



Ehangcom iSX4000 Universal Application Platform

EhangAgent User Manual

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About This Manual

Welcome to this document. It is the EhangAgent user manual. The software-related purpose, intended audience, document description and relevant information are as follows:

Purpose

This manual provides information about the application of EhangAgent of the iSX platform.

Intended Audience

1. Distributors
2. System Integrators
3. Toolkit Developers
4. Independent Software Vendors (ISVs)
5. Value Added Resellers (VARs)
6. Original Equipment Manufacturers (OEMs)

How to Use This Manual

This manual is concomitant with the software installation. This document mainly includes the following sections:

1. *Overview*: This section describes the general use of this manual.
2. *Query Function*: This section describes how to use the EhangAgent query function.
3. *Assignment and Configuration Functions*: This section describes how to use the EhangAgent assignment and configuration functions.
4. *Environment Setup*: This chapter describes the setup of environment required for iSX1000 node management through EhangAgent (i.e. by the SNMP) in the command line environment of Windows.

Chapter 1 Overview

EhangAgent is developed based on net-snmp5.4.2.1. The purpose is to provide an agent to manage iSX series products by using SNMP. Because EhangAgent introduces some basic MIB definitions of net-snmp, a net-snmp software package shall be installed to run this agent normally.

Note: “localhost” in the commands listed in this document assumes that you locally query or configure an eHang SNMP agent that occupies port 161. The configuration file in the patch given by eHang sets the agent port to 1161. If the configuration file in the eHang patch is not changed, the SNMP port shall be set to 1161 in the command, i.e. “localhost:161” shall be changed to “localhost:1161”.

Chapter 2 Query Function Application

2.1 Query at the System Level

1. Query the number of ISX nodes in the system (i.e. the MC where this agent is located; the same below)

```
snmpget -v 2c -c private localhost:1161 isxNodeNum.0
```

Description: Assume that this SNMP agent is local. Therefore, input localhost:1161, otherwise input the IP address of the PC where the agent is located. (The same below)

2. Query the node numbers of all ISX nodes in the system

```
snmptable -v 2c -c private localhost:1161 isx1000NodeNOtable
```

2.2 Query at the Node Level

1. Query the node number of the current node

```
snmpget -v 2c -c private localhost:1161 isx1KNodeNO.0
```

2. Query information about the motherboard

1) Node number of the node where the motherboard is located

```
snmpget -v 2c -c private localhost:1161 isxMBNodeNo.0
```

2) Motherboard status

```
snmpget -v 2c -c private localhost:1161 isxMBStatus.0
```

Description: Results returned from the SNMP agent are basically results returned from the SDK and are not converted. For specific meanings, refer to the "Description" column of the MIB library. You are recommended to use MIBBrowser or MIB Smith. (The same below)

3) Default motherboard gateway (routing)

```
snmpget -v 2c -c private localhost:1161 isxMBDefGW.0
```

4) Motherboard IP address

```
snmpget -v 2c -c private localhost:1161 isxMBIPAddress.0
```

5) Motherboard hardware version number

```
snmpget -v 2c -c private localhost:1161 isxMBHwVersion.0
```

6) Motherboard hardware branch version number

```
snmpget -v 2c -c private localhost:1161 isxMBBrhVersion.0
```

7) Motherboard firmware version number

```
snmpget -v 2c -c private localhost:1161 isxMBFWVersion.0
```

8) Number of motherboard licenses

```
snmpget -v 2c -c private localhost:1161 isxMBLicenseNum.0
```

- 9) **Motherboard serial number**
snmpget -v 2c -c private localhost:1161 isxMBSerialNo.0
- 10) **Motherboard license status**
snmpget -v 2c -c private localhost:1161 isxMBLicenseStatus.0
- 11) **Motherboard license remaining time**
snmpget -v 2c -c private localhost:1161 isxMBLicRemainTime.0
- 12) **Current reference clock source used by the motherboard**
snmpget -v 2c -c private localhost:1161 isxMBRCSrcCurrent.0
- 13) **Number of current reference clock sources available for the motherboard**
snmpget -v 2c -c private localhost:1161 isxMBRCSrcValidNum.0
- 14) **List of current reference clock sources available for the motherboard**
snmptable v 2c -c private localhost:1161 isxMBRCSrcValidTable
- Description:** The list of current available reference clock sources is a list in two columns. Among both columns, the “rCName” column is “Reference Clock Source Name” in Chinese and may not be normally displayed in some operating systems; the “rCID” column is “Reference Clock Source ID” in sexadecimal notation.
- 15) **Number of current reference clock sources of the motherboard**
snmpget -v 2c -c private localhost:1161 isxMBRCSrcOrderNum.0
- 16) **List of current reference clock sources of the motherboard**
Snmptable v 2c -c private localhost:1161 isxMBRCSrcOrderTable

3. Query about Relevant Resources Information (including DSP and VOIP daughter boards)

- 1) **Query the number of DSP daughter boards in the current node**
snmpget -v 2c -c private localhost:1161 isxDSPBrdNum.0
- 2) **Query detailed information about DSP daughter boards in the current node**
snmptable v 2c -c private localhost:1161 isxDSPBrdTable

Description:

isxDSPNodeNo: Node number of the node where a DSP daughter board is located;

isxDSPBrdNo: Board number of a DSP daughter board;

isxDSPHwVersion: Hardware version number of a DSP daughter board;

isxDSPBrhVersio: Hardware branch version number of a DSP daughter board;

isxDSPFWVersion: Firmware version number of a DSP daughter board;

isxDSPLicenseNum: Number of licenses of a DSP daughter board;

isxDSPSerialNo: Serial number of a DSP daughter board;

isxDSPLicenseStatus: License status of a DSP daughter board;

isxDSPLicRemainTime: License remaining time of a DSP daughter board;

isxDSPBrdStatus: Status of a DSP daughter board. Return values are basically values returned from SDK. For specific meanings, refer to the MIB library;

isxDSPBrdOperation: Operation variable of a DSP daughter board. You can deactivate, reset and activate a DSP by using this variable. 0 is always returned during reading (the same below);

isxDSPNet2IP: IP address of the second network interface of a DSP daughter board;
isxDSPNet2IPMask: Mask of the second network interface of a DSP daughter board;
isxDSPBrdDefGW: Default gateway of a DSP daughter board.

3) Query the number of VOIP daughter boards in the current node

```
snmpget -v 2c -c private localhost:1161 isxVoIPBrdNum.0
```

4) Query detailed information about VOIP daughter boards in the current node

```
snmptable -v 2c -c private localhost:1161 isxVoIPBrdTable
```

Description:

isxVoIPNodeNo: Node number of the ISX node where a VOIP daughter board is located;
isxVoIPBrdNo: Board number of a VOIP daughter board;
isxVoIPHwVersion: Hardware version number of a VOIP daughter board;
isxVoIPBrhVersion: Hardware branch version number of a VOIP daughter board;
isxVoIPFWVersion: Firmware version number of a VOIP daughter board;
isxVoIPLicenseNum: Number of licenses of a VOIP daughter board;
isxVoIPSerialNo: Serial number of a VOIP daughter board;
isxVoIPLicenseStatus: License status of a VOIP daughter board;
isxVoIPLicRemainTime: License remaining time of a VOIP daughter board;
isxVoIPBrdStatus: Status of a VOIP daughter board. Return values are basically values returned from SDK. For specific meanings, refer to the MIB library;
isxVoIPBrdOperation: Operation variable of a VOIP daughter board. You can deactivate, reset and activate a VOIP by using this variable.
isxVoIPNet2IP: IP address of the second network interface of a VOIP daughter board;
isxVoIPNet2IPMask: Mask of the second network interface of a VOIP daughter board;
isxVoIPBrdDefGW: Default gateway of a VOIP daughter board
isxVoIPICDefGW: VOIP service gateway.

4. Query about Trunk Information

1) Query the number of trunks in the current node

```
snmpget -v 2c -c private localhost:1161 isxSpanNum.0
```

2) Query detailed information about trunks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSpanTable
```

Description:

isxSpanNodeNo: Node number of the node where a trunk is located;
.isxTrunkBrdNo: Daughter board number of a the daughter board where a trunk is located;
isxSpanNo: Trunk number;
isxSpanStatus: Trunk status;
isxSpanType: Trunk type;
isxSpanCodingType: Trunk coding type;
isxSpanSignalMode: Trunk signaling mode;
isxSpanErrorTypeE1: Trunk error correction type. This variable is valid only when the trunk type is E1. If the trunk type is J1 or T1, 0 is returned;
isxSpanLineTypeE1: Trunk line type. This variable is valid only when the trunk type is E1. If the trunk type is J1 or T1, 0 is returned;
isxSpanFrameTypeT1J1: Trunk frame type. This variable is valid only when the trunk type is J1 or T1. If the trunk type is E1, 0 is returned;
isxSpanLineLenT1J1: Trunk line length. This variable is valid only when the trunk type is J1 or T1. If the trunk type is E1, 0 is returned;
isxSpanLawTranTypeT1J1: Trunk law mode transformation. This variable is valid only when the trunk type is J1 or T1. If the trunk type is E1, 0 is returned;
isxSpanTransparentChanNoT1J1: Trunk transparent channel number. This variable is valid only

when the trunk type is J1 or T1. If the trunk type is E1, 0 is returned;

isxSpanLoopbackCfg: Trunk loopback configuration. This variable is a bitmap variable. Bit0, Bit1, Bit2 and Bit3 indicate frame loopback, load loopback, remote loopback and local loopback respectively;

isxSpanLoopbackLineBM: Trunk channel loopback. This variable is a bitmap variable. If correspondence bit is set to 1, it indicates correspondent channel is loopback;

isxSpanSenderSlipCtr: Trunk sender slip counter

isxSpanReceiverSlipCtr: Trunk receiver slip counter;

isxSpanAlarmType: Trunk alarm information. This variable is a bitmap variable. For specific meanings, refer to OAM.

5. Query about Signaling Information

1) PRI Part

1) Query the number of PRI daughter boards in the current node

```
snmpget -v 2c -c private localhost:1161 isxPRIBdNum.0
```

2) Query information about PRI daughter boards in the current node (D channel information excluded)

```
snmptable -v 2c -c private localhost:1161 isxPRIBdInfoTable
```

Description:

isxPRIBdNodeNO: Node number of the node where a PRI daughter board is located;

isxPRIBdNO: PRI daughter board number;

isxPRIBdStatus: PRI daughter board status;

isxPRIBdHwVersion: PRI daughter board hardware version number;

.isxPRIBdBrhVersion: PRI daughter board hardware branch version number;

isxPRIBdFWVersion: PRI daughter board firmware version number;

isxPRIBdLicenseNum: Number of PRI daughter board licenses;

isxPRIBdSerialNO: PRI daughter board serial number;

isxPRIBdLicenseStatus: PRI daughter board license status;

isxPRIBdLicRemainTime: License remaining time of a PRI daughter board;

isxPRIDChanAdd: Operation variable for adding a D channel. 0 is returned during reading;

isxPRIDChanDel: Operation variable for deleting a D channel. 0 is returned during reading;

3) Query the number of D channels in the current node

```
snmpget -v 2c -c private localhost:1161 isxPRIDChanNum.0
```

4) Query detailed information about D channels in the current node

```
snmptable -v 2c -c private localhost:1161 isxPRIDChanTable
```

Description:

isxPRIDChanID: D channel ID;

isxPRIDChNodeNO: Node number of the ISX node where a D channel is located;

isxPRIDChPRIBDNO: Daughter board number of the PRI daughter board where a D channel is located;

isxPRIDChSpanBDNO: Trunk board number where the trunk occupied by a D channel is located;

isxPRIDChSpanNO: Trunk board number of the trunk occupied by a D channel;

isxPRIDChChanCtr: Counter for establishment of a D channel;

isxPRIDChStatus: D channel status;

isxPRIDChSpanTimeSlot: Number of time slots occupied by a D channel;

isxPRIDChMsgAccess: D channel message layer access mode;

isxPRIDChNetSideFlag: D channel network side flag;

isxPRIDChSwType: D channel switch type;

isxPRIDChOperation: D channel operation variable. 0 is returned during reading.

II) SIP Part

1) Query the number of SIP daughter boards in the current node

```
snmpget -v 2c -c private localhost:1161 isxSIPBdNum.0
```

2) Query information about SIP daughter boards in the current node (SIP stack information excluded)

```
snmptable -v 2c -c private localhost:1161 isxSIPBdInfoTable
```

Description:

isxSIPBdNodeNO: Node number of the node where a SIP daughter board is located;

isxSIPBdNO: SIP daughter board number;

isxSIPBdHwVersion: SIP daughter board hardware version number;

isxSIPBdBrdVersion: SIP daughter board hardware branch version number;

isxSIPBdFWVersion: SIP daughter board firmware version number;

isxSIPBdLicenseNum: Number of SIP daughter board licenses;

isxSIPBdSerialNO: SIP daughter board serial number;

.isxSIPBdLicenseStatus: SIP daughter board license status;

isxSIPBdLicRemainTime: License remaining time of a SIP daughter board;

isxSIPBdSndIP: IP address of the second network interface of a SIP daughter board;

isxSIPBdSndIPMask: Mask of the second network interface of a SIP daughter board;

isxSIPBdDefGWIP: Default gateway of a SIP daughter board;

isxSIPBdStatus: SIP daughter board status;

3) Query the UDP configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkUDPCfgTable
```

Description: A row in the list corresponds to a SIP daughter board to simplify the MIB library.

4) Query the TCP configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkTCPCfgTable
```

5) Query the TLS configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkTLSCfgTable
```

6) Query the DNS configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkDNSCfgTable
```

7) Query the proxy configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkProxyCfgTable
```

9) Query the response configuration information list of all SIP stacks in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPStkACKCfgTable
```

10) Query the number of allowed IP addresses of all SIP daughter boards in the current node

```
snmpget -v 2c -c private localhost:1161 isxSIPAllowIPNum.0
```

11) Query the allowed IP address configuration information list of all SIP daughter boards in the current node

```
snmptable -v 2c -c private localhost:1161 isxSIPAllowIPTable
```

III) SS7 Part

1) Query the number of all SS7 daughter boards in the current node

```
snmpget -v 2c -c private localhost:1161 isxSS7BdNum.0
```


2) **Query information about SS7 daughter boards in the current node (SS7 stack information excluded)**

```
snmptable -v 2c -c private localhost:1161 isxSS7BdTable
```

3) **Query the number of all SS7 stacks in the current node**

```
snmpget -v 2c -c private localhost:1161 isxSS7StackNum.0
```

Description: This variable indicates the number of all SS7 stacks in the current node, not the number of stacks of an SS7 daughter board.

4) **Query information about all SS7 stacks in the current node**

```
snmptable -v 2c -c private localhost:1161 isxSS7StackTable
```

Description:

isxSS7StkOPC: Source signaling point code;

isxSS7StkDPCLen: Signaling point code length;

isxSS7StkSSF: Sub-service field;

isxSS7StkCfgStatus: SS7 stack configuration status. 0 and 1 indicate deactive state and active state respectively.

5) **Query the number of all SS7 link sets in the current node**

```
snmpget -v 2c -c private localhost:1161 isxSS7LinkSetNum.0
```

6) **Query information about all SS7 link sets in the current node**

```
snmptable -v 2c -c private localhost:1161 isxSS7LinkSetTable
```

Description:

isxSS7LinkSetAPC: Adjacent signaling point code;

isxSS7LinkSetWorkingStatus: Link set working status. 0 and 1 indicate available state and unavailable state respectively.

isxSS7LinkSetCfgStatus: Link set configuration status.

7) **Query the number of all SS7 links in the current node**

```
snmpget -v 2c -c private localhost:1161 isxSS7LinkNum.0
```

8) **Query information about all SS7 links in the current node**

```
snmptable -v 2c -c private localhost:1161 isxSS7LinkTable
```

Description:

isxSS7LinkULen: Unit length;

isxSS7LinkErrorType: Link error correction type;

isxSS7LinkSLC: Link code;

isxSS7LinkProri: Link priority;

isxSS7LinkSpanNodeNO: Node number where the trunk occupied by a link is located;

isxSS7LinkSpanBdNO: Trunk daughter board number where the trunk occupied by a link is located;

isxSS7LinkSpanNO: Trunk number where the trunk occupied by a link is located;

isxSS7LinkSpanChan: Trunk channel number where the trunk occupied by a link is located;

isxSS7LinkWorkingState: Link working status. This variable is a bitmap variable. For specific meanings, refer to OAM;

isxSS7LinkCfgStatus: Link configuration status.

9) **Query the number of all SS7 destination signaling points in the current node**

```
snmpget -v 2c -c private localhost:1161 isxSS7DPCNum.0
```

10) Query all SS7 destination signaling points in the current node

```
snmptable -v 2c -c private localhost:1161 isxSS7DPCTable
```

Description:

isxSS7DPCDPC: Destination signaling point code;

isxSS7DestStatus: Destination status;

isxSS7DPCCfgStatus: Destination signaling configuration status.

11) Query the number of all SS7 signaling routes in the current node

```
snmpget -v 2c -c private localhost:1161 isxSS7RouteNum.0
```

12) Query information about all SS7 signaling routes in the current node

```
snmptable -v 2c -c private localhost:1161 isxSS7RouteTable
```

Description:

isxSS7RoutePriority: Link set priority;

isxSS7RouteWorkingStatus: Signaling route working status;

isxSS7RouteCfgStatus: Signaling route configuration status.

13) Query the number of all circuit groups in the current node

```
snmpget -v 2c -c private localhost:1161 isxSS7CICGrpNum.0
```

14) Query information about all circuit groups in the current node

```
snmptable -v 2c -c private localhost:1161 isxSS7CICGrpTable
```

Description:

isxSS7CICGrpBase: Circuit group start number;

isxSS7CICGrpUserPart: User part type;

isxSS7CICGrpCurCtrlType: Circuit control type;

isxSS7CICGrpConnCheckReq: Connection check flag;

isxSS7CICGrpSpanNodeNO: Node number where the trunk occupied by a circuit group is located;

isxSS7CICGrpSpanBrdNO: Trunk daughter board number where the trunk occupied by a circuit group is located;

isxSS7CICGrpSpanNO: Trunk number where the trunk occupied by a circuit group is located;

isxSS7CICGrpWorkingStatus: Circuit group working status. This variable is a bit variable array. Each element in the array represents the status of a time slot. For details of each bit, refer to OAM;

isxSS7CICGrpCfgStatus: Circuit group configuration status.

Chapter 3 Assignment and Configuration Function Application

Assigning a value to some variables in the SNMP agent achieves ISX node configuration.

3.1 Configuration at the System Level

1. Set a node for the current operation

Assigning a value to the “current operation node variable” switches over the current operation node. The operation is as follows:

```
snmpset -v 2c -c private localhost:1161 isx1KNodeNO.0 i Node number
```

3.2 Configuration at the Node Level

1. Motherboard configuration

1) Deactivate, reset or activate the motherboard

```
snmpset -v 2c -c private localhost:1161 isxMBOperation.0 i 0 (or 1 or 2)
```

Description: 0, 1 and 2 indicate deactivating, activating and resetting the motherboard.

2) Set or delete the motherboard default gateway

```
snmpset -v 2c -c private localhost:1161 isxMBDefGW.0 s "IP"
```

3) Set the motherboard IP address

```
snmpset -v 2c -c private localhost:1161 isxMBIPAddress.0 s "IP;NetMask"
```

4) Set the current reference clock source of the motherboard

```
snmpset -v 2c -c private localhost:1161 isxMBRCSrcSet.0 s "Reference clock source ID"
```

5) Add a reference clock source in the motherboard reference clock source list

```
snmpset -v 2c -c private localhost:1161 isxMBRCSrcOrderAdd.0 s "Reference clock source ID"
```

6) Delete a reference clock source in the motherboard reference clock source list

```
snmpset -v 2c -c private localhost:1161 isxMBRCSrcOrderDel.0 s "Reference clock source ID"
```

2 Resource Board Configuraiton

1) Deactivate or reset a DSP daughter board

```
snmpset -v 2c -c private localhost:1161 isxDSPBrdOperation.ROWNO i 0 (or 1)
```

Caution: **ROWNO** in the above-mentioned command indicates the row number of a DSP daughter board in the isxDSPBrdTable table. For a DSP daughter board to be operated, find the row number of the DSP daughter board in this table. (The same below)

Description: 0 and 1 indicate deactivating and resetting a daughter board respectively.

2) Set the IP address of the second network interface of a DSP daughter board

```
snmpset -v 2c -c private localhost:1161 isxDSPNet2IP.ROWNO s "IP"
```

Description: After the IP address of the second network interface is set by using this variable, the mask is “255.255.0.0” by default. If you want to modify the mask, you can achieve this by setting “isxDSPNet2IPMask”.

3) Set the mask of the second network interface of a DSP daughter board

```
snmpset -v 2c -c private localhost:1161 isxDSPNet2IPMask. ROWNO s "NetMask"
```

4) Set the default gateway of a DSP daughter board

```
snmpset -v 2c -c private localhost:1161 isxDSPBrdDefGW. ROWNO s "IP"
```

5) Deactivate or reset a VOIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxVoIPBrdOperation. ROWNO i 0 (or1)
```

Caution: ROWNO in the above-mentioned command indicates the row number of a VOIP daughter board in the isxDSPBrdTable table. For a VOIP daughter board to be operated, find the row number of the VOIP daughter board in this table.

Description: 0 and 1 indicate deactivating and resetting a daughter board respectively.

6) Set the IP address of the second network interface of a VOIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxVoIPNet2IP. ROWNO s "IP"
```

7) Set the mask of the second network interface of a VOIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxVOIPNet2IPMask. ROWNO s "NetMask"
```

8) Set the default gateway of a VOIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxVOIPBrdDefGW. ROWNO s "IP"
```

9) Set the service gateway of a VOIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxVolPICDefGW. ROWNO s "IP"
```

3. Trunk Configuration

1) Set the trunk type

```
snmpset -v 2c -c private localhost:1161 isxSpanType. ROWNO i 1 (or 2 or 3)
```

Caution: ROWNO in the above-mentioned command indicates the row number of a trunk in the isxSpanTable table. For a trunk to be operated, find the row number of the trunk in this table. (The same below)

1, 2 and 3 indicate E1, T1 and J1 respectively.

2) Set the trunk coding mode

```
snmpset -v 2c -c private localhost:1161 isxSpanCodingType. ROWNO i 1 (or 2)
```

Description: 1 and 2 indicate AMI and HDB3-B8ZS respectively.

3) Set the trunk signaling mode

```
snmpset -v 2c -c private localhost:1161 isxSpanSignalMode. ROWNO i 1 (or 2)
```

Description: 1, 2 and 3 indicate ClearChannel, CAS and MonitorMode respectively.

4) Set the error correction type of E1

```
snmpset -v 2c -c private localhost:1161 isxSpanErrorTypeE1. ROWNO i 1 (or 2)
```

Description: 1, 2, 3 and 4 indicate No, CRC4, FEBE and Both respectively.

5) Set the line type of E1

```
snmpset -v 2c -c private localhost:1161 isxSpanLineTypeE1. ROWNO i 1 (or 2)
```

Description: 1 and 2 indicate 75Ω and 120Ω respectively.

6) Set the frame type of T1 or J1

```
snmpset -v 2c -c private localhost:1161 isxSpanFrameTypeT1J1. ROWNO i 1 (or 2)
```

Description: D4 (1), DSF (2)

7) Set the line length of T1 or J1

```
snmpset -v 2c -c private localhost:1161 isxSpanLineLenT1J1. ROWNO i 1 (or 2-9)
```

Description: LL-DSX1-CSU-000-TO-133(1), LL-DSX1-CSU-134-TO-166(2), LL-DSX1-CSU-267-TO-399(3), LL-DSX1-CSU-400-TO-533 (4), LL-DSX1-CSU-534-TO-655 (5), LL-CSU-0-DB-SHORT(6), LL-CSU-N-7-5-DB-LONG(7), LL-CSU-N-15-0-DB-LONG (8), LL-CSU-N-22-5-DB-LONG (9)

8) Set the law mode transformation type of T1 or J1

```
snmpset -v 2c -c private localhost:1161 isxSpanLawTranTypeT1J1. ROWNO i 1 (or 2)
```

Description: uLaw2aLaw (1), Transparence (2)

9) Set the transparent channel number of T1 or J1

```
snmpset -v 2c -c private localhost:1161 isxSpanTransparentChanNoT1J1. ROWNO i Channel number
```

10) Set the loopback mode

```
snmpset -v 2c -c private localhost:1161 isxSpanLoopbackCfg. ROWNO i Loopback mode bit mask
```

Description: The meanings of the bits of the bit mask are as follows: Bit0: frame loopback, Bit1: load loopback, Bit2: remote loopback, Bit3: local loopback, Bit(4..31): reserved

11) Set a loopback channel

```
snmpset -v 2c -c private localhost:1161 isxSpanLoopbackLineBM. ROWNO i Loopback channel bit mask
```

12) Deactivate, reset or activate a trunk

```
snmpset -v 2c -c private localhost:1161 isxSpanOperation. ROWNO i 0 (or 1 or 2)
```

Description: 0, 1 and 2 indicate deactivating, activating and resetting a trunk.

4. Signaling Configuration**I) PRI Part**

1) Add a D channel in a PRI daughter board

```
snmpset -v 2c -c private localhost:1161 isxPRIDChanAdd.ROWNO s
"SpanBdNO;SpanNO;SpanTimeSlot;MessageAccess;NetSideFlag;SwitcherType"
```

Description:

ROWNO is the row number of the trunk daughter board in the isxPRIDInfoTable table. You shall determine the row number of the daughter board in this table prior to addition. (The same below)

SpanBdNO: Trunk daughter board number where the occupied trunk is located. Range: 0 to MAX_TRUNK_BRD-1;

SpanNO: Occupied trunk number. Range: 0 to MAX_SPAN_NUM-1;

SpanTimeSlot: Occupied trunk time slot number. Range: 0-31;

MessageAccess: Message layer access. Range: 0: not allow, 1: allow 2nd layer to access, 2: allow physical layer;

NetSideFlag: Network side flag. Range: 0: user side, 1: net side;

SwitcherType: Switch type. Range: OneTR6(31), CCITT(32), DASS2(33), NET5(34), NET5SW(35), QSIGMASTER(36), QSIGSLAVE(37), TS014(38), VN(39)

Example: If you want to add a D-Channel, using the following parameter: SpanBdNO:0, SpanNO:1, SpanTimeSlot:16, MessageAccess: not allow NetSideFlag:user side, SwitcherType:NET5, you should write "0;1;16;0;0;34" to this variable.

2) Delete a D channel from a PRI daughter board

```
snmpset -v 2c -c private localhost:1161 isxPRIDChanAdd.ROWNO i D channel number
```

3) Change the trunk time slot number occupied by a D channel

```
snmpset -v 2c -c private localhost:1161 isxPRIDChSpanTimeSlot.ROWNO i Time slot number
```

Description: **ROWNO** is the row number of the D channel in the isxPRIDChanTable table. You shall determine the row number in this table prior to setting. (The same below)

4) Change the message layer access of a D channel

```
snmpset -v 2c -c private localhost:1161 isxPRIDChMsgAccess.ROWNO i 0 (or 1 or 2. For specific meanings, refer to 1))
```

5) Change the network side flag of a D channel

```
snmpset -v 2c -c private localhost:1161 isxPRIDChNetSideFlag.ROWNO i 0 (or 1. For specific meanings, refer to 1))
```

6) Change the switch type of a D channel

```
snmpset -v 2c -c private localhost:1161 isxPRIDChNetSideFlag.ROWNO i 31 (or 32-39. For specific meanings, refer to 1))
```

7) Deactivate, activate or restore a D channel to the default value

```
snmpset -v 2c -c private localhost:1161 isxPRIDChOperation.ROWNO i 0 (or 1 or 2)
```

Description: 0, 1 and 2 indicate deactivation, activation and restoring to the default value.

II) SIP Part**1) Change the IP address of the second network interface of a SIP board**

```
snmpset -v 2c -c private localhost:1161 isxSIPBdSndIP.ROWNO s "IP"
```

Description: **ROWNO** is the row number of a SIP daughter board in the isxSIPBdInfoTable table. You shall determine the row number in this table prior to operation.

2) Change the mask of the second network interface of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSIPBdSndIPMask.ROWNO s "Mask"
```

3) Change the default gateway of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSIPBdDefGWIP.ROWNO s "IP"
```

4) Deactivate or reset a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSIPBdOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and resetting.

5) Activate the list of allowed IP addresses of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxActivateSIPAllowIP.ROWNO i 1
```

Description: This variable can be set to 1 only. If this variable is read, the state of the list of allowed IP addresses of this SIP daughter board is returned: 0: not activated, 1: activated, but failed, 2: activated.

6) Change the IP address in the UDP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOUDPCfgIPAddr.ROWNO s "IP"
```

Description: **ROWNO** is the row number of a SIP stack in the isxSIPStkUDPCfgTable table. You shall determine the row number in this table prior to operation. (The same below)

7) Change the port in the UDP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOUDPCfgIPAddr.ROWNO I Port number
```

8) Enable or disable the TCP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgEnable.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate enablement and disablement respectively.

ROWNO is the row number of the SIP daughter board in the isxSIPStkTCPCfgTable table. You shall determine the row number in this table prior to operation. (The same below)

9) Change the local IP address in the TCP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgLocalIPAddr.ROWNO s "IP"
```

10) Change the local port number in the TCP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgLocalPort.ROWNO I Port number
```

11) Change the connection flag in the TCP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgConnFlag.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate disabling and enabling permanent connection respectively.

12) Change the connection timeout value in the TCP configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgConnTimeOut.ROWNO i Timeout time
```

13) Change the remote IP address in the TCP configuration of the SIP stack of a SIP daughter board (1 or 2 or 3 or 4)

```
snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgRemoteIPAddr (1 or 2 or 3 or 4) .ROWNO s "IP"
```

14) Change the remote port number in the TCP configuration of the SIP stack of a SIP daughter board

board (1 or 2 or 3 or 4)

snmpset -v 2c -c private localhost:1161 isxSSTOTCPCfgRemotePort (1 or 2 or 3 or 4) .**ROWNO** i Port number

15) Enable or disable the TLS configuration of a SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSTOTLSCfgEnable.**ROWNO** i 0 (or 1)

Description: **ROWNO** is the row number of this daughter board in the isxSIPStkTLSCfgTable table. You shall determine the row number in this table prior to operation. (The same below)
0 and 1 indicate disablement and enablement respectively.

16) Change the IP address in the TLS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSTOTLSCfgIPAddr.**ROWNO** s "IP"

17) Change the port number in the TLS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSTOTLSCfgPort.**ROWNO** i Port number

18) Change the domain name in the DNS/Proxy configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDCDomainName.**ROWNO** s "Domain name"

Description: **ROWNO** is the row number of this SIP daughter board in the isxSIPStkDNSCfgTable table. You shall determine the row number in this table prior to operation. (The same below)

19) Change the Call ID in the DNS/Proxy configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDCDomainName.**ROWNO** s "Call ID"

20) Change the first IP address in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDCPrimaryDnsServerIP.**ROWNO** s "IP"

21) Change the first IP address port in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDCPrimaryDnsServerPort.**ROWNO** i Port number

22) Change the transmission mode of the first IP address in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDCPrimaryDnsTransType.**ROWNO** i 0 (or 1)

Description: 0 and 1 indicate UDP and TCP respectively.

23) Change the second IP address in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDC2ndDnsServerIP.**ROWNO** s "IP"

24) Change the second IP address port in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDC2ndDnsServerPort.**ROWNO** i Port number

25) Change the transmission mode of the second IP address in the DNS configuration of the SIP stack of a SIP daughter board

snmpset -v 2c -c private localhost:1161 isxSSDC2ndDnsTransType.**ROWNO** i 0 (or 1)

Description: 0 and 1 indicate UDP and TCP respectively.

26) Change the third IP address in the DNS configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDC3rdDnsServerIP.ROWNO s "IP"
```

27) Change the third IP address port in the DNS configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDC3rdDnsServerPort.ROWNO i Port number
```

28) Change the transmission mode of the third IP address in the DNS configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDC3rdDnsTransType.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate UDP and TCP respectively.

29) Disable or enable the Porxy configuration of a SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDOProxyServerEnable.ROWNO i 0 (or 1)
```

Description: **ROWNO** is the row number of this SIP daughter board in the isxSIPStkProxyCfgTable table. You shall determine the row number in this table prior to operation. (The same below)

0 and 1 indicate disablement and enablement respectively.

30) Change the IP address in the Porxy configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDOProxyIpAddr.ROWNO s "IP"
```

31) Change the port in the Porxy configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDOProxyPort.ROWNO i Port number
```

32) Change the host name in the Porxy configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDOProxyHostName.ROWNO s "Host name"
```

33) Change the transmission mode in the Porxy configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSSDOProxyTransType.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate UDP and TCP respectively.

34) Change the ACK sending mode in the ACK configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSACManualAckOn2xxx.ROWNO i 0 (or 1)
```

Description: **ROWNO** is the row number of this SIP daughter board in the isxSIPStkACKCfgTable table. You shall determine the row number in this table prior to operation. (The same below)

0 and 1 indicate automatic sending and sending by application respectively.

35) Change the PACK message sending mode in the ACK configuration of the SIP stack of a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSACManualPrack.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate automatic sending and sending by application respectively.

36) Add an allowed IP address in a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSIPAllowIPAdd.0 s "BoardNO;IP;NetMask"
```

37) Delete an allowed IP address from a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxSIPAllowIPDel.0 s "BoardNO;Index"
```

Description: Index indicates the index in the IP address list for the SIP daughter board where an IP address to be deleted is located.

38) Activate an allowed IP address list in a SIP daughter board

```
snmpset -v 2c -c private localhost:1161 isxActivateSIPStack.ROWNO i 1
```

Description: ROWNO is the row number of this SIP daughter board in the isxSIPStackOpTable table. You shall determine the row number in this table prior to operation. (The same below)

39) Restore the SIP stack of a SIP daughter board to the default

```
snmpset -v 2c -c private localhost:1161 isxSIPStackDefault.ROWNO i 1
```

III) SS7 Part**1) Add a SS7 stack in an SS7 daughter board**

```
snmpset -v 2c -c private localhost:1161 isxSS7BdStackAdd.ROWNO s "StackID;OPC;DPCLen;Sub service field(SSF)"
```

Description: ROWNO is the row number of this SS7 daughter board in the isxSS7BdTable table. You shall determine the row number in this table prior to operation. (The same below)

OPC: Source signaling point code in the following format: 0-0-0 (it indicates the source signaling point code 000)

DPCLen: Signaling point code length

SSF: Subservice field

If you want to add an SS7 stack in an SS7 daughter board by using the built-in automatic computing parameter function in this agent, just input:

```
snmpset -v 2c -c private localhost:1161 isxSS7BdStackAdd.ROWNO s "default"
```

2) Delete a SS7 stack from an SS7 daughter board

```
snmpset -v 2c -c private localhost:1161 isxSS7BdStackDel.ROWNO i ID
```

Description: ID indicates the SS7 stack ID that can be found in the isxSS7StackTable table.

3) Activate or deactivate an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7BdOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

4) Change the source signaling point code of an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkOPC.ROWNO s "OPC"
```

Description: ROWNO is the row number of this SS7 daughter board in the isxSS7StackTable. You shall determine the row number in this table prior to operation. (The same below)

5) Change the signaling point code length of an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkDPCLen.ROWNO i Signaling point code length
```

6) Change the subservice field of an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkSSF.ROWNO s "SSF"
```

Description: The value range of SSF is as follows: intl, spare, nat and res: indicate international, not used, native and reserved respectively.

6) Add a link set in an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkLinkSetAdd.ROWNO s "LinkSetID;APC"
```

Description: APC indicates an adjacent signaling point code in the following format: 0-0-0 (it indicates the adjacent signaling point 000)

7) Add a destination signaling point in an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkDPCAdd.ROWNO s "DPCID; DPC"
```

8) Add a circuit group in an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkCICGrpAdd.ROWNO s "CICGrpID;DPC;SpanNodeNO;SpanBdNO;SpanNO"
```

Description:

CICGrpID indicates the circuit group ID

DPC indicates the destination signaling point code

SpanNodeNO indicates the node number where the trunk occupied by the circuit group is located

SpanBdNO indicates the daughter board number where the trunk occupied by the circuit group is located

SpanNO indicates the trunk number of the trunk occupied by the circuit group

If you want to add an SS7 stack in an SS7 daughter board by using the built-in automatic computing parameter function in this agent, just input:

```
snmpset -v 2c -c private localhost:1161 isxSS7StkCICGrpAdd.ROWNO s "default"
```

9) Delete a link set from an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkLinkSetDel.ROWNO i ID
```

10) Delete a destination signaling point from an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkDPCDel.ROWNO i ID
```

11) Delete a circuit group from an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkCICGrpDel.ROWNO i ID
```

12) Deactivate or activate an SS7 stack

```
snmpset -v 2c -c private localhost:1161 isxSS7StkOperation.ROWNO i 0 (or1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

13) Change the adjacent signaling point code of a link set

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSetAPC.ROWNO s "APC"
```

Description: **ROWNO** is the row number of this link set in the isxSS7LinkSetTable table. You shall determine the row number in this table prior to operation. (The same below)

14) Add a link in a link set

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSetLinkAdd.ROWNO s "LinkID;SpanNodeNO;SpanBdNO;SpanNO;SpanChan"
```

If you want to add an SS7 stack in an SS7 daughter board by using the built-in automatic computing parameter function in this agent, just input:

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSetLinkAdd.ROWNO s "default"
```

15) Delete a link from a link set

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSetLinkDel.ROWNO i ID
```

16) Deactivate or activate a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSetOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

17) Change the unit length of a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkULen.ROWNO i Unit length
```

Description: **ROWNO** is the row number of this link set in the isxSS7LinkTable table. You shall determine the row number in this table prior to operation. (The same below)

18) Change the error correction type of a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkErrorType.ROWNO i 0 (or 1)
```

Description: 0 means SS7_LINK_ERR_NORMAL; 1 means SS7_LINK_ERR_CYC

19) Change the link code of a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSLC.ROWNO i 0 (or 1-15)
```

29) Change the priority of a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkProri.ROWNO i 0 (or 1-15)
```

21) Change the node number where the trunk occupied by a link is located

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSpanNodeNO.ROWNO i Node number
```

22) Change the daughter board number where the trunk occupied by a link is located

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSpanBdNO.ROWNO i Daughter board number
```

23) Change the trunk number of the trunk occupied by a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSpanNO.ROWNO i Trunk number
```

24) Change the channel number of the trunk occupied by a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkSpanChan.ROWNO i Channel number
```

25) Deactivate or activate a link

```
snmpset -v 2c -c private localhost:1161 isxSS7LinkOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

26) Change the signaling point code of a destination signaling point

```
snmpset -v 2c -c private localhost:1161 isxSS7DPCDPC.ROWNO s "DPC"
```

Description: **ROWNO** is the row number of this link set in the isxSS7DPCTable table. You shall determine the row number in this table prior to operation. (The same below)

28) Add a signaling route at a destination signaling point

```
snmpset -v 2c -c private localhost:1161 isxSS7DPCRouteAdd.ROWNO s "RouteID;LinkSetID;Priority"
```

If you want to add an SS7 stack in an SS7 daughter board by using the built-in automatic computing parameter function in this agent, just input:

```
snmpset -v 2c -c private localhost:1161 isxSS7DPCRouteAdd.ROWNO s "default"
```

29) Delete a signaling route from a destination signaling point

```
snmpset -v 2c -c private localhost:1161 isxSS7DPCRouteDel.ROWNO i ID
```

30) Deactivate or activate a signaling route

```
snmpset -v 2c -c private localhost:1161 isxSS7DPCOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

31) Change the destination signaling point code of a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpDPCID.ROWNO s "DPC"
```

Description: **ROWNO** is the row number of this circuit group in the isxSS7CICGrpTable table. You shall determine the row number in this table prior to operation. (The same below)

32) Change the start number of a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpBase.ROWNO i BaseNum
```

33) Change the user part type of a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpUserPart.ROWNO i 0 (or 1)
```

Description: 0(SS7_CIC_USER_ISUP) means ISUP user, 1(SS7_CIC_USER_TUP) means TUP user.

34) Change the circuit control type of a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpCurCtrlType.ROWNO i 0 (or 1-4)
```

Description: 0(SS7_CIC_INCOMING) means incoming is controller,
 1(SS7_CIC_OUTGOING) means outgoing is controller,
 2(SS7_CIC_BOTHWAY) means bothway are controller,
 3(SS7_CIC_CONTROLLED) means bothway circuit acts as a controlled side in case of dual seizure,
 4(SS7_CIC_CONTROLLING) means bothway circuit acts as a controlling side in case of dual seizure

35) Change the connection check flag of a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpConnCheckReq.ROWNO i 0 (or 1-4)
```

Description: 0(SS7_CIC_CONTREQ_UNAVAL) means not request,
 1(SS7_CIC_CONTREQ_AVAL) means not request

36) Change the node number where the trunk occupied by a circuit group is located

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpSpanNodeNO.ROWNO i Node number
```

37) Change the daughter board number where the trunk occupied by a circuit group is located

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpSpanBrdNO.ROWNO i Daughter board number
```

38) Change the trunk number of the trunk occupied by a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpSpanNO.ROWNO i Trunk number
```

39) Deactivate or activate a circuit group

```
snmpset -v 2c -c private localhost:1161 isxSS7CICGrpOperation.ROWNO i 0 (or 1)
```

Description: 0 and 1 indicate deactivation and activation respectively.

Chapter 4 Environment Setup

This chapter describes the setup of environment required for iSX1000 node management through EhangAgent (i.e. by the SNMP) in the command line environment of Windows.

Note: Currently, EhangAgent supports only iSX1000, not iSX4000.

4.1 Installing the iSX Suite of eHangCom

The iSX suite of eHangCom shall be installed first.

4.2 Obtaining Standard SNMP Command Software

Some standard SNMP commands such as `snmpget` and `snmpset` are needed for node management through the SNMP. The simplest method to provide a command line environment to use these commands is to install an open source `net-snmp` suite. In addition, EhangAgent is based on the `net-snmp-5.4.2.1` software package. Therefore, the “`net-snmp-5.4.2.1-1.win32.exe`” suite is recommended here.

After `net-snmp-5.4.2.1` is installed, copy all files in the **C:\Program Files\eHangCom\EhangView\snmp\mibs** directory to **C:\usr\share\snmp\mibs** to rewrite the files of the same name. Assume that you install `net-snmp-5.4.2.1` in the **C:\usr** directory.

4.3 Starting EhangAgent

After the above-mentioned two pieces of software are installed, start EhangAgent first, i.e. the `snmpd.exe` program in the **C:\Program Files\eHangCom\EhangView** directory (assume that your iSX suite is installed in the **C:\Program Files\eHangCom** directory). The startup method is to run the `run_snmpd.bat` batch file in the **C:\Program Files\eHangCom\EhangView** directory.

4.4 Command line interface Startup

After EhangAgent runs, iSX1000 nodes can be managed through command lines. Before this operation, however, two environment variables, i.e. `MIBDIR` and `MIBS`, must be set. You can manually set them in the Windows registry. Setting values are as follows:

```
MIBDIR=C:\PROGRA~1\eHangCom\EhangView\snmp\mibs
MIBS=+EHANG-ISX-NODE-MIB
```

You can also set both environment variables by directly running the `start.bat` batch file in the **C:\Program Files\eHangCom\EhangView** directory, and then input various commands in the displayed command line interface to manage iSX1000 nodes.

If your iSX suite is not installed in the **C:\Program Files\eHangCom** directory, modify **C:\PROGRA~1\eHangCom** of the environment variable `MIBDIR` (including that in the `setenv.bat` script) to a corresponding value.