Getting Channel Usage from a Device

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Introduction

A typical monitoring task for an E1/T1 access server is to monitor E1/T1 usage as a number of active DS0 channels in use per device or per particular DS1 channel on the device. This document describes how to get this information through SNMP.

Prerequisites

Requirements

There are no specific requirements for this document.

Components Used

This document is not restricted to specific software and hardware versions. AS5350 with Cisco IOS® Software Release 12.2(15)T1 was used in the test.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

Monitor E1/T1 Channel Usage via SNMP

The CISCO−POP−MGMT−MIB provides these objects about DS0 channels use on a device that can be monitored through SNMP:

- cpmActiveDS0s − The number of DS0s that are currently in use.
- cpmDS1ActiveDS0s − The number of DS0s that are currently in use for a particular DS1.
- cpmActiveDS0sHighWaterMark − The high water mark for number of DS0s that are active simultaneously.
- cpmDS1ActiveDS0sHighWaterMark − The high water mark for number of DS0s that are active simultaneously on particular DS1.

These two objects:

- cpmDS1ActiveDS0s
- cpmDS1ActiveDS0sHighWaterMark

are indexed with this pair:

- cpmDS1UsageSlotIndex
- cpmDS1UsagePortIndex

This output shows an example of the data illustrating this, with one active DS0 channel on the first DS1 port in the seventh slot:

```
snmpwalk -c public 192.0.2.1 cpmActiveDS0s
       CISCO-POP-MGMT-MIB::cpmActiveDS0s.0 = Gauge32: 1

snmpwalk -c public 192.0.2.1 cpmDS1ActiveDS0s
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.0 = Gauge32: 1
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.1 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.2 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.3 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.4 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.5 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.6 = Gauge32: 0
       CISCO-POP-MGMT-MIB::cpmDS1ActiveDS0s.7.7 = Gauge32: 0
```

In order to locate router models and Cisco IOS Software releases that support this MIB, use Cisco IOS MIB Tools. At the time of the writing of this document, CISCO−POP−MGMT−MIB is mainly used on AS5xxx−series Access Servers and 36xx and 37xx Access Routers.

Note: On 36xx and 37xx−series, CISCO−POP−MGMT−MIB is supported only with Digital Modem Network Module(s) installed, otherwise the MIB is empty.

If your router does not support CISCO−POP−MGMT−MIB, you can obtain the operational status of all individual B−channels using isdnBearerOperStatus from ISDN−MIB (indexed with ifIndex) and count all the channels with active(4) status, to get the number of channels currently in use. This, however, requires scripting.

This output shows an example of the data illustrating this, with one active DS0 channel on the E1 port:

```
snmpwalk -c public 192.0.2.1 isdnBearerOperStatus
       ISDN-MIB::isdnBearerOperStatus.263 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.264 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.265 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.266 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.267 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.268 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.269 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.270 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.271 = INTEGER: active(4)
       ISDN-MIB::isdnBearerOperStatus.272 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.273 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.274 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.275 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.276 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.277 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.278 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.279 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.280 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.281 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.282 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.283 = INTEGER: idle(1)
       ISDN-MIB::isdnBearerOperStatus.284 = INTEGER: idle(1)
```

```
ISDN-MIB::isdnBearerOperStatus.285 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.286 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.287 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.288 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.289 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.290 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.291 = INTEGER: idle(1)
ISDN-MIB::isdnBearerOperStatus.292 = INTEGER: idle(1)
```

Related Information

- **SNMP: Frequently Asked Questions About MIBs**
- **Cisco IOS MIB Tools**
- **Technical Support − Cisco Systems**

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