How to Measure Frame Relay Circuit Utilization Using SNMP

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Introduction

Tracking Frame Relay data−link connection identifier (DLCI) utilization is similar to tracking the utilization of other types of interfaces in that you track traffic transmitted and received by an interface and compare it with maximum amount possible. However, unlike other interfaces, other factors affect the throughput for a particular Frame Relay circuit. For example, committed information rate (CIR), burst rate, and service provider network congestion can affect your ability to accurately calculate utilization.

This document provides two different methods for calculating Frame Relay circuit utilization:

- Using the **frCircuitSentOctets** and **frCircuitReceivedOctets** from RFC 1315 MIB. This method measures the in and out octets for each circuit (DLCI). As long as you are not using compression over the circuit, the counters are accurate.
- Using the **ifInOctets** and **ifOutOctets** from RFC 2233 for each Frame Relay sub−interface.

Please refer to How To Calculate Bandwidth Utilization Using SNMP for the formulas to use. As an estimate of a maximum throughput of the Frame Relay circuit, you can use the **ifSpeed** of the interface, or, if you have Frame Relay Traffic Policing in place, (Bc+Be)/Tc.

Before You Begin

Conventions

For more information on document conventions, see the Cisco Technical Tips Conventions.

Prerequisites

There are no specific prerequisites for this document.

Components Used

The information in this document applies to all devices that support RFC 1315 MIB and RFC 2233.

frCircuitSentOctets and frCircuitReceivedOctets from RFC 1315 MIB

RFC 1315 MIB

```
.1.3.6.1.2.1.10.32.2.1.7
frCircuitSentOctets OBJECT-TYPE
        -- FROM RFC1315-MIB
        SYNTAX          Counter
        MAX-ACCESS      read-only
        STATUS          Mandatory
        DESCRIPTION    "The number of octets sent  from  this  virtual circuit
                        since it was created."
::= { iso(1) org(3) dod(6) internet(1) mgmt(2) mib-2(1) transmission(10) frame-relay(32)
 frCircuitTable(2) frCircuitEntry(1) 7 }


.1.3.6.1.2.1.10.32.2.1.9
frCircuitReceivedOctets OBJECT-TYPE
        -- FROM RFC1315-MIB
        SYNTAX          Counter
        MAX-ACCESS      read-only
        STATUS          Mandatory
        DESCRIPTION    "Number of octets received  over  this  virtual circuit
                        since it was created."
::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) transmission(10) frame-relay(32)
 frCircuitTable(2) frCircuitEntry(1) 9 }
```

ifInOctets and IfOutOctets from RFC 2233

The advantage of this method is that these counters take into consideration the compressed data statistics rather than the uncompressed.

```
.1.3.6.1.2.1.2.2.1.10
ifInOctets OBJECT-TYPE
        -- FROM RFC1213-MIB
        SYNTAX          Counter
        MAX-ACCESS      read-only
        STATUS          Current
        DESCRIPTION    "The total number of octets received on the interface, including
                        framing characters. Discontinuities in the value of this counter
                        can occur at re-initialization of the management system, and at ot
                        times as indicated by the value of ifCounterDiscontinuityTime."
::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1


.1.3.6.1.2.1.2.2.1.16
ifOutOctets OBJECT-TYPE
        -- FROM RFC1213-MIB
        SYNTAX          Counter
        MAX-ACCESS      read-only
        STATUS          Current
        DESCRIPTION    "The total number of octets transmitted out of the interface, inclu
                        framing characters. Discontinuities in the value of this counter c
                        occur at re-initialization of the management system, and at other
                        times as indicated by the value of ifCounterDiscontinuityTime."
::= { ISO(1) org(3) DOD(6) Internet(1) mgmt(2) mib-2(1) interfaces(2) ifTable(2) ifEntry(1
```

Related Information

- **Frame Relay Traffic Policing**
- **How To Calculate Bandwidth Utilization Using SNMP**
- **Technical Support − Cisco Systems**

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