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**User Guide Router Monitor** 

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*Overview*

The Router Monitor is a dynamically updated web page that provides availability and response time data for EMAN registered routers on the Cisco network.

*QuickSteps*

**Exception Report: Environmental Exceptions**

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**Trend Report: Host Monitor**

To view a trend report for a host "router" monitor follow these steps:

1. From the EMAN Operational Data main menu select "Monitors", "Routers" and then press the "GO" button.
2. Specify a network area from the drop down list in the top right portion of your browser and press the "GO" button.
3. Find the router you are interested in from the list that appears and select "GO" in the HOST column to the right.

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3. Find the router you are interested in from the list that appears and select "GO" in the HOST column to the right.
4. An information panel for the selected router will appear in a separate browser window.

**Router Information Panel**

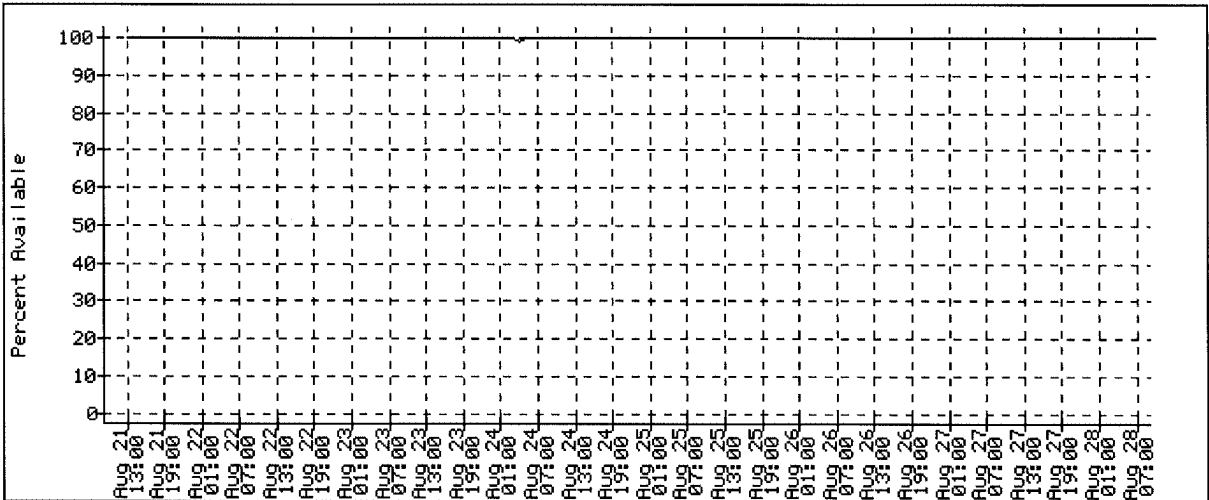
<b>HOST MONITOR LAST UPDATE: Aug 28 11:40:38 PDT HOST: access-gwl.cisco.com</b>											
Host	Chassis	IOS	UpTime	CPU	Avail	Resp	Availability Trending				
<a href="#">access-gwl.cisco.com</a>	7507	11.3(1)T	14d 0h 22m 15s	8 %	100 %	0 ms	24hr	wk	mo	3mo	6mo

- **Host:** Identifies the host address for this router. Click on this Host address" to view specific information about this router.
- **Chassis:** The chassis type this router is housed in.
- **IOS:** The IOS version currently loaded on this router
- **UpTime:** The duration this device has been up.
- **CPU:** Current utilization of the CPU. This statistic is refreshed at the rate you specify on the Router Monitor main page.
- **Avail:** Specifies the current percentage availability of this router.
- **Resp:** Specifies the current response time for this router measured in milliseconds
- **Availability Trending:** Five time frames are available for trending reports 24hr, wk, mo, 3mo and 6mo.

5. To view a host monitor trend report click on the time frame you are interested in. This report will appear in a separate browser window and is divided into two graphs:

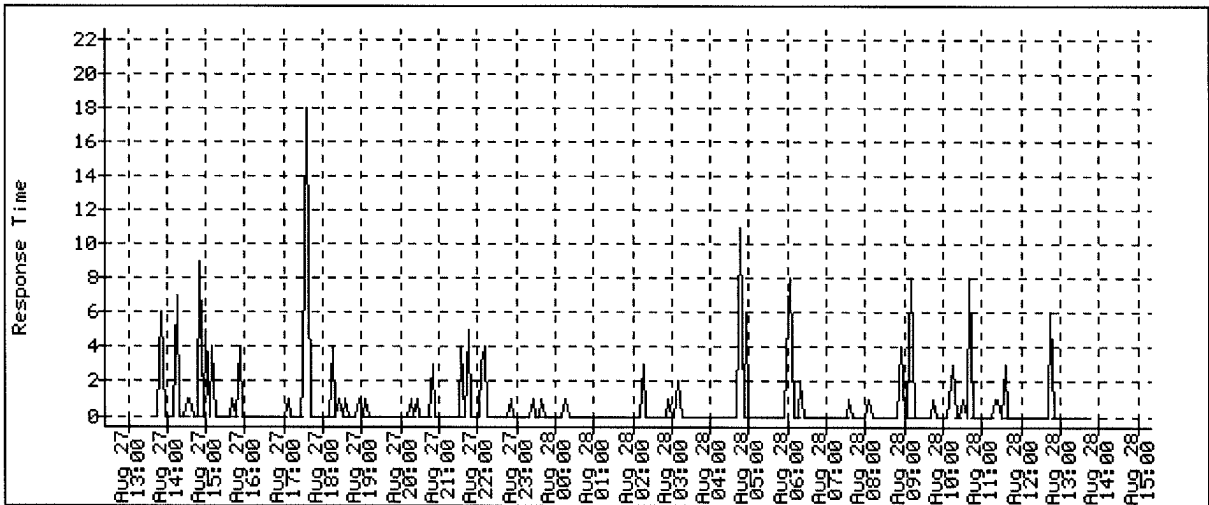
- Percent Available
- Response Time (ms)

### Router: Percent Availability Graph



This graph shows the performance of a specific router over time, in this case the last 24 hours.

### Router: Response Time (ms) Graph



This graph shows the response time of a specific router measured in milliseconds over time, in this case the last 24 hours.

- If you would like to view an alternate time frame select it in the scroll box at the bottom of the browser window that contains these two graphs and press the "Plot" button.

### Trend Report: Interface Monitor

To view a trend report for a router interface follow these steps:

- From the EMAN Operational Data main menu select "Monitors", "Routers" and then press the "GO" button.
- Specify a network area from the drop down list in the top right portion of your browser and press the "GO" button.
- Find the router you are interested in from the list that appears and select "GO" in the Interface column to the right.
- An Interface Monitor panel for the selected router will appear in a separate browser window.

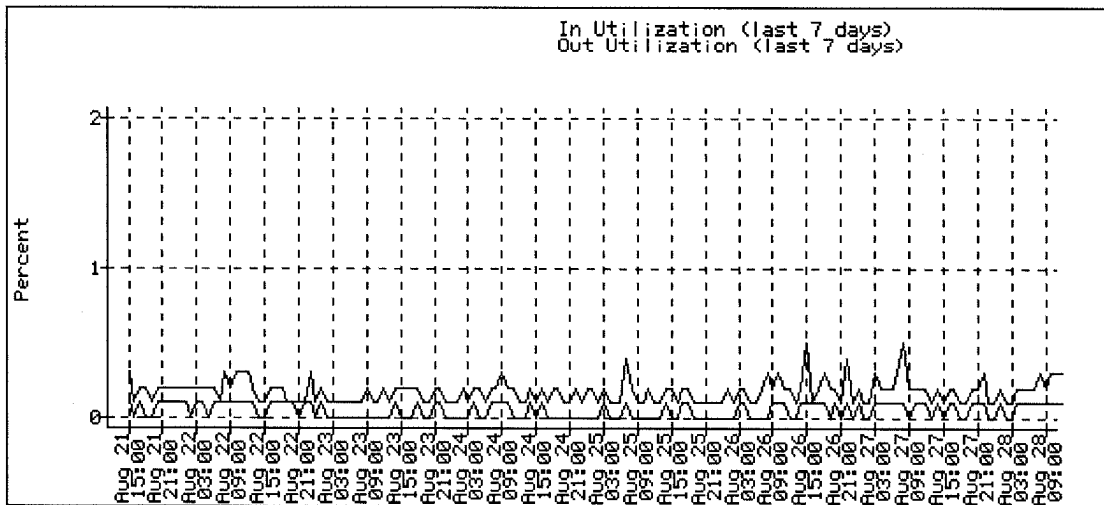
### Router: Interface Monitor

INTERFACE MONITOR												LAST UPDATE: Aug 28 13:49:57 PDT			HOST: sj-isdn-10.		
BW (Kbps)	Description	Carrier	Circuit	IP Addr	Oper	In Util	Out Util	In Kbps	Out Kbps	Reliab	Interface						
000	Ethernet connection to cat52-knoc-access1			171.70.192.28	UP	0	0	15	6	255	24hr	wk	mo				
000	Ethernet connection to cat52-knoc-access2			171.70.192.60	UP	0	0	14	3	255	24hr	wk	mo				

- Int:** A textual string containing information about the interface. This string should include the name of the manufacturer, the product name and the version of the hardware interface.
  - BW (Kbps):** Bandwidth measured in (Kbps) of this interface.
  - Description:** Provides a description of the interface.
  - Carrier:** Identifies a carrier, if applicable for an interface.
  - Circuit:** Identification Number, if applicable.
  - IP Addr:** Hard coded IP Address or current network address assigned through DNS.
  - Oper:** Current Status: Up, Degraded or Down.
  - In Util:** In Utilization is calculated by taking the In Kbps/Interface Speed X 100.
  - Out Util:** Out Utilization is calculated by taking the Out Kbps/Interface Speed X 100.
  - In Kbps:** Five minute exponentially-decayed moving average of input bits per second.
  - Out Kbps:** Five minute exponentially-decayed moving average of output bits per second.
  - Reliab:** The reliability of the interface. Used by IGRP.
  - Interface Trending:** Five time frames are available for trending reports 24hr, wk, mo, 3mo and 6mo.
- To view an interface monitor trend report click on the time frame you are interested in. This report will appear in a separate browser window and is divided into four graphs:

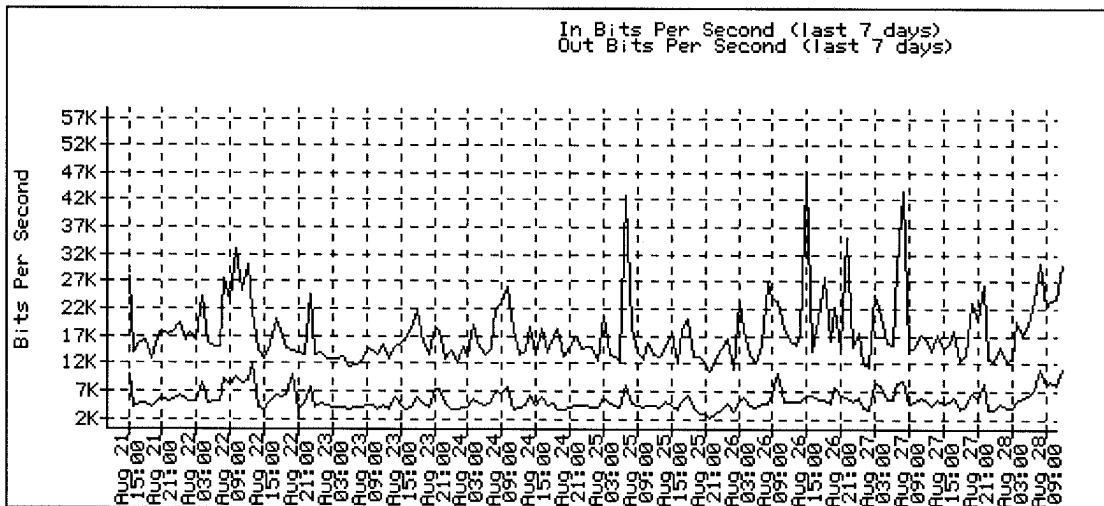
- In/Out Utilization
- In/Out Bits Per Second
- In/Out Error Percent
- In/Out Discards Percent

### Router: In/Out Utilization Graph



This graph shows the In/Out utilization of a specific router over time, in this case the last 7 days.

### Router: In/Out Bits Per Second Graph



This graph shows the In/Out Bits Per Second of a specific router over time, in this case the last 7 days.

### Router: In/Out Errors Percent Graph

3. Find the router you are interested in from the list that appears and select "GO" in the HOST column to the right.
4. A CDP Map for the selected router will appear in a separate browser window.

### Router: DLCI Monitor

MONITOR													LAST UPDATE: Sep 14 08:39:16 PDT			HOST: austin-is-gw1		
Interface	Description	IP Addr	CIR	CBR	State	In Util	Out Util	In Kbps	Out Kbps	FECN	BECN	PVC T						
al1/0:0.100		171.68.28.42	0	0	ACTIVE	-1	-1	199	7	0	0	24hr						

- **DLCI:** Data-Link Connection Identifier. Value that specifies a PVC or SVC in a Frame Relay network. In the basic Frame Relay specification, DLCI's are locally significant (connected devices might use different values to specify the same connection). In the LMI extended specification, DLCI's are globally significant (DLCI's specify individual end devices).
- **Interface:** A textual string containing information about the interface. This string should include the name of the manufacturer, the product name and the version of the hardware interface.
- **Description:** Provides a description of the interface.
- **IP Addr:** Hard coded IP Address or current network address assigned through DNS.
- **CIR:** Committed Information Rate. The rate at which a Frame Relay network agrees to transfer information across a user network interface under normal conditions, averaged over a minimum increment of time. CIR, measured in bits per second, is one of the key negotiated tariff metrics.
- **CBR:** Committed Burst Rate. This variable indicates the maximum amount of data, in bits, that the network agrees to transfer under normal conditions, during the measurement interval.
- **State:** Current Status: Invalid (1), Active (2), Inactive (3). Indicates whether the particular virtual circuit is operational. In the absence of a Data Link Connection Management Interface, virtual circuit entries (rows) may be created by setting virtual circuit state to 'active', or deleted by changing Circuit state to 'invalid'. Whether or not the row actually disappears is left to the implementation, so this object may actually read as 'invalid' for some arbitrary length of time. It is also legal to set the state of a virtual circuit to 'inactive' to temporarily disable a given circuit.
- **In Util:** In Utilization is calculated by taking the In Kbps/Interface Speed X 100.
- **Out Util:** Out Utilization is calculated by taking the Out Kbps/Interface Speed X 100.
- **In Kbps:** Five minute exponentially-decayed moving average of input bits per second.
- **Out Kbps:** Five minute exponentially-decayed moving average of output bits per second.
- **FECN:** Forward Explicit Congestion Notification. Bits set by a frame relay network to inform DTE receiving the frame that congestion was experienced in the path from source to destination. DTE receiving frames with the FECN bit set can request that higher-level protocols take flow-control action as appropriate.
- **BECN:** Backward Explicit Congestion Notification. Bit set by a frame relay network

A record of Syslog events can be viewed for a specific device for the last 2, 4 and 8 hour periods:

1. From the EMAN Operational Data main menu select "Monitors", "Routers" and then press the "GO" button.
2. Specify a network area from the drop down list in the top right portion of your browser and press the "GO" button.
3. Find the router you are interested in from the list that appears and select "GO" in the Syslog column to the right.
4. A Syslog report for the selected router will appear in a separate browser window.

### Router: Syslog Report

ARCH IIONS	Host: access-gw2.cisco.com	Message Type: All
	Start Time/Date: Aug 27, 1998 15:26 pdt	End Time/Date: Aug 28, 1998 15:26 pdt

g-98 08:16:36 [ 1 ] AUTORP-5-MAPPING RP for 239.0.0.0/8 is now 171.69.10.13

- **Host:** Displays the name of the host
- **Message Type:** This field
- **Start Time/Date:** This field
- **End Time/Date:** This field
- Syslogs:

### *How It Works*

### *Related Tools*

EMAN contains a variety of tools that perform real time monitoring and alarming for devices on the Cisco network. These include:

- Host Monitor
- Application Monitor
- Router Monitor
- WAN Switch Monitor
- Dial Modem Monitor
- Netflow Monitor
- Solaris Monitor

These are available from the Monitors & Alerts pull down menu on the Operational Data Main Menu. Users may also customize their own alerts using EMAN's Alert Service capability.

EMAN User Guide: Router Monitor

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