

## - SNMP and Logging -

### SNMP

**Simple Network Management Protocol (SNMP)** allows for centralized administration of all network resources. SNMP relies on the use of **traps**, or criteria for logging specific informational or critical events. Cisco developed **Remote Monitoring (RMON)** to utilize SNMP on routers and switches.

RMON **alarms** identify a specific *occurrence* on a device. RMON **events** can then be configured to perform an action once the alarm is tripped.

### Configuring RMON Alarms and Events

To configure an RMON alarm:

```
Router(config)# rmon alarm 1 ifEntry.20.1 30 delta rising-threshold 100 1
falling-threshold 0 owner AARON
```

To configure an RMON event once the ALARM is triggered:

```
Router(config)# rmon event 1 log trap SNMPCOMMUNITY description
ERROR owner AARON
```

To configure the SNMP specific information:

```
Router(config)# snmp-server community SNMPCOMMUNITY RO
Router(config)# snmp-server host 150.50.4.10 SNMPCOMMUNITY

Router(config)# snmp-server enable traps
Router(config)# snmp-server trap-source e0
Router(config)# snmp-server packetsize 1450
Router(config)# snmp-server location Detroit, Michigan
Router(config)# snmp-server contact Aaron Balchunas
Router(config)# snmp-server enable traps isdn layer2
Router(config)# snmp-server enable traps frame-relay
```

To force RMON to capture every packet coming inbound on an interface:

```
Router(config)# interface e0
Router(config-if)# rmon promiscuous
```

To adjust the RMON queue size:

```
Router(config)# rmon queuesize 256
```

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## Configuring a SYSLOG Server

To direct all logging and debugging information to a centralized syslog server:

```
Router(config)# logging 150.50.1.1
Router(config)# logging buffered
```

Syslog servers used **UDP port 514**. When using a logging server, it is important to configure the router to include time and date stamps with the logs:

```
Router(config)# service timestamps log datetime localtime msec show-timezone
Router(config)# service timestamps debug datetime localtime msec show-timezone
```

To identify what messages to actually log:

```
Router(config)# logging trap 5
```

The default value is 7, which logs *informational* and everything else.

Other logging commands include:

```
Router(config)# logging facility LOCAL6
Router(config)# logging source-interface e0
```

## Troubleshooting RMON, SNMP, and Logging

Important show commands would include:

```
Router# show snmp
Router# show rmon events
Router# show logging
```

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## **Interface “Accounting”**

**Accounting** can be configured on an interface to track several items:

- The number of packets sent or received on an interface.
- The number of packets of a certain IP precedence sent or received on an interface.
- The number of access-list violations on an interface.

To configure accounting:

```
Router(config)# interface e0/0  
Router(config-if)# ip accounting output-packets  
Router(config-if)# ip accounting precedence input  
Router(config-if)# ip accounting precedence output  
Router(config-if)# ip accounting access-violations
```

To view the accounting statistics:

```
Router# show ip accounting
```

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