

How to **configure Nagios to monitor network switch** and its **active ports**.

1. Enable switch.cfg in nagios.cfg

Uncomment the switch.cfg line in /usr/local/nagios/etc/nagios.cfg as shown below.

```
[nagios-server]# grep switch.cfg /usr/local/nagios/etc/nagios.cfg  
  
cfg_file=/usr/local/nagios/etc/objects/switch.cfg
```

2. Add new hostgroup for switches in switch.cfg

Add the following switches hostgroup to the /usr/local/nagios/etc/objects/switch.cfg file.

```
define hostgroup{  
  
    hostgroup_name    switches  
  
    alias             Network Switches  
  
}
```

3. Add a new host for the switch to be monitored

In this example, I've defined a host to monitor the core switch in the /usr/local/nagios/etc/objects/switch.cfg file. Change the address directive to your switch ip-address accordingly.

```
define host{  
  
    use                generic-switch  
  
    host_name          core-switch
```

```
alias          Cisco Core Switch

address        192.168.1.50

hostgroups     switches

}
```

4. Add common services for all switches

Displaying the uptime of the switch and verifying whether switch is alive are common services for all switches. So, define these services under the switches hostgroup_name as shown below.

```
# Service definition to ping the switch using check_ping

define service{

use          generic-service

hostgroup_name    switches

service_description    PING

check_command      check_ping!200.0,20%!600.0,60%

normal_check_interval    5

retry_check_interval     1

}

# Service definition to monitor switch uptime using check_snmp

define service{

use          generic-service
```

```

hostgroup_name      switches

service_description  Uptime

check_command        check_snmp!-C public -o sysUpTime.0

}

```

5. Add service to monitor port bandwidth usage

check_local_mrtgtraf uses the [Multil Router Traffic Grapher – MRTG](#). So, you need to install MRTG for this to work properly. The *.log file mentioned below should point to the MRTG log file on your system.

```

define service{

use                                generic-service

host_name                        core-switch

service_description              Port 1 Bandwidth Usage

check_command
    check_local_mrtgtraf!/var/lib/mrtg/192.168.1.11_1.log!AVG!1000000,2000000!50
    00000,5000000!10

}

```

6. Add service to monitor an active switch port

Use check_snmp to monitor the specific port as shown below. The following two services monitors port#1 and port#5. To add additional ports, change the value ifOperStatus.n accordingly. i.e n defines the port#.

```

# Monitor status of port number 1 on the Cisco core switch

define service{

use                                generic-service

host_name                        core-switch

```

```

service_description Port 1 Link Status

check_command      check_snmp!-C public -o ifOperStatus.1 -r 1 -m RFC1213-MIB
}

# Monitor status of port number 5 on the Cisco core switch

define service{

use                generic-service

host_name          core-switch

service_description Port 5 Link Status

check_command      check_snmp!-C public -o ifOperStatus.5 -r 1 -m RFC1213-MIB
}

```

7. Add services to monitor multiple switch ports together

Sometimes you may need to monitor the status of multiple ports combined together. i.e Nagios should send you an alert, even if one of the port is down. In this case, define the following service to monitor multiple ports.

```

# Monitor ports 1 - 6 on the Cisco core switch.

define service{

use                generic-service

host_name          core-switch

service_description Ports 1-6 Link Status

check_command      check_snmp!-C public -o ifOperStatus.1 -r 1 -m RFC1213-MIB, -o
ifOperStatus.2 -r 1 -m RFC1213-MIB, -o ifOperStatus.3 -r 1 -m RFC1213-MIB, -o
ifOperStatus.4 -r 1 -m RFC1213-MIB, -o ifOperStatus.5 -r 1 -m RFC1213-MIB, -o
ifOperStatus.6 -r 1 -m RFC1213-MIB
}

```

```
}
```

8. Validate configuration and restart nagios

Verify the nagios configuration to make sure there are no warnings and errors.

```
# /usr/local/nagios/bin/nagios -v /usr/local/nagios/etc/nagios.cfg

Total Warnings: 0

Total Errors: 0

Things look okay - No serious problems were detected during the pre-flight check
```

Restart the nagios server to start monitoring the VPN device.

```
# /etc/rc.d/init.d/nagios stop

Stopping nagios: .done.

# /etc/rc.d/init.d/nagios start

Starting nagios: done.
```

Verify the status of the switch from the Nagios web UI: <http://{nagios-server}/nagios> as shown below:

Service Status Details For Host 'core-switch'						
Host 	Service 	Status 	Last Check 	Duration 	Attempt 	Status Information
core-switch	PING	OK	10-25-2008 06:41:16	0d 0h 0m 57s	1/3	PING OK - Packet loss = 0%, RTA = 1.44 ms
	Port 1 Bandwidth Usage	UNKNOWN	10-25-2008 06:41:26	0d 0h 0m 47s	1/3	check_mrtgtraf: Unable to open MRTG log file
	Port 1 Link Status	OK	10-25-2008 06:41:35	0d 0h 0m 38s	1/3	SNMP OK - up(1)
	Port 5 Link Status	OK	10-25-2008 06:41:44	0d 0h 0m 29s	1/3	SNMP OK - up(1)
	Ports 1-6 Link Status	OK	10-25-2008 06:41:56	0d 0h 0m 17s	1/3	SNMP OK - up(1) up(1) up(1) up(1) up(1) up(1)
	Uptime	OK	10-25-2008 06:42:10	0d 0h 0m 11s	1/3	SNMP OK - Timeticks: (2302030400) 266 days, 10

Fig: Nagios GUI displaying status of a Network Switch