Open Source Network Management Tools

Overview

- Introduction
- NOC Philosophy
- Available Tools

introduction

- wikipedia: *"A network operations center (or NOC, pronounced "nock") is one or more locations from which control is exercised over a computer, television broadcast, or telecommunications network."*

Functions of a NOC

- Responsible for monitoring the network for alarms or adverse conditions (e.g. power failures, link failure)
- NOC staff analyze problems, troubleshooting, collaborate with other technicians on site.
- NOC tracks issues/problems until they are resolved.
- Problems not solved within a specified time frame can be escalated to the appropriate personnel.
- Standard Operating Procedures exists that detail how to remedy issues/problems.

NOC Philosophy

(Adapted from RedHat documentation)
- Automate everything
- Document everything
- Communicate as much as possible
- Know your resources
- Know your users
- Know your business
- Security cannot be an afterthought
- Plan ahead

Purpose

- NOCs are dedicated to monitoring and coordinating network operations.
- This requires that the following functional areas are addressed:
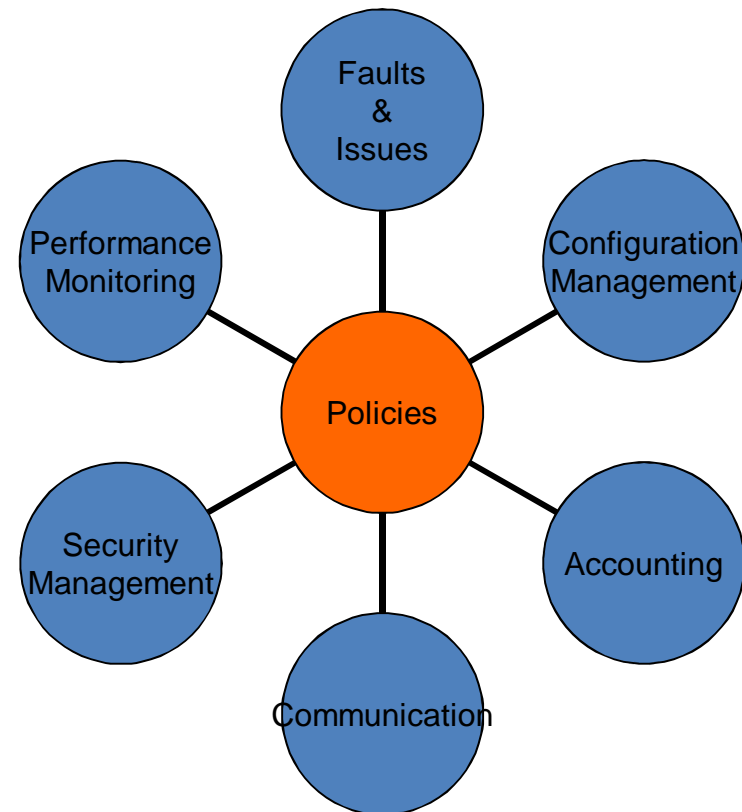
MRTG

- Multi Router Traffic Grapher
- http://oss.oetiker.ch/mrtg/
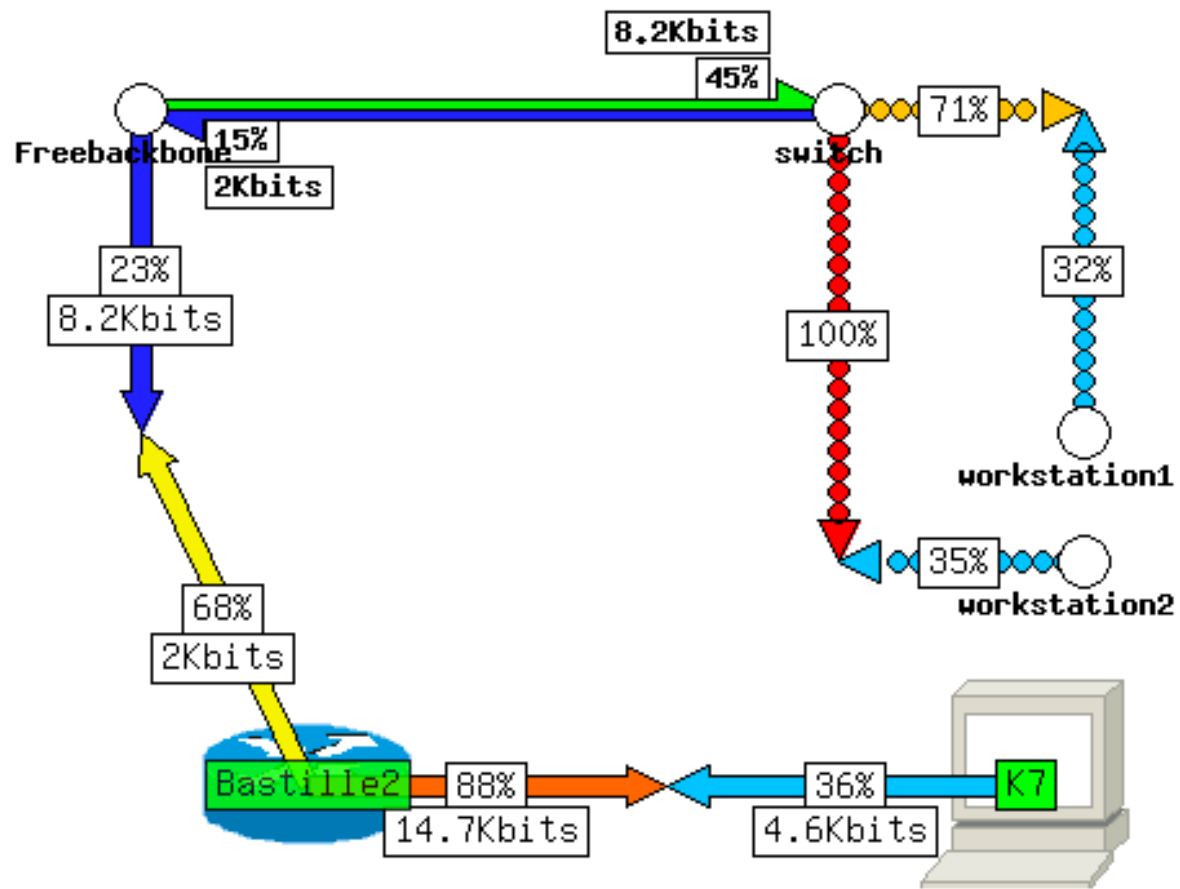- Based on SNMP
- Used to monitor traffic load on network links.
- Many hacks exist to allow you to monitor other things (e.g. incoming / outgoing emails, cache hits and misses)
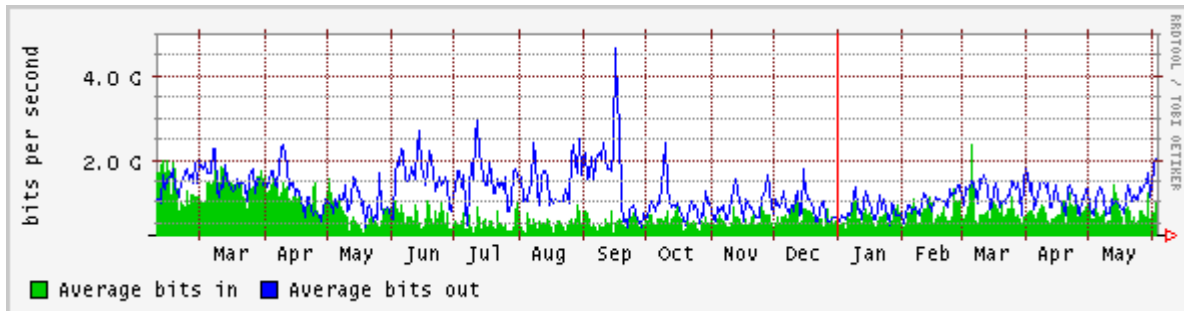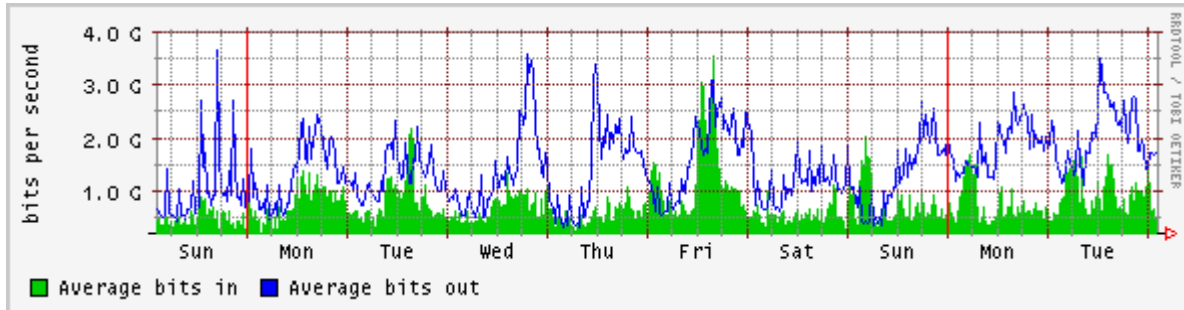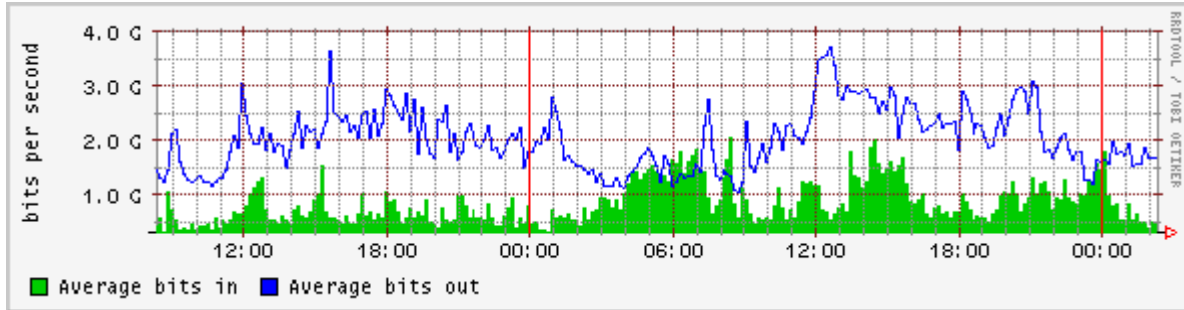
Weathermap 4RRD

- Generates network weather maps.
- Shows the network link utilization on the network map by color scheme
- Data used to create graph are acquired from RRDTool databases or MRTG HTML files

8.2Kbits

45%

Freebackbone **15%** switch 71%

2Kbits

23%

8.2Kbits

100%

32%

workstation1

68%

2Kbits

35%

workstation2

Bastille2 88% 36% K7

14.7Kbits 4.6Kbits

Example Tropicalex Network map
Last update on Mon Sep 19 15:17:28 2005

Link load WeatherMap4RRD 1.2RC8

10   25   40   55   70   85   90   100 %

Traffic load
- 1-10%
- 10-25%
- 25-40%
- 40-55%
- 55-70%
- 70-85%
- 85-100%

WeatherMap4RRD editor

Lille
64%
96%
87%
38%
Brest
3%
61%
45%
43%
Paris
67%
74%
97%
79% 306.9Kbits
83%
46%
Bordeaux
71%
50%
1%
66%
208.2Kbits
Toulouse
Marseille

Tropicalex Network map
Last update on Tue May 31 00:24:22 2005