

MRTG: Basic Traffic Measurement

AfNOG 2009 - Cairo

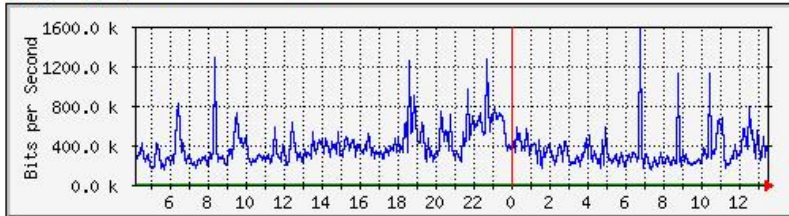
Sunday Folayan

Mark Tinka

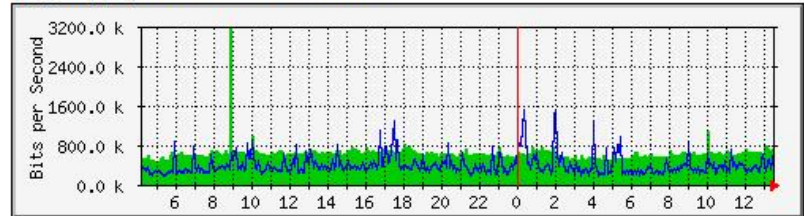
The Border Links

MRTG Index Page

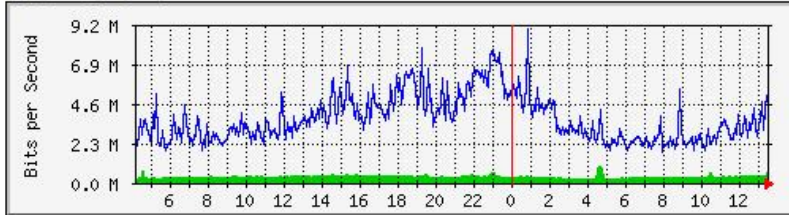
[psg0.0] psg0 verio customer transit



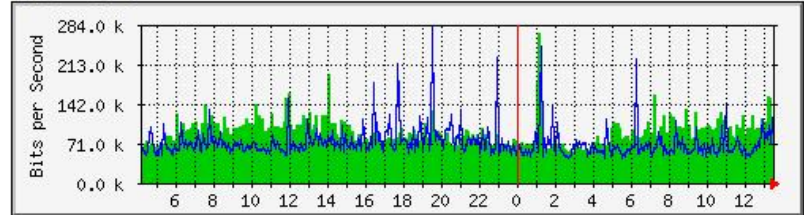
[psg0.3] psg0 verio backbone transit



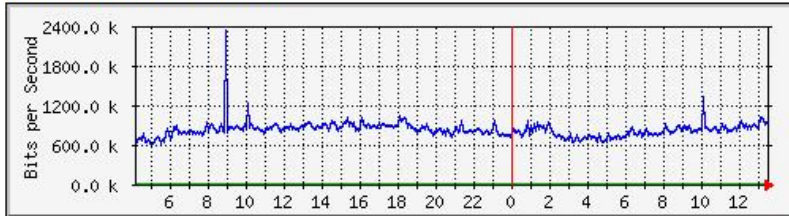
[psgl.1] psg1 sprint transit



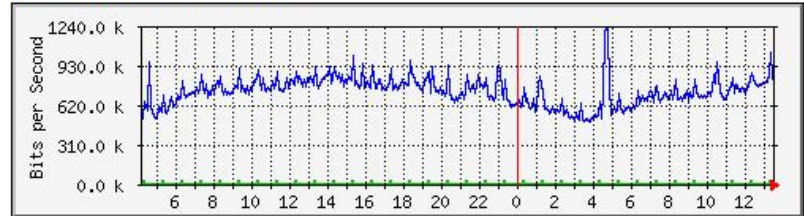
[psgl.3] psg1 SIX ether



[psg0.1] psg0 primary ether

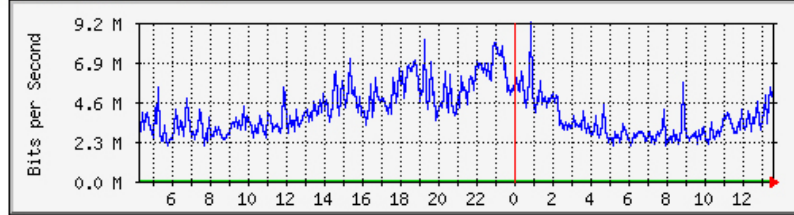


[psgl.2] psg1 primary ether

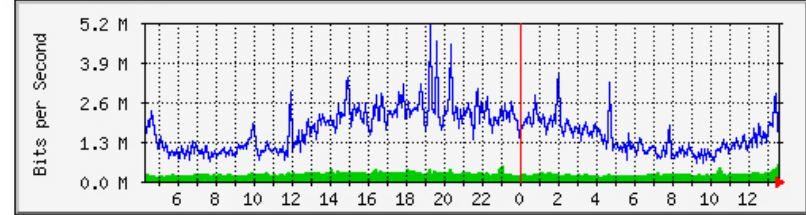


Measure Hosts Using The Switch

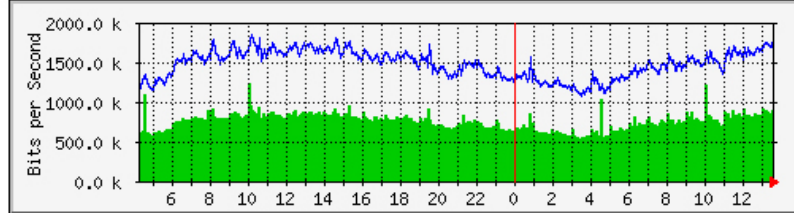
[psg2.2] psg2 to psg1



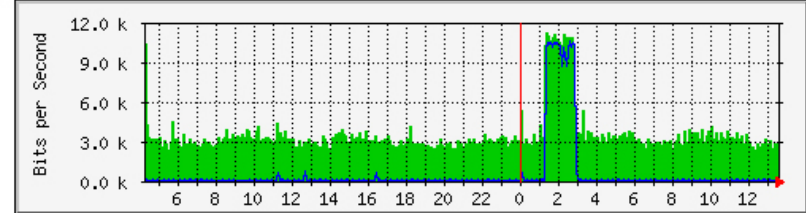
[switch1.2] psg.com



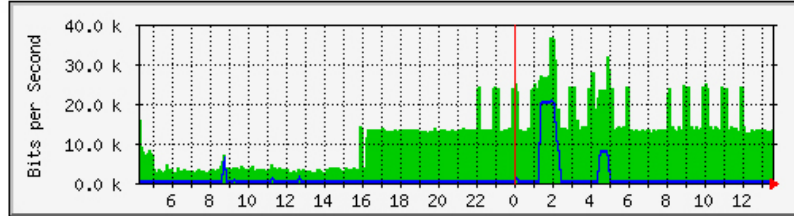
[switch1.9] rip.psg.com



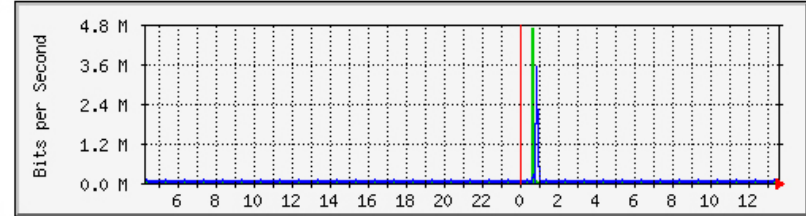
[switch0.8] ripl.psg.com



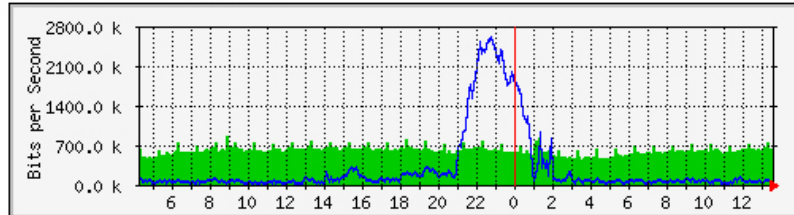
[switch1.04] bbgp.psg.com



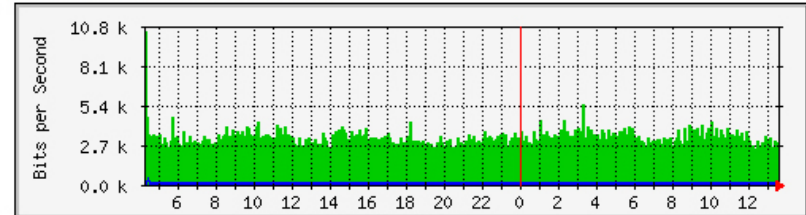
[switch1.3] raid1.psg.com



[switch1.5] work0.psg.com

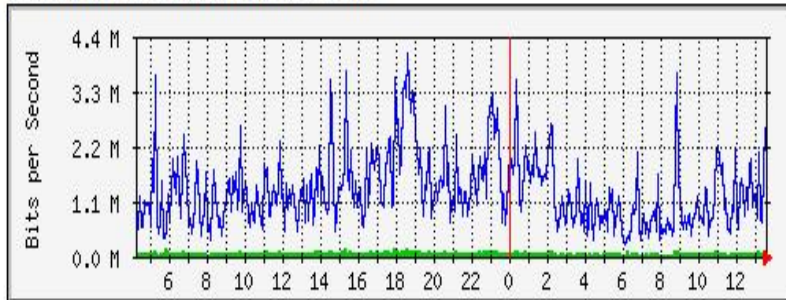


[switch0.9] psg.ron.lcs.mit.edu

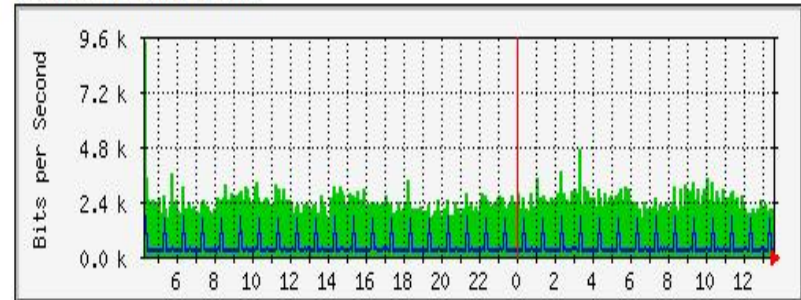


Some Internals & a Service

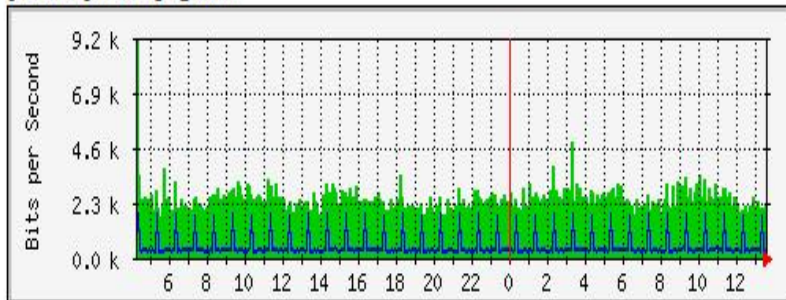
[switch1.6] freeearthfoundation.com



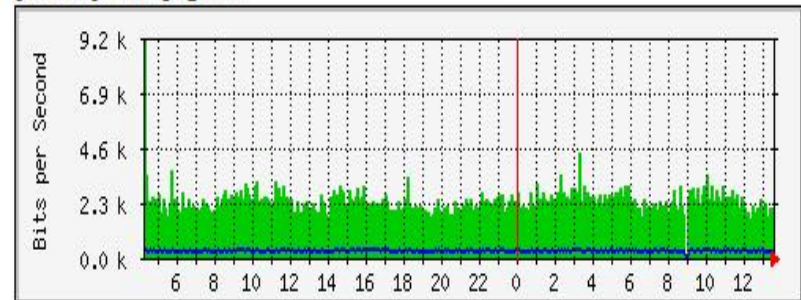
[voip0.0] voip0.psg.com



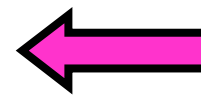
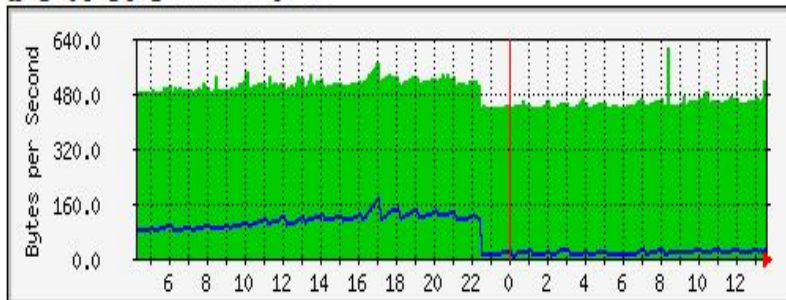
[oob0.0] oob0.psg.com



[oob1.0] oob1.psg.com



[psg.e] psg.psg.com mail queue

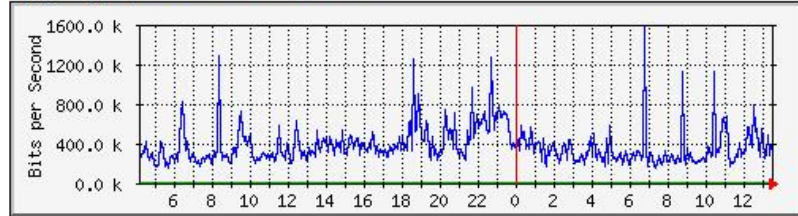


Not an Interface
This is a Service
The Exim Spool

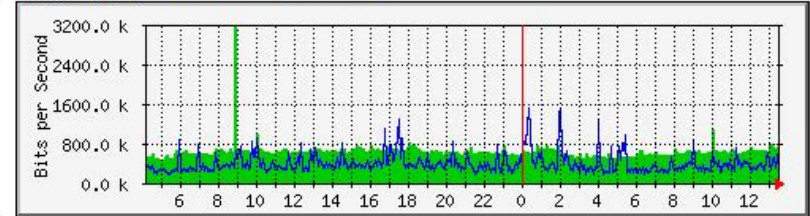
How was this done?

MRTG Index Page

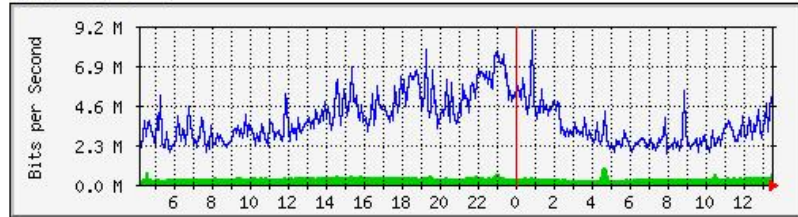
[psg0.0] psg0 verio customer transit



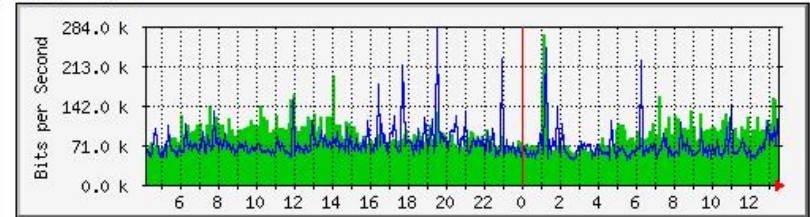
[psg0.3] psg0 verio backbone transit



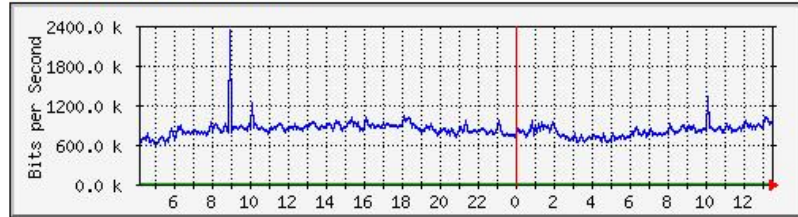
[psg1.1] psg1 sprint transit



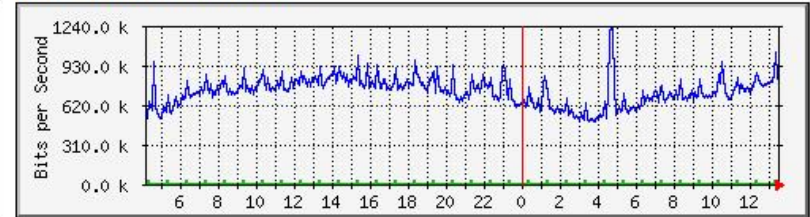
[psg1.3] psg1 SIX ether



[psg0.1] psg0 primary ether



[psg1.2] psg1 primary ether



MRTG Config File

```
# cat /usr/local/etc/mrtg/mrtg.cfg
```

```
WorkDir: /usr/local/www/share/rg
```

```
WriteExpires: Yes
```

```
#RunAsDaemon: Yes
```

```
Interval: 5
```

```
Options[_]: growright, bits, unknaszero
```

```
Timezone[_]: GMT
```

```
WithPeak[_]: wmy
```

```
< ... as many device configs ... >
```

One Devices Config

Target[psg1.1]: /144.232.9.62:snmp-community@psg1.psg.com

RouterUptime[psg1.1]: snmp-community@psg1.psg.com

MaxBytes[psg1.1]: 19375000

Title[psg1.1]: 0.1 psg1 sprint transit serial

PageTop[psg1.1]: <H1>[psg1.1] psg1 sprint transit</H1>

<TABLE>

<TR><TD>System:</TD><TD>psg1 - Juniper M5</TD></TR>

<TR><TD>Maintainer:</TD> <TD>Randy Bush randy@psg.com;</TD></TR>

<TR><TD>Interface:</TD><TD>t1-0/1/2.0 </TD></TR>

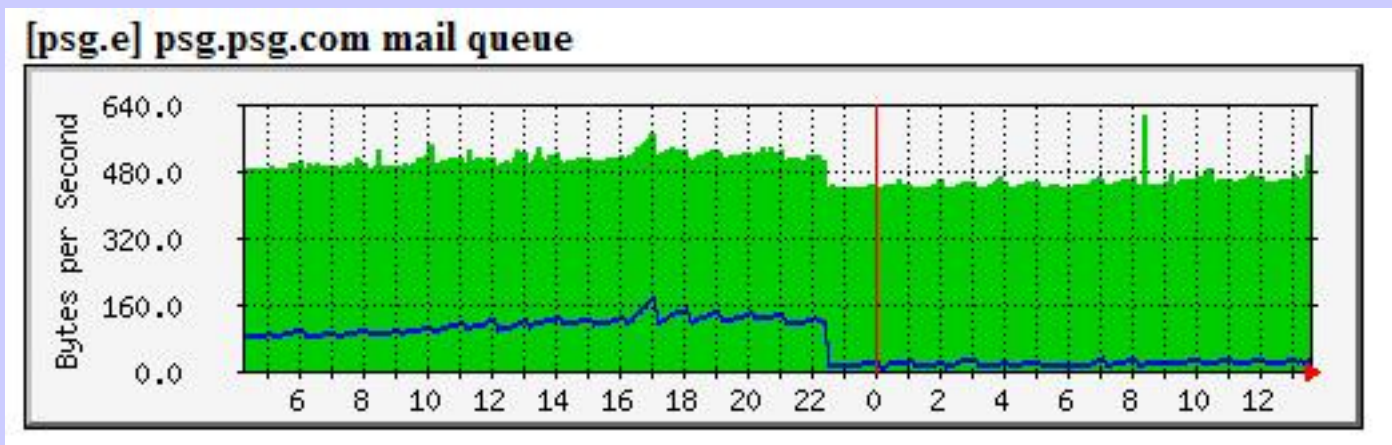
<TR><TD>IP:</TD><TD> 144.232.9.62</TD></TR>

<TR><TD>Max Speed:</TD>

<TD>155Mb/sec (OC3c)</TD></TR>

</TABLE>

Custom Measure, Not an Interface



Target[psg.e]: ``ssh -i $MRTGmrtg-scr mrtg-scr@psg.com do-exim-mrtg``

Options[psg.e]: growright, unknaszzero, gauge

MaxBytes[psg.e]: 100000

Title[psg.e]: psg.psg.com mail queue

PageTop[psg.e]: `<H1>[psg.e] psg.psg.com mail queue</H1><TABLE>`

`<TR><TD>System:</TD><TD>psg.psg.com - Exim</TD></TR>`

`<TR><TD>Maintainer:</TD><TD>Randy Bush randy@psg.com</TD></TR>`

`<TR><TD>Application:</TD><TD>Exim MTA</TD></TR>`

`<TR><TD>Input:</TD><TD>spool Kb/10</TD></TR>`

`<TR><TD>Output:</TD><TD>messages</TD></TR>`

`</TABLE>`


```
psg.com:/usr/local/bin# cat do-exim-mrtg
#!/bin/sh

# input = size of spool
#
/bin/expr \
  `/usr/bin/du -s /var/spool/exim/input \
    | /usr/bin/awk '{print $1}'` / 10

# output = number of messages in queue
#
/usr/local/sbin/exim -bpc

# pseudo-uptime
#
/bin/ps -auxww \
  | /usr/bin/grep exim \
  | /usr/bin/head -1 \
  | /usr/bin/awk '{print $9}'

echo exim@`hostname`
```

How to Get Config Data Automatically!

- MRTG comes with a program to fetch data from SNMP-speaker and produce layout ready for
`/usr/local/etc/mrtg/mrtg.cfg`

```
# cfmaker <community>@switch1
```

```
Target[switch1_1]: 1:snmp-community@switch1:
SetEnv[switch1_1]: IP="147.28.0.252" DESCR="Ethert-Port-on-unit-1,-port:1"
MaxBytes[switch1_1]: 125000000
Title[switch1_1]: Traffic Analysis for 1 --
PageTop[switch1_1]: <h1>Traffic Analysis for 1 -- </h1>
  <div id="sysdetails"> <table>
    <tr> <td>System:</td>
      <td> in Westin 18-C2 - Seattle WA US</td> </tr>
    <tr> <td>Maintainer:</td>
      <td>Randy Bush &lt;randy@psg.com&gt;</td></tr>
    <tr> <td>Description:</td>
      <td>EtherNet-Port-on-unit-1,-port:1  </td></tr>
    <tr> <td>ifType:</td>
      <td>ethernetCsmacd (6)</td></tr>
    <tr> <td>ifName:</td>
      <td>Port1</td></tr>
    <tr> <td>Max Speed:</td>
      <td>125.0 MBytes/s</td></tr>
    <tr> <td>Ip:</td>
      <td>147.28.0.252 (switch1.psg.com)</td></tr>
  </table>
</div>
```

Making the Web Page

- You have mrtg.cfg
- You have MRTG running every 5 mins
- You want to make the web page

```
# indexmaker mrtg.cfg > \  
  /usr/local/www/data/mrtg.html
```

- And that's it!