

Observium

All in one network
graphing and monitoring



Network Monitoring and Management

Network Startup Resource Center



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Observium

- SNMP-based auto-discover network monitoring tool
- Written in PHP as a web application
- Includes support for a wide range of hardware:
 - Cisco, Linux, FreeBSD, Juniper, Brocade, Foundry, HP and many more
 - See http://www.observium.org/wiki/Supported_Devices

Available metrics

- CPU, memory and storage statistics
- Interface traffic, packet and detailed error statistics
- Temperature, fan speed, voltage, amperage, power humidity and frequency sensors
- Users, processes, load average and uptime statistics

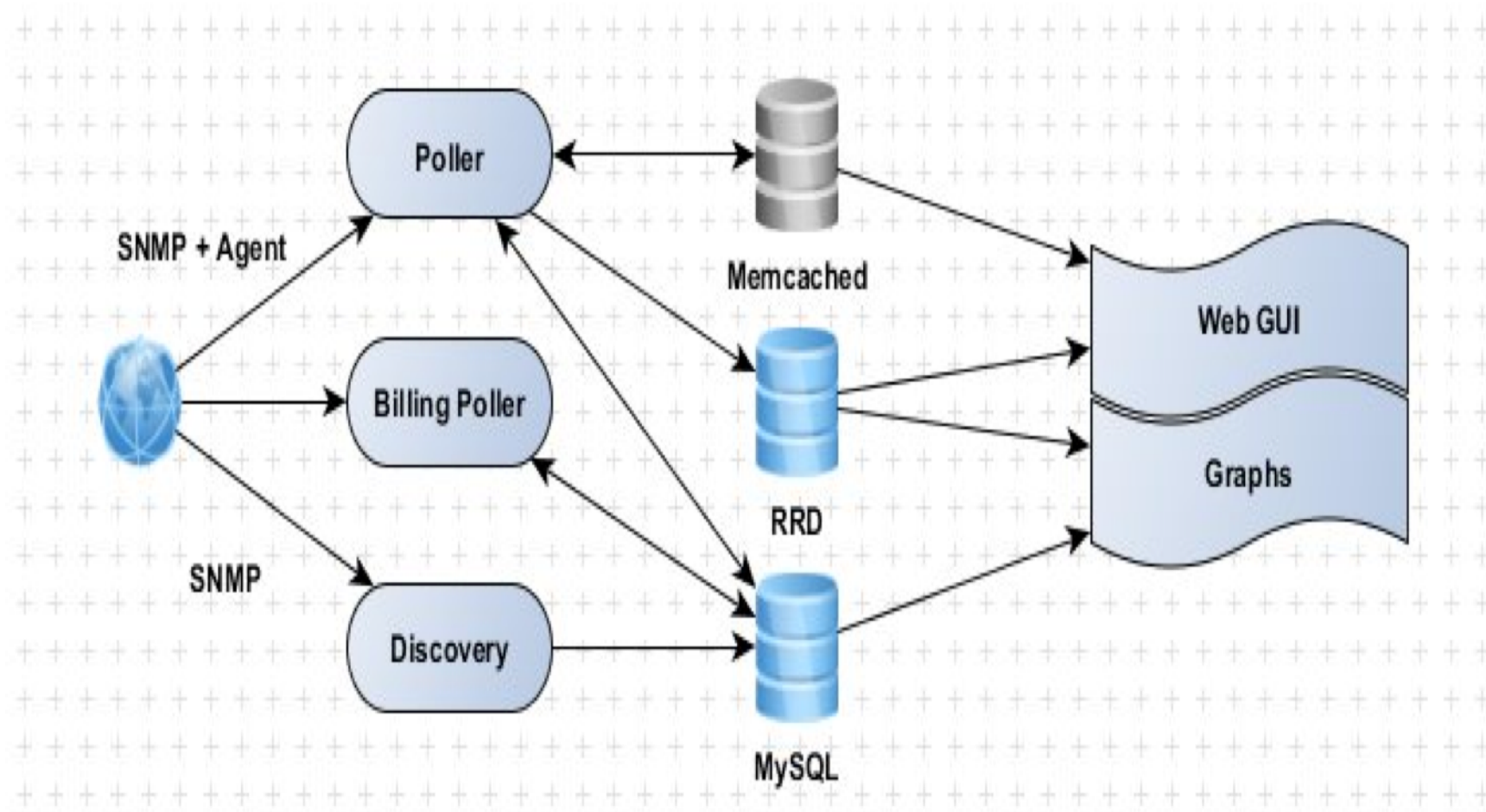
Available metrics cont.

- Linux distribution detection
- Real-time interface traffic graphing
- Device inventory collection (useful!)
- Detailed IPv4, IPv6, TCP and UDP stack statistics
- BGP And OSPF information
- Mac and IP address information

Features

- Concept of enabled vs. ignored
- Many already supported devices
- Host monitoring well supported using check_mk and support scripts
- Application monitoring using SNMP
- Billing module
- Integration with other tools:
 - Smokeping, collectd, syslog (receive logs from devices)

Architecture



Availability

Observium

Open Source (free) vs. “Professional” (paid) versions

- <http://www.observium.org/>
- http://www.observium.org/wiki/Edition_Split

Librenms

- Fork of Observium. Open Source, Free and GPL
- <https://github.com/librenms/librenms>
- https://github.com/librenms/librenms/blob/master/doc/Observium_Welcome.md

Screen shots

These are from the Observium Open Source version. This is the version we will use in class and in our labs.



alpha.memetic.org

Ovh, Paris, France

Linux alpha.memetic.org 2.6.32-22-server #36-Ubuntu SMP Thu Jan 3 20:38:33 UTC 2010 x86_64

Hardware	Generic x86 64-bit
Operating System	Linux 2.6.32-22-server (Ubuntu 10.04)
Contact	Adam Armstrong <adama@memetic.org>
Location	Ovh, Paris, France
Uptime	23 days, 10h 6m 52s



43 20 1 22

lo, eth0, eth1, virbr1, virbr0, cisco0, vnet0, vnet4, vnet1, vnet2, vnet3

Services

5 5 0 0

dns, http, imap, pop, ssh

Processors

Intel Core i7 920 @ 2.67GHz		31%
Intel Core i7 920 @ 2.67GHz		39%
Intel Core i7 920 @ 2.67GHz		36%
Intel Core i7 920 @ 2.67GHz		11%
Intel Core i7 920 @ 2.67GHz		26%
Intel Core i7 920 @ 2.67GHz		25%
Intel Core i7 920 @ 2.67GHz		16%
Intel Core i7 920 @ 2.67GHz		21%

Memory Pools

Physical memory		7.69GB / 7.81GB 98.45%
Virtual memory		8.33GB / 39.05GB 21.33%
Swap space		660.35MB / 31.24GB 2.06%

Storage

/		35.71GB / 38.75GB 92%
/home		30.95GB / 38.45GB 81%
/mnt		1.55TB / 1.69TB 92%

Recent Events

29/jun/10 13:55:01 cisco0 ifName: vnet5 -> cisco0



Devices : 17 (12 up 3 down 2 ignored 2 disabled)

Ports : 140 (89 up 3 down 5 ignored 42 shutdown)

[Overview](#) [Devices](#) [Services](#) [Locations](#) [Ports](#) [Health](#) [BGP Sessions](#) [System](#)
cisco0.vm
Belly of Alpha

[Overview](#) [Graphs](#) [Health](#) [Ports](#) [BGP](#) [Map](#) [Inventory](#) [Events](#) [Syslog](#) [Config](#) [Settings](#)

Cisco IOS Software, 7200 Software (C7200-ADVIPSERVICESK9-M), Version 12.2(33)SRD2, RELEASE SOFTWARE (fc2) Technical Support:
http://www.cisco.com/techsupport Copyright (c) 1986-2009 by Cisco Systems, Inc. Compiled Wed 20-May-09 20:57 by prod_rel_team

Hardware CISC07206VXR
Operating System Cisco IOS 12.2(33)SRD2 (ADVIPSERVICESK9)
Location Belly of Alpha
Uptime 15 days, 16m 15s



16 7 0 9

Fa0/0, Fa1/0, Fa1/1, Et2/0, Et2/1, Et2/3, Et2/2, Et2/4, Et2/5, Et2/6, Et2/7, Fa3/0, Fa3/1, Null0, Lo0, Lo100

Recent Syslog

14/Jul/10 14:07:58 CLNS-3-BADPACKET : ISIS: L2 CSNP, packet (64769) or wire (115) length invalid from ca01.3979.001c (FastEthernet1/0)
14/Jul/10 14:07:36 CLNS-5-ADJCHANGE : ISIS: Adjacency to 0110.0000.0001 (FastEthernet1/0) Down, hold time expired

Processors

NPE400 0 10%

Memory Pools

7200VXR NPE-400 - I/O 5.38MB / 16MB 33.66%

7200VXR NPE-400 - Processor 40.02MB / 151.46MB 26.42%

7200VXR NPE-400 - Transient 91.5KB / 16MB 0.56%

Temperatures

I/O Cont Inlet 22°C NPE Inlet 22°C
I/O Cont Outlet 22°C NPE Outlet 22°C

Recent Events

04/Jul/10 20:07:14 Loopback100 ifName: Tu0 -> Lo100
04/Jul/10 20:07:14 Loopback100 ifDescr: Tunnel0 -> Loopback100
04/Jul/10 20:07:14 Loopback100 ifAlias: -> Cust: Memetic (Loopback fake)
04/Jul/10 20:07:14 Loopback100 ifMtu: 17883 -> 1514
04/Jul/10 20:07:14 Loopback100 ifSpeed: 100000 -> 4294967295
04/Jul/10 20:07:14 Loopback100 ifHighSpeed: 0 -> 8000
04/Jul/10 20:07:14 Loopback100 ifType: tunnel -> softwareLoopback
04/Jul/10 20:07:14 Loopback100 type: -> Cust
04/Jul/10 20:07:14 Loopback100 descr: -> Memetic
04/Jul/10 20:07:14 Loopback100 notes: -> Loopback fake



Devices : 75 (71 up 0 down 4 ignored 4 disabled)

Ports : 4078 (1723 up 567 down 255 ignored 1508 shutdown)

Overview Devices Services Locations Ports Health BGP Sessions System



uk.thn.pbr01

Telehouse North, London, UK

Overview Graphs Health Ports VRFs BGP Map Inventory Events Syslog Config Settings

3. GigabitEthernet0/0/2

Peering: LINX 224

195.66.224.180/23

2001:7fb:4::21e9:1/64



367.37Mbps

1 Gbps

Ethernet

0:23:4:a7:7a:2

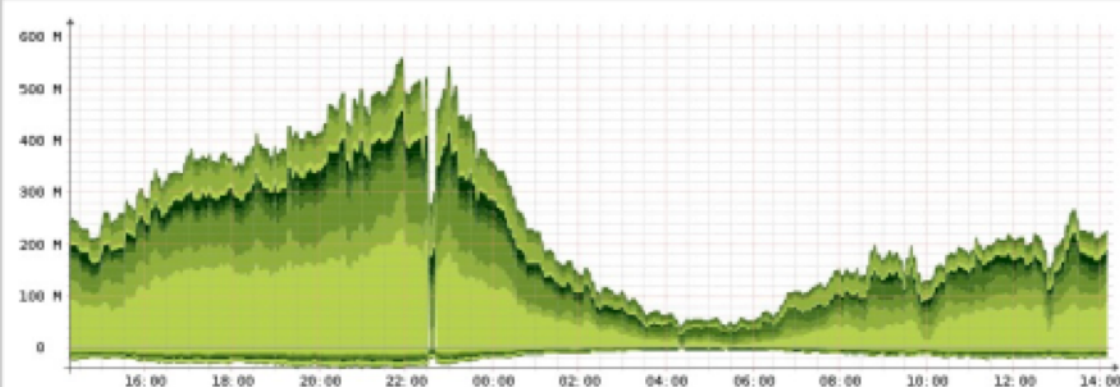
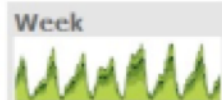
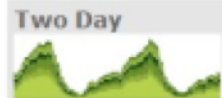
MTU 1500

80.55Mbps

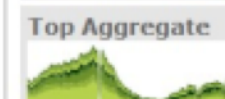
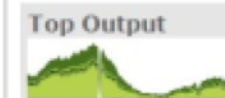
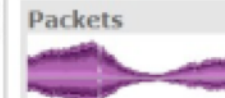
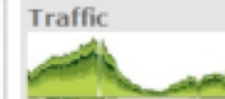
54.95Kpps

43.24Kpps

Graphs | ARP Table | Mac Accounting : Bits (Mini|Top10) | Packets (Mini)



	In: Current	Maximum	Total	Out: Current	Maximum	Total
195.66.224.125 (00:19:e2:bf:e7:c4)	87.08Mbps	230.75Mbps	7.36TB	7.52Mbps	13.06Mbps	575.74GB
195.66.224.168 (00:24:dc:8e:e4:01)	38.04Mbps	71.06Mbps	2.51TB	1.40Mbps	2.60Mbps	97.56GB
195.66.224.133 (00:0c:db:e8:57:09)	25.59Mbps	98.77Mbps	3.51TB	1.75Mbps	4.57Mbps	194.06GB
195.66.224.140 (00:19:07:ab:ec:c0)	11.15Mbps	43.41Mbps	1.38TB	1.16Mbps	5.44Mbps	156.57GB
195.66.224.46 (00:18:74:2e:1b:c0)	11.89Mbps	21.76Mbps	698.90GB	2.10Mbps	3.84Mbps	139.90GB
195.66.225.56 (00:1f:ca:4f:73:80)	14.17Mbps	39.23Mbps	1.19TB	877.28kbps	1.91Mbps	79.25GB
195.66.224.43 (00:21:e0:3a:3e:02)	10.11Mbps	16.59Mbps	662.79GB	4.50Mbps	8.28Mbps	355.62GB
195.66.224.243 (00:1a:90:29:89:c0)	9.71Mbps	70.80Mbps	2.04TB	727.43kbps	4.99Mbps	87.92GB
195.66.225.100 (00:1e:f7:47:cd:84)	9.06Mbps	27.56Mbps	949.74GB	13.34 bps	14.33 bps	897.38kB
195.66.224.227 (00:12:f2:3e:e4:01)	8.88Mbps	27.88Mbps	925.59GB	461.89kbps	1.31Mbps	49.05GB



Ports : 140 (89 up 3 down 5 ignored 42 shutdown)

System

Belly of Alpha

ings

[Expand All Nodes](#) [Collapse All Nodes](#)

Cisco 7206VXR, 6-slot chassis

Serial No. 4294967295

1. I/O and CPU Slot 0

I/O and Processor Slot Container

1. NPE-400 (NPE400 0)

Cisco 7200VXR Network Processing Engine NPE-400

Serial No. 11111111

2. C7200-IO-FE-MII/RJ45 (module 0)

1/0 FastEthernet (TX-1SL)

Serial No. 4294967295

- 1. **FastEthernet0/0**
DEC21140
- 1. **I/O Cont Inlet Temperature 0 { }**
I/O Cont Inlet Temperature Sensor
- 2. **I/O Cont Outlet Temperature 0 { }**
I/O Cont Outlet Temperature Sensor

1. Flash Card Slot Container I/O 0

Flash Card Slot Container I/O

2. PA Slot 1

PA Slot Container

3. PA Slot 2

PA Slot Container

1. PA-2FE-FX (module 2)

Dual Port FastEthernet (RJ45)

Serial No. XXXXXXXXXX

4. PA Slot 3

PA Slot Container

12.  61.  79.  83.  88



Devices : 17 (12 up 3 down 2 ignored 2 disabled)
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cisco0.vm
Belly of Alpha

Overview Graphs Health Ports BGP Map Inventory Events Syslog Config Settings

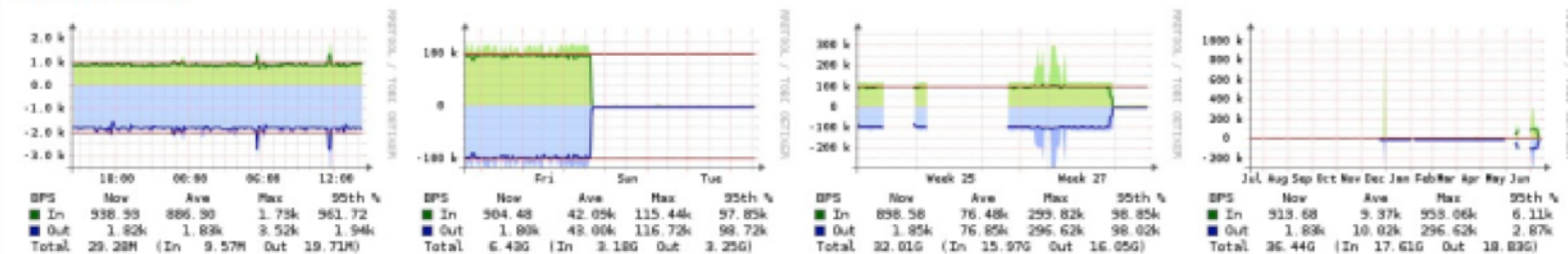
3. FastEthernet1/1

Cust: Memetic [100Mbit] {CUST001} (BGP Partial)
172.16.0.2/24

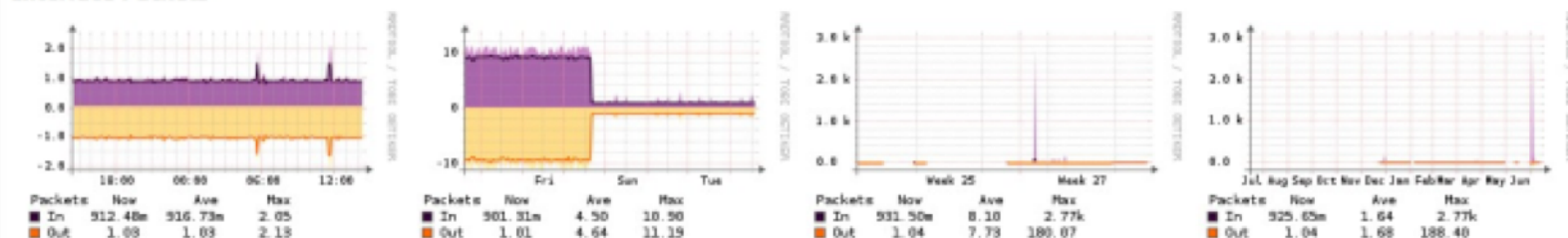
944bps 100Mbps Ethernet ca:0:39:79:0:1d MTU 1500
2Kbps 1pps 1pps
cisco0 on alpha.memetic v4

Graphs | ARP Table | Mac Accounting : Bits (Mini|Top10) | Packets (Mini)

Interface Traffic



Interface Packets



Interface Non Unicast

Online Observium demo

Is available at:

<http://demo.observium.org/>

Workshop installation is at:

<http://observium.ws.nsrc.org/>

Questions

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