



Network Management & Monitoring

**Observium: all in one network
graphing and monitoring**



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Observium

- Autodiscovering SNMP based network monitoring tool
- Written in PHP (web application)
- Includes support for a wide range of network hardware and operating systems including:
 - 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.

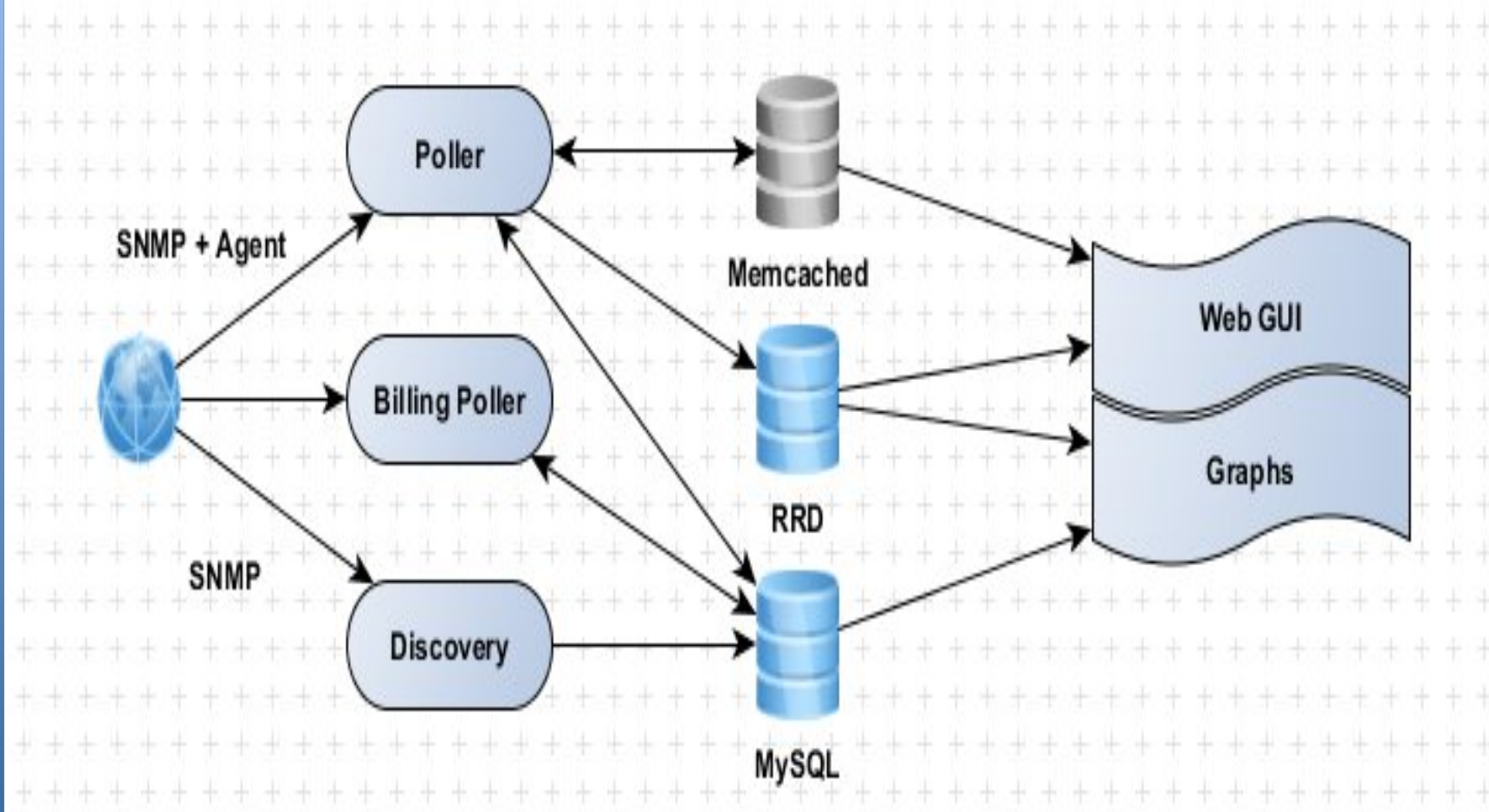
Available metrics

- Linux distribution detection.
- Real-time interface traffic graphing.
- Device inventory collection (very useful!)
- Detailed IPv4, IPv6, TCP and UDP stack statistics.
- BGP and OSPF statistics.
- MAC / IP

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 integration, collectd as well
- Syslog integration (receive logs from devices)

Architecture





Availability

- Open source
- http://www.observium.org/wiki/Main_Page



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



alpha.memetic.org

Ovh, Paris, France

Overview Graphs Health Apps CollectD Ports Inventory Services Events Syslog Settings

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



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Belly of Alpha

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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 CISCO7206VXR
 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, Nu0, 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

uk.thn.pbr01
Telehouse North, London, UK

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

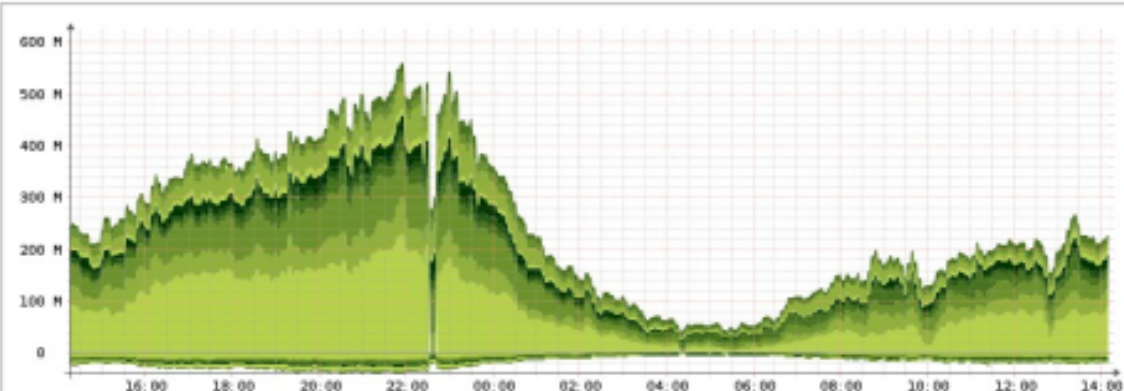
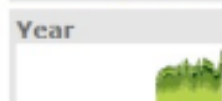
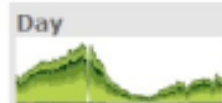
MTU 1500

80.55Mbps

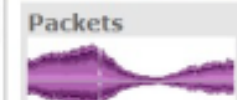
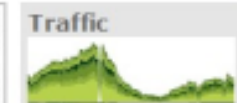
54.95Kpps

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	13.09Mbps	575.74GB
195.66.224.168 (00:24:dc:8e:e4:01)		38.04Mbps	71.08Mbps	2.51TB		1.40Mbps	2.63Mbps	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:3a:02)		10.11Mbps	16.59Mbps	662.79GB		4.59Mbps	8.28Mbps	355.62GB
195.66.224.243 (00:1a:30:29:89: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)		8.38Mbps	27.88Mbps	925.59GB		461.89kbps	1.31Mbps	49.05GB





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cisco1.vm
 Belly of Alpha

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

Expand All Nodes Collapse All Nodes

CISCO7206VXR (Chassis)

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)

I/O 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. XXX00000000

4. PA Slot 3

PA Slot Container

5. PA Slot 4



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

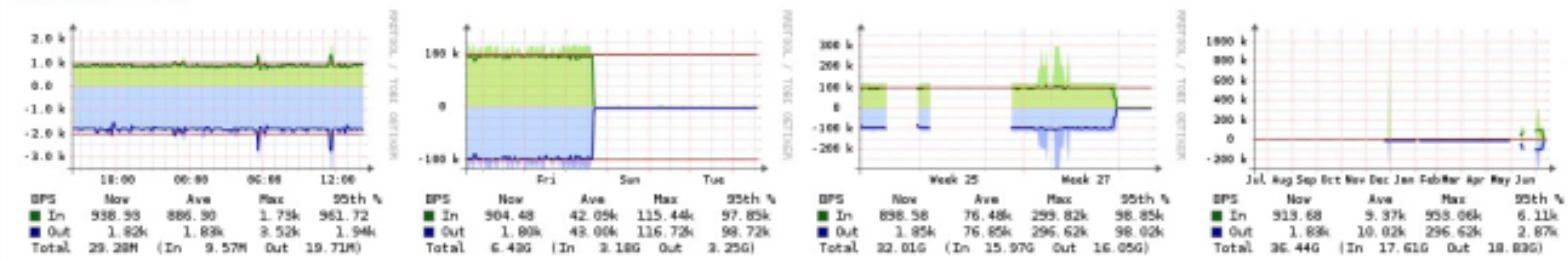
3. FastEthernet1/1

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

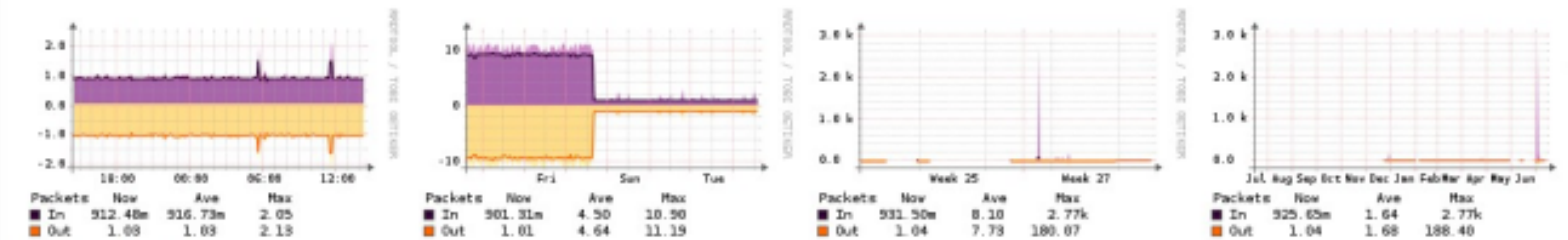
944bps 100Mbps Ethernet ca:0:39:79:0:1d MTU 1500
2Kbps
1pps
1pps
cisco0 on alpha.memetic v4

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

Interface Traffic



Interface Packets



Interface Non Unicast



Questions?