



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.

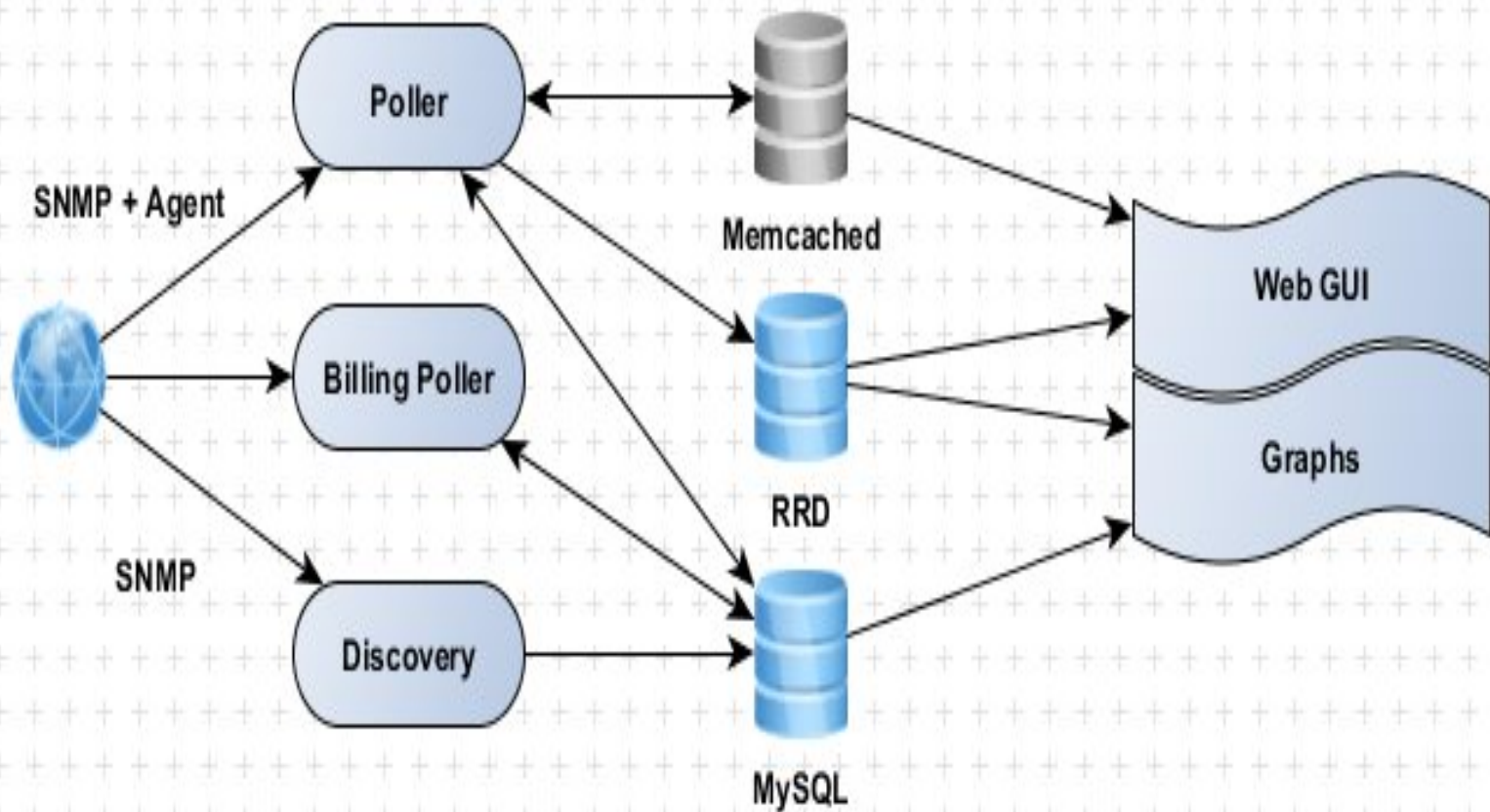
Available metrics

- 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)

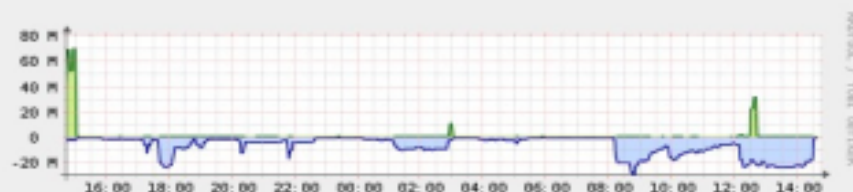
Overview Devices Services Locations Ports Health BGP Sessions System

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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[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 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, Nu0/0, 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

2001:7f8:4::21e9:1/64



367.37Mbps

1 Gbps

Ethernet

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

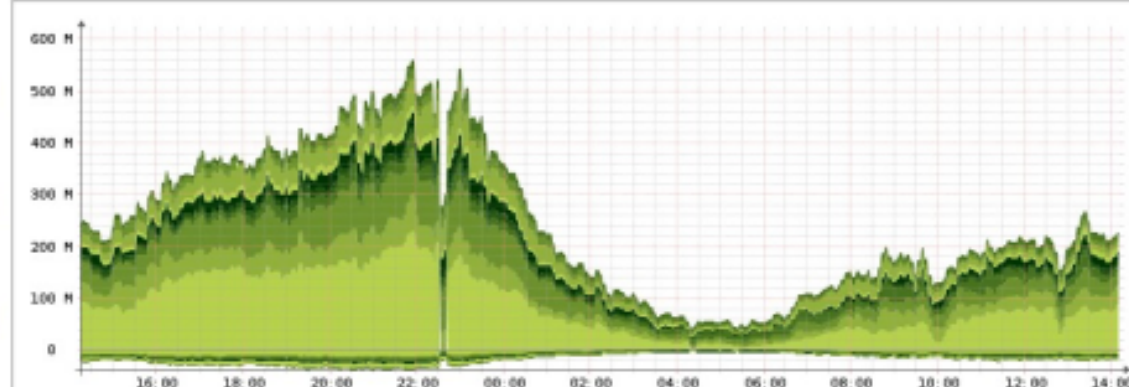
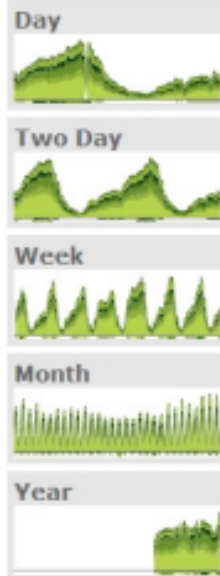
MTU 1500

80.55Mbps

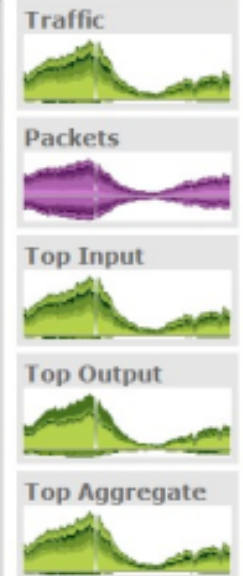
54.95Kpps

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	71.08Mbps	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: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)	8.98Mbps	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-ISL)

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. XXX000000000

[-] 4. PA Slot 3

PA Slot Container

[-] 5. PA Slot 4

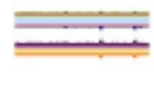
PA Slot Container

3. FastEthernet1/1

Cust: Memetic [100MbK] {CUST001} (BGP

Partial)

172.16.0.2/24


 944bps
 2Kbps
 1pps
 1pps

100Mbps

Ethernet

ca:0:39:79:0:1d

MTU 1500

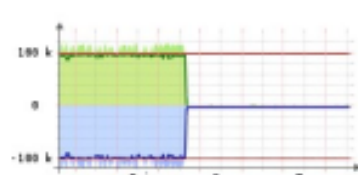
cisco0 on alpha.memetic v4

[Graphs](#) | [ARP Table](#) | [Mac Accounting : Bits \(Mini|Top10\)](#) | [Packets \(Mini\)](#)

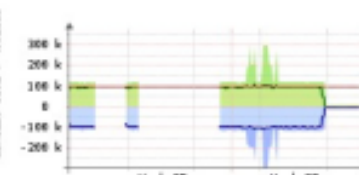
Interface Traffic



DPS	Now	Ave	Max	95th %
In	938.99	886.90	1.75k	961.72
Out	1.82k	1.83k	3.52k	1.94k
Total	29.28M	(In 9.57M Out 19.71M)		



DPS	Now	Ave	Max	95th %
In	304.48	42.05k	115.44k	97.85k
Out	1.80k	43.00k	116.72k	98.72k
Total	6.43G	(In 2.18G Out 3.25G)		



DPS	Now	Ave	Max	95th %
In	898.58	76.48k	299.82k	98.85k
Out	1.85k	76.85k	296.62k	98.02k
Total	32.01G	(In 15.97G Out 16.05G)		



DPS	Now	Ave	Max	95th %
In	913.68	9.37k	933.06k	6.11k
Out	1.83k	10.02k	296.62k	2.87k
Total	36.44G	(In 17.61G Out 18.83G)		

Interface Packets



Packets	Now	Ave	Max
In	912.48m	916.73m	2.05
Out	1.09	1.03	2.13



Packets	Now	Ave	Max
In	301.31m	4.50	10.50
Out	1.01	4.64	11.19



Packets	Now	Ave	Max
In	931.50m	8.10	2.77k
Out	1.04	7.73	189.07



Packets	Now	Ave	Max
In	925.65m	1.64	2.77k
Out	1.04	1.68	188.40

Interface Non Unicast

Questions?