



Network Management & Monitoring

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



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.

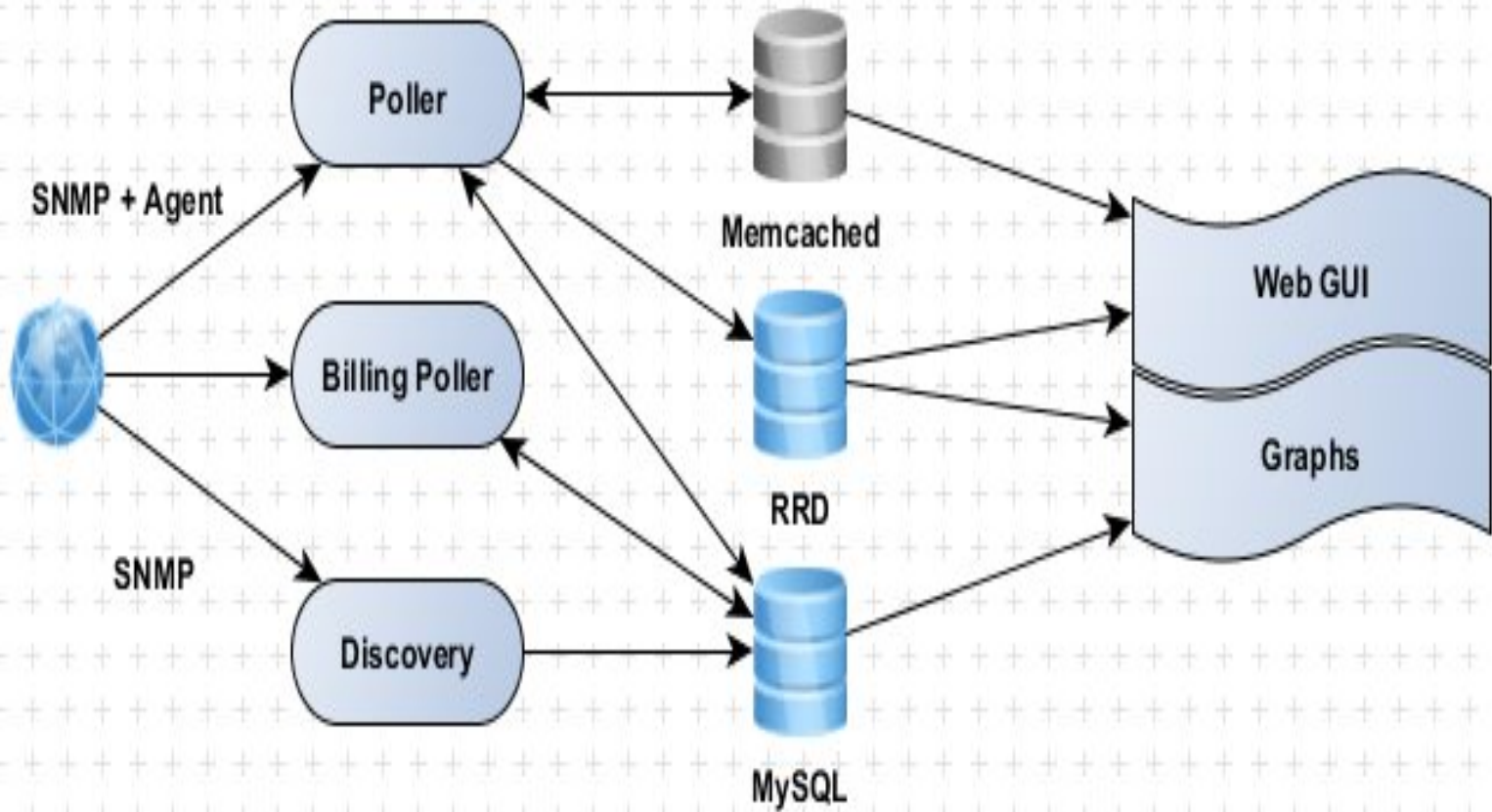
Available metrics

- 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

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

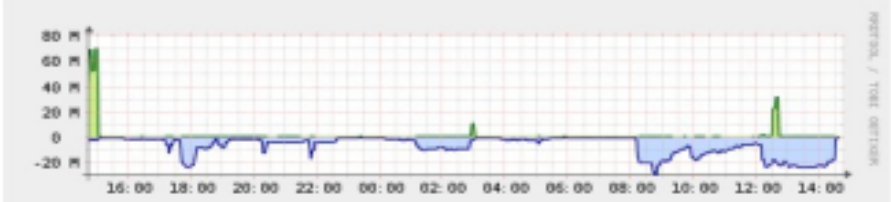
Hardware Generic x86 64-bit

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/Jan/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
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- 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, 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)

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uk.thn.pbr01
Telehouse North, London, UK

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3. GigabitEthernet0/0/2

Peering: LINX 224

195.66.224.180/23

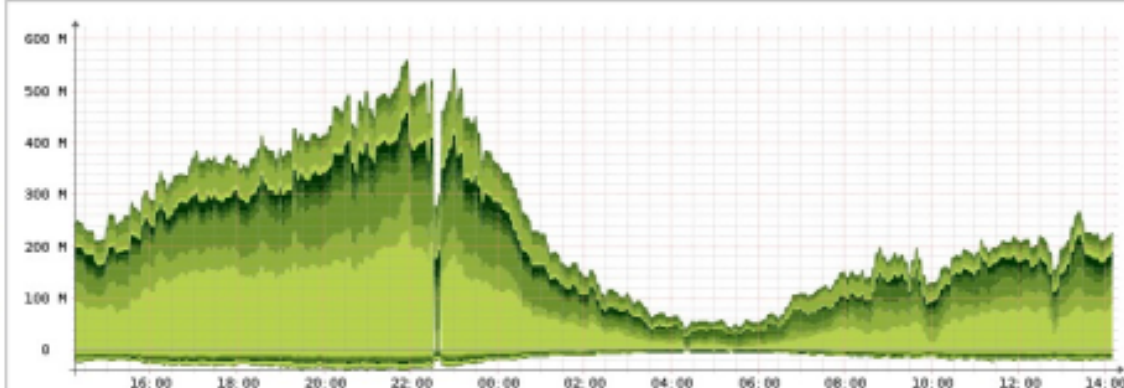
2001:7f8:4::21e9:1/64



367.37Mbps 1Gbps Ethernet 0:23:4:a7:7a:2
 80.55Mbps
 54.95Kpps
 43.24Kpps
 MTU 1500

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

- Day
- Two Day
- Week
- Month
- Year



	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	13.00Mbps	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	4.50Mbps	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	940.74GB	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

- Traffic
- Packets
- Top Input
- Top Output
- Top Aggregate



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cisco1.vm
 Belly of Alpha

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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. XXX00000000

[-] **4. PA Slot 3**

PA Slot Container

[-] **5. PA Slot 4**

PA Slot Container

cisco0.vm
 Belly of Alpha

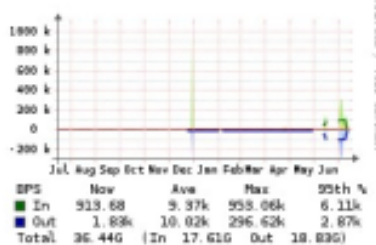
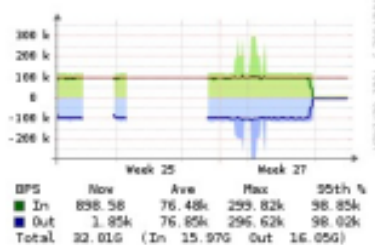
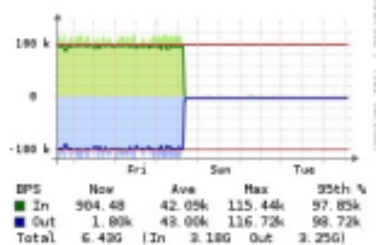
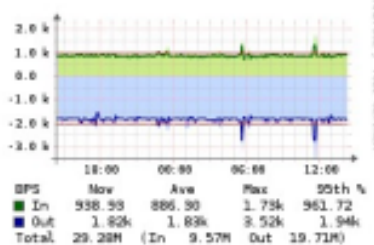
3. FastEthernet1/1

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

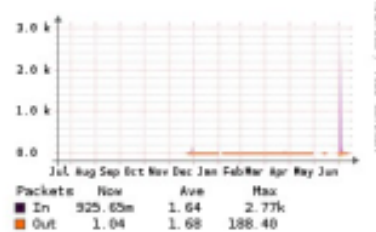
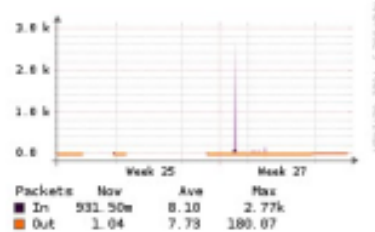
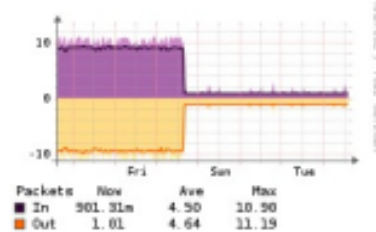
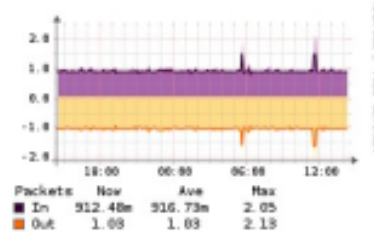
944bps 100Mbps Ethernet ca:0:39:79:0:1d cisco0 on alpha.memetic v4
2Kbps 1pps 1pps
MTU 1500

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

Interface Traffic



Interface Packets



Interface Non Unicast

Questions?