

Campus Network Design Workshop

LibreNMS

All in one network graphing and
monitoring

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LibreNMS

- SNMP-based auto-discover network monitoring
- Derived from Observium
- 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.librenms.org>



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

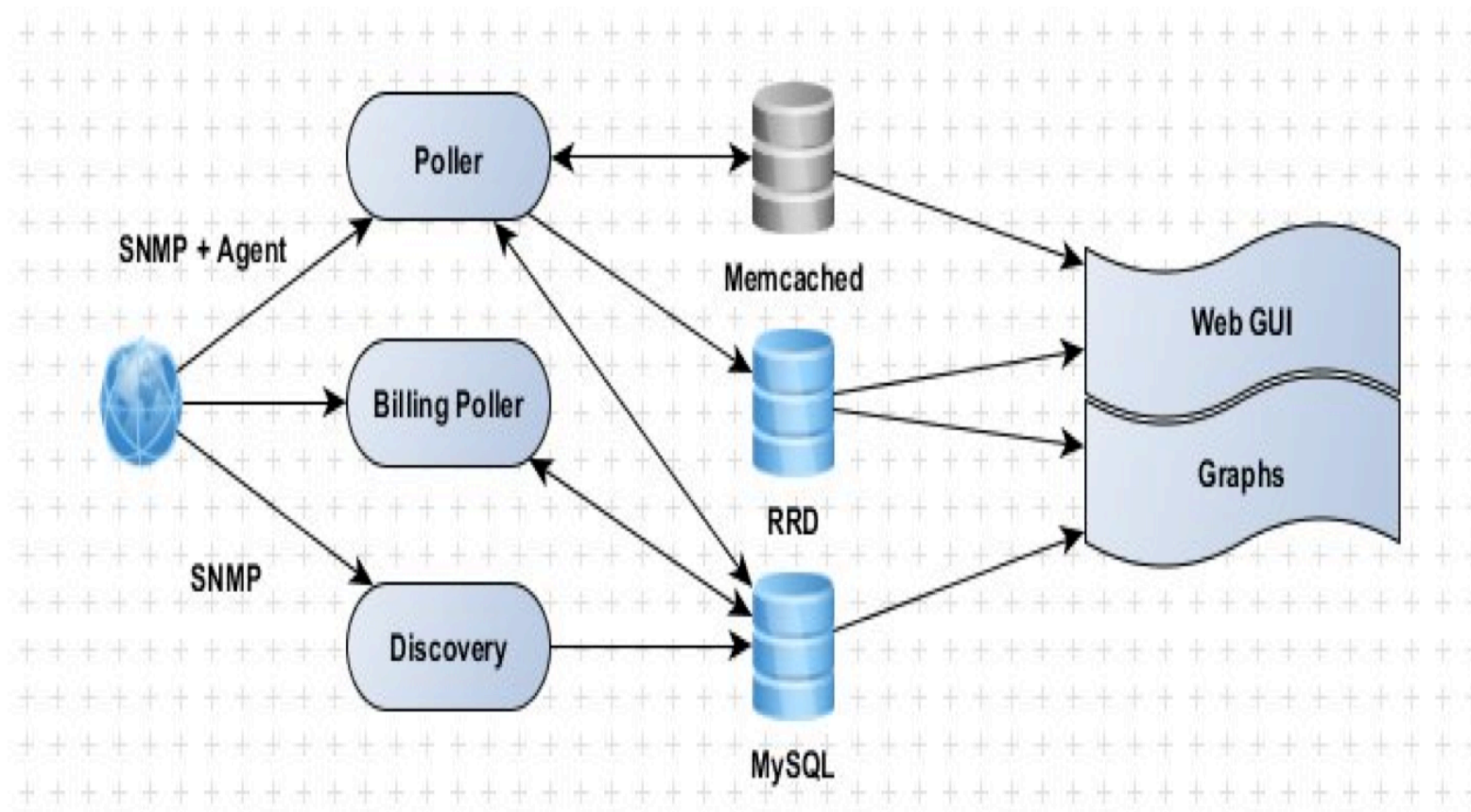
...Available metrics

- Linux distribution detection
- Real-time interface traffic graphing
- Device inventory collection (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, nfsen, rancid, syslog (receive logs from devices)
- Alerting

Architecture



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Availability

- LibreNMS
 - Fork of Observium. Open Source, Free and GPL
 - <http://www.librenms.org/>
 - Available as a git download of PHP code
 - <https://github.com/librenms/librenms>
 - <https://github.com/librenms/librenms/blob/master/doc/General/Welcome-to-Observium-users.md>
 - Available as an Ubuntu based appliance



Screen shots

- These are from LibreNMS
- This is the version we will use in class and in our labs.



n1c1.lab.lpnz.org
 AM408

Storage Usage

Memory Usage

Processor Usage

Overview

Graphs

Health

Ports

Inventory

Logs

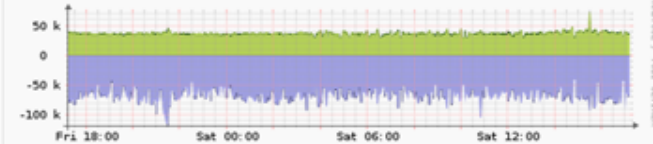
Alerts

Alert Stats

Linux n1c1 3.2.0-4-amd64 #1 SMP Debian 3.2.68-1+deb7u2 x86_64

Hardware	Generic x86 64-bit
Operating System	Linux 3.2.0-4-amd64
Contact	dean@nsrc.org
Location	AM408
Uptime	29 days, 20h 47m 56s

Overall Traffic



9

9

0

0

lo, eth0, eth1, eth1.201, eth1.202, br1, br2, br101, eth1.101

Processors

Intel Xeon 5160 @ 3.00GHz	<div></div> 2%
Intel Xeon 5160 @ 3.00GHz	<div></div> 2%
Intel Xeon 5160 @ 3.00GHz	<div></div> 1%
Intel Xeon 5160 @ 3.00GHz	<div></div> 1%

Memory Pools

Physical memory	<div></div> 76%
Virtual memory	<div></div> 38%
Swap space	<div></div> 0%

Storage

/	<div></div> 94%
/boot	<div></div> 10%
/srv/archip	<div></div> 42%
/tmp	<div></div> 3%
/usr	<div></div> 22%
/var	<div></div> 30%

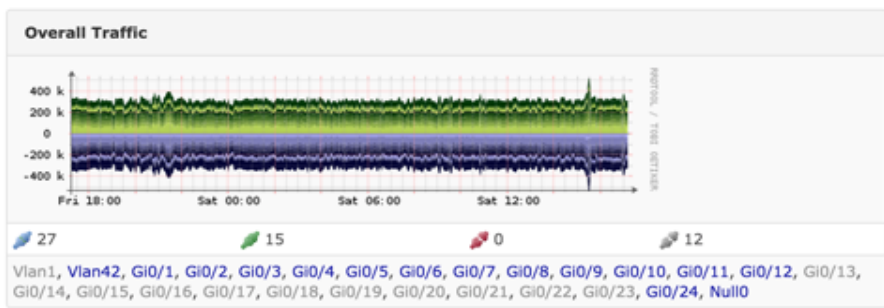
Recent Events

26/Aug/15 16:10:12	Memory pool added: type hrstorage index 3 descr Virtual memory
--------------------	--

sw2.lab.lpnz.org
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Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE2, RELEASE SOFTWARE (fc1) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2013 by Cisco Systems, Inc. Compiled Tue 05-Feb-13 12:41 by prod_rel_team	
Hardware	catalyst2960G24
Operating System	Cisco IOS 15.0(2)SE2 (LANBASEK9)
Contact	NRL, VUW
Location	AM408
Uptime	33 days, 3h 52m 44s



Processors

Processor 1	<div></div>	6%
-------------	-------------	----

Memory Pools

Processor	<div></div>	78%
I/O	<div></div>	57%
Driver text	<div></div>	0%

Recent Events

26/Aug/15 16:05:07	Device status changed to Up
26/Aug/15 16:00:06	Device status changed to Down
25/Aug/15 17:05:15	GigabitEthernet0/11 ifVlan: -> 666
25/Aug/15 17:05:15	GigabitEthernet0/11 ifTrunk: -> dot1Q
25/Aug/15 17:05:14	GigabitEthernet0/10 ifVlan: -> 108
25/Aug/15 17:05:14	GigabitEthernet0/9 ifVlan: -> 108
25/Aug/15 17:05:14	GigabitEthernet0/8 ifVlan: -> 108
25/Aug/15 17:05:14	GigabitEthernet0/7 ifVlan: -> 108
25/Aug/15 17:05:12	GigabitEthernet0/6 ifVlan: -> 108
25/Aug/15 17:05:12	GigabitEthernet0/5 ifVlan: -> 108

sw1.lab.lpnz.org :: Total Traffic

Bits

6 Hours

24 Hours

48 Hours

One Week

Two Weeks

One Month

Two Months

One Year

Two Years



From 2015-08-29 17:17 To 2015-09-05 17:17 Update

[Show Legend](#) | [Show Previous](#)

[Show RRD Command](#)



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[Overview](#)[Devices](#)[Services](#)[Ports](#)[Health](#)[Plugins](#)**sw1.lab.lpnz.org**

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[Overview](#)[Graphs](#)[Health](#)[Ports](#)[VLANs](#)[Map](#)[Inventory](#)[Logs](#)[Alerts](#)[Alert Stats](#)[Config](#)[Expand All Nodes](#) [Collapse All Nodes](#)**WS-C2960G-48TC-L (1)**

WS-C2960G-48TC-L

[Serial No. FOC1302V0CN](#)**1. WS-C2960G-48TC-L - Fixed Module 0**

WS-C2960G-48TC-L - Fixed Module 0

2. WS-C2960G-48TC-L - Power Supply 0

WS-C2960G-48TC-L - Power Supply 0

[Serial No. AZS125207BS](#)**3. WS-C2960G-48TC-L - Fan 0**

WS-C2960G-48TC-L - Fan 0



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Overview

Graphs

Health

Ports

VLANs

Map

Inventory

Logs

Alerts

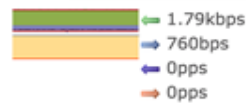
Alert Stats

Config



10102. GigabitEthernet0/2

Link to SDN1-ge-1/1/28 - VLAN50



1Gbps Ethernet
fullDuplex -
VLAN 50

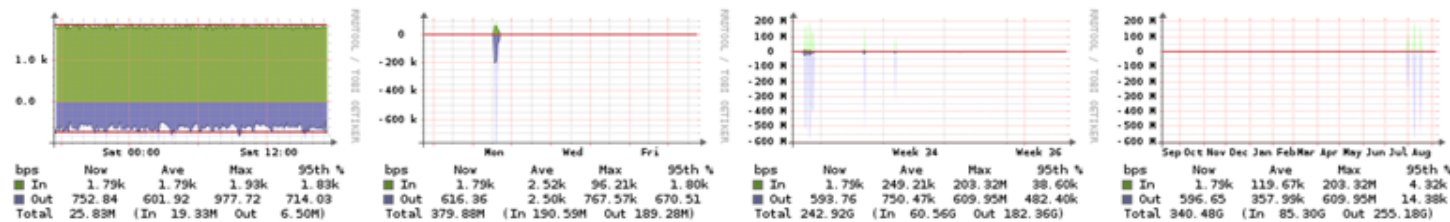
00:24:50:bd:2f:02
MTU 1500

Graphs

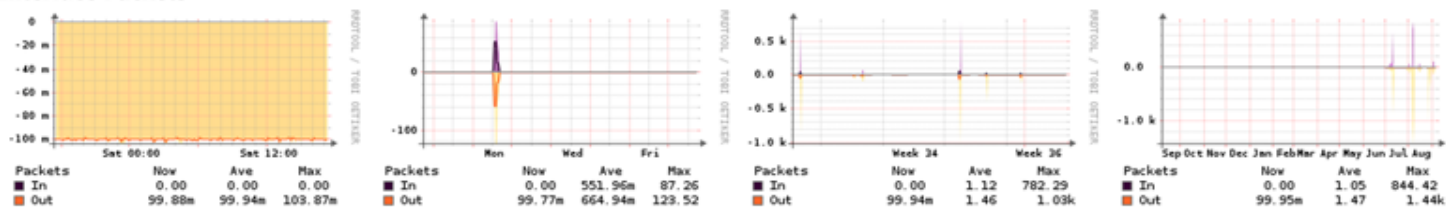
Real time | ARP Table | Eventlog | VLANs

Create Bill

Interface Traffic



Interface Packets



Interface Non Unicast



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Online demo

- <https://demo.librenms.org/>
 - User: admin
 - Pass: admin



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Questions?

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