Campus Network Design Workshop

LibreNMS

All in one network graphing and monitoring

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Network Startup Resource Center

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

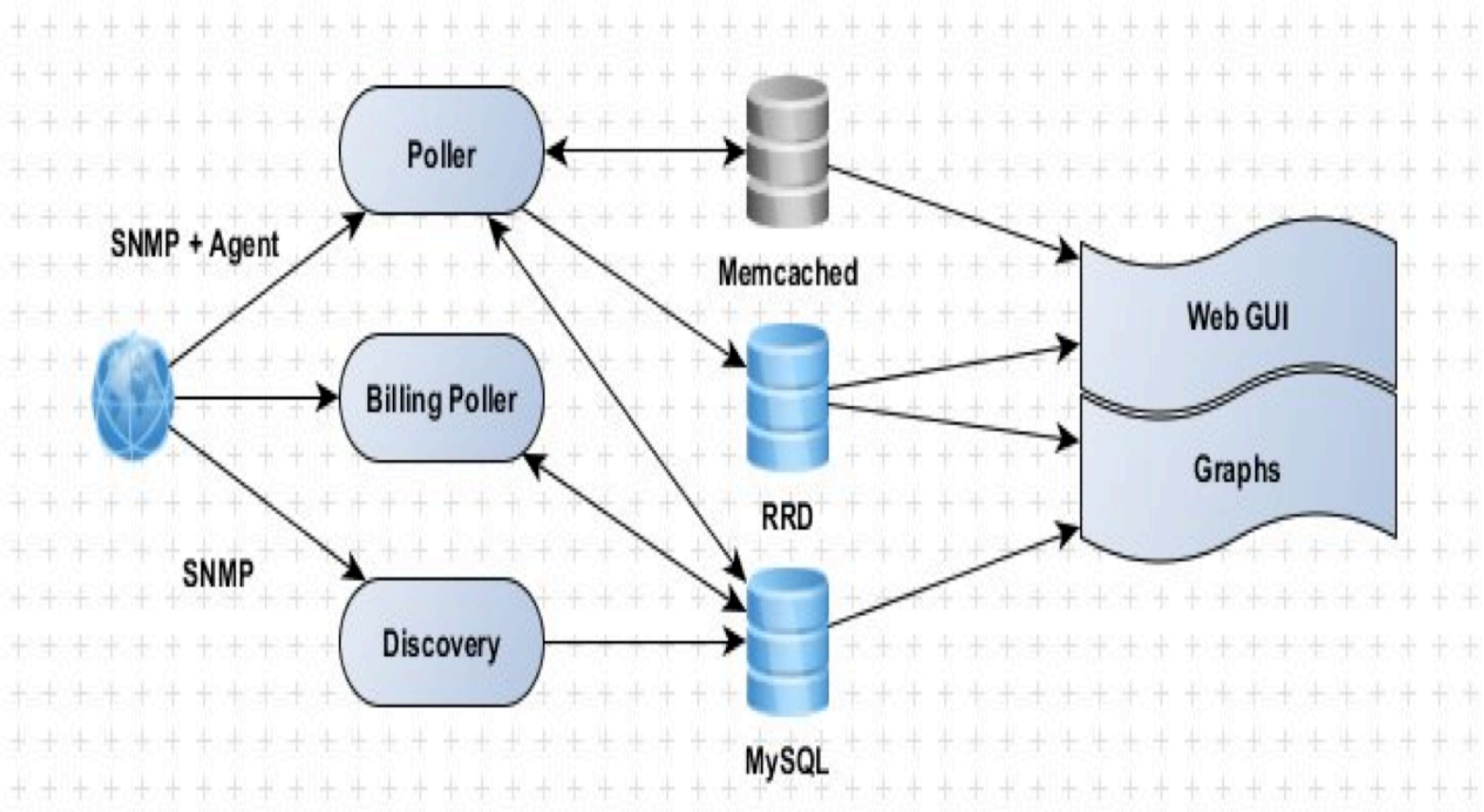
...Available metrics

- 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

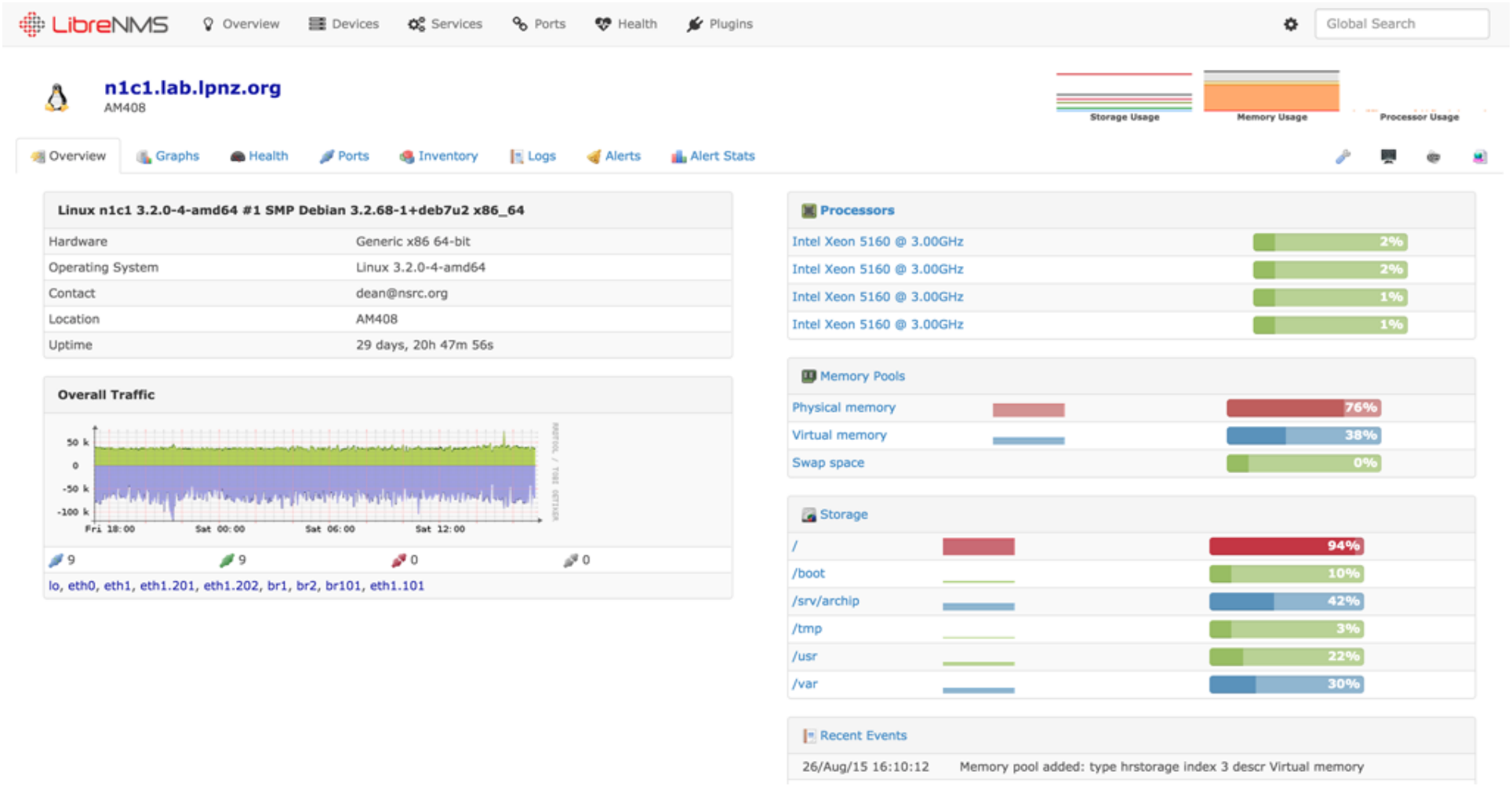


Availability

- 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.



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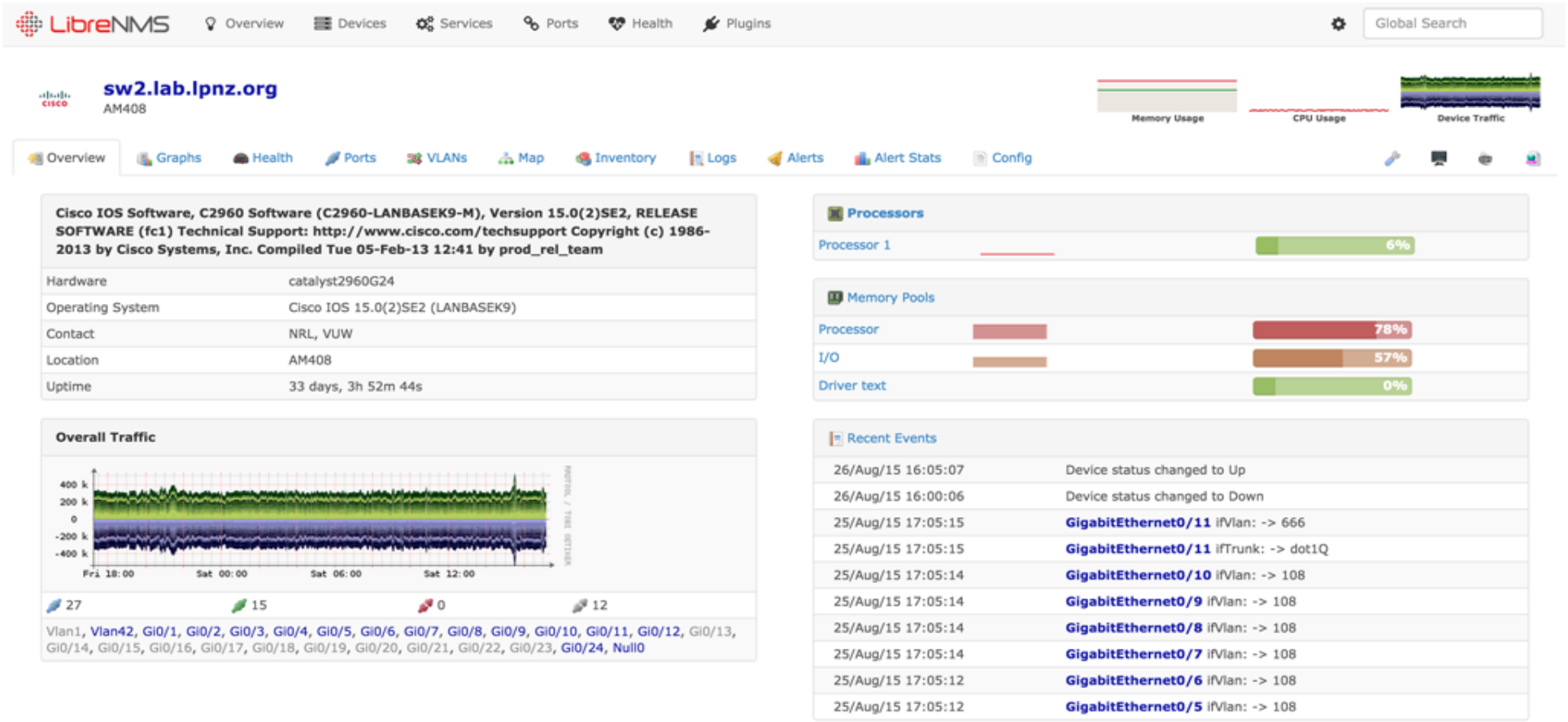
LibreNMS
Overview
Devices
Services
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Global Search
sw2.lab.lpnz.org
AM408
Memory Usage
CPU Usage
Device Traffic
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Health
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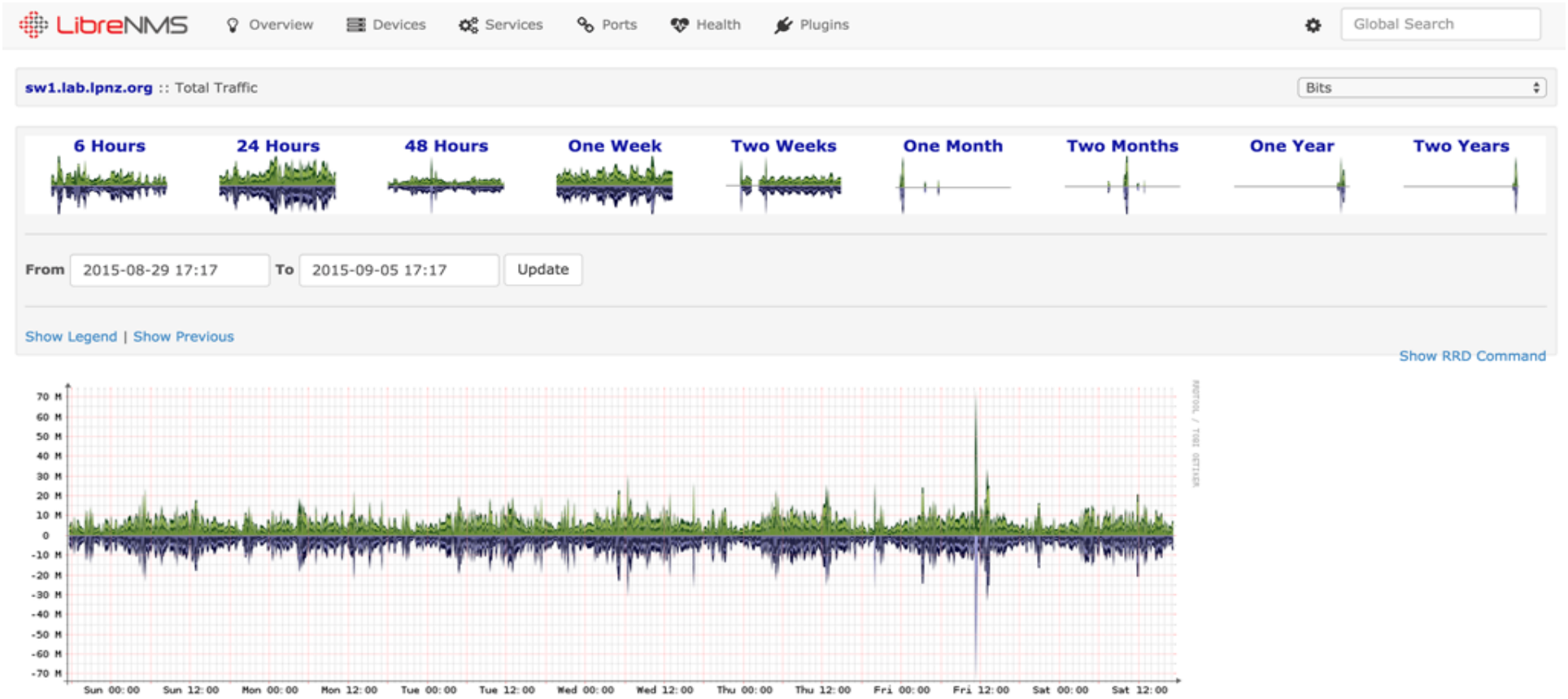
VLANs
Map
Inventory
Logs
Alerts
Alert Stats
Config
Cisco IOS Software, C2960 Software (C2960-LANBASEK9-M), Version 15.0(2)SE2, RELEASE SOFTWARE (fc1) Technical Support: http://www.cisco.com/techsupport Copyright (c) 1986-2013 by Cisco Systems, Inc. Compiled Tue 05-Feb-13 12:41 by prod_rel_team
Hardware catalyst2960G24
Operating System Cisco IOS 15.0(2)SE2 (LANBASEK9)
Contact NRL, VUW
Location AM408
Uptime 33 days, 3h 52m 44s
Processors
Processor 1 6%
Memory Pools
Processor 78%
I/O 57%
Driver text 0%
Overall Traffic
400 k
200 k
0
-200 k
-400 k
Fri 18:00
Sat 00:00
Sat 06:00
Sat 12:00
27
15
0
12
Vlan1, Vlan42, Gi0/1, Gi0/2, Gi0/3, Gi0/4, Gi0/5, Gi0/6, Gi0/7, Gi0/8, Gi0/9, Gi0/10, Gi0/11, Gi0/12, Gi0/13, Gi0/14, Gi0/15, Gi0/16, Gi0/17, Gi0/18, Gi0/19, Gi0/20, Gi0/21, Gi0/22, Gi0/23, Gi0/24, Null0
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



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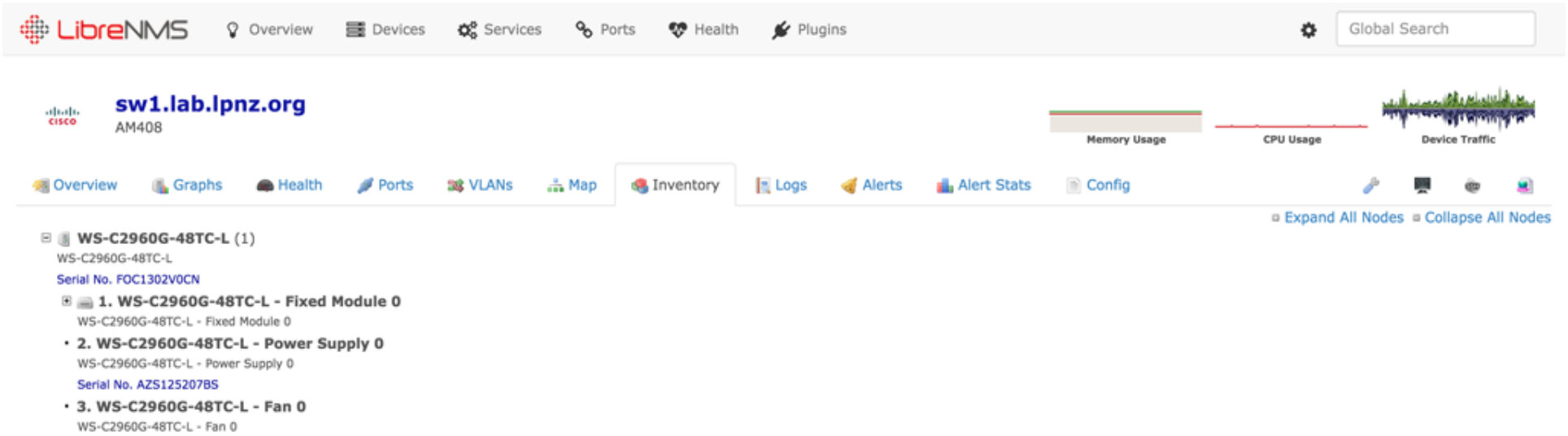
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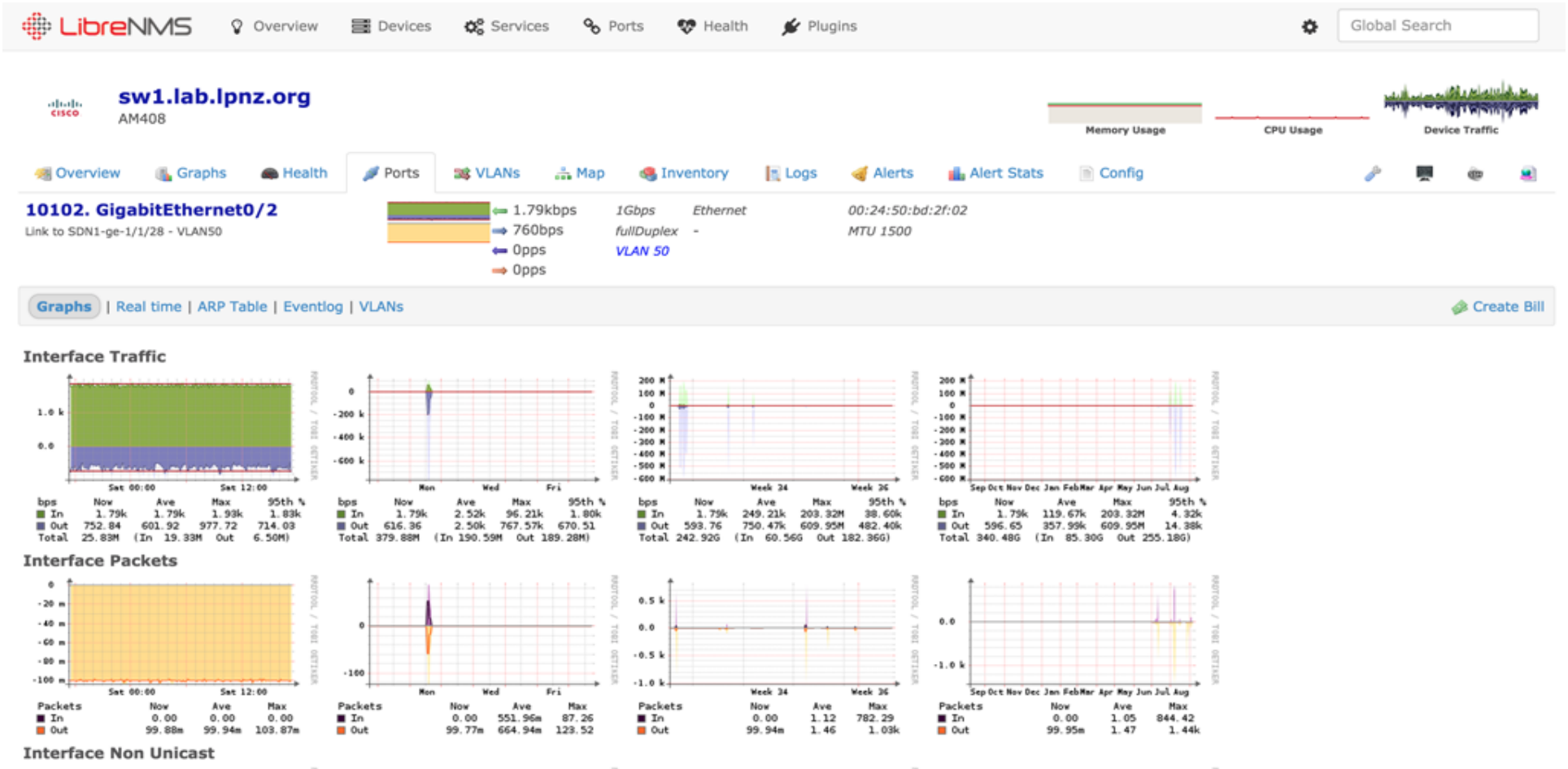
Inventory
Logs
Alerts
Alert Stats
Config
Expand All Nodes
Collapse All Nodes
WS-C2960G-48TC-L (1)
WS-C2960G-48TC-L
Serial No. FOC1302V0CN
1. WS-C2960G-48TC-L - Fixed Module 0
WS-C2960G-48TC-L - Fixed Module 0
2. WS-C2960G-48TC-L - Power Supply 0
WS-C2960G-48TC-L - Power Supply 0
Serial No. AZS125207BS
3. WS-C2960G-48TC-L - Fan 0
WS-C2960G-48TC-L - Fan 0



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Online demo

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

Questions?