

Netdisco & LibreNMS

Web-based Network Monitoring

By Gilbert Detillieux, 11 Jan 2022 MUUG Meeting



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About me...

- First exposed to UNIX at U of M in 1979, worked on it starting in 1980
- Worked in industry from 1983 to 1989, trying to focus on UNIX support
- Began current job as a SysAdmin in October 1989 (32+ years ago)
- Focused on UNIX/Linux, primarily
- Secondary focus on LAN admin
 - Managed switches from multiple vendors

Early Network Monitoring

- Unix commands:
 - ifconfig, route, ping, traceroute, etc.
- Arpwatch
- NMAP
- SNMP and MRTG
 - Presentations at MUUG meetings in [January 2001](#) and [September 2002](#)
 - Crude by today's standards
 - Lots of manual configuration involved
- Would like a more automated, integrated solution



Welcome to Netdisco!

Netdisco is a web-based network management tool suitable for small to very large networks. IP and MAC address data is collected into a PostgreSQL database using SNMP, CLI, or device APIs.

How To
Install

How To
Configure

View On
GitHub

See the
Demo

Read our
Wiki

Ask a
Question

Netdisco is written in Perl and self-contained apart from the PostgreSQL database, so is very easy to install and runs well on any linux or unix system. We also have [docker images](#) if you prefer.

It includes a lightweight web server for the interface, a backend daemon to gather data from your network, and a command line interface for troubleshooting. There is a simple configuration file in YAML format.

Please check out the [installation instructions](#) on CPAN.

You can also speak to someone in the [irc.libera.chat#netdisco](#) IRC channel, or on the [community email list](#).



Some of the things you can do with Netdisco:

- Locate a machine on the network by MAC or IP
- Turn off a switch port, or change the VLAN or PoE status of a port
- Inventory your network by model, vendor, and software
- Keep historic data of system IPs and locations
- Search and retrieve data via the [API](#)
- View pretty pictures of your network

cpan 2.052000 released november build unknown docker images ready

Hosted on GitHub Pages — Theme by [orderedlist](#)

Source: <http://netdisco.org/>



Welcome to LibreNMS, a fully featured network monitoring system that provides a wealth of features and device support.

WHAT CAN IT DO?

FEATURES



Automatic discovery

Automatically discover your entire network using CDP, FDP, LLDP, OSPF, BGP, SNMP and ARP.



Customisable alerting

Highly flexible alerting system, notify via email, irc, slack and more.



API Access

A full API to manage, graph and retrieve data from your install.



Billing system

Generate bandwidth bills for ports on your network based on usage or transfer.



Automatic Updates

Stay upto date automatically with bug fixes, new features and more.



Distributed Polling

Horizontal scaling to grow with your network.



iPhone App



Android App

Source: <https://www.librenms.org/>

More....

- Extensive device support
- Mobile friendly Web UI
- Unix Agent

Integration support for:

- NfSen
- collectd
- SmokePing
- RANCID
- Oxidized

Multiple authentication methods:

- MySQL
- HTTP
- LDAP
- Radius
- Active Directory

Source: <https://www.librenms.org/>

What they have in common:

- Web-based GUI
- Use SNMP, ARP and network discovery protocols (e.g. LLDP, CDP, FDP, etc.)
 - Back-end (daemon) processes to collect data
 - Back-end database to store current state and history
- Fairly extensive online documentation
 - Including good installation and configuration guides
- Online demos available
- Manual installation process, lots of commands
- Docker images available

Netdisco features/strengths:

- Network-centric view of things
- Good at showing where devices are connected
 - E.g. switch port where a MAC or IP address found
 - Network topology map
- Works well with Cisco hardware, not as well with some others (e.g. Juniper, TP-Link)
- All back-end code is in Perl – more portable
 - E.g. Ubuntu/Debian, RH/Fedora, openSUSE, and BSD
- Simpler installation (a bit)
- Back-end database must be PostgreSQL

Netdisco GUI features/strengths:

- Clean, simple GUI, with JS support code
- Run its own mini web server on port 5000
- No HTTPS or address restrictions, but...
 - <https://blog.mgauto.me/post/installing-netdisco/> (see step 7 for Ubuntu/Apache SSL Proxy setup)
 - See also <https://github.com/netdisco/netdisco/wiki/Install-Tips#behind-a-proxy> (for Apache Proxy setup)

Netdisco demo:

- Public demo:
<https://netdisco2-demo.herokuapp.com/>
 - Inventory vs Device/Inventory by Model by OS
 - Device/Addresses without DNS Entries
 - Device Details, Ports & Neighbors tabs
 - Port/Ports with multiple nodes attached
 - IP/IP Inventory & IP/Subnet Utilization
- “Live” demo (UM CS site)
 - Node/Node Vendor Inventory
- Review <https://metacpan.org/pod/App::Netdisco> installation/configuration guide

LibreNMS features/strengths:

- A more host-centric view
- Good at showing/graphing resource usage
 - Does deep dive using SNMP
 - Includes display of a lot of vendor-specific MIB info
- Back-end code is mostly PHP, and a bit of Python
- Back-end DB is MariaDB (MySQL)
- Fairly portable, but [install instructions](#) only for:
 - Ubuntu 20.04 (nginx or Apache)
 - RHEL / CentOS 8 (nginx or Apache)
 - Debian 11 (nginx only?!)
 - Docker and VM images
- [Old install docs](#) for some older distros (obsolete)

LibreNMS demo:

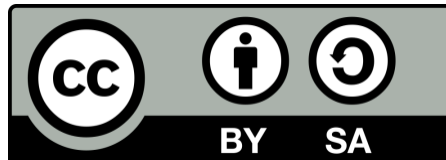
- Public demo: <https://demo.librenms.org/>
 - Overview/Dashboard/Default
 - Overview/Maps/Availability & Overview/Outages
 - Devices/All Devices/Network & .../Server
 - Health/Memory & other tabs...
 - Top (global) tabs vs Device-specific tabs
- “Live” demo (MUUG and UM CS site)
 - Apps/Overview & other tabs...
 - Printers (Health/Count & .../Toner tabs)
 - Raspberry Pi Sensors (Health/State, Hum. & Temp. tabs)
- Review Installation & Config
 - <https://docs.librenms.org/Installation/Install-LibreNMS/>
 - <https://docs.librenms.org/Extensions/Applications/>
 - <https://github.com/librenms/librenms-agent/tree/master/snmp>

Which one is right for you?

- Netdisco if you're a Network Admin
(or most interested in network details)
- LibreNMS if you're a SysAdmin
(or most interested in host-specific details, or
graphs of traffic levels & other resources)
- Ralph:
"I think...both."
- Groundhog Day



Questions?



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