OpenNMS 101

Tarus Balog
tarus@opennms.org
http://www.opennms.org/Training

Module 0: Introduction to OpenNMS

History

- OpenNMS was started in the Summer of 1999
- First Code Contributed to Sourceforge on 30 March 2000
- Maintained by Oculan until May, 2002.
- Maintained by the OpenNMS Group since September, 2004

OpenNMS is the world's first enterprise-grade network management application platform developed under the open source model.

world's first

• NetSaint	2000-01-10	1323
• OpenNMS	2000-03-30	4141
• Zabbix	2001-03-23	23494
• Nagios	2001-05-03	26589
• RRDTool	2003-01-13	71544
• Groundwork	2006-02-21	160654
• ZenOSS	2006-03-20	163126
• Hyperic	2006-07-17	172556

enterprise-grade

OpenNMS was designed from Day One to monitor tens if not hundreds of thousands of devices. Current work is focused on removing those constraints to allow for millions of devices and billions of metrics.

That scalability comes in a number of forms:

- Discrete devices (hundreds of thousands)
- Performance metrics (millions)
- Events per second (thousands)
- Remote monitors (thousands)

application platform

While OpenNMS works “out of the box”, it really starts to shine when you customize it. It is highly configurable and offers a myriad of ways to integrate with other systems.

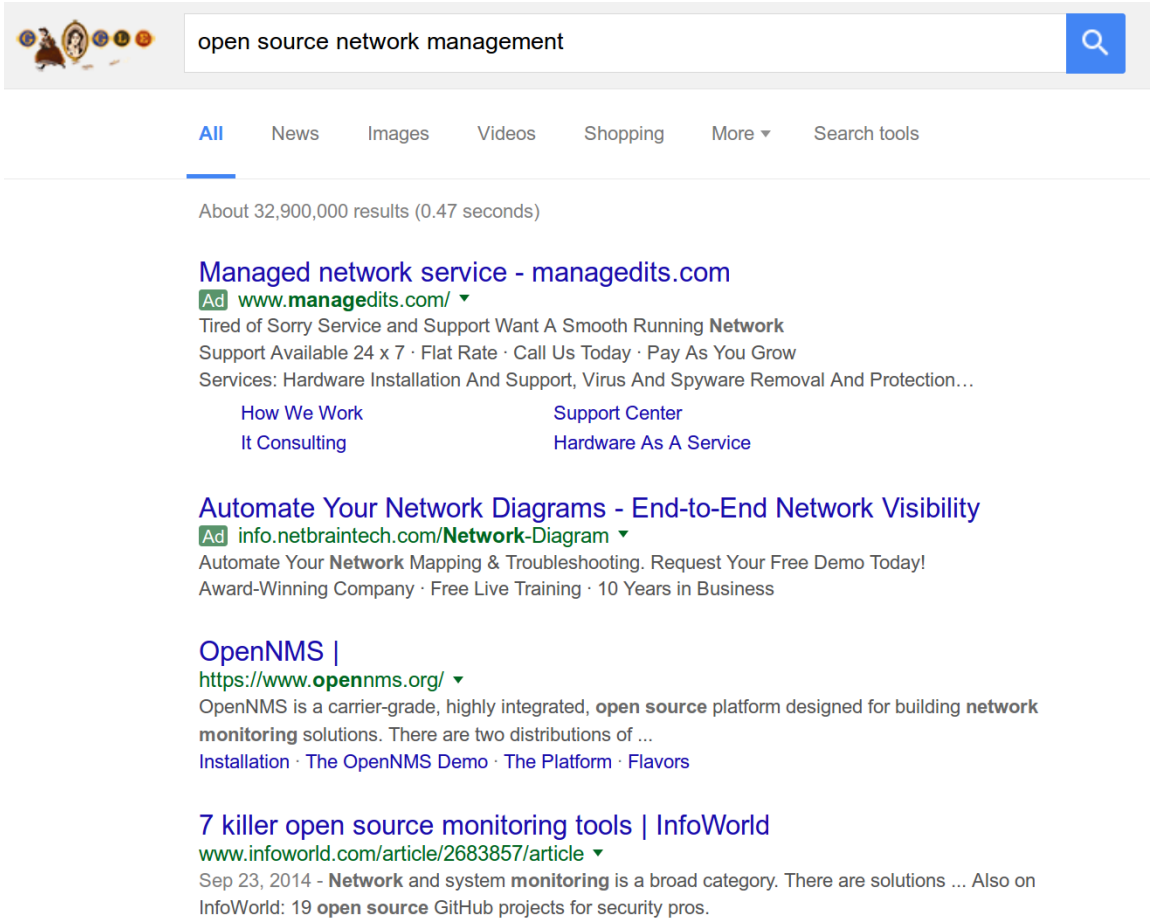
- Full-featured ReST Interface for both configuration and queries, forms the basis for OpenNMS Compass
- Device and event information stored in a database
- Notification system can execute arbitrary commands
- Built-in integration includes
  - RANCID configuration management
  - DNS for provisioning
  - Trouble Ticketing API (RT, Jira, OTRS, Remedy, etc.)

open source

Fully 100% of the OpenNMS source code is available under an Open Source license (as defined by the Open Source Initiative).

The main application is published under the AGPLv3, with various subsystems such as Newts published under more permissive licenses such as the Apache License.

It's the community



What is Network Management?

The term “network management” can be loosely defined as the maintenance and monitoring of computer networks to insure service availability. The formal definition is often referred to as FCAPS:

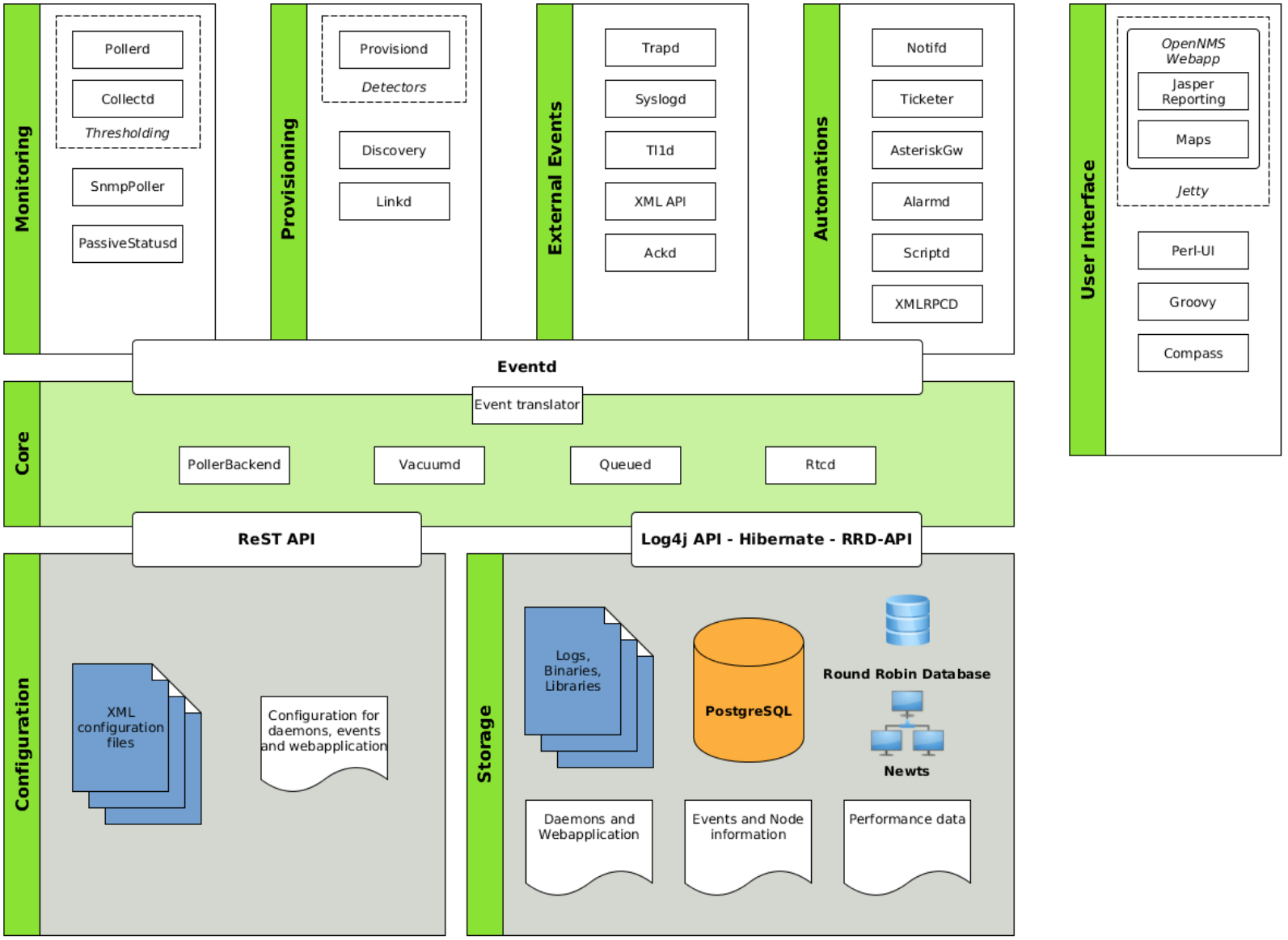
- Fault Management
- Configuration
- Accounting
- Performance Measurement
- Security

The Four Main Areas of OpenNMS

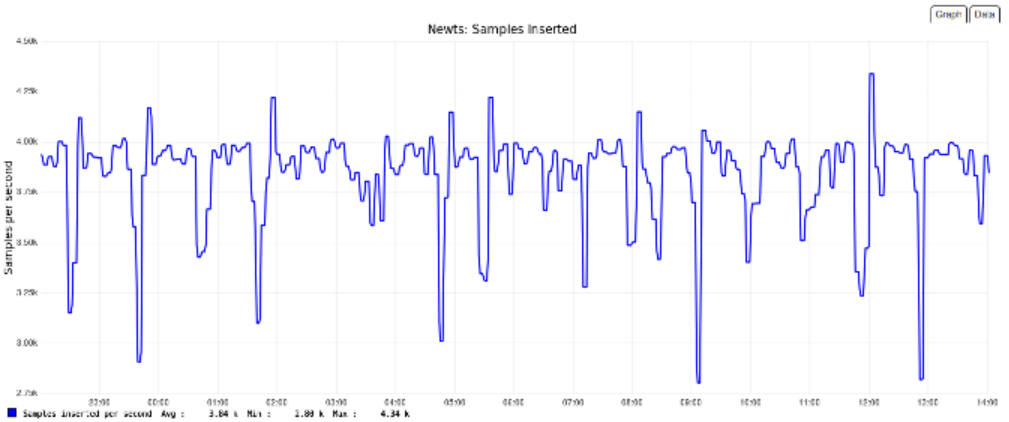
- Event and Notification Management: Generate, receive, enhance, reduce and correlate various network alerts and feed them to a robust notification system.
- Provisioning: Both Automated Discovery and Directed Discovery.
- Service Monitoring: Is a particular network service reachable and available?
- Performance Data Collection: Gather numeric data from across the network for display, trending and thresholding

OpenNMS Versions

	MERIDIAN openNMS	HORIZON openNMS
Target:	Developed for Enterprises and Businesses looking for stable platforms with long term support	The OpenNMS proving grounds where innovation happens quickly to address the requirements for monitoring new technologies and IT ecosystems such as Docker, SDN/NFV, and virtual systems.
Key Words:	Stable, reliable and supported	Powerful, cutting edge with a rapid release cycle.
Development Model:	Open Source	Open Source
License:	AGPLv3 or optional Proprietary License	AGPLv3
Release Interval :	12 months, given release supported for three years.	3-4 months
Support:	Several options available, including access to the OpenNMS Connect forums	Community supported mailing lists and wiki, as well as with the OpenNMS ULTRA support product
Feature Selection:	Features chosen for level of stability, usefulness and quality of integration with existing code	Exploration of new technologies to test value to drive rapid advances in management technology


Monitoring
Pollerd
Collectd
Thresholding
SnmpPoller
PassiveStatusd
Provisioning
Provisiond
Detectors
Discovery
Linkd
External Events
Trapd
Syslogd
Tl1d
XML API
Ackd
Automations
Notifd
Ticketer
AsteriskGw
Alarmd
Scriptd
XMLRPCD
User Interface
OpenNMS Webapp
Jasper Reporting
Maps
Jetty
Perl-UI
Groovy
Compass
Eventd
Event translator
Core
PollerBackend
Vacuumd
Queued
Rtcd
ReST API
Log4j API - Hibernate - RRD-API
Configuration
XML configuration files
Configuration for daemons, events and webapplication
Storage
Logs, Binaries, Libraries
PostgreSQL
Round Robin Database
Newts
Daemons and Webapplication
Events and Node information
Performance data

Newts




```
org.opennms.newts.stress.InsertDispatcher.samples
             count = 10512100
         mean rate = 51989.68 events/second
     1-minute rate = 51906.38 events/second
     5-minute rate = 38806.02 events/second
    15-minute rate = 31232.98 events/second
```

Minion