OpenNMS 101

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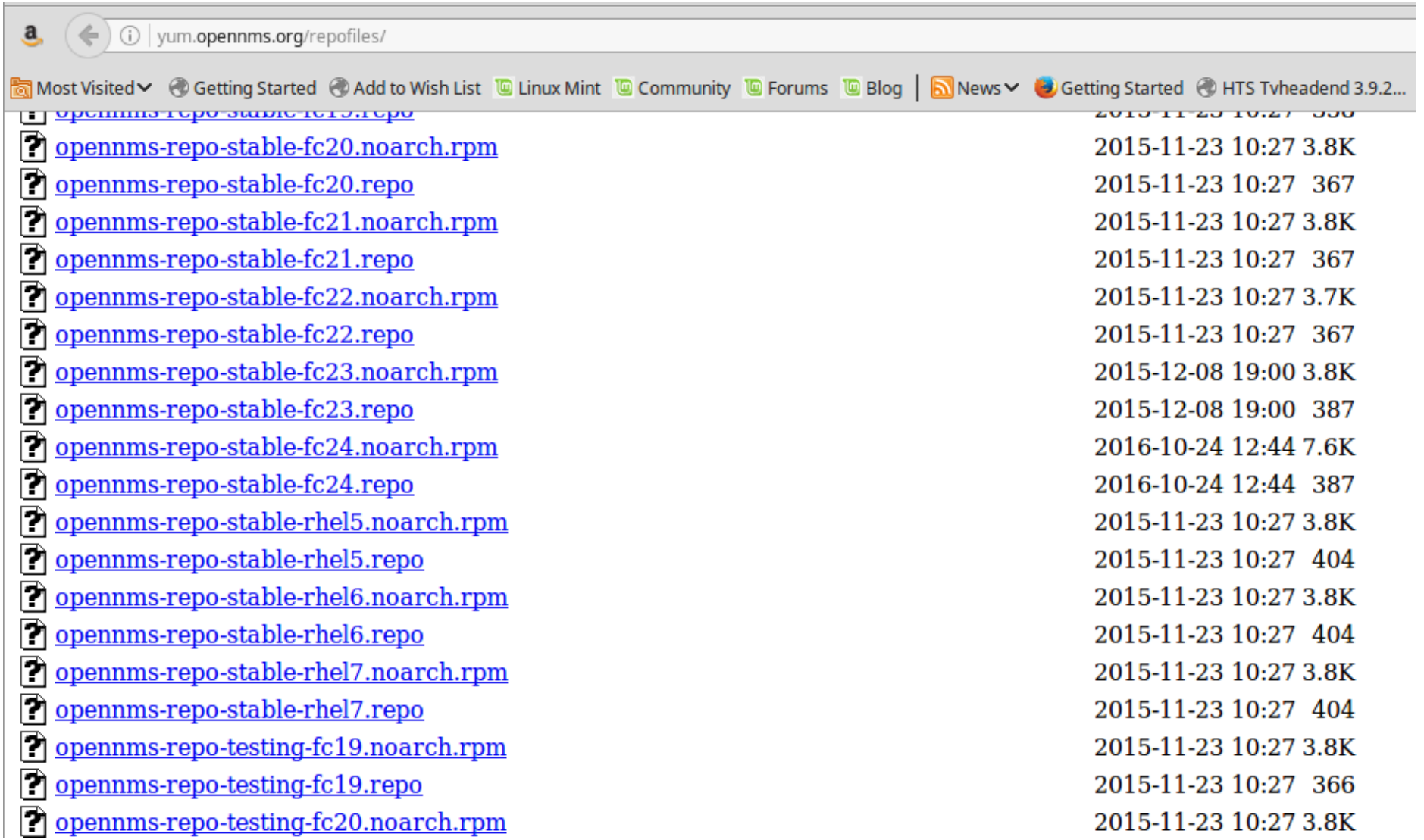
Module 1a: Installation via RPM (RHEL/CentOS)

Meridian vs. Horizon

- Both Require Java
- Both have some C++ code (jicmp, jrrd)
- Horizon – freely available downloads for apt (Debian/Ubuntu) and rpm (RHEL/CentOS)
- Meridian – password protected repository, rpm only (RHEL/CentOS)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Installation Guide

Installation Guide

 OpenNMS 17.0.0, Last updated 2015-12-01 17:26:19 -05:00

1. Basic Installation of OpenNMS

The *OpenNMS* platform can be installed in several ways. This guide describes the installation of the platform on *RHEL*-, *Debian*- and *Microsoft Windows* based operation systems. Installable pre-compiled software packages are provided through *RPM* and *Debian* repository servers. Running *OpenNMS* requires the following components:

- Internet access to download and verify installation packages from public repository server
- Installed Oracle Java 8 environment
- PostgreSQL 9.1+ data base
- Set link to section which describes to install with RRDTool. Optional RRDtool to persist long term performance data

OpenJDK 8 can be used, but for production and critical environments *Oracle Java 8* is recommended.

`${OPENNMS_HOME}` is referred to the path *OpenNMS* is installed to. On *RHEL-based* systems it is `/opt/opennms` on *Debian-based* systems it is `/usr/share/opennms`. The environment in *Microsoft Windows* can refer to `C:\Program Files\opennms`

With the *opennms* meta package all dependencies needed for the components mentioned above are maintained. The following sections describe how to install *OpenNMS* on a single system. Dependencies for *Java* and the *PostgreSQL* data base are maintained with the *opennms* meta installation package.

https://docs.opennms.org/opennms/branches/develop/guide-install/guide-install.html

Setting Up PostgreSQL

First, as root, initialize the database:

```
# sudo postgresql-setup initdb
```

Next, edit /var/lib/pgsql/data/pg_hba.conf:

```
# TYPE  DATABASE        USER            ADDRESS                 METHOD
# "local" is for Unix domain socket connections only
local   all             all                                     trust
# IPv4 local connections:
host    all             all             127.0.0.1/32            trust
# IPv6 local connections:
host    all             all             ::1/128                 trust
```

Finally, start the database and enable it on startup:

```
# sudo systemctl start postgresql
# sudo systemctl enable postgresql
```

Tuning PostgreSQL

Database PostgreSQL [edit]

Shared Buffers [edit]

The default shared_buffers parameter in postgresql.conf is extremely conservative, and in most cases with modern servers, this can be significantly tweaked for a big performance boost, and drop in I/O wait time. This change will need to be in-line with kernel parameter changes to shmmax.

The PostgreSQL project wiki aggregates many good links in its Performance Optimization article. Among others linked from there, see Postgres Wiki tuning page and this PostgreSQL performance page for recommendations on this and other PostgreSQL settings.

If you want to put PostgreSQL on a different box then you want to change the SQL host look in opennms-datasources.xml. The PostgreSQL server will also need iplike installed and configured.

To clean up extra events out of the database try this Event_Configuration_How-To#The_Database

PostgreSQL 9.1 tuning [edit]

Summarized from these blog posts.

For a system that has been running for some time, a good start is to determine what resources are available. Linux systems have a nice SNMP "System Memory Stats" graph to review how system memory is used.

Next, db size can be found:

```
opennms=# select pg_size_pretty(pg_database_size('opennms')) as db_size;
 db_size
---------
 691 MB
(1 row)
```

https://wiki.opennms.org/wiki/Performance_tuning#Database_PostgreSQL_2

Setting Up OpenNMS

First, as root, set the Java version (writes to `/opt/opennms/etc/java.conf`):

```
# /opt/opennms/bin/runjava -s
runjava: Looking for an appropriate JRE...
runjava: Checking for an appropriate JRE in JAVA_HOME...
runjava: skipping... JAVA_HOME not set
runjava: Checking JRE in user's path: "/bin/java"...
runjava: found an appropriate JRE in user's path: "/bin/java"
runjava: value of "/bin/java" stored in configuration file
```

Next, run the installer (creates file `/opt/opennms/etc/configured`):

```
# /opt/opennms/bin/install -dis

=============================================================================
OpenNMS Installer
=============================================================================

Configures PostgreSQL tables, users, and other miscellaneous settings.
                                        . . .
Upgrade completed successfully!
```

Uses of `iplike`

- `iplike` is a stored procedure, installed separately
- It allows for quick IP Address comparisons:
  - Can use wildcards
  - Can use ranges
  - Can use combinations
- Examples:
  - 10.10.1.* (matches all in the 10.10.1.0 subnet)
  - 10.10.1.1-50 (matches the first 50 IP addresses)
  - 10.10.1,5,11-15.* (matches all in the 10.10.1.0, 10.10.5.0 and 10.10.11.0 through 10.10.15.0 networks)
- In psql, use it as `iplike(ipaddr,'pattern')`

Install `iplike` and Start OpenNMS

Finally, install the iplike stored procedure:

```
# yum -y install iplike
runjava: Looking for an appropriate JRE...
runjava: Checking for an appropriate JRE in JAVA_HOME...
runjava: skipping... JAVA_HOME not set
runjava: Checking JRE in user's path: "/bin/java"...
runjava: found an appropriate JRE in user's path: "/bin/java"
runjava: value of "/bin/java" stored in configuration file
```

Next, set up OpenNMS to start automatically on a reboot:

```
# sudo systemctl enable opennms
```

Then start OpenNMS:

```
# sudo systemctl start opennms
```

Open Firewall for port 8980

The OpenNMS web server listens on port 8980. To open that up on CentOS 7:

```
# firewall-cmd --zone=public --add-port=8980/tcp --permanent
success
# firewall-cmd --reload
success
```

Then you should be able to access the web page at:

```
http://localhost:8980/opennms
```