

# OpenNMS 1.8.2

## Quickstart Guide

Quick Install Instructions for OpenNMS



**openNMS**

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### Edition 0

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<sup>1</sup> <http://www.opennms.com>

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Please send any omissions or corrections to this document to Tarus Balog [Tarus@opennms.org](mailto:Tarus@opennms.org)

Installation instructions for OpenNMS. Includes instructions for various system platforms.

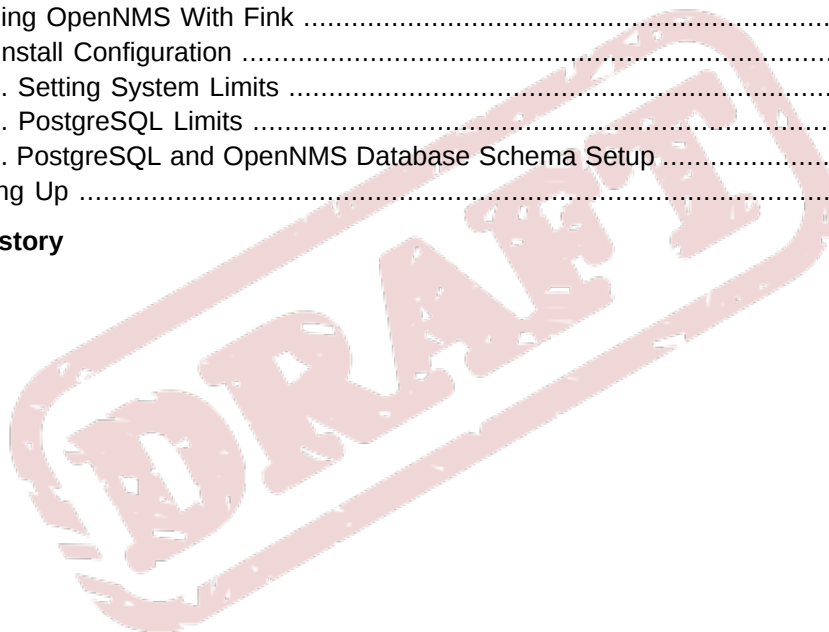
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<b>Preface</b>	<b>vii</b>
1. Document Conventions .....	vii
1.1. Typographic Conventions .....	vii
1.2. Pull-quote Conventions .....	viii
1.3. Notes and Warnings .....	ix
2. We Need Feedback! .....	ix
<b>1. Quickstart Install Instructions for RPM and YUM Based Systems</b>	<b>1</b>
1.1. Preparation .....	1
1.2. Choosing an OpenNMS Release .....	1
1.3. Installing Repository RPMs .....	2
1.4. Installing the PostgreSQL Database Server .....	3
1.5. Configuring PostgreSQL For OpenNMS .....	3
1.6. Installing OpenNMS .....	4
1.7. OpenNMS Post-Install Configuration .....	4
<b>2. Quickstart Install Instructions for Mac OS X</b>	<b>7</b>
2.1. Preparation .....	7
2.2. Installing OpenNMS With Fink .....	7
2.3. Post-Install Configuration .....	7
2.3.1. Setting System Limits .....	7
2.3.2. PostgreSQL Limits .....	8
2.3.3. PostgreSQL and OpenNMS Database Schema Setup .....	8
2.4. Starting Up .....	8
<b>A. Revision History</b>	<b>11</b>
<b>Index</b>	<b>13</b>



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# Preface

## 1. Document Conventions

This manual uses several conventions to highlight certain words and phrases and draw attention to specific pieces of information.

In PDF and paper editions, this manual uses typefaces drawn from the [Liberation Fonts](https://fedorahosted.org/liberation-fonts/)<sup>1</sup> set. The Liberation Fonts set is also used in HTML editions if the set is installed on your system. If not, alternative but equivalent typefaces are displayed. Note: Red Hat Enterprise Linux 5 and later includes the Liberation Fonts set by default.

### 1.1. Typographic Conventions

Four typographic conventions are used to call attention to specific words and phrases. These conventions, and the circumstances they apply to, are as follows.

#### Mono-spaced Bold

Used to highlight system input, including shell commands, file names and paths. Also used to highlight keycaps and key combinations. For example:

To see the contents of the file **my\_next\_bestselling\_novel** in your current working directory, enter the **cat my\_next\_bestselling\_novel** command at the shell prompt and press **Enter** to execute the command.

The above includes a file name, a shell command and a keycap, all presented in mono-spaced bold and all distinguishable thanks to context.

Key combinations can be distinguished from keycaps by the hyphen connecting each part of a key combination. For example:

Press **Enter** to execute the command.

Press **Ctrl+Alt+F1** to switch to the first virtual terminal. Press **Ctrl+Alt+F7** to return to your X-Windows session.

The first paragraph highlights the particular keycap to press. The second highlights two key combinations (each a set of three keycaps with each set pressed simultaneously).

If source code is discussed, class names, methods, functions, variable names and returned values mentioned within a paragraph will be presented as above, in **mono-spaced bold**. For example:

File-related classes include **filesystem** for file systems, **file** for files, and **dir** for directories. Each class has its own associated set of permissions.

#### Proportional Bold

This denotes words or phrases encountered on a system, including application names; dialog box text; labeled buttons; check-box and radio button labels; menu titles and sub-menu titles. For example:

Choose **System** → **Preferences** → **Mouse** from the main menu bar to launch **Mouse Preferences**. In the **Buttons** tab, click the **Left-handed mouse** check box and click

<sup>1</sup> <https://fedorahosted.org/liberation-fonts/>

**Close** to switch the primary mouse button from the left to the right (making the mouse suitable for use in the left hand).

To insert a special character into a **gedit** file, choose **Applications** → **Accessories** → **Character Map** from the main menu bar. Next, choose **Search** → **Find...** from the **Character Map** menu bar, type the name of the character in the **Search** field and click **Next**. The character you sought will be highlighted in the **Character Table**. Double-click this highlighted character to place it in the **Text to copy** field and then click the **Copy** button. Now switch back to your document and choose **Edit** → **Paste** from the **gedit** menu bar.

The above text includes application names; system-wide menu names and items; application-specific menu names; and buttons and text found within a GUI interface, all presented in proportional bold and all distinguishable by context.

### ***Mono-spaced Bold Italic*** or ***Proportional Bold Italic***

Whether mono-spaced bold or proportional bold, the addition of italics indicates replaceable or variable text. Italics denotes text you do not input literally or displayed text that changes depending on circumstance. For example:

To connect to a remote machine using ssh, type **ssh *username@domain.name*** at a shell prompt. If the remote machine is **example.com** and your username on that machine is john, type **ssh *john@example.com***.

The **mount -o remount *file-system*** command remounts the named file system. For example, to remount the **/home** file system, the command is **mount -o remount */home***.

To see the version of a currently installed package, use the **rpm -q *package*** command. It will return a result as follows: ***package-version-release***.

Note the words in bold italics above — *username*, *domain.name*, *file-system*, *package*, *version* and *release*. Each word is a placeholder, either for text you enter when issuing a command or for text displayed by the system.

Aside from standard usage for presenting the title of a work, italics denotes the first use of a new and important term. For example:

Publican is a *DocBook* publishing system.

## 1.2. Pull-quote Conventions

Terminal output and source code listings are set off visually from the surrounding text.

Output sent to a terminal is set in **mono-spaced roman** and presented thus:

```
books      Desktop  documentation  drafts  mss    photos  stuff  svn
books_tests Desktop1  downloads      images  notes  scripts  svgs
```

Source-code listings are also set in **mono-spaced roman** but add syntax highlighting as follows:

```
package org.jboss.book.jca.ex1;
```

```
import javax.naming.InitialContext;

public class ExClient
{
    public static void main(String args[])
        throws Exception
    {
        InitialContext iniCtx = new InitialContext();
        Object          ref    = iniCtx.lookup("EchoBean");
        EchoHome        home   = (EchoHome) ref;
        Echo             echo   = home.create();

        System.out.println("Created Echo");

        System.out.println("Echo.echo('Hello') = " + echo.echo("Hello"));
    }
}
```

### 1.3. Notes and Warnings

Finally, we use three visual styles to draw attention to information that might otherwise be overlooked.



#### Note

Notes are tips, shortcuts or alternative approaches to the task at hand. Ignoring a note should have no negative consequences, but you might miss out on a trick that makes your life easier.



#### Important

Important boxes detail things that are easily missed: configuration changes that only apply to the current session, or services that need restarting before an update will apply. Ignoring a box labeled 'Important' won't cause data loss but may cause irritation and frustration.



#### Warning

Warnings should not be ignored. Ignoring warnings will most likely cause data loss.

## 2. We Need Feedback!

If you find a typographical error in this manual, or if you have thought of a way to make this manual better, we would love to hear from you. Please submit a report in our Bugzilla system: <http://bugzilla.opennms.org>.

Make sure to file against the problems in this manual against the Documentation component of the OpenNMS product, and to mention the identifier of this book: *Quickstart\_Guide*

If you prefer to not use Bugzilla, or have a concern which requires a different level of feedback, you can also:

- Subscribe to one of the many [OpenNMS Email Discussion Lists](#)<sup>2</sup>
- Chat with us on IRC at [irc.freenode.net](http://irc.freenode.net) in the #opennms channel.
- Call, Write, Skype or Fax The OpenNMS Group's Commercial Support. Details for contacting The OpenNMS Group, Inc. can be found at the [Contact Us Form](#)<sup>3</sup> on their website.



# Quickstart Install Instructions for RPM and YUM Based Systems

These instructions cover installation for Linux distributions that make use of the Yum packaging system. Some distributions that make use of this packaging system include Fedora®, Red Hat Enterprise Linux® and CentOS.

Installing a YUM package puts a permanent repository reference into the system the package is installed on. This allows the administrator of the machine to have an upgrade path for future OpenNMS releases. You may choose to disable the repository after installation to disable this feature.

The YUM packaging system will also attempt to resolve any dependencies required by a package and install them as well. For instance, installing the **opennms-plugins.noarch** package will attempt to install **opennms-plugin-provisioning-link.noarch**, **opennms-plugin-provisioning-map.noarch** and other dependencies as well.



## Installing on RHEL 4

If you want to use Yum on Red Hat Enterprise Linux 4 instead of **uptodate**, see the *Yum Installation on RHEL 4*<sup>1</sup> on the OpenNMS.org wiki.

## 1.1. Preparation

Before you begin, you may want to install the YUM **fastestmirror** package if it is supported by your platform. This package will attempt to optimize your selection of download mirrors to provide the best speeds possible. Fully deploying and administering this package is outside the scope of this document, instead refer to the *fastestmirror*<sup>2</sup> documentation on the CentOS wiki site.

## 1.2. Choosing an OpenNMS Release

The OpenNMS Community makes four builds of the OpenNMS software platform available through YUM repositories. These builds vary in purpose, from deployment ready to developer specific to those who wish to live on the cutting edge.

### OpenNMS Build Releases

#### stable

The latest officially released stable version of OpenNMS. Current stable version is 1.8.2. If you are putting OpenNMS into a production environment for daily use, this is the recommended version install.

#### unstable

The latest officially released development version of OpenNMS. This may have more features than the stable version, but it may also contain bugs that have yet to be discovered or triaged.

#### testing

A nightly build of the code that will be part of the next stable version of OpenNMS.

<sup>2</sup> <http://wiki.centos.org/PackageManagement/Yum/FastestMirror>

snapshot

A nightly build of the very latest development version of OpenNMS.

## 1.3. Installing Repository RPMs

To allow your system to fetch the OpenNMS packages from the OpenNMS YUM repository, you must first install the appropriate package from the [OpenNMS YUM Repository site](http://yum.opennms.org)<sup>3</sup>. Choose the release you want to use and then install the distribution-specific RPM package appropriate for your platform.

To install this package, type: `su -c 'rpm -Uvh package_url'` at a shell prompt. If the package you wish to install is located at <http://yum.opennms.org/repofiles/opennms-repo-stable-fc13.noarch.rpm>, type: `su -c 'rpm -Uvh http://yum.opennms.org/repofiles/opennms-repo-stable-fc13.noarch.rpm'`.

Once you've installed the distribution-specific RPM package of your choice, a query of the YUM database should show OpenNMS as an available install option when you check `yum search opennms`:

```
[user@opennms ~]$ yum search opennms
Loaded plugins: fastestmirror
Excluding Packages from CentOS-5 - Base
Finished
Excluding Packages from CentOS-5 - Updates
Finished
===== Matched: opennms =====
mib2opennms.i386 : Generate OpenNMS Events from MIB Traps
mib2opennms.x86_64 : Generate OpenNMS Events from MIB Traps
opennms.noarch : Enterprise-grade Network Management Platform (Easy Install)
opennms-core.noarch : The core OpenNMS backend.
opennms-docs.noarch : Documentation for the OpenNMS network management platform
opennms-plugin-provisioning-dns.noarch : DNS Provisioning Adapter for OpenNMS
opennms-plugin-provisioning-link.noarch : Link Provisioning Adapter for OpenNMS
opennms-plugin-provisioning-map.noarch : Map Provisioning Adapter for OpenNMS
opennms-plugin-provisioning-rancid.noarch : RANCID Provisioning Adapter for OpenNMS
opennms-plugin-ticketer-centric.noarch : OpenNMS Trouble-Ticketer Plugin: CentricCRM
opennms-plugins.noarch : All Plugins for OpenNMS
opennms-remote-poller.noarch : Remote (Distributed) Poller for OpenNMS
opennms-repo-stable.noarch : Yum repository files for stable/rhel5 OpenNMS
opennms-webapp-jetty.noarch : Embedded web interface for OpenNMS
opennms-webapp-standalone.noarch : Standalone web interface for OpenNMS
```



### Systems with Older Versions of YUM

Some older versions of `yum` do not recognize `/etc/yum.repos.d/` as a valid location for YUM repositories, which will make the command above not return any results. In this case you will need to append the OpenNMS repositories to the end of `/etc/yum.conf` by typing `su -c 'cat /etc/yum.repos.d/* >> /etc/yum.conf'` at a command prompt to ensure YUM is able to fetch the packages from the OpenNMS repository.

<sup>3</sup> <http://yum.opennms.org>



### Prematurely Installing OpenNMS Packages

While the OpenNMS packages are now available for installing, doing so before following the next steps will result in an unoptimized database configuration.

## 1.4. Installing the PostgreSQL Database Server

While YUM will install the PostgreSQL packages automatically, there are several reasons to install PostgreSQL prior to your OpenNMS installation:

- Installing PostgreSQL first will result in an optimized IPLIKE stored procedure for your OpenNMS database, greatly improving performance.
- Your Linux distribution may ship with a version of PostgreSQL that may not have the optimizations and features of a later version of PostgreSQL. Later versions of PostgreSQL ship with maintenance features turned on by default, which greatly help with maintenance of the OpenNMS database after deployment. For more information on this topic, see the [Configuring YUM<sup>4</sup>](#) section of the [commandprompt.com](#) wiki.

To install PostgreSQL from your distribution's official sources, type: `su -c 'yum -y install postgresql-server'` as root or a user with root privileges at a command prompt.

After successful installation of the PostgreSQL server you will need to initialize the database with `su -c 'service postgresql initdb'`, then start the database with `su -c 'service postgresql start'`. To ensure this configuration is persistent upon a reboot of the server, type: `su -c 'chkconfig postgresql on'` at the command prompt.

## 1.5. Configuring PostgreSQL For OpenNMS

OpenNMS needs to be able to connect to PostgreSQL as the `postgres` user over a TCP/IP connection by default.

To allow OpenNMS to connect to the database, you will need to edit your database's `pg_hba.conf` file. Consult your distribution's PostgreSQL documentation for the location of this file.

By default `pg_hba.conf` should have entries similar to the following at the bottom of the file:

```
local all all ident sameuser
host all all 127.0.0.1/32 ident sameuser
host all all ::1/128 ident sameuser
```

You will need to change these entries to the following:

```
local all all trust
host all all 127.0.0.1/32 trust
host all all ::1/128 trust
```

Next, you will need to edit `postgresql.conf` to accept TCP/IP connections. As with `pg_hba.conf`, check your distribution's PostgreSQL documentation for the location of this file, by default they should be in the same location. Depending on your version of PostgreSQL, the directive in the configuration may be `tcpip_socket` or `listen_addresses` within the `postgresql.conf` file. Configuration file

comments will indicate whether you need to uncomment this to make the daemon listen or what you may need to change this parameter to. Make the appropriate changes, save your file, and quit your editor.

To apply the changes you've made to the PostgreSQL configuration, you will need to restart it with **su -c 'service postgresql restart'**

Lastly, to create the database for OpenNMS to use, as the root user type: **su - postgres -c 'createdb -U postgres -E UNICODE opennms'** at the command prompt.

## 1.6. Installing OpenNMS

With all the prerequisites taken care of, you can now install OpenNMS. The OpenNMS software is not a single package, but a combination of many components. The YUM packaging system will download and install all of these components and their dependencies, such as the Java environment and others if they are not already configured on your system.

There are many packages available in the OpenNMS YUM repository, but as this is a quick start, we will install the one package that will provide everything you need to get started. To install this package type: **su -c 'yum install opennms'**. If you are on a fast connection and have setup the YUM `fastestmirror` plugin, this will take just a few moments to download the packages required and proceed to installing them.



### Disabling the OpenNMS Repository

Some distributions that use YUM/RPM as a package manager will attempt an automatic `yum update` at regular intervals. A system administrator might also run a manual `yum update` and inadvertently upgrade the OpenNMS causing misconfiguration or complete failure. To avoid these scenarios, disable the OpenNMS repositories after successful installation by adding `enabled=0` to the files matching `/etc/yum.repos.d/opennms*`.

## 1.7. OpenNMS Post-Install Configuration

Now that OpenNMS is installed on your system, there are a few tasks to complete before starting the service.

First, OpenNMS needs to which Java JDK it needs to take advantage of. To set this and persist the setting, run: **su -c '/opt/opennms/bin/runjava -s'**. Running this command will search through your system for possible Java environments to use and select the best one for OpenNMS to use.

Next, you will need to run the OpenNMS installer which will bootstrap your database and initialize the system to prepare for operation. Depending on your system's hardware, this could take anywhere from a few moments to a few minutes. If the installer cannot proceed for some reason, or there is a problem with the system configuration, the installer will do its best to tell you what is wrong and how to remedy it. If the installer does not provide a remedy for your situation, consult the sources in the [Feedback](#) section of the [Preface](#).

Once the installer is complete, you can start OpenNMS. To start OpenNMS on most systems that use YUM, type: **su -c 'service opennms start'**. If you wish to have OpenNMS started at

boot-time, you will need to set this with **chkconfig**. On most systems, use **su -c 'chkconfig opennms on'** to have OpenNMS started at boot time.

You can now login to your OpenNMS instance at **<http://your-server-address:8980/opennms/>**.

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# Quickstart Install Instructions for Mac OS X

Installation of OpenNMS is supported on Mac OS X via the [Fink Project](http://www.finkproject.org)<sup>1</sup>, a package manager for Mac OS X. This quickstart assumes you are comfortable using a terminal and a text editor.



## While it is possible...

While it is possible to install OpenNMS on this platform using other methods, the developers of OpenNMS make the Fink packages available directly to the Fink repositories. By using this package you are choosing the same method they use to install and maintain a running instance of OpenNMS.

## 2.1. Preparation

Installing the Fink package manager is outside the scope of this document, but instructions can be found at <http://www.finkproject.org/doc/bundled/install.php>.

Once Fink is installed on your target system, you must configure it to use the `unstable` repository. Edit `/sw/etc/fink.conf`, and add the `unstable` package repositories to the `Trees` line so it resembles the following example:

```
Trees: local/main stable/main stable/crypto unstable/main unstable/crypto
```

After completing the edits, you will need to update Fink with the new configuration by typing `fink selfupdate-rsync` and then `fink scanpackages` in a terminal window.

## 2.2. Installing OpenNMS With Fink

Installing OpenNMS from Fink will also install all of its dependencies if they are currently not installed. Currently, OpenNMS this means that the `jicmp`, `opennms-pgsql`, `postgresql-server`, `rrdtool`, and `rrdtool-java` packages will be installed when you install OpenNMS.

Installing OpenNMS requires first typing `fink selfupdate-rsync` in a terminal window (a best practice before installing any package), then subsequently running the `fink install opennms` in the terminal.

## 2.3. Post-Install Configuration

Even though the packages are installed, some configuration is still necessary before starting OpenNMS

### 2.3.1. Setting System Limits

You will need to create a `/etc/sysctl.conf` to define some shared memory limits. Create `/etc/sysctl.conf` with the following contents:

<sup>1</sup> <http://www.finkproject.org>

```
kern.maxfiles=65536
kern.sysv.shmmax=16777216
kern.sysv.shmmin=1
kern.sysv.shmmni=128
kern.sysv.shmseg=32
kern.sysv.shmall=4096
```

You can now reboot your system to make these changes take effect.

### 2.3.2. PostgreSQL Limits

After the changes in `/etc/sysctl.conf` have been put into effect, you will want to edit `postgresql.conf` *find the default full path to this* to allow connections to be made to the database, increase the maximum amount of connections that can be made to the database and change a memory constraint.

Make sure the following items are set in `postgresql.conf`:

```
listen_addresses = 'localhost'
max_connections  = 192
shared_buffers   = 3072kB
```

If PostgreSQL has already been started, you will need to restart it to make the changes take effect. To restart, type `pgsql.sh restart` *find the full path to this* in a terminal. If you have not yet started PostgreSQL, this should also start it.

### 2.3.3. PostgreSQL and OpenNMS Database Schema Setup

Now that PostgreSQL is running, create the user that OpenNMS will use to connect to the database by typing `sudo @PREFIX@/bin/createuser -s -d -r -l -e -U postgres opennms` *need another full path* in a terminal.

With the user created, you can now use the OpenNMS installer to create the database and bootstrap OpenNMS. Type `sudo @PREFIX@/var/opennms/bin/install -disU -u opennms` to start this process. Errors reported by the installer should also include basic instructions on what needs to be done, if not, consult the the sources in the Feedback section or visit the OpenNMS wiki at <http://www.opennms.org>.



#### IPLIKE Compatibility

Note that the `iplike-pgsqlXX` package must match the version of PostgreSQL you have installed through fink, or the installer will fail.

## 2.4. Starting Up

With configuration complete, you can start OpenNMS:

```
sudo @PREFIX@/bin/pgsql.sh start
sudo @PREFIX@/bin/opennms start
```

To have PostgreSQL and OpenNMS start on boot, you can use **daemonic** which was installed as a dependency to OpenNMS if you installed with Fink. Type **sudo daemonic enable postgresqlXX** where *XX* is the version of PostgreSQL installed by Fink to have it start on boot. Likewise, type **sudo daemonic enable opennms** to have it activated at boot time as well.

If all steps have been successful, you can now login to **<http://your-machine-ip:8980/opennms>** and login as admin with the default password of admin.

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# Appendix A. Revision History

Revision 0 Thu Aug 9 2010

Mike Danko [mike@14m3.com](mailto:mike@14m3.com)

Initial creation of book by publican



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# Index

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contact information for this manual, ix



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