

Linuxha.net
Additional Installation Notes for
Redhat Enterprise Linux v4, CentOS v4 & Scientific Linux v4

This document should be used in conjunction with the standard installation guide and provides additional information which should be used to ensure the software works as expected on the above mentioned distributions.

Revision History

Version	Date	Author	Change Summary
1.0.0	19th March 2005	S. Edwards	Initial version

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1 Preface

1.1 Introduction

The purpose of this document is to describe any differences in the installation process of Linuxha.net that must be followed when performing an installation on Redhat Enterprise Linux version 4 or distributions based on it - such as Scientific Linux version 4.

This is not a complete installation guide - a generic installation guide is available separately - please ensure that this is read first - prior to reading this document or attempting an installation.

The software is still undergoing revisions and refinements to both add functionality and more importantly fix any remaining bugs. The most recent version of the software and this document are available from the author's web site.

<http://www.linuxha.net//index.pl?ARGS=findproject:linuxha>

It is recommended that you visit the site for the latest available news, software and articles on "Linuxha.net" prior to undertaking any cluster configuration based on this software.

1.2 Document Organization

This document is broken down into the following sections:

Part 1 – *Document overview* – contains information on the purpose of this document, the intended audience, why it should be read and conventions the document attempts to follow.

Part 2 – *Basic Operating Environment Configuration* – summarizes the type of installation that was made as an example of what might be used for a typical deployment of this software on the distributions mentioned. It also mentioned required packages that need to be installed.

Part 3 – *Linuxha.net Package Installation* – covers differences in the installation process compared to the general installation guide. In particular it covers creation of a suitable kernel to ensure that the DRBD module can be built and used.

1.3 Intended Audience

It is expected that the administrator responsible installation of the sample Linux operating systems is experienced in either UNIX or Linux system administration. Although all differences compared to the standard installation are described in detail it is possible that the actual steps necessary may deviate slightly from the text. In such cases the author will respond to requests for help; but sometimes knowledge of the operating system may provide the administrator with enough information to work

through such problems.

1.4 Conventions

When entering a command that should be run as “root”, the start of the command will be preceded by a “#”, for example:

```
# clstat
```

When the command can be entered by a non-root user then the commands will be prefixed with a “\$” instead, for example:

```
$ ps -ef | grep cld daemon
```

Any output generated by commands is shown with the same font, but with a slightly different background colour, for example:

```
Cluster: cluster2 - DOWN
```

If a point is of particular interest it will be shown as a note, highlighted as follows:

 This is a important consideration of which you should be aware.

If a point is considered critically important it will appear as follows:

 If you ignore this you might lose all data.

1.5 Request for Feedback

This documentation and the associated software is available for free under the GNU GPL software license. However it would be a great benefit to the author and other potential users if the administrator following this text is able to send details of their experiences (good or bad) to the following address:

simon.edwards@linuxha.net

All feedback is confidential and will be used purely to help improve the documentation and software.

1.6 Software Versions Covered

This document is based on experiences of using Linuxha.net version 0.8.5. It will be updated to reflect changes in later releases when possible.

1.7 Understanding Linuxha.net Releases

Due to the limit resources it is not possible to test every release of Linuxha.net against against every potentially supported configuration. However certain releases are tested more thoroughly than others:

- x.x.0 The “.0” releases, such as 0.8.0 tend to be tested the most. Although this does not guarantee that all functionality across all operating system versions has been tested, it does mean that such versions are less likely to suffer from unknown bugs or lack of functionality.
- x.x.n These “minor” releases are used to fix bugs or problems either currently outstanding from prior to the last major release, or newly found problems with the last major release. The intention is to expose this new functionality to environments for as much testing as possible - and hence installation of such releases should be performed with caution.

It has been noted that this release approach is not ideal. However a saner approach is likely once version 1.0.0 has been released.

The version of the “linuxha_apache” package used for this installation is “0.7.0”.

2 Basic Operating Environment Configuration

2.1 Operating System Configuration

A standard type installation was chosen - of type "server" . The additional components that were installed over the defaults were;

- *Scientific Linux Sections* - the "ksh93" option - which provides the standard Korn Shell from <http://www.kornshell.com> was included.
- *Development Tools* - this is necessary since the Linuxha.net installation requires that the compilation of a kernel module as well as several Perl modules that come in source only.

The reset of the installation was left alone. The total space occupied by this server-type installation was just under 1.5Gb - all of which was stored in a single "/" file system using "ext3".

Basic X software was also installed, but not Gnome or KDE - meaning a standard run-level of 3 was chosen automatically.

2.2 Disk Partitioning

This has little bearing on the installation and use of Linuxha.net. In this instance the following partition table configuration was used:

Mount Point / Type	Size	Notes
/	3Gb	All software and temporary work space allocated to a single file system since only a demo environment.
Swap Space	256 Mb	Only a small Apache configuration - hence little memory or swap was required.
LVM Physical Volume	750 Mb	A single physical volume was set aside since only a single Linuxha.net package was intended to be installed (at least on the root disk).

2.3 Additional RPM Packages to Install

Unfortunately versions of Linuxha.net currently available do not yet come available as native packages, (since the stable "1.0.0" releases are not yet out). Hence the "tar packages" utility set provides the easiest way to install and manage the Linuxha.net software. These utilities are cross-platform and make use of the Korn Shell.

Unfortunately RHEL4 does not come with either Ksh93 or Zsh, and so either must be installed. Since the development environment must be installed anyway for this example Zsh installation will be used. (Note SL4 already comes with Ksh93 and hence this section can be skipped).

Download the latest source from the following local:

www.zsh.org

The file is typically called “zsh.tar.gz” and currently is approximately 2.5Mb in size. Once downloaded file exists in “/tmp” on the RHEL4 server, use the following commands to build and install the shell:

```
# cd /tmp
# tar xvzf zsh.tar.gz
# cd zsh-4.2.4/
# ./configure --prefix=/usr/local
```

Once the configuration stage has completed build and install the program:

```
# make && make install
```

To ensure the “/usr/bin/ksh” link makes use of zsh:

```
# rm /usr/bin/ksh
# ln -s /usr/local/bin/zsh /usr/bin/ksh
```

The alternative approach is to either install Zsh or Ksh93 - see the main installation guide for further details of installation. At this point the “Tarp” utility set can be installed as described in the standard Installation Guide.

Also remember to reclaim the space in “/tmp” from the Zsh build;

```
# cd /tmp
# rm -rf zsh-4.2.4
```

At this point for RHEL3 it was necessary to install the kernel sources - for RHEL4 these appear to be installed by default.

3 Linuxha.net Package Installation

3.1 Install Linuxha.net Package

Unlike the RHEL3/SL3 environments no special build steps are necessary, simply run the following on each host, as described in the standard installation manual.

```
# cd /tmp
# tpininstall -i -p linuxha -v
```

The above commands assume that the “linuxha” package for the current release has been copied to the “/tmp” directory ready for installation.

The post-installation script might take some time to run - please double check the output from both the “stdout” and “stderr” files (if generated). These are used to determine whether the post installation script completed successfully.

The remaining installation, customization and configuration of the software are as described in the general installation guide. The only remaining differences from the standard installation document is the manual page configuration. Apart from adding the “1m” section to the list of the allowable sections the following line must also be added to the “/etc/man.config” file:

```
MANPATH /usr/local/cluster/man
```

This setting means that the “.bashrc” or “.profile” or “.kshrc” as referenced in the standard installation guide do not need to include a list modifying the MANPATH setting.

4 Other Points

No other points are pertinent to the build of Linuxha.net on RHEL4 or comparable environments.