

# Notes for Installing RedHawk 6.3 with Red Hat Enterprise Linux 6.3

## Installation Notes

November 6<sup>th</sup>, 2014



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# 1. Introduction

This document assists the user in installing the RedHawk 6.3 operating system onto a Red Hat Enterprise Linux 6.3 distribution (RHEL 6.3). The directions in this document supersede all others – they are specific to installing the software on Concurrent Computer Corporation’s RedHawk systems. Other information provided as part of this release, when it may contradict Concurrent’s directions, should be ignored and Concurrent’s directions in this document should prevail.

## 2. Requirements

You will need these resources to install RedHawk 6.3 onto a RHEL 6.3 distribution:

- A RHEL 6.3 Installation DVD or ISO downloaded from the Red Hat Network
- RedHawk Revision 6.3 DVDs for x86 or x86\_64
- The *RedHawk Release Notes* document for RedHawk 6.3
- The `recommended-pkgs.txt` file that matches your RHEL 6.3 software

If you do not already have a RHEL 6.3 Installation DVD or ISO, you will also need:

- A current and valid Red Hat Network account login ID and password
- An external Internet connection with access to the Red Hat Network

### NOTE

*Upgrades from RedHawk 6.0 are not supported by the procedures described in this document.*

## 3. Overview

RedHawk Linux now comes with CentOS Linux DVDs, however installing RedHawk with RHEL DVDs is also supported by Concurrent. This document explains the various steps required to set up a RHEL 6.3 system properly and then install RedHawk 6.3 onto that system.

### NOTE

*If you already have a RHEL 6.3 Installation DVD or ISO, you can skip directly to Section 5, “Install RHEL 6.3,” below and begin the RHEL 6.3 installation.*

## 4. Download the RHEL 6.3 Installation ISO

This section outlines several manual steps that you will need to perform over the Internet in order to download a RHEL 6.3 ISO image from the Red Hat Network.

### 4.1. Establish a Red Hat login

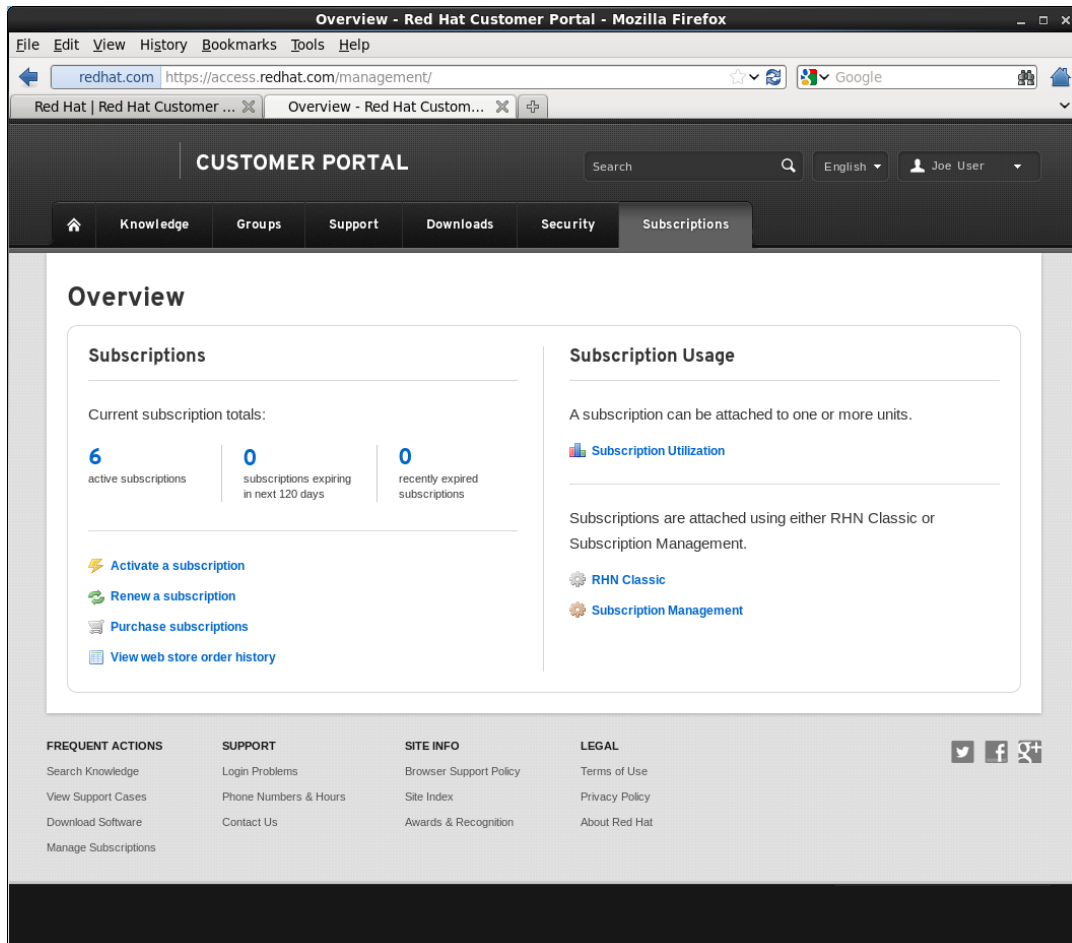
If you do not already have a Red Hat login you will need to create one via the Red Hat Customer Portal website. Navigate a web browser to the following URL:

<http://access.redhat.com>

Click the Register link at the upper right of the page. If you already have a login you can also click the Log In link and simply enter your existing login information.

## 4.2. Purchase a Red Hat support subscription

Once you are logged into the Red Hat Customer Portal click on the Subscriptions tab and select the Overview link. You should see a page similar to the following example displayed:



The above example page indicates that 6 active subscriptions have been purchased and associated with this Red Hat login.

If you have active subscriptions that have not yet been attached to systems then you may proceed to the next section, otherwise you will need to click on the Purchase subscriptions link on this page to purchase a subscription. To determine how many active subscriptions have already been attached to systems, click on the RHN Classic link to view the subscription management page:

## Systems

Filter by System:

1 - 5 of 5 (0 selected)

<input type="checkbox"/>	Updates	Errata	Packages	System	Base Channel	Entitlement
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	angelina	Red Hat Enterprise Linux Workstation (v. 6 for 32-bit x86)	Management
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	erector	Red Hat Enterprise Linux Workstation (v. 6 for x86_64)	Management
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	llama	Red Hat Enterprise Linux Workstation (v. 6 for 32-bit x86)	Management
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	mango	Red Hat Enterprise Linux Workstation (v. 6 for x86_64)	Management
<input type="checkbox"/>	<input checked="" type="checkbox"/>	0	0	selena	Red Hat Enterprise Linux Workstation (v. 6 for 32-bit x86)	Management

1 - 5 of 5 (0 selected)

In this example, only five active subscriptions have been attached to systems, so one active subscription is still available and can be attached to the machine that will be installed with RedHawk.

RedHawk 6.3 can be installed upon both RHEL Workstation and RHEL Server. If you need to purchase a new subscription, choose the subscription type and support-level that is the most appropriate for your site and installation.

### 4.3. Download the RHEL 6.3 DVD ISO

Before you can install RedHawk 6.3, you must first install RHEL 6.3 on the system, which requires that you download an appropriate RHEL installation DVD ISO from the Red Hat Customer Portal. To download the ISO, click on the “Downloads” tab and select the “Downloads” link, and you will see a list of Red Hat product categories. For RedHawk 6.3 the interesting categories are shown here:

- [Red Hat Enterprise Linux Server \(v. 6 for 32-bit x86\)](#)
- [Red Hat Enterprise Linux Server \(v. 6 for 64-bit x86\\_64\)](#)
- [Red Hat Enterprise Linux Workstation \(v. 6 for 32-bit x86\)](#)
- [Red Hat Enterprise Linux Workstation \(v. 6 for x86\\_64\)](#)

Click on the text of the link that matches the subscription type you wish to attach to the RedHawk machine, and you will then see the associated ISO Image Downloads page. For example, the RHEL Workstation page will be similar to the following:

# Red Hat Enterprise Linux Workstation (v. 6 for x86\_64)

[Details](#) [Errata](#) [Packages](#) [Subscribed Systems](#) [Downloads](#)

## ISO Image Downloads

**NOTE:** By downloading this software, you agree to the terms and conditions of the applicable License Agreement (available at <http://www.redhat.com/licenses/>)

Not sure how to download and use these images? [Check out our ISO Download Help.](#)

## Latest Release

Below please find the complete set of ISO images for the **latest release** of Red Hat Enterprise Linux Workstation (v. 6 for x86\_64). Depending on the variant of Red Hat Enterprise Linux Workstation (v. 6 for x86\_64) you'd like to install, you may only need a subset of these discs. ([more information](#))

### Red Hat Enterprise Linux 6.4 Workstation (AMD64/Intel EM64T)

ISO	Size	Checksum
<a href="#">boot.iso</a>	239 MB	MD5: f938742142aa8af35eb2af52274effd6 SHA-256: 0bc0abe024fb989fe16203fbd70e46c8c918dc3d682dbf09e54b96f6c64c6aa5
<a href="#">Binary DVD</a>	4,162 MB	MD5: 92ef93299a1eafe69728b54712ede35f SHA-256: 5fd7f52b6aea280ac798498bf206aa1f1523578f36deec4453fdad0775db83b2
<a href="#">P2V ISO</a>	100 MB	MD5: 9f7fc3bfe733bf31385f3c13e2080c97 SHA-256: bc6f2b62b9c6dc9be2d48b39b67b07cbc0198a02d5158b41ae6afa144b16ae92

[View Source ISO Images](#) (NOTE: these images are not necessary for installation.)

## Older Releases

Below please find complete sets of ISO images for the **older releases** of Red Hat Enterprise Linux Workstation (v. 6 for x86\_64). Note that only one set of ISO images is necessary to install any particular release of Red Hat Enterprise Linux Workstation (v. 6 for x86\_64).

[View ISO Images for Older Releases](#)

The DVD ISOs that are displayed in the above example are for RHEL Workstation version 6.4 and these *cannot* be used with RedHawk 6.3. Instead, you must click on the View ISO Images for Older Releases link, and this will display these additional choices:

- [View ISO Images for Older Releases](#)
- [Red Hat Enterprise Linux 6.3 Workstation \(AMD64/Intel EM64T\)](#)
  - [View Source ISO Images](#) (NOTE: these images are not necessary for installation.)
- [Red Hat Enterprise Linux 6.2 Workstation \(AMD64/Intel EM64T\)](#)
  - [View Source ISO Images](#) (NOTE: these images are not necessary for installation.)
- [Red Hat Enterprise Linux 6.1 Workstation \(AMD64/Intel EM64T\)](#)
  - [View Source ISO Images](#) (NOTE: these images are not necessary for installation.)
- [Red Hat Enterprise Linux 6.0 Workstation \(AMD64/Intel EM64T\)](#)
  - [View Source ISO Images](#) (NOTE: these images are not necessary for installation.)

In this example, click the Red Hat Enterprise Linux 6.3 Workstation link, which will display the following choices:

### Red Hat Enterprise Linux 6.3 Workstation (AMD64/Intel EM64T)

ISO	Size	Checksum
<a href="#">Driver update disk (dd-pch_gbe-14269-2-el6_3-x86_64.iso)</a>	444 KB	MD5: d1e87419949aee9eb69c26fed9b36bf
<a href="#">boot.iso</a>	239 MB	MD5: f5aa24ffcd1c0ccacdced17fd8ec3dd4 SHA-256: a479fae5e944418337271d4f035b2d300d7f380ada0d71b8107672a2c2d81b24
<a href="#">Binary DVD</a>	4,151 MB	MD5: 08a45c198fafda48ba367f29d34b3af0 SHA-256: d2b8f288eefbeeb61f8f0daa7aa787933b17b6a38e5b86149d0714db773c88b
<a href="#">P2V ISO</a>	100 MB	MD5: 9f7fc3bfe733bf31385f3c13e2080c97 SHA-256: bc6f2b62b9c6dc9be2d48b39b67b07cbc0198a02d5158b41ae6afa144b16ae92
<a href="#">WinSync Installer</a>	3 MB	MD5: 438ba864390d1042f6204021e83dd75 SHA-256: 4e2cc41db6de1404dfcbbc7115aec2d1be50659bf2af536cb32804aa6a4002d

Click on the Binary DVD link to download the RHEL 6.3 Workstation DVD ISO.

## 5. Install RHEL 6.3

Once the desired RHEL 6.3 ISO is fully downloaded, burn the ISO to a physical DVD using your preferred DVD burning software, and then complete section 5.1.1 in the *RedHawk Release Notes* in order to perform a RHEL installation.

### NOTE

*The screens shown in the RedHawk Release Notes are from CentOS 6.3; the RHEL 6.3 screens will all have a different color scheme, however the contents of each screen will be nearly identical to the CentOS 6.3 screens.*

Note that Concurrent does *not* recommend registering the system with the Red Hat Network during the RHEL installation, and the *RedHawk Release Notes* reflect this. If you wish, you can register the system after RHEL installation in order to ensure that the RHN Classic registration method is used.

Once the RHEL 6.3 installation is finished, proceed to the next section.

## 6. Install Recommended Packages

This section details the steps that are required in order to install the set of Concurrent recommended packages.


### 6.1. Download the `recommended-pkgs.txt` File

Concurrent publishes *recommended packages* lists for customers supplying their own Red Hat software. Installing all of the recommended packages will ensure that your system will closely match systems that are shipped directly by Concurrent with CentOS software pre-installed. These packages are not required, but having the packages installed will help to provide a consistent RedHawk user experience and will also assist Concurrent technical support.

If you do not already have one of these files, you will need to download one from Concurrent's Software Documentation Library website. Use a web browser to surf to this URL:

<http://redhawk.ccur.com/docs/document.cgi>

You should see a page similar to the following displayed:



**redhawk.ccur.com**

### Software Documentation Library

All manuals are provided in PDF format and can be read using [Adobe Acrobat Reader](#) on Linux or Windows platforms.

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Concurrent manuals are organized into trees rooted at the base operating system distribution.

Select your base operating system distribution from the list below, or use the "find" feature to locate a specific document.

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



Type in a regular expression to locate a document **title** or **publication number**.

Find Titles   Show All Titles

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- [RedHawk Linux](#)
- [PowerMAX OS](#)
- [Red Hat Linux](#)
- [Other](#)

Click on RedHawk Linux, then click on RedHawk Server, and then click on RedHawk Linux 6.3. The page should now look similar to the following:

- [RedHawk Linux](#)
  - [RedHawk Server](#)
    - [RedHawk Linux 2.3](#)
    - [RedHawk Linux 4.1](#)
    - [RedHawk Linux 4.2](#)
    - [RedHawk Linux 5.1](#)
    - [RedHawk Linux 5.2](#)
    - [RedHawk Linux 5.4](#)
    - [RedHawk Linux 6.0](#)
    - [RedHawk Linux 6.3](#)
      -  [RedHawk Linux OS Version 6.3 Release Notes](#)
      -  [RedHawk Linux User's Guide - Version 6.3](#)
      -  [RedHawk Linux Frequency-Based Scheduler \(FBS\) User's Guide - Version 6.3](#)
      - [Installing on RHEL](#)
    - [RedHawk Linux 6.5](#)
    -  [Archive](#)
  - [RedHawk Embedded](#)
  - [Compilers](#)
  - [FAQ](#)
  - [Hardware](#)
  - [Libraries](#)
  - [Tools](#)
- [PowerMAX OS](#)
- [Red Hat Linux](#)
- [Other](#)

Next, click on the Installing on RHEL link that is listed under RedHawk Linux 6.3 and the following files will appear for download:

- [Installing on RHEL](#)
  -  [RedHawk 6.3 w/ Red Hat Installation Notes](#)
  - [rhel-6.3-svr-x86\\_64-recommended-pkgs.txt](#)
  - [rhel-6.3-ws-i386-recommended-pkgs.txt](#)
  - [rhel-6.3-ws-x86\\_64-recommended-pkgs.txt](#)



The first link under Installing on RHEL is a link to the latest version of this document that you are currently reading. The other links are the `recommended-pkgs.txt` files that are appropriate for the various versions of RHEL.

Download the `recommended-pkgs.txt` file that matches the version of RHEL you are installing.

## 6.2. Transfer the RHEL 6.3 DVD (if necessary)

You should already have downloaded the RHEL 6.3 ISO image, however if you only have access to a physical RHEL 6.3 DVD you will need to transfer the DVD to your system's hard drive in order to follow these procedures.

Insert the RHEL 6.3 DVD into the system's optical media tray and issue the following command to temporarily create a copy of the RHEL 6.3 DVD on the hard drive.

```
-- as root --
dd if=/dev/cdrom of=/tmp/rhel6.3-dvd.iso
```

After this command completes, remove the RHEL 6.3 DVD from the optical media drive as it will no longer be needed during the rest of this procedure.

If you have access to the original RHEL DVD ISO image that was downloaded from Red Hat, simply ensure that it is placed in `/tmp` with the name `rhel6.3-dvd.iso` before continuing.

## 6.3. Loopback mount the RHEL 6.3 DVD ISO image

Issue the following commands to loopback mount the copy of the RHEL 6.3 DVD ISO image.

```
-- as root -
# yum clean all
# mkdir -p /mnt/rhel6.3-dvd
# mount -o loop /tmp/rhel6.3-dvd.iso /mnt/rhel6.3-dvd
```

After these commands complete, the contents of the RHEL 6.3 DVD ISO will be accessible under the `/mnt/rhel6.3-dvd` mount point.

### NOTE

*The software installation in upcoming steps will require the RHEL DVD ISO image to be continuously loopback mounted. You may wish to put the above mount command into `/etc/rc.local` to ensure that the ISO will be automatically re-mounted each time the system is rebooted.*

## 6.4. Create a yum repo to access the RHEL 6.3 image

Using your preferred text editor, create a file named `/etc/yum.repos.d/rhel6.3-dvd.repo` with the following contents:

```
[rhel6.3-dvd]
name=rhel6.3-dvd
baseurl=file:///mnt/rhel6.3-dvd
enabled=1
gpgcheck=0
```

Once this yum repo file is in place, RPM dependencies should automatically be satisfied from the mounted RHEL 6.3 DVD ISO image.

To verify that the RHEL DVD repository is now set up correctly, issue the following command:

```
-- as root --  
# yum repolist
```

You should see output similar to the following displayed:

```
[root@ihawk ~]# yum repolist  
Loaded plugins: aliases, changelog, downloadonly, kabi, presto, product-id,  
               : refresh-packagekit, security, subscription-manager, tmprepo,  
               : verify, versionlock  
Loading support for Red Hat kernel ABI  
repo id                repo name                status  
rhel6.3-dvd            rhel6.3-dvd              3,955  
repolist: 3,955  
[root@ihawk ~]#
```

If you do not see a similar output, review the above steps to make sure that everything is mounted and configured correctly.

## 6.5. Install Recommended Base Packages

To install the recommended packages on a freshly installed 6.3 system, issue the following command as root on your system (this example assumes that you are using 64-bit RHEL Workstation and that the `recommended-pkgs.txt` file is in the current directory):

```
# yum -y install $(<rhel-6.3-ws-x86_64-recommended-pkgs.txt)
```

Refer to section 6.1 above if you do not yet have an appropriate `recommended-pkgs.txt` file.

### NOTE

*After installation completes, do not reboot the system. Proceed to the next step.*

## 7. Install RedHawk Linux

Now that the recommended packages have been installed, the system is ready for RedHawk software to be installed. This section details the steps that are required to successfully complete the RedHawk installation.

### 7.1. Install `ccur-redhawk-user-deps` RPM

You must first install the `ccur-redhawk-user-deps` RPM before you will be able to successfully run the RedHawk DVD's `install` script.

Insert the RedHawk 6.3 OS Installation DVD in the system's optical media drive; the DVD should automatically mount, but if it does not issue the following commands:

```
# mkdir -f /mnt/cdrom  
# mount /dev/cdrom /mnt/cdrom
```

Once the DVD is mounted, change to the `Packages` directory in the top-level of the DVD and install the package as follows:

```
# cd /mnt/cdrom      ↵ substitute the actual mount point if different
# cd Packages
# rpm -ivh --nodeps ccur-redhawk-user-deps*.rpm
```

This completes the RedHawk Linux pre-installation steps.

## 7.2. Complete RedHawk Linux Installation

The system is now ready for RedHawk and subsequent software to be installed. Continue following section 5.2 of the *RedHawk Release Notes* to complete the installation.

### NOTE

*Changing the run-level to `init 1` will unmount the RHEL DVD ISO.  
RedHawk installation requires additional packages to be installed  
from the RHEL DVD ISO that was loopback mounted in section 6.3.  
Use the `mount` command in section 6.3 to remount the ISO as needed.*

Please contact Concurrent Technical Support if you have any problems during any stage of this installation (support@ccur.com or 1-800-245-6453).