RED HAWK Architect™
Version 3.0
Release Notes

October 2009

0898600-3.0

READ ME BEFORE INSTALLING THIS PRODUCT

concurrent

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1.0. Introduction

This document provides release information and installation instructions for Concurrent Computer Corporation's RedHawk Architect™ Version 3.0.

1.1 Product Description

RedHawk Architect is an easy-to-use GUI interface for configuring, building and flashing embedded solutions.

RedHawk Architect greatly simplifies the following tasks to create and maintain a runtime and development environment for single board computers (SBCs):

- installing custom configurations of the Red Hat® Enterprise Linux distribution

- installing and configuring the RedHawk™ Linux® operating system

- installing NightStar™ application development tools

- maintaining and reconfiguring an SBC's root file system

- flashing a bootable root file system to a CompactFlash device

1.2 Related Publications

The following table lists Concurrent documentation for RedHawk Architect and the components that can be installed using RedHawk Architect. Depending upon the document, they are available online on RedHawk Linux systems or from Concurrent's documentation web site at **http://redhawk.ccur.com/docs**.

RedHawk Architect	Pub. Number
RedHawk Architect Release Notes	0898600
RedHawk Architect User Guide	0898601
RedHawk Linux	
RedHawk Linux Release Notes	0898003
RedHawk Linux User's Guide	0898004
RedHawk Linux Cluster Manager User's Guide	0898016
RedHawk Linux FAQ	N/A
NightStar Development Tools	
NightView User's Guide	0898395
NightTrace User's Guide	0898398
NightProbe User's Guide	0898465
NightTune User's Guide	0898515

1.3 Syntax Notation

The following notation is used throughout this document:

italic	Books, reference cards, and items that the user must specify appear in *italic* type. Special terms may also appear in *italic*.
list bold	User input appears in **list bold** type and must be entered exactly as shown. Names of directories, files, commands, options and man page references also appear in **list bold** type.
`list`	Operating system and program output such as prompts, messages and listings of files and programs appears in `list` type.
`[]`	Brackets enclose command options and arguments that are optional. You do not type the brackets if you choose to specify these options or arguments.

2.0. Prerequisites

- RedHawk 5.2 host system or
- Red Hat Enterprise Linux 5.2 host system

Note that the host system is assumed to be a separate system than the target system. In particular, the host system must have a working DVD/CD drive in order to load the media required for target installation. In addition, it is expected that the host system will have a free USB port for use in flashing the target image.

Note that if you are going to be configuring custom kernels using the Kernel Manager page in Architect, the host system must have the qt-devel and possibly qt RPMs installed.

3.0. Target Boards

3.1 Supported Target Boards

RedHawk Architect Version 3.0 supports the following target boards:

- Concurrent Technologies TP 442/34x (CompactPCI)

- Concurrent Technologies VP 426/231 (VME64x)

- GE Fanuc V7865 (VME)

- GE Fanuc V7812 (VME)

- GE Fanuc mITX-945E-P (Mini-ITX)

- Intel Desktop Board D945GCLF2 (Mini-ITX)

3.2 Board Support Packages

Some Single Board Computers (SBCs) might require a Board Support Package (BSP) to enable devices that are not supported by the standard RedHawk kernels.

This software is typically proprietary and cannot be distributed as source code. It usually requires a special agreement between Concurrent Computer Corporation and the copyright holder.

For example, a board support package might be required to enable a PCI-VME bridge chip or for utilities such as EEPROM flash programs

Contact Concurrent Computer Corporation (see "Direct Software Support" on page 9) for more information on obtaining board support packages.

4.0.   Changes in This Release

The following changes have been made in Version 3.0 of RedHawk Architect:

- Previous versions of Architect supported creating target images of the RedHawk Version 5.1 operating system. Architect Version 3.0 supports creating *only* RedHawk Version 5.2 target images.

- Architect now supports building of "server class" install images with generic sessions (no SBC).

- Architect now allows reconfiguration of root device and size.

- Architect now supports configuration of read-only root file system options.

- Architect now allows manual setting of target image size.

- Architect now provides a button that can be pushed at any time to recalculate the estimated image size. This estimate will include changes made to the root file system image outside of Architect itself (e.g. via product installation CDs, NUU, etc.).

- Architect now provides the ability to remove unneeded resources in images (e.g. man pages, PDF files, the RPM database, etc.). This can significantly reduce the size of the root file system image.

- RedHawk Linux Cluster Manager has been specifically enhanced to allow the importing of Architect root file system images, and is now bundled with the Architect product. Cluster Manager may be used with imported Architect root images to perform hard drive installations and also to allow diskless booting of the root images.

- Architect has been updated to use the Qt version 4.5 toolkit.

5.0.   Installation Procedures

Perform the following installation steps as the root user.

1. Insert the installation CD in the CD-ROM drive.

2. Execute the **mount** command with the mount point that is designated in **/etc/fstab**.

    NOTE: /media/cdrom is used in the examples in this section; e.g.:

    mount /media/cdrom

    If the entry is not in **/etc/fstab**, executing the following command will mount the cdrom device at **/media/cdrom**:

    mount /dev/cdrom /media/cdrom

3. Change the current working directory to the directory containing the installation script:

    cd /media/cdrom

4. Invoke the installation script:

    ./install-architect

    When prompted, you must accept EULA to continue.

5. When installation is complete, change the current working directory outside of **/media/cdrom**:

    cd /

6. Unmount the CD-ROM device (may be required to remove the installation CD from the CD-ROM device):

    umount /media/cdrom

6.0. Software Removal

Should you desire to uninstall RedHawk Architect, perform the following steps as the root user.

1. Insert the installation CD in the CD-ROM drive.

2. Mount the CD-ROM drive:

    `mount /media/cdrom`

    Note: Your CD device mount point may be different.

3. Change the current working directory to the directory containing the installation script:

    `cd /media/cdrom`

4. Invoke the uninstall script:

    `./uninstall-architect`

5. When the uninstall is complete, change the current working directory outside of **`/media/cdrom`**:

    `cd /`

6. Unmount the CD-ROM device (may be required to remove the installation CD from the CD-ROM device):

    `umount /media/cdrom`

7.0.   Known Issues

Special consideration should be given to the following areas.

haldaemon on RHEL 5.2 system

When running Architect on a Red Hat Enterprise Linux 5.2 system, **haldaemon** must be disabled to prevent possible problems.

To disable **haldaemon**:

> $ **service haldaemon stop**

To prevent **haldaemon** from starting up after shutdown:

> $ **chkconfig haldaemon --level 12345 off**

Build Image hang

If the Architect image builder hangs during the installation of RedHawk, it is most likely the result of a process hanging during shutdown of services while **chroot**ed into the image. It should be possible to kill any hung process, thereby allowing Architect to finish without aborting the entire build.

Use the following to identify the hung process:

> $ **ps -auxf**

Then use the following to kill the hung process.

> $ **kill -9** *hung_process_ID*

The builder will resume and the image will be successfully built.

This incident is extremely rare and one you most likely will not experience.

Non-bootable image

There may be a case where a configuration not known to Architect or some change in system configuration results in a non-bootable image. Two types of problems may occur: an incorrect root device name or an incorrect grub boot partition number.

If the kernel does not find the supplied root device name resulting in a panic, you will need to edit **/boot/grub/grub.conf** on the image and change the root device entries to the root device name that was configured. For example, if the root device should be named "/dev/sda1" but the entry is "/dev/hda1", make the correction.

If the grub boot partition number is not recognized, edit **/boot/grub/grub.conf** and change the boot partition number to the correct one.

If you are not sure which root device name or grub boot partition to specify, it may be helpful to create several options in **grub.conf** so that you can easily determine the correct one as you attempt to boot the image. Remember to remove any "quiet" and "rhgb" options during your tests so that you can see the kernel boot messages.

After the correct entries to **grub.conf** file are identified and created, make the corresponding changes to **/etc/fstab**.

Architect previous session files are not Compatible

Architect session files that were created with a version of Architect previous to 2.0 are not compatible with Architect 3.0.

8.0. Software Updates and Support

8.1 Direct Software Support

Software support is available from a central source. If you need assistance or information about your system, please contact the Concurrent Software Support Center at our toll free number 1-800-245-6453. For calls outside the continental United States, the number is 1-954-283-1822. The Software Support Center operates Monday through Friday from 8 a.m. to 5 p.m., Eastern Standard Time.

Calling the Software Support Center gives you immediate access to a broad range of skilled personnel and guarantees you a prompt response from the person most qualified to assist you. If you have a question requiring on-site assistance or consultation, the Software Support Center staff will arrange for a field analyst to return your call and schedule a visit.

You may also submit a request for assistance at any time by using the Concurrent Computer Corporation web site at **http://www.ccur.com/isd_support_contact.asp**.

8.2 Software Updates

Updates to Concurrent software can be obtained via Concurrent's Software Portal. There are three ways of installing product updates:

- Using the Network Update Utility (NUU) installed on your RedHawk system

- Manual installation after browsing and downloading individual RPMs from Concurrent's software repositories

- Building a customized Update CD using Concurrent's web site for immediate download

8.2.1 Updating via NUU

NUU supports installation and updating of software products from Concurrent software repositories over a network. NUU utilizes Yum and the RPM subsystems to install and update software.

NUU is installed automatically with RedHawk, however, you should configure it to include all of the Concurrent software products installed on your system.

Clicking on the "Updates (NUU)" icon on your desktop launches NUU to check to see if Concurrent updates are available for your system.

Instructions for configuring NUU can be found in the **QuickStart.pdf** document available at **http://redhawk.ccur.com/updates/QuickStart.pdf.**
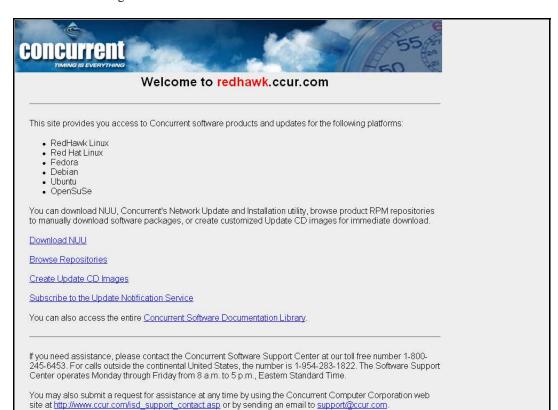
The first time you invoke NUU you will need to specify your redhawk.ccur.com Login ID and Password that were provided in the shipping documents accompanying your system. If you require assistance, refer to "Direct Software Support" on page 9.

Before using NUU to install any updated software modules, check for NUU updates separately. Apply any NUU updates and then restart NUU before applying any other updates.

8.2.2 Installing Manually Downloaded RPMs

You can browse Concurrent's software repositories to locate updated RPMs and download them for manual installation.

Access the RedHawk Updates web site (**http://redhawk.ccur.com**) by clicking on the "Concurrent Software Portal" icon on the desktop. Accessing this web site displays the following screen:
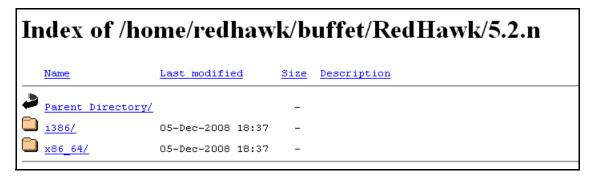
Clicking on the **Browse Repositories** link takes you to an authentication page.

Enter your redhawk.ccur.com Login ID and Password and click the Browse button.

Select the products of interest and architecture from the following pages to see the list of RPMs in the product software repository.

To locate the latest RPMs in the repository, click on the Last modified column header to sort by date. You may need to click twice to set the sort order to newest-to-oldest.

After locating the RPMs of interest and downloading them to your system, you can manually install them.

To install newly downloaded packages, follow these steps:

1. Log in as root and take the system down to single-user mode:

   a. Right click on the desktop and select Open Terminal.

      b. At the system prompt, type **`init 1`**.

2. Change directory to the location of the updates and issue the following command:

        `rpm -Uvh *.rpm`

The time it takes to install will vary depending on the number of updates being installed.

3. When complete, exit single-user mode (Ctrl-D).

NOTE

If you have installed an update containing new RedHawk kernels on a system that has post-installation loadable modules present, those modules must be recompiled for the new kernel; for example, an NVIDIA driver that is a later version than the one included with RedHawk or any third party package that uses loadable modules.

8.2.3 Customized Update CDs

You can use Concurrent's Software Portal to create a customized Update CD for your system which you can then download and burn onto physical media, or simply mount as an ISO9660 image.

Update CDs have customized copies of product software repositories and a simple graphical interface for selecting packages for update and installation. These CDs use NUU (described above) to talk to the CD to obtain packages -- no network access is required during installation via Update CDs.

Access the RedHawk Updates web site (**http://redhawk.ccur.com**) by clicking on the "Concurrent Software Portal" icon on the desktop, then click on Create Update CD images.

You will need to enter your redhawk.ccur.com Login ID and Password and then you can select the products to update. A CD image is built as part of the web session. At the end of the session, you can immediately download it for subsequent installation.

8.2.4 Automatic Notification of Available Updates

When updates, incremental releases or major releases occur, those who have subscribed to Concurrent's automatic notification service are automatically sent an email with a link to the redhawk.ccur.com site describing the updates relative to your company. Multiple email addresses can be subscribed per customer site.

To subscribe, unsubscribe or change notification options, click on the "Subscribe to the Update Notification Service" link on the **redhawk.ccur.com** site.

8.3   Documentation Updates

For the latest documents, including updated FAQ, Release Notes and User Guides, go to Concurrent's documentation web site at **http://redhawk.ccur.com/docs**.