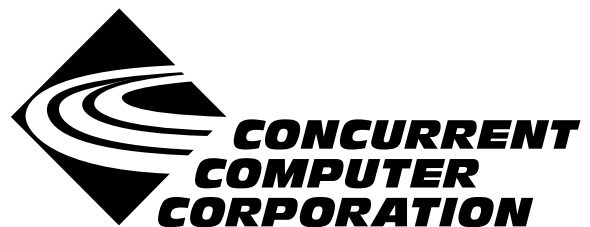


NightProbe

Version 2.5.1 Release Notes (Linux)

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1.0. Introduction

NightProbe™ provides a graphical user interface that permits real-time recording, viewing, and modification of program data within one or more executing programs. It can be used during development and operation of applications, including simulations, data acquisition, and system control.

The features and capabilities of NightProbe include:

- An X Window System™ and OSF/Motif™ graphical user interface provides data sampling control and a spreadsheet interface for data recording, monitoring, and modification.
- Several timing sources, including the system clock and the frequency-based scheduler, are provided for controlling the sampling rate. The user may explicitly start, suspend, and stop sampling using the graphical user interface.
- Any static memory location of any Ada, C, or Fortran process on any processor may be sampled by NightProbe. The symbol table browsing facilities support all scalar data types in those programming languages.
- Sampled data can be monitored interactively or written to a file or shared memory area in real time. It can also be passed to the NightTrace™ daemon for later analysis.
- NightProbe can be run on a different processor from the target program, which minimizes NightProbe's impact on the target program's performance.
- NightProbe allows data locations to be specified using logical addresses or the symbolic names that appear in the program source code. The data addresses and data types are then located by searching the symbol table in the executable program file. NightProbe can present lists of the static variables in programs, and the user may select the variables of interest using the graphical user interface.
- Configuration files can be created, edited, and saved to retain target selections and display layout, allowing for fast start-up.
- No modifications to source code or recompilations are required for use with NightProbe.

2.0. Documentation

Table 2-1 lists the NightProbe 2.5.1 documentation available from Concurrent.

Table 2-1. NightProbe Version 2.5.1 Documentation

Manual Name	Pub. Number
<i>NightProbe User's Guide</i>	0890480-040
<i>NightProbe Version 2.5.1 Release Notes (Linux)</i>	0898465-2.5.1

Copies of the Concurrent documentation can be ordered by contacting the Concurrent Software Support Center. The toll-free number for calls within the continental United States is 1-800-245-6453. For calls outside the continental United States, the number is 1-954-283-1822 or 1-305-931-2408.

Additionally, the manuals listed above are available:

- online using the **nhelp** utility
- in PDF format in the **documentation** directory of the installation CD
- on the Concurrent Computer Corporation web site at www.ccur.com

3.0. Prerequisites

Prerequisites for NightProbe Version 2.5.1 for both the host system and target systems are as follows:

3.1. Host System

3.1.1. Software

- RedHawk™ Linux *or* Red Hat® Linux *
- Required capabilities **

NOTE

The following capabilities are normally installed by the installation script on the CD containing the NightStar tools or by the standard installation of the Red Hat or RedHawk Linux operating system. The user will be notified if required capabilities do not exist on the Linux system.

- NightStar™ Tools

Capabilities	RPMs providing these capabilities
<code>ccur-HyperHelp</code> <code>ccur-HyperHelp-scripts</code> <code>ccur-elanlm</code> <code>ccur-ktalk</code>	<code>ccur-HyperHelp-scripts-6.4.2-002</code> <code>ccur-elanlm-5.0-5</code> <code>ccur-x11progs-6.4.2-004</code>

* This product has been extensively tested on RedHawk Linux 1.1 and Red Hat Linux 7.1, 7.2, and 7.3. However, this product has not been tested with versions of Linux supplied by other vendors.

** The “Capabilities” listed may be found in those versions of the RPMs listed under “RPMs providing these capabilities” or in later versions.

- RedHawk Linux *or* Red Hat Linux

Capabilities	RPMs providing these capabilities
/bin/sh ld-linux.so.2 libICE.so.6 libSM.so.6 libX11.so.6 libXext.so.6 libXmu.so.6 libXp.so.6 libXt.so.6 libc.so.6 libc.so.6(GLIBC_2.0) libc.so.6(GLIBC_2.1) libm.so.6 libm.so.6(GLIBC_2.0)	<i>RedHawk 1.1:</i> bash-2.05b-3 glibc-2.2.90-24 glibc-debug-2.2.90-24 XFree86-libs-4.2.0-65 <i>Red Hat 7.3:</i> bash-2.05a-13 compat-glibc-6.2-2.1.3.2 glibc-2.2.5-39 glibc-debug-2.2.5-39 XFree86-libs-4.2.0-8

3.1.2. Hardware

- an Intel®-based PC - 300Mhz or higher (recommended minimum configuration)
- 64MB physical memory (recommended minimum configuration)

3.2. Target Systems

3.2.1. RedHawk Systems

3.2.1.1. Software

- RedHawk Linux 1.1 or later
- Required RedHawk Linux RPMs (see “RedHawk Target Installation” on page 8 for more information)

3.2.1.2. Hardware

- any iHawk Series 860 system

3.2.2. PowerMAX Systems

3.2.2.1. Software

- PowerMAX OS 4.3 or later
- Required PowerMAX OS packages (see “PowerMAX Target Installation” on page 8 for more information)

3.2.2.2. Hardware

- Computer Systems:
 - Power Hawk™ 620 and 640
 - Power Hawk 710, 720 and 740
 - PowerStack™ II and III
 - Night Hawk® Series 6000
 - TurboHawk™
 - PowerMAXION™
- Board-Level Products:
 - Motorola® MVME2604
 - Motorola MVME4604

4.0. System Installation

Installation of the host portion of NightProbe is normally done as part of the general installation of either the RedHawk NightStar Tools or the PowerWorks Linux Development Environment. A single command installs (or uninstalls) all required software components. See the *RedHawk NightStar Tools Release Notes* (0898008) or *PowerWorks Linux Development Environment Release Notes* (0898000) for more information.

The following section describes how to install (or uninstall) NightProbe independently for those rare cases when this is necessary.

NOTE

NightProbe requires that certain packages are installed on the target systems. See “Target Installation” on page 8 for more information.

4.1. Separate Host Installation

At times, it may be necessary to install (or uninstall) NightProbe independent of the installation of the software suite in which it is normally distributed. This may be done using the standard Linux product installation mechanism, **rpm** (see **rpm(8)**).

The RPM name associated with NightProbe 2.5.1 is:

```
ccur-nprobe
```

and the file associated with this RPM is:

```
ccur-nprobe-2.5.1-000.i386.rpm
```

which can be found in the **RPM** directory on the installation CD.

NOTE

The user must be root in order to use the **rpm** product installation mechanism on the Linux system.

To install the NightProbe RPM, issue the following commands on your Linux system:

1. Insert the installation CD in the CD-ROM drive
2. Mount the CD-ROM drive (assuming the standard mount entry for the CD-ROM device exists in **/etc/fstab**)

```
mount /mnt/cdrom
```

3. Change the current working directory to the directory containing the NightProbe RPM

```
cd /mnt/cdrom/RPM
```

4. Install the RPM

```
rpm -ivh ccur-nprobe-2.5.1-000.i386.rpm
```

By default, the product is installed in **/usr/opt**.

5. Change the current working directory outside the **/mnt/cdrom** hierarchy

```
cd /
```

6. Unmount the CD-ROM drive (otherwise, you will be unable to remove the installation CD from the CD-ROM drive)

```
umount /mnt/cdrom
```

To uninstall the NightProbe RPM, use the following command:

```
rpm -e ccur-nprobe
```

4.2. Target Installation

4.2.1. RedHawk Target Installation

When targeting a RedHawk Linux system, NightProbe requires that the following RPMs are installed on that target system:

NightStar Tool	RPM
NightProbe server	<code>ccur-nprobeserv-2.5.1-000.i386.rpm</code>
NightStar daemon	<code>ccur-nstar-1.1-000.i386.rpm</code>
Élan License Manager	<code>ccur-elanlm-5.0-5.i386.rpm</code>

These RPMs may be installed on the target system by installing the RedHawk NightStar Tools on that system. However, the individual RPMs can be found in the **RPM** subdirectory on the installation CD and may be installed separately. See “Separate Host Installation” on page 6 for the procedure to install an individual RPM.

4.2.2. PowerMAX Target Installation

When targeting a PowerMAX system, NightProbe requires that the following software packages are installed on that target system:

NightStar Tool	Package	Version
NightProbe	<code>nprobeserv</code>	2.5.1
NightStar daemon	<code>nstar</code>	1.1

These packages are normally installed during the installation of the corresponding NightStar tool on the PowerMAX OS system. However, the packages are also included on the PowerWorks Linux Development Environment Installation CD and may be installed by following the procedures below if the packages listed above have not been installed on the target system, or if the versions installed on the target system are not the same as those specified above.

NOTE

The versions of the required software packages installed on the PowerMAX OS target systems must be the same as those listed above. If this is not the case, follow the procedures below.

If your PowerMAX OS system has a CD-ROM device:

```
mkdir /mnt/tmp
mount -F cdfs /dev/dev_name /mnt/tmp
cd /mnt/tmp/powermax-ppc604
```

If your PowerMAX OS system does not have a CD-ROM device:

On the Linux system, insert the PowerWorks Linux Development Environment Installation CD in the CD-ROM drive, mount the CD-ROM drive, and use NFS to export it to the PowerMAX OS system:

```
mount /mnt/cdrom
exportfs powermax_os_system:/mnt/cdrom
```

On the PowerMAX OS system, mount the CD-ROM as an NFS filesystem:

```
mkdir /tmp/cdrom
mount -F nfs linux_system:/mnt/cdrom /tmp/cdrom
cd /tmp/cdrom/powermax-ppc604
```

On the PowerMAX OS system, install the target portions of the NightStar tools via the following commands:

```
cp ./nightstar.Z /tmp/nightstar.Z
zcat /tmp/nightstar.Z | pkgadd -d -
```

NOTE

If the **nsimserver** package already exists on the PowerMAX OS system and its version is different from that specified in the table above, do NOT remove it, but instead supply the **-a check** arguments to the above **pkgadd** command. This will allow multiple versions of this package to coexist on the system. Use of the **-a check** arguments also causes the **pkgadd** command to become extra verbose.

If your PowerMAX OS system has a CD-ROM device:

```
cd /
umount /mnt/tmp
```

If your PowerMAX OS system does not have a CD-ROM device:

On the PowerMAX OS system, unmount the NFS filesystem:

```
cd /
umount /tmp/cdrom
```

On the Linux system, unexport the NFS filesystem, and then unmount the CD-ROM:

```
cd /
exportfs -u powermax_os_system:/mnt/cdrom
umount /mnt/cdrom
```

5.0. Overview of NightProbe 2.5.1

5.1. Enhancements

In addition to minor bug fixes and maintenance, the following enhancements are contained in NightProbe 2.5.1:

- NightProbe now provides the capability to probe programs running on a remote target system. Much of the heavy GUI and symbol table processing has been offloaded to the host system.
- NightProbe now supports probing C++ programs.
- NightProbe now supports probing Ada95 programs built with the PowerMAX OS MAXAda product.
- The nomenclature for items in the NightProbe graphical user interface has been improved.

5.2. Known Issues

The following items describe NightProbe issues which may be addressed in future patches and releases:

- NightProbe prints Ada95 fixed point types using their underlying integer representation, not as a fractional number.
- NightProbe prints Ada95 enumeration values as the underlying integer representation, not the textual image of the corresponding enumeration constant.
- NightProbe does not provide a method for setting the priority or CPU bias of the NightProbe server process which does the data sampling. This will be configurable through the graphical interface in a future release. Until then, you can adjust the CPU bias and priority of the NightStar daemon process which launches the NightProbe server process by adding a **run** command to the **nstar.d** initialization file. The **nstar.d** initialization file is executed at boot time and can be found in **/etc/rc.d/init.d/nstar.d** on RedHawk systems and **/etc/init.d/nstar.d** on PowerMAX OS systems.

6.0. 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 1-800-245-6453. Our customers outside the continental United States can contact us directly at 1-954-283-1822 or 1-305-931-2408. The Software Support Center operates Monday through Friday from 8 a.m. to 7 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.

