NightView
Version 5.2 Release Notes

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1.0. Introduction

NightView™ is a general-purpose, source-level debugger for Ada, C, C++, and Fortran. NightView can be used to debug multiple processes on the local system or on different targets.

NightView 5.2 supports vector types on the Power Hawk™ 700 Series.

NOTE

Installation procedures for this product are slightly different from those for other Concurrent products. Please read *System Installation* on page 4 of these release notes before attempting to install this product, and carefully follow the installation instructions.

2.0. Documentation

Table 2-1 lists the NightView 5.2 documentation available from Concurrent.

Table 2-1. NightView Version 5.2 Documentation

Manual Name	Pub. Number
NightView User's Guide	0890395-210
NightView Version 5.2 Release Notes	0890395-5.2
NightView Pocket Reference	0890475-030

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 1-954-973-5354.

Additionally, the *NightView User's Guide* and *NightView 5.2 Release Notes* are available online by using the X Window System™ utility, **nhelp**.

Further, the *NightView User's Guide* and *NightView 5.2 Release Notes* are also available on Concurrent Computer Corporation's web site at www.ccur.com.

3.0. Prerequisites

Prerequisites for NightView Version 5.2 are as follows:

3.1. Software

- PowerMAX OS Version 4.3 or later
- X Window System (X11 Version 6.3 or later)
- An X™ server is required if you are using NightView's graphical user interface.
- Élan License Manager™ 5.0.1 or later (See *System Installation* on page 4 for details)

For more information about configuring your system to support NightView, see Appendix A, "System Resource Requirements" in the *NightView User's Guide* (0890395-210).

3.2. 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

The NightView product is installed as standard PowerMAX OS software packages and utilizes the standard PowerMAX OS product installation mechanism, **pkgadd** (see **pkgadd(1)**).

The package names are **NightView** and **Nviewp**. These names are case-sensitive.

Please refer to the “Installing Add-on Software” chapter in the *System Administration Volume I* (0890429) manual and the *PowerMAX OS Release Notes* for instructions on software installation.

NightView may be installed in either the root directory or elsewhere. When you run **pkgadd(1M)** to install NightView, you are prompted to enter the name of the directory for installation. If you want to install in the root directory, just press the <return> key at the prompt. Otherwise, enter the name of the directory where you want NightView installed. If this directory does not exist, the installation procedures attempt to create it for you.

NOTE

NightView consists of multiple packages. The **NightView** package must be installed on systems on which you want to run the NightView user interface. The **Nviewp** package must be installed on systems on which the user programs you want to debug will be running. Most customers will want both packages on the same system.

If the NightView package is installed before the **Nviewp** package, you will get a warning about the **Nviewp** package not being installed.

NightView **must** be run with the Élan License Manager. Follow the steps in the "Obtaining Licenses" section of the *Élan License Manager Release Notes* (0891055); the *feature alias* is **NightView**. If you are debugging Ada programs, then you need an additional license. The feature alias to debug Ada programs is **NightView_Ada**. If you are not already running the Élan License Manager, if you do not have a copy of the *Élan License Manager Release Notes*, or if you need a license key, contact Concurrent Software Distribution at 1-800-666-5405 (or 1-954-283-1836 outside the continental United States).

If your site has multiple license servers, and you need to indicate a server on a particular system, you can set the environment variable POWERWORKS_ELMHOST to the name of the server’s system before invoking NightView. For more information, see the *Élan License Manager Release Notes* (0891055).

5.0. Overview of NightView 5.2

5.1. Enhancements

5.1.1. Vector Support

NightView 5.2 supports vector types on the Power Hawk 700 Series. You can print a vector variable or register with the **`print`** command. You can also see the vector registers with the **`info registers`** command. NightView prints vectors as 4 hexadecimal words. See the sections titled “print” and "info registers" in Chapter 7 of the *NightView User’s Guide* (0890395-210).

You can set the value of a vector from a set of values with the **`vector-set`** command. See the section titled "vector-set" in Chapter 7 of the *NightView User’s Guide* (0890395-210). You can also assign one vector to another vector.

5.1.2. Info Registers

Some registers are defined by the architecture to be composed of various fields. In 5.2, **`info registers`** expands those fields symbolically. If a field is a single bit, NightView prints an abbreviation for that field only if the value of the field is `1`. See the section titled "info registers" in Chapter 7 of the *NightView User’s Guide* (0890395-210).

5.2. Changes in This Release

5.2.1. Remote Debugging

5.2.1.1. Login Command

The **`login`** command now has an option `/popup`. This option tells NightView to pop up the login dialog box to complete the login process. Only the `user=` and `name=` keywords may be used with `/popup`.

The **`login`** command also has an option `/conditional`. This option tells NightView to continue the login process only if the dialogue name does not already exist.

These options can be useful from macros or for other tools that communicate with NightView.

See the section titled "login" in Chapter 7 of the *NightView User's Guide* (0890395-210).

5.2.1.2. -nolocal

If NightView is invoked with **`-nolocal`**, the login dialog box pops up automatically. See Chapter 6, "Invoking NightView" in the *NightView User's Guide* (0890395-210).

5.2.1.3. Feedback

NightView prints more feedback messages during the remote-debug login process. See the section titled "Remote Dialogues" in Chapter 3 of the *NightView User's Guide* (0890395-210).

5.2.1.4. Error Messages

If you try to create a dialogue with a name that already exists, NightView gives you an error. In earlier releases, the error popup in the graphical user interface gave the name as "%<name>s". In 5.2, the error popup gives the correct name. See the section titled "Remote Login Dialog Box" in Chapter 9 of the *NightView User's Guide* (0890395-210).

NightView 5.2 gives a more informative error message if the appropriate version of **`NightView.p`** cannot be found on the remote system.

5.2.2. KoalaTalk

NightView now communicates with KoalaTalk by default. (This is how other tools communicate with NightView.) There is a new option, **`-noktalk`** to inhibit communication with KoalaTalk. See Chapter 6, "Invoking NightView" in the *NightView User's Guide* (0890395-210). You can get the same effect by setting the `useKoalaTalk` resource to `False`. See the section titled "NightView Resources" in Appendix D of the *NightView User's Guide* (0890395-210).

5.2.3. Serial Interface

`nview` is now a script that decides whether to run the serial interface or the graphical user interface. The serial interface program is **`snview`**. You might notice this program running when you run **`ps(1)`**. You should continue to invoke **`nview`**, rather than invoking **`snview`** or **`xnview`** directly.

5.2.4. Miscellaneous Fixes

- Fixes for Ada `float'first` and `float'last`.
- **`Info representation`** now includes information about C++ base classes.
- Improvements to the **`help`** command in the serial interface.

- The 5.2 release fixes a problem with installing multiple versions of the **`Nviewp`** package. If you need to do this, install the older version first. Most sites need only the most recent version.

6.0. Cautions

6.1. SFNOLIM Kernel Tunable

The `SFNOLIM` kernel tunable should not be set above 1024; doing so may cause NightView to fail during initialization or when communicating with other tools.

6.2. Breakpoint Command Streams

The current implementation of breakpoint command streams does not include protection against concurrent access of data structures internal to the debugger. Avoid referencing other processes within breakpoint command streams. In practice, this is rarely a problem.

6.3. Fortran 77 Arrays

There is currently a problem with Fortran 77 arrays passed as formal arguments. The compiler generates a temporary variable to optimize references to the array. This temporary variable is then used in place of the original array argument. If the original array argument is not used later in the routine, then the lifetime of the argument is very short and its value is discarded. If you try to use the debugger to reference the argument later in the routine, the results are undefined. You can do two things to avoid running into this problem:

- Use the array later in the routine. For example, pass the array as an argument to another routine. This extends the lifetime of the original argument.
- Use the debugger to look at the array at the first executable line of the routine. The value of the original argument probably still exists at this point.

6.4. Scroll Bars

Some users have had a problem using the scroll bars in the graphical user interface. When the up-arrow button on a scroll bar is clicked, the window scrolls the length of the entire window contents, rather than just one line. This problem is caused by an inappropriate X resource, which has apparently been copied from one user to another in much the same way as **`$HOME/.profile`** files are often copied:

```
*XmScrollBar*translations:   <Btn1Down>:   Select()
```

You should remove this resource from your **`$HOME/.Xdefaults`** or whatever other means you use for setting X resources. This resource affects any Motif application, not just NightView.

6.5. Accessing Variables While in Prologue of Subprogram

Because the compilers generate line-number information for code that comprises the prologue of a subprogram, you may inadvertently set an eventpoint or stop your program at such a location. The prologue is the code that the compiler generates to set up the execution environment for a subprogram; until that code completes execution, the environment is incomplete. Attempts to access variables while in the context of the prologue may result in errors from NightView or may result in erroneous values.

If you suspect such a problem, you can determine whether you are in the prologue by doing the following:

- Stop the program at the point where the referencing problem occurs.
- Enter the command **`info frame`**.
- If the output from this command says something like "Could not obtain frame description information", then you are probably stopped in the prologue.

To try and avoid this problem, do not set an eventpoint on the lines containing a subprogram heading. If you want to set the eventpoint at the beginning of the subprogram, use the *unit_name* (for Ada) or *function_name* form of location specifier, rather than a *file_name* and *line_number*. See the section titled "Location Specifiers" in Chapter 7 of the *NightView User's Guide* (0890395-210).

6.6. Shared Objects

For core files, NightView cannot always find correct stack description information (tdesc) for shared objects. This problem occurs when the shared objects are built without position-independent code. This problem can cause NightView to display the wrong results for any routine other than the most recently called routine. For example, a **`backtrace`** command may print the wrong information, or an **`up`** command may fail. This is true for any release of NightView, not just 5.2. This is not a problem for running processes, only for core files.

We recommend that you build shared objects with position-independent code if you plan to debug programs that use them. For C and Fortran, use the **`-Zpic`** option. See **`cc(1)`** or **`f77(1)`**. For Ada, use **`-sm shared`** or **`-sm both`**. For HAPSE Ada, see "Shared Libraries and Shared-Objects" in the *HAPSE Reference Manual* (0890288). For MAXAda, see "Compile Options" and "Shared Objects" in the *MAXAda Reference Manual* (0890516).

7.0. 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 our toll free number (1-800-245-6453). Our customers outside the continental United States can contact us directly at 1-954-973-5354. 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.