1553v5 ABI
User Level Driver
Release Notes

Original: September 2005

0890541-000

READ ME BEFORE INSTALLING THIS PRODUCT

concurrent

Disclaimer

The information contained in this document is subject to change without notice. Concurrent Computer Corporation has taken efforts to remove errors from this document, however, Concurrent Computer Corporation's only liability regarding errors that may still exist is to correct said errors upon their being made known to Concurrent Computer Corporation.

License

Duplication of this manual without the written consent of Concurrent Computer Corporation is prohibited. Any copy of this manual reproduced with permission must include the Concurrent Computer Corporation copyright notice.

Trademark Acknowledgments

NightHawk is a registered trademark of Concurrent Computer Corporation.
PowerMAX OS and Power Hawk are trademarks of Concurrent Computer Corporation.
All other trademarks are the property of the respective owners.

Contents

1.0.   Introduction

This document provides instructions for installing and configuring the 1553v5 ABI user level device driver on NightHawk NH6200-NH6800, Power Hawk Series 600, Power Hawk Series 700, and Power Hawk Series 900 computer systems running PowerMAX OS 4.3, 5.1, 6.1 and 6.2.

The 1553 Advanced Bus Interface (ABI) is a real-time interface between a PowerMAX OS system and a MIL-STD-1553 bus. It provides the host system with such advanced 1553 interface capabilities as independent and simultaneous bus controller simulation, remote terminal simulation, and 1553 bus monitoring. An overview of the 1553 ABI and the user interface to it are provided in Chapter 13 of the *PowerMAX OS Real-Time Guide*, publication number 0890466-090.

2.0.   Documentation

2.1.   Concurrent Documentation

The **1553v5drv(7)** and **1553v5lib(7)** man pages are provided by Concurrent Computer Corporation with this product.

2.2.   Vendor Documentation

Vendor documentation for the 1553 ABI may accompany this product. Contact the vendor, SBS technologies, if you have questions regarding this documentation.

3.0. Prerequisites

The following prerequisites apply to the 1553 ABI device.

3.1. Software

- PowerMAX OS Revision 4.3 or later

3.2. Hardware

- Any of the following systems:
  - NightHawk™ HN6200-HN6800 Computer System
  - Power Hawk™ Series 600 Computer System
  - Power Hawk™ Series 700 Computer System
  - Power Hawk™ Series 900 Computer System
- Empty VME slot

4.0. Syntax Notation

The following notation is used throughout this manual:

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

5.0.   Installation Procedures

Follow the steps in this section to install and configure the 1553 ABI driver package.

5.1.   Installing from 4mm DAT

To install the 1553v5drv and 1553v5lib packages from the 4mm DAT tape, perform the following steps:

1. Boot the Concurrent computer system to single-user mode.

2. Sign onto the system as root.

3. If a version of the 1553v5drv and 1553v5lib packages already exists on this system, issue the **pkgrm(1M)** command and confirm to the command that the 1553v5drv and 1553v5lib packages are to be removed. (**Note:** this step can be followed to remove the driver regardless of whether a new version is to be installed.) Execute the following commands:

    ```
    # pkgrm 1553v5lib
    # pkgrm 1553v5drv
    ```

4. Load the package tape into the 4mm DAT tape drive.

5. Install the software package on the system using the **pkgadd(1M)** command. When asked which package to install, select the 1553v5drv and 1553v5lib packages.

    ```
    # pkgadd -d tape1
            .
            .
            .
    Installation of 1553v5-ABI Library Interfaces (1553v5lib) was
    successful.
    #
    ```

5.2.   Installing from CD-ROM

NOTE: The system must be configured with the gr (generic CD-ROM device driver) and cdfs (CD-ROM filesystem) modules and an entry must exist for CD-ROM device nodes in **/etc/conf/node.d/gr**.

To install the 1553v5 user level driver packages from the CD-ROM, perform the following steps:

1. Boot the Concurrent computer system to single user mode.

2. Sign onto the system as root.

3. If a version of the 1553v5drv and 1553v5lib packages already exists on this system, issue the **pkgrm(1M)** command and confirm to the command that the 1553v5 packages are to be removed. (**Note:** this step can be followed to remove the driver regardless of whether a new version is to be installed.) Execute the following commands:

```
# pkgrm 1553v5lib
# pkgrm 1553v5drv
```

4. Insert the supplied disc into the CD-ROM drive and mount the file system as shown below:

```
# mkdir /mnt/cdrom
# mount -F cdfs -r /dev/cd/0 /mnt/cdrom
```

5. Install the software package on the system using the **pkgadd(1M)** command. When asked which package to install, select the 1553v5drv and 1553v5lib packages.

```
# pkgadd -d /mnt/cdrom/pkgs.dstream
    .
    .
    .
Installation of 1553v5-ABI Library Interfaces (1553v5lib) was
successful.
#
```

6.0.   Configuring SBS Technologies MIL-STD-1553 ABI-V5 board

6.1.   Software Configuration

The 1553v5drv user level device driver provides a configuration utility, **abiconfig**, to access an SBS Technologies MIL-STD-1553 ABI-V5 board. A full description of **abiconfig** is provided with the **1553v5drv(7)** man page.

Below is a simple example of configuring the 1553 interface:

1. Configure the kernel for pre-allocated memory:
    (edit **/etc/conf/pack.d/mm/space.c** - { 0x01000000, 0x80000, 0 })

2. Rebuild the kernel:

    # **/etc/conf/bin/idbuild -B**

3. Reboot the system:

    # **cd /**
    # **shutdown -i6 -y -g0**   (if boards are already installed)
    # **shutdown -i0 -y -g0**   (if boards need to be installed)

4. Execute the following:

    # **usr/sbin/drivers/1553v5drv/abiconfig –ci /dev/ud/abiV50 0xe4000000 0x1000000**

5. Run your application.

6.2.   Default Firmware

The default firmware files are described in **/usr/src/drivers/1553v5drv/ firmware/firmware.cfg**. This file can be modified to contain different versions of the instruction and data firmware files. The files themselves must be in the same directory as **firmware.cfg**.

The current default versions are:

f008f.dat – instruction RAM file

f009f.dat – data RAM file

7.0. Testing Procedure

Tests are provided with the 1553v5 ABI user level driver in **`/usr/src/drivers/1553v5lib/`**
`examples`. The README file explains the purpose of each test.

It is recommended that all tests are run before submitting a support request.

8.0. 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. 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** or by sending an email to **support@ccur.com**.

Direct Software Support