

**A9782A/A9784A PCI-X
2 Gigabit Fibre Channel and
Gigabit Ethernet Combination Cards
for HP-UX 11i v 1.0
Release Notes**

Software Version B.11.11

HP-UX PA-RISC-Based Systems



i n v e n t

Manufacturing Part Number : J6372-90002

E0304

U.S.A.

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PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination Card Release Notes

What's in this Version

The following information is for the initial release of HP's A9784A PCI-X 2 Gigabit Fibre Channel and 1000BaseT Combination product for HP-UX 11i v 1.0 (version B.11.11). The information here also applies to the A9782A (fiber-based Gigabit Ethernet) card.

Table 1 shows all the hardware and software requirements for using the A9782A and A9784A. There are two separate drivers required for the combination card to operate: **igelan** for Gigabit Ethernet and **fd** for Fibre Channel. You can check to see if these drivers are present on your system by running the commands described in "How to Verify that the Correct Driver is in the Kernel" in this document.

For the latest information on the Fibre Channel driver and features, refer to the *A6826A Fibre Channel Mass Storage Adapter Release Notes* available on <http://docs.hp.com> under "Networking and Communications" The Fibre Channel driver in the A6826A and the features of that Fibre Channel product are identical to the Fibre Channel implemented on the A9782A and A9784A. The A6826A release notes provide the most recent information on the Fibre Channel driver used on the A9782A/A9784A because the Fibre Channel driver and minimum system requirements are identical.

For the most up-to-date list of network cards and the systems that they work on, check the Card, Driver, Version matrix on <http://docs.hp.com> under "Networking and Communications," or ask your sales representative.

What's in this Version

Features

The A9782A and A9784A PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination cards have the following features:

- PCI-X operation in 133 MHz, 64-bit-compatible mode. Note: the cards can also operate in PCI mode and so can be put in a PCI slot. The cards are **keyed** for 3.3 volt I/O slots, which means they only fit in 3.3 volt I/O slots. For further details on which slots support the cards, refer to “System Slots Keyed for the 3.3 Volt A9782A and A9784A Cards” in this document.
- vPars version A.02.03 support. Boot over vPars is supported only on the Fibre Channel port.
- Interrupt Migration.
- Support HP-UX 11i v 1.0 (64 bit) on PA-RISC platforms.
- Support the following PA-RISC systems (see Table 1 for details):
 - rp8420 and rp8400 (base system or base system and I/O Expansion (IOX) cabinet),
 - rp7420 and rp7410, and
 - Superdome (or Superdome with IO Expansion (IOX) cabinet).
- Support a maximum of 8k LUNs per system on HP-UX 11i v 1.0 (B.11.11).
- Support boot/dump on Fibre Channel port only.
- Online/Offline Diagnostics. There is a known problem when running the Offline Diagnostic Environment (ODE) from the A9782A and A9784A cards. For details, refer to “Known Problems and Workarounds” in this document.
- Ignite UX support.
- Support readout of Vital Product Data (VPD) for Fibre Channel. To read the Fibre Channel VPD, use: `fcmsutil devicefilename vpd` .
- Firmware for the Fibre Channel port.
- Two LED speed indicators for the Fibre Channel port: one 1Gb LED and one 2Gb LED.
- On the A9782A, two LED indicators for the GigE port: one LED for Link and one LED for Activity.
- On the A9782A, the 1000Base-SX port operates only at 1000 Mbit/s and only in full-duplex mode. It autonegotiates duplexity and flow control but not speed.

Ensure that the 1000 Mbit/s port on the interfacing switch is set for autonegotiation or 1000Mbit/s full-duplex mode.

- On the A9784A, the 1000Base-T port operates at 10 or 100 Mbit/s in either full- or half-duplex modes and at 1000 Mbit/s only in full-duplex mode. The Link/Activity LED stays on solid to indicate the link is up; the LED blinks when data is transmitted or received.

Ensure that you set both your switch and the gigabit Ethernet port on the card to autonegotiation or set both to the same speed and duplex mode

- The Gigabit Ethernet port supports use of Jumbo Frames. The maximum transmission unit (MTU) for using jumbo frames with the **igelan** driver on HP-UX 11i v 1.0 is 9000 bytes.
- The Gigabit Ethernet LAN software supports TCP/IP, NFS, and DLPI applications. Ethernet and SNAP encapsulations are supported.
- Support HP ServiceGuard.
- Support PCI-X/PCI online addition/replacement (OLA/R) on supported systems.

Overview of Software Installation Process

The required operating environment is HP-UX 11i v 1.0. To install the Operating Environment, use the Ignite-UX-11-11 Installation Utilities available on the HP-UX 11i v 1.0 OE or AR media. The operating environment version should show as B.11.11 when you type: **uname -a** at the system prompt.

For instructions on how to install and configure the A9782A and A9784A hardware and software, refer to the *PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination Card for HP-UX 11i v 1.0 Installation Guide* available on the web at <http://docs.hp.com> under “Networking and Communications.” If the A9782A or A9784A card was factory installed (ordered on product option 0D1) or is the “built-in” or “core” LAN, the LAN and Fibre Channel drivers for this card will already be on your system disk.

If Installing from the December 2003 OE or AR Media

The December 2003 HP-UX 11i Operating Environment disk, or Application Software and Support Plus disks contain everything you need except for an optional patch PHKL_28979 (or later).

1. Using the December HP-UX 11i Operating Environment disk or Support Plus disk, load the HWEEnable11i bundle. Load the HWEEnable11i bundle before or with the driver bundles mentioned in the next step.
2. Using the December HP-UX 11i Operating Environment disk or Application Software disk, load the two latest required drivers:
 - Fibre Channel driver (FibrChan1-01 bundle version B.11.11.02) and,
 - Gigabit Ethernet driver (GigEther-01 bundle version B.11.11.11).
3. Using the December HP-UX 11i Operating Environment disk or Support Plus disk, load the Online Diagnostics from the HP-UX Support Tools Bundle. They are necessary for Fiber Channel operation.
4. From the worldwide web, download the following recommended patch from either:
<http://software.hp.com> under “Internet Ready and Networking” or
<http://itrc.hp.com> :
 - PHKL_28979 (or later) -- *recommended* to resolve incorrect reporting of ioscan results when multiple instances of ioscan are running.

Software and Firmware Requirements

Following are the systems that support the A9782A and A9784A cards, the maximum number of cards supported per system, the required software, and the required firmware (PDC) level for the Fibre Channel port:

Table 1 Systems Supporting A9782A/A9784A and Minimum Firmware Req'ts

Systems that Support Card	Max Cards per System	HP-UX 11i v 1.0 (B.11.11) Software Application Release (to load in swinstall)	Minimum Firmware Version for Fibre Channel Port
Superdome (SD) base servers or with I/O Expansion (IOX) cabinet	64(64-way);32(32-way);16(16-way)	December 2003 OE or application software disk.	PDC 36.5
rp7410	12 (2 cages of 6 slots ea)		PDC 17.005
rp8400 base system	12 (2 cages of 6 slots ea; also see next entry)		PDC 17.005
rp8400 I/O Expansion (IOX) cabinet--meant for use in addition to base system	16 (so base plus IOX can support 28)		PDC 17.005

System Slots Keyed for the 3.3 Volt A9782A and A9784A Cards

The A9782A and A9784A are 3.3 volt only cards and are **keyed** for 3.3 volt I/O slots, which means they only fit in 3.3 volt I/O slots. The A9782A and A9784A are only supported in slots 1 through 6 of the rp8400 and rp7410. Each of those systems has 2 card cages for a total of 12 cards allowed per system.

How to Verify that the Correct Driver is in the Kernel

The A9782A and A9784A are only supported in slots 4 through 7 of HP Superdome. In each Superdome I/O cage (whether in the base system or IOX cabinet), slots 4 through 7 are the only high-performance 3.3 volt slots. Reminder: Networking and I/O cards are not customer installable in HP Superdome; they are for installation only by a qualified HP support representative.

How to Verify that the Correct Driver is in the Kernel

For instructions on how to install and configure the hardware and software, refer to the *PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination Card for HP-UX 11i V 1.0 Installation Guide* available on the web at <http://docs.hp.com> under “Networking and Communications.”

The required operating environment is HP-UX 11i v 1.0 or v 2.0. The operating environment version should show as B.11.11 or B.11.23 when you type: `uname -a` at the system prompt.

The A9782A and A9784A cards require the **fcd** B.11.11.02 driver version from the FibrChanl-01 bundle and the **igelan** B.11.11.09 driver from the GigEther-01 bundle. Note that the Fibre Channel driver is the same one used with the A6826A Fibre Channel card.

To verify that the driver was loaded in the kernel, execute the following command:

```
what /stand/vmunix |grep drivername  
where drivername is igelan (for Gigabit Ethernet) or fcd (for Fibre Channel)
```

You should see a response like:

```
igelan_ilan Version: 1 Jun 26 2003  
igelan Revision: B.11.11.09 Jun 26 2003
```

To verify that the fibre channel driver (fcd) was loaded in the kernel, you can also execute the following command: `fcmsutil /dev/fcdx`
where: x is the number assigned to the Fibre Channel port.

Known Problems and Workarounds

Problem 1----- The following Storage Networking Industry Association (SNIA) Common HBA API calls will not work correctly with an A9784A card:

- HBA_GetNumberOfAdapters() - This SNIA API call will not include any A9784A cards in the count of cards supported by the library.
- HBA_GetAdapterAttributes() - This SNIA API call will not correctly report the speed of the Fibre Channel port on an A9784A card. Other attributes will still be correctly retrieved.

This issue (detailed in JAGaf04234) may impact applications that use the SNIA Common HBA API libraries, such as SAN Management applications. For example, a SAN Management application may be unable to detect all of the cards on a system that has an A9784A card.

Cause ----- The HP-specific implementation of the SNIA Common HBA API library prevents the A9784A card from being correctly recognized.

Workaround:

There is currently no workaround available for this issue.

Fix --- The fix for this issue will be released in AR0604 in FCD version B.11.11.03

Problem 2-----There is a known problem when running the Offline Diagnostic Environment (ODE) from either the A9782A or A9784A card.

Issue:

Running the ODE diagnostics tools from a boot device attached to A9782A or A9784A will cause the following error message to be displayed:

```
Configuring the System...**Could Not Reset Boot Device **  
** IODC Returned An Error Status Of -4 **
```

Workaround:

There are two temporary workarounds in order to run the ODE tools. Boot and run the ODE diagnostics from either:

- the HP-UX 11i Support Plus disk or,
- a storage device not attached to the A9782A or A9784A.

A permanent fix for this will be released on the June 2004 HWEnable11i bundle located on either the June 2004 Operating Environment disk or Support Plus disk.

List of Related Documentation

The following is a list of documents related to this product. They are available on the web at <http://docs.hp.com> under “Networking and Communications.” The Support Guide is also available on the Instant Information CD if you have an HP support contract.

- *PCI-X 2 Gigabit Fibre Channel and Gigabit Ethernet Combination Card for HP-UX 11i v 1.0 Installation Guide*
Provides step-by-step instructions on how to install and configure the hardware and software.
- *A9782A PCI-X 2 Gigabit Fibre Channel and 1000Base-SX Combination Card for HP-UX 11i v 1.0 Support Guide*
Provides information on advanced features and detailed information on troubleshooting the combination Fibre Channel and Gigabit Ethernet card.
- *A6826A Fibre Channel Mass Storage Adapter Release Notes*
Provides the most recent information on the Fibre Channel driver that is identical to the Fibre Channel driver used in the combination 2 Gigabit Fibre Channel and Gigabit Ethernet cards.