Sun™ Quad GigaSwift Ethernet UTP Adapter Product Notes

Sun Microsystems, Inc.
www.sun.com

Part No. 817-2975-11
January 2004, Revision A

Submit comments about this document at: `http://www.sun.com/hwdocs/feedback`

Copyright 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, U.S.A. All rights reserved.

Sun Microsystems, Inc. has intellectual property rights relating to technology that is described in this document. In particular, and without limitation, these intellectual property rights may include one or more of the U.S. patents listed at http://www.sun.com/patents and one or more additional patents or pending patent applications in the U.S. and in other countries.

This document and the product to which it pertains are distributed under licenses restricting their use, copying, distribution, and decompilation. No part of the product or of this document may be reproduced in any form by any means without prior written authorization of Sun and its licensors, if any.

Third-party software, including font technology, is copyrighted and licensed from Sun suppliers.

Parts of the product may be derived from Berkeley BSD systems, licensed from the University of California. UNIX is a registered trademark in the U.S. and in other countries, exclusively licensed through X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo,AnswerBook2, docs.sun.com, Sun Enterprise Volume Manager, OpenBoot, SunVTS, Sun Enterprise, Sun Fire, and Solaris are trademarks, registered trademarks, or service marks of Sun Microsystems, Inc. in the U.S. and other countries. All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

All SPARC trademarks are used under license and are trademarks or registered trademarks of SPARC International, Inc. in the U.S. and in other countries. Products bearing SPARC trademarks are based upon an architecture developed by Sun Microsystems, Inc.

The OPEN LOOK and Sun™ Graphical User Interface was developed by Sun Microsystems, Inc. for its users and licensees. Sun acknowledges the pioneering efforts of Xerox in researching and developing the concept of visual or graphical user interfaces for the computer industry. Sun holds a non-exclusive license from Xerox to the Xerox Graphical User Interface, which license also covers Sun's licensees who implement OPEN LOOK GUIs and otherwise comply with Sun's written license agreements.

U.S. Government Rights—Commercial use. Government users are subject to the Sun Microsystems, Inc. standard license agreement and applicable provisions of the FAR and its supplements.

DOCUMENTATION IS PROVIDED "AS IS" AND ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS AND WARRANTIES, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT, ARE DISCLAIMED, EXCEPT TO THE EXTENT THAT SUCH DISCLAIMERS ARE HELD TO BE LEGALLY INVALID.

Copyright 2003 Sun Microsystems, Inc., 4150 Network Circle, Santa Clara, California 95054, Etats-Unis. Tous droits réservés.

Sun Microsystems, Inc. a les droits de propriété intellectuels relatants à la technologie qui est décrit dans ce document. En particulier, et sans la limitation, ces droits de propriété intellectuels peuvent inclure un ou plus des brevets américains énumérés à http://www.sun.com/patents et un ou les brevets plus supplémentaires ou les applications de brevet en attente dans les Etats-Unis et dans les autres pays.

Ce produit ou document est protégé par un copyright et distribué avec des licences qui en restreignent l'utilisation, la copie, la distribution, et la décompilation. Aucune partie de ce produit ou document ne peut être reproduite sous aucune forme, par quelque moyen que ce soit, sans l'autorisation préalable et écrite de Sun et de ses bailleurs de licence, s'il y ena.

Le logiciel détenu par des tiers, et qui comprend la technologie relative aux polices de caractères, est protégé par un copyright et licencié par des fournisseurs de Sun.

Des parties de ce produit pourront être dérivées des systèmes Berkeley BSD licenciés par l'Université de Californie. UNIX est une marque déposée aux Etats-Unis et dans d'autres pays et licenciée exclusivement par X/Open Company, Ltd.

Sun, Sun Microsystems, the Sun logo, AnswerBook2, docs.sun.com, Sun Enterprise Volume Manager, OpenBoot, SunVTS, Sun Enterprise, Sun Fire, et Solaris sont des marques de fabrique ou des marques déposées, ou marques de service, de Sun Microsystems, Inc. aux Etats-Unis et dans d'autres pays. Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits portant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

Toutes les marques SPARC sont utilisées sous licence et sont des marques de fabrique ou des marques déposées de SPARC International, Inc. aux Etats-Unis et dans d'autres pays. Les produits protant les marques SPARC sont basés sur une architecture développée par Sun Microsystems, Inc.

L'interface d'utilisation graphique OPEN LOOK et Sun™ a été développée par Sun Microsystems, Inc. pour ses utilisateurs et licenciés. Sun reconnaît les efforts de pionniers de Xerox pour la recherche et le développement du concept des interfaces d'utilisation visuelle ou graphique pour l'industrie de l'informatique. Sun détient une license non exclusive de Xerox sur l'interface d'utilisation graphique Xerox, cette licence couvrant également les licenciées de Sun qui mettent en place l'interface d 'utilisation graphique OPEN LOOK et qui en outre se conforment aux licences écrites de Sun.

LA DOCUMENTATION EST FOURNIE "EN L'ÉTAT" ET TOUTES AUTRES CONDITIONS, DECLARATIONS ET GARANTIES EXPRESSES OU TACITES SONT FORMELLEMENT EXCLUES, DANS LA MESURE AUTORISEE PAR LA LOI APPLICABLE, Y COMPRIS NOTAMMENT TOUTE GARANTIE IMPLICITE RELATIVE A LA QUALITE MARCHANDE, A L'APTITUDE A UNE UTILISATION PARTICULIERE OU A L'ABSENCE DE CONTREFAÇON.

Please
Recycle

Sun Quad GigaSwift Ethernet UTP Adapter Product Notes

This product note provides important information that was not available at the time the *Sun Quad GigaSwift Ethernet UTP Adapter Installation and User's Guide* was written.

Errors in the *Sun Quad GigaSwift Ethernet UTP User's Guide*

The following errors in the *Sun Quad GigaSwift Ethernet UTP Adapter Installation and User's Guide* were discovered after the product CD was produced.

Hardware Requirements

Table 1-1 on page 2 lists a number platforms that are not currently supported. The table should read as follows:

TABLE 1 Hardware and Software Requirements

Requirements	Hardware or Software
Hardware	Sun Enterprise™ E220, E420, E450, Netra™ 1150, Netra T20, Sun Blade™ 150, Sun Blade 1000, Sun Blade 2000, Sun Fire™ V210, Sun Fire V240, Sun Fire V440, Sun Fire V280, Sun Fire V480, Sun Fire V880
Software	Solaris™ 7, 8, and 9 operating environment

To Enable Jumbo Frames

Pages 27 and 28 provide examples for enabling jumbo frames. The following example at the top of page 28 is incorrect:

- **To set jumbo frames for a specific instance of** `ce`**, add a line into** `ce.conf` **file for that particular instance to be set to** `accept-jumbo`:

```
# grep ce /etc/path_to_inst
  "/pci@1f,0/network@a" 0 "ce"
  "/pci@1f,0/network@a" 0 "ce" accept-jumbo=1;
```

The correct example for enabling jumbo frames for a specific instance using the `ce.conf` file is as follows:

1. **Obtain the hardware path names for the** `ce` **devices in the device tree.**

   a. **Check the** `/etc/driver_aliases` **file to identify the name associated with a particular device:**

```
# grep ce /etc/driver_aliases
ce "pci108e,abba"
ce "pci100b,35"
```

Note – `ce "pci100b,35"` is used by the Sun Quad GigaSwift Ethernet device.

---

   b. **Locate the path names and the associated instance numbers are in the** `/etc/path_to_inst` **file.**

```
# grep ce /etc/path_to_inst
"/pci@9,600000/pci@1/pci@0/network@0" 0 "ce"
"/pci@9,600000/pci@1/pci@0/network@1" 1 "ce"
"/pci@9,600000/pci@1/pci@4/network@2" 2 "ce"
"/pci@9,600000/pci@1/pci@4/network@3" 3 "ce"
```

2. **Add the appropriate lines into the** `ce.conf` **file for the particular instances to be set to** `accept-jumbo`:

```
# cd /platform/sun4u/kernel/drv
# vi ce.conf
name="pci100b,35" parent="/pci@9,600000/pci@1/pci@0"
unit-address="0" accept-jumbo=1;
name="pci100b,35" parent="/pci@9,600000/pci@1/pci@4"
unit-address="3" accept-jumbo=1;
```

   In this example, jumbo frames is enabled on interfaces 0 and 3.

3. **Save the** `ce.conf` **file.**

▼ To Set Driver Parameters Using a `ce.conf` File

On page 52 the parent is incorrect:

To identify a PCI device unambiguously in the `ce.conf` file, use the name, parent name, and the unit-address for the device. Refer to the `pci`(4) man page for more information about the PCI device specification.

In the first line in the previous example:

- `parent` = “`pci@9,600000`”

In the second line in the previous example:

- `parent` = “`pci@9,600000`”
- `unit-address` = “`1`”

In the third line in the previous example:

- `parent` = “`pci@9,600000`”
- `unit-address` = “`2`”

In the fourth line in the previous example:

- `parent` = “`pci@9,600000`”
- `unit-address` = “`3`”

The correct parent in all four lines should be changed to the following:

- `parent` = “`/pci@9,600000/pci@1`”

On page 53, in the second code example, the parent and unit are incorrect:

In the following example, the `adv-autoneg-cap` and `adv-1000fdx-cap` parameters are set for a single instance of the Sun Quad GigaSwift Ethernet device.

```
name="pci100b,35" parent="pci@9,600000" unit-address="2"
adv-autoneg-cap=0 adv-100hdx-cap=0 adv-100fdx-cap=1 adv-1000fdx-cap=0 adv-
10hdx-cap=0 adv-10fdx-cap=0 adv-1000hdx-cap=0 adv-100T4-cap=0;
```

The parent and unit address in the code example should be changed to the following:

```
name="pci100b,35" parent="/pci@9,600000/pci@1" unit-address="0"
adv-autoneg-cap=0 adv-100hdx-cap=0 adv-100fdx-cap=1 adv-1000fdx-cap=0 adv-
10hdx-cap=0 adv-10fdx-cap=0 adv-1000hdx-cap=0 adv-100T4-cap=0;
```

Usability Enhancements to the Driver

On page 53, the second code example is wrong:

Then you had to get the link status:

```
# ndd -get /dev/ce adv_autoneg_cap
1
```

It should contain the following:

```
# ndd -get /dev/ce link_status
1
```

Changes in Supported Features

- Full hot plug and IO Dynamic Reconfiguration of the Sun Quad GigaSwift Ethernet adapter is not supported pending release of the following patches:
  - Solaris 8 110900-09 and 112838-08 (not released yet)
  - Solaris 9 113068-04 and 110824-05 (not released yet)

  The system must be powered off before you install the adapter.

Known Issues With the QGE Adapter

Table lists and describes the current problems with the QGE adapter and offers work arounds where applicable.

TABLE 2 Problems and Work Arounds

Problem	Work Around
The bus speed detection may not occur in the correct sequence on power up.	For Solaris 9, install Patch ID 113068-04 For Solaris 8, install Patch ID 110842-11
Dynamic Reconfiguration DR of the Quad GigaSwift Ethernet on Sun Fire" V880/Sun Fire 15000 servers may occasionally cause a system panic. This problem occurs during the connect phase of DR. In addition, sometimes the board may be identified as unknown. Both 33 MHz and 66 MHz slots are affected.	For Solaris 9, install Patch ID 113068-04. For Solaris 8, install Patch ID 110842-11.
System panics when the adapter is configured with hot plug I/O space, memory space, and the bus master is enabled even if all of the registers in the PCI configuration space are not initialized.	For Solaris 9, install Patches ID 110824-04 and 110900-09 For Solaris 8, install Patch ID 112838-07.
The device tree isn't built correctly after a series hot plug commands. The ethernet interfaces of the QGE card are not detected after hot plug/DR.	For Solaris 9, install Patch ID 110824-05 For Solaris 8, install Patch ID 112838-08
`reboot -r` hangs when using old `ce` drivers. The CD contains the minimum required driver/patches for the QGE product.	If your system does not have the latest patches, install the patches before you physically installing the card. If installing an OS from the network, you must also add the patch to the OS image on the Install Server.
Sun Fire V880R systems experience fatal resets under heavy load. Some systems might experience "FATAL RESET" crash under heavy stress on the PCI bus. The QGE card is a high bandwidth card and *might* bring out this crash if running at high loads.	Contact your Sun Service Representative.
Sun Fire V480R systems experience 'FATAL RESET' from DAR/DCS/CDX. Some systems might experience "FATAL RESET" crash under heavy stress on the PCI bus. The QGE card is a high bandwidth card and *might* bring out this crash if running at high loads.	Contact your Sun Service Representative.

Note – For all Patch IDs listed in TABLE 2, install the latest version. Patches are updated routinely. Each update has a higher number following the dash. For the Patch IDs listed here, the Patch ID number you would install would be the listed number or one with a higher number following the dash.

Installing the Adapter to Avoid Cable Problems

Note – While the RJ-45 connector specifications meet the PCI mechanical specifications, the cable release tab may be pinched due to the tightness of the slots in some systems.

1. **Align the adapter edge connector with the PCI slot and slide its face plate into the small slot at the end of the PCI opening.**
2. **Apply even pressure at both corners of the adapter and push the adapter until it is firmly seated in the slot.**
3. **Plug the cable into an RJ-45 connector.**
4. **Adjust the adapter to ensure that you can lock the cable in the connector before you fasten the screw into the top notch of the face plate.**

Jumbo Frames Support

Although Jumbo Frames is configurable in 10/100 mode, Jumbo Frames is only supported in the Gigabit (1000Mbps) mode. Configuring Jumbo Frames allows the QGE interfaces to send/receive packets of up to 9216 bytes. However, the actual transfer size depends on the switch capability.

Refer to the documentation that came with your switch's for exact commands to configure Jumbo Frames support.

Jumbo Frames with Trunking 1.3

When using Jumbo Frames with Trunking 1.3, you must explicitly enable Jumbo Frames on each link participating in the Trunk.

▼ To Configure Jumbo Frames Using ndd

1. **Bring down and unplumb the interface before using ndd to set Jumbo Frame.**
2. **Set the instance number:**

```
% ndd -set /dev/ce instance 0
```

   In this example, the instance number set is 0.

3. **Set the instance to accept jumbo frames:**

```
% ndd -set /dev/ce accept-jumbo 1
```

4. **Plumb the interface up:**

```
% ifconfig ce0 plumb xx.xx.xx.xx up
```

   Where *xx.xx.xx.xx* = the IP address of the interface.

5. **Repeat steps 1 throug 4 to set all the interfaces using jumbo frames.**

▼ To Configure Jumbo Frames Using ce.conf

- **Add the following line to the** `ce.conf` **file to set all the** `ce` **interfaces to use jumbo frames:**

```
accept_jumbo=1;
```