

**GigEther-00 (gelan)  
Gigabit Ethernet Driver  
for HP-UX 11i v 2  
of December 2005  
Release Notes**

**Software Version B.11.23.06**



**Manufacturing Part Number : J1642-90017  
E1205**

U.S.A.

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# GigEther-00 (gelan) Gigabit Ethernet Driver for HP-UX 11i v 2 of December 2005 Release Notes

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## What's in this Version

The following information is for the GigEther-00 (gelan) Gigabit Ethernet Driver for HP-UX 11i v 2 of December 2005. The gelan driver supports Gigabit Ethernet cards such as:

- A4929A PCI GigE Base-T,
- A4926A PCI GigE Base-SX.

You can check to see if this driver is present on your system by running the commands described in “How to Verify that the Correct Driver is in the Kernel” in this document.

The HP-UX 11i v 2 release of December 2005 provides the following new gelan Gigabit Ethernet Driver feature:

- *Ability to turn on or off the receive and send sides of the card's **Checksum Offload (CKO)**.* See details in the following section of this document.
- Improvements and fixes listed in Fixes in this Version.

## Checksum Offload Changes for the gelan Gigabit Ethernet Driver

Beginning with the HP-UX 11i v1 and v2 OE release of May 2005, the **gelan** gigabit Ethernet networking driver allows you to turn the CKO feature of the gigabit Ethernet interface ON or OFF. With this and subsequent versions of the **gelan** driver:

- The default for *receive* side CKO is OFF (disabled). Prior to the May 2005 release, the receive side CKO was ON (enabled). This setting can be restored as explained in the examples that follow.
- The default for the *send* side is CKO ON (enabled) -- the same setting as on prior releases.

### Example settings for gelan driver:

Recommended: To set the CKO options permanently (so they're saved across reboots), edit the following values in the `/etc/rc.config.d/hpgelanconf` file:

```
HP_GELAN_SEND_CKO and  
HP_GELAN_RECV_CKO and set them to ON or OFF
```

To determine the current CKO settings, enter the following command:

```
lanadmin -x cko ppa
```

Optional: If desired, you can also use the `lanadmin -X` command to temporarily set these values; but if you use the `lanadmin` command, your settings will not be saved across a reboot. The exact `lanadmin` commands are as follows (note that the `-X` is capitalized in these commands):

```
lanadmin -X send_cko_on ppa  
lanadmin -X recv_cko_on ppa
```

## Fixes in this Version

Please refer to the **lanadmin** man page for details of these CKO options.

The HP-UX 11i v 2 release of December 2005 provides the following new gelan Gigabit Ethernet Driver fixes:

The Gigabit Ethernet cards listed in the first part of this section are supported on the December 2005 release of HP-UX 11i v 2 on specified HP-UX PA-RISC and Itanium®/Itanium®2-based Servers and Itanium®/Itanium®2-based Workstations. The HP-UX 11i v 2 release of December 2005 is not for PA-RISC-based workstations. 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 “I/O Cards and Networking Software,” or ask your sales representative.

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## Fixes in this Version

The following fixes are included in the December 2005 HP-UX 11i v2:

- In the unlikely event that a hardware error occurred on a gigabit Ethernet controller, the checksum computation that was offloaded to the controller might not catch and discard incorrect data in a received frame.
- The MESA Information log displayed “N/A” for the Engineering Date Code, and an empty string for the Board Revision. This was because gelan was erroring out these requests.

Resolution:

The gelan driver has been modified to return correct values for these requests.

- Could not set Jumbo MTU when link was DOWN. This was because a driver check explicitly disallowed this.

Resolution:

The driver allows MTU changes to all values between 1024-9000, regardless of the link status.

- The maximum supported MTU value was retrieved with an IOCTL that was not supported by the gelan driver.

Resolution:

The driver now implements this IOCTL.

- The gelan driver's ISR (Interrupt Service Routine) did not provide any information on the entry/exit timestamps.

Resolution:

The driver has 2 new members in its data structure to record the entry and exit timestamps of its ISR.

- The driver did not support RFC 2863 compliant 64-bit statistics requests.

Resolution:

The gelan driver now supports 64-bit statistics requests.

- The gelan shared library for nettl was not passing the right number of parameters while invoking formatter's subsystem function in “nice” mode. Hence formatter dumped core when used with “nice” option.

Resolution:

The gelan shared library for nettl is modified to pass in all the arguments to the formatter subsystem.

- When netfmt(1m) was used with the “nice” option, the gelan driver's formatter library also performed a “raw” format. This caused each traced packet from the gelan driver to be displayed in both “nice” and “raw” formats.

Resolution:

The gelan driver's formatter library performs only the “nice” format when netfmt(1m) is invoked with the “nice” option.

- WBEM clients could not retrieve the properties port type, flow control status, and maximum speed on gelan interfaces.

Resolution:

The gelan driver now processes the requests and returns the appropriate values.

- On systems subjected to high stress, gelan interfaces were found to transition to GELAN\_ERROR state, as reported by the “-x card\_info” option of the lanadmin(1m) command. This brought the link to DOWN state for the interface, and a reset of the card was required to recover. This happened because the gelan driver's interrupt service routine was not invoked for a long time due to the high stress on the system. So, a watchdog timer put the interface into GELAN\_ERROR state.

Resolution:

The watchdog timer has been modified to not rely on the interrupt service routine for monitoring the health of the gelan interface.

- In one observed instance, the content of the receive control structure DMA'd to the host memory by the card was incorrect. That control structure contains an index used by the driver to process inbound packets. Incorrect index could lead driver to access wrong host memory location and result in system panic.

Resolution:

A check is added in the driver to verify that the index is within the expected limit. If the index is invalid, the driver will take the interface offline.

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## Overview of Software Installation Process

The installation media for the December 2005 release of HP-UX 11i v 2.0 consists of two DVDs -- one with the Operating Environment (OE) and the other with applications. If you load the latest OE, you will get the latest gigabit Ethernet drivers including the gelan driver described in this document. The gelan driver resides in a software set or “bundle” named GigEther-00.

Install the Operating Environment according to the instructions in the *Installation and Update Guide HP-UX 11i Version 2*. The operating environment version should show as B.11.23 when you type: **uname -a** at the system prompt.

For instructions on how to install and configure your network card's hardware and software, refer to the *PCI 1000Base-T and HSC/PCI 1000Base-SX/9000 Quick Installation* available on the web at <http://docs.hp.com/en/netcom.html> under “Gigabit Ethernet.” If the network card was factory installed (ordered on product option 0D1) or is the “built-in” or “core” LAN, the LAN driver for this card will already be on your system disk.

## How to Verify that the Correct Driver is in the Kernel

The operating environment is HP-UX 11i v 2. The operating environment version should show as B.11.23 when you type: **uname -a** at the system prompt. For the December 2005 release of HP-UX 11i v 2.0, Gigabit Ethernet cards such as the A4926A and A4929A cards require the **gelan** B.11.23.05 driver from the GigEther-00 bundle. To verify that the driver was loaded in the kernel, execute the following command:

```
what /stand/vmunix |grep drivername
```

where *drivername* is gelan (for the GigEther-00 bundled Gigabit Ethernet)

You should see a response like:

```
gelan_ilan Version: 1 Aug 18 2005  
gelan Revision: B.11.23.05 Aug 18 2005
```

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## List of Related Documentation

Following is a list of documents related to this product. They are available on the web at <http://docs.hp.com> under “I/O Cards and Networking Software.” Scroll down to 1000Base-T and 1000Base-SX (Gigabit Ethernet). The Support Guide is also available on the Instant Information CD if you have an HP support contract.

- *PCI 1000Base-T and HSC/PCI 1000Base-SX/9000 Quick Installation*  
Provides step-by-step instructions on how to install and configure the hardware and software.
- *Ethernet Support Guide*  
Provides information on advanced features and detailed information on troubleshooting the Gigabit Ethernet cards.
- *Installation and Update Guide HP-UX 11i Version 2*  
Provides information on installing the Operating Environment whether on a new or existing system.