Netra™ T2000 Server Product Notes

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Netra T2000 Server Product Notes

The *Netra T2000 Server Product Notes* provide last-minute information regarding your Netra™ T2000 server.

Topics include:

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- "Software Notes" on page 19
- "Documentation Notes" on page 25

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Shipping Kit Contents

The shipping kit might contain different items than those described on the packing list. For example, to promote eco-responsibility, the kit might no longer contain the RJ-45 Ethernet cable, the antistatic wriststrap, or other ancillary items. Alternatively, serial adapters, fasteners, or other items not listed on the packing list might be included to enhance the customer experience. Contact Sun Microsystems, Inc. to purchase the items you need. These ancillary items also might be available at computer supply stores.

Hardware Notes

Surge Protection

The Netra T2000 server does not require an additional surge protector for the AC or DC power configurations if the facility has a surge protector that limits voltage surges to less than 2000 volts. You can, however, install a surge protector if your site requires an additional protector.

New Storage Configuration

The Netra T2000 server is now available with 4 hard drives in the 8-core configuration. There is no optical media drive in this configuration. Hot-swapping of these drives and mass storage assembly replacement procedures are similar enough that the existing administration and service documentation is sufficient.

New PCI Tray

Some Netra T2000 servers are shipping with a slightly different PCI tray design than that described in the documentation. The functionality of the trays are identical, as are the PCI card type locations.

PCI Card Retainers

Your Netra T2000 server (or the included accessory kit) might not have the upgraded PCI card retainers to support the LM320 SCSI card in slots PCI-X2 and PCI-X3. If you require support for this card in either of these slots, please contact your Sun representative.

AC Power Supply Fans

When the system is in standby mode and 12 VDC power is off, the power supply fans might or might not be spinning.

Power Cycling the Server

Wait at least 10 seconds from power off, before you use the Power/Standby button to power on the Netra T2000 server.

Supported Writable Optical Media

The optical media drive shipped in your Netra T2000 server might be a model TS-T632A. As a service to users who want to burn CD or DVD writable media, Sun Microsystems is making the following information available from the manufacturer's in-house testing of their drive.

TABLE 1   CD-R Supported Media

Maker	LI	LO
SKC	964005	795974
MPO	970006	795974
TDK	971505	795974
TDK	971505	910148
RITEK	971517	795970
MKM	971521	795974
NANYA	971537	795974
?	971629	795973
?	971629	795974
MBI	971706	795974
Wealth Fair	971817	795974

TABLE 1   CD-R Supported Media *(Continued)*

Maker	LI	LO
DDT	971828	795974
?	972115	795974
BeAll	972116	795974
E-TOP	972122	795974
E-TOP	972128	795974
DAXON	972267	795974
TAIYO YUDEN	972401	744301
TAIYO YUDEN	972401	744302
TAIYO YUDEN	972401	795972
SONY	972411	795974
SONY	972415	744300
SONY	972415	795974
SONY	972416	795974
CSI	972426	795974
MPO	972506	744500
MPO	972507	795900
MPO	972509	795900
MAXELL	972529	743000
MAXELL	972529	795974
NSD	972535	795971
NSD	972535	795974
FORNET	972607	795971
FORNET	972607	795974
SKC	972626	745973
SKC	972626	795973
LEAD DATA	972654	795974
LEAD DATA	972656	795974
CMC	972666	795971
CMC	972666	795973
CMC	972666	795974

TABLE 1 CD-R Supported Media *(Continued)*

Maker	LI	LO
D-ST	972706	795972
PLASMON	972718	795974
PLASMON	972719	795974
MAM-E	972758	795974
RICOH	972766	795971
GIGA	972812	795972
GIGA	972812	795974
GIGA	972815	795972
Kingpromedia	972822	795967
MMM SA	972826	795974
PRODISC	973219	795971
PRODISC	973219	795972
PRODISC	973219	795973
PRODISC	973219	795974
MKM	973421	744300
MKM	973421	795974
MKM	973423	744301
MKM	973423	795973

TABLE 2 CD-RW Supported Media

Maker	LI	LO
RITEK	971000	795974
MBI	971700	795974
Daxon	972260	744150
Daxon	972260	795974
CMC	972665	795974
RICOH	972700	741200
RICOH	972700	795974
MKM	973422	795974

TABLE 2 CD-RW Supported Media *(Continued)*

Maker	LI	LO
MKM	973422	744300
RITEK	971000	795974
Nanya	971535	795973
MBI	971701	795974
Daxon	972260	795974
Daxon	972260	744150
Fornet	972600	795974
Lead data	972651	795974
CMC	972665	795974
RICOH	972700	795974
RICOH	972700	741200
Princo	972729	795974
Prodisc	973210	795974
MKM	973423	795974
MKM	973423	744300
MKM	973424	795974
MKM	973424	744300
MKM	973425	795974
MKM	973425	744300
?	972711	744101
?	972710	744101
?	972650	745974

TABLE 3 DVD+R Supported Media

Maker	MID	MT ID
BeAll	BeAll000	P40
CMC	CMC MAG	F01
DDT	DDT	001
NSD	INFODISC	R10

TABLE 3   DVD+R Supported Media *(Continued)*

Maker	MID	MT ID
INFOSCIENCE	IS01	001
MAXELL	MAXELL	001
MBI	MBIPG101	R03
MKM	MCC	002
OPTODISC	OPTODISC	OR4
PHILIPS	PHILIPS	C08
RICOH	RICOHJPN	R01
RITEK	RITEK	R02
TDK	TDK	001
INTERAXIA	VDSPMSAB	001
UME	AML	002
CMC	CMC MAG	E01
DAXON	DAXON	AZ2
DDT	DDT	002
E-TOP	EMDP	000
NSD	IMC JPN	R01
NSD	INFODISC	R20
INFOMEDIA	INFOME	R20
INFOSCIENCE	IS02	001
ISSM	ISSM	001
AMC	KIC00000	S80
LEADDATA	LD	S03
MAM-E	MAM	M02
MAXELL	MAXELL	002
MBI	MBIPG101	R04
MKM	MCC	003
Eastgate	MICRON	001
MPO	MPOMEDIA	080
NANYA	NANYA	CLX
OPTODISC	OPTODISC	OR8

TABLE 3 DVD+R Supported Media *(Continued)*

Maker	MID	MT ID
PHILIPS	PHILIPS	081
POSTECH	POS	R01
Prodisc	PRODISC	R03
RICOH	RICOHJPN	R02
RITEK	RITEK	R03
SONY	SONY	D11
TDK	TDK	002
Wealth Fair	WFKA11	211
TAIYO YUDEN	YUDEN000	T02
BeAll	BeAll000	PG0
CMC	CMC MAG	M01
DAXON	DAXON	AZ3
DAXON	DAXON	CY3
E-TOP	EMDPAZ01	000
INFOMEDIA	INFOME	R30
INFOSCIENCE	IS03	001
ISSM	ISSM	003
LEADDATA	LD	S04
LGE	LGEP16	001
MAXELL	MAXELL	003
MBI	MBIPG101	R05
MKM	MCC	004
MUST	MUST	006
NANYA	NANYA	FLX
NSD	NSD	R40
OPTODISC	OPTODISC	R16
POSTECH	POS	R05
Prodisc	PRODISC	R04
Prodisc	PRODISC	R05
RICOH	RICOHJPN	R03

TABLE 3 DVD+R Supported Media *(Continued)*

Maker	MID	MT ID
RITEK	RITEK	R04
RITEK	RITEK	P16
RITEK	RITEK	R05
SONY	SONY	D21
TDK	TDK	003
TAIYO YUDEN	YUDEN000	T03
SKC	SKC	P16
UME	AML	003
?	MJC	005
?	Dvsn+16	001
RITEK	RITEK	F16
ULTRAN	ULTRAN	212
Wealth Fair	WFKA11	321

TABLE 4 DVD-R Supported Media

Maker	MID
BeAll	BeAllG40001
CMC	CMC MAG AF1
DDT	DDTRG001
DST	DvsnA001
GIGA	GSC001
NSD	INFODISC-R01
AMC	KIC01RG20
MAME(France)	MAM4XG02
MKM	MCC 01RG20
Must Tech	MUST 001
MAXELL	MXL RG02
Prodisc	ProdiscS03
RITEK	RITEKG04

TABLE 4   DVD-R Supported Media *(Continued)*

Maker	MID
TDK	TTG01
TY	TYG01
NSD	UTJR001001
CMC	CMC MAG AE1
DAXON	DAXON008S
DDT	DDT02RG20
DST	Dvsn-80
FUJIFILM	FUJIFILM03
GIGA	GSC003
GIGA	GSC004
NSD	IMC JPN R01
NSD	INFODISC-R20
INFOMEDIA	INFOMEDIAR20
ISSM	ISSMR01
AMC	KIC01RG080
LEADDATA	LEADDATA S03
LGE	LGE08
MKM	MCC 02RG20
Must Tech	MUST 003
MAXELL	MXL RG03
OPTODISC	OPTODISCR008
Plasmon	Plasmon1A
POSTECH	POSG06
PRINCO	PRINCO8X02
PRODISC	ProdiscF01
PRODISC	ProdiscS04
RITEK	RITEKG05
SONY	SONY08D1
TDK	TTG02
TDK	TTH01

TABLE 4   DVD-R Supported Media *(Continued)*

Maker	MID
TY	TYG02
BeAll	BeAllG16001
CMC	CMC MAG. AM3
DAXON	DAXON016S
FUJIFILM	FUJIFILM04
INFOSCIENCE	INFOSMART03
ISSM	ISSMR02
LEADDATA	LEADDATA S04
LGE	LGE16
MBI	MBI 01RG40
MBI	MBI03RG40
MKM	MCC03RG20
Must Tech	MUST007
MAXELL	MXLRG04
NANYA	NANYAF02
NSD	NSDR40
OPTODISC	OPTODISCR016
POSTECH	POSG08
PRODISC	ProdiscF02
PRODISC	ProdiscS05
RITEK	RITEKF1
SONY	SONY16D1
TDK	TTH02
TY	TYG03
INFOSCIENCE	INFOSMART01

TABLE 5 DVD+RW Supported Media

Maker	MID	MT ID
RICOH	RICOHJPN	W01
INFOMEDIA	INFODISC	A10
DAXON	DAXON	D42
MBI	MBIPG101	W04
MKM	MKM	A02
OPTODISC	OPTODISC	OP4
PHILIPS	PHILIPS	041
PRODISC	PRODISC	W02
RITEK	RITEK	004
PHILIPS	PHILIPS	RW8
RICOH	RICOHJPN	W21
RITEK	RITEK	008
RICOH	RICOHJPN	W11

TABLE 6 DVD-RW Supported Media

Maker	MID
CMC	CMC W02
DAXON	DAXON_RW2X01
INFOMEDIA	INFOMEDIA
JVC	JVC_VictorW7
MKM	MCC 01RW11n9
PRINCO	PRINCORW2X01
PRODISC	Prodisc DW04
RITEK	RITEKW01
TDK	TDK502sakuM3
CMC	CMC W03
INFOMEDIA	INFOMEDIAA20
JVC	JVC0VictorD7

TABLE 6 DVD-RW Supported Media *(Continued)*

Maker	MID
MBI	MBI01RWG 20
MKM	MCC 01RW4X
OPTODISC	OPTODISCW004
PRINCO	PRINCORW0004
PRODISC	Prodisc DW06
RITEK	RITEKW04
TDK	TDK601saku
MKM	MCC 01RW6X01
JVC	JVC1Victord7
TDK	TDK701saku
RITEK	RITEKW06

TABLE 7 DVD-R Dual Layer Supported Media

Maker	MID
MKM	MKM 01RD30

TABLE 8 DVD+R Dual Layer Supported Media

Maker	MID	MT ID
CMC	CMC MAG	D01
MKM	MKM	001
RICOH	RICOHJPN	D00
RITEK	RITEK	D01
MKM	MKM	003
RICOH	RICOHJPN	D01

TABLE 9   DVD-RAM Supported Media

Maker	MID
Matsushita	Matsushita M01J3002
Matsushita	Matsushita M01J3003
Matsushita	Matsushita M01J3004
RITEK	RITEK M02
MAXELL	MXL 16
OPTODISC	OPTODISC
RITEK	RITEK M01

Sun 10-Gigabit Ethernet PCI-X Adapter

Now shipping with the adapter is a small, rectangular ESD-EMI gasket. This gasket improves ESD-EMI characteristics. You must install this gasket before installing the adapter into a system. Use the following procedure to install the gasket.

1. **Using a No. 2 Phillips screwdriver, remove the two screws that secure the bracket to the adapter card.**

   See FIGURE 1.

FIGURE 1 Removing the Bracket Screws
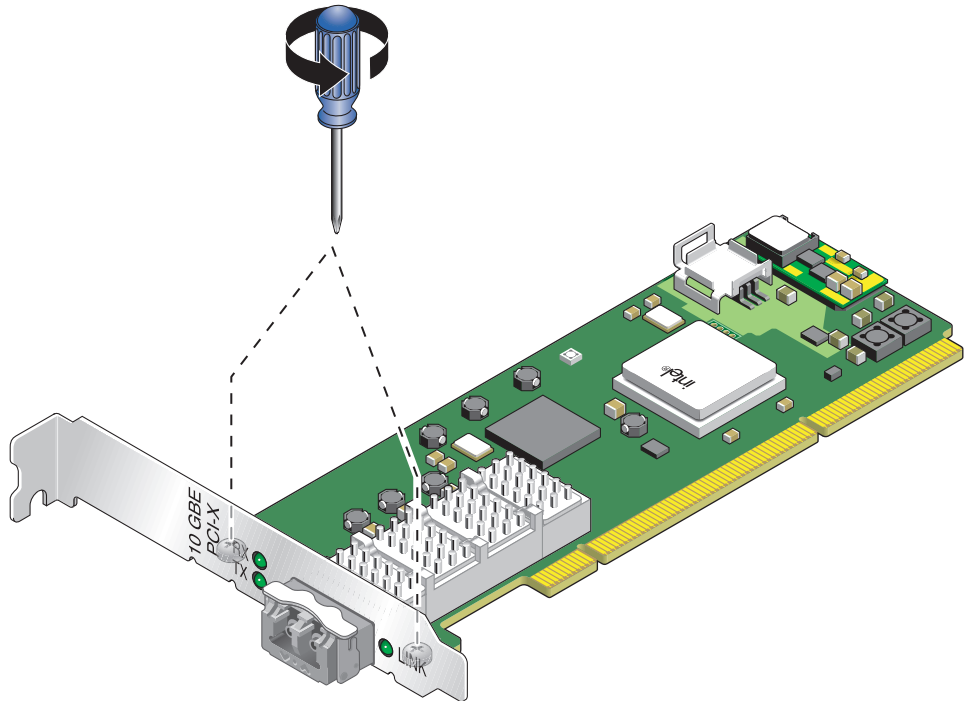
2. **Release the lever on the optical transceiver.**

3. **Disassemble the optical transceiver and bracket from the adapter card as one unit.**

   See FIGURE 2.

FIGURE 2   Disassembling the Sun 10-Gigabit Ethernet PCI-X Adapter
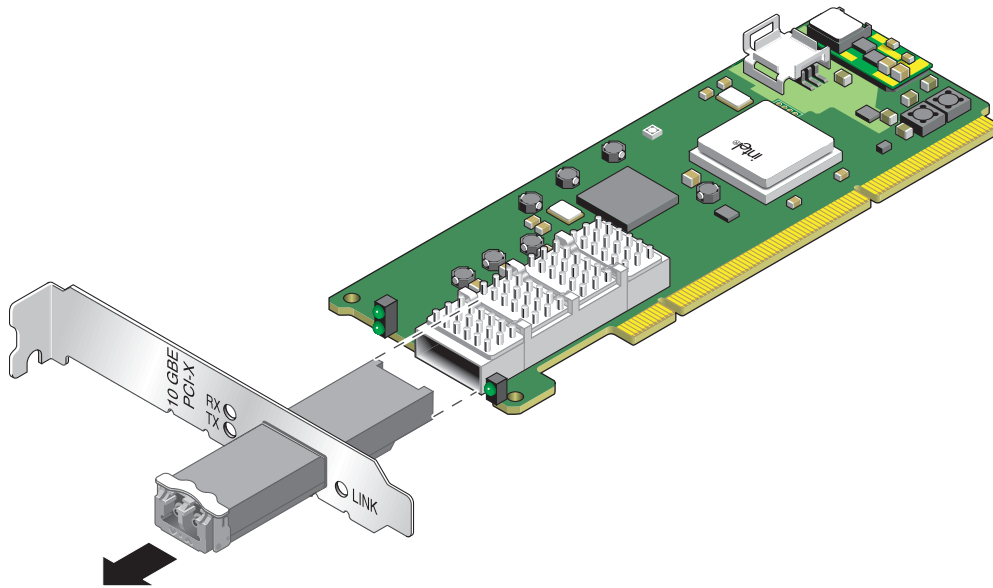
4. **Determine which bracket you are going to use.**

   If that bracket is different than the one with the optical transceiver, swap the brackets.

5. **Ensure that the bracket has the correct orientation.**

   See FIGURE 2.

6. **Peel the backing off of the EMI-ESD gasket and slide it over the optical transceiver, with the sticky side toward the bracket.**

7. **Reassemble the optical transceiver, bracket, and gasket to the adapter card.**

   See FIGURE 3.

FIGURE 3   Assembling the Sun 10-Gigabit Ethernet PCI-X Adapter

Sticky side out
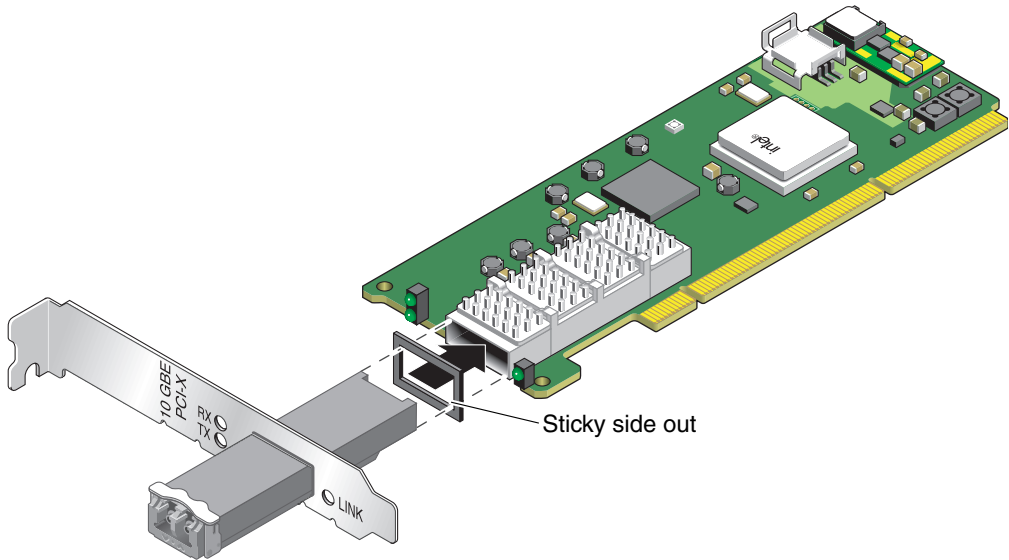
8. Using the No. 2 Phillips screwdriver, tighten the two screws securing the bracket to the adapter card.

See FIGURE 4.

FIGURE 4   Securing the Bracket Screws
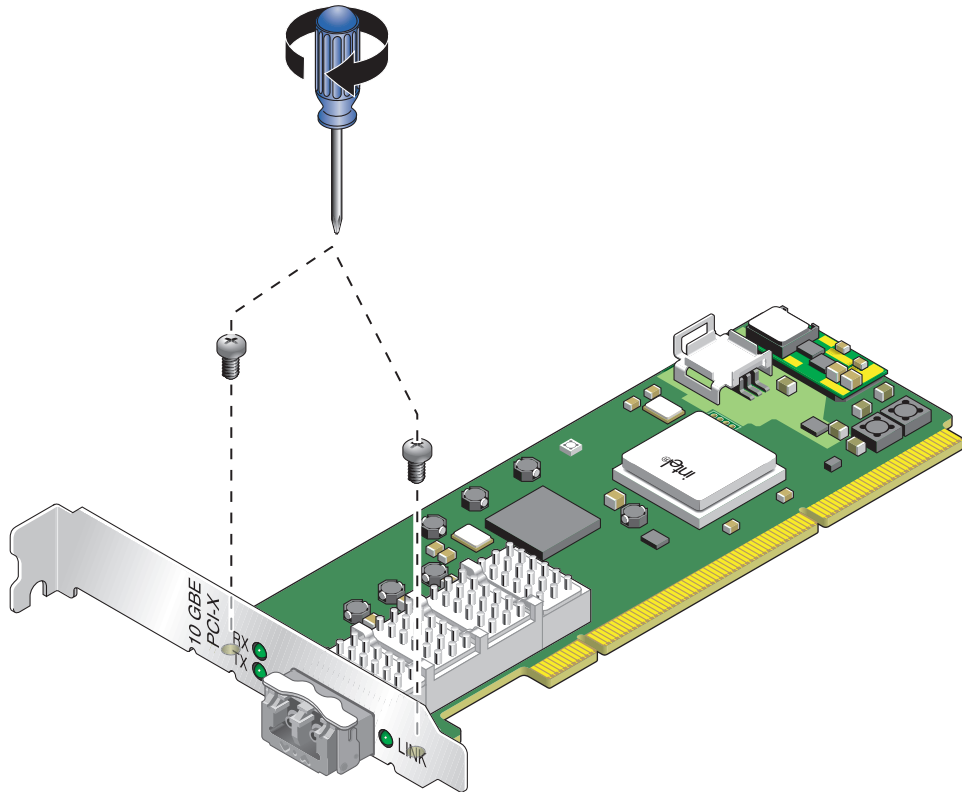
9. **Close the lever on the optical transceiver.**

10. **Install the Sun 10-Gigabit Ethernet PCI-X adapter into the Netra T2000 server.**

    See the *Netra T2000 Server Service Manual* for instructions.

Software Notes

Transition From the `ipge` to the `e1000g` Network Driver

About the `ipge` and `e1000g` Network Drivers

The `ipge` network driver was a temporary support mechanism for the Intel PCI-Express network interfaces found on SPARC® based servers. The driver was provided in the following releases of the Solaris™ 10 software:

- Solaris 10 3/05 HW2

- Solaris 10 1/06

- Solaris 10 6/06

Presently, and with the release of Solaris 10 11/06, the new Sun standard `e1000g` network driver is available. The `e1000g` driver provides additional features such as link aggregation, as well as superior performance in most environments.

Transitioning from the `ipge` driver to the `e1000g` driver will circumvent the following issues:

- 6386498 - `ipge` trouble talking to switch forced to 100/full

- 6445862 - Solaris 10 U2 on Sun Fire™ T2000 Sun Ray™ server panics due to `ipge` driver

- 6233824 - `ipge` driver external loopback test (`netlbtest`) does not work

- 6331252 - Ophir based network devices are unreliable in back-to-back configuration

- 6191165 - Under heavy load `ipge` driver can exit a thread uncleanly when unplumbed

- 6287035 - Onboard network ports (`ipge`) on Sun Fire T2000 showing inconsistent behavior

- 6324131 - Activity LED remains on even though no traffic is passing through

Conditions of the Transition

When transitioning from the `ipge` network driver to the `e1000g` network driver, consider the following conditions:

■ The transition script automatically transitions all Sun network configuration files from using `ipge` to `e1000g` network interface. This transition results in a new `e1000g` network interface name. All device instances remain intact.

■ The transition script is unable to transition third-party applications or user scripts that have the `ipge` network interface name embedded. Failure to manually convert such applications at the time the transition script is run might result in application failure. Because failure modes are application-dependent, it is not possible to predict specific application symptoms and error messages. Applications most likely to be affected by the transition are firewalls.

■ Presently, Sun Cluster systems cannot upgrade to the `e1000g` network driver. The transition script detects this condition and automatically exits.

Transitioning From the `ipge` to the `e1000g` Network Driver

1. **Install patch 118833-18 or later, or install Solaris 10 11/06 software or later.**

2. **Install the `e1000g` transition patch, 123334-01 or later.**

3. **Run the transition script,** `/usr/sbin/e1000g_transition -b`**, delivered in patch 123334.**

   The `-b` argument allows you to back out the script, should there be complications. See "Conditions of the Transition" on page 19.

More Information

See Sun Alert Notification 102502 for more information about the transition from the `ipge` to the `e1000g` driver. The notification is available online at:

http://sunsolve.sun.com/search/document.do?assetkey=1-26-102502-1&searchclause=102502

NIC Data Integrity Issues

If the `e1000g` network driver is configured for use with the Intel Gigabit Ethernet card, there might be data integrity issues during periods of high stress on the network interfaces. When the system is under high network stress, application data could be corrupted. Data corruption can only be detected by the application or if the user sees unexpected application data.

● **To determine if you have an Intel Gigabit Ethernet Card installed, type this command as superuser:**

```
# ifconfig -a
```

If an Intel Gigabit Ethernet Card is installed, the output contains a string in the form of `e1000g`x. Where x is 0, 1,2,...

Workaround: Add the following to the `/etc/system` file as superuser:

```
set ip:dohwcksum=0
```

Supported Firmware and Software Versions

The following firmware and software version are the minimum supported versions for the Netra T2000 server:

- Solaris 10 1/06 - 6/06 Operating System
- Sun system firmware 6.2.1, which includes Advanced Lights Out Manager (ALOM) CMT 1.2.1 software
- SunVTS™ 6.2 software
- Sun Management Center 4.0 software

Suggested Patches and Packages

Sun Microsystems continually strives to improve software and applications. Developments in the functionality of the Solaris 10 6/06 and earlier operating system have necessitated the following patches to provide your server with optimal performance:

- `123252-01` — SunOS 5.10: platform/SUNW, Netra-T2000 patch
- `119578-27` — SunOS 5.10: FMA patch

The following patches supplement the Solaris 10 11/06 and later Operating System and provide enhancement:

- `124753-02` — Firmware 6.3.7
- `126238-01` — `prtdiag picl` features point patch
- `126237-01` — drivers and `scadm` features point patch
- `125122-01` — `ntwdt` point patch

The patches are available for download at:

http://sunsolve.sun.com

`nalmtest` of SunVTS Hangs

6424423 — The `nalmtest` of SunVTS 6.2 might hang while running.

Workaround: You can leave SunVTS or `nalmtest` hung (as this should not effect other processes on the system) or reboot the server.

Critical Alarm Upon Boot

6421462 — Upon booting the Netra T2000 server, the critical alarm LED might be illuminated, yet there is no error.

Workaround: Reset the critical alarm through the system controller using the following ALOM command:

```
sc> setalarm critical off
```

System Panic From Solaris 10 6/06 Optical Media Drive Boot

6453703 — Booting the Netra T2000 server from the optical media drive with a version of Solaris 10 6/06 or earlier will cause a system panic. The Solaris 10 6/06 DVD or CD-ROM does not have the necessary patches for the Netra T2000. See "Suggested Patches and Packages" on page 21. If you must boot the server from the optical media drive, use a later version of the Solaris Operating System.

FMA Error Continuously Reported

6438060 — After a reboot, FMA continuously reports `SUNOS-8000-1L` messages for `ereport.io.pci.sec-rserr`. This is a fault in the FMA software. This situation is under investigation.

Critical Fault in PCI-Express Subsystem

6457637 — In a Sun Cluster configuration, a critical fault in the PCI-Express subsystem is reported.

Workaround: Perform the following steps:

1. Edit the `/etc/system` **file to contain the following lines:**

```
set pcie:pcie_aer_ce_mask=0x1
set segkmem_lpsize=0x400000
```

2. Clear the FMA errors:

```
# fmadm repair fault-identifier
# cd /var/fm/fmd
# rm e* f* c*/eft/* r*/*
# fmadm reset cpumem-diagnosis
# fmadm reset cpumem-retire
# fmadm reset eft
# fmadm reset io-retire
```

3. Clear the faults in the system controller through the ALOM prompt:

```
sc> showfaults -v
ID Time FRU Fault
0 Aug 4 22:01 hc://product-id=SUNW,Netra-T2000/component=
IOBD Host detected fault, MSGID:
SUN4-8000-75 UUID: fault-identifier

sc> clearfault fault-identifier
Clearing fault from all indicted FRUs...
Fault cleared.
```

Console Output Is Slow

6453191 — The console output from the serial ports appears to be at 1200 baud. The root cause of this behavior is from 6405226 and 6450614.

Workaround: Upgrade to firmware version 6.3.7 with patch 124753-02 or later to resolve this problem.

ALOM and POST Reports Conflict

6454648 — The power-on self-test reports an error in the IO-bridge test, yet ALOM does not. There are two conditions to this situation, ALOM does not test the IO-bridge and POST is falsely reporting the error.

Workaround: Add three entries to the ASR database. Edit the `asr.cfg` file to have the following lines:

```
node asr_entry pcie-pcix1 {
  key = "pcie-pcix1";
  alt = "IOBD/PCI-BRIDGE1";
  nac = "IOBD/PCI-BRIDGE1";
  path = "/@780/@0/@8/@0";
  reason = [ 0x00 ];
  postbits = 0x10000000000000;
}

node asr_entry pcie-pcix2 {
  key = "pcie-pcix2";
  alt = "IOBD/PCI-BRIDGE2";
  nac = "IOBD/PCI-BRIDGE2";
  path = "/@7c0/@0/@1/@0";
  reason = [ 0x00 ];
  postbits = 0x2000000000000000;
}

node asr_entry pcie-pcix3 {
  key = "pcie-pcix3";
  alt = "IOBD/PCI-BRIDGE3";
  nac = "IOBD/PCI-BRIDGE3";
  path = "/@7c0/@0/@9/@0";
  reason = [ 0x00 ];
  postbits = 0x4000000000000000;
}
```

Cluster Interconnects Go Up and Down

6328986, 6467860 — Sun Cluster 3.1u4 customers wanting to use the on-board Gigabit Ethernet ports or ports from a PCIe network interface card and the `e1000g` network driver for cluster interconnects, require an Ethernet switch.

Efforts are underway to resolve this situation.

System Clock Drift

6565947 — In some Netra T2000 servers, the system clock drifts by as much as 20 seconds per day. Additionally, the ALOM real-time clock corrects the system clock every two hours. Upon correction, the system clock jumps approximately two seconds.

Workaround: Perform one of the following actions:

- Configure the Netra T2000 server as a Network Time Protocol (NTP) client.
- Edit the `/etc/system` file to contain the following line:

```
set sys_tick_freq=0x3b9ea648
```

Reboot the system.

Documentation Notes

Differences of Information

There are differences between the Netra T2000 server documentation and labels applied to the server itself. These differences occur because the information is presented in the context of its need. For example, the serial connector is labeled with either the word "serial" or "A". This label identifies a type of signal and its standard connector. The server documentation provides more information about that signal, its parameters, and the connector pinout. The same holds true for the server service label, as it provides a summary or overview of service procedures. More explicit and detailed procedures are described in the server service manual.

Additional Documentation Support

The Sun Fire T2000 server and Netra T2000 server share certain characteristics. You can consult the *Sun Fire T2000 Server Product Notes*, 819-2544-18, as an additional documentation support resource.

PCI Cable to U-Plate Fasteners

In section 2.3.6 of the *Netra T2000 Server Service Manual*, 819-5841-10, the procedure to remove the PCI tray describes removing the U-plate. Earlier versions of the Netra T2000 server did not have hook-and-loop fasteners on the underside of the U-plate, to which the PCI cables are attached.

For newer versions of the Netra T2000 server, you must take an additional step of unfastening the PCI cables from the underside of the U-plate before you remove the U-plate.

Accordingly, you must take the additional step of attaching the PCI cables to the underside of the U-plate, after installing the U-plate.

`scadm` Command Not Supported

In Chapter 2, Advanced Lights Out Management, of the *Netra T2000 Server Administration Guide*, use of the `scadm` command is discussed. The Netra T2000 server supports the `scadm` command with the following software installed:

- Solaris 10 11/06 or later operating system
- Firmware 6.3.7 or later
- Point patch 126237-01 or later

PCI Slots Incorrectly Identified

The Netra T2000 documentation incorrectly identifies the PCI slots. The correct labeling is seen in FIGURE 5.

FIGURE 5   Netra T2000 Server Rear Panel
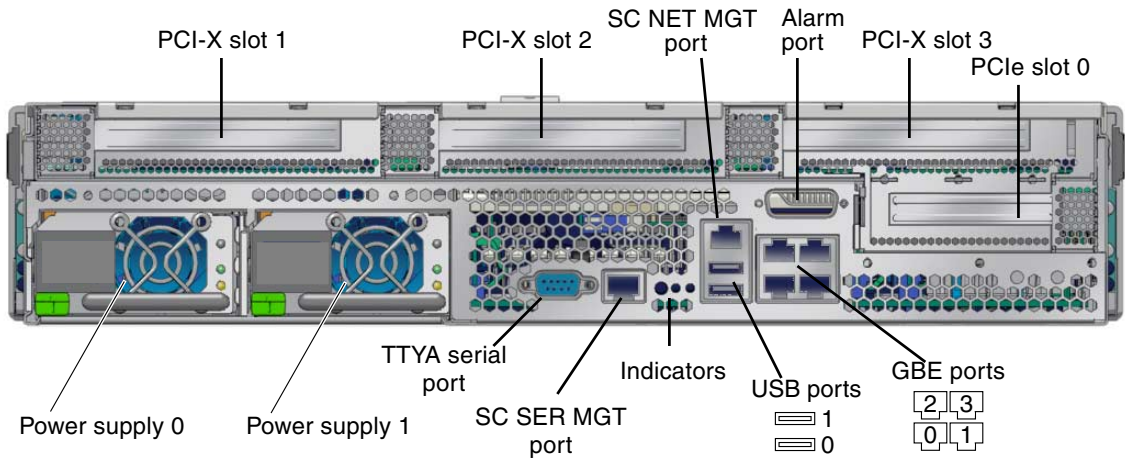
DC Operation Conditions and Procedures

The following DC power cabling and connector information was mistakenly omitted from the *Netra T2000 Installation Guide*.

DC Supply and Ground Conductor Requirements

- Suitable conductor material: use copper conductors only
- Power supply connections through the input connector: 12 AWG (between the Netra T2000 server and the source). There are three conductors:
  - -48V (negative terminal)
  - Chassis ground connection
  - -48V Return (positive terminal)
- System ground conductor: 12 AWG (to be connected to the chassis)
- Cable insulation rating: Minimum of 75°C (167°F), low smoke fume (LSF), flame retardant
- Cable type one of the following:
  - UL style 1028 or other UL 1581 (VW-1) compliant equivalent
  - IEEE 383 compliant
  - IEEE 1202-1991 compliant
- Branch circuit cable insulation color: Per applicable National Electrical Codes

■ Grounding cable insulation color: Green/yellow

Note – Depending on the DC power source, the -48V (negative terminal) might be marked with a minus (-) symbol, and the -48V Return (positive terminal) might be marked with a positive (+) symbol.

Overcurrent Protection Requirements

■ Overcurrent protection devices must be provided as part of each equipment rack.

■ Circuit breakers must be located between the DC power source and the Netra T2000 server. Use one 20 A double-pole, fast trip DC-rated circuit breaker for each power supply unit.

Note – Overcurrent protection devices must meet applicable national and local electrical safety codes and be approved for the intended application.


Assembling the DC Input Power Cable

1. Identify the parts that you will use to assemble the DC input power cable (FIGURE 6**).**

The following DC connection parts are required to assemble one or more DC power input cables. These cables connect the -48V DC input source(s) to the power supply units.

■ DC input plugs

■ Strain relief housings

■ Cage clamp operating lever

■ Tie wraps

FIGURE 6 DC Connection Parts

DC input plug

Cage clamp operating lever

Strain relief housing
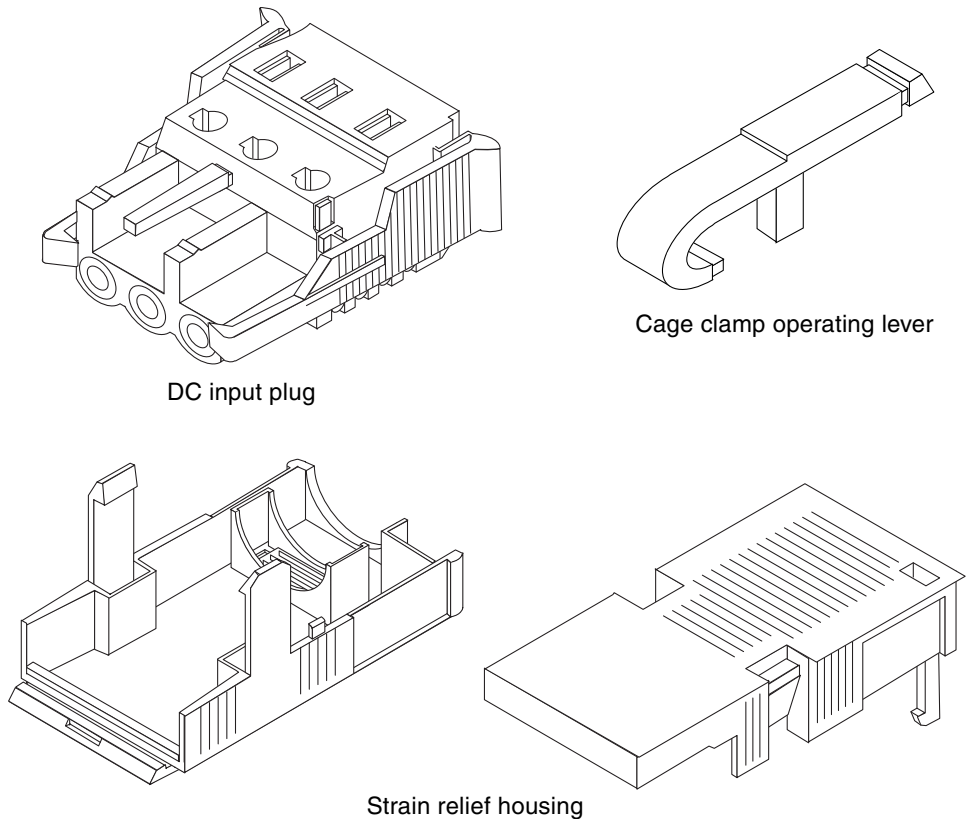
2. Turn off power from the DC power source through the circuit breakers.

Caution – Do *not* proceed with these instructions until you have turned off the power from the DC power source through the circuit breakers.

3. Get a DC input plug from the ship kit.

4. Locate the three wires coming from the DC power source that will be used in the connection to your unit:

- -48V (negative terminal)
- Chassis ground
- -48V Return (positive terminal)

Note – Depending on the DC power source, the -48V (negative terminal) might be marked with a minus (-) symbol, and the -48V Return (positive terminal) might be marked with a positive (+) symbol.

5. **Strip 5/16 inches (8 mm) of insulation from each of the wires coming from the DC power source.**

   Do not strip more than 5/16 inches (8 mm) from each wire. Doing so leaves uninsulated wire exposed from the DC connector after the assembly is complete.

FIGURE 7   Stripping the Insulation From the Wire

5/16 in. (8 mm)
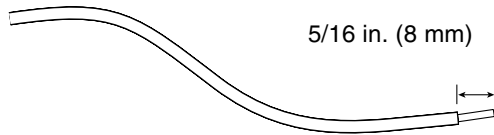
6. **Open the cage clamp for this section of the DC input plug by taking one of the following actions:**

   ■ Insert the tip of the cage clamp operating lever into the rectangular hole directly above the hole in the DC input plug where you want to insert the first wire. Press down on the cage clamp operating lever (FIGURE 8).

FIGURE 8   Opening the DC Input Plug Cage Clamp Using the Cage Clamp Operating Lever

Top of input plug
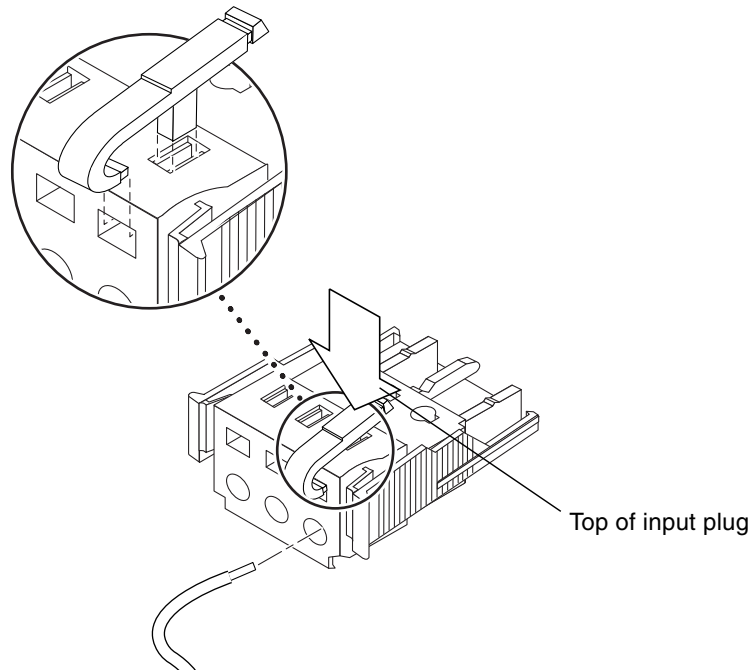
- Insert a small slotted screwdriver into the rectangular hole directly above the hole in the DC input plug where you want to insert the first wire, and press down on the screwdriver (FIGURE 9).

Opening the Cage Clamp Using a Screwdriver

Top of input plug
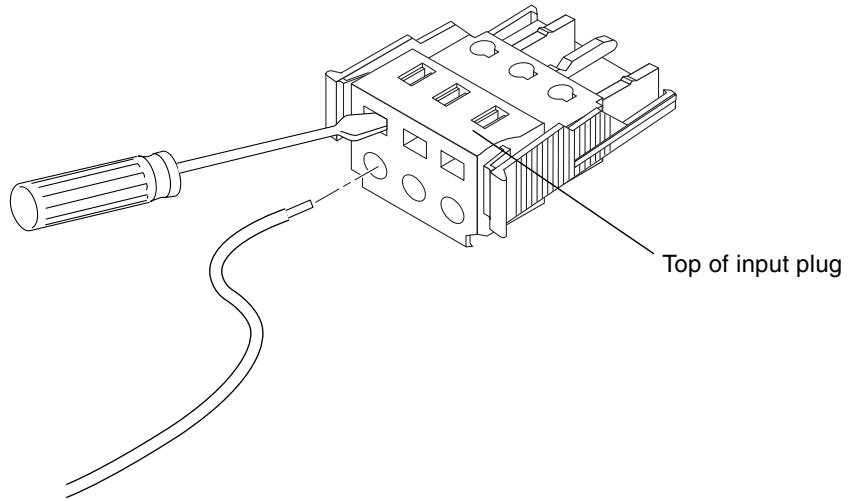
7. **Feed the exposed section of the appropriate wire into the rectangular plug hole in the DC input plug.**

   FIGURE 10 shows which wires should be inserted into each hole in the DC input plug.

FIGURE 10 Assembling the DC Input Power Cable

Top of connector

From -48V return

From chassis ground (green/yellow)

From -48V
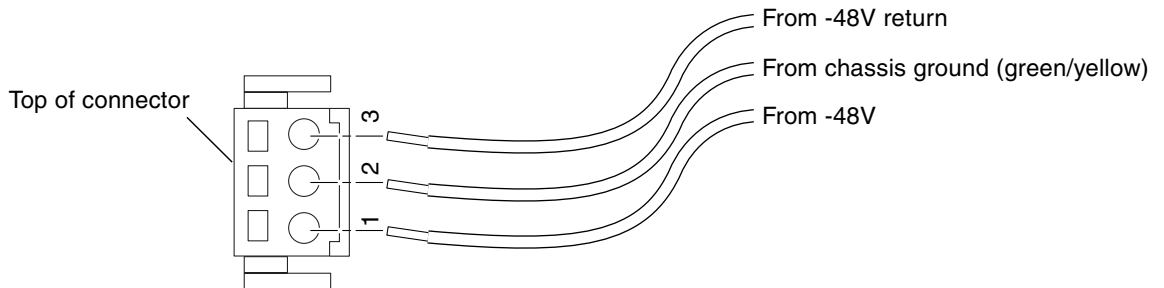
8. **Repeat Step 6 and Step 7 for the other two wires to complete the assembly of the DC input power cable.**

9. **Repeat** Step 4 **through** Step 8 **to create as many DC input power cables as you need for your unit.**

You need two DC input power cables for each of the power supplies.

If you need to remove a wire from the DC input plug, insert the cage clamp operating lever or a small screwdriver into the slot directly above the wire and press down (FIGURE 8 and FIGURE 9). Pull the wire from the DC input plug.

Installing the Strain Relief Housings

1. **Insert the bottom portion of the strain relief housing into the notch on the DC input plug until it snaps into place.**

Ensure that the strain relief housing snaps into place on the DC input plug. You cannot complete the assembly correctly if the strain relief housing is not snapped into place.

**FIGURE 11** Inserting the Bottom Portion of the Strain Relief Housing
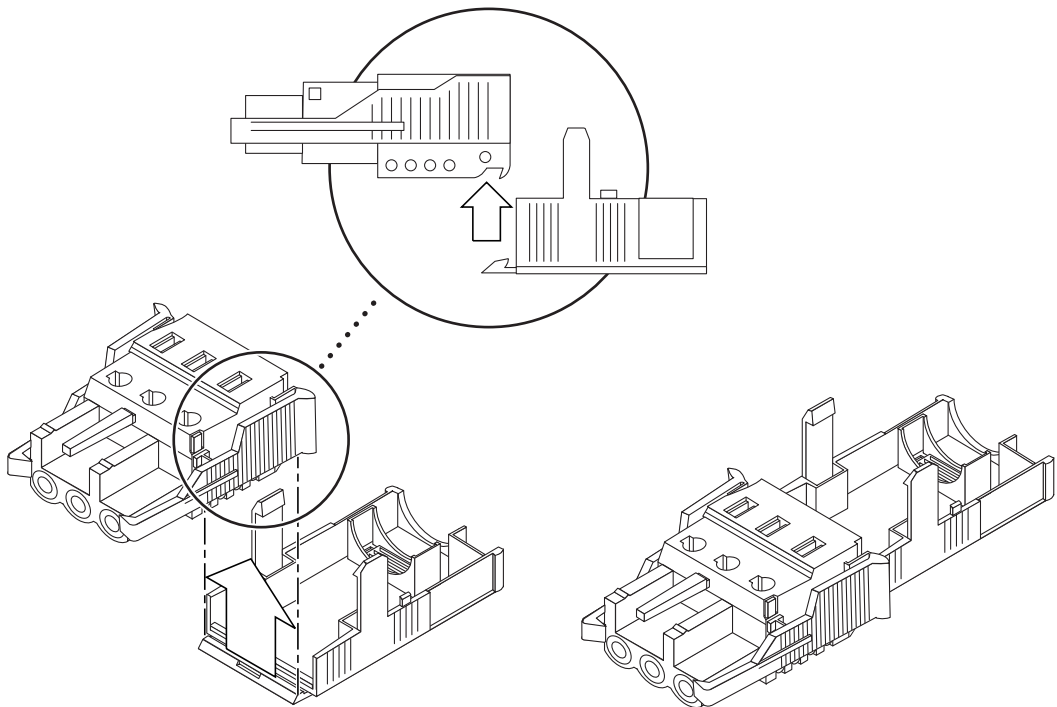
2. **Route the three wires coming from the DC power source through the opening at the end of the bottom portion of the strain relief housing (**FIGURE 12**).**

FIGURE 12   Routing the Wires out of the Bottom Portion of the Strain Relief Housing
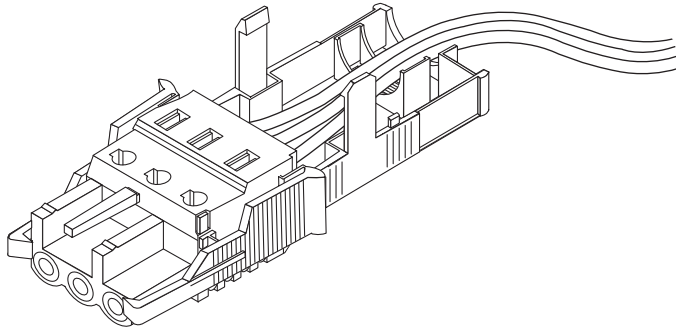
3. Insert a tie wrap into the bottom portion of the strain relief housing (FIGURE 13**).**

FIGURE 13   Securing the Wires to the Strain Relief Housing
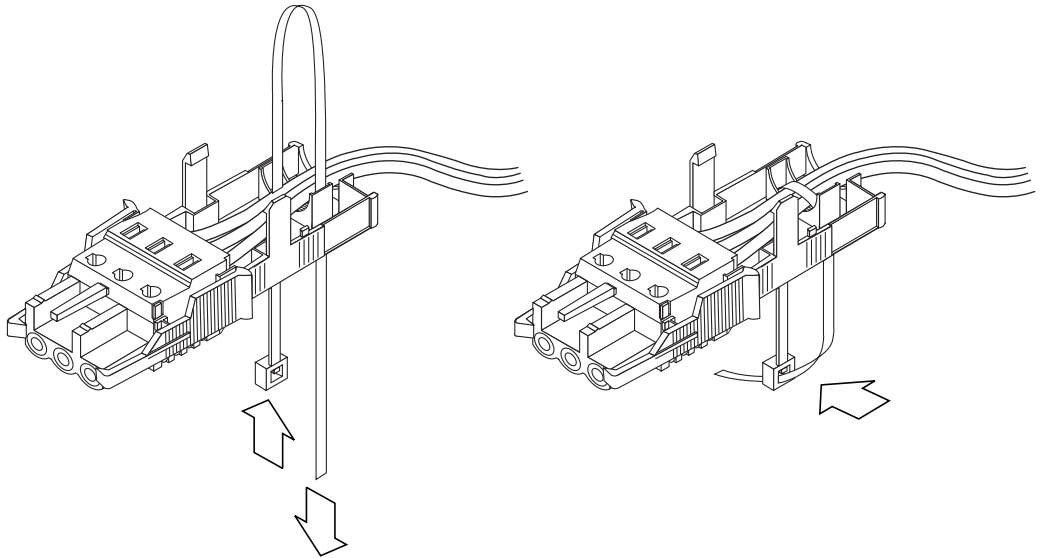
4. Loop the tie wrap over the wires and back out of the strain relief housing, and tightening the tie wrap to secure the wires to the strain relief housing (FIGURE 13**).**

5. Lower the top portion of the strain relief housing so that the three prongs on the top portion insert into the openings in the DC input plug.

Push the top and bottom portions of the strain relief housing together until they snap into place (FIGURE 14).

FIGURE 14   Assembling the Strain Relief Housing