



# JNI 2 Gb PCI Single and Dual Port Fibre Channel Host Bus Adapters Release Notes

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# JNI 2 Gb PCI Single and Dual Port FC HBAs Release Notes

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This document contains important information about the JNI 2 Gb PCI Single and Dual Port FC HBAs that was not available at the time the product documentation was published. Review this document so that you are aware of issues or requirements that can impact the installation and operation of the JNI 2 Gb PCI Single and Dual Port FC HBAs.

- “New Product Features” on page 2
- “System Requirements” on page 3
- “Bugs” on page 6
- “Disabling Sun StorEdge Traffic Manager for Solaris on a Per-Port Basis” on page 8
- “The hbamap Script” on page 9
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# New Product Features

The JNI 2 Gb PCI Single and Dual Port HBAs are new products manufactured by JNI Corporation of San Diego, California, and are based on the JNI JNIC-1560 Fibre Channel controller ASIC. These HBAs are produced for Sun with unique drivers to accommodate the Sun StorEdge™ SAN Foundation software 4.2. The JNIC-1560 controller provides the capability for the HBAs to meet a wide range of Fibre Channel requirements.

## Limitations

This release of the JNI 2 Gb PCI Single and Dual Port FC HBAs does not support the following:

- Sun StorEdge Enterprise Storage Manager
- Sun StorEdge Enterprise Backup Software
- Sun Solstice Backup™
- IP over Fibre Channel (FCIP)

## luxadm

All `luxadm` commands are supported with this release of the JNI 2 Gb PCI Single and Dual Port FC HBAs with the exception of the `fcode_download` subcommand.

## FCode

The JNI HBAs are supplied with a working FCode loaded and hence there is no need to download FCode as a part of an installation.

If you need to determine the current version of FCode loaded on each HBA, look in the `/var/adm/messages` file. The FCode version for each JNI HBA is logged in the `/var/adm/messages` file during booting. If an FCode upgrade is needed in the future, an appropriate utility will be supplied with the installation software.

In addition to the method given in the preceding paragraph, you can also use the `hbamap` script to retrieve the FCode version. This is useful if the `/var/adm/messages` file has been rolled over and the messages logged during booting are lost. For details about the `hbamap` script, see “The `hbamap` Script” on page 9.

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# System Requirements

Certain software packages and patches are required to support the JNI 2 Gb PCI Single and Dual Port FC HBAs. You need to install the appropriate package before you install the patch.

## Minimum Operating System

The minimum operating system is Solaris 8 Operating System, Update 4.

## Required Packages

Certain software packages and patches are required for Sun StorEdge SAN Foundation software 4.2 for the Solaris OS to be supported on your SAN. For instructions to find, download, and install these packages and patches, see *Sun StorEdge SAN Foundation Software 4.2 Installation Guide*, 817-1244.

You must download the appropriate JNI HBA driver for the Sun Solaris Operating System (OS) version. The drivers are found on the Sun Download Center (SDLC). TABLE 1 describes the packages.

**TABLE 1** Packages and README File

<b>SDLC Package Archive Description</b>	<b>Package Archive File Name</b>	<b>Contents</b>
Solaris 8 JNI 2 Gb PCI HBA Packages	s8_san4.2_jni_support_packages.tar.Z	SUNWjfca, SUNWjfcax, SUNWjfcaw, SUNWjfcax packages
Solaris 9 JNI 2 Gb PCI HBA Packages	s9_san4.2_jni_support_packages.tar.Z	SUNWjfca, SUNWjfcax, SUNWjfcaw, SUNWjfcax packages
JNI 2 Gb PCI HBA package README	README_san_4.2_jni_support.txt	Installation instructions

## ▼ To Download the Packages

1. **Go to** <http://www.sun.com/storage/san>.
2. **Scroll down to Get the Software and click Sun StorEdge SAN 4.2 release Software/Firmware Upgrades and Documentation.**
3. **Type your username and password and click Login.**  
If you are not registered, follow the instructions in the note.
4. **At the Sun Download Center, go to Sun StorEdge SAN 4.2. Under Optional, click the JNI 2 Gb PCI HBA package README file and print the instructions.**
5. **Click one of the two packages given in TABLE 1 and type the destination directory in the Save As dialog box.**

## ▼ To Install the Packages

- **Follow the JNI 2 Gb PCI HBA package README file instructions.**



# Required Patches

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**Note** – Be sure to install the package before you install the patch.

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You must download the appropriate JNI HBA patch for your Sun Solaris OS version. The drivers are found at the SunSolve™ web site. TABLE 2 lists the patches and a brief description.

TABLE 2 Patches

Patch	Description
114877-01	JNI 2 Gb PCI HBA patch for Solaris 8 OS
114878-01	JNI 2 Gb PCI HBA patch for Solaris 9 OS

## ▼ To Download the Patches

1. **Go to SunSolve at** <http://www.sunsolve.sun.com>.
2. **Click Patch Portal.**
3. **Under PatchFinder, type in the appropriate patch.**  
You do not have to type in the version. PatchFinder automatically finds the latest version.
4. **Verify the correct patch and print the screen. The page contains the installation instructions.**
5. **Click [ Download Patch (*nn,nnn* bytes) HTTP FTP ].**

## ▼ To Install the Patches

- **Follow the instructions within the 114877 or 114878 patch file.**

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# Bugs

The following bugs are listed in order of priority (P) and then severity (S).

- **Bug 4842383 (P2/S3):** The host can take a long time to boot if devices not supported by Sun StorEdge Traffic Manager Software are attached. Examples of such unsupported devices are tape devices and Sun StorEdge T3 and T4 arrays with the `mp_support` set to anything other than the `mpxio` option.

**Workaround:** Wait for the system to boot or disconnect the unsupported devices before booting. Attach the devices after the system has booted.

- **Bug 4849458 (P2/S2):** A `devfsadm` panic occurs when repeatedly removing cables from tape devices that are not supported by Sun StorEdge Traffic Manager Software.

**Workaround:**

- Do not remove the cables from unsupported tape devices unless absolutely necessary.
- You can unconfigure the tape devices before moving the cables.
- **Bug 4854863 (P2/S3):** A system panic can occur when changing the fabric configuration by, for example, removing and reconnecting JNI HBA cables after a host has been configured.

**Workaround:** Disconnect and reconfigure any devices on the host before physically reconfiguring the cables. Then reconfigure the devices.

- **Bug 4866127 (P2/S3):** A `jnitest` (part of the SunVTS™ test suite) fails when all options are selected.

**Workaround:** This problem does not occur during normal HBA operation. When conducting a loopback test on the JNI HBA, use a loopback connector instead of a loopback cable.

- **Bug 4870540 (P3/S4):** The current jfca driver does not detect the topology by itself. The topology setting has to be done inside the `jfca.conf` file. By default, the topology is set to fabric for all JNI ports. The driver assumes that all ports are connected to a fabric switch as a `F_Port`. The topology can be set on a per-port basis, or on a system-wide basis by the `jfca.conf` file.

**Workaround:** Perform one of the following options.

- Setting the topology on a system-wide basis.

The following settings in the `jfca.conf` file make all jfca ports connect in private loop topology:

- `FcLoopEnabled = 1;`
- `FcFabricEnabled = 0;`

The following settings in the `jfca.conf` file make all jfca ports connect in fabric topology:

- `FcLoopEnabled = 0;`
- `FcFabricEnabled = 1;`

- Setting the topology on a per-port basis.

To set the topology on a per-port basis, you need to obtain the world wide node name (WWNN) of the HBA port.

- Use the `hbamap` script shown in “The `hbamap` Script” on page 9 to obtain the world wide port name (WWPN).
- To obtain the WWNN, replace the initial number “2” of the WWPN with a “1”. Then check the label on the back of the JNI HBA as explained below.

---

**Note** – Another way of obtaining the WWNN is by looking at the system messages during booting. These are also logged in the `/var/adm/messages` file.

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When the jfca driver initially comes up, it prints the WWNN for each port. For example:

```
jfca6: WWNN: 100000017300DECD  WWP: 20000017300DECD
```

The preceding output indicates that jfca6 has a WWNN of 100000017300DECD. There is a label for each port on the back of the JNI HBA that identifies the port’s WWNN. Compare the label with the output to verify the jfca number for a given port. This jfca number can be used to set the topology for that specific port in the `jfca.conf` file. For example, if the jfca number is 6 (jfca6), the following settings should be made:

The following settings make the jfca6 ports connect in a private loop mode:

- `jfca6-FcLoopEnabled = 1;`
- `jfca6-FcFabricEnabled = 0;`

The following settings make the jfca6 ports connect in a fabric topology:

- `jfca6-FcLoopEnabled = 0;`
- `jfca6-FcFabricEnabled = 1;`

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## Disabling Sun StorEdge Traffic Manager for Solaris on a Per-Port Basis

Sun StorEdge Traffic Manager for Solaris can be enabled or disabled on a given JNI 2 Gb PCI Single and Dual Port FC HBA port. The two entries for this feature are:

- `mpxio-disable="no"`
- `mpxio-disable="yes"`

---

**Note** – By default all ports have the `mpxio-disable="no"` setting.

---

The following example shows the syntax for disabling the Multipath I/O feature on a per-port basis by adding the line shown in the example (box) to the `jfca.conf` file. The example shows how a given device name is used to modify the line to be added to the `jfca.conf` file.

```
/device/pci@6,2000/SUNW,jfca@2/fp@0,0:devctl
```

```
name="jfca" parent="/pci@6,2000" unit-address="2" mpxio-disable="yes";
```

---

# The hbamap Script

This script prints information about the Fibre Channel HBAs in the system.

```
#!/bin/ksh
#####
## Script to map out HBA info of all SAN 4.2 or later HBAs on the system.
## - Controller number
## - qlc or jfca instance
## - Port WWN
## - ISP chipset or JNI model number
## - FCode version
## - Connection status
## - device path
##
## This script may break if you do not have SUNWsan and SFK installed
## along with all the appropriate patches. Minimum OS should be
## Solaris 8, Update 4.
##
#####

function map_hba_info {

printf "%-4s" "$CNUM" ; printf "%-7s" "$DRIVER$INST" ; printf "%-18s" "$WWN" ; \
printf "%-10s" "$MODEL" ; printf "%-9s" "$FCODE" ; printf "%-15s" "$STATUS" ; \
printf "$CPATH"

}

LUXOUTPUT=`luxadm -e port`
HBACOUNT=`echo "$LUXOUTPUT" | egrep -c 'qlc|jfca'`
CONNECTEDCOUNT=`echo "$LUXOUTPUT" | egrep 'qlc|jfca' | grep -v NOT | wc -l | bc`

if `test $HBACOUNT = 0`
then
echo "FOUND PATH TO $HBACOUNT FC SAN 4.X HBA PORTS"
echo
exit

```

\*\*\*\*\* (Continued) \*\*\*\*\*

```

fi

HBACOUNTER=1
QLCCOUNTER=1
JFCACOUNTER=1

echo
echo "FOUND PATH TO $HBACOUNT FC SAN 4.X HBA PORTS"
echo
echo "C#  INST#  PORT WWN          MODEL      FCODE      STATUS      DEVICE PATH"
echo "--  -----  -"

for i in `echo "$LUXOUTPUT" | grep CONNECTED | awk '{print $1}'`
do
  if echo $i | /usr/xpg4/bin/grep -q qlc
  then
    CONTROLLER=`echo "$i" | cut -f1 -d:`
    CNUM=`ls -l /dev/cfg | grep $CONTROLLER | awk '{print $9}'`
    CPATH=`dirname "$CONTROLLER" | nawk -F/devices '{print $NF}'`
    DRIVER=qlc
    INST=`grep '$CPATH' /etc/path_to_inst | grep '$DRIVER' | awk '{print $2}'`
    STATUS=`echo "$LUXOUTPUT" | grep $i | awk '{print $2,$3}'`
    LIST=`prtconf -vp`
    WWN=`echo "$LIST" | grep port-wwn | head -$QLCCOUNTER | tail -1 | \
      awk '{print $NF}' | sed 's/\/\//`
    MODEL=`echo "$LIST" | egrep "\"sf\"|\"FC100\"|\"ISP\" | head -$QLCCOUNTER | \
      tail -1 | awk '{print $2}' | awk -F" " '{print $NF}'`
    FCODE=`echo "$LIST" | egrep "\"sf\"|\"FC100\"|\"ISP\" | head -$QLCCOUNTER | \
      tail -1 | nawk -FDriver: '{print $NF}' | awk '{print $1}'`
    QLCCOUNTER=`expr $QLCCOUNTER + 1`
    map_hba_info
  echo

```

\*\*\*\*\* (Continued) \*\*\*\*\*

```

else
  if echo $i | /usr/xpg4/bin/grep -q jfca
  then
    CONTROLLER=`echo "$i" | cut -f1 -d:`
    CNUM=`ls -l /dev/cfg | grep $CONTROLLER | awk '{print $9}'`
    CPATH=`dirname "$CONTROLLER" | nawk -F/devices '{print $NF}'`
    DRIVER=jfca
    INST=`grep '$CPATH' /etc/path_to_inst | grep '$DRIVER' | awk '{print $2}'`
    STATUS=`echo "$LUXOUTPUT" | grep $i | awk '{print $2,$3}'`
    LIST=`prtconf -vp`
    WWN_HI=`echo "$LIST" | grep my_wwn_hi | head -$JFCACOUNTER | tail -1 | awk
' {print $NF}'`
    WWN_HI_2=`echo "$WWN_HI" | cut -c2-8`
    PWWN_HI="2$WWN_HI_2"
    WWN_LO=`echo "$LIST" | grep my_wwn_lo | head -$JFCACOUNTER | tail -1 | awk
' {print $NF}'`
    WWN="$PWWN_HI$WWN_LO"
    MODEL=`echo "$LIST" | grep FCX | head -$JFCACOUNTER | tail -1 | awk '{print
$2}' | \
      awk -F" '{print $2}' | nawk -F-L '{print $1}'`
    FCODE=`echo "$LIST" | grep fcode_revision | head -$JFCACOUNTER | tail -
1 | \
      awk -F" '{print $2}' | awk '{print $NF}'`
    JFCACOUNTER=`expr $JFCACOUNTER + 1`
    map_hba_info
    echo
  else
    HBACOUNTER=`expr $HBACOUNTER + 1`
    QLCCOUNTER=`expr $QLCCOUNTER + 1`
  fi
fi
done
echo

```

---

## Service Contact Information

If you need help installing or using this product within the United States, call 1-800-USA-4SUN, or go to:

<http://www.sun.com/service/contacting/index.html>

