Oracle® Virtual Networking
Host Drivers for Oracle Solaris 11.1

Release Notes

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Contents

Using This Documentation

This document provides information about Oracle Virtual Networking host drivers releases 5.3, 5.2.1, and 5.1.2 for the Oracle Solaris 11.1 operating system (OS).

Related Documentation

Documentation	Link
All Oracle products	http://www.oracle.com/documentation
Oracle Virtual Networking documentation	http://www.oracle.com/goto/FABRIC-INTERCONNECT/docs
Oracle Solaris 11 OS	http://www.oracle.com/goto/Solaris11/docs
Oracle Fabric Interconnect documentation	http://www.oracle.com/goto/FABRIC-INTERCONNECT/docs
Oracle VM Server for SPARC	http://www.oracle.com/goto/vm-sparc/docs
Oracle VM Server for x86	http://www.oracle.com/technetwork/documentation/vm-096300.html

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Late-Breaking Information

These topics provide important information and late-breaking news about the Oracle Virtual Networking host drivers releases 5.3, 5.2.1, and 5.1.2 for the Oracle Solaris 11.1 OS.

What's New in These Releases

What's New in Release 5.3

- Support for Oracle SDN. In this version of host drivers, Private Virtual Interface (PVI) vNICs are supported to take advantage of high-speed server-to-server connections for "east-west" traffic. The PVI functionality is embedded in the standard host driver package, so no additional software is required. Installation of the host drivers is the same in previous versions of Oracle Virtual Networking Host Drivers for Oracle Solaris 11.1.
- Customer-reported issues have been fixed. See "Fixed Issues in Release 5.3" on page 16.

What's New in Release 5.2.1

- An Interm Development Release (IDR) is required to run Oracle Solaris 11.1 OS with release 5.2.1 of Oracle Virtual Networking host drivers. Contact Oracle Support and request the IDR for Oracle Solaris 11.1 SRU13.
- Support for MPxIO on Oracle Solaris 11.1 hosts. Additional multipathing solutions are supported in this release in case you do not want to use MPxIO. However, to use non-MPxIO multipathing, make sure that MPxIO is disabled. By default, MPxIO is disabled on Oracle Solaris 11.1 hosts. If you need to disable MPxIO, see "Disable MPxIO on an Oracle Solaris 11.1 Host" on page 19.
- Several customer-reported issues have been fixed. See "Fixed Issues in Release 5.2.1" on page 16.

What's New in Release 5.1.2

- Fixes to the Veritas DMP application are included in the release.

  After upgrading to host drivers release 5.2.1 on servers running Veritas DMP, you must edit the `/etc/system` file and reboot the server for these fixes to take effect. If Veritas DMP is not running, you do not have edit the `/etc/system` file before booting the server. For information about the workarounds, see 16758070 and 17025682 in "Fixed Issues" on page 15.
- Several customer-reported issues have been fixed. See "Fixed Issues in Release 5.1.2" on page 17.

Minimum Requirements

Software	Release 5.3	Release 5.2.1	Release 5.1.2
Oracle Virtual Networking Host Drivers	5.3–S11U1	5.2.1–S11U1	5.1.2-S11U1
Oracle Solaris OS (64-bit SPARC-based and Sun x86 platforms)	Oracle Solaris 11.1 with SRU13	Oracle Solaris 11.1 with SRU13	Oracle Solaris 11.1
XgOS	3.9.0	3.9.0	3.9.0
Oracle VM Server for SPARC	3.0	3.0	3.0
Oracle VM Server for X86	3.0	3.0	3.0

Supported HCAs

Host drivers releases 5.3, 5.2.1, and 5.1.2 support Oracle HCAs as well as third-party manufacturers' HCAs with the requirement that the HCAs use the required version of firmware. Refer to the HCA's product notes for latest firmware versions.

Supported Oracle HCAs include:

- Sun InfiniBand Dual Port 4x QDR PCIe Low Profile Host Channel Adapter M2. Refer to http://docs.oracle.com/cd/E19241-01/index.html for documentation.
- Sun InfiniBand Dual Port 4x QDR PCIe ExpressModule Host Channel Adapter M2. Refer to http://docs.oracle.com/cd/E19157-01/index.html for documentation.
- Oracle Dual Port QDR InfiniBand Adapter M3. Refer to http://docs.oracle.com/cd/E40985_01/index.html for documentation.

For third-party HCAs, consult the manufacturer's documentation for the required firmware version.

System Limitations and Restrictions

These topics document system limitations and restrictions for the host driver releases 5.3, 5.2.1, and 5.1.2.

Limitations and Restrictions for Release 5.3

- **Virtual Resources Supported per Oracle Solaris Server**

  vNIC support:

  - A maximum of 16 vNICs, which can be 8 vNICs and 8 PVI vNICs (typical configuration), 16 vNICs and 0 PVI vNICs, or 0 vNICs and 16 PVI vNICs.
  - HA vNICs are not supported from the Oracle Fabric Interconnect. However, server-based HA vNICs are available natively though the IPMP on the Oracle Solaris server.

  vHBA support:

  - A maximum of eight standalone vHBAs allowed.

Limitations and Restrictions for Release 5.2.1

- **The `fcadm`, `fcinfo`, and `cfgadm` Utilities Are Not Supported**

  The host HBA utilities `fcadm`, `fcinfo`, and `cfgadm` are not supported.

- **A vNIC or vHBA on an Oracle Solaris Host Cannot Be Deleted if It Is Part of an LDom or Oracle Solaris Zone**

  Currently, a vNIC or vHBA cannot be deleted from an Oracle Solaris host if that vNIC or vHBA is part of an Oracle Solaris LDom or zone. Instead, to delete a vNIC or vHBA that is in an online zone or LDom, you must first disassociate the vNIC or vHBA from the zone or LDom, then delete the vNIC or vHBA.

- **Naming Guidelines for Oracle Solaris vNICs and vHBAs**

  The host drivers do not support creation of a vNIC and vHBA with the same name. When you create a vNIC or vHBA, the two names must be different.

  In the Oracle Solaris OS, the names of virtual resources are restricted to the following lengths:

- vNICs: 10 characters
- vHBAs: 15 characters
- Server profiles: 31 characters

With the Oracle Solaris OS, use the standard Oracle notation to name vNICs and vHBAs:

- *vnic-name.server-profilex*
- v*hba-name.server-profilex*

Replace (*x*) with a numeral at the end of a vNIC and vHBA name so that the vNIC and vHBA receive correctly enumerated instance numbers. There are no special numerals in the vNIC or vHBA name string (for example, 0 is not reserved). You can use any number of numerals in the vNIC and vHBA strings, as long as the entire name string complies with the name length limitation.

Some examples of acceptable vNIC and vHBA names:

- `vnic0.profile1`, `vnic01.profile1`, `vnic001.profile1`
- `vhba1.profile1`, `vhba123.profile1`, `vhba987.profile1`
- `oracle2.profile1`, `webapps9.profile1`, `backups3.profile1`

- **Virtual Resources Supported per Oracle Solaris Server**

  vNIC support:

  - A maximum of eight standalone vNICs are supported.
  - HA vNICs are not supported from the Oracle Fabric Interconnect. However, server-based HA vNICs are available natively though the IPMP on the Oracle Solaris server.

  vHBA support:

  - A maximum of eight standalone vHBAs allowed.

- **Connectivity to Commonly Available Brocade FC Switches in Fabric-Port Mode (f-port).**

  NPIV login must be enabled on the FC switch.

- **Dynamic LUN Discovery Support**

  Dynamic LUN discovery is supported in situations when no LUN masking is present and either an RSCN message is sent from the storage target, or a use-initiated rescan occurs on the vHBA.

Limitations and Restrictions for Release 5.1.2

- **vNIC Support for Oracle Solaris Server**
  - A maximum of eight standalone vNICs are supported.

- HA vNICs are not supported from the Oracle Fabric Interconnect. However, server-based HA vNICs are available natively though the IPMP on the Oracle Solaris server.

- **vHBA Support for Oracle Solaris Server**
  - A maximum of four standalone vHBAs are supported.
  - Ha vHBAs (multipathing) are not supported.

Downloading the Host Drivers

The host driver software is available through My Oracle Support (MOS). Access to MOS requires a valid user account and password. To register as a new user, view related documentation, or download software, go to:

`http://support.oracle.com`

▼ Download the Host Drivers

The host driver software is available through MOS, but the host driver documentation, including the release notes, are at:

`http://www.oracle.com/goto/FABRIC-INTERCONNECT/docs`

1. **Go to My Oracle Support:**

   `http://support.oracle.com`

2. **Log in with your account name and password.**
3. **On the MOS home page, click the Patches & Updates tab.**
4. **In the Patch Search panel, click the Product Or Family (Advanced) link.**
5. **From the Product is drop-down menu, start typing "Oracle Virtual Networking Host Drivers."**

   When you enter enough characters for the string to be unique, the drop-down will contain the entry you seek.

6. **Click Oracle Virtual Networking Drivers.**
7. **From the Release drop-down menu, select the checkbox for the version of the host drivers you want to download (for example, Oracle Virtual Networking Drivers 5.2.1).**
8. **Click the Search button to display the search results.**

9. **Select either the SPARC or x86-64 version of the host driver package by clicking the patch number.**
10. **(Optional) Click the Read Me button to get more patch information.**
11. **Click the Download button to download the package.**

Installing the Host Drivers

These topics describe how to install the host drivers. The host drivers package contains Oracle Solaris host drivers and other related tools.

PreInstallation Requirements for All Releases

- See "Minimum Requirements" on page 3 for system requirements.
- The Oracle Solaris hosts must have at least one dual-port Oracle ConnectX2 QDR HCA.
- The HCA installed in the host must be running the correct minimum version of firmware. For more information, see "Supported HCAs" on page 3.
- Root permissions are required on the Oracle Solaris host.
- Packages can be downloaded to any directory in the file system that the package-server user can read *except* for the `/opt` directory.
- The host drivers can be installed on either a web repository or a server's local device.
- One server reboot is required after the host drivers are installed.
- If your server is running Veritas DMP, note that extra steps are required as part of the installation as detailed in "Install the Host Drivers" on page 7.

▼ Install the Host Drivers

1. **Locate the Oracle host software.**

   See "Download the Host Drivers" on page 6.

2. **Log in to the Oracle Solaris 11.1 server as `root`.**

3. **Copy the drivers onto the server.**

   These packages can go anywhere in the file system *except* for `/opt` (for example, the `root`, `/tmp` or `/ORCLovn`). In this example procedure, the drivers are downloaded to `/usr`.

Note – If you are using a web repository, you can specify the URL for the location of the file. For example, use `https://deploy-srv1/oracle/system/io/ORCLovn-drv` for a server named `deploy-srv1` to install the host drivers in the `oracle` directory.

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4. **Untar the TAR ball:**

```
tar xvzf ORCLovn-5.x.x-SL-sparcv.tgz
```

   The host drivers are placed in the `ORCLovn` directory.

5. **Set up the publisher:**

```
pkg set-publisher -p /usr/ORCLovn
```

6. **Install the host drivers by using the `pkg install` command and specifying the host driver file name.**

Note – This step assumes an installation from a local repository. If you are installing the host drivers from a web repository, specify the URL for the location of the file.

```
pkg install ORCLovn-drv
```

7. **(Optional) Unset the publisher:**

```
pkg unset-publisher /usr/ORCLovn
```

   After installing the host drivers, the `xsadmd` service sometimes is set to disabled state.

8. **After the drivers are installed, *but before rebooting the server*, issue the following commands to check the state of `xsadmd`, and re-enable it if it is disabled:**

```
svccfg -s application/xsadmd:default setprop general/enabled = true
svccfg -s application/xsadmd:default refresh
```

Allow these commands to complete.

9. **Reboot the server to load the drivers into memory:**

```
reboot --rv
or
shutdown -y -g0 -i6
```

10. **After the reboot, you can verify that the host drivers are installed using any of the following options:**

- Issue the `pkg list` command and `grep` for `ORCLovn-drv` (part of the driver file name).
- Issue the `svcs xsadmd` command. If the `xsadmd` service is present and online, the host drivers are installed.
- Issue the `modinfo` command and `grep` for `xs` to see the modules that were installed.

11. **If your server is running Veritas DMP, you must edit the `/etc/system` file as described in "Fixed Issues" on page 15.**
    - For Veritas DMP running on SPARC T5 or M5 series servers, see Bug ID 17294921.
    - For Veritas DMP running on EMC, see Bug ID 16758070.

After the packages have been successfully added, you can configure vNICs and vHBAs. Refer to the *Oracle Virtual Networking XgOS Command-Line Interface User's Guide*.

▼ Uninstall the Host Drivers

Follow this procedure to remove the host drivers (for example, if you need to do a fresh installation instead of an upgrade).

1. **Halt all network and storage traffic.**

   For example, set the interfaces to down state, and wait for network and storage traffic to quiesce.

2. **Unset the publisher by using the `pkg unset-publisher` command and specifying the directory where the host driver file exists:**

```
pkg unset-publisher /usr/ORCLovn
```

3. **Remove the currently installed host drivers by using the `pkg uninstall` command and specifying the host driver file name:**

```
pkg uninstall ORCLovn-drv
```

4. **Reboot the Oracle Solaris server to clear the host drivers from memory.**
5. **Allow the server to completely reboot, then log back in as `root`.**

Known Issues

Known Issues in Release 5.3

Also see "Known Issues in Release 5.2.1" on page 12 for more known issues.

Bug ID	Description
18086995	**The `ipadm delete-ip` Operation Pushes vNIC to Up/Down State in Chassis** For vNICs or PVI vNICs that are added from the Oracle Fabric Interconnect, if you issue the `ipadm delete-ip` command on an Oracle Solaris 11.1 host to remove the network address for a vNIC, a problem sets the vNIC to `up/down` state on the Oracle Fabric Interconnect. This problem affects standard vNICs and PVI vNICs. **Workaround:** You can work around this problem by assigning the IP address from the host.
18046241	**vNIC Host Managed IP Address for vNIC is Not Displayed on Chassis** If you configure a vNIC, then attempt to assign the vNIC's IP address as a host-managed address, the IP address is visible on the host. However, a problem prevents the address from being displayed on the Oracle Fabric Interconnect when you issue the `show vnic` command.

Bug ID	Description
18046181	**Do Not Allow Duplicate PVI With Same Net ID** A problem allows duplicate PVIs to be created with the same Net ID. This is incorrect, as each PVI should have its own unique Net ID.
18046171	**No Traffic Between Access vNIC and Host Managed vLAN on Trunk vNIC** An access-mode PVI connected to one Oracle Solaris 11.1 host and a trunk PVI connected to a different Oracle Solaris 11.1 host cannot pass traffic through the same VLAN when both PVIs are connected to the same cloud.
18018632	**PVI Cloud vNICs Remained in Up/Initializing After SP Disconn/Reconn** When two servers have 16 vNICs and 16 PVIs configured across them (8 vNICs and 8 PVIs on each server), and traffic is occurring on all 16 vNICs, if the Server Profile is disconnected and reconnected, the PVIs might not come back up. Instead, a problem causes them to remain in up/initializing state. This problem is seen only on the PVIs. The standard vNICs come back online correctly after the Server Profile is connected. **Workaround:** If you encounter this problem, you can work around the PVI problem by setting the PVIs down, then up.
18005204	**PVI SM Failover Causes Few of PVI Not to PING** In an HA deployment (when two Oracle Fabric Interconnects are interconnected), the InfiniBand subnet manager fails over to the standby Oracle Fabric Interconnect when the active Oracle Fabric Interconnect goes offline. When the IB subnet manager fails over, a problem prevents pings on some of the PVIs. While the subnet is failed over, pings and traffic are not supported on the affected PVIs, but when failback occurs, the affected PVIs resume pinging/traffic.
17949002	`kstat xsvnic` **Displays All Zeros Under Statistics for PVI vNICs** A problem prevents the proper display of kernel statistics for PVIs. As a result, statistics for PVIs are displayed as zeroes.
17940487	**PVI Loss in ICMP Packets When Host Comes Up After Reboot** When a host is rebooted and the PVI is coming up on the host and the Oracle Fabric Interconnect, ICMP packet loss occurs during pings, but only for a short time. ICMP packet loss goes from 100% on the first ping session to 0% packet loss by the third ping session.
17927174	**Datalink Management Failed to Add a vNIC Device** On an Oracle Solaris server that has a full 16 vNICs (8 standard vNICs and 8 PVI vNICs), a problem can prevent all vNICs from being displayed by data-link management processes. When the problem occurs, all vNICs are shown by other processes but data-link management misses one vNIC. For example, `prtconf -D` correctly shows all 16 vNICs, but `dladm show-phys` shows only 15 vNICs**.**
17877733	**PVI vNIC and Clouds Stats Are Not Incremented** In an HA Oracle Fabric Interconnect deployment (where multiple servers are redundantly connected to two Oracle Fabric Interconnects), statistics for PVI vNICs and PVI Clouds are not incrementing. This problem causes the following commands to show zero: • `show pvi` *pvi-name* `throughput` • `show pvi` *pvi-name* `throughput` • `show vnic` *pvi-name* `stats`

Known Issues in Release 5.2.1

Also see "Known Issues in Release 5.1.2" on page 14 for more known issues.

Bug ID	Description
17490439	**Failed to Detect LUN 0 When MPXIO Is Enabled From the Host** Oracle Solaris 11.1 hosts fail to detect LUN 0 when LUN 0 is added to a vHBA after that vHBA is already created. **Workaround:** Either: • Always mapping a vHBA to LUN when the vHBA is being created, or • If a vHBA is added that does not map to LUN 0, or if LUN 0 is created on storage after the vHBA is created, then set the vHBA down, then up to have the LUN visible on the Oracle Solaris 11.1 host.
17487287	**System Crashes When vHBAs and VNICs Removed at Once** A problem can cause Oracle Solaris 11.1 hosts to crash in some situations while vHBAs are being deleted. This problem occurs if you delete multiple vHBAs and immediately attempt to delete vNICs while the vHBA deletion process is still ongoing. Also, this problem can occur when you issue the `format` command on the host while the vHBA deletion process is still ongoing. **Workaround:** • Delete vNICs before deleting vHBAs, or if you need to delete vHBAs first, wait until all vHBAs have been completely deleted before starting to delete vNICs. • Don't run the `format` command on the host while vHBAs are being deleted.
17444507	**The`format` Command Hangs When Dynamically Adding LUNs to vHBA** A problem causes the `format` command on Oracle Solaris 11.1 hosts to hang when dynamically adding LUNs from some EMC storage targets. This problem has been observed on Oracle Solaris 11.1. hosts running SRU7 connected to EMC VNX5100 storage. **Workaround:** You can work around this problem by contacting Oracle Support and requesting an IDR for the SRU running on your Oracle Solaris 11.1 hosts.
17370928	**LUN Masking Is Not Working to Show a Mask of LUNs Behind a Target** In this release, LUN Masking is not supported from the Oracle Fabric Interconnect. Do not use the LUN Mask feature from the Oracle Fabric Interconnect because it will not properly mask, and all LUNs will be visible. **Workaround:** Configure any LUN masking from the storage target.
17337836	**Stale Entries Getting Created in `/dev/` Directory** When LUNs and Targets are dynamically added or deleted, entries are written to the `/dev` directory. However, a problem prevents the proper cleanup of these entries, and as a result, stale entire can accumulate in `/dev`. When enough entries have accumulated, issuing the `format` command hangs. **Workaround:** Periodically, manually clean up the entries in `/dev`. Issue the following command: `devfsadm -Cv`

Bug ID	Description
17254225	**LUN 0 Must Always Be Mapped to the vHBA for SCSAv3** Per SCSAv3, LUN 0 (zero) is required and should be mapped to vHBAs for correct reporting. However, the host drivers do not check or enforce this requirement, so it is possible that LUN 0 is not mapped vHBAs. If LUN 0 is not mapped to vHBAs, inconsistencies can occur on those vHBAs. **Workaround:** Make sure that LUN 0 is mapped to vHBAs.
17234437	**LUN Not Visible in `format` Command From NetApp Storage** A problem prevents LUNs on NetApp storage from being visible when issuing the `format` command on an Oracle Solaris 11.1 host. **Workaround:** You can work around this problem by adding lines to the `scsi_vhci.conf` file on the Oracle Solaris host. Follow this procedure: 1. Log in to the Oracle Solaris 11.1 host and using `vi`, `emacs`, `gedit`, or any standard text editor, open the `/kernel/drv/scs_vhci.conf` file for editing. 2. Find the `scsi-vhci-failover-override =` statement and add the following NetApp line: **`"NETAPP  LUN", "f_sym",`**

Known Issues in Release 5.1.2

Bug ID	Description
16530626	**Change the LUN Mask Not Detaching the Old LUN Mask's LUNs** In a LUN Mask assigned to an Oracle Solaris host, the original LUNs remain masked even if the configuration of the LUN Mask has been changed. If you edit the LUN mask the changes do not take effect. For example, if you create a LUN mask with two LUNs, then remove those LUNs and add two more, the LUN mask will incorrectly contain four LUNS (the two newly added LUNs, plus the two LUNs from the original LUN mask). This problem occurs even after rescanning the vHBA. Because LUN masking is not assigned dynamically, you must set the vHBA down, then up. **Workaround:** Do the following when you make any changes to a LUN mask that is already created: 1. Set the vHBA down: **`set vhba`** *name*`.`*server-profile-name* **`down`** 2. Set the vHBA up again: **`set vhba`** *name*`.`*server-profile-name* **`up`**
16493871, 1650219	**Dynamically Adding a New `LOG_ARCHIVE_DEST_N` Destination Does Not Work** With multiple vNICs on an Oracle Fabric Interconnect's Gigabit Ethernet I/O card, either resetting the I/O card or cycling the card between `up` and `down` state multiple times can cause some of the vNICs to get stuck in `up/down` state. Also, when continuously disconnecting and reconnecting a server profile that has vNICs associated with it, vNICs might sometimes get set to `up/indeterminate` state. **Workaround:** Do the following when a vNIC is in `up/down` or `up/indeterminate` state: 1. On the Oracle Fabric Interconnect, set the vNIC to admin state down: **`set vnic`** *vnic-name*`.`*server-profile-name* **`down`** 2. On the Oracle Fabric Interconnect, set the vNIC to admin state up: **`set vnic`** *vnic-name*`.`*server-profile-name* **`up`**
16338332	**vHBA disks are not shown in `cfgadm -al`** On Oracle Solaris 10 1/13 hosts, the `cfgadm -al` command does not show vHBA disks. **Workaround:** No workaround currently exists for this problem.

Bug ID	Description
16338330	**Zpool Goes to Unavailable State After Host Reboots** After a reboot of the Oracle Solaris host, when LUNs come back online, a problem prevents any LUNS that are not restored (repaired) from being available to the ZFS Zpool. Zpool cannot enable the LUNs for I/O internally, and therefore the Zpools do not come back online after the reboot. To work around this issue, destroy and re-create the pool from a backup source. Manually marking the device repaired using `zpool clear` or `fmadm repaired` might enable some data to be recovered.

16338290	**Error Seen in dmesg on vNIC Creation and Deletion**
	When adding or deleting a vNIC interface, spurious messages are displayed on the Oracle Solaris host. Be aware that messages are displayed, but they are not always errors. You need to scan the messages to determine if an actual error exists. For example, the following messages are actual errors:
	`@ Jan 25 10:17:29 sparc1-prb nwamd[756]: [ID 588122 daemon.error] 1:@ nwamd_set_unset_link_properties: dladm_set_linkprop(mtu) failed for net25:@ operation not supported`
	`@ Jan 25 10:17:29 sparc1-prb nwamd[756]: [ID 387169 daemon.error] 1:@ nwamd_unconfigure_interface: disable failed for net25: Operation failed`
	Workaround: No workaround currently exists for this problem.

Fixed Issues

Fixed Issues in Release 5.3

Also see "Fixed Issues in Release 5.2.1" on page 16 for more fixed issues.

Bug ID	Description
17444507	**The `format` Command Hangs When Dynamically Adding LUNs to vHBA** A problem caused the `format` command on Oracle Solaris 11.1 hosts running SRU7 to hang when dynamically adding LUNs from EMC VNX5100 storage. **Workaround:** You can work around this problem by updating to Oracle Solaris 11.1 SRU 16.5 without applying any new IDRs.

Fixed Issues in Release 5.2.1

Also see ""Fixed Issues in Release 5.1.2" on page 17 for more fixed issues.

Bug ID	Description
17498283	**Vdbench I/O Hang On Pillar DMP LUNs After Test Running For an Hour** In previous releases, Pillar storage with Symantec DMP was not supported. In this release, Oracle Solaris hosts hang if continuous traffic is run on the DMP Pillar LUN.
17652162	**Hitachi Storage LUN's Not Being Shown on Host Server** A problem prevented a software routine from completing, and as a result, LUNs on Hitachi storage were not being displayed on Oracle Solaris 11.1 hosts.
17353701	**Oracle Solaris 5.1.2 Driver Not Showing All LUNS** In a previous version of host driver, a problem in the underlying Oracle Solaris NDI framework prevented all LUNs available to the Oracle Solaris 11.1 server from being displayed.
16918716	**I/O Domain With Virtual Multipath Disk for a LDOM Panic After Reboot** In a split domain deployment (one primary domain and one I/O domain) with a virtual Multipath Disk for a vHBA LUN in each domain, when the I/O domain is rebooted the server panicked and entered a reboot loop. This bug is fixed in Oracle Solaris 11.1 SRU 12.5.
16338330	**Zpool Goes to Unavailable State After Host Reboots** After a reboot of the Oracle Solaris host, when LUNs come back online, a problem prevents any LUNS that are not restored (repaired) from being available to the ZFS Zpool. Zpool cannot enable the LUNs for I/O internally, and therefore the Zpools do not come back online after the reboot. **Workaround:** Destroy and re-create the pool from a backup source. Manually marking the device repaired using `zpool clear` or `fmadm repaired` might enable some data to be recovered.

Fixed Issues in Release 5.1.2

Bug ID	Description
17294921	**Unable to See the New Assigned LUNs Through Xsigo Devices** A problem prevented newly assigned LUNs from being seen through Oracle Solaris hosts with Oracle Solaris host drivers installed. This problem occurred when Oracle Solaris hosts attempted to bring online a LUN that was offline and had never been brought online before.
17025682	**Numerous** `ibc_attach failed` **and** `attach_ibcattach_fail` **Error Messages During Reboot** On Oracle M5 and T5 series servers connected to an Oracle Fabric Interconnect through ConnectX-2 HCAs, a problem caused vHBAs to not reconnect when the servers were rebooted when the servers were running Veritas DMP. When this problem occurred, numerous `ibc_attach failed` and `attach_ibcattach_fail` error messages were displayed. This problem is fixed in the 5.1.2 host drivers by using the following workaround, which requires editing a system file on the server: 1. Open the `/etc/system` file for editing. 2. Just before the Veritas `vxvm` entry, add the following line: **`forceload:drv/ib`** 3. Save and close `/etc/system`. 4. Reboot the server.
16758070	**SPARC: Host Crashed When Creating a Zpool With EMC DMP Device** If an Oracle Solaris 10 1/13 server with Oracle Virtual Networking host drivers installed is also running Veritas DMP, the host can experience a problem that crashes the server. The problem is an issue with the Veritas DMP application. While waiting on a fix for this problem from the vendor, you can work around this issue by using the following interim fix, which requires editing a system file on the server: 1. In the `/etc/system` file, find the ZFS lines, and add the following: **`set zfs:zfs_vdev_enable_mvector=0`** 2. Save and close `/etc/system`. 3. Reboot the server.
16896738	**Presenting a LUN to the Oracle Solaris Host Creates a Crash Dump** When one or more newly provisioned LUNs are presented to one or more vHBAs, and during that time the storage array was not responding to simple SCSI commands, a race condition sometimes caused a kernel panic if the SCSI mid-layer still had a reference to the LUN being freed due to the unresponsive array.

Documentation Issues

These topics describe known issues related to the product documentation.

Additional Step Required to Install Drivers

The chapter about installing Oracle Solaris host software in the *Fabric Interconnect Hardware and Host Drivers Installation Guide* has an incomplete procedure for installing host drivers for Oracle Solaris 11.1 OS. The following text supplements the text for the installation procedure:

After installing the host drivers, the `xsadmd` service sometimes is set to disabled state. After the drivers are installed, but *before rebooting the server*, issue the following commands to check the state of `xsadmd`, and reenable it if it is disabled:

```
svccfg -s application/xsadmd:default setprop general/enabled = true
svccfg -s application/xsadmd:default refresh
```

Allow these commands to complete, then reboot the server with either **`reboot --rv`** or **`shutdown -y -g0 -i6`**.

This additional text is applicable only to the installation procedure in the manual. The installation procedure documented in these release notes contains the additional text.

Using Non-MPxIO Multipathing, MPxIO Must Be Disabled

In release 5.2.1 of host drivers for Oracle Solaris 11.1 hosts, MPxIO multipathing is supported. By default, MPxIO multipathing software is enabled when the host drivers are installed. However, your network might use a different multipathing solution—for example, DMP.

Release 5.2.1 of host drivers for Oracle Solaris 11.1 also supports using non-MPxIO multipathing software with the requirement that MPxIO is explicitly disabled before using the other multipathing software. See "Disable MPxIO on an Oracle Solaris 11.1 Host" on page 19.

▼ Disable MPxIO on an Oracle Solaris 11.1 Host

To disable MPxIO on an Oracle Solaris 11.1 host, you must edit the `xsvhba.conf` file.

1. **Open the** `/kernel/drv/xsvhba.conf` **file for editing.**
2. **Change the** `mpxio-disable="no"` **entry to** `mpxio-disable="yes"`**.**
3. **Save and close the file.**
4. **Reboot the server.**

   After the server reboots, MPxIO is disabled, and another multipathing software solution can be installed and used on the Oracle Solaris 11.1 host.

Red Hat Linux-to-Oracle Solaris Command Comparison

This table contains some commonly used Red Hat Linux commands and their equivalent Oracle Solaris commands. Online help is available for these commands through the Oracle Solaris manual pages (`man` *command-name*).

Red Hat Linux Command	Oracle Solaris Command
rpm -ivh *package*	**pkg install**
rpm -qa|grep ORCLovn	**pkg list**
rpm -qi *package*	**pkg uninstall**
yum install *package*	**pkg-get -if** *package*
rpm -e *package*	**pkgrm** *package*
dhclient *vnic*	**ipadm create-addr -T dhcp** *interface*
service sshd status	**svcs -a ssh**
service sshd restart	**svcadm restart ssh**
chkconfig sshd on	**svcadm enable ssh**
cat /var/log/messages	**cat /var/adm/messages**
cat /etc/fstab	**cat /etc/vfstab**
fdisk -l	**format**

Red Hat Linux Command	Oracle Solaris Command
ping -c 5 *host*	**ping** *host* **64 5** where 64 is the ping packet size and 5 is the ping delay (5ms)
cat /proc/driver/xsvnic/devices/*vnic*	**prtconf -D** then **kstat -I** *instance*
(There is no equivalent in Red Hat.)	**top prstat** This command is supported on vNICs only in release 5.1.2.
iostat	**free vmstat**