Release Notes for Host Drivers for Oracle SDN 1.0.0

These release notes document information about the release 1.0.0 of Oracle Virtual Networking host drivers for Oracle SDN.

Additional release notes exist for:

- Oracle Fabric Interconnect and Oracle XgOS
- Oracle Fabric Manager GUI and plug-ins
- Oracle Virtual Networking host drivers for Oracle Solaris 10 Update 11 servers
- Oracle Virtual Networking host drivers for Oracle Linux
- Oracle Virtual Networking host drivers for Oracle VM
- Oracle Virtual Networking host drivers for VMware ESX Server Classic 4.1 and ESXi 4.1 servers
- Oracle Virtual Networking host drivers for VMware ESXi 5.0 servers
- Oracle Virtual Networking host drivers for Windows servers

These release notes contain the following sections:

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VIRTUAL NETWORKING

Overview

Oracle SDN is a virtual interconnection between servers that speeds up migrating data between servers connected into one or more *server fabrics* through the use of a *private virtual interconnect* (PVI). When a PVI is created, you can assign one or more vNICs to the PVI, and the servers in turn are connected to the PVI through those vNICs. When the servers are interconnected, the result is robust, reliable, and speedy lateral traffic (also known as "east-west" traffic), for applications such as vMotion.

What's New in This Release

This release contains full GA support for Oracle SDN on the following server OSes and hypervisors:

- GA support for Red Hat Enterprise Linux (RHEL) 6 Update 1 servers that are running version 5.0.0-LX or higher of Oracle Virtual Networking host drivers for Linux hosts

- GA support for VMware ESXi Server 5.0 servers that are running version 5.1.0-ESX of Oracle Virtual Networking Oracle Virtual Networking host drivers for ESX hosts

- GA support for VMware ESX Server Classic 4.1 and ESXi 4.1 servers that are running version 5.1.0-ESX of Oracle Virtual Networking host drivers for ESX hosts

System Requirements

The minimum software versions that support Oracle SDN are:

- XgOS version 3.7.0-XGOS or higher running on the Fabric Interconnect(s)

- Oracle Fabric Manager version 3.4.0-XFM-BETA1 or higher running on the Fabric Manager Server

- Version 5.0.0-LX of Oracle Virtual Networking host drivers for Linux hosts running on Red Hat Enterprise Linux 6 Update 1

- Version 5.1.0-ESX of Oracle Virtual Networking host drivers for ESX hosts running on ESXi Server 5.0

- Version 5.1.0-ESX of Oracle Virtual Networking host drivers for ESX hosts running on VMware ESX Server (or ESXi Server) 4.1

If you are not running these versions of software:

- Upgrade the Fabric Interconnect and Fabric Manager Server to the required version of software

- Uninstall any previous version of Oracle Virtual Networking host drivers and install the required version

Configuration and management of Oracle SDN is supported through Oracle Fabric Manager GUI.

ConnectX and ConnectX-2 are supported, so make sure these are the HCAs in the servers you will be adding to the Oracle SDN.

InfiniHost HCAs are not supported in the Oracle SDN environment.

System Limitations and Restrictions

Be aware of the following limitations when using Oracle SDN:

- 16 PVI vNICs are supported per server, but each vNIC can only be terminated on a unique PVI. As a result, do not attempt to configure more than one PVI vNIC per PVI Cloud per server.

- One PVI vNIC per server is supported in Oracle Fabric Manager. Do not configure more than one PVI per server.

- Each server supports a maximum of 16 total vNICs. Each standard vNIC, HA vNIC, and PVI vNIC count against this total of 16 vNICs. For example, you could configure 4 HA vNICs (8 total vNICs), 4 standard vNICs, and 4 PVI vNICs for a grand total of 16 (8+4+4).

- Supported configurations for this release are either direct-attached servers with HA Fabric Interconnects, or direct-attached servers with a single Fabric Interconnect. In the HA Fabric Interconnect configuration, the two Fabric Interconnects must be directly connected by 2 separate IB links which provide redundancy and a merged fabric. In the single Fabric Interconnect configuration, each server is directly connected to the Fabric Interconnect through 2 separate IB ports. For more information about the supported configurations, see the *Oracle SDN Quick Start Guide*.

- For blade servers, the supported configuration for this release is HA Fabric Interconnects directly connected to the InfiniBand Fabric Switches in each blade chassis.

- Moving a vNIC from a Network Cloud to a PVI Cloud, or from a PVI Cloud to a Network Cloud is not supported. Also, moving a vNIC between two PVI Clouds is not allowed. If a vNIC needs to be terminated on another PVI Cloud, you can create a new vNIC on the Network or PVI Cloud that you want, then delete the old vNIC.

User Guides

Oracle provides the following Oracle Fabric Interconnect product documentation in PDF format:

- *Oracle Fabric Interconnect Hardware and Host Drivers Installation Guide*
- *XgOS Software Upgrade Guide*
- *XgOS Command-Line User Guide*
- *Fabric Remote Booting Guide*
- *Oracle SDN Quick Start Guide*
- *Oracle Fabric Manager User's Guide*
- *XgOS vNIC Switching Configuration Guide*

Release notes are also available for the Oracle Fabric Interconnect and XgOS product, the Oracle Fabric Manager product, and the various Oracle Virtual Networking host drivers. Release Notes and manuals are available as PDF files on the Oracle Technical Network web portal:

Step 1   Go to http://docs.oracle.com/cd/E38500_01/index.html

Step 2   After locating the documentation you need, click the ***Download*** button to pull a copy of the PDF file to your local machine.

Documentation Additions

The following text supplements the text in the *Oracle SDN Quick Start Guide*.

Checksumming Must be Disabled

Linux and ESX hosts with SDN host drivers will need to have checksum functionality disabled if they are communicating with a Windows server that has checksum disabled. The default for all OSes is that checksumming is disabled.

On Linux hosts:

Step 1   Using vi, or another standard Linux editor, edit `/etc/modprobe.d/xsigo.conf`

Step 2   Add the following line at the end of the file:

```
options xve xve_no_tx_checksum_offload=1
```

Step 3   Reboot the ESX host.

On ESX hosts:

Step 1   Issue the following command:

```
esxcfg-module –s "xve_no_tx_checksum_offload=1" xve
```

Step 2   Issue the following command and double check its output with the output from the previous step:

```
esxcfg-module -g xve enabled = 1 options = 'xve_no_tx_checksum_offload=1'
```

Step 3   Reboot the ESX host.

Supported OSes and Hypervisors

With this release, Oracle SDN supports the following server OSes and hypervisors:

- Red Hat Enterprise Linux (RHEL) 6 Update 1 servers
- VMware ESXi Server 5.0 servers
- VMware ESX Server 4.1 servers

Downloading the Host Drivers

The existing host drivers contain the Oracle SDN functionality embedded in them. As a result, there are no special host drivers for Oracle SDN. As long as the host server has at least the minimum supported version of host driver installed, Oracle SDN functionality is supported. The Oracle SDN host drivers are supported only on specific versions of hosts Linux or ESXi OS running Oracle Virtual Networking. For more information, see System Requirements.

> **Note**
> Software is available through this method, but documentation is not. For information about how to obtain product documentation, see User Guides on page 3.

You can download the SDN-capable version(s) of host driver through Oracle's Technical Network (OTN), which is available without a user account or password. To get the software:

Step 1   Point your browser to http://www.oracle.com/technetwork/indexes/downloads/index.html

Step 2   Scroll down to the *Drivers* section.

Step 3   Click the Xsigo Drivers link.

Step 4   In the *Xsigo Downloads* or *Xsigo Downloads, GPL* section, find the OS/hypervisor in use in your network and click the link to download the software to a network-accessible node in your network.

Step 5   Using file copy, SCP, or another file transfer protocol, copy the host driver software from the network node to the host server.

Step 6   When the new host driver is on the host server, run the appropriate command to install or upgrade it to the appropriate version. For example, run (**rpm -ivh** or or **rpm -uvh**) on Oracle Linux or Red Hat servers.

> **Note**
> You can find information about installing host drivers for each different host OS/hypervisor type in the release notes at http://docs.oracle.com/cd/E38500_01/index.html.

Known Issues

Table 1 shows the known issues in this release of Oracle SDN.

Table 1   Known Problems in Oracle SDN for ESX and Linux Hosts, 1.0.0

Number	Description
21386	Oracle SDN generates an ARP when the MTU of a PVI vNIC is less than the default IB MTU size of 2048. If you use a standard vNIC MTU size (1500) on a PVI vNIC, be aware that you might have excessive ARPs throughout the PVI fabric. There is currently no way to selectively disable this behavior.
21317	In this release, if you configure a VLAN interface on a PVI vNIC, no traffic is supported on that vNIC. As a result, VLAN functionality is not supported on a PVI vNIC in this release.
20547	While one or more PVI vNICs are connected to a PVI Cloud, Oracle Fabric Manager should block changes to the MTU of the PVI Cloud. However, Fabric manager does not block this modification. The newly changed MTU for the PVI Cloud is not actually pushed to existing PVI vNICs, but any new PVI vNICs connected to that PVI Cloud do get the new MTU. Do not edit the PVI Cloud and change the MTU.
19969	If an event causes failover or restart of the OpenSM InfiniBand subnet manager, multicast traffic is delayed for approximately seven seconds while the failover or restart occurs.
19961	Currently, IPv6 is not supported for Oracle SDN.

Table 1   (continued) Known Problems in Oracle SDN for ESX and Linux Hosts, 1.0.0

Number	Description

19870	A known issue in ESX software causes pseudo devices such as the PVI vNICs to be displayed on an ESXi 5.0 host as "Unknown" devices. For example:
	
	``
	esxcfg-nics -l
	Name PCI Driver Link Speed Duplex MAC Address MTU
	  Description
	pvi0 Pseudo xve Up 10000Mbps Full 00:13:97:02:40:18 1500
	  Unknown Unknown
	``
	
	This issue is applicable to ESXi 5.0 hosts only, and it is cosmetic. The PVI vNIcs are correctly installed and functioning.

Accessing Oracle Support

Oracle customers have access to electronic support through My Oracle Support. For information, visit http://www.oracle.com/us/corporate/acquisitions/xsigo/support-1849142.html or visit http://www.oracle.com/us/corporate/accessibility/support/index.html if you are hearing impaired.

Gathering Information for Oracle Support — Linux

If the Oracle Oracle Fabric Interconnect is supporting RHEL Linux servers and problems are encountered, please gather the information in the following section before contacting Oracle Support or filing a case through the support website.

On the Oracle Oracle Fabric Interconnect

- Type and number of servers connected (brand, model, number of CPUs, size and type of memory)
- Output from the **get-log-files -all** command (for the Oracle Oracle Fabric Interconnect), which will gather the **show tech-support** information plus all log files, and place this information into xsigo-logs.tar.gz

On the Host Server

- The file output from **/opt/orclovn/bin/xsigo-support -o** <filename>

Gathering Information for Oracle Support — ESXi

If the Oracle Oracle Fabric Interconnect is supporting ESX servers and you encounter problems, please gather the information in the following section before contacting Oracle Support or filing a case through the support website.

On the Oracle Oracle Fabric Interconnect

- Type and number of servers connected (brand, model, number of CPUs, size and type of memory)
- Output from the **get-log-files -all** command (for Oracle's Fabric Interconnect), which will gather the **show tech-support** information plus all log files, and place this information into xsigo-logs.tar.gz

On the Host Server

The file output from the **xsigo-support** script.