Oracle® Communications

Diameter Signaling Router vSTP eLYNX Card Installation Guide

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Oracle Communications Diameter Signaling Router vSTP eLYNX Card Installation Guide, Release 8.5.1

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Contents

My Oracle Support

My Oracle Support (https://support.oracle.com) is your initial point of contact for all product support and training needs. A representative at Customer Access Support can assist you with My Oracle Support registration.

Call the Customer Access Support main number at 1-800-223-1711 (toll-free in the US), or call the Oracle Support hotline for your local country from the list at http://www.oracle.com/us/support/contact/index.html. When calling, make the selections in the sequence shown below on the Support telephone menu:

1. Select **2** for New Service Request.

2. Select **3** for Hardware, Networking and Solaris Operating System Support.

3. Select one of the following options:

   - For Technical issues such as creating a new Service Request (SR), select **1**.

   - For Non-technical issues such as registration or assistance with My Oracle Support, select **2**.

You are connected to a live agent who can assist you with My Oracle Support registration and opening a support ticket.

My Oracle Support is available 24 hours a day, 7 days a week, 365 days a year.

Acronyms

Table   Acronyms

Term	Definition
HSL	High Speed Link
LSL	Low Speed Link
MEAL	Measurement Event Alarm Logging
MO	Managed Object
MSU	Message Signal Unit
MTP	Message Transfer Part
PC	Point Code
SCCP	Signaling Connection Control Part
TDM	Time Division Multiplexing
vSTP	Virtual Signaling Transfer Point

Terminology

Table   Terminology

Term	Definition
E1	E1 is a digital transmission link with a total baud rate of 2.048 Mbps (2048000 bits per second).
T1	T1 is a digital transmission link with a total baud rate of 1.544 Mbps (1544000 bits per second).

1

Introduction

This chapter describes how to obtain help, where to find related documentation, and provides other general information.

Overview

The Time Division Multiplexing (TDM) over vSTP enables signal transmission over the eLYNX PCIe card and provide direct access using PCIe pass through.

Documentation Admonishments

Admonishments are icons and text throughout this manual that alert the reader to assure personal safety, to minimize possible service interruptions, and to warn of the potential for equipment damage.

Table 1-1   Admonishments

Icon	Description
DANGER	Danger: (This icon and text indicate the possibility of personal injury.)
WARNING	Warning: (This icon and text indicate the possibility of equipment damage.)
CAUTION	Caution: (This icon and text indicate the possibility of service interruption.)

Customer Training

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Installing vSTP with eLYNX Support

This section provides instructions for installing vSTP software and eLYNX PCIe card to enable TDM support over vSTP:

Prerequisites

Following are the pre-requisites you must have before proceeding with the installation of vSTP software with TDM support:

- The eLYNX cards must be inserted to appropriate slot in the host machine. Ensure that all the eLYNX PCIe cards are visible in the `lspci` command output.
- The firmware and bios must be up to date on the host machine or server. Refer Appendix A for updating firmware on Host using the OSA (Oracle system assistant)
- The vSTP MP VM profile must be configured.

> **Note:**
>
> One eLynx card requires one vSTP MP.

> **Note:**
>
> The vSTP MP requires the following configuration:
> - 8 GB of RAM
> - 8 vCPUs
> - 70 GB of Hard disk

Configuring PCI Pass Through over Openstack Cloud

Perform the following steps to configure PCI pass through over cloud:

1. Configure nova-scheduler (controller).
   Add **PciPassthroughFilter** filter to nova.conf with the following command:

   ```
   [filter_scheduler]
   enabled_filters = <your filters>, PciPassthroughFilter
   available_filters = nova.scheduler.filters.all_filters
   ```

2. Locate vendor_id and product_id of the eLynx card (compute).

Execute the following **lspci** commnd to show vendor_id and product_id:

```
lspci -vvv -nn | grep -i "10ee:7035" -A 11
```

Sample Output:

```
[root@host2 ~]$  lspci -vvv -nn | grep -i "10ee:7035"  -A 2
07:00.0 Network controller [0280]: Xilinx Corporation Device
[10ee:7035] (rev 10)
        Subsystem: Xilinx Corporation Device [10ee:0007]
        Physical Slot: 2
```

In the above output:

- **07:00.0** is the PCI address of the eLYNX card.

- The value "**10ee:7035**" represents Vendor ID (10ee) and Product ID (7035)

- **Physical Slot: 2** indicates the physical PCIe slot where the eLYNX card is inserted.

3. Configure nova-api (controller).
   Add eLynx card to nova.conf file on the controller:

   The type of the card must be **type-PCI**. Name can be anything.

   Example:

   ```
   [pci]
   pci_passthrough_whitelist =
   "{"vendor_id":"10ee","product_id":"7035"}"
   alias =
   "{"vendor_id":"10ee","product_id":"7035","device_type":"type-
   PCI","name":"elynx1}"
   ```

   In this example the card name is eLynx1:

   Note: If multiple eLynx cards are connected to a host, multiple alias needs to be created.

4. Update flavor with the card name (controller or cli box).
   Execute the following command:

   ```
   openstack flavor set elynx_flavor --property
         "pci_passthrough:alias"="elynx1:1"
   ```

5. Restart the controller and compute services.

   a. Restart the controller services with the following command:

      ```
      systemctl restart openstack-nova-api.service
        openstack-nova-conductor.service
        openstack-nova-consoleauth.service
       openstack-nova-metadata-api.service
       openstack-nova-scheduler.service
      ```

    b. Restart the compute services with the following command:

```
systemctl restart openstack-nova-compute.service
```

Installing DSR

Install the DSR software. For information related to DSR software installation, refer to *DSR Software Installation Guide* for Release 8.5.1.0 and above.

Installing ELYNX rpms on vSTP-MP

The eLYNX driver comes pre-installed with the vSTP-MP. As soon as the VSTP-MP is attached to the ELYNX PCIe hardware, the driver is initialized when the vSTP MP starts.

Once the eLYNX card is attached to the vSTP MP, check the vSTP GUI for eLYNX PCIe board details attached to corresponding vSTP MP. For information related to vSTP GUI, see the "GUI Configuration" section of *Diameter Signaling Router vSTP User Guide*.

Flashing eLYNX card with Latest Software

The eLYNX card comes configured with the factory version of eLYNX software. The flashing procedure is required to load the latest software on to the eLYNX Card. Follow these steps to flash the eLYNX card:

1. On the vSTP-MP attached to the eLYNX card, execute following command:

```
$ sudo elynx_test
```

2. From the options menu, select following option:
   ```
   25. Update flash
   ```

3. After selecting option 25, input card number 0 and press "enter" button:

```
Enter the Option: 25


Enter the Card Number: 0
```

4. The flashing procedure shall begin now and will display following ouput:

```
Downloading BOOT.bin
=================================================
BOOT.bin downloaded successfully
flash status : 2
=================================================
BOOT.bin copied to card memory
Memory flash update is in process ...

flash update is in progress
```

5. After the flashing is complete, the program will return to original menu and following output will be visible above the menu list:

```
Update flash completed for card: 0
```

6. Select `Input option 26` to exit the program.

7. Once all eLYNX cards on given host machine are flashed. Reboot the host machine to load the latest software on the eLYNX card.

Configuring E1/T1 Parameters on vSTP MP

The eLYNX card can be fully configured using the vSTP SOAM GUI. For more details, refer to the "GUI Configurations" section of *Diameter Signaling Router vSTP User Guide*.
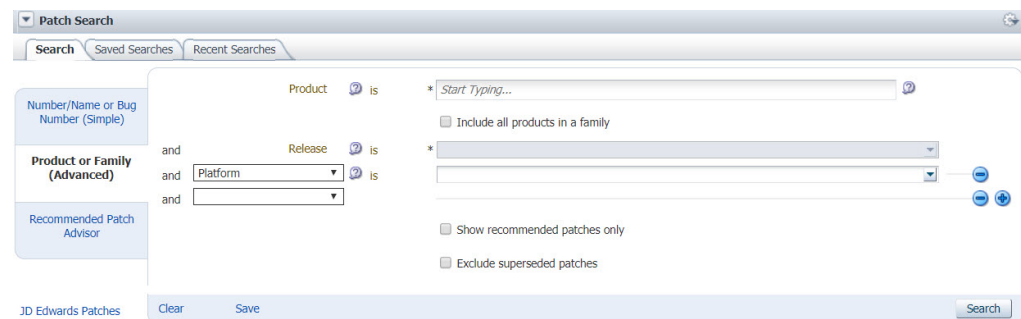
A

Appendix A Upgrade Host Firmware using Oracle System Assistant

Execute the following steps to upgrade all the firmware using Oracle System Assistant (OSA):

1. Obtain the .iso file for OSA using the following steps:

   a. Login to URL: https://support.oracle.com

   b. In the **How Do I...?** header click **Download a Patch**. A new tab for **Patches and Updates** gets opened.

   c. Select **Product or Family (Advanced)** tab under the **Patch Search** header.

   Figure A-1   Searching Patch

   d. Enter the name of the server for which the OSA is required and select the required version. For example, Oracle server X7-2.

   e. Click on **Search** button. The list of available patches appears on the screen.

   f. Select and download the required Oracle System Assistant image from the list. Save on local machine.

2. Perform the following steps to mount and boot the ILOM using the downloaded OSA image file:

   a. Log in to the ILOM for which the firmware needs to be updated.

   b. Launch the Remote Console.

   c. In the remote console window menu, select **KVMS** > **Storage**. The **Storage Devices** window gets opened. Select the OSA image from local machine, which is downloaded in the previous step. This creates a virtual Flash drive with the image on it.

   d. Select the uploaded image and click **Connect**.

Figure A-2   Upload Image
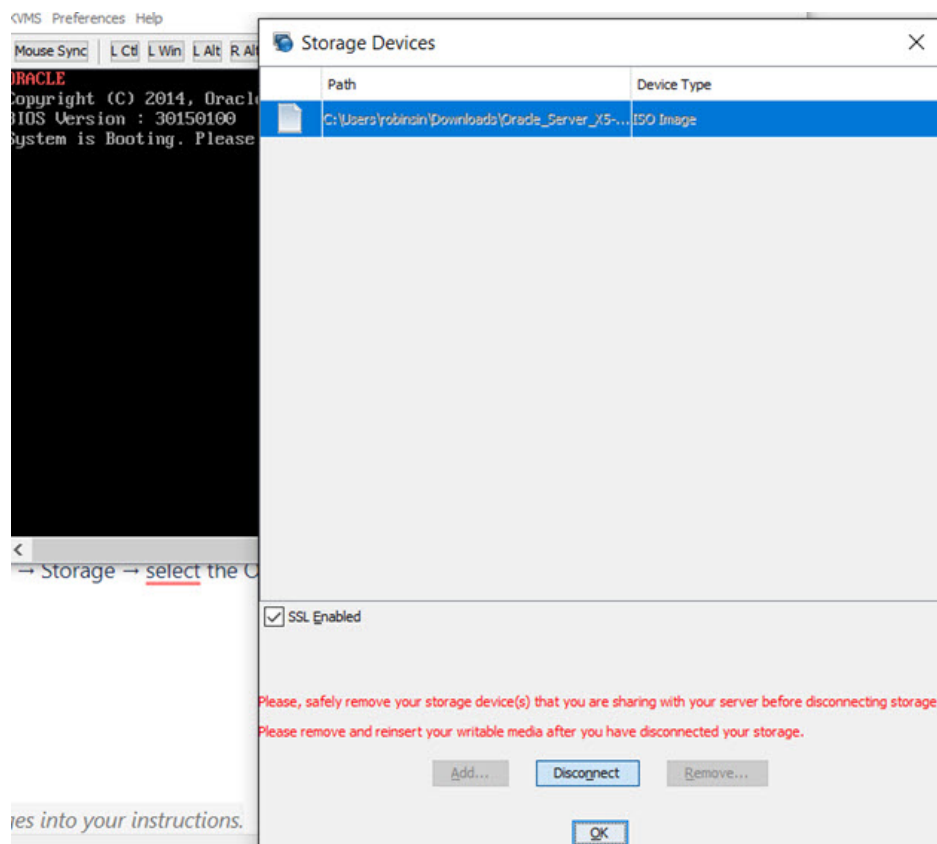
e.   In the Boot menu, select press F8 from the keyboard and to select Boot popup menu.

f.   There will a virtual Flash drive. Select the drive by pressing **Enter**. The ILOM will boot with OSA image.

Figure A-3   ILOM Boot process
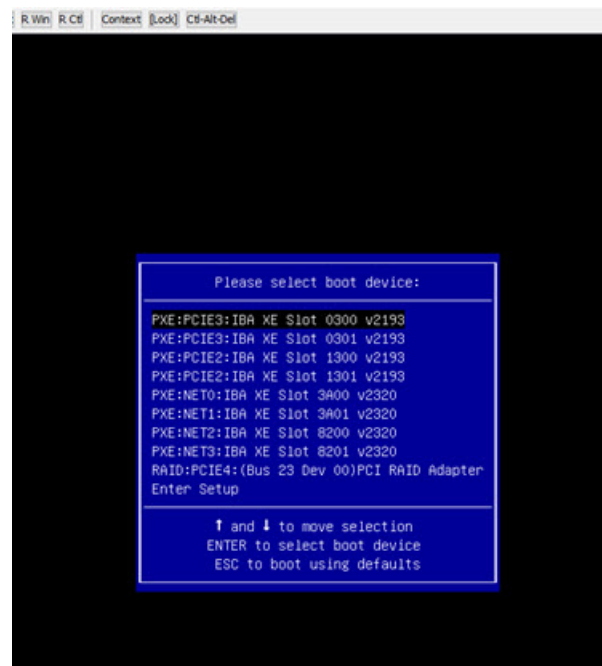
3. The boot process will continue for about 45 minutes. After this, the option for OSA starts appearing in the ILOM.

4. Click **Update Firmware** > **Install updates**. The server will switch ON/OFF several times during the process.

5. After the process is complete, reboot the server. The firmware will be upgraded to the latest version after the reboot.