Coraid® EtherDrive® HBA
for VMware® vSphere™ (ESXi 5.x)

Administration Guide

HBA Driver v7.0.1

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Revision History

The following table describes notable changes in each revision of this document.

Table 1: Document revision history

Publication Date	Changes
09/18/2014	Removed EULA link and warranty information.
08/08/2014	Removed return product shipping address from Warranty and return policy. Coraid TAC will assist in the RMA process.
04/25/2014	Removed specifics about sector size from the definition of LUN in the terminology table on page 7
11/21/2013	Updated presentation
09/27/2013	• Updated installation instructions to recommend installing the HBA driver before the HBA card. For more information, see Installing the EtherDrive HBA Driver. • Updated document design
10/18/2012	Initial release

Introduction

Thank you for purchasing a Coraid® EtherDrive® Host Bus Adapter (HBA).

This guide explains how to install and configure your EtherDrive HBA to work with the VMware® vSphere™ infrastructure on an ESXi™ Server 5.x host.

For information about the EtherDrive HBA for ESX/ESXi 4.x, see the *Coraid EtherDrive HBA for VMware vSphere (ESX/ESXi) Administration Guide* (September 2012).

The HBA card and HBA driver software deliver ATA-over-Ethernet (AoE) technology to your host for fast and affordable Ethernet SAN performance.

The Ethernet SAN is comprised of one or more LUNs providing shared storage. The EtherDrive HBA is installed in the host and presents the LUNs as SCSI drives. The HBA driver and EtherDrive HBA translate disk requests to AoE requests and transmit the requests to the Ethernet SAN. As responses return from the Ethernet SAN, the reverse translation occurs in the HBA driver.

To use Coraid's Ethernet SAN storage with your host, one or more Coraid EtherDrive HBA cards must be installed. The EtherDrive HBA's network ports are dedicated specifically for communication with Coraid Ethernet SAN storage appliances. At least one port from the EtherDrive HBA must be connected to the SAN where the Ethernet SAN storage is located.

Installation Overview

To install your EtherDrive HBA:

• Configure the Coraid Ethernet SAN storage with at least one LUN. See the *Coraid EtherDrive SRX Administration Guide* or the *Coraid EtherDrive VSX Administration Guide* for instructions.

• Install the Coraid EtherDrive HBA driver as described in Installing the EtherDrive HBA Driver.

• Install the Coraid EtherDrive HBA card as described in Installing an EtherDrive HBA Card or, if your HBA is a mezzanine card, see the separate Coraid *Addendum* for your particular blade system (for example, Dell, HP, IBM).

• For HBA cards with built-in SAN port connectors, be sure to use high-quality cables.

• Reboot your ESXi host.

• Complete your storage configuration.

Requirements

• One or more LUNs must be present and online on the Ethernet SAN.

• The EtherDrive HBA should only be used in conjunction with Coraid Ethernet SAN storage appliances.

• The EtherDrive HBA requires an HBA driver. Install it as described in Installing the EtherDrive HBA Driver.

• Because the AoE protocol is not routable, the EtherDrive HBA and the Ethernet SAN storage must be connected to the same network broadcast domain.

- The EtherDrive HBA requires a PCI Express (PCIe®) slot in the host or a mezzanine connector on a system board in the blade server. It does not support PCI-X.

- To upgrade an ESX 3.5 host to ESXi 5.x, you must first upgrade it to ESX 4.1.

- The EtherDrive HBA must be connected to a network switch that supports jumbo frames with an MTU (Maximum Transmission Unit) size of 9000 or greater. Flow control (IEEE 802.3) is also recommended.

Note: Isolate the SAN from other network traffic to ensure your SAN is dedicated exclusively for storage.

Terminology

The information in this guide assumes familiarity with common data storage and networking concepts and familiarity with data center operations.

This guide uses the following terms that might be unfamiliar to you or are specific to Coraid products.

Table 2: Terminology

Term	Description
AoE	ATA-over-Ethernet protocol
AoE Target	The shelf and LUN combination used to identify a block storage device on the Ethernet SAN
CorOS	Operating system software that is embedded into—and distributed as an integral part of—the Coraid hardware storage solution
HBA (Host Bus Adapter)	An HBA is used to connect a host system to network storage. Coraid offers a range of HBAs with support for a variety of operating systems. For more information see www.coraid.com.
Host	The computer accessing the storage over the Ethernet SAN
LUN (Logical Unit Number)	A LUN is a grouping of uniquely numbered blocks of storage attached to a storage appliance by Ethernet SAN. LUNs can be disk drives, disk partitions, or a RAID. The terms "AoE target," "LUN," "device," "drive," and "disk" are used interchangeably in this document.
VM (Virtual Machine)	A collection of virtual hardware that collectively presents a physical machine for a guest operating system

Ethernet SAN Configuration

Before you can communicate with the Ethernet SAN through your EtherDrive HBA, you must create and place online one or more EtherDrive LUNs. For details, see the *EtherDrive SRX Administration Guide* and the *Coraid EtherCloud Storage Manager (ESM) Online Help*.

Note: Performance is suboptimal while the RAID on the LUN is initializing. For optimal performance, wait until the RAID has finished initializing before using it.

Multipath communication

Every rack-mounted EtherDrive HBA has two ports (some HBA mezzanine cards for blade servers are quad port). It is recommended that each port be connected to the SAN network. Having multiple connections to the SAN offers two advantages: network redundancy and higher bandwidth capacity. A higher level of redundancy is achieved when the two ports of the EtherDrive HBA are connected to separate switches. Furthermore, more than one EtherDrive HBA may be installed in your host; multiple HBAs offer additional redundancy and throughput.

Multipath communication is built into the EtherDrive HBA driver and requires no configuration. The EtherDrive HBA automatically detects all network paths to Ethernet SAN storage and uses each path to load balance all data packets bound for Ethernet SAN storage.

Installing the EtherDrive HBA Driver

Install the HBA driver before you install the EtherDrive HBA card in the host. The host will not recognize the EtherDrive HBA until the HBA Driver has been installed. In addition, installing the HBA card before the HBA driver might renumber NICs and destabilize virtual switches.

In these instructions, the version and release numbers in the file names are replaced by XXX. Substitute the name of the package you download when installing your driver. If you are not familiar with the scp utility used in the example, you can use a different download utility, browser, or copy tool.

Note: You must have access permissions as a superuser (root) to perform this installation.

To install the EtherDrive HBA driver

1 Make sure that Secure Shell (ssh) is enabled on the ESXi host.

   For instructions, see Appendix B: Enabling Secure Shell (SSH).

2 Download the appropriate EtherDrive HBA driver from:

   http://www.coraid.com/support

   Note: Make sure to download the correct driver for your version of ESXi server.

3 If applicable, uninstall any previously installed Coraid EtherDrive HBA drivers.

4 Securely copy the EtherDrive HBA driver to your ESXi host.

Example

```
scp etherdrive-esxi5-XXX.zip root@esx_ip_address:
```

Note: Make sure to include the colon (**:**) at the end of the above string.

5 Launch the vSphere CLI on your Linux or Windows server.

6 From SSH on your ESXi host, install your EtherDrive HBA driver.

If you are logged in to the ESXi host directly, enter:

```
esxcli software vib install -d file:///etherdrive-esxi5-XXX.zip
```

If you are using the vSphere CLI, enter:

```
esxcli -u root -s hostname software vib install -d file:///etherdrive-esxi5-XXX.zip
```

7 Reboot your ESXi host.

Installing an EtherDrive HBA Card

Note: This section applies only to HBA cards for use in rack-mounted hosts. It does not apply to an HBA card that connects directly to a mezzanine connector on a system board inside a blade server. If you are installing an HBA mezzanine card, see the separate Coraid *Addendum* written specifically for your blade system.

To use Coraid's Ethernet SAN, install one or more EtherDrive HBA cards in the host.

⚠ **NOTICE**

Installing the HBA card before the HBA driver might renumber NICs and destabilize virtual switches. Always install the HBA driver first, as described in Installing the EtherDrive HBA Driver.

To install the HBA card

⚠ **NOTICE**

Follow ESD (electrostatic discharge) and other safety precautions when handling the EtherDrive HBA card. Static discharge can destroy the circuits etched in silicon microchips or dramatically shorten their life span. To protect the EtherDrive HBA from damage, observe standard ESD precautions.

1 Power off the host and disconnect the power cable.

2 Open the host chassis and locate an available PCIe slot.

3 Remove the slot cover (if any) by removing the screw or releasing the lever.

4 Seat the EtherDrive HBA firmly into the PCIe slot.

You might need to remove and replace existing PCIe cards or other hardware to access an available slot.

5 Attach the EtherDrive HBA retaining bracket using the existing screw or lever.

> **Note:** Depending on whether you are using a full-height or half-height slot, you might need to change the retaining bracket on your EtherDrive HBA. Your EtherDrive HBA includes both a half-height and a full-height retaining bracket.

- (SFP+ EtherDrive HBA only) You must remove both transceivers (if present) before you can remove the retaining bracket.
- (CX4 EtherDrive HBA only) If you change the retaining bracket on your EtherDrive HBA, make sure you remove and replace the locking pin on each port carefully. Push the pin on one side at a time, alternating sides, until it comes loose or clicks back into place. The locking pin looks like this:
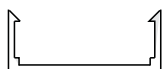
6 Close the host chassis, and then connect the power cable(s).

7 Connect cables from the HBA SAN ports on the host to an Ethernet switch connected to the SAN. The switch must support jumbo frames with an MTU size of 9000 (see Requirements).

Each EtherDrive HBA provides at least two ports for communication with Coraid EtherDrive storage appliances. At least one port must be connected to the SAN network where the Ethernet SAN is located. You can also connect directly to the ports on the storage appliance.

8 Power on the host.

Claiming EtherDrive LUNs

Before you can use AoE targets (LUNs) with your host, you must claim them by issuing the appropriate command through the VMware vSphere 5 `esxcli` command line utility. The ESXi HBA driver only presents LUNs that have been claimed by an ESXi host.

Note: Once a LUN is claimed by an ESXi host, it is visible to all other ESX(i) hosts on the SAN through the `esxcli` command line utility and the vSphere Client Configuration tab: **Storage** and **Storage Adapters**.

- To claim an **ESXi 5.x** LUN, see `esxcli ethdrv claim`.
- To claim an **ESX(i) 4.x** (or earlier) LUN (legacy), see Claiming an ESX 4.x legacy LUN in ESXi 5.x.

Using vSphere Client

After you install the EtherDrive HBA driver and card, you can use vSphere Client to manage your locally attached storage as you would any other standard storage.

You can use VSphere Client:

- To recognize the EtherDrive HBA as a storage adapter using vSphere Client

- To rename an EtherDrive LUN

- To set up a volume

- To rename a datastore

For information about using vSphere and VMware features, see VMware documentation.

Recognizing the EtherDrive HBA as a storage adapter

Use the vSphere Client Rescan feature to recognize an EtherDrive HBA.

To recognize the EtherDrive HBA as a storage adapter using vSphere Client

1 Launch vSphere Client.

2 Click the **Configuration** tab.

3 Under **Hardware**, click **Storage Adapters**.

4 Click **Rescan All**.

5 In the Rescan dialog box, select a type of scan and then click **OK**.
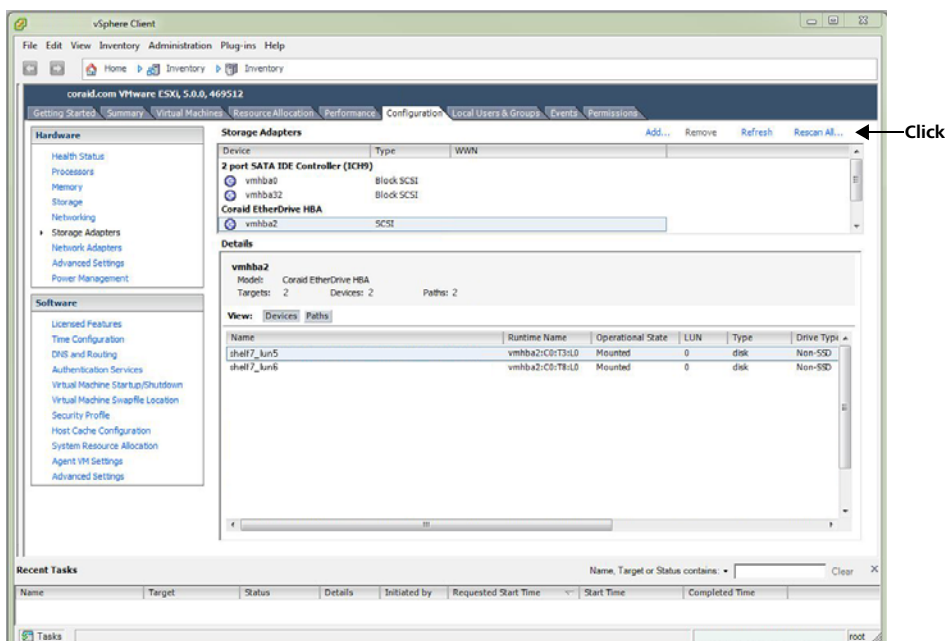
The EtherDrive HBA appears in the list of available storage adapters. The available EtherDrive LUNs are listed in the **Details** section.

Note: Only claimed EtherDrive LUNs are listed. For more information, see Claiming EtherDrive LUNs.

Renaming an EtherDrive LUN

vSphere assigns a name to each LUN available to the ESXi server. You can change the vSphere-assigned LUN names to reflect EtherDrive `shelf.slot` names. Renaming the LUNs helps you determine the best placement of virtual machines and virtual disks, and also helps you troubleshoot any problems.

To rename an EtherDrive LUN

1 Claim the LUN.

   • To claim an **ESXi 5.x** LUN, see `esxcli ethdrv claim`.

   • To claim an **ESX(i) 4.x** LUN, see Claiming an ESX 4.x legacy LUN in ESXi 5.x.

2 Determine the name vSphere assigned to the EtherDrive LUN as described in `esxcli ethdrv list`.

3 Launch vSphere Client.

4 Click the **Configuration** tab.

5 Note the vSphere-assigned LUN name in the Runtime Name column and compare it to the EtherDrive `shelf.lun` number you discovered in step 1.

6 Note the extent value in the LUN column.

7 Right-click the LUN name and select **Rename**.

8 Name the LUN with the shelf:LUN:Extent number used by the Ethernet SAN.

   For example, `7:5:0`.

   The LUN name can also include additional information as appropriate for your implementation.

   For example, `Accounting Dept DB: Shelf:7 LUN:5 Extent: 0.`

Setting up a volume on the Ethernet SAN

Set up a volume on the Ethernet SAN as you would on any SCSI storage.

To set up a volume

1 Launch vSphere Client.

2 Click the **Configuration** tab.

3 Under **Hardware**, click **Storage**.

4 Click **Add Storage**.
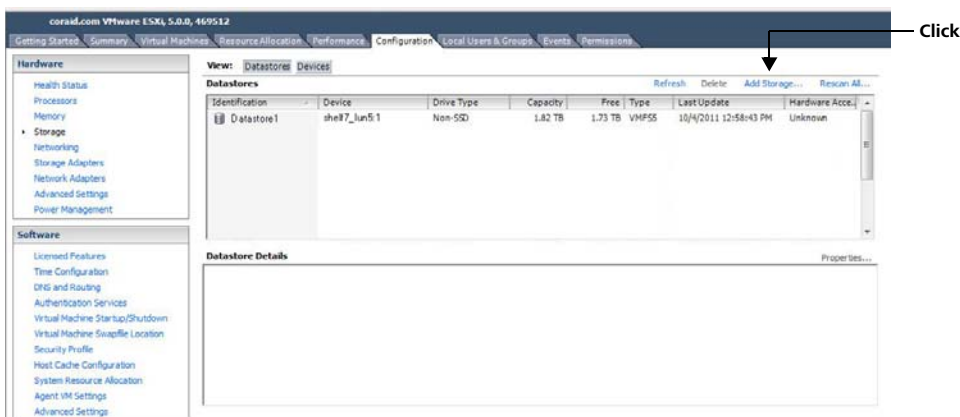
5   In the Add Storage Wizard, select **Disk/LUN** for Storage Type, then click **Next**.

6   Select the EtherDrive LUN on which to create a volume, then click **Next**.

   Only claimed EtherDrive LUNs appear. For more information, see Claiming EtherDrive LUNs.

7   Specify a file system version (VMFS-5 or VMFS-3), then click **Next**.

8   Review or change the disk layout, then click **Next**.

9   Verify the LUN, then click **Next**.

10 Enter a name for the volume (datastore), then click **Next**.

11 Specify the maximum file size and capacity of the volume, then click **Next**.

12 (VMFS-3 only) Select the block size of the volume (datastore), then click **Next**.

13 Verify that the configuration information is correct, then click **Finish**.

14 Review the information about the volume (datastore) on the **Configuration** tab.
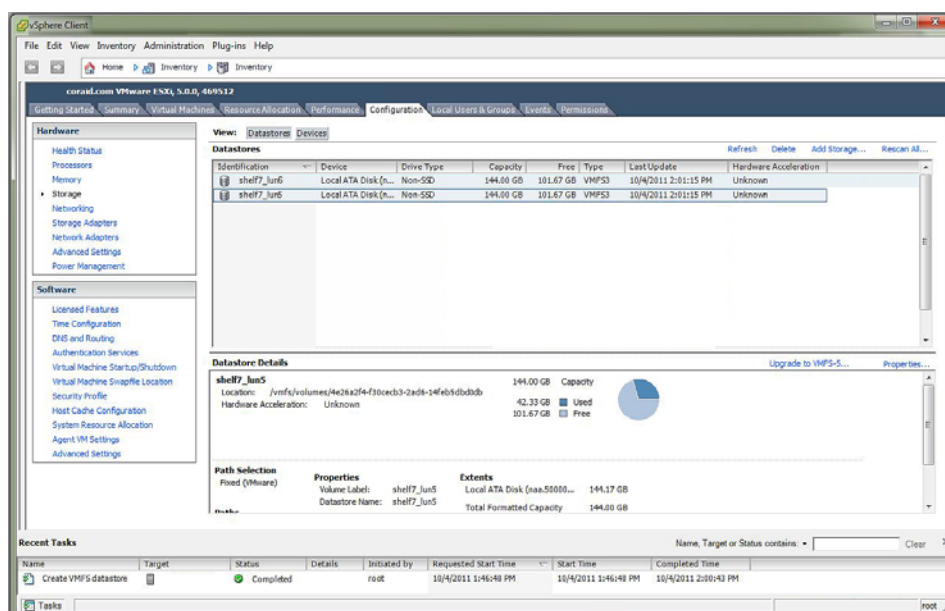
Renaming a volume (datastore)

You can rename a datastore to indicate that LUN locations have been extended onto it.

To rename a datastore

1 Launch vSphere Client.

2 Click the **Configuration** tab.

3 Under **Hardware**, click **Storage**.

4 Select the volume (datastore) you want to rename, then click **Properties**.

5 Click **Rename**.

6 Enter a new name, then click **OK**.

   For example, `Shelf:7 LUN: 5 + Shelf:7 LUN:6`

7 Click **Close**.

Using ESXCLI `ethdrv` Commands

VMware vSphere 5 includes a command line utility called `esxcli`. For detailed information about all vSphere 5 commands, see VMware documentation.

The Coraid EtherDrive HBA driver control extends the ESXCLI with the following commands:

```
esxcli ethdrv list
esxcli ethdrv devices list
esxcli ethdrv ports list
esxcli ethdrv claim
esxcli ethdrv release
esxcli ethdrv flush
```

You can display vSphere 5 commands from:

• An ESXi 5.x host with vSphere CLI access using an SSH client.

• A Windows host with the vSphere CLI installed.

• A Linux host with the vSphere CLI installed.

• A vSphere Management Assistant.

Command usage includes the following conventions:

• The `-a` flag displays all possible information for a command.

• The `-?` flag displays usage information.

Note: Before you can use the ESXi 5.x host vSphere CLI with an SSH client, you must enable SSH on the ESXi host. See Appendix B: Enabling Secure Shell (SSH).

Usage

To display command usage information, issue `esxcli ethdrv` without a command or command options.

```
~ # esxcli ethdrv {cmd} [cmd options]
```

Table 3: Available commands

Commands	Description
`devices`	EtherDrive HBA device information
`ports`	EtherDrive HBA port information

Table 4: Available command options

Command options	Description
`claim`	Claim an AoE target for use.
`list`	List all EtherDrive HBA targets and devices.
`release`	Release a target from use by all ESXi hosts.
`flush`	Refreshes the CLI output to remove targets that are no longer present on the ESXi host's storage network.

Command usage includes the following conventions:

• The `-a` flag displays all possible information for a command.

• The `-?` flag displays usage information.

Commands

esxcli ethdrv list

The `ethdrv list` command lists information for attached LUNs (includes driver name and instance [`shelf.lun`], AoE target, size, attached ports, and whether the device is a legacy ESX host created prior to ESXi 5.0).

This list shows one line per AoE target. The Device field does not show the LUN number.

Usage

```
~ # esxcli ethdrv list
```

Example

```
Device          Target      Size        Port    Legacy    Claiming Hosts
vmhba2:C0:T3    7.5         144.000GB   0,1               ESXi
vmhba2:C0:T8    7.6         144.000GB   0,1               ESXi
```

esxcli ethdrv devices list

The `ethdrv devices list` command lists information for attached LUNs (includes driver name and instance [`shelf.lun`], AoE target, size, and attached ports).

Use this command to see how legacy LUNs are segmented.

Usage

```
~ # esxcli ethdrv devices list
```

Example

```
Device             Target      Size        Port
vmhba2:C0:T3:L0    7.5         144.000GB   0,1
vmhba2:C0:T8:L0    7.6         144.000GB   0,1
```

esxcli ethdrv ports list

The `ethdrv ports list` command lists information for attached ports (includes HBA model, Ethernet address, and link speed).

Usage

```
~ # esxcli ethdrv ports list
```

Example

```
Port     Model               Address          Speed
0        EHBA-2-E-RJ45       001004ff0002     1000/1000
1        EHBA-2-E-RJ45       001004ff0003     1000/1000
2        EHBA-20-E-CX4       001004010a68     10000/10000
3        EHBA-20-E-CX4       001004010a69     0/10000
```

esxcli ethdrv claim

Before you can use an AoE target (LUN) with your host, you must claim it. The ESXi HBA driver only presents LUNs that have been claimed by an ESXi host.

Issue the `esxcli ethdrv claim` command to claim a LUN.

Usage

```
~ # esxcli ethdrv claim [cmd options] -t|--target=<string>
```

Table 5: esxcli ethdrv claim command arguments

Command argument	Description
-t --target	The `shelf.lun` of the target of the claim (required).
-l --legacy	**Note:** In ESXi 5.x you should always issue the -l command argument to claim a LUN that is hosting a DataStore that was created on an ESX(i) 4.x (or earlier) host. In this document such LUNs are referred to as legacy. If you fail to issue the -l argument and the legacy LUN exceeds 2TB, only the first 2TB of the LUN will be visible to your EtherDrive HBA driver. This happens because legacy LUNs are created with the SCSI-2 standard which defines an addressing scheme that supports a maximum 2TB of storage. The 2TB maximum requires ESX(i) 4.x (and earlier versions) to automatically segment LUNs larger than 2TB into multiple SCSI devices at 2TB boundaries. Only use the -l argument when claiming an ESX(i) 4.x (or earlier) LUN. For more information, see Claiming an ESX 4.x legacy LUN in ESXi 5.x.

Example

To claim an **ESXi 5.x** LUN:

```
~ # esxcli ethdrv claim -t <targetid>
```

To claim an **ESX 4.x** or earlier LUN (legacy):

```
~ # esxcli ethdrv claim -l -t <targetid>
```

For more information, see the note above about the -l argument.

esxcli ethdrv release

Issue the `esxcli ethdrv release` command to clear the configuration string of a LUN.

Usage

`~ # esxcli ethdrv release -t <targetid>`

Table 6: esxcli ethdrv release command arguments

Command argument	Description
-f --force	(Optional) Force release of a LUN not claimed by the host
-t --target	Identifies the `shelf.lun` to be released (required)

Examples

`~ # esxcli ethdrv release -t 7712.1`

A force release:

`~ # esxcli ethdrv release -f -t 7712.1`

esxcli ethdrv flush

If a LUN does not respond for more than one minute, you can execute the `flush` command to remove targets that are no longer present on the ESXi host's storage network. Commands created from a flushed AoE LUN and sent to the SCSI LUN are immediately rejected. When the AoE LUN reappears on the network, it will automatically reappear in HBA output and respond to SCSI commands.

Usage

`~ # esxcli ethdrv flush`

Note: You can use this command any time a target is missing on the ESXi host's storage network. After one minute of absence, the target will be considered "dead" and the `flush` command will remove it from the network.

Using Raw Device Mappings

With vSphere, the Raw Device Mapping (RDM) option is only available for storage that is not local. Only iSCSI, Fibre Channel, and SAS storage types are considered non-local; EtherDrive storage LUNs are considered local storage by ESXi. For this reason, the RDM storage type option is not available when configuring a Virtual Machine or Virtual Disk.

While it is possible to enable RDM for local storage types, VMware warns that:

• RDM is a mechanism that VMware provides in order to support Microsoft Cluster Services (MSCS), as described in VMware documentation. Other uses of RDM are not tested by VMware.

• Using RDM to map any other volume that contains sensitive customer data (for example, outside ESXi Server's root file system, and not MSCS, but still important to the customer) is undertaken strictly at the customer's own risk.

• If you lose data in a non-MSCS configuration (something that VMware has not tested and does not support), VMware will reject any service or support request.

It may be possible to configure RDM on a volume that holds the ESXi Server's root file system. This is absolutely NOT supported or recommended by VMware. If you attempt this and are unsuccessful, then attempt to file a Field Service request or Support Request with VMware, VMware will reject the request.

Given these constraints, if you still want to enable RDM for EtherDrive storage, contact Coraid TAC for more information. For more information about RDM, see VMware documentation.

Upgrading from ESX 4.x to ESXi 5.x

For detailed instructions, see the *VMware ESX Migration Guide* documentation available on the VMware website.

Note: When you upgrade an ESX host to ESXi 5.x, all previous versions of the EtherDrive HBA driver are removed.

Claiming an ESX 4.x legacy LUN in ESXi 5.x

A LUN is considered legacy if it is hosting a datastore that was created on an ESX(i) 4.x (or earlier) host. In ESXi 5.x, you should always claim a legacy LUN as legacy by issuing the `-1` command argument (see `esxcli ethdrv claim`). Otherwise, if the LUN exceeds 2TB, only the first 2TB of the LUN will be visible to your EtherDrive HBA driver. This happens because a legacy LUN was created with the SCSI-2 standard which defines an addressing scheme that supports a maximum 2TB of storage. The 2TB maximum requires ESX(i) 4.x (and earlier versions) to automatically segment a LUN larger than 2TB into multiple SCSI devices at 2TB boundaries. A standard (non-legacy) LUN is presented as a single SCSI device that is the same size as the AoE target and identified by a 16-byte NAA. Legacy LUNs are identified by an 8-byte NAA.

For example: When claimed using the `-1` command argument, a 5TB legacy LUN will be presented to the ESXi 5.x server as two 2TB LUNs and one 1TB LUN. The segmented LUNs can be reassembled using vSphere Client's Extend Datastore feature. For instructions, see Renaming a volume (datastore).

Notes

- The limitations described above do not apply to LUNs created for ESXi 5.0 or later.
- Datastores created on one LUN type (legacy or non-legacy) cannot be converted to the other LUN type.
- When operating an ESXi 5.x host, if you want to access a LUN that was used by an ESX 4.x host, the LUN must be claimed as legacy.

To use the esxcli utility to claim a legacy host target

1 Launch the vSphere CLI or VMware Management Assistant (VMA).

2 Log in with root permissions.

3 At the prompt, enter the following: `esxcli ethdrv claim -l -t <targetid>`

For example, `~ # esxcli ethdrv claim -l -t 7712.1`

Note: `-l` indicates that this is a legacy target.

4 Repeat for each preexisting datastore you want to use with the migrated ESXi 5.x host.

5 Launch vSphere Client.

6 Click the **Configuration** tab.

7 Under **Hardware**, click **Storage Adapters**.

8 Click **Rescan All**.

9 Review the information about the datastores in the host's storage inventory and the virtual machines in the host's virtual machine inventory.

Appendix A: Removing the HBA Driver

If you are using EtherDrive HBA driver 5.0 or later, you can install a new version of the HBA driver without deleting the old driver. In most cases, the installation process removes the existing driver and replaces it with the correct one. If necessary, you can remove the EtherDrive HBA ESXi 5.x driver.

⚠ **NOTICE**

Failure to perform these steps correctly when deleting the driver may result in a loss of data or cause your ESXi host to quit unexpectedly.

To remove the EtherDrive HBA driver

1 Determine the version of the currently installed driver.

```
esxcli software vib list
```

2 Place the ESXi host into Maintenance Mode.

For details, see VMware's documentation.

3 Launch the vSphere CLI on your Linux or Windows server.

4 SSH into your ESXi host.

5 Issue the VIB `list` command to determine the name of the VIB for the EtherDrive HBA driver.

Example

```
esxcli software vib list

Name           Version        Vendor Acceptance Level    Install Date
-----          --------       ------ ----------------    ------------
ata-pata-amd   XXX.XXX.XXX    VMware VMwareCertified      2011-08-11
CRD-ethdrvadm  XXX.XXX.XXX    coraid PartnerSupported     2011-08-11
scsi-ethdrv    XXX.XXX.XXX    coraid PartnerSupported     2011-08-11
```

6 Remove both packages.

Example

If you are logged in to the ESXi host directly, enter:

```
esxcli software vib remove -n CRD-ethdrvadm
esxcli software vib remove -n scsi-ethdrv
```

If you are using the vSphere CLI, enter:

```
esxcli -u root -s hostname software vib remove -n CRD-ethdrvadm
esxcli -u root -s hostname software vib remove -n scsi-ethdrv
```

7 Reboot the ESXi host.

Appendix B: Enabling Secure Shell (SSH)

The following procedures describe how to use vSphere Client to enable SSH on your ESXi host.

To enable SSH on the ESXi host

1 Launch vSphere Client.

2 Click **Inventory**.

3 Click the **Configuration** tab.

4 Set the Security Profile for the ESXi host.

   • Under **Software**, click **Security Profile**.

   • In **Services** click **Properties**.

   • In the **Services Property** window, select **SSH**, and then click **Options**.

   • Click **Start**, select a Startup Policy, and then click **OK**.

   • Click **OK** to close the Services Properties window.

Note: To disable SSH on the ESXi host after you install the EtherDrive HBA driver, repeat the above procedure and click **Stop** under Startup Policy.

Frequently Asked Questions

Question: The EtherDrive HBA looks like a standard Network Interface Card (NIC). Can I use the EtherDrive HBA for IP traffic?

Answer: No. The EtherDrive HBA is a dedicated storage device. This allows it to process storage commands at an exceptionally fast rate.

Question: What do I have to configure to use Multipath?

Answer: Nothing! The EtherDrive HBA driver automatically handles Multipath communications for all of the available EtherDrive HBA ports. Even if a single host has two EtherDrive HBA cards, the EtherDrive HBA driver automatically uses the ports on both devices. For information, see Multipath communication.

Question: I understand that I need a EtherDrive HBA for my host in order to use my Ethernet SAN storage appliances. Do I also need an EtherDrive HBA for each of my Ethernet SAN storage appliances?

Answer: No. Only one EtherDrive HBA is required for each host. One EtherDrive HBA can communicate with any Ethernet SAN storage appliance running a compatible version of the CorOS. You can add additional EtherDrive HBAs to your host if you have unusual security or bandwidth requirements or if your storage exceeds the limitations of your operating system.

Question: I added a new LUN to my Ethernet SAN storage appliance. How do I view it in vSphere Client?

Answer: Perform a storage rescan from vSphere Client. For instructions, see Recognizing the EtherDrive HBA as a storage adapter.

Question: Why can vSphere see my EtherDrive storage but not add a Virtual Machine File System (VMFS) to it?

Answer: The Ethernet switch used to connect the EtherDrive HBA to the EtherDrive storage does not support jumbo frames or jumbo frames are not enabled on the switch. The HBA requires the use of jumbo frames with an MTU of 9000. See Requirements.

Contacting Coraid Technical Support

Technical support

Do you have more questions? See the Coraid Support web site:

http://www.coraid.com/support/

Contact the Coraid Technical Assistance Center at:

support@coraid.com

To help the Technical Assistance Center diagnose your problem, send diagnostic output along with a description of your problem. To obtain diagnostic output, issue any available `sos` commands.

Safety Information

WARNING: Read the installation instructions before connecting the system to the power source.

ATTENTION: Avant de brancher le système sur la source d'alimentation, consulter les directives d'installation.

WARNUNG: Vor dem Anschließen des Systems an die Stromquelle die Installationsanweisungen lesen.

Lithium battery notice for service personnel

This product contains a lithium battery. Although the battery is not field-serviceable, observe the following warning:

⚠️ **CAUTION**

Danger of explosion if battery is replaced with incorrect type. Replace only with the same type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

ATTENTION: Il y a danger d'explosion s'il a remplacement incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un type equivalent recommande par le constructeur. Mettre au rebut les batteries usagees conformement aux instructions du fabricant.

WARNUNG: Bei Einsetzen einer falschen Batterie besteht Explosionsgefahr. Ersetzen Sie die Batterie nur durch den gleichen oder vom Hersteller empfohlenen Batterietyp. Entsorgen Sie die benutzten Batterien nach den Anweisungen des Herstellers.

Laser warning

⚠️ **CAUTION**

Class 1 Laser product.

ATTENTION: Produit laser de classe 1

WARNUNG: Laserprodukt der Klasse 1

EtherDrive equipment is intended for installation in restricted access areas.

Regulatory compliance

United States FCC statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Canada compliance statement (Industry Canada)

This Class [A] digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe [A] respecte toutes les exigences du Réglement sur le matériel brouilleur du Canada.

European Union (CE) Statement

This product is in conformity with the essential requirements of the following EU directives:

* 2004/108/EC — Electromagnetic Compatibility Directive (EMC)

* 2006/95/EC — Low Voltage Directive (LVD)