Application Note

Enabling Storage Offloads on Dell® and Marvell® FastLinQ® 41000 Series Adapters

This application note describes how to use NIC partitioning (NPar) to configure Marvell FastLinQ 41000 Series Adapters for iSCSI or FCoE storage offloads on Dell 14G Servers.

- FCoE storage offloads use partition 2.
- iSCSI storage offloads use partition 3.

The following procedures use the LIFECYCLE CONTROLLER; the graphics are from family firmware version (FFV) 14.10.07.

1 Configuring FCoE Storage Offloads

To configure 41000 Series Adapters for FCoE storage offloads:

1. From the LIFECYCLE CONTROLLER (Figure 1-1), select System Setup.

![Figure 1-1. System Setup](image-url)
2. On the System Setup page (Figure 1-2), select Advanced Hardware Configuration.

![Figure 1-2. System Setup](image)

3. On the System Setup Main Menu (Figure 1-3), select Device Settings.

![Figure 1-3. System Setup Main Menu](image)
4. On the Device Settings page (Figure 1-4), select the 41000 Series Adapter port you want to configure.

![System Setup](image)

**Figure 1-4. Device Settings Page**

**NOTE**

The NPar setting affects all ports of a specific adapter; that is, on a dual port adapter, both ports will be in either NPar mode or non-NPar (default) mode.

FCoE-Offload and iSCSI-Offload are available only in NPar or NPar extended partitioning (NParEP) mode.

In NPar mode, only one offload is allowed per physical port. One adapter can be in default mode while other adapters (on the same server) can be in NPar mode or NParEP mode—any mix is allowed.
5. On the adapter port Main Configuration Page (Figure 1-5), select Device Level Configuration.

![Figure 1-5. Adapter Port Main Configuration Page](image)

6. From the Virtualization Mode menu (Figure 1-6), select either NPar or NPar + SR-IOV, as appropriate.

![Figure 1-6. Device Level Configuration Page](image)
After NPar is enabled, you can enable NParEP mode (Figure 1-7). NParEP enables 8 physical functions (PFs), or partitions per port, on a dual-port 41000 Series Adapter, or 4 PFs per port on a quad-port 41000 Series Adapter, for a total of 16 PFs per adapter.

Default NPar enables four PFs per port on a dual-port 41000 Series Adapter, or two PFs per port on a quad-port 41000 Series Adapter, for a total of eight PFs per adapter.

**Figure 1-7. Device Level Configuration Page, Enabling NParEP Mode**

7. Select **Enable** or **Disable** to NParEP mode, as appropriate.
8. Click the **Back** button at the bottom of the page.
9. On the Main Configuration Page (Figure 1-8), select **NIC Partitioning Configuration**.

**Figure 1-8. Adapter Port Main Configuration Page**
10. Select **Partition 2 Configuration** to enable FCoE (Figure 1-9).

![Figure 1-9. Adapter Port Main Configuration Page, NIC Partitioning Configuration](image)

11. Click the **Enabled** button for FCoE Mode (Figure 1-10), which is disabled by default.

![Figure 1-10. Adapter Port Main Configuration Page, Partition Configuration](image)
When FCoE Mode is enabled, NIC Mode and NIC+RDMA Offload Mode are disabled.

**NOTE**

All but the first partition of a physical port can be disabled (hidden from the OS) by disabling all of the modes on this respective page of the desired partition. Therefore, the number of ports visible to the OS partitions can be tailored from one to the maximum allowed. Additionally, only one personality is allowed per partition. The personalities are NIC/NIC+RDMA-Offload on any partition, FCoE-Offload on the second partition, or iSCSI-Offload on the third partition.

12. Click **Back** to return to the NIC Partitioning Configuration Page, and then click **Back** again to return to the Main Configuration page (Figure 1-11).

![Figure 1-11. Main Configuration Page](image)

13. Click **FCoE Configuration** (Figure 1-11).
14. On the Main Configuration Page - FCoE Configuration, configure the FCoE general parameters, boot LUNs, and VLAN ID (Figure 1-12). Click Back when you are done.

![Main Configuration Page - FCoE Configuration](image)

**Figure 1-12. Main Configuration Page - FCoE Configuration**

15. On the Main Configuration Page, click Finish. When the Warning box appears, click Yes (Figure 1-13).

![Warning Box](image)

**Figure 1-13. Saving Changes**
16. When the Success box appears, click Yes (Figure 1-14).

![Figure 1-14. Changes Saved Successfully](image)

17. Exit LIFECYCLE CONTROLLER and reboot for the changes to take effect (Figure 1-15).

![Figure 1-15. Exit and Reboot](image)
2 Configuring iSCSI Storage Offloads

To configure 41000 Series Adapters for FCoE storage offloads:

1. Complete Steps 1 through 9 in "Configuring FCoE Storage Offloads" on page 1.

2. Select Partition 3 Configuration to enable iSCSI (Figure 2-1).

Figure 2-1. Adapter Port Main Configuration Page, NIC Partitioning Configuration
3. Click the **Enabled** button for iSCSI Offload Mode (Figure 1-10), which is disabled by default.

![Figure 2-2. Adapter Port Main Configuration Page, Partition Configuration](image)

When iSCSI Offload Mode is enabled, NIC Mode and NIC+RDMA Offload Mode are disabled.

**NOTE**

All but the first partition of a physical port can be disabled (hidden from the OS) by disabling all of the modes on this respective page of the desired partition. Therefore, the number of ports visible to the OS partitions can be tailored from one to the maximum allowed. Additionally, only one personality is allowed per partition. The personalities are NIC/NIC+RDMA-Offload on any partition, FCoE-Offload on the second partition, or iSCSI-Offload on the third partition.
4. Click Back to return to the NIC Partitioning Configuration Page, and then click Back again to return to the Main Configuration page (Figure 2-3).

Figure 2-3. Main Configuration Page

5. On the Main Configuration Page - iSCSI Configuration, configure the iSCSI general parameters, initiator parameters, and target parameters (Figure 2-4). Click Back when you are done.

Figure 2-4. Main Configuration Page - iSCSI Configuration
6. On the Main Configuration Page, click **Finish**. When the Warning box appears, click **Yes** (Figure 2-5).

![Figure 2-5. Saving Changes](image)

7. When the Success box appears, click **Yes** (Figure 2-6).

![Figure 2-6. Changes Saved Successfully](image)
8. Exit LIFECYCLE CONTROLLER and reboot for the changes to take effect (Figure 2-7).

![Figure 2-7. Exit and Reboot](image-url)
# Document Revision History

<table>
<thead>
<tr>
<th>Rev. A, July 17, 2019</th>
<th>Changes</th>
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<tbody>
<tr>
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