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# HowTo Configure NVIDIA

# BlueField-3 to BlueField Mode on VMware

# vSphere 8.0

*Created on Nov 19, 2024*

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## Introduction

This guide outlines configuring the NVIDIA® BlueField®-3 DPU to BlueField Mode on VMware ESXi version 8.0.



## Referen

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### Simulation / Modeling / Design

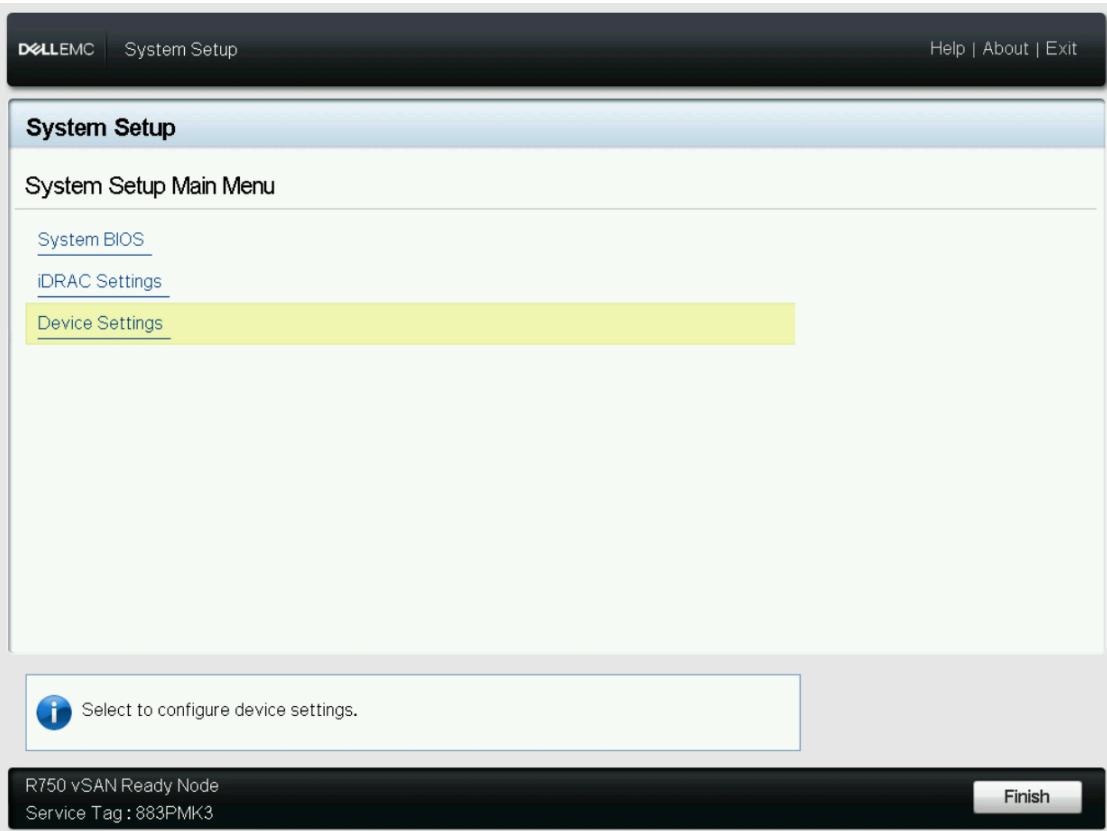
### Conversational AI

## Using the BIOS Menu on DELL and Lenovo Servers

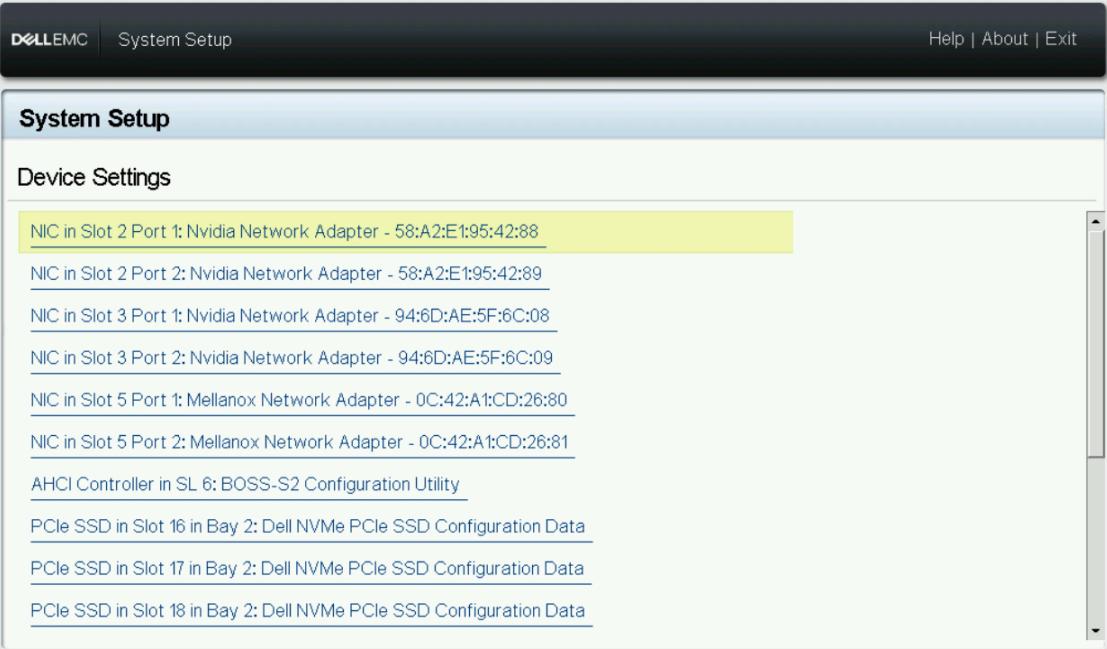
### On a Dell server:

1. a. Enter the server's **BIOS** menu.
- b. Click **Device Settings**:





- c. Select the desired **BlueField device(s)**.



- d. Verify that the **Chip Type** is a BlueField device (**BlueField-3**) and set the **VMware Distributed Services Engine (DPU)** to **Disabled**.

Click **BlueField Internal Cpu Configuration**.

Main Configuration Page

- [Firmware Image Properties](#)
- [NIC Configuration](#)
- [iSCSI Configuration](#)
- [Power Configuration](#)
- [Device Level Configuration](#)
- [VMware Configuration](#)
- [BlueField Internal Cpu Configuration 3](#)

VMware Distributed Services Engine (DPU)  Enabled 2

Blink LEDs 0

Device Name Nvidia Network Adapter

Chip Type BlueField-3 1

i BlueField Internal Cpu Configuration

R750 vSAN Ready Node Service Tag : 983PMK3

Default Finish

- e. Set **Internal Cpu Offload Engine** to **Enabled** and **Internal CPU Model** to **EMBEDDED CPU**.

Main Configuration Page • BlueField Internal Cpu Configuration

Internal Cpu Model  SEPARATED HOST  EMBEDDED CPU 1

Internal Cpu Page Supplier  ECPF  EXT HOST PF

Internal Cpu Eswitch Manager  ECPF  EXT HOST PF

Internal Cpu IB Vport0  ECPF  EXT HOST PF

Internal Cpu Offload Engine  Enabled  Disabled

i Select the model for the Internal CPU

R750 vSAN Ready Node Service Tag : 983PMK3

Back

f. Click **Back**.

g. Click **VMware Configuration**.

**NIC in Slot 2 Port 1: Nvidia Network Adapter - 58:A2:E1:95:42:88**

Main Configuration Page

- [Firmware Image Properties](#)
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- [VMware Configuration](#)

**BlueField Internal Cpu Configuration**

VMware Distributed Services Engine (DPU) .....	<input type="radio"/> Disabled <input checked="" type="radio"/> Enabled
Blink LEDs .....	<input type="text" value="0"/>
Device Name .....	Nvidia Network Adapter
Chip Type .....	BlueField-3

**VMware Configuration**

R750 vSAN Ready Node  
Service Tag: 983PMK3

**Default**    **Finish**

- h. Set **Management PF** to **Disabled**.
- i. Click **Back**.
- j. Click **Finish**.
- k. Repeat steps b-i for all necessary BlueField devices in the server.
- l. Save BIOS settings.
- m. Power cycle the server.

## **On a Lenovo server:**

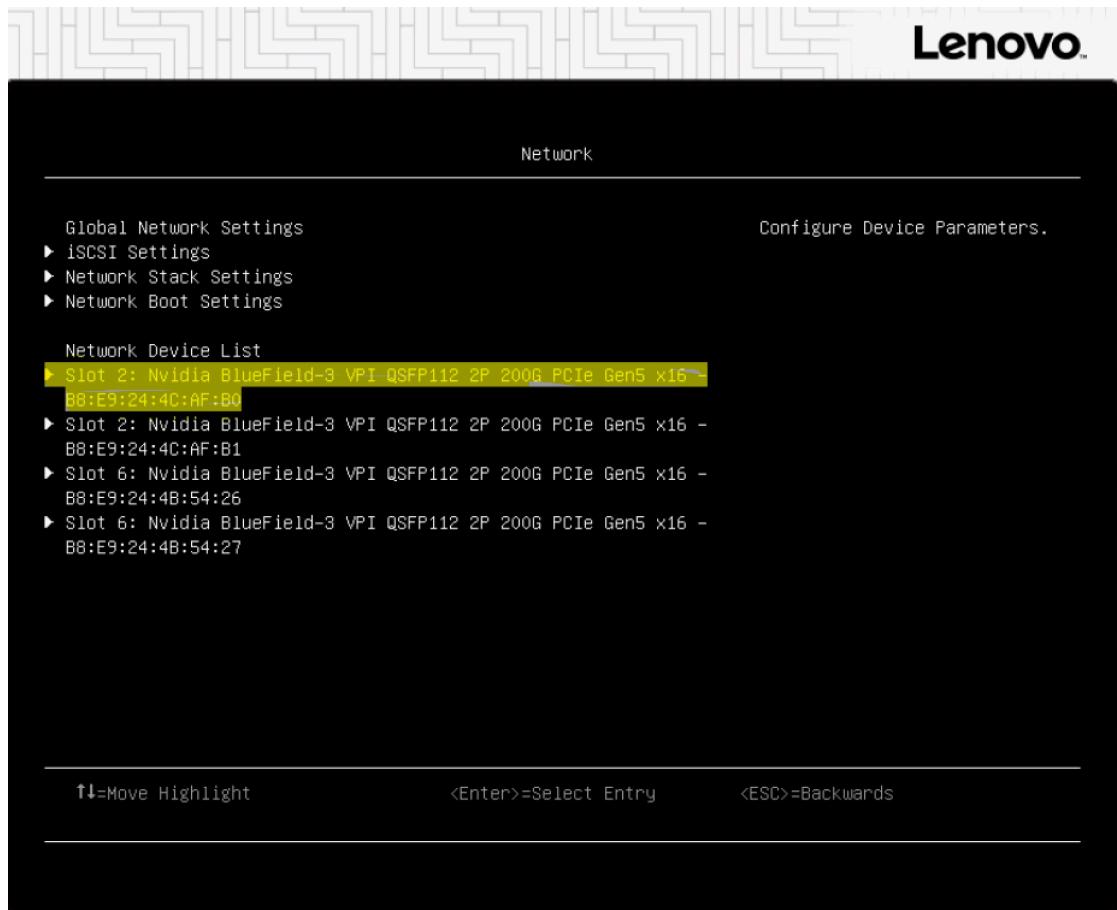
1. a. Enter the server's **BIOS** menu.
- b. Select **System Settings**.



### c. Select Network.



### d. Select the desired **BlueField device(s)**.



- e. Verify that the **Chip Type** is a BlueField device (**BlueField-3**) and set the **VMware Distributed Services Engine (DPU)** to **Disabled**.



- f. Click **BlueField Internal Cpu Configuration**.

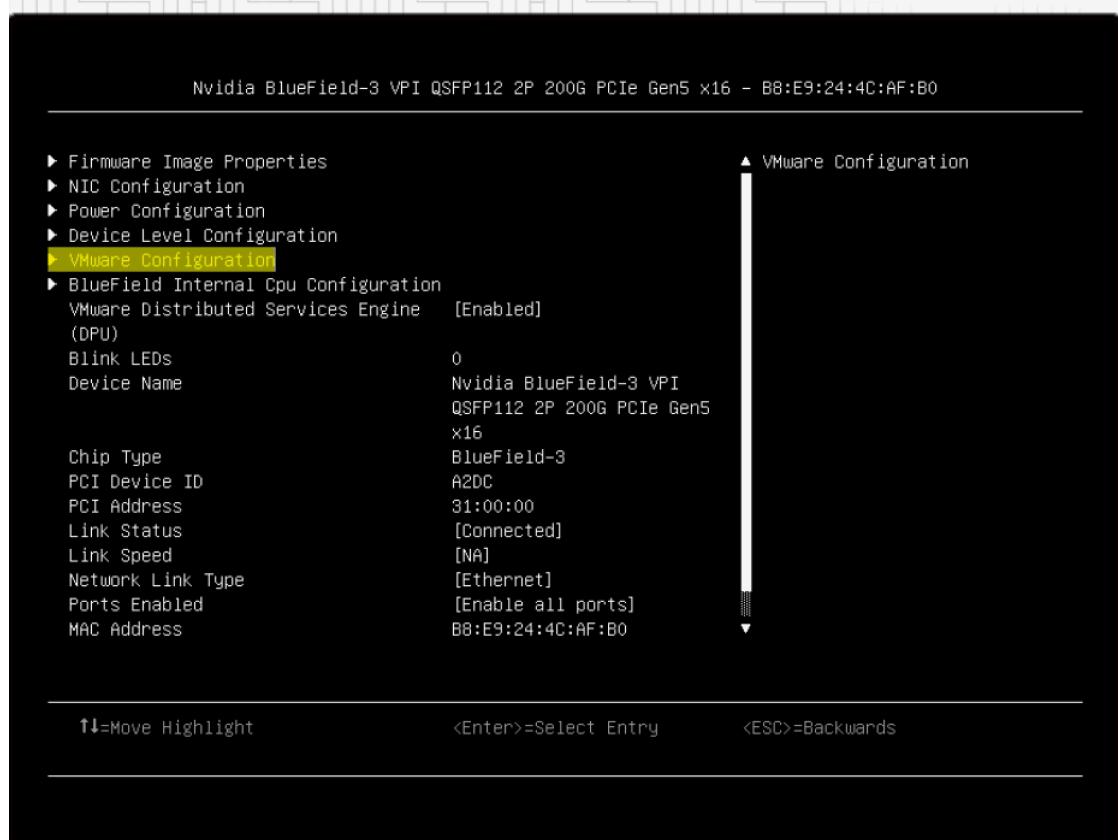


- g. Set **Internal Cpu Offload Engine** to **Enabled** and **Internal CPU Model** to **EMBEDDED CPU**.



- h. Click **Back**.

- i. Click **VMware Configuration**.



j. Set Management PF to **Disabled**.



k. Click **Back**.

l. Click **Finish**.

m. Repeat steps c-k for all necessary BlueField devices in the server.



- n. Save BIOS settings.
- o. Power cycle the server.

## Author



**Boris Kovalev**

Boris Kovalev has worked for the past several years as a Solutions Architect, focusing on NVIDIA Networking/Mellanox technology, and is responsible for complex machine learning, Big Data and advanced VMware-based cloud research and design. Boris previously spent more than 20 years as a senior consultant and solutions architect at multiple companies, most recently at VMware. He has written multiple reference designs covering VMware, machine learning, Kubernetes, and container solutions which are available at the Mellanox Documents website.

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