

# Dell PowerEdge VRTX Networking

A Dell deployment and configuration guide for using the Dell PowerEdge VRTX 1GbE switch.

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### Revisions

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### 1 Introduction

Dell PowerEdge VRTX is a converged infrastructure product focused on remote, branch, and small office requirements.

This document outlines the configuration of the Dell PowerEdge VRTX 1GbE switch I/O Module (IOM) to establish basic connection to the local network. Dell PowerEdge VRTX can be configured with an integrated 1GbE pass-through switch module or an integrated 1GbE switch module. The 1GbE switch module is recommended for most applications.

Dell PowerEdge VRTX Chassis Components illustrates the primary components of the Dell PowerEdge VRTX chassis.





### 1.1 Acronyms Used in the Document

Acronym	Expanded Word
I/O Module	IOM
LAG	Link Aggregation
СМС	Chassis Management Controller

#### 1.2 General Networking Guidelines

- If using MAC address filtering or port security on the uplink switch connected to the Dell PowerEdge VRTX, set it to a minimum of 6 MAC addresses.
- Ensure that the local network DHCP server IP address pool is sufficient to support multiple unique IP addresses. If assigning static IP addresses to the Dell PowerEdge VRTX 1GbE switch IOM, ensure that these IP addresses are unique from the local network DHCP server pool.
- When configuring IEEE 802.1Q trunks or Link Aggregation (LAGs) on the Dell PowerEdge VRTX 1GbE switch IOM as illustrated in Basic Network Topology, the uplink switch ports must have the same IEEE 802.1Q trunks or Link Aggregation (LAGs) configuration.
- When establishing a management link to the Dell PowerEdge VRTX Chassis Management Controller (CMC), it is recommended to create a separate VLAN. In Basic Network Topology, CMC port1 and the uplink switch port are designated as members of VLAN5.

**NOTE**: If either CMC port 1 or port 2 on the Dell PowerEdge VRTX are not physically connected to an uplink switch, do not designate a separate VLAN.

## 1.3 Basic Network Topology Uplink Switch



Figure 2 Basic Network Topology

Xel

### 2 Dell PowerEdge VRTX Configuration

To configure the PowerEdge VRTX 1GbE switch IOM, follow the steps below:

- 1. Log into the CMC.
- 2. Log into the VRTX 1GBE switch module.
- 3. Configure the VLANs.
- 4. Configure the trunk ports.
- 5. Configure the Link Aggregations Ports.

NOTE: For detailed instructions on each of the steps below, see the next few sections.

#### 2.1 Logging into CMC

For instructions on configuring the CMC settings, see the *Chassis Management Controller Version 1.0 for Dell PowerEdge VRTX User's Guide* at **dell.com/support/manuals**.

- Go to the LCD display on the front of the PowerEdge VRTX system. To locate the LCD display, see Dell PowerEdge VRTX Chassis Components.
- Select IP Summary from the main menu screen. The CMC IP address is displayed along with iDRAC IP address.

NOTE: Use the up and down arrow button to navigate and the center button to select.

- 3. Open a web browser.
- 4. In the address field, enter the CMC IP address you got in step 2.
- 5. In the **Login** screen to the Dell PowerEdge VRTX CMC, enter the default Username: **root** and Password: **calvin**, and click **Submit**.

The Chassis Management Controller GUI is displayed.



Figure 3 Chassis Management Controller GUI

NOTE: It is recommended to set a unique username and password.



### 2.2 Logging into the PowerEdge VRTX 1GbE Switch Module

1. In the Chassis Management Controller GUI, navigate to the **I/O Module Overview** object in the left pane.

	ANAGEMEN	T CONT	ROLLER Exp	ress	
CMC-PLSC001 PowerEdge VRTX root, Administrator	Properties Status	Setup	Power Tro	ubleshooting Update	
Chassis Overview Chassis Controller					
Server OverMew     OModule Overview     A Gigabit Ethernet     PCle Overview	Slot	Health	Fabric Gigabit Ethernet	Name R1-2401 ROBO 1 Gb Switch Module	Launch IOM GUI

Figure 4 I/O Module Overview

#### 2. Click on Launch IOM GUI.

The Login screen to the VRTX 1GbE Switch Module is displayed.

Login
Type in Username and Password, and then click "Submit" button.
Username:
Password:
Mode: Basic 🔽
No action within UI: Switch is configured from the factory with default that enables simple 1G operation
Basic Mode: Gives the user simplified control. The advanced features are configured to default values.
Advanced Mode: Gives the Network Administrator total control over the switch configuration. Not recommended for novice Network Administrators.
Cancel Submit

Figure 5 VRTX 1GbE Switch Module Login Screen

 In the login screen, enter the default Username: root and Password: calvin, and click Submit. The VRTX 1GbE Switch Module Home page is displayed.

NOTE: It is recommended to set a unique username and password.

**NOTE**: By default, the 1GbE switch module obtains its IP address from the local DHCP server. However, you can assign a static IP address by selecting the **<Setup>** entry from the **I/O Module Overview** page.

### 2.3 Configuring VLANs

- 1. In the VRTX 1GbE Switch Module **Home** page, expand **Switching**→**VLAN** then click **VLAN Membership**.
- 2. In the VLAN membership page, click Add.
- 3. In the VLAN ID field, enter 10.
- 4. For VLAN name, enter < Server node 1>.
- 5. Click Apply.
- 6. Add VLAN 20 and server node 2 and then click Apply.

	RK ADMINISTRATOR		Mode Basic 💌
System R1-2401 root, r/w Basic Mode	VLAN Membership Summary Add		
<ul> <li>Home</li> <li>System</li> <li>Switching</li> <li>Ports</li> <li>Address Tables</li> </ul>	VLAN Membership : Add		B B C ?
Spanning Tree     VLAN     VLAN Membership     Ort Settings	VLAN ID (2-4094) VLAN Name (0-32 characters) Authentication Not Required	10 Server Node 1 Disable V	
+ Link Aggregation + Multicast Support			Cancel Apply



- 7. In the Port Settings page, click **Edit**.
- 8. Select the **Internal Port** radio button and use the drop-down menu to select gi1/1. This is the server port in this example.
- 9. Use the pull down menu in the Port VLAN Mode to select Access.
- 10. In the VLAN list, click 1, and click Remove.
- 11. Enter **10** in the VLAN list box, and click **Add**.
- 12. Click Apply.

System P	Port Settings			
root, r/w Su	ummary Edit			
Basic Mode  Home  System	Port Settings : Edit			
<ul> <li>Switching</li> <li>Ports</li> <li>Address Tables</li> <li>Spanning Tree</li> </ul>				
	Port	C External Port giù	1 v Internal Port gi1/1 v	_
VLAN Membership	Port VLAN Mode	Access	•	_
LAG Settings	Current Reserved VLAN			
+ Link Aggregation	Reserve VLAN for Internal Use (1-4094)	0	None	
+ Multicast Support	PVID (1-4095)	1		
+ Statistics/RMON	VLAN List (I - Inactive Configuration)	[	Add Membership: Remove Forbidden	
	Frame Type	Admit All		
	Ingress Filtering	Enable 💌		
	Native VLAN ID (1-4094)	1	C None	
	Multicast VLAN ID (1-4094)	0	None	
	Customer VLAN ID (1-4094)	C	@ None	
			Cancel	pply

Figure 7 Assigning VLANs to Server Nodes

- 13. Use the drop-down menu to select gi2/1.
- 14. In the VLAN list, click 1, and click Remove.
- 15. In the VLAN list, enter 20, and click Add.
- 16. Click Apply.
- 17. In the upper-right corner of the page, click the floppy drive icon to save all new settings to start-up configuration.

#### 2.4 Configuring Trunk Ports

- 1. Expand Port Settings.
- 2. Under the **Port Settings** tab, click **Edit**.
- 3. Select the External Port radio button.
- Use the drop-down menu to select gi0/1.
   This is the external port connected to the uplink switch. All the VLANs must be in the VLAN list field.
- 5. Use the pull down menu in the **Port VLAN Mode** field to select **Trunk**.
- 6. In the VLAN list, enter **10** in the VLAN list box, and click **Add**.
- 7. Click Apply.
- 8. Enter 20 in the VLAN list box and click Apply.
- 9. In the upper-right of the configuration page, click the floppy drive icon to save all the new settings to start-up configuration.

System P	Port Settings		
root, r/w Su Basic Mode	ummary <b>Edit</b>		
➡ Home + System - Switching + Ports	Port Settings : Edit		
+ Address Tables + Spanning Tree - VLAN VLAN Membership	Port Port VLAN Mode	C External Port gi0/1 V C Internal Port gi1/1 V	
Port Settings	Current Reserved VLAN		
Link Aggregation	Reserve VLAN for Internal Use (1-4094) PVID (1-4095)	C O None	
	VLAN List (I - Inactive Configuration)	Add 100 C Hagged C Hagged	
	Frame Type	Admit Ali	
	Ingress Filtering	Enable	
	Native VLAN ID (1-4094)	© 1 O None	
	Multicast VLAN ID (1-4094)	C None	
	Customer VLAN ID (1-4094)	C C None	
		Cancel	



### 2.5 Configuring Link Aggregation Ports

Sometimes it is desirable to "aggregate" multiple ports together to obtain more bandwidth to support multiple downstream devices. Follow the steps below to configure LAG ports.

- 1. Expand Link Aggregation → LAG Membership.
- Under the LAG Membership tab, click Edit. The default LAG Group is 1. Add ports as members to this LAG group.
- Under external ports, click first on the LAG button for Gi0/1. This adds a check mark.
- 4. Click on the **LACP button** for the port This adds an **L**.
- 5. Do the same for Gi0/2 adding LAG then LACP.
- 6. If needed, continue adding ports that forms the LAG to the uplink switch.
- 7. Click Apply.

System	LAG Membership	
R1-2401 root , r/w Basic Mode	Summary   Edit	
Home + System Switching + Ports	LAG Membership : Edit	H = C ?
+ Spanning Tree	LAG	
Link Aggregation LAG Membership ← LAG Membership ← Statistics/RMON	External Ports gi0/1 gi0/2 gi0/3 gi0/4 gi0/5 gi0/8 gi0/7 gi0/8 LACP LAG Internal Ports Server Slot 1 gi1/1 gi1/2 gi1/3 gi1/4 LAG LAG	Cancel Apply

Figure 9 Assigning Ports to LAG Membership

#### 8. Click VLAN→LAG Settings.

System R1-2401	LAG Settings	
root, r/w	Summary Edit	
Basic Mode		
Home	LAG Settings : Edit	H = C ?
+ System		
+ Ports		
🛨 — Address Tables		
+ Spanning Tree	LAG	1 💌
VLAN Membership	Port VLAN Mode	Trunk
Port Settings	Current Reserved VLAN	
LAG Settings	Reserve VLAN for Internal Use (1-4094)	C None
+ Multicast Support	PVID (1-4095)	1
+ Statistics/RMON	VLAN List (I - Inactive Configuration)	Add 1 1 1 2() 1 2() C Tagged 3() 4() 5() 5() 5() () () () () () () () () ()
	Frame Type	Admit All
	Ingress Filtering	Enable
	Native VLAN ID (1-4094)	© 1 C None
	Multicast VLAN ID (1-4094)	C ONONE
	Customer VLAN ID (1-4094)	C © None
		Cancel Apply

Figure 10 Setting LAG as Trunk

- 9. Click Edit.
- 10. Change the Port VLAN Mode for **LAG 1** to **Trunk**.
- 11. Click Apply.
- 12. In the upper-right of the configuration page, click the floppy drive icon to save all new settings to start-up configuration.
- 13. In the upper right corner, click logout. .



## 3 Additional Resources

- Additional information for the Dell PowerEdge VRTX can be found at <u>Dell PowerEdge VRTX Product Page</u>.
- The User Guide for the Dell PowerEdge VRTX contains additional configuration details. Download the latest User Guide at <a href="http://www.dell.com/support">http://www.dell.com/support</a>. This site is focused on meeting your needs with proven services and support.
- <u>http://DellTechCenter.com</u> is an IT Community where you can connect with Dell Customers and Dell employees for the purpose of sharing knowledge, best practices, and information about Dell products and installations.
- For information on VRTX training, please visit <u>learndell.com/server</u> or email Dell Education Services at <u>US\_Training@Dell.com</u>.