

Emerson SmartCabinet™ for DELL VRTX
Technical Guide



Emerson SmartCabinet™ for Dell VRTX

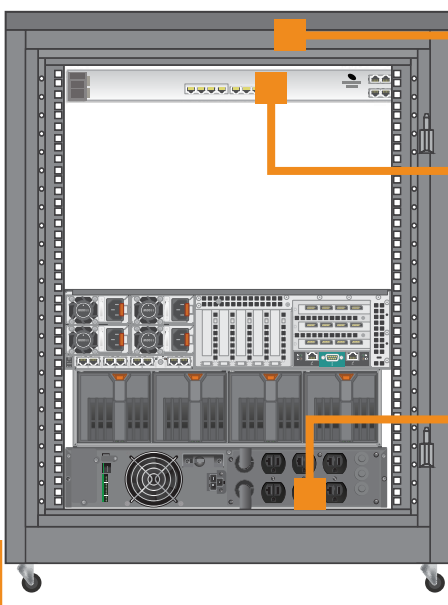


Thank you for your interest in the Emerson SmartCabinet™ for Dell VRTX. This document will give you an overview of this solution and will show you how to simplify the deployment and maintenance of a Dell VRTX chassis.

The 4 main features of the SmartCabinet™ for Dell VRTX are:

- **Remote Access.** You will be able to access the serial port of your VRTX CMC through your network or through a modem connection. This means you will never lose access to your VRTX chassis and will be able to troubleshoot and fix issues remotely saving you time and money.
- **Power Conditioning and Back-up.** The SmartCabinet™ for Dell VRTX uses true on-line UPS technology that delivers continuous, high-quality AC power with no break when transferring to battery. It protects equipment from all power disturbances due to blackouts, brownouts, sags, surges or noise interference.
- **Remote Monitoring.** The SmartCabinet™ for Dell VRTX can be connected to your network and will alert you about power failures, high-temperature conditions, or when the cabinet door is opened.
- **Physical Security.** The SmartCabinet™ for Dell VRTX has lockable front and back doors and may be equipped with sensors to alert you when the doors are opened.

The next sections of this document will show you how to take advantage of these 4 main features when deploying a Dell VRTX chassis on a SmartCabinet™.



13U Cabinet

This cabinet has capacity to 1,000 lbs. on rolling wheels. Be sure to extend the feet on the bottom of the cabinet before mounting the VRTX chassis.

ACS 6008

The advanced console server has 8 serial ports. One or two of these ports are connected to the serial ports of VRTX's CMC's. Remaining serial ports can be used to access the serial console ports of other network equipment. You will be able to access all serial ports via your network or a modem connection, which allows you to remotely configure and troubleshoot your CMC's and other network equipment at the same location.

GXT4™-3000

This true online UPS provides up to 3kVA (2,700W) of high-quality AC power. The batteries will power a fully loaded VRTX chassis operating at maximum capacity for 5 minutes. The outlets used to power the VRTX chassis are remote controllable so you can cycle the chassis in the unlikely event of an unresponsive CMC.

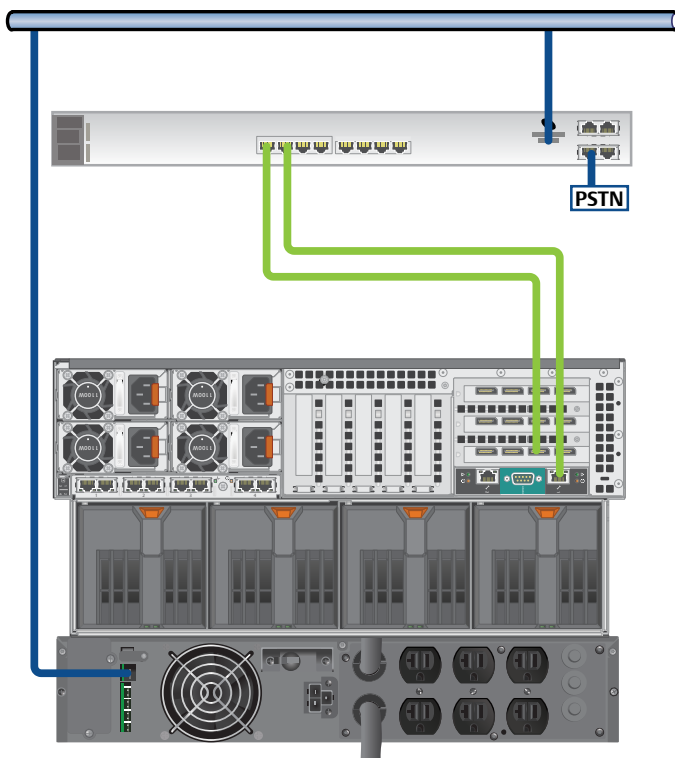
Cables and Adapters

A SmartCabinet™ for Dell VRTX ships with all cables and adapters necessary for the installation of the VRTX chassis into the cabinet. It includes four power cords, 4 CAT5 cables, and 2 serial adapters. No more trips to the store to buy additional cables.

Remote Access

A SmartCabinet™ for Dell VRTX allows you to remotely access the one or two serial ports on your VRTX chassis (depending on how many CMC's you have). You will be able to run racadm commands from any SSH client or web browser. This will give you complete control over your VRTX chassis.

The remote access functionality is accomplished by connecting the serial console port of the CMC into one of the 8 serial ports of the ACS 6008, using a CAT5 and a serial adapter (both provided). One or both network interfaces on the ACS6008 need to be connected to your network. Optionally you can also connect a USB modem to the front of the ACS6008 and connect the modem to an analog phone line.



After the physical installation is completed and the cabinet is powered on you will have to follow the installation guide to configure the IP address of your ACS. You also need to configure the serial port connected to your VRTX chassis with the correct settings (115200, 8n1).

The ACS installation guide is available at http://images.go.emersonnetworkpower.com/Web/LiebertCorporation/%7Bb4186451-9832-4f00-8612-f4baa0e29bf7%7D_590767501G.pdf

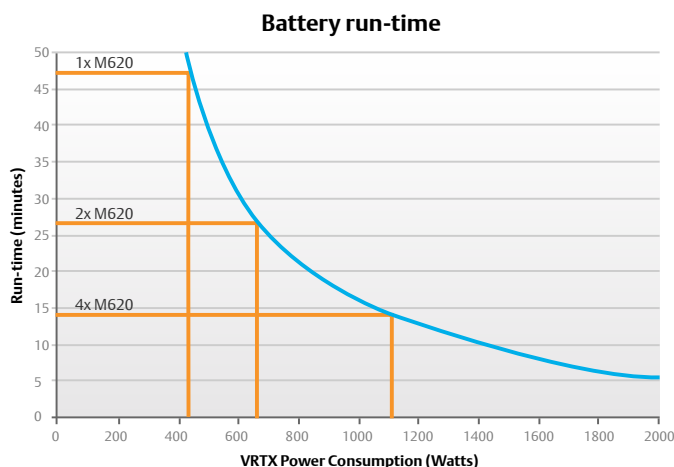
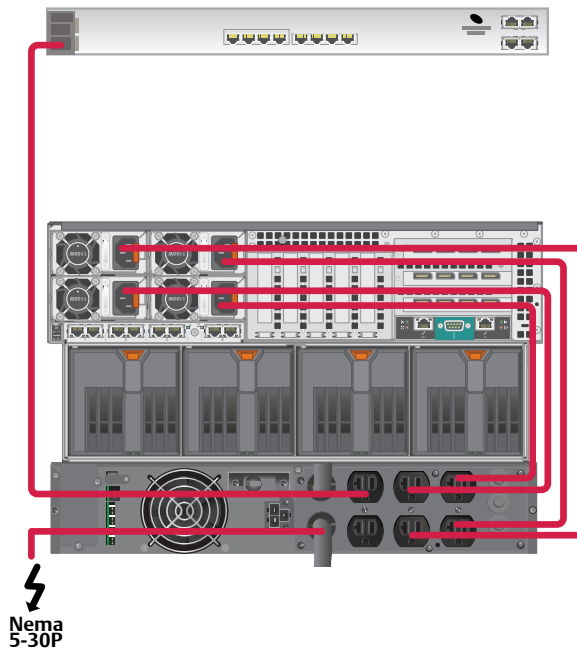
If you are using a modem connection, you will have to configure the ACS for dial-in or dial back access.

The instructions are available at <http://community.emerson.com/networkpower/support/avocent/serial/acs6000/w/wiki/1071.dial-in-and-setup-callback-to-the-ac6000-internal-modem>

Power Distribution and Back-up

A SmartCabinet™ for Dell VRTX is powered by a 3 KVA true online UPS that offers the highest level of power protection and the highest up time to your chassis. The picture to the right shows how you will connect the power cables when installing your VRTX chassis (power cables are provided with cabinet). The VRTX chassis must be connected to the four outlets on the right side of the UPS, otherwise remote control functionality will not be available. The UPS will be connected to a NEMA 5-30R receptacle (if a NEMA 5-30R plugs are not available see Other Configuration – NEMA5-15P Plugs on page 8).

The UPS will provide 5-45 minutes of battery power to your chassis depending on how many blades are installed. The graph below shows different run-times for 1, 2, and 4 M620 blades with 2 processors, 16GB memory, and 6 1TB 2.5in hard-drives for each blade. As you can see you will have plenty of time to resolve a power outage or gracefully shutdown your VRTX chassis. However, if these run-times are not enough, you can add additional battery modules to the cabinet (Dell part number # A8173319). One additional battery module will give you 40-120 minutes of run-time.



The GXT4™ UPS can be managed through the LCD screen in front of the unit, or through the web browser (after you have configured the network settings in the Unity control card).

To learn how to do this, please visit the GXT4™ manual at <http://www.emersonnetworkpower.com/documentation/en-US/Products/ACPower/RackmountUPS/Documents/SL-23193.pdf>

Remote Monitoring

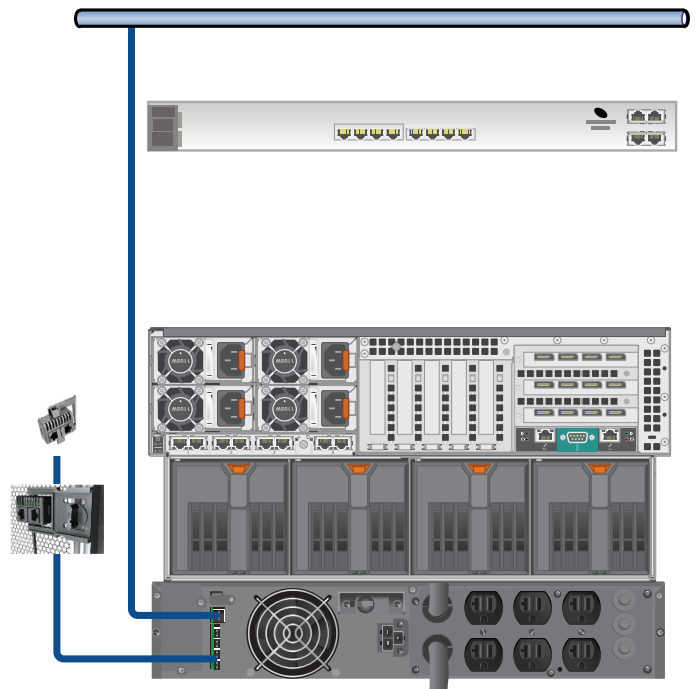
A SmartCabinet™ for Dell VRTX allows you remotely monitor the environment in which your VRTX chassis is running to ensure that you will receive SNMP alerts when conditions degrade.

To receive these alerts, you will have to configure the IntelliSlot™ Unity card that comes pre-installed on your GXT4™. To learn how to perform the initial configuration on your monitoring card, please use the manual located at <http://www.emersonnetworkpower.com/documentation/en-us/products/monitoring/documents/sl-52645.pdf>

- Power alerts. You will receive alerts when the utility power is down and the UPS is running on battery. You will also receive alerts if the power remaining on the battery is running out.
- Temperature alerts. To receive temperature alerts you will have to order an optional temperature sensor (Dell part number A6996380).
- Intrusion Alerts. To receive alerts when the front and back doors are opened and closed, you will have to order an optional door sensor (Dell part number A6996373).

The Unity card will support up to 10 sensors daisy-chained off a single RJ45 ports so you can install more than one temperature or door sensor if necessary.

Besides having the ability to send traps, the Unity card has full SNMP capabilities and will allow you to monitor the power and the sensors on a SmartCabinet via any network management software that supports SNMP.



EMERSON Network Power

Welcome Liebert (Administrator) Logout

GXT4-1000RT120 Sensor Communications

Updated: February 9, 2015 10:20:31AM

Identification

Uninitialized
Uninitialized
Uninitialized

Status

GXT4-1000RT120
Normal Operation
Sensor

Status	Value	Units
SNMPv3 Engine ID	800001DC0300006810114F	

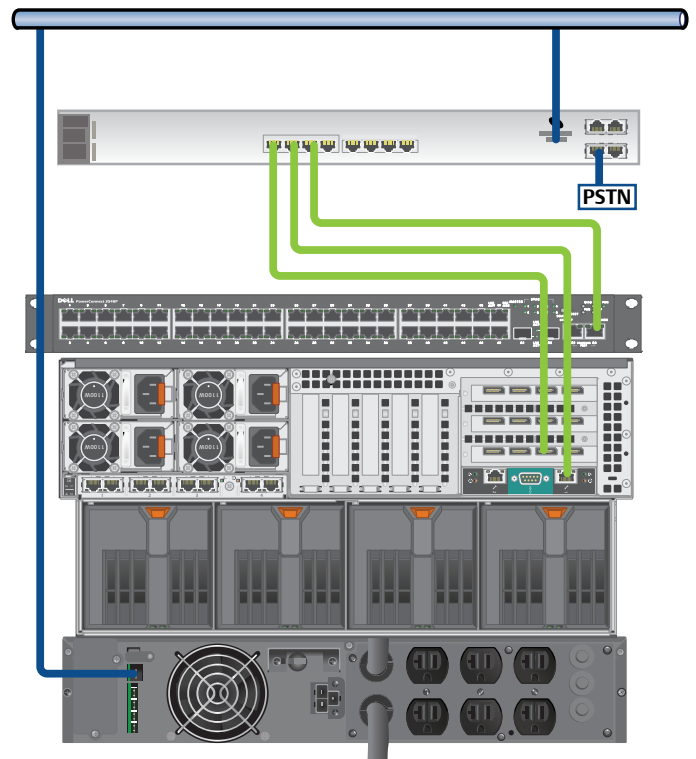
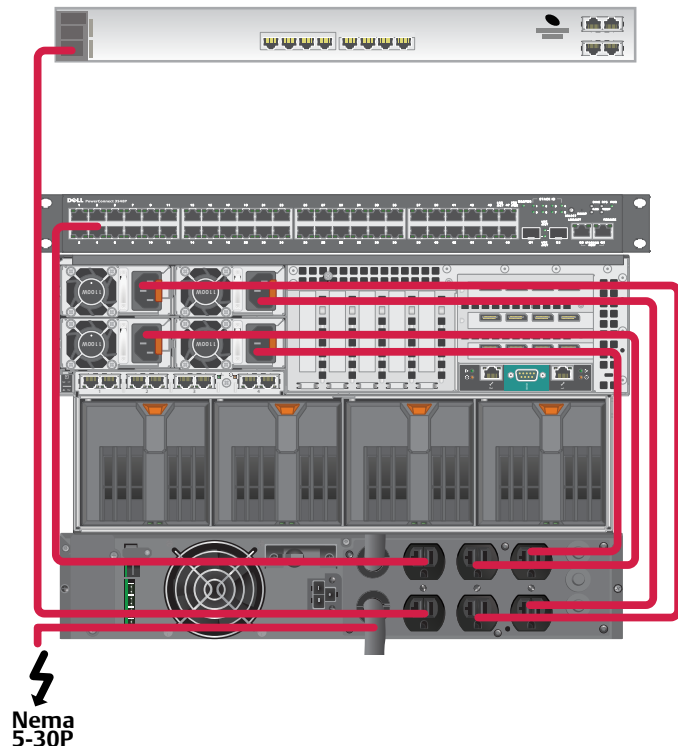
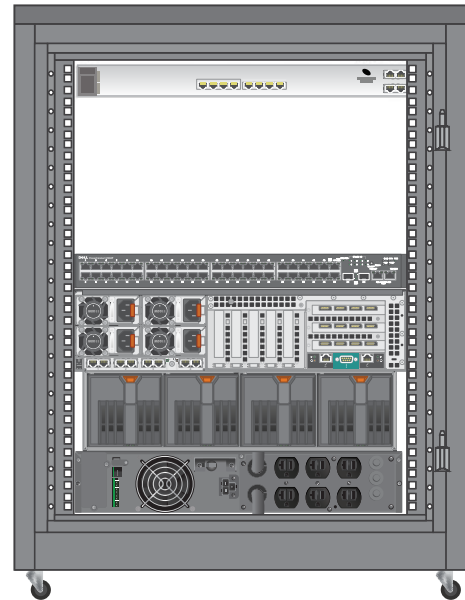
Settings	Edit	Save	Cancel	Units
SNMPv1/v2c Enable	<input checked="" type="checkbox"/>	enabled		
SNMPv3 Enable	<input checked="" type="checkbox"/>	enabled		
Authentication Traps	<input type="checkbox"/>	enabled		
Heartbeat Trap Interval	24 hours			

Other Configuration

Adding an Network Switch

A SmartCabinet™ for Dell VRTX has additional power capacity and serial ports so you can also install more equipment besides the VRTX Chassis. In this example one additional network switch is mounted on the cabinet. The diagrams on this page show the network and serial connections (on the bottom right), and power connections (bottom left).

Before installing additional equipment into the cabinet you will need to confirm that you still have power capacity available. If your VRTX is fully populated and running at full capacity it will consume 2,200W of power. The SmartCabinet™ has 2,700W of power capacity so there are 500W available for expansion. Most VRTX chassis are not fully populated and do not run at full capacity so you will have to check the web interface on your Unity card to determine how much power is being consumed by your installation.



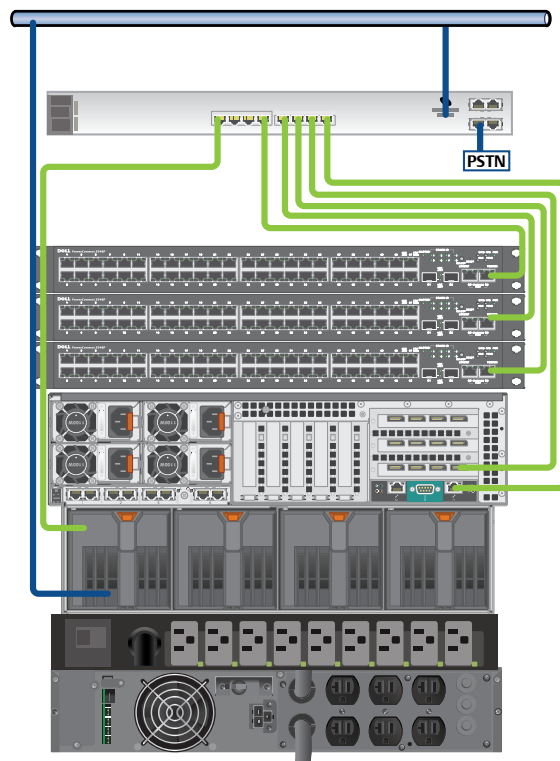
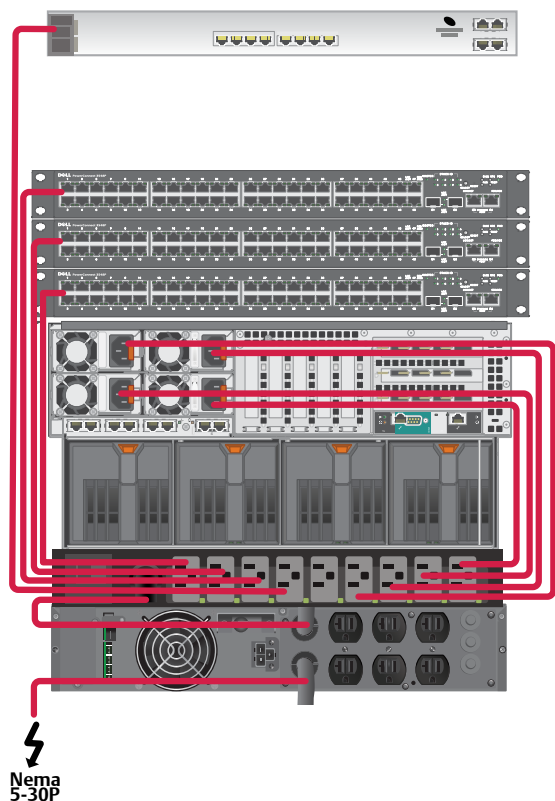
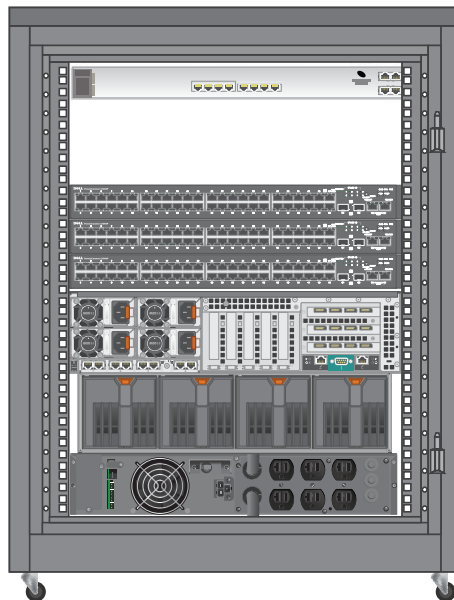
Other Configuration

Adding Three Network Switches

Similarly to the previous page, you will have to confirm that the cabinet has enough power capacity to power three additional network switches by consulting the web interface on the Unity card to find out how much power is being used and by comparing the remaining capacity against the power requirements of your network equipment.

In this example, the 6 outlets on the UPS are not enough to power all the equipment so a horizontal PDU with nine additional outlets is added (Dell part number A7527354). The input cord of the rack PDU connects to the output cord of the UPS and all the equipment on the cabinet is connected to the PDU. Note the serial connection between the rack PDU and the ACS 6008. The ACS 6008 will allow you to manage the PDU through its native web interface (please see ACS user manual for more details).

Since the console port of all the network equipment is also connected to the ACS 6008, you will have full remote control over all the equipment in this cabinet, via network or modem.



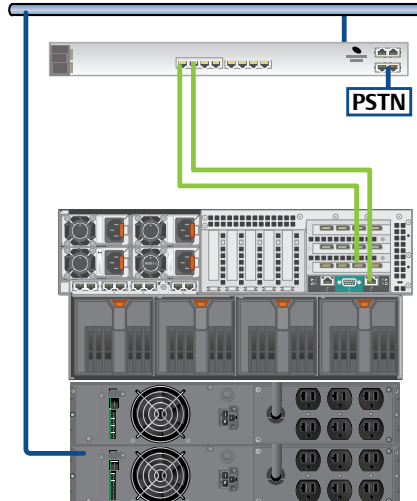
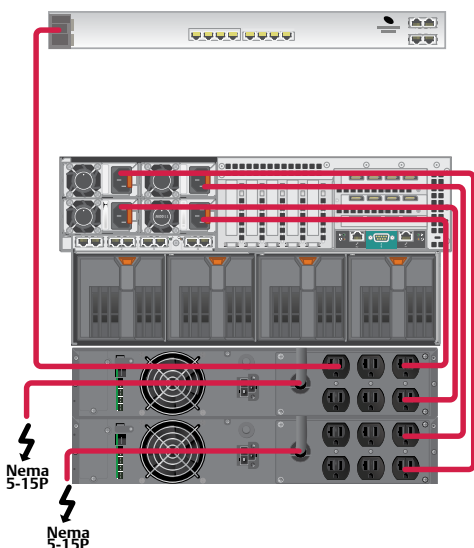
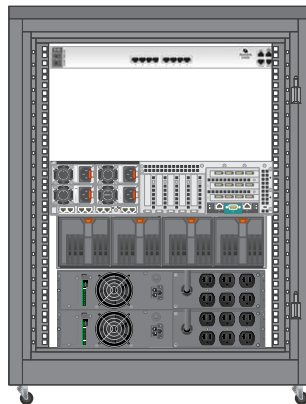
Other Configurations

NEMA 5-15P Plugs

For places where a NEMA 5-30R receptacle is not available or cannot be installed, you can order a variation of the SmartCabinet™ for Dell VRTX with standard NEMA 5-15P outlets. This variation uses two 1500VA UPS's instead of using a single 3000VA. The price is the same but you need to order a different part number (A8340383).

All the functionality of this variation is identical to what has been described in this document so far. There are a few differences that you need to take into account:

- **Power Connections.** Each UPS will power two power supplies on the VRTX chassis and you will need two input power cords for the cabinet.
- **Monitoring.** Both UPS's will have to be connected to the network and managed independently.
- **Weight.** The standard cabinet weighs 180 lbs. (without the VRTX chassis). This configuration weighs 235 lbs. (without the VRTX chassis)



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AV-49107 (R08/15) Printed in USA

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