



Energize VCE VxRail Appliances with Eaton power management solutions

The VCE's VxRail Appliance has propelled interest in hyper-converged infrastructures due to its flexibility and functionality. However, to realize its full potential, power management is vital. With that need in mind, Eaton offers fully integrated, scalable solutions that ensure maximum levels of uptime in the virtualized environment.

Hyper-converged infrastructure's ability to create a single appliance stack where compute, storage, networking, virtualization resources and other technologies are tightly integrated is becoming increasingly popular in data centres across the world. It allows IT professionals to reduce complexity in their IT environment, reduce risks and eliminate the need to evaluate hardware and software individually. It also delivers a smaller footprint to reduce power and cooling costs. Eaton provides intelligent, scalable solutions designed to organize, protect and manage hyperconverged infrastructures to ensure their business continuity.



VCE VxRail Appliance powered with Eaton technology

At the forefront of this revolution is the VCE VxRail Appliance — a new fully integrated and jointly engineered hyper-converged infrastructure appliance family for VMware environments. The VxRail Appliance family brings together the best of EMC and VMware. The all-in-one single product family features EMC rich data services and VMware's leading hyper-converged software, that includes VMware vSphere®, vCenter Server® and VMware Virtual SAN™, delivered with one point of support.

But in today's high availability server environments, unplanned power outages or line quality irregularities can have a detrimental impact on data centres and enterprise network infrastructures. To illustrate this, during a recent survey, 37% of IT professionals said they had suffered an unplanned outage in the past 12 months, with 32% saying those outages had lasted more than four hours¹. The cost of network downtime averages €6,170 per hour for small businesses (1-100 employees), and €66,170 per hour for medium businesses (100-1000 employees.) Hyperconverged infrastructures are not immune to the potentially devastating consequences of these events. These include poor business continuity, operational downtime and reputational damage — all of which could be impossible to recover from.

Everything possible should be done to avoid this type of situation occurring. Despite this, there is a dangerous misconception that if the software layers of an IT system can handle equipment failures in the physical layer, power protection and power management become optional or even completely unnecessary. The truth is that power protection remains essential in every type of system, regardless of where resiliency is achieved.



Powering Business Worldwide

As an EMC Technology Connect Partner and VCE Technology Alliance Partner, Eaton helps enhance the value of VxRail Appliances by offering fully integrated, scalable infrastructure solutions including power protection, power distribution, IT racks, environmental sensors and power management software. With Eaton's solutions, VxRail Appliance users can manage their entire IT application, including power devices, from a single dashboard, as well as ensuring integrity of valuable data and continuity of the entire business by implementing effective disaster recovery policies.

Adding value

A power management system must communicate and integrate with the virtualization layer and be capable of monitoring and reporting the power used by each server or outlet. Ultimately, maximizing resiliency involves providing a strong foundation on which application, operating system and other layers can rely.

Devising a power management infrastructure system requires **software** that can monitor and manage power devices, but also initiate proper disaster recovery policies on power and environmental alerts and thus ensure business continuity.

Designed to offer VxRail Appliance users an effective method of achieving these objectives, Eaton's Intelligent Power Manager (IPM) software helps extend network runtime and protects critical equipment through intelligent load shedding, targeted virtual machine (VM) migration and disaster recovery initiation to failover site. To simplify power management, IPM allows personnel to view and manage an entire power infrastructure from an existing virtualization dashboard.

Eaton is an Elite level member of VMware's Technology Alliance Partner programme and its IPM software is validated VMware Ready for integration with vSphere and vCenter. IPM also ensures that IT managers can view the status of their network power infrastructure through an easy to deploy management pack that

plugs into VMware's vRealize Operations management suite. The software offers IT professionals unrivalled management capability over their virtualized and cloud-based IT infrastructures. It complements virtualization and cloud management tools by extending their capabilities to include monitoring and management of network connected power devices, infrastructure-aware workload management, dynamic power capping, and initiation of failover policies.






Eaton's award-winning **power protection** and distribution solutions seamlessly integrate into VxRail. Eaton's Energy Star qualified 5PX and 9PX UPS models with extended battery modules provide reliable, versatile and efficient backup power, while **rack and cable management** options maintain the integrity of hardware equipment, improve airflow and reduce cooling costs.

The role of **power distribution units (PDUs)** has evolved so that they can now give a detailed snapshot of the operation of the data center server rack as a whole. In fact, according to the IHS Rack Power Distribution Units 2015 report, the increase in demand for intelligent PDUs "is driven by the need to monitor power usage, report efficiency metrics, decrease power use in the data center, and enable capacity planning". A PDU is no longer solely about power distribution, but is a valuable source of operational data.

Eaton's ePDU G3 third-generation rack power distribution units combine best-in-class efficiency and reliability with technological advances that include a new patent-pending grip feature for International Electrotechnical Commission (IEC) connectors. They feature a most accurate view of power usage in its environment and are able to operate at up to 60°C, leading to cost saving opportunities.

Eaton's **environmental monitoring sensors** complement the overall power management solution and help automate migration of virtual machines to cloud or backup site based on temperature and humidity spikes and security alarm notifications.

How Eaton energizes VxRail performance

 IPM	IPM integrates with VMware vCenter to provide continuous uptime of hosts and virtual machine. The Eaton Infrastructure Management Pack for vRealize Operations Manager enables you to monitor and manage the health, risks and efficiency of the power infrastructure within an IT environment.
 UPS	ENERGY STAR qualified 5PX and 9PX UPS models with extended battery modules provide reliable, versatile and efficient backup power.
 Rack PDU	ePDU G3 Metered Input features most accurate view of power usage in its environment leading to cost saving opportunities, advanced LCD pixel display, a hot-swap meter and the ability to operate at high 60°C temperatures.
 Rack and cable management	Eaton rack supports a weight capacity up to 900 kg (includes castors). Tool-less blanking panels allow for quick installation and reduces re-circulation and hot exhaust air to the equipment inlet. Cable management maximizes airflow and rack organization.
 Environmental Monitoring Probe	Delivers up-to-date temperature and humidity readings within the rack.

Why Eaton with VxRail?

VxRail benefits	Reduce complexity	Reduce cost	Reduce risk
Achieved by	<ul style="list-style-type: none"> • Pre-integrating hardware and software from the factory • Enabling power-on to provision in 15 minutes 	<ul style="list-style-type: none"> • Eliminating need to evaluate hardware, software individually • Delivering a smaller footprint to reduce power and cooling costs 	<ul style="list-style-type: none"> • Providing a single vendors support
Eaton power management benefits	Improve IT efficiency	Lower costs	Improve business continuity
Achieved by	<ul style="list-style-type: none"> • Reducing installation time through onsite configuration and start-up options • Providing single-pane-of-glass management • Integrating power management into existing, leading hypervisors 	<ul style="list-style-type: none"> • Offering pay-as-you-grow capability • Delivering high-efficiency product portfolio for reduced energy costs • Less initial upfront batteries, less battery replacement 	<ul style="list-style-type: none"> • Providing intelligent load shedding, power capping on demand and targeted VM migration capability through IPM • Enabling disaster recovery initiation to failover site

The next step

It's essential to make the right choices about power management and configuring a system to support a hyperconverged infrastructure solution that will ensure continuity of an entire business.

VCE VxRail Appliance advanced abilities have been combined with Eaton's industry-leading power management solutions to provide the premier hyperconverged solution to reduce deployment time and complexity, limit risk, lower total cost of ownership and ensure data integrity.

Eaton reference designs for VxRail Appliance configurations of 200 VMs, 400 VMs, 800 VMs and 1600 VMs are available at www.eaton.eu/emc.



Eaton helps enhance the value of VxRail by offering fully integrated, scalable infrastructure solutions.



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