



## Lower startup cost and higher efficiency for converged infrastructure

**Location:**

Scandiano, Reggio Emilia, Italy

**Segment:**

IT

**Problem:**

To reduce start-up, integration and energy costs by finding a scalable, energy efficient and virtualisation-ready power solution for a new VSPEX Labs Validated converged infrastructure concept.

**Solution:**

Eaton's 9PX UPS and ePDUs with Intelligent Power Manager™ software.

**Results:**

Reduced integration times and costs for E4 Computer Engineering, combined with energy efficiency and start-up savings for E4's customers.

**Contact Information**

**Daniele Daneluz**

Account Manager IT Distribution  
DanieleDaneluz@Eaton.com

**Background**

Founded in 2002, E4 Computer Engineering SpA specialises in the production of customised high performance computing infrastructures for scientific and research environments as well as data centre solutions for enterprises. The company boasts amongst its customers some of the most prestigious European research centres, including the CERN in Geneva, and recently received an award from Italy's Istituto Nazionale di Fisica Nucleare (National Institute for Nuclear Physics) for providing top quality hardware solutions. Amongst its latest data centre solutions for enterprises, E4 has developed the E4 VSTONE Structured Virtualization Solution. E4 VSTONE is a VSPEX Labs Validated converged infrastructure offering for private clouds which has been equipped with Eaton's reliable and flexible, virtualisation-ready 9PX UPS and rack power

distribution units (also known as enclosure power distribution units or ePDUs).

**Challenges**

For businesses around the world, simplicity, flexibility and scalability are top priorities when it comes to managing data centres. It is to meet this growing demand that E4 recently designed its E4 VSTONE Structured Virtualization Solution. With server, storage and network capabilities all integrated into one system, E4 VSTONE provides data centres with a simple, flexible and scalable solution.

With power protection and management being as vital for virtual machines as it is for physical servers, E4 needed to equip E4 VSTONE with UPS technology that could guarantee power supply continuity and ensure storage integrity, and ePDUs

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*Lucio Lipreri, E4 Computer Engineering  
Technology Architect*



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to reliably distribute the power and monitor consumption. The Company also needed a solution that could easily integrate with the VMware's Vsphere and Microsoft's HyperV virtualisation environment supported by E4 VSTONE, in order to reduce startup and integration costs and time.

Another key challenge for E4 was to equip its E4 VSTONE with a power infrastructure which offered scalability as well as energy efficiency.

## Solution

To overcome all of these challenges, E4 turned to Eaton's virtualisation-ready 9PX UPS and its ePDUs. "Thanks to its state-of-the-art Intelligent Power software, the Eaton equipment is compatible with all major operating systems and virtualisation software and can easily integrate with virtualised IT environments, including VMware's vSphere and Microsoft's Hyper-V as used by E4 VSTONE," explains Daniele Daneluz, IT distribution account manager at Eaton.

As well as its software being VMware Ready, Eaton is part of the Microsoft Partner Network working closely with the company to ensure its software integrates with their Hyper-V platform. Eaton's power management software is also VSPEX Labs Validated. E4 Computer Engineering singled out Eaton's solutions for their ability to integrate all power management functions so that users can conveniently and efficiently monitor their entire IT installation, including UPSs and ePDUs, from the same location using the same management pane.

A key attraction of the Eaton 9PX UPS used was its ability to ensure business and service continuity through

the Intelligent Power software which can be configured to automatically trigger the live migration of virtual machines to a back-up facility, ensuring data integrity and zero downtime.

In addition, E4 chose the 9PX to provide E4 VSTONE's users with a scalable offering both in terms of power and reliability. Thanks to Eaton's Powerware Hot Sync® load-sharing technology, paralleling can be used to gain redundancy and add capacity to the system at a later point depending on the infrastructure growth. In addition, Hot Sync technology is used to parallel power converter modules within a UPS. Hot Sync technology also guarantees maximum system availability and reliability by eliminating a single point of failure in a parallel UPS system in which two or more units share the same load. A maintenance bypass is also available for easy replacement of the UPS without powering down critical systems.

Another reason for turning to Eaton was to provide users with an IT infrastructure which could ensure power supply continuity whilst achieving energy efficiency. Offering 95% efficiency in online double conversion mode and 98% in high-efficiency mode as well as a power factor of 0.9, the 9PX delivers 28% more power than other UPSs in the same class, with 40% less energy usage.

Thanks to Eaton's patented mounting system, the company's ePDUs are specifically designed for the data centre environment to provide maximum availability and fit any standard 42U IT rack. By enabling users to monitor and track consumption, including accurate volt, ampere, watt and kilowatt-hour measurements, Eaton ePDUs can also contribute

to controlling operating costs, giving users a comprehensive view of their rack power distribution.

Eaton's high levels of service and customer support also influenced E4's decision to equip E4 VSTONE with the company's power infrastructure offering. "Eaton fully supported us in the design of E4 VSTONE as well as in the start-up phase, providing us with the opportunity to configure and customize the solution according to our needs," comments Loris Lignola, Enterprise B.U. Team leader E4 Computer Engineering.

## Results

By providing an easy-to-integrate, scalable and flexible power solution, Eaton has helped E4 to significantly reduce integration times and thus costs in designing and assembling E4 VSTONE. It has enabled E4 to provide customers with a VSPEX Labs Validated, ready-to-use converged infrastructure solution and one that will help them achieve savings on start-up and installation times as well as energy consumption.

"Thanks to Eaton's power management solutions, we have succeeded in designing a totally integrated, scalable and fault tolerant solution for private clouds which also provides power supply continuity – E4 VSTONE. This will offer our customers a great opportunity to save on start-up and integration costs whilst ensuring storage integrity and energy savings" comments Lucio Lipreri, Technology Architect E4 Computer Engineering.

Following the success of the E4 VSTONE project, the company is planning to partner with Eaton again. E4 will rely on Eaton's power infrastructure solutions for future projects involving

IT infrastructure and data centres and wherever there is a demand for an efficient, scalable power management structure which can be easily integrated.



E4 VSTONE®



**Eaton Industries (Italy) S.r.l.**  
Via Papa Giovanni XXIII, 43  
20090 Rodano (Milano)  
Italy  
www.eaton.eu

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