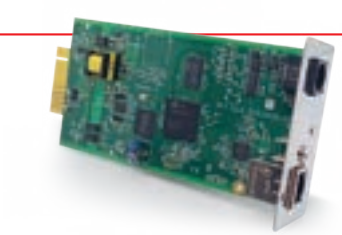
Connectivity

ACCESSORIES



NetMan 208

CARD - ETHERNET - SNMP

The NetMan 208 network card allows UPS directly connected over LAN 10/100/1000 Mb connections to be managed using the main network communication protocols (TCP/IP, HTTP and SNMP). It is the ideal solution for the integration of UPS over Ethernet networks with Modbus/TCP or BACNET/IP protocols. It was developed to integrate UPS into medium-sized and large networks, to provide a high level of reliability in communication between the UPS and associated management systems.





FEATURES

- 32 bit RISC dual core processor;
- Compatible with 10/100/1000 Mbps Ethernet and IPv4/6 networks;
- Compatible with PowerShield³ and PowerNetGuard;
- SNMP v1, v2 and v3 with RFC1628 for PowerNetGuard and NMS connection;
- SNMP v1, v2 and v3 with RFC3433 for the management of environmental sensors;
- HTTPS for UPS control via web browser;
- SMTP for alarm notifications and UPS status updates via email;
- Ldap and Active Directory integration for centralised authentication mechanism support;
- Permits to initiate live migration of virtual machines (VM) to automatically and transparently migrate VMs during power disturbance to protected devices by UPS with migration systems such as VMware and vMotion™. NetMan 208 can monitor and manage UPS either inside or outside the data center. Can also measure power consumption to help calculate power usage effectiveness (PUE), the standard metric utilised for gauging Data Center power efficiency.
- Modbus/TCP;
- BACNET/IP;
- Maximum expandability;
- Events log and data management;
- Wake-on-LAN management for starting computers via TCP/IP network;
- Other standards: DHCP, DNS, RARP, FTP, NTP, ICMP, IGMP;
- Management of environmental sensors;
- Configurable via SSH sessions and web;
- Firmware upgradeable via web browser;
- Configurable firewall.

Environmental sensor

FOR NETMAN 208

The NetMan 208 environmental sensors is able to monitor and record environmental conditions, as well as activities in protected areas and the area where the UPS is installed. The environmental sensors allow management and control to be extended to cover the area around the UPS, monitoring the temperature and humidity and driving cooling fans or locks. Values are provided via Internet, SNMP and via PowerShield³ software. PowerShield³ can be used to manage sensor operating states in order to send messages. Refer to PowerShield³ software documentation for further information. NetMan 208 can manage up to 3 separate sensors. Environmental sensors are quick to install thanks to their small footprint and they do not require a separate external power supply. Thanks to the self-learning sensors, configuration is also rapid and intuitive.



Available sensor:

-55 +60 °C Temperature 0-100% humidity Sensor and I/O digital 0-12 Vdc In, 1 A max Out at 48 Vdc Sensor.

MultiCom 302

CARD - MODBUS/JBUS INTERFACE

The MultiCom 302 protocol converter allows UPS monitoring using the MODBUS/JBUS protocol over RS232 or RS485 serial lines. In addition, it also manages a second independent RS232 serial line that can be used to connect to other devices such as the PLC or a PC running PowerShield[3] software.

FEATURES

- Port configuration for MODBUS/JBUS as RS232 or RS485;
- Management of two independent serial lines;
- Suitable for integration with the main BMS management programs.



MultiCom 352

CARD - INTERFACE DUPLEXER

The MultiCom 352 serial duplicator is an accessory that allows two devices to be connected to a single communication serial port on the UPS. It can be used anywhere where several serial connections are required for multiple polling of the UPS. It is ideal for LAN networks with firewalls, where a high level of security is required, or for the management of separate LAN networks supplied by a single UPS.

FEATURES

- Cascading configuration giving a maximum of 4 serial communication ports;
- LED communication flow indicator;
- Firmware upgradeable via serial port.



MultiCom 372

CARD - RS232 INTERFACE

The MultiCom 372 allows an additional communication port to be added to the UPS to control and monitor the UPS via the RS232 serial line.
The board is supplied with an ESD (UPS Emergency Shutdown) input and an RSD (Remote Shutdown) input, both available on a removable terminal board and directly connectible to emergency buttons or other buttons.

FEATURES

- Management of ESD input and UPS Shut-down;
- Ability to supply devices at 12 V 80 mA max.



MultiCom 384

CARD - RELAY I/O INTERFACE

The MultiCom 384 provides a set of relay contacts for managing UPS alarm notifications and operating states. The board has two removable terminal boards. One of these terminal boards includes the ESD (UPS Emergency Shut Down) and RSD (Remote Shut Down) signals. The board also provides the possibility of associating Battery Working, Bypass, Alarm and Battery Low warnings with potential free contacts on normally close or normally open contacts.

FEATURES

- Max. current 3 A at 250 V;
- Signal-contact customisation;
- Normally Open or Normally Close configuration for each contact.

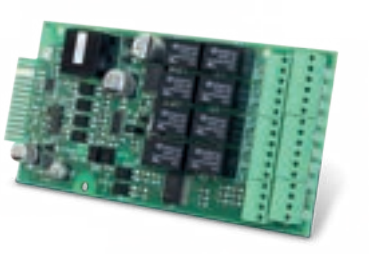


MultiCom 392

SLOT EXPANDER NETWORK CARD

MultiCom 392 is a communications card that provides 8 configurable dry contact outputs and up to 4 inputs to assist with monitoring and control of the UPS.

Device is compatible with a broad range of Riello UPS models, including Multi Power, Multi Sentry, Sentryum and our Central Supply Systems (CSS).



MultiCom 411

PROFIBUS PROTOCOL CONVERTER

The MultiCom 411 connects a Riello UPS to a Profibus DP Network. In industrial environments, the Gateway integrates UPS management and monitoring into a control system.

The Gateway uses the field bus design, one of the most popular used for communicating between devices such as automation control systems and distributed I/O hardware.



MultiCom 421

PROFINET PROTOCOL CONVERTER

The MultiCom 421 connects a Riello UPS to a PROFINET-IO Network. In industrial environments, the Gateway integrates UPS management and monitoring into a control system. The Gateway uses the PROFINET control system, one of the most popular used for communicating between devices such as automation control systems and distributed I/O hardware.



Multi I/O

BOX - RELAY I/O CARD & MODBUS/JBUS INTERFACE

The Multi I/O is a device that integrates UPS into a control system using fully configurable input and output relay signals. It can be used to connect two devices to a single UPS serial communication port.
It can be used anywhere where several serial connections are required for multiple polling of the UPS.
It can also communicate on RS485 lines using the MODBUS/JBUS protocol.

FEATURES

- 8 analogue/digital inputs;
- 8 relay outputs (3 A at 250 V) that can be configured using UPS and input operating states;
- Can communicate with UPS via RS232;
- It can control two independent RS232/ RS485 serial lines to monitor the UPS and its operating states using the MODBUS/ JBUS protocol;
- Firmware upgradeable via serial port.



Multi Panel

REMOTE DISPLAY INTERFACE

The Multi Panel is a remote monitoring device that can provide a detailed UPS status overview in real time. This device is able to display mains power, output and battery readings as well as UPS operating states. The high visibility graphic display supports English, Italian, German, French, Spanish, Russian, Chinese and many other languages. It has 3 independent serial ports, one of which allows for UPS monitoring via the MODBUS/JBUS protocol (on either an RS485 or RS232 serial line). The other independent serial lines can be used to connect devices such as the NetMan 208 or a PC running PowerShield[3] software.

FEATURES

- High visibility LCD with graphic functions
- Management of three independent serial lines;
- Port configuration for MODBUS/JBUS as RS232 or RS485;
- Suitable for integration with the main BMS management programs;
- Firmware upgradeable via serial port.





CONNECTIVITY EXAMPLES

Index of configurations

Connecting a UPS to other devices, sensors, computers and other specific devices, means on the one hand allowing the user to monitor UPS operating parameters and prevent critical situations and on the other hand provides the UPS with input parameters from the working environment. By processing these parameters the UPS is able to activate/ deactivate itself, communicate its status and much more.
This brief overview summarises some of the basic connectivity configurations, grouped according to the end purpose and situation surrounding each case.

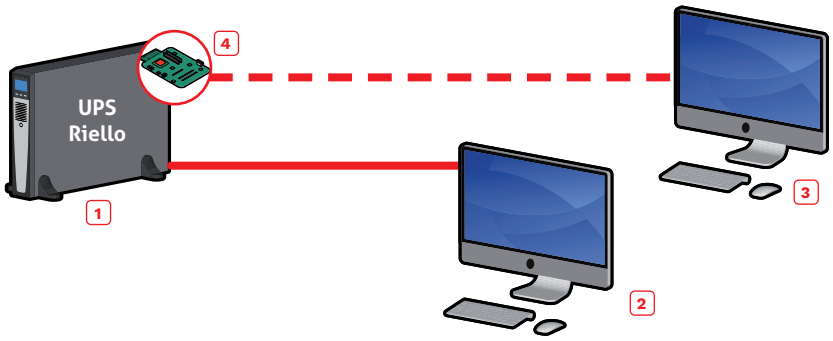
- **Point to point connections;**
- **Multipoint connection;**
- **Connection for UPS in parallel setup;**
- **Connection with several systems in parallel setup and STS;**
- **Field bus connections;**
- **Bus connections over Ethernet;**
- **Field bus connections;**
- **Serial bus connections.**

POINT TO POINT CONNECTIONS



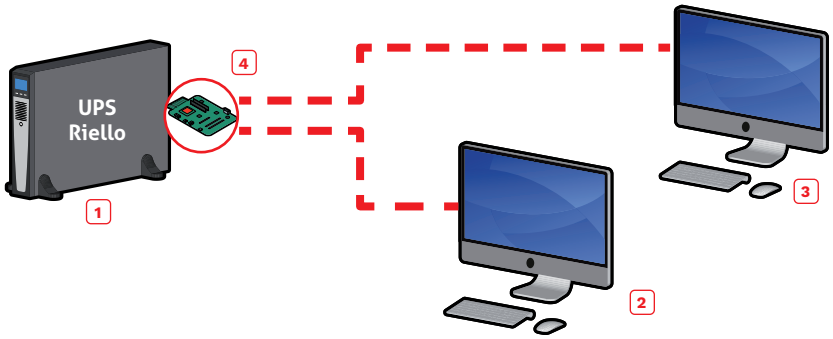
Controlling the UPS from 1 workstation

1	UPS connected to load
2	Local computer with PowerShield³ version FREE
	USB or RS232



Controlling the UPS from different workstations

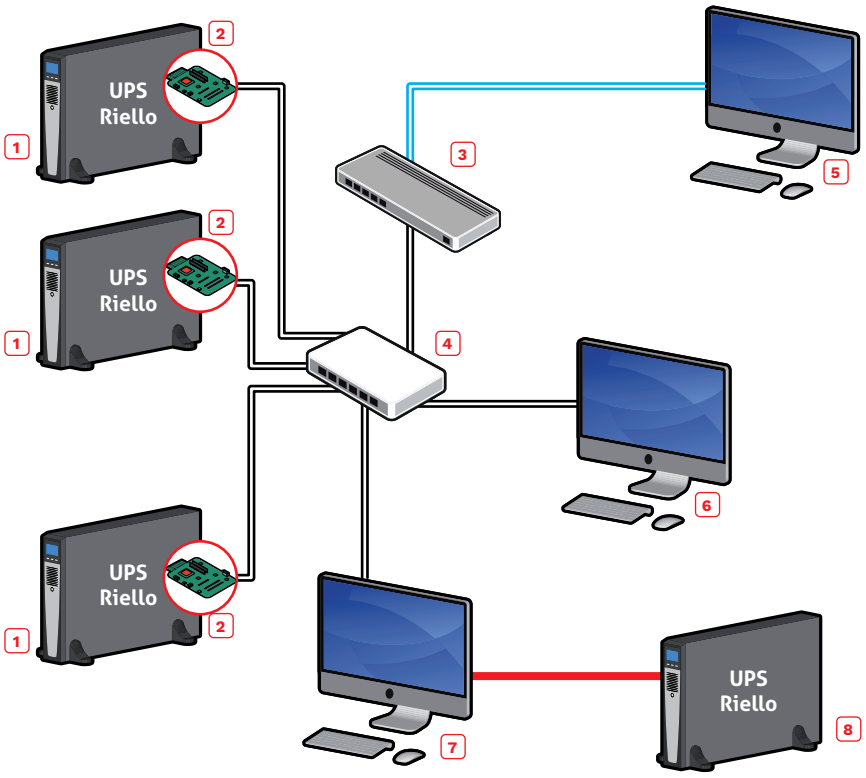
1	UPS connected to load
2	Local computer with PowerShield³ version FREE
3	Local computer with PowerShield³ software version FULL
4	MultiCom 372 board
	RS232
	USB or RS232



UPS control from several workstations, using 2 serial ports

1	UPS connected to load
2	Local computer with PowerShield³ version FREE
3	Local computer with PowerShield³ version FREE
4	MultiCom 352 board
	RS232

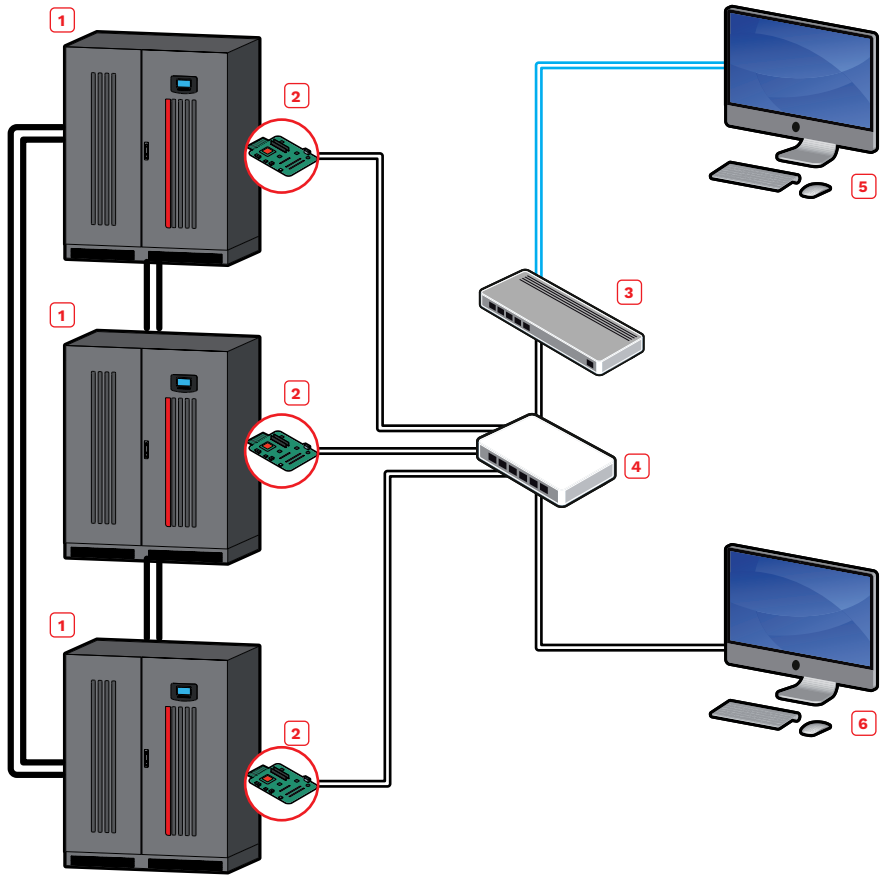
DISTRIBUTED CONNECTION (MULTIPOINT)



Connection with more than 1 UPS.
The FULL version of PowerShield³ software is required as well as a NetMan 208 communication board on each UPS.

1	UPS connected to load
2	NetMan 208 board
3	Firewall
4	Switch
5	Remote computer connected via web
6	Local computer
7	Local computer that controls the UPS (8) via USB or RS232 and UPS (1) via LAN and Ethernet
8	UPS connected to load
	USB or RS232
	Ethernet
	World Wide Web

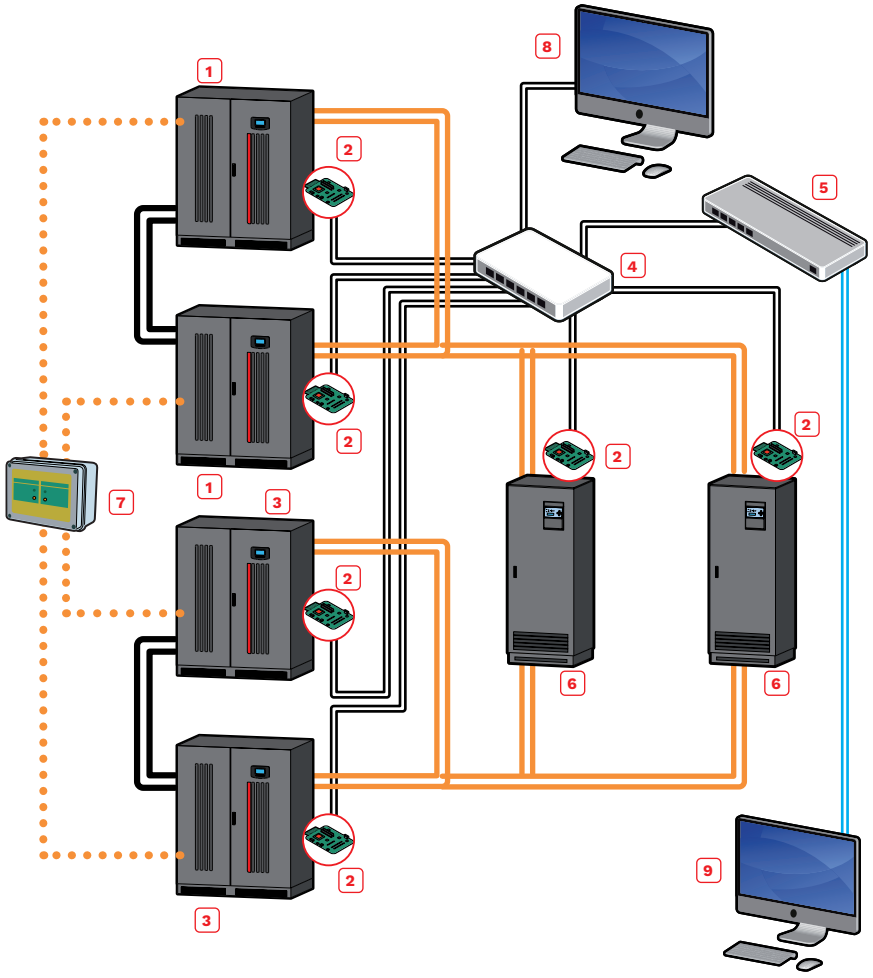
CONNECTION FOR UPS IN PARALLEL SETUP



The FULL version of PowerShield³ software should be used for managing setups with several UPS installed in parallel and each UPS must have a NetMan 208 board installed.

1	UPS in parallel setup connected to the load
2	NetMan 208 board
3	Firewall
4	Switch
5	Remote computer connected via web
6	Local computer
	Ethernet
	World Wide Web
	Parallel setup bus

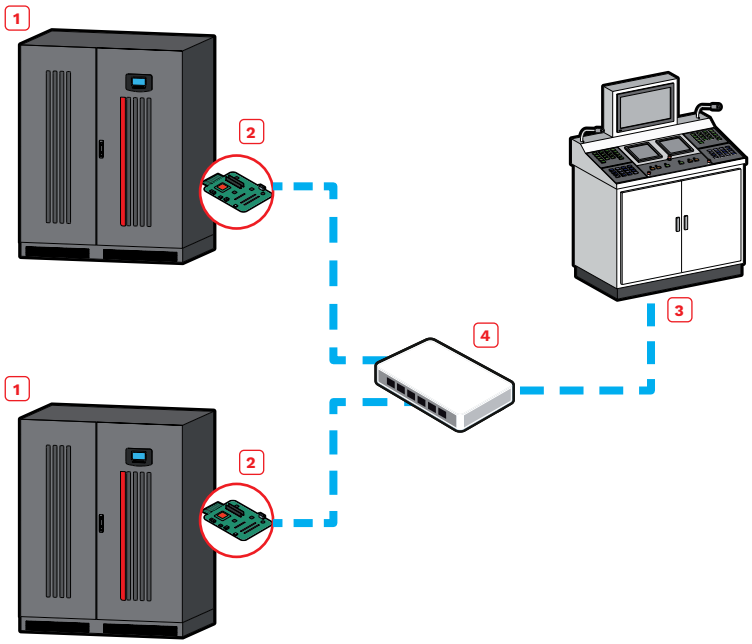
CONNECTION WITH SEVERAL SYSTEMS IN PARALLEL AND STS



The FULL version of PowerShield³ software should be used for managing setups with several UPS installed in parallel and each UPS must have a NetMan 208 board installed.

1	UPS arranged in parallel connected to an STS channel
2	NetMan 208 board
3	UPS arranged in parallel connected to an STS channel
4	Switch
5	Firewall
6	STS connected to load
7	UGS
8	Local computer with PowerShield³ software version FULL
9	Remote computer connected via web, running PowerShield³ software version FULL
	UGS management of parallel setup
	Ethernet
	World Wide Web
	Parallel setup bus
	Power connection

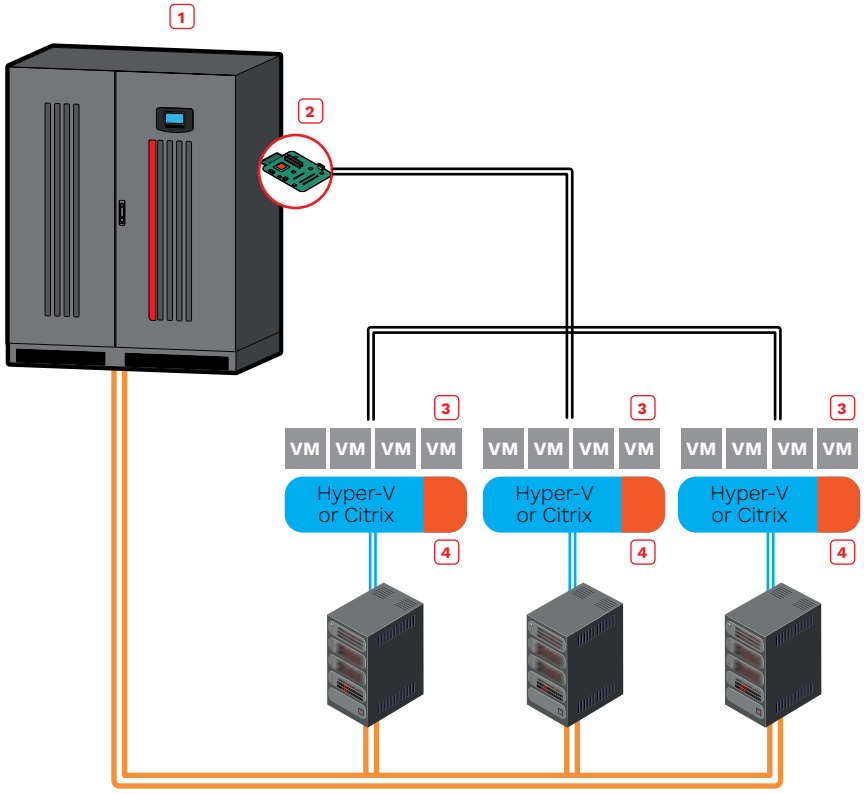
FIELD BUS CONNECTION OVER ETHERNET



For UPS management in industrial or civil environments requiring Modbus protocol communication over Ethernet.

1	UPS connected to load
2	NetMan 208 board
3	SCADA management system
4	Switch
	Modbus / TCP over Ethernet

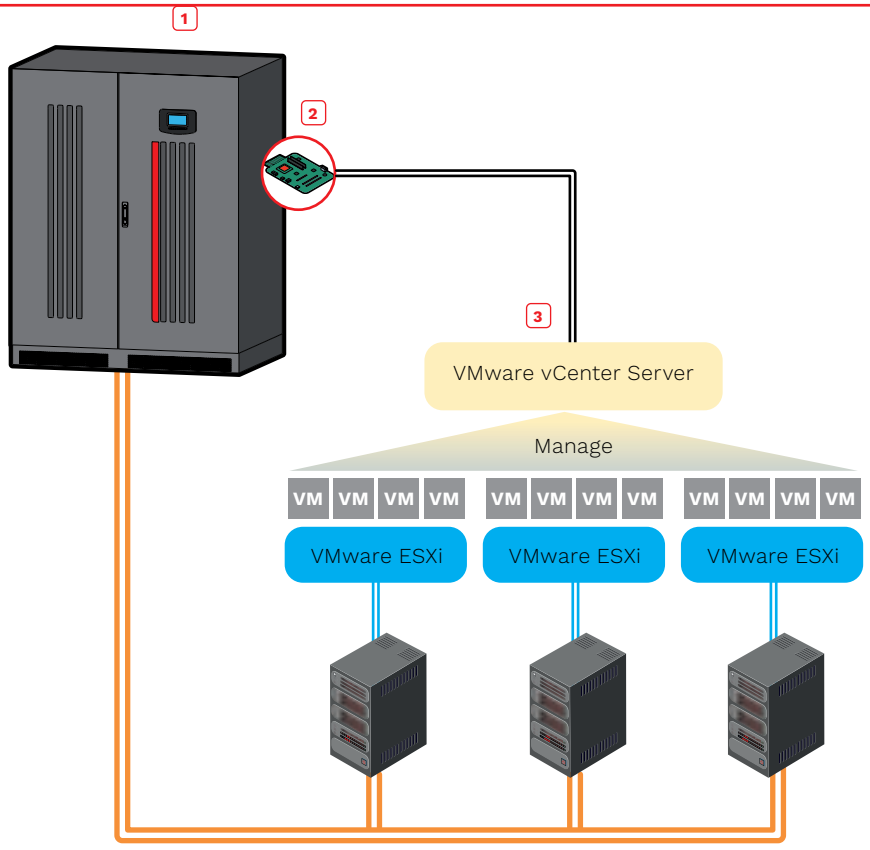
POWERSHIELD³ ON VIRTUALISED SYSTEMS: MICROSOFT HYPER-V; CITRIX



PowerShield³ software should be used for managing setup with UPS, a specific script to shut down the virtualised system must be used, UPS must have a NetMan 208 board installed.

1	UPS
2	NetMan 208
3	Virtualised system
4	PowerShield³
	Ethernet
	Power connection

NETMAN 208 ON VIRTUALISED SYSTEMS: WMWARE ESXI



NetMan 208 should be used for managing Esxi hosts and vCenter servers, enabling you to manage your virtual network to perform shutdown or live migrations of active virtual machines as well as shutdown of physical hosts with delay and priority.

1	UPS
2	NetMan 208
3	Virtualised system
	Ethernet
	Power connection

The information in this document is subject to change without notice. Riello UPS assumes no responsibility for any errors that may appear in this document.

DATCONX0Y24AREN

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