

PowerPanel[®] Business Edition
Installation Guide
For
UPS without Remote Management Card

Rev. 4

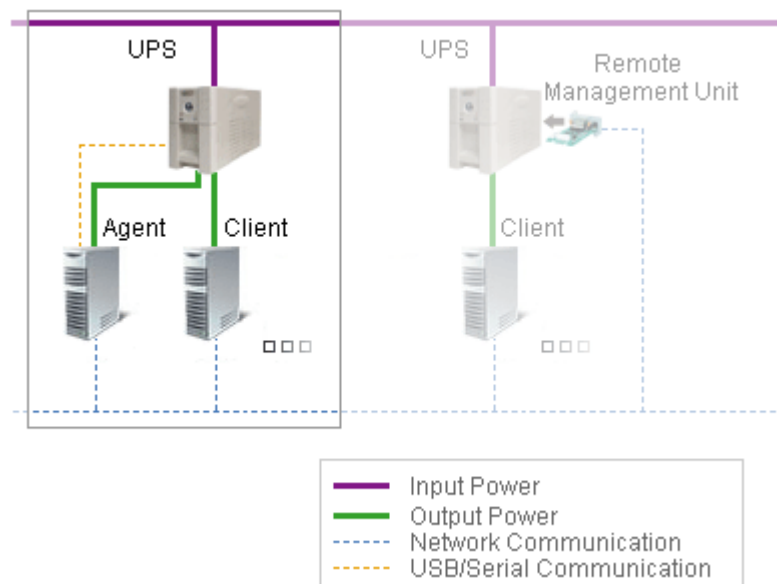
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Table of Contents

Introduction	3
Hardware Installation	3
Connect Computer's Power with UPS Correctly	3
Ensure USB or Serial Cable between Computer and UPS is Connected Properly	4
Install PowerPanel® Business Edition Software	4
Installation on Windows.....	4
Installation on Linux.....	6
Installation on VMWare ESX/ESXi 4	9
Verify Firewall Settings	9
Access PowerPanel® Business Edition Software Interface	10
Establish Communication between Agent and Client.....	11
Ensure Secret Phrase is Matched Each Other	11
Assign Client Computer's IP Address to Agent	11
Assign Connected Outlet of Client.....	11
Setup Necessary Shutdown Time	11
Configure Startup and Shutdown of Virtual Machines on VMWare ESX/ESXi 4	11
Configure Command Execution for VMWare ESXi 4	12

Introduction

PowerPanel® Business Edition software provides for power management and unattended/automatic shutdown of PCs and servers connected to the UPS. When one computer is supplied power by the UPS and communicates with the UPS through the USB or serial connection, installing PowerPanel® Business Edition Agent on this single computer can initiate a shutdown in the event of the power outage to prevent the hosted computer from data loss. Other computers which are also supplied power by the UPS can be protected by installing PowerPanel® Business Edition Client. The PowerPanel® Business Edition Agent establishes the communication with the PowerPanel® Business Edition Client via the network and relays UPS state to the PowerPanel® Business Edition Client. Before the UPS stops supplying power to the Client computer, the PowerPanel® Business Edition Client will be requested an early, graceful shutdown by the PowerPanel® Business Edition Agent.



Hardware Installation

Connect Computer's Power with UPS Correctly

UPS outlets may have different functions: **Surge + Battery** protected outlets provide the protection for the equipment free from the surge and supply battery power once power outage occurs. **Surge** protected outlets provides the equipment free from surge only but does not provide the battery power once power outage occurs. The Agent computer should be connected to UPS with **Surge + Battery** protected outlets instead of **Surge** outlets.

On specific modes, **NCL** (Non-critical load) outlets are designed to turn off early to save battery power in order to maximize the battery runtime for the remaining outlets. Agent computer also should be not plugged into these NCL outlets.

Determine which outlet to be plugged by the Agent computer according the following series:

Smart App Online series.

-
- Outlets numbered **1** or **2** are NCL. The Agent computer should be plugged into other outlets instead of numbered ones.

Smart App Sinewave series.

- The Agent computer should be plugged into one of outlets labeled **CRITICAL LOAD**.

Smart App Intelligent LCD series and **Smart App AVR** series.

- The Agent computer should be plugged into one of outlets labeled **SURGE + BATTERY**.

Paragon Tower series.

- The Agent computer can be plugged into any of outlets.

Professional Rack Mount LCD series.

- The Agent computer should be plugged into one of outlets labeled **CRITICAL LOAD**.

Professional Rack Mount series.

- The Agent computer should be plugged into one of black outlets.

Professional Tower series.

- The Agent computer should be plugged into one of outlets labeled **CRITICAL LOAD OUTLET BANK**.

Office Rack Mount series and **Office Tower** series.

- The Agent computer should be plugged into one of outlets labeled **SURGE + BATTERY**

Ensure USB or Serial Cable between Computer and UPS is Connected Properly

Make sure the connection between the Agent computer and the UPS is securely connected. The Agent will not monitor the UPS status on the condition of the communication loss.

Install PowerPanel® Business Edition Software

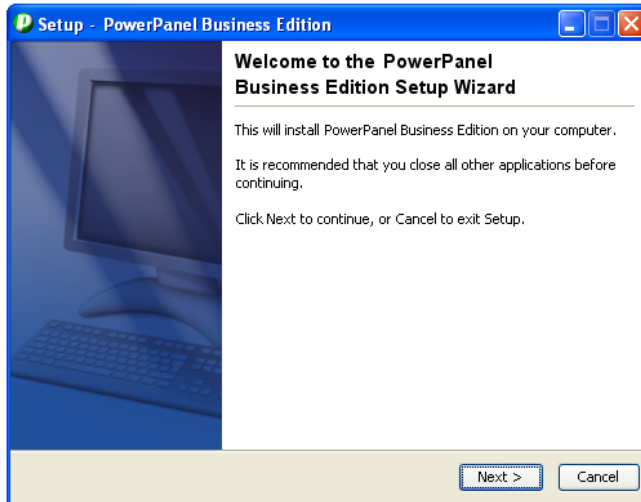
If the single computer has a USB or serial connection to UPS, the PowerPanel Business Edition Agent should be installed on this computer. The Agent installation is only compatible with Windows systems. If multiple computers are supplied power by UPS, these computers without the USB or serial connections to USB should be installed the PowerPanel Business Edition Client. The Client installation is compatible with Windows, Linux and VMWare ESX/ESXi systems.

Installation on Windows

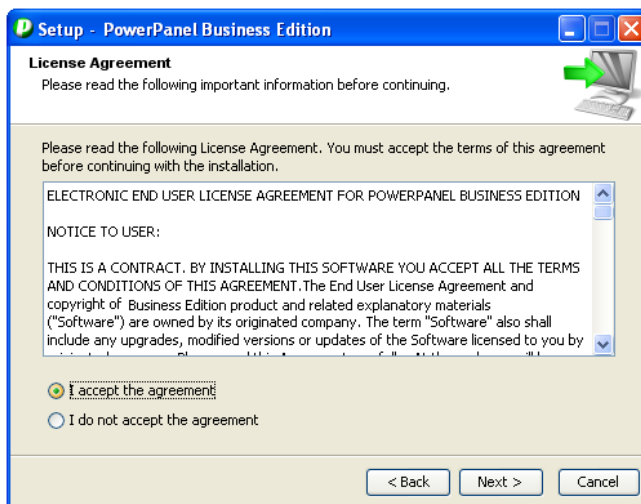
A popup page will be displayed automatically when inserting the PowerPanel® Business Edition installation CD. Users can click the **Install PowerPanel Business Edition** shortcut on the popup page to initiate the installation procedure. If the popup page is not displayed when inserting the CD, browse to the CD drive and open the folder named **software**, and then double click the file named **setup.exe** to start the installation procedure.

To install follow these steps:

- Click the **Next** button to start an installation.

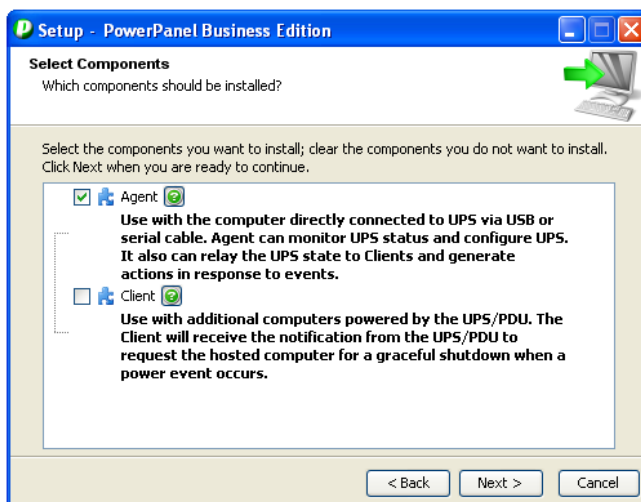


- Accept the license agreement.

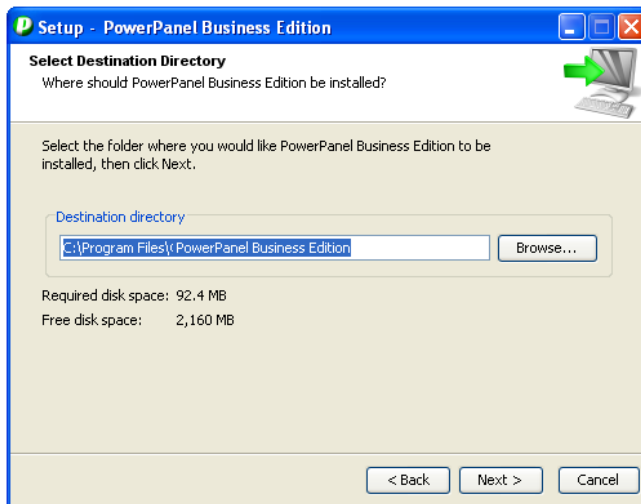


- **Choose the component.** If the target computer can communicate with UPS directly via a USB or serial connection, Agent should be installed. If the computer does not have a USB or serial connection to the UPS, or the computer which is powered by the UPS with a remote management card or a PDU, Client should be installed.

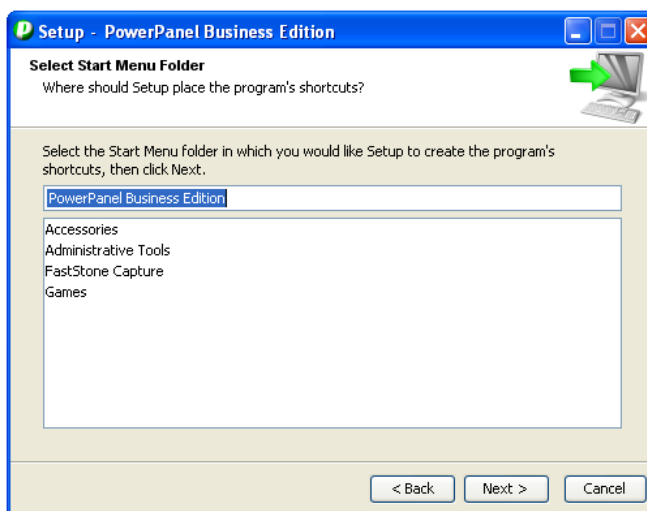
Note: The Agent and Client can't be selected to install at the same time.



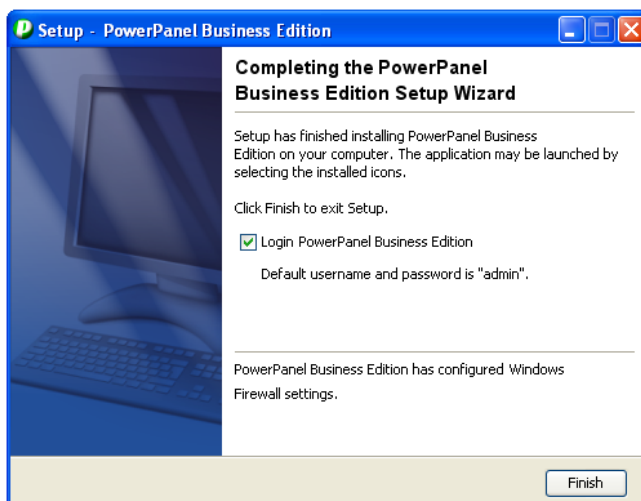
- Choose the destination location.



- Choose the start menu folder.



- Click the **Finish** button to complete the installation.



Installation on Linux

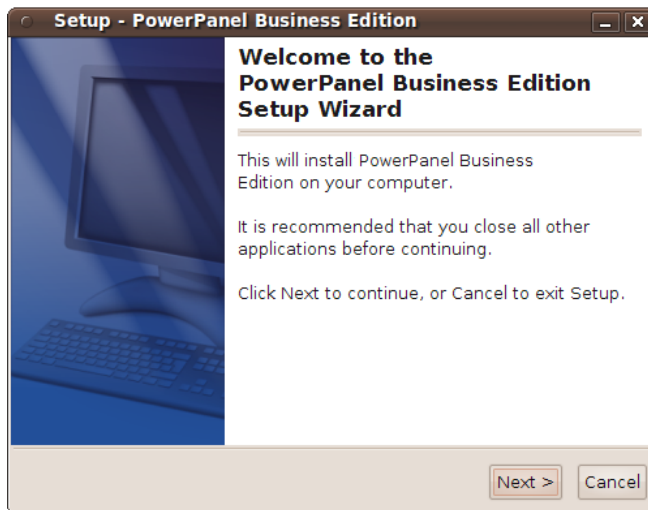
On Linux, users may mount CD by using the mount command. Run **mount -t iso9660 /dev/scd0 /mnt/cdrom** as a root user. **/dev/scd0** is the CD drive and **/mnt/cdrom** will be the mount point.

Browse to the CD drive and find the installer named **setup.sh** in the **/software/linux** folder. The installer is

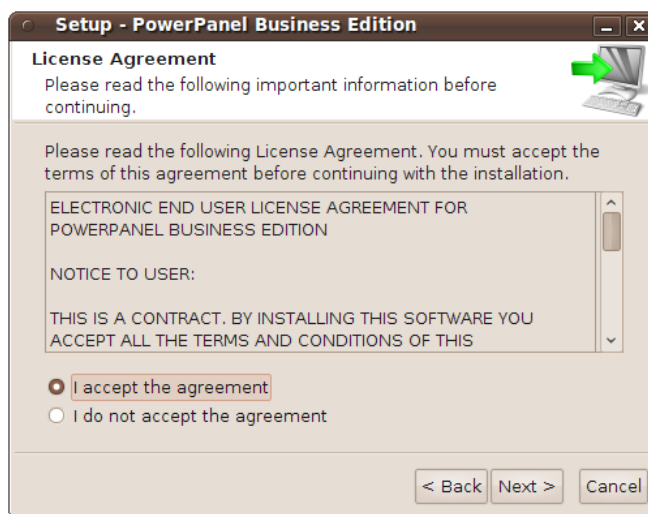
used to install the Client and requires root permission. The installation wizard will guide users to complete the installation. Double click **setup.sh** or run the **./setup.sh** command to initiate an installation wizard on desktop.

To install follow these steps:

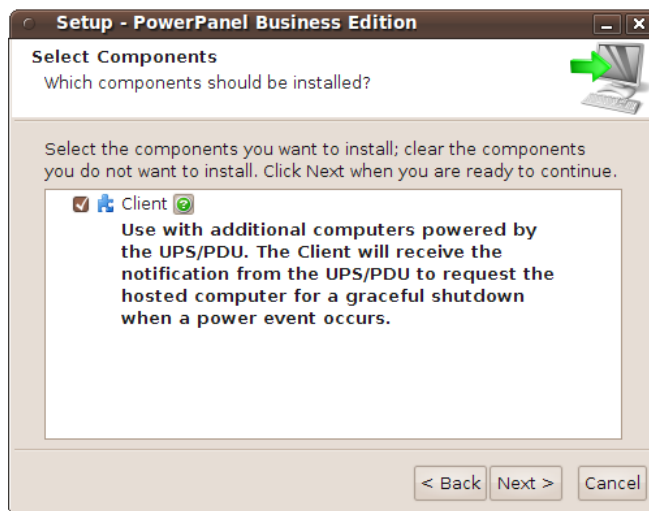
- Click the **Next** button to start an installation.



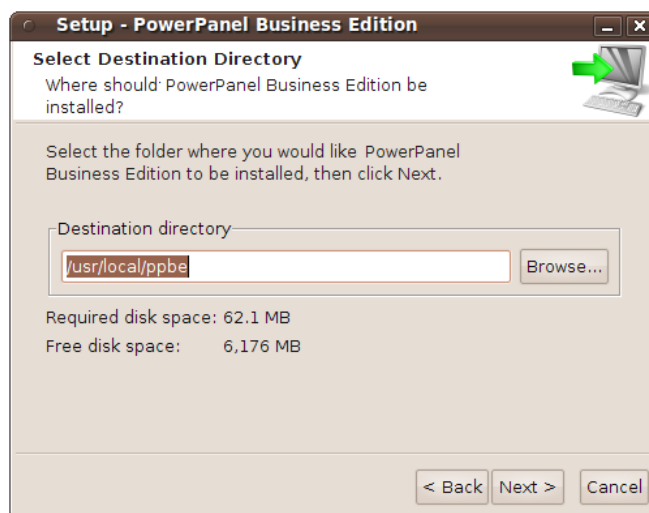
- Accept the license agreement.



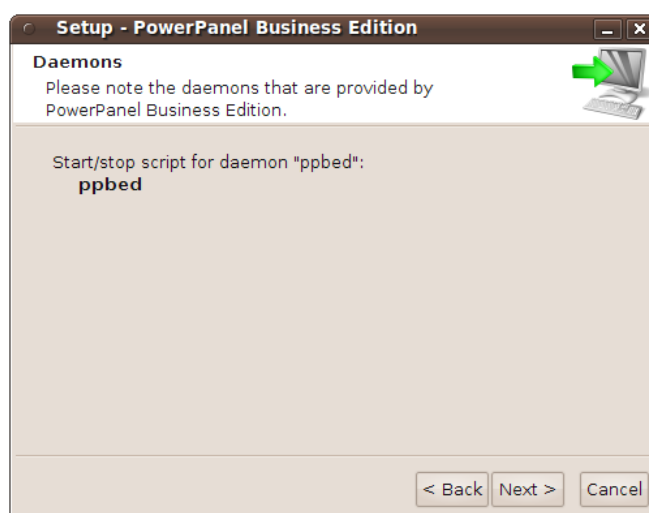
- Click **Next** button to the next step. On Linux, only Client can be installed.



- Choose the destination location.



- The daemon **ppbed** will start during installation. Click **Next** button to continue.



- Click the **Finish** button to complete the installation.



Note: The Linux installation will be also initiated by using the `./setup -c` command in text mode. The detailed installation steps are described in **Installation on VMWare ESX/ESXi 4** section.

Installation on VMWare ESX/ESXi 4

On VMWare ESX/ESXi, users may mount CD by using the mount command. Run `mount /dev/scd0 /mnt/cdrom` as a root user. `/dev/scd0` is the CD drive and `/mnt/cdrom` will be the mount point.

Browse to the CD drive and find the installer named `setup.sh` in the `/software/linux` folder. The installer is used to install the Client and requires root permission. The installation wizard will guide users to complete the installation. Double click `setup.sh` or run the `./setup.sh` command to initiate an installation procedure.

Note: Installation for **ESX** server must be launched on the **Service Console** (aka **Console Operation System**); installation for **ESXi** server must be launched on the **vMA** (**vSphere Management Assistant**) installed on the VMWare ESXi host computer.

The installation procedure will be initiated as following steps:

- Press **Enter** to start an installation.

```
Starting Installer ...
This will install PowerPanel Business Edition on your computer.
OK [o, Enter], Cancel [c]
```

- Accept the license agreement.

```
YOUR ACCEPTANCE OF THE FOREGOING AGREEMENT WAS INDICATED DURING
INSTALLATION.

I accept the agreement
Yes [1], No [2]
```

- Choose the component. Click **Enter** for the default selection to install the Client.

```
Which components should be installed?
1: Client
Please enter a comma-separated list of the selected values or [Enter] for the de
fault selection:
[1]
```

- **Choose the destination location.**

```
Where should PowerPanel Business Edition be installed?  
[/usr/local/ppbe]
```

- Installation procedure starts to process until the installation is complete.

```
Please wait for PowerPanel Business Edition configuring  
Default username and password is "admin".  
PowerPanel Business Edition may not do hibernation.  
Finishing installation...
```

Verify Firewall Settings

The installer will automatically setup in order to ensure the PowerPanel Business Edition can pass through the firewall during installation. Users can verify the firewall settings or setup again according to following steps:

The firewall settings could be verified on Windows such as **Control Panel > System and Security > Windows Firewall > Allow programs to communicate through Windows Firewall** on Windows 7, **Control Panels > Security > Windows Firewall > All programs to communicate through Windows Firewall > Exceptions** tab on Windows Vista or **Control Panel > Network and Internet Connections > Windows Firewall > Exceptions** tab on Windows XP.

Most Linux distributions and VMWare ESX 4 have the firewall installed and startup. Once installation is complete, verify the below ports are open: UDP 161 (out), UDP 162 (in), TCP 3052 (in/out), UDP 3052 (in/out), TCP 8443 (in/out), UDP 53566 (in/out).

Use “*iptables*” command, which is supported by most Linux distributions, to list the open communication ports using in connection.

On Linux, use following command to open communication ports

```
iptables -I OUTPUT -p udp --dport 161 -j ACCEPT  
iptables -I INPUT -p udp --dport 162 -j ACCEPT  
iptables -I INPUT -p tcp --dport 3052 -j ACCEPT  
iptables -I INPUT -p udp --dport 3052 -j ACCEPT  
iptables -I OUTPUT -p tcp --dport 3052 -j ACCEPT  
iptables -I OUTPUT -p udp --dport 3052 -j ACCEPT  
iptables -I INPUT -p tcp --dport 8443 -j ACCEPT  
iptables -I OUTPUT -p tcp --dport 8443 -j ACCEPT  
iptables -I INPUT -p udp --dport 53566 -j ACCEPT  
iptables -I OUTPUT -p udp --dport 53566 -j ACCEPT  
service iptables save
```

On VMWare ESX 4 server, use following command to open communication ports:

```
esxcfg-firewall -o 161,udp,out,ppbed
esxcfg-firewall -o 162,udp,in,ppbed
esxcfg-firewall -o 3052,udp,out,ppbed
esxcfg-firewall -o 3052,udp,in,ppbed
esxcfg-firewall -o 3052,tcp,out,ppbed
esxcfg-firewall -o 3052,tcp,in,ppbed
esxcfg-firewall -o 53566,udp,out,ppbed
esxcfg-firewall -o 8443,tcp,out,ppbed
esxcfg-firewall -o 8443,tcp,in,ppbed
```

Access PowerPanel® Business Edition Software Interface

To access the Agent or Client web interface in Windows, go to **Start > All Programs > PowerPanel Business Edition > PowerPanel Business Edition Agent** or **PowerPanel Business Edition Client**, which will take you to the login page. Users can also enter the URL, **http://127.0.0.1:3052** in local computer or **http://hosted_computer_ip_address:3052** in remote computer, to the address field of the web browser to access the Agent or Client web interface. **hosted_computer_ip_address** is the IP address of the computer which has the PowerPanel® Business Edition software installed.

The default username is **admin** and default password is **admin**. For security consideration, it is recommended to change the login username and password in the Agent and the Client after login.

Establish Communication between Agent and Client

Ensure Secret Phrase is Matched Each Other

The secret phrase is used to create secure network communications between the Agent and Client. For security consideration, it is recommended to change the secret phrase. The default secret phrase is **powerpanel.encryption.key** and users can setup the secret phrase at the *Secret Phrase* field on **Security/Authentication** page both in the Agent and Client. When the secret phrase in the Agent is changed, the secret phrase in the Client is also changed to match each other. If multiple Clients attempt to establish the communication with the Agent, the secret phrases used by Clients must be also matched with the Agent's secret phrase.

Assign Client Computer's IP Address to Agent

In order to let Client be aware of the UPS status from the Agent, users must assign the Client computer's IP address to the Agent to establish the communication. Users can do this task on the **UPS/Load** page in the Agent.

Assign Connected Outlet of Client

If the Client computer connects to the NCL outlet, users must assign the correct outlet to the Client computer on the **UPS/Load** page in the Agent. In event of power outage, the Client computer must perform a complete shutdown prior to a NCL outlet turn off avoiding the data loss or system crash.

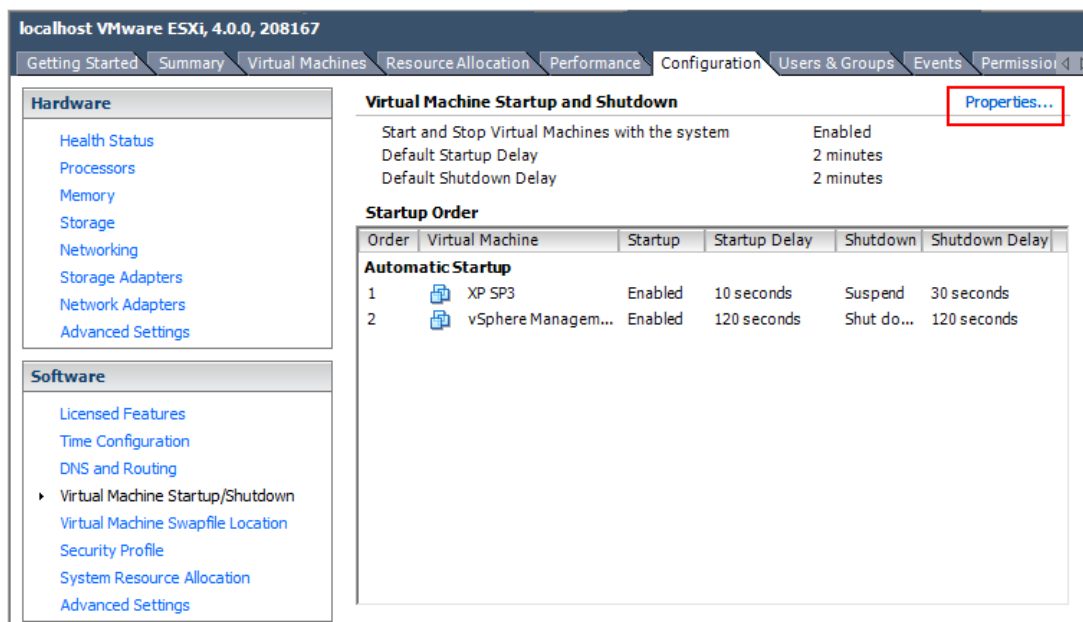
Setup Necessary Shutdown Time

Each computer running the Agent or the Client requires the sufficient time to be shut down completely before the UPS stops supplying power. Therefore users could set up this sufficient time at the *Necessary shutdown time* option on the **Event Action/Action Settings** page in the Agent and the Client.

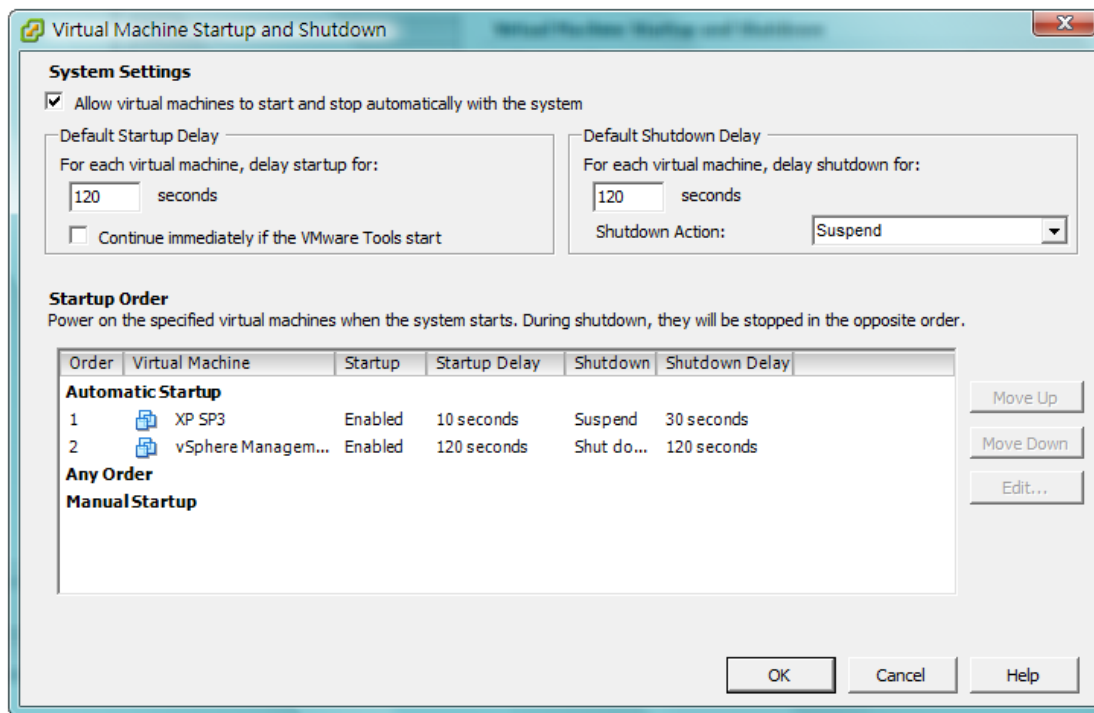
Configure Startup and Shutdown of Virtual Machines on VMWare ESX/ESXi 4

In order to assure that all virtual machines could be shut down gracefully, use **vShpere Client** to configure the shutdown delay time for each virtual machine. Following procedures will guide you to configure the automatic startup and shutdown properties of each virtual machine:

- Select the topmost VMware ESX/ESXi server host from the tree hierarchy on the left side. Go to **Configuration → Virtual Machine Startup/Shutdown menu → Properties.**



- Set **Allow virtual machines to start and stop automatically with the system** option enabled. The **Shutdown Action** option of the **Default Shutdown Delay** block should be changed to **Suspend** to ensure all virtual machine can restore from previous state at next boot of host machine.



Configure Command Execution for VMWare ESXi 4

(Note: Settings described in this section are not required on VMWare ESX 4)

In order to assure the ESXi host and all virtual machines can be shut down correctly in case of power events, users have to edit the command script files for specific event to shutdown ESXi host from vMA. Refer to the examples of **shutdown.sh** in the **extcmd** directory of installation folder. Then configure the command file fields to have **shutdown.sh** selected on events which are configured with shutdown action in the **Event Action/Events** page. These events include *Battery capacity is critically low*, *The output power is going to stop soon* and *Utility power failure* events. That ensures the command able to be executed when these events occur.

Fill in the **\$host_username** and **\$host_password** with actually username and password for the ESXi host in the **shutdownHostViaSOAPAPICall.pl** of the **/extcmd/etc** directory:

```
.... (snippet)...
my $host_username = 'your_username';
my $host_password = 'your_password';
.... (snippet)...
```

And add a line of the VMWare ESXi 4 installed computer (ESXi host) address in the **hostlist** file of the **/extcmd/etc** directory:

```
192.168.1.2
```