Installation and configuration for Winpower in the VMware ESXi (paid version)

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1 Overview



Shutdown Sequence



- The full name for the vMA is "vSphere Management Assistant", it is released by the VMware company to manage the vSphere
- The script "shutdownESXi.sh" is used to notify the local ESXi host and the remote ESXi hosts to shut down.

If the script shutdownESXi.sh is executed on the general OS, the executed permission will be refused

- The Virtual Machine on the ESXi host are shut down automatically by the ESXi host with the "Allow virtual machines to start and stop automatically with the system" function, they are not shut down by the script "shutdownESXi.sh"
- When runs the "shutdownESXi.sh" to notify the ESXi hosts to shut down, it needs to provide the ESXi hosts username and password to pass through the verification.
- Run the config.pl to save the ESXi hosts IP address and corresponding username and password, the information is saved in the "hostlist". Multi-ESXi hosts are supported.
- The ESXi hosts will accept the shutdown notification from vMA with right password and take effect to shut down

2 Configuring for VMware ESXi

2.1 Installing and configuring the vMA

- Go to the website :<u>http://www.vmware.com/support/developer/vima/</u>
 Download the vMA, and extract it, the format for the VMA document is *.OVF.
- Start the VMware Client, select "File" > "Deploy OVF Template", Click the browse button, select the OVF document.
- Start vMA, the default user name is vi-admin. Set the password for the first login.

2.2 Configuring VMs startup/shutdown automatically



• Start VMware Client, select Configuration -> Virtual Machine Startup/Shutdown->Properties

 Select "Allow virtual machines to start and stop automatically with the system" checkbox. Move up the virtual machines to the "Automatic Startup" list The virtual machines will start/stop when the host start/shutdown automatically.

System Settings	
Allow virtual machines to start and stop automatically with t	ne system
Default Startup Delay	Default Shutdown Delay
For each virtual machine, delay startup for:	For each virtual machine, delay shutdown for:
10 seconds	30 seconds
Continue immediately if the VMware Tools start	Shutdown Action: Power Off

Startup Order

Power on the specified virtual machines when the system starts. During shutdown, they will be stopped in the opposite or

Note: if the "**shutdown**" is selected in the "**Shutdown Action**", make sure the VMware tools are installed for each virtual machine.

Please refer to the official website for more VMware tools information.

If the OS is Windows, right click one of the VMs, click **Guest -> Install/Upgrade VMware Tools**

After the VMware tools installation, the VMware tools status will be changed to "OK" from the Summary



2.3 Configuring the port

- The Winpower use UDP 2198/2199/2200 for the remote communication. All the ports are opened as default.
- Open the UDP ports by the following command if the ports are disabled: For example, open the UDP port 2199: iptables -I INPUT -p udp --dport 2199 -j ACCEPT iptables -I OUTPUT -p udp --dport 2199 -j ACCEPT

3 Configuring for Winpower

3.1 Winpower installation and start

- Start the vMA guest operating system from VMware client.
- Download the software (Winpower_setup_LinuxAMD64.tar.gz) from the Web site or from the CD attached. Upload the software from Windows to vMA using WinSCP tools.
- Extract the software, there are two files including LinuxAMD64 and InstallerData. Enter the following commands to access the LinuxAMD64 and InstallerData files: sudo chmod -R 777 LinuxAMD64 sudo chmod -R 777 InstallerData
- Enter the Linux path and then enter the following command to install the software: cd Linux

sudo ./setup_console.bin

 Go to the installation path and enter the following command to start the Winpower agent: cd /opt/MonitorSoftware (or /opt/Winpower) sudo ./agent start Note: The Winpower agent will be running automatically when the vMA start up

3.2 Winpower Communication Configuration

3.2.1 USB Communication

For the USB pass through is available for the VMware ESXi 4.1 (The Virtual Machine Version should be 7 or later, otherwise update the VM version firstly)

For more information refer to the website:

http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&ex ternalld=1010675

🖉 vMA5.1 - Virtual Machi	ne Properties			
Hardware Options Resou	rces		Manage Cardiana	Virtual Machine Version: 7
Show All Devices	Add	Remove	Memory Configura	luon
Let		-	255 GB	600 -
Hardware	Summary			Memory Size:
Memory	600 MB		128 GB -	
CPUs	1			Maximum recommended for
🖳 Video card	Video card		64 GB -	🚽 this
Strategy VMCI device	Restricted			guest OS: 255 GB.
SCSI controller 0	LSI Logic Parallel		32 GB -	Maximum recommended for
Hard disk 1	Virtual Disk			best performance: 4 GB.
🚇 CD/DVD drive 1	CD/DVD Drive 1		16 GB-	Default recommended for this
Network adapter 1	VM Network			duest OS: 1 GB.
	Present		8 GB -	Minimum recommended for
SB controller	Fresent		and the second sec	🚽 this
			4 GR 🖂	quest OC: E12 MP

- Power off the vMA, right click it, choose the option "**Upgrade Virtual Hardware**", update the Virtual Machine Version
- Choose vMA, add the USB controller by the "Summary"->"Edit setting"->"add"->"USB Controller"



Choose the vMA, add the USB device by the "Summary"->"Edit setting"->"add"->"USB device", make sure the UPS is connected.

🛃 172.18.139.102 - vSphere Cli	ient					_ 0 ×
<u>File Edit View</u> Inventory	Administration Plug-ins Help					
🖸 🔯 🏠 Home 🌬	🚮 Inventory 🕨 🗊 Inventory					
		🕗 vMA5.1 - Virtual Machine F	Properties			
		Hardware Options Resources	1	🕝 Add Hardware	-	-
 I72.18.139.102 VMA5.1 WIN7 	VMA5.1 Getting Started Summary Res	Show All Devices	Add	Select USB device Which USB device	do you want to use?	
	General	Hardware	Summary			
	Guest OS: SUSE Lin VM Version: 7 CPU: 1 vCPU Memony: 600 MB	Memory CPUs DE 0	600 MB 1 (No Settings)	Device Type USB Device	vMotion Support	is connected
	Memory Overhead: 48.09 MI VMware Tools: ® Runn	IDE 1 PS2 controller 0	(No Settings) (No Settings)	Ready to Complete	Select the host USB device below:	Granding
	IP Addresses: 172.18.1	 PCI controller 0 SIO controller 0 	(No Settings) (No Settings)		Phoenixtec Power HID UPS	vMA5.1
	State: Powered Host: localitos Active Tasks: vSphere HA Protection: ③ N/A	 Keyboard Pointing device Video card VMCI device SCSI controller 0 	(No Settings) (No Settings) Video card Restricted LSI Logic Paral	8		
	Commands Shut Down Guest Suspend	Hard disk 1 CD/DVD drive 1 Ketwork adapter 1 KSB controller	Virtual Disk CD/DVD Drive VM Network Present			
	🚱 Restart Guest	New USB Device (ad	Host Device			
	Console Con		THE DEVICE	Help		

• The UPS USB can be added successfully as below image

2	/MA5.5 - Virtual Machine P	Properties	
Har	dware Options Resources		Virtual Machine Version: 7
	Show All Devices	Add Remove	Phoenixtec Power HID UPS USB Unique ID:
Ha	rdware	Summary	host: localhost path:5/0 version:2
	Memory	600 MB	Device Status: Connected
	CPUs	1	Connet minute using uttation while device is connected
	Video card	Video card	Cannot migrate using vmotion while device is connected.
	VMCI device	Restricted	
	USB controller	Present	
	USB 1	Host Device - Phoenixtec Power HID UPS	
	USB 2	Host Device - Phoenixtec Power USB UPS	
0	SCSI controller 0	LSI Logic Parallel	
	CD/DVD drive 1	CD/DVD Drive 1	
	Hard disk 1	Virtual Disk	
	Network adapter 1	VM Network	

- Restart the ESXi host after adding the USB controller and USB device
- Auto search the UPS via the remote Winpower manager on the Windows.

Choose the Winpower agent of the vMA under the LAN or WAN tree structure, Act as Administrator, click the "System"->"Auto Search Device". The UPS can be added under the LAN or WAN after searching. (The localhost is the host name of the vMA, it is the Winpower agent inside vMA)



 Choose the Winpower agent of the vMA, Act as Administrator, open the "Shutdown Parameter" dialog, and make sure the "Run Command File before shutdown" checkbox is chose.

Shutdown Settings		×
Shutdown Options		
USB LINE-INT_16465160 Battery Backup Time	00132	▼ 1 ↓ min
Begin Shutdown Immediately when Battery i Shut down when remaining battery time is t System Shut down Hibernate	s Low pelow e 🔲 Multi-UPS input	2 🗘 🗘 min
System shutdown need time Accept Remote Shutdown signal from other		2 ¢ min
Command File before Shutdown		Browse
Shutdown Remote Agents		
Shutdown Conditions	Agent is shutdown	Add Modify Remove
Shutdown Alarm Parameters		
Shutdown Alarm Interval Scheduled Shutdown Countdown warning		1 + min 10 + min
ОК	Cancel	

3.2.2 RS232 Communication

For the serial port pass through is available for the VMware ESXi 4.1 (The Virtual Machine Version should be 7 or later, otherwise update the VM version firstly)

For more information refer to the website:

http://kb.vmware.com/selfservice/microsites/search.do?language=en_US&cmd=displayKC&ex ternalld=1010675



- Power off the vMA, right click it, choose the option "Upgrade Virtual Hardware"
- Power off the vMA ,Add the serial port by the "Summary"->"Edit setting"->"add"->"Serial
 Port"->"Use physical serial port", the serial port name is "/dev/char/serial/uart0" as default.

VMA5.1 - Virtual Machine Proper	rties		
Hardware Options Resources		Virtual Machine Versio	on: vmx-09
Hardware Options Resources Show All Devices Hardware Sum Memory 600 CPUs 1 Video card Vide VMCI device Rest SCSI controller 0 LSI 1 Hard disk 1 Virtut CD/DVD drive 1 CD/I Network adapter 1 VM fi USB controller Press Serial port 1 /dev	Add Remove	Virtual Machine Version	vn: vmx-09
		C Use network C Server (VM listens for connection) Image: Client (VM initiates connection) Port URI: Image: Use Virtual Serial Port Concentrator vSPC URI: Image: Vield CPU on poll	
Help		ОК	ancel

• Restart the ESXi host after adding the serial port

Auto search the UPS via the remote Winpower manager on the Windows.

Choose the Winpower agent of the vMA under the LAN or WAN tree structure, Act as Administrator ,open the "System"->"Com Port Setting", add the serial port name. The serial port name is "/dev/char/serial/uart0" as default.

Click the "**System**"->"**Auto Search Device**", the UPS can be added under the localhost after searching (The localhost is the host name of the vMA, it is the Winpower agent inside vMA)



Choose the Winpower agent of the vMA, Act as Administrator, open the "Shutdown Parameter" dialog, and make sure the "Run Command File before shutdown" checkbox is chose

Shutdown Settings		×
Shutdown Options		
USB - LINE-INT_1646516	00132	-
Battery Backup Time		1 🗘 min
Begin Shutdown Immediately when Battery i	s Low	
Shut down when remaining battery time is t	elow	2 🗘 min
System System Shut down Hibernate	e 📃 Multi-UPS input	
Shut down UPS		
System shutdown need time		2 🗘 min
Accept Remote Shutdown signal from other		Add
0 🔶 min shutdown system		Remove
Run Command File before Shutdown	[Browse
Shutdown File Max Execution Time		1 🗘 min
Shutdown Remote Agents		
Shutdown Conditions	Agent is shutdown	Add
		Modity
		Remove
Shutdown Alarm Parameters		
Shutdown Alarm Interval		1 🗘 🗘 min
Scheduled Shutdown Countdown warning		10 🗘 min
ОК	Cancel	

3.3 Configuration for shutdown script

The config.pl is used to add the hosts to be shutdown.

Enter the command: sudo ./config.pl

Input the target VMware ESXi physical host IP(or hostname), username, password.

For example: 172.18.127.125 and 172.18.127.110 will be added:

```
vi-admin@localhost:/opt/MonitorSoftware> sudo ./config.pl
Enter your target host ip or hostname:
172.18.127.110
Enter your host username:
root
Enter your host password:
: command not found:
vi-admin@localhost:/opt/MonitorSoftware> sudo ./config.pl
Enter your target host ip or hostname:
172.18.127.125
Enter your host username:
root
Enter your host password:
: command not found:
```

Note:

Winpower supports multi-hosts shutdown, but the other ESXi hosts should be set refer to section "2.2 Configuring VMs startup/shutdown automatically"

The VMware host information will be saved in hostlist document. Enter the command: **cat hostlist,** get the input hosts information Note: The password will be encrypted.

vi-admin@localhost:	∕opt∕MonitorSof	tware> cat hostlist
172.18.127.110	root	UGEkJHdPcmQ=
172.18.127.125	root	bmlkaGhpcw==

4 Shutdown Sequence

After the correct configuration, when the UPS need to shut down the system, the VMware will act as following sequence example, the guest OS will also shutdown properly.

|--|

Name	Target	Status	Details	Initiated by	Requested Start Ti 🤝	Start Time
Power Off virtual machine	D VMA4.0	Completed		root	2012-11-8 8:48:16	2012-11-8 8:48:16
🔊 Power Off virtual machine	🔂 vSphere Man	🥥 Completed		root	2012-11-8 8:48:14	2012-11-8 8:48:14
🔊 Power Off virtual machine	🔂 Windows XP I	🥥 Completed		root	2012-11-8 8:48:12	2012-11-8 8:48:12
🔊 Initiated guest OS shutdown	🗗 redhat5	Completed		root	2012-11-8 8:47:43	2012-11-8 8:47:43
Auto power Off		Completed		root	2012-11-8 8:47:43	2012-11-8 8:47:43
Shutdown Host	172.18.127.1	l 🧔 Completed		root	2012-11-8 8:47:42	2012-11-8 8:47:42
<						
🖉 Tasks						