Installation Guide

PowerChute[™] Network Shutdown v4.3

Windows®

Linux[®]/Unix[®]

Mac OS[®] X

Hyper-V[®]/SCVMM[®]

VMware[®]

Nutanix™

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Introduction



PowerChute[™] Network Shutdown (PowerChute) works in conjunction with the UPS Network Management Card (NMC) to provide network-based shutdown of multiple computer systems.

In the case of a UPS critical event, the software performs a graceful, unattended system shutdown before the UPS battery is exhausted. The number of protected systems is limited only by the capacity of the UPS.

View these Application Notes for detailed information on using PowerChute in specific environments.



After installation, it is essential to configure the software using the PowerChute Setup wizard. This ensures that PowerChute is aware of UPS critical events in order to protect your system.

Product Center

The PowerChute Product Center page has many links to useful up-to-date information. This includes background information on virtualization, loss of communications, and application notes which discuss varied subject matter including possible UPS configurations.

Software and Hardware Requirements

To install PowerChute Network Shutdown (PowerChute), you must have the following:

 A supported operating system and web browser, as listed on the website, Operating System and Compatibility Chart. For VMware[®], a licensed version of ESXi is required. PowerChute does not support the free version of ESXi.

NOTE: PowerChute v4.3+ is a 64-bit only application and cannot be installed on a 32-bit operating system.

Disk space

Task	Disk Space Required
Commence PowerChute Network Shutdown installation process	100 MB
Install PowerChute Network Shutdown using a virtual appliance - Disk format: thin provisioned	2 GB
Install PowerChute Network Shutdown using a virtual appliance - Disk format: thick provisioned	3 GB
Installing PowerChute Network Shutdown with a private JRE	135 MB
Installing PowerChute Network Shutdown when a public JRE is already installed	15 MB

JRE

You must have a supported Java[™] Runtime Environment (JRE), as seen for the different operating systems.

PowerChute gives you the option of installing a "private" JRE. The private JRE included with PowerChute v4.3 is Java 11.



If there is no supported public JRE present on the OS, then you have to choose the private JRE option to continue with the installation. The minimum supported JRE is Java 8.

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PowerChute v4.3 does not provide a private JRE with the following operating systems:

- IBM AIX[™]
- HP-UX
- Mac OS[®] X
- Solaris

For most operating systems, you can download a Java Runtime Environment from http://java.com or http://jdk.java.net/.

NOTE: For Mac OS X, JDK 8 or greater must be installed as the JRE does not contain the required files to run PowerChute. JDKs can be downloaded from the Oracle website - select the JDK download option - or the OpenJDK website.

- The computer hardware requirements are a 700 MHz processor and 256 MB of memory.
- On a graphical interface with PowerChute: A monitor with a minimum resolution of 800 x 600; however, 1024 x 768 or greater is recommended.
- A UPS with a Smart Slot and a Network Management Card (part number AP9617, AP9618, AP9619, AP9630, AP9631, AP9635) with a firmware version of 3.3.1 or later, or a Symmetra PX2 (which has an internal Network Management Card, OG-9354).
 - You can update your NMC firmware from the APC website.
- PowerChute Network Shutdown cannot be used with PowerNet SNMP Adapters (cards). If your card has a part number of AP9605, AP9606, AP9205, or AP9603, it is not compatible with PowerChute Network Shutdown.
- You must know the IP address for each NMC.
- PowerChute can use IPv4 or IPv6 to communicate with the Network Management Card(s). IPv6 support is available only for Network Management Card firmware 6.0.X or higher.
- Firewall

PowerChute needs to be able to connect to the NMC Web Access port (default: TCP port 80) and receive data inbound to UDP port 3052. If SNMP is enabled, PowerChute needs to be able to receive data inbound on the SNMP port configured during installation (the default port is 161). You must also configure the firewall to allow traps to be sent to the port of the configured trap receiver.

When the Windows[®] Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically for the required ports.

- Windows PowerShell 2.0 or higher is required for Hyper-V[®] support on PowerChute. For instructions on how to install PowerShell 2.0 on Windows Server 2008, see http:// msdn.microsoft.com/en-us/library/ff637750(v=azure.10).aspx.
- You must have administrator or root privileges to run the installer.
- You must **uninstall** PowerChute Plus, PowerChute Business Edition, PowerChute Personal Edition, and PowerChute Server before installing PowerChute Network Shutdown.

SNMP MIB

To access PowerChute Network Shutdown via SNMP using a Network Management System (NMS), it may be necessary to first install the APC PowerNet MIB on the NMS. To get the latest version of the PowerNet MIB:

- 1. Visit the APC website at http://www.apc.com/tools/download/index.cfm
- 2. Select Firmware Upgrades MIB from the Software/Firmware dropdown list.
- 3. Install the MIB on the NMS by following the instructions in the NMS User Guide.

The PowerNet MIB is also available in the group1 folder of the PowerChute installation directory.

Preliminary Steps in Installing

To install and operate the PowerChute Network Shutdown software, perform the following steps first.

1. Install the Network Management Card (NMC) in your UPS and configure it with an IP address before beginning the PowerChute installation.

For installation instructions, see the Network Management Card installation guide.

- 2. Using the NMC user interface, configure the UPS and the Network Management Card. At a minimum, perform these tasks:
 - a. When configuring a shutdown, set the **Low Battery Duration** field value to at least five minutes.
 - b. Set the authentication phrase for the administrator.



The administrator authentication phrase and the administrator user name must be the same for the NMC and PowerChute.

In the NMC, the default administrator user name and password are both **apc**, while the default setting for the authentication phrase is **admin user phrase**. We recommend that you change the defaults for security reasons.

Different NMC account types and PowerChute

With firmware version 6.0.6 and above of the NMC, it is possible to add multiple users with different account types - Administrator, Device, Read-only, and Network-Only.

PowerChute can use an Administrator or Device account instead of the built-in "apc" account to communicate with the NMC.

To do this:

1. Create an account on the NMC, either an Administrator or Device account, using **Configuration - Security - Local Users - Management**.

You must log on using the superuser account ("apc") to add new users.

- 2. On the NMC user interface, go to the Configuration Shutdown page.
- 3. Select the new account you created from the User Name drop-down under PowerChute Shutdown Parameters.
- 4. Use the same user name in PowerChute. The Authentication Phrase must also match.

Installation Guide

PowerChute Network Shutdown

Windows

Installing PowerChute Network Shutdown

See these sections:

- Installing on Windows and Windows Server Core
- Upgrading the Software
- Uninstalling on Windows
- Silently Installing the Software

Installing on Windows and Windows Server Core



To install on Windows in order to monitor a VMware host, see the VMware section of this help.

To install on Hyper-V or SCVMM, see the Hyper-V/SCVMM section of this help.

Follow these steps below.

1. Locate the PowerChute installation executable file, **Setup-x64.exe**, on the PowerChute CD or download it from the APC website. You must have administrator rights to run the installer.

Double-click on the file.

(If you downloaded from the website, you need to extract the exe file from the zip file).

2. A warning dialog, below, displays if you downloaded the exe from the web: click the **Run** button.

Open File - Security Warning 🛛 🔀	
Do you	want to run this file?
	Name: ministrator.SCVMMGAL\Downloads\Setup-x64.exe Publisher: Schneider Electric Type: Application From: C:\Users\administrator.SCVMMGAL\Downloads\Set Bun Cancel
	ys ask before opening this file While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>

3. At the welcome dialog, click on Next to continue.

At the License Agreement dialog, if you agree with the terms, click I Agree to continue.

4. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your Windows operating system.

5. If Hyper-V is not detected, you see the VMware Support dialog shown below; choose **Do not enable Virtualization Support**.

ſ	PowerChute Network Shutdown Setup		_		×
C	onfigure VMware Support PowerChute Network Shutdown can be used to /irtual Machines and provide safe network-bas	o protect VMware Hosts ed shutdown.	and their		
	 Select an option below: Do not enable Virtualization Support. Enable VMware Support. 				
	O Enable Nutanix AHV Support.				
		< Back Nex	d >	Cano	el

If Hyper-V is detected, you see the Hyper-V Support dialog shown below; choose **Do not enable Hyper-V Support** and click Next to proceed.

🍊 📃 PowerChute Network Shutdown Setup
Configure Hyper-V Support PowerChute Network Shutdown can be used to protect Hyper-V Servers and their Virtual Machines and provide safe network-based shutdown.
Note: PowerShell 2.0 or higher is required for Hyper-V support.
Select an option below:
O not enable Hyper-V Support.
○ Enable Hyper-V Support.
< Back Next > Cancel

6. Enter an installation folder location or accept the default.

7. When your Windows Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically by choosing **Yes** when prompted:

PowerChute Network Shutdown ports must be opened in the Windows Firewall to enable communication with the Network Management Card(s). Would you like this configuration to be performed automatically?

See Firewall for more information.

After installation, it is necessary to configure PowerChute in order to protect your system. On Windows, the PowerChute Setup wizard opens automatically after you click the **Finish** button on this dialog:



On Windows Server Core, you see the following dialog, follow the steps there:



Upgrading the Software

If you have v3.1 or higher of PowerChute already installed on your target machine, the installation process asks you whether you want to perform an upgrade rather than a complete installation. Upgrading enables you to retain your existing configuration settings.

For earlier versions of PowerChute, you must uninstall the software before installing v4.3.

It is not necessary to run the PowerChute Setup wizard after the upgrade on Windows.



PowerChute v4.3+ is a 64-bit only application and cannot be installed on a 32-bit operating system. If you have a 32-bit operating system, you cannot upgrade to v4.3+.

Following the upgrade installation, to ensure that the PowerChute user interface enhancements are applied correctly, it is necessary to clear the browser history:

- In Internet Explorer select Tools > Safety > Delete browsing history
- In Chrome select Settings > Show advanced settings > Privacy > Clear browsing data
- In Firefox select Open Menu > History > Clear Recent History

Uninstalling on Windows

On Windows, use the **Uninstall** option under **PowerChute Network Shutdown** in the Windows Start menu.

On Windows Server Core, follow these steps.

- 1. Open a command prompt window.
- 2. Type C:\Program Files\APC\PowerChute\uninstall.exe and press Enter.

On Windows Server 2012, PowerChute must be uninstalled using Add/Remove Programs.

- 1. Right-click the PowerChute Network Shutdown menu option in the Start menu.
- 2. Click Uninstall in the options menu that displays on the bottom of the screen.

Apps by na	ime 🗸					
Microsoft SQL Server 2008		Import and Export Data (32-bit)		SQL Server Profiler		Virtual Machine Manager Console
SQL Server Installation Cente		Import and Export Data (64-bit)	Microso	oft System Center 2	Power	Chute Network Shut
Microsoft SQL Server 2012		Project Conversion Wizard		Data Store Configuration	1	Open PCNS 🗸
Data Profile Viewer	圕	Reporting Services Configuration		Deployment Manager	Silect	
Database Engine Tuning Advisor		SQL Server Configuration		Operations Console	K	MP Author
Deployment Wizard	90	SQL Server Data Tools		Operations Manager Shell		User Guide
Deployment Wizard	Ē	SQL Server Error and Usage		Orchestration Console	VMwa	re
Download Microsoft SQL		SQL Server Installation Cente		Runbook Designer		start VM Statistics Logging
Execute Package Utility		SQL Server Management		Virtual Machine Manager		
Pin to taskbar	Open new window	Run as Ru administrator	un as different user	Open file location		

To uninstall in silent mode:

- 1. Open a command prompt.
- 2. Type "C:\Program Files\APC\PowerChute\uninstall.exe" /S and press return.

Silently Installing the Software

Installing silently means the installation is unattended or non-interactive.



It is not possible to roll out your event configurations or shutdown settings using a silent installation. You can however, use pcnsconfig.ini to do this. See the section on INI files in the online help.



PowerChute only supports silent installation in Single, Redundant and Parallel UPS configurations.

Silent Install on Windows

Perform the following steps:

Edit the silent installations file to set the required parameters; see Editing your silent installation file.

1. Type the following on one line at the Windows command line:

```
Setup.exe /S /F silentInstall.ini
```



If a silent installation fails, see Appendix A: Error codes for silent installations.

Editing your silent installation file

On Windows operating systems, the file that guides silent installations is named **silentInstall.ini**.

The file is a plain text file and can be edited with a standard text editor. Each field or line has a value that the installer needs in order to carry out the installation. The table below explains the fields available in the silent installation file.

Field name	Description
applicationDirectory=	Specifies the installation folder. Type the folder name after "=", ensuring it has valid characters for the operating system. Note : You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.
ACCEPT_EULA=yes	Yes signifies acceptance of the software license agreement. The installation will not proceed unless yes is specified here.
*INSTALL_JAVA= System PCNS	The value System here signifies you want to use the public JRE for your PowerChute installation. The value PCNS here signifies you want to use the private JRE.
*The installation detects whether the JRE r	neets the requirements, see JRE.
REGISTER_WITH_NMC= yes no	Using yes or no, specify whether PowerChute should be registered with the Network Management Card (NMC) or not.
MODE= single redundant parallel	Use single, redundant, or parallel to specify the UPS configuration mode. For detailed information, see "PowerChute Network Shutdown Operating Modes and supported UPS Configurations " here.
NETWORKCONFIG= IPv4 IPv6	Specify your Internet protocol with IPv4 or IPv6.
IPV6NETWORKCONFIG= unicast multicast	When you are using IPv6 only (you entered NETWORKCONFIG= IPv6 above) you must specify the communication mechanism here. See also UNICAST_ADDRESS= and MULTICAST_ADDRESS=. For detailed information, see "The Communications Process of PowerChute Network Shutdown" here.
IP_1= IP_2= IP_3= IP_4= IP_5= IP_6= IP_7= # IP_8= # IP_9=	On each line, specify the IP address of each NMC that will be communicating with this PowerChute installation. You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).

Field name	Description	
IP_1_Outlet= IP_2_Outlet=	This applies only to UPS devices with outlet groups (for example, Smart-UPS SMX and SMT devices). Specify the outlet group that supplies power to the PowerChute installation.	
IP_3_Outlet= IP_4_Outlet= IP_5_Outlet=	On a UPS that has only Switched Outlet Groups, "IP_1_Outlet" must be set to "1". If you enter "0", PowerChute may not correctly identify Outlet events associated with the first Outlet group.	
IP_6_Outlet= IP_7_Outlet=	On a UPS that has both a Main Outlet Group (not switched) and Switched Outlet Groups, "IP_1_Outlet" must be set to "0".	
# IP_8_Outlet= # IP_9_Outlet=	You can comment out entries not needed by putting the # character at the beginning of the line (see examples 8 and 9).	
PORT=	This is the NMC web port: 80 for HTTP; 443 for HTTPS.	
PROTOCOL= HTTP HTTPS	Use HTTP or HTTPS to specify which protocol you are using.	
ACCEPTCERTS= YES NO	When using the HTTPS protocol, SSL certificates are used to secure the connection. By default the NMC use a self-signed certificate, which needs to be accepted.	
	Select YES to automatically accept a self-signed certificate.	
	Select NO to accept a connection only if the NMC is configured with a valid certificate.	
USERNAME= PASSWORD= AUTHENTICATION_PHRASE=	Enter the user name, password, and authentication phrase to validate PowerChute communication with the NMC. (The authentication phrase reverts to the default if not specified).	
	NOTE : We recommend that you change the defaults for security reasons.	
	The acceptable characters for username and password are:	
	• the alphabet in both lowercase and uppercase (a to z and A to Z)	
	numbers from 0 to 9	
	• these characters: _! \ " # \$%& ' () *+, / :; <=>?@^`{ } []~	
	The password length must be from 3–32 characters, and the username from 3–10 characters. The authentication phrase must be 15–32 ASCII characters.	
LOCAL_IP_ADDRESS=	This information applies to a PowerChute server with multiple network cards. Use it to specify the IP address of the card that will communicate with PowerChute.	
UNICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and unicast in IPV6NETWORKCONFIG= unicast multicast, you must specify your unicast host address here.	
MULTICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and multicast in IPV6NETWORKCONFIG= unicast multicast, the Network Management card will send UDP packets to the multicast address you specify here.	
SNMPv1		
ENABLE_SNMPV1_ACCESS = True False	Specify true to enable SNMPv1 access and false to disable SNMPv1 access.	
NAME _COMMUNITY_N =	Enter the community name, up to 15 ASCII characters.	
NMS_COMMUNITY_N=	Enter the IP address of the Network Management System.	

Field name	Description	
ACCESS_TYPE_COMMUNITY_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMP community string: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.	
SNMP_PORT =	Specify the SNMP Port. 161 is the default.	
NOTE: N indicates an integer (0-N)		
	SNMPv3	
ENABLE_SNMPV3_ACCESS = True False	Specify True to enable SNMPv3 access and false to disable SNMPv3 access.	
USERNAME_PROFILE_N =	Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.	
AUTH_PASSPHRASE_PROFILE_N =	Enter the Authentication passphrase of 8-32 ASCII characters.	
PRIV_PASSPHRASE_PROFILE_N =	Enter the Privacy passphrase of 8-32 ASCII characters.	
AUTH_PROTOCOL_PROFILE_N = MD5 SHA1 SHA256 SHA512 NONE	Specify the Authentication protocol of the SNMPv3 user profile.	
PRIV_PROTOCOL_PROFILE_N = AES128 AES192 AES192EX AES256EX AES256 DES NONE	Specify the Privacy protocol of the SNMPv3 user profile. See the "SNMP Troubleshooting" topic of the PowerChute Network Shutdown User Guide available on www.apc.com for more information on JRE requirements for AES-192/Ex and AES-256/Ex.	
ACCESS_TYPE_PROFILE_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMPv3 user profile: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.	
SNMP_PORT=	Specify the SNMP discovery Port. 161 is the default.	
NOTE: N indicates an integer (0-N)		
SNMP Traps		
UPSCriticalEvents_Enabled = True False	Specify True to enable SNMP Traps for UPS Critical Events.	
UPSCriticalEvents_SendClearingTrap = True False	Enter True to send a Trap once a UPS Critical Event has cleared.	
UPSCriticalEvents_Delay =	Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.	
UPSCriticalEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.	
UPSCriticalEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the UPS Critical Event is cleared.	
UPSCriticalEvents_RepeatTimes =	Specify the number of times the trap is sent when the UPS Critical Event occurs.	
LostCommsEvents_Enabled = True False	Specify True to enable SNMP Traps for Lost Communication Events.	
LostCommsEvents_SendClearingTrap = True False	Enter True to send a Trap once a Lost Communication Event has cleared.	

Field name	Description
LostCommsEvents_Delay =	Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes =	Specify the number of times the trap is sent when the Lost Communication Event occurs.
Enabled_TrapReceiver_N = True False	Enter True to enable the Trap Receiver.
NMS_TrapReceiver_N =	Enter the IP address of the Network Management System that will receive traps.
Port_TrapReceiver_N =	Enter the port number of the Trap Receiver.
Type_TrapReceiver_N = v1 v3	Enter the version of SNMP used to send the traps.
ProfileName_TrapReceiver_N =	Enter the User Name of the SNMPv3 User Profile used to send the traps.
NOTE: N indicates an integer (0-N)	

Installation Guide

PowerChute Network Shutdown

Linux/UNIX

Installing PowerChute Network Shutdown

See these sections:

- Installation Steps on Linux and UNIX
- Upgrading the Software
- Uninstalling on Linux and UNIX
- Silently Installing the Software

Installation Steps on Linux and UNIX

These instructions also apply when installing on Solaris, AIX and HP-UX. You must have root privileges to perform the installation.

- 1. If you are installing from the CD, locate your installation files in the Linux_x64 directory on the CD. Copy them to a temporary directory on your server.
- 2. If you are installing from the website, locate the file

pcns430Linux.tar.gz

on the APC website and copy it to a temporary directory on your server.

Change your working directory to the temporary directory. Then type the following commands:

```
gunzip pcns430Linux.tar.gz
tar -xf pcns430Linux.tar
```

3. If you are not logged on as the root user, you need to run the installer using sudo, or switch to root user context using the su command and then run the installer.

./install.sh

After a web download you need to grant execute permissions:

chmod +x install.sh

On HP-UX type the command su - root before running

./install.sh

- 4. At the License Agreement, if you agree with the terms, type Yes and press the Enter key to continue. Type No to exit.
- 5. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. However, PowerChute does not provide a private JRE with IBM AIX[™], HP-UX and Solaris. If you are installing PowerChute on one of these operating systems, you must first download and install a public JRE to use with PowerChute. JREs can be downloaded from http://java.com or htp://jdk.java.net. For all other Linux-based operating systems, PowerChute automatically installs the bundled JRE on your operating system

If using the public JRE, you must enter its path. Enter an installation folder location or accept the default.

You cannot specify a directory name that contains a space, either for the installation or the Java directory. If you do not specify an installation directory, it will be installed to the default: /opt/APC.

After installation, it is necessary to configure your system in order to protect it. You must open the browser and enter the PowerChute URL:

```
https://<your_machine_name/ IP>:6547
```

Follow the steps in the PowerChute Setup wizard to complete your configuration.

Upgrading the Software

If you have v3.1 or higher of PowerChute already installed on your target machine, the installation process asks you whether you want to perform an upgrade rather than a complete installation. Upgrading enables you to retain your existing configuration settings.

After an Linux upgrade, it is not necessary to run the PowerChute Setup wizard.



PowerChute v4.3+ is a 64-bit only application and cannot be installed on a 32-bit operating system. If you have a 32-bit operating system, you cannot upgrade to v4.3+.

Following the upgrade installation, to ensure that the PowerChute user interface enhancements are applied correctly, it is necessary to clear the browser history:

- In Internet Explorer select Tools > Safety > Delete browsing history
- In Chrome select Settings > Show advanced settings > Privacy > Clear browsing data
- In Firefox select **Open Menu > History > Clear Recent History**

Uninstalling on Linux and UNIX

On Linux:

• Run the uninstall script located in the PowerChute directory from a terminal prompt.

/opt/APC/PowerChute/uninstall

• To uninstall in **silent mode**, run the uninstall script located in the PowerChute directory, with the -q option.

/opt/APC/PowerChute/uninstall -q

• On UNIX, when the daemon starts, the script adds 1024 file handles. Delete ulimit -n 1024 from the PCNS startup script if you do not need them at: /opt/APC/PowerChute/group1/powerchute.sh.

Silently Installing the Software

Installing silently means the installation is unattended or non-interactive.



It is not possible to roll out your event configurations or shutdown settings using a silent installation. You can however, use pcnsconfig.ini to do this. See the section on INI files in the online help.



PowerChute only supports silent installation in Single, Redundant and Parallel UPS configurations.

Silent Install on Linux

Edit the silentInstall.sample file to set the required parameters; see Editing your silent installation file.

Type the following command to start the installation, as an administrator: ./install.sh -f silentInstall.sample



If a silent installation fails, see Appendix A: Error codes for silent installations.

Editing your silent installation file

On the Linux operating system, the file that guides silent installations is named silentInstall.sample.

The file is a plain text file and can be edited with a standard text editor. Each field or line has a value that the installer needs in order to carry out the installation. The table below explains the fields available in the silent installation file.

Field name	Description
INSTALL_DIR=	Specifies the installation directory. Type the directory name after "=", ensuring it has valid characters for the operating system. NOTE : You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.
JAVA_DIR=	Specifies the JRE directory. Type the path where the public JRE is installed on the system e.g. /usr/local/bin/jre/jre1.X.X_XX. If this value is blank or absent, the private JRE is installed.
ACCEPT_EULA=yes	Yes signifies acceptance of the software license agreement. The installation will not proceed unless yes is specified here.
REGISTER_WITH_NMC= yes no	Using yes or no, specify whether PowerChute should be registered with the Network Management Card (NMC) or not.
MODE= single redundant parallel	Use single, redundant, or parallel to specify the UPS configuration mode. For detailed information, see "PowerChute Network Shutdown Operating Modes and supported UPS Configurations " here.
NETWORKCONFIG= IPv4 IPv6	Specify your Internet protocol with IPv4 or IPv6.
IPV6NETWORKCONFIG= unicast multicast	When you are using IPv6 only (you entered NETWORKCONFIG= IPv6 above) you must specify the communication mechanism here. See also UNICAST_ADDRESS= and MULTICAST_ADDRESS=. For detailed information, see "The Communications Process of PowerChute Network Shutdown" here.
IP_1= IP_2= IP_3= IP_4= IP_5= IP_6= IP_7= # IP_8= # IP_9=	On each line, specify the IP address of each NMC that will be communicating with this PowerChute installation. You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).

Field name	Description	
IP_1_Outlet= IP_2_Outlet=	This applies only to UPS devices with outlet groups (for example, Smart-UPS SMX and SMT devices). Specify the outlet group that supplies power to the PowerChute installation.	
IP_3_Outlet= IP_4_Outlet= IP_5_Outlet=	On a UPS that has only Switched Outlet Groups, "IP_1_Outlet" must be set to "1". If you enter "0", PowerChute may not correctly identify Outlet events associated with the first Outlet group.	
IP_6_Outlet= IP_7_Outlet=	On a UPS that has both a Main Outlet Group (not switched) and Switched Outlet Groups, "IP_1_Outlet" must be set to "0".	
# IP_8_Outlet= # IP_9_Outlet=	You can comment out entries not needed by putting the # character at the beginning of the line (see examples 8 and 9).	
PORT=	This is the NMC web port: 80 for HTTP; 443 for HTTPS.	
PROTOCOL= HTTP HTTPS	Use HTTP or HTTPS to specify which protocol you are using.	
ACCEPTCERTS= YES NO	When using the HTTPS protocol, SSL certificates are used to secure the connection. By default the NMC use a self-signed certificate, which needs to be accepted.	
	Select YES to automatically accept a self-signed certificate.	
	Select NO to accept a connection only if the NMC is configured with a valid certificate.	
USERNAME= PASSWORD= AUTHENTICATION_PHRASE=	Enter the user name, password, and authentication phrase to validate PowerChute communication with the NMC. (The authentication phrase reverts to the default if not specified).	
	NOTE : We recommend that you change the defaults for security reasons.	
	The acceptable characters for username and password are:	
	• the alphabet in both lowercase and uppercase (a to z and A to Z)	
	numbers from 0 to 9	
	• these characters: _! \ " # \$%& ' () *+, / :; <=>?@^`{ } []~	
	The password length must be from 3–32 characters, and the username from 3–10 characters. The authentication phrase must be 15–32 ASCII characters.	
LOCAL_IP_ADDRESS=	This information applies to a PowerChute server with multiple network cards. Use it to specify the IP address of the card that will communicate with PowerChute.	
UNICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and unicast in IPV6NETWORKCONFIG= unicast multicast, you must specify your unicast host address here.	
MULTICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and multicast in IPV6NETWORKCONFIG= unicast multicast, the Network Management card will send UDP packets to the multicast address you specify here.	
SNMPv1		
ENABLE_SNMPV1_ACCESS = True False	Specify true to enable SNMPv1 access and false to disable SNMPv1 access.	
NAME _COMMUNITY_N =	Enter the community name, up to 15 ASCII characters.	
NMS_COMMUNITY_N=	Enter the IP address of the Network Management System.	

Field name	Description	
ACCESS_TYPE_COMMUNITY_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMP community string: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.	
SNMP_PORT =	Specify the SNMP Port. 161 is the default.	
NOTE: N indicates an integer (0-N)		
	SNMPv3	
ENABLE_SNMPV3_ACCESS = True False	Specify True to enable SNMPv3 access and false to disable SNMPv3 access.	
USERNAME_PROFILE_N =	Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.	
AUTH_PASSPHRASE_PROFILE_N =	Enter the Authentication passphrase of 8-32 ASCII characters.	
PRIV_PASSPHRASE_PROFILE_N =	Enter the Privacy passphrase of 8-32 ASCII characters.	
AUTH_PROTOCOL_PROFILE_N = MD5 SHA1 SHA256 SHA512 NONE	Specify the Authentication protocol of the SNMPv3 user profile.	
PRIV_PROTOCOL_PROFILE_N = AES128 AES192 AES192EX AES256EX AES256 DES NONE	Specify the Privacy protocol of the SNMPv3 user profile. See the "SNMP Troubleshooting" topic of the PowerChute Network Shutdown User Guide available on www.apc.com for more information on JRE requirements for AES-192/Ex and AES-256/Ex.	
ACCESS_TYPE_PROFILE_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMPv3 user profile: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.	
SNMP_PORT=	Specify the SNMP discovery Port. 161 is the default.	
NOTE: N indicates an integer (0-N)		
SNMP Traps		
UPSCriticalEvents_Enabled = True False	Specify True to enable SNMP Traps for UPS Critical Events.	
UPSCriticalEvents_SendClearingTrap = True False	Enter True to send a Trap once a UPS Critical Event has cleared.	
UPSCriticalEvents_Delay =	Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.	
UPSCriticalEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.	
UPSCriticalEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the UPS Critical Event is cleared.	
UPSCriticalEvents_RepeatTimes =	Specify the number of times the trap is sent when the UPS Critical Event occurs.	
LostCommsEvents_Enabled = True False	Specify True to enable SNMP Traps for Lost Communication Events.	
LostCommsEvents_SendClearingTrap = True False	Enter True to send a Trap once a Lost Communication Event has cleared.	

Field name	Description
LostCommsEvents_Delay =	Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes =	Specify the number of times the trap is sent when the Lost Communication Event occurs.
Enabled_TrapReceiver_N = True False	Enter True to enable the Trap Receiver.
NMS_TrapReceiver_N =	Enter the IP address of the Network Management System that will receive traps.
Port_TrapReceiver_N =	Enter the port number of the Trap Receiver.
Type_TrapReceiver_N = v1 v3	Enter the version of SNMP used to send the traps.
ProfileName_TrapReceiver_N =	Enter the User Name of the SNMPv3 User Profile used to send the traps.
NOTE: N indicates an integer (0-N)	

Installation Guide

PowerChute Network Shutdown

Mac OS X

Installing PowerChute Network Shutdown

See these sections:

- Installing on Mac OS X
- Upgrading the Software
- Uninstalling on Mac OS X
- Silently Installing the Software

Installing on Mac OS X

PowerChute must be installed on the machine to be protected. Perform the following steps:

- 1. Locate the PowerChute installation files on the PowerChute CD, or download it from the APC website. Copy the installation files from the Mac OS X folder to a folder on the Mac.
- 2. Open a terminal and navigate to the folder containing the installation script.
- 3. Run./install.command



4. In the terminal window you will be prompted to enter your password.



5. The PowerChute installer will display, click next to accept the License Agreement.



- 6. Enter the path to the directory in which you want to install PowerChute.
- 7. Click **Next** to proceed with the installation. The installation cannot be canceled once it has begun.



8. The installation progress bar will display.



9. When the installation is successful, a window displays to prompt server configuration.



10. Click Open PCNS in browser to complete the PowerChute Configuration wizard.

0							Po	wer	Chute Net	work S	hutdo	wn						
2 +	/ https	≤ 🔒 10.	179.23	32.93:	6547/c	gwizard		_										
II Apple iClo	and Fac	cebook	Twitt	tter V	Vikipedi	Yahoo	News T	1	Popular =									
Baurar	hute 6	Catura	Mak															
Powert	mute a	Setup.	TTER	come	,			_										
Configure	PowerC	Chute N	etwork	k Shute	fown.													
	Pr	lowerCh	ute Ne	atwork	Shuddo	m must k	e configur	ad u	with the det	ale of t	he Net	unde M	anan	eme	nt Card	(e) in	the	
	Po	owerCh IPS(s) pr	ute Ne rovidin	etwork	Shutdov er. Pow	vn must b arChute o	e configur annot mon	ed v	vith the det the UPS(s)	ails of the for crit	he Netw	vork M ants ur	anag til thi	eme s set	nt Card up has	(s) in been	the h	
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	Pro UF 00	YowerCh IPS(s) pr ompleter	ute Ne rovidin d.	etwork ng pow	Shutdor er. Pow	vn must t arChute c	e configur annot mon	ed v itor	with the deta the UPS(s)	ails of t for crit	he Netv ical eve	vork M ents ur	anag til thi	eme s set	nt Card up has	(s) in beer	n the h	
	Pr UF co	³ owerCh IPS(s) pi ompleter	ute Ne rovidin d.	etwork ng pow	Shutdor er. Pow	vn must t arChute c	e configur annot mon	ed v itor	with the det the UPS(s)	ails of t for crit	he Netw ical eve	vork M ents ur	anag til thi	eme s set	nt Card up has	(s) in beer	n the h	
	Pr	PowerCh IPS(s) pr ompleted	ute Ne rovidin d.	atwork ng pow	Shuldor er. Pow	vn must t	e configur annot mon	ed v	vith the det the UPS(s)	ails of t for crit	he Netv	vork M ents ur	anag til thi	eme s set	nt Card up has	(s) in beer	n the	
	Pr	PowerCh IPS(s) pr ompleter	ute Ne rovidin d.	etwork ng pow	Shutdor er. Pow	vn must t	e configur annot mon	ed v	with the det the UPS(s)	ails of the for crit	he Netv	vork M ents ur	anag til thi	eme s set	nt Card up has	(s) in been	n the	
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	Pr UI co	PowerCh IPS(s) p ompleter	ute Ne rovidin d.	etwork ng pow	Shutdor er. Pow	vn must b	e configur annot mon	ed v	with the det	ails of t	he Netw	vork M ents ur	anag til thi	eme s set	nt Card up has	(s) in beer	n the	

After installation, it is necessary to configure your system in order to protect it. Follow the Setup wizard to specify your configuration.

Upgrading the Software

PowerChute cannot be upgraded during installation on Mac OS X. To install a new version of PowerChute, you must manually uninstall the previous version and do a full installation of the latest version PowerChute v4.3.

Uninstalling on Mac OS X

To uninstall PowerChute on Mac OS X:

- Go to the folder where the installation files have been placed: /Users/Shared/Applications/APC/PowerChute
- 2. Double click on the file called uninstall.command
- 3. A terminal window opens to prompt you to enter your password.
- 4. A window opens to confirm the uninstall click **Yes** to uninstall.



5. A window displays to confirm that uninstallation is complete.



To uninstall in silent mode:

- 1. In a terminal window, navigate to the folder in which the PowerChute files are installed.
- 2. Enter the command ./uninstall.command -q
Silently Installing the Software

Installing silently means the installation is unattended or non-interactive.



It is not possible to roll out your event configurations or shutdown settings using a silent installation. You can however, use pcnsconfig.ini to do this. See the section on INI files in the online help.



PowerChute only supports silent installation in Single, Redundant and Parallel UPS configurations.

Silent Install on Mac OS X

Perform the following steps:

Edit the silent installations file to set the required parameters; see Editing your silent installation file.

For an installation on Mac OS X, navigate to the temporary folder on the new server, and type the following command on one line:

```
Install.command -s silentinstall.ini
```



Using sudo will always prompt the user to enter a password. To do this completely silently, you could use this command: Echo *password* | sudo -S ./install.command -s

The applicationDirectory should be the first line in the INI file. See Editing your silent installation file.



If a silent installation fails, see Appendix A: Error codes for silent installations.

Editing your silent installation file

The file that guides silent installations in Mac OS X is named silentInstall.ini.

Each field or line has a value that the installer needs in order to carry out the installation. The table below explains the fields available in the silent installation file.

Field name	Description
applicationDirectory=	Specifies the installation folder. Type the folder name after "=", ensuring it has valid characters for the operating system. Note : You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.
ACCEPT_EULA=yes	Yes signifies acceptance of the software license agreement. The installation will not proceed unless yes is specified here.
REGISTER_WITH_NMC= yes no	Using yes or no, specify whether PowerChute should be registered with the Network Management Card (NMC) or not.
MODE= single redundant parallel	Use single, redundant, or parallel to specify the UPS configuration mode. For detailed information, see "PowerChute Network Shutdown Operating Modes and supported UPS Configurations " here.
NETWORKCONFIG= IPv4 IPv6	Specify your Internet protocol with IPv4 or IPv6.
IPV6NETWORKCONFIG= unicast multicast	When you are using IPv6 only (you entered NETWORKCONFIG= IPv6 above) you must specify the communication mechanism here. See also UNICAST_ADDRESS= and MULTICAST_ADDRESS=. For detailed information, see "The Communications Process of PowerChute Network Shutdown" here.
IP_1= IP_2= IP_3= IP_4= IP_5= IP_6= IP_7= # IP_8= # IP_9=	On each line, specify the IP address of each NMC that will be communicating with this PowerChute installation. You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).
IP_1_Outlet= IP_2_Outlet= IP_3_Outlet= IP_4_Outlet= IP_5_Outlet= IP_6_Outlet= IP_7_Outlet= # IP_8_Outlet= # IP_9_Outlet=	This applies only to UPS devices with outlet groups (for example, Smart-UPS SMX and SMT devices). Specify the outlet group that supplies power to the PowerChute installation. On a UPS that has only Switched Outlet Groups, "IP_1_Outlet" must be set to "1". If you enter "0", PowerChute may not correctly identify Outlet events associated with the first Outlet group. On a UPS that has both a Main Outlet Group (not switched) and Switched Outlet Groups, "IP_1_Outlet" must be set to "0". You can comment out entries not needed by putting the # character at the beginning of the line (see examples 8 and 9).
PORT=	This is the NMC web port: 80 for HTTP; 443 for HTTPS.
PROTOCOL= HTTP HTTPS	Use HTTP or HTTPS to specify which protocol you are using.

Field name	Description
ACCEPTCERTS= YES NO	When using the HTTPS protocol, SSL certificates are used to secure the connection. By default the NMC use a self-signed certificate, which needs to be accepted. Select YES to automatically accept a self-signed certificate.
	valid certificate.
USERNAME= PASSWORD= AUTHENTICATION_PHRASE=	Enter the user name, password, and authentication phrase to validate PowerChute communication with the NMC. (The authentication phrase reverts to the default if not specified).
	NOTE : We recommend that you change the defaults for security reasons.
	The acceptable characters for username and password are:
	• the alphabet in both lowercase and uppercase (a to z and A to Z)
	• numbers from 0 to 9
	• these characters: _! \ "#\$%&' () *+,/:;<=>?@^`{ }[]~
	The password length must be from 3–32 characters, and the username from 3–10 characters. The authentication phrase must be 15–32 ASCII characters.
LOCAL_IP_ADDRESS=	This information applies to a PowerChute server with multiple network cards. Use it to specify the IP address of the card that will communicate with PowerChute.
UNICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and unicast in IPV6NETWORKCONFIG= unicast multicast, you must specify your unicast host address here.
MULTICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and multicast in IPv6NETWORKCONFIG= unicast multicast, the Network Management card will send UDP packets to the multicast address you specify here.
	SNMPv1
ENABLE_SNMPV1_ACCESS = True False	Specify true to enable SNMPv1 access and false to disable SNMPv1 access.
NAME _COMMUNITY_N =	Enter the community name, up to 15 ASCII characters.
NMS_COMMUNITY_N=	Enter the IP address of the Network Management System.
ACCESS_TYPE_COMMUNITY_N =	Specify the Access type of the SNMP community string:
READONLY READWRITE DISABLED	DISABLED: No SNMP GET or SET requests are permitted.
	READONLY: Only SNMP GET requests are permitted.
	READWRITE: SNMP GET and SET requests are permitted.
SNMP_PORT =	Specify the SNMP Port. 161 is the default.
NOTE: N indicates an integer (0-N)	
	SNMPv3
ENABLE_SNMPV3_ACCESS = True False	Specify True to enable SNMPv3 access and false to disable SNMPv3 access.
USERNAME_PROFILE_N =	Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.
AUTH_PASSPHRASE_PROFILE_N =	Enter the Authentication passphrase of 8-32 ASCII characters.
PRIV_PASSPHRASE_PROFILE_N =	Enter the Privacy passphrase of 8-32 ASCII characters.

Field name	Description
AUTH_PROTOCOL_PROFILE_N = MD5 SHA1 SHA256 SHA512 NONE	Specify the Authentication protocol of the SNMPv3 user profile.
PRIV_PROTOCOL_PROFILE_N =	Specify the Privacy protocol of the SNMPv3 user profile.
AES256EX AES256 DES NONE	See the "SNMP Troubleshooting" topic of the PowerChute Network Shutdown User Guide available on www.apc.com for more information on JRE requirements for AES-192/Ex and AES-256/Ex.
ACCESS_TYPE_PROFILE_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMPv3 user profile: • DISABLED: No SNMP GET or SET requests are permitted.
	READURET: Only SIMP GET requests are permitted. READWRITE: SNMP GET and SET requests are permitted.
SNMP_PORT=	Specify the SNMP discovery Port. 161 is the default.
NOTE: N indicates an integer (0-N)	
	SNMP Traps
UPSCriticalEvents_Enabled = True False	Specify True to enable SNMP Traps for UPS Critical Events.
UPSCriticalEvents_SendClearingTrap = True False	Enter True to send a Trap once a UPS Critical Event has cleared.
UPSCriticalEvents_Delay =	Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.
UPSCriticalEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
UPSCriticalEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the UPS Critical Event is cleared.
UPSCriticalEvents_RepeatTimes =	Specify the number of times the trap is sent when the UPS Critical Event occurs.
LostCommsEvents_Enabled = True False	Specify True to enable SNMP Traps for Lost Communication Events.
LostCommsEvents_SendClearingTrap = True False	Enter True to send a Trap once a Lost Communication Event has cleared.
LostCommsEvents_Delay =	Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes =	Specify the number of times the trap is sent when the Lost Communication Event occurs.
Enabled_TrapReceiver_N = True False	Enter True to enable the Trap Receiver.
NMS_TrapReceiver_N =	Enter the IP address of the Network Management System that will receive traps.
Port_TrapReceiver_N =	Enter the port number of the Trap Receiver.
Type_TrapReceiver_N = v1 v3	Enter the version of SNMP used to send the traps.
ProfileName_TrapReceiver_N =	Enter the User Name of the SNMPv3 User Profile used to send the traps.
NOTE: N indicates an integer (0-N)	

Installation Guide

PowerChute Network Shutdown

Hyper-V/SCVMM

Installing PowerChute Network Shutdown

See these sections:

- PowerChute Hyper-V Installation
- Installing on Windows Hyper-V/SCVMM
- PowerChute SCVMM Installation
- Hyper-V and SCVMM Configuration
- Upgrading the Software
- Uninstalling on Hyper-V and SCVMM
- Silently Installing the Software

Using PowerChute in the Hyper-V environment

The Hyper-V server can be part of a Windows failover cluster or a standalone host. If it is part of a cluster, then PowerChute can perform a migration of the virtual machines to any available Hyper-V hosts in the same cluster during a shutdown.

Remote Server Administration Tools

The Remote Server Administration Tools must be installed for Hyper-V and Failover Clustering (Windows Server 2012). The PowerChute PowerShell scripts will not work correctly (for either VM migration or VM shutdown) if these are not installed.

To verify:

- 1. Launch PowerShell.
- 2. Run the command Get-Module -ListAvailable.
- 3. Check that Hyper-V and FailoverClusters are shown:

PS C:\Users\administrator.SCUMMGAL> Get-Nodule -ListAvailable Directory: C:\Windows\system32\WindowsPowerShell\vi.@\Modules					
Nodule'I ype	Version	Name	ExportedComnands		
Manifest Manifest Manifest Manifest Manifest Script Manifest Manifest Manifest Manifest Binary	2.0.0.0 1.0 1.0 1.0 1.0 2.0 1.0 2.0 2.0 2.0 2.0 1.0 0.0 0 1.0 0 0 1.0 0 0 0 0 0 0 0 0	AppLocker Appx BestPractices BitsIransfer BranchCache CimCmdlots ClusterAvareUpdating DirectAccessClientComponents Disn DnsClient FailoverClusters GroupPolicy Hyper-U	(Get-AppLockerFile (Add AppxTackage, (Get-BpaModel, Get (Add-BitsFile. Com (Add-BCDataCacheEx (Get-CimAssociated (Get-CauPlugin, Re (Disable-DAManualE (Add-AppxProvision (Resolve-DnsName, (Add-ClusterCheckp (Backup-GPO, Bluck (Add-VMDvdDrive, A		

Installing on Windows Hyper-V/SCVMM

Follow these steps below.

1. Locate the PowerChute installation executable file, **Setup-x64.exe**, on the PowerChute CD or download it from the APC website. You must have administrator rights to run the installer.

Double-click on the file.

(If you downloaded from the website, you need to extract the exe file from the zip file).

2. A warning dialog, below, displays if you downloaded the exe from the web: click the **Run** button.

Open File	- Security Warning	×
Do you	want to run this fil	le?
	Name:minist Publisher: <mark>Schneid</mark> Type: Applicati From: C:\Users	rator.SCVMMGAL\Downloads\Setup-x64.exe der Electric ion s\administrator.SCVMMGAL\Downloads\Set
☑ Al <u>w</u> a	ys ask before opening	<u>R</u> un <u>Cancel</u>
۲	While files from the In potentially harm your you trust. <u>What's the</u>	ternet can be useful, this file type can computer. Only run software from publishers <u>risk?</u>

3. At the welcome dialog, click on **Next** to continue.

At the License Agreement dialog, if you agree with the terms, click I Agree to continue.

Enter an installation folder location or accept the default.

4. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your operating system.

5. At the dialog below, choose Enable Hyper-V Support and your installation proceeds.

PowerChute Network Shutdown Setup		x
Configure Hyper-V Support PowerChute Network Shutdown can be used to protect Hyper-V Servers and their Virtual Machines and provide safe network-based shutdown.		
Note: PowerShell 2.0 or higher is required for Hyper-V support. Select an option below: O Do not enable Hyper-V Support. Enable Hyper-V Support.		
< <u>B</u> ack <u>N</u> ext >	Cano	:el

A dialog will appear to note the following:

- a. PowerChute does not support environments where SCVMM is running on a Virtual Machine.
- b. PowerChute must be installed on a physical machine.

Click OK to proceed.

6. When your Windows Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically by choosing **Yes** when prompted:

PowerChute Network Shutdown ports must be opened in the Windows Firewall to enable communication with the Network Management Card(s). Would you like this configuration to be performed automatically?

See Firewall for more information.

After installation, it is necessary to configure PowerChute in order to protect your system.

If you installed on Hyper-V server, you have to go to another machine in order to configure this installation of PowerChute. In the graphic below, **Hyper-V machine** at step 2 represents the machine name or the IP address of your Hyper-V machine.



On a standard Windows machine when you have enabled Hyper-V in this installation process, the PowerChute Setup wizard opens automatically after you click the **Finish** button.



PowerChute SCVMM Installation

PowerChute can protect Hyper-V hosts that are managed by System Center Virtual Machine Manager (SCVMM). SCVMM should be configured on a physical machine. SCVMM configured on a virtual machine is not supported by PowerChute.

PowerChute can be installed on the same server as SCVMM, or on a remote server.

If PowerChute is installed on a remote server:

- It is necessary to also install the SCVMM console on that server to provide the PowerShell modules used by PowerChute.
- It is necessary to add the machine account on which PowerChute is installed to the Administrator User Role in SCVMM settings.
- It is necessary to use a remote shut down command to shut down the SCVMM machine. The remote shut down command is not part of PowerChute.

To add the machine account on which PowerChute is installed to the Administrator User Role in SCVMM:

- 1. In SCVMM Console, Click Settings.
- 2. Expand Security and select User Roles.
- 3. Right click on the Administrator role in the right hand pane and select **Properties**.
- 4. In the Administrator Properties dialog click Members.
- 5. Click the Add button and enter the machine name on which PowerChute is installed.
- 6. Click OK twice.
- 7. The PowerChute machine account should be listed under Role Members.

Administrator - Virtual Machine Home	Vanager						- 0 - 2
Create Create Run Create Servicing Window Create	Import Console Add-in Import	Backup Backup	 PowerShell Jobs PRO Window 	Delete Delete	Properties Properties		
iettings	User Roles (4)						
General	Name	•	Descriptio	on		Profile Type	• Parent User Role
C User Roles	Administrator		Administ	rator User R	ole	Administrator	
Run As Accounts	ADev	ADev				Delegated administrator	Administrator
The state was to be	CDev	CDev				Delegated administrator	Administrator
Servicing Windows	JDEV					Delegated administrator	Administrator
System Center Settings	Administrator	9					
	Role members	NT AUTHO	DRITY\SYSTEM, SC S1\$	VMMGAL\D	omain Admins	s, SCVMMGAL\SCVMM2012 \$, S	CVMMGAL
	Description:	Administra	tor User Role				

8	Administrator Properties	×
Name and description Members	Members Members are user accounts or Active Directory groups that belong to this user role. Members:	
	Name	A <u>d</u> d
	SCVMMGAL\vmmadmin NT AUTHORITY\SYSTEM SCVMMGAL\Decrain Admine	<u>R</u> emove
	SCVMMGAL\SCVMM2012\$	
	SCVMMGAL\2012R2SFS1\$	
View Script	ОК	Cancel

Hyper-V and SCVMM Configuration

PowerShell scripts are used to perform Live Migration of VMs and Graceful VM shutdown for Hyper-V and Maintenance Mode/Host Shutdown in SCVMM. By default, Windows prevents the execution of PowerShell scripts. The PowerChute installation program will automatically detect if PowerShell script execution is enabled and provide an option to enable it if it is not. To verify that the Execution Policy has been changed, open a new command prompt window and

enter the command:

powershell Get-ExecutionPolicy

Verify that it has been set to remotesigned.

If it is not set to remotesigned, open a command prompt and type the following

powershell Set-ExecutionPolicy remotesigned



For more information on the Execution Policy settings, see Microsoft Technet.

Upgrading the Software

If you have v3.1 or higher of PowerChute already installed on your target machine, the installation process asks you whether you want to perform an upgrade rather than a complete installation. Upgrading enables you to retain your existing configuration settings.



PowerChute v4.3+ is a 64-bit only application and cannot be installed on a 32-bit operating system. If you have a 32-bit operating system, you cannot upgrade to v4.3+.

Following the upgrade installation, to ensure that the PowerChute user interface enhancements are applied correctly, it is necessary to clear the browser history:

- In Internet Explorer select Tools > Safety > Delete browsing history
- In Chrome select Settings > Show advanced settings > Privacy > Clear browsing data
- In Firefox select Open Menu > History > Clear Recent History

Uninstalling on Hyper-V and SCVMM

On Windows, use the **Uninstall** option under **PowerChute Network Shutdown** in the Windows Start menu.

On Windows Server Core, follow these steps.

- 1. Open a command prompt window.
- 2. Type C:\Program Files\APC\PowerChute\uninstall.exe and press Enter.

On Windows Server 2012, PowerChute must be uninstalled using Add/Remove Programs.

- 1. Right-click the PowerChute Network Shutdown menu option in the Start menu.
- 2. Click Uninstall in the options menu that displays on the bottom of the screen.

Apps by na	ame 🗸					
Microsoft SQL Server 2008		Import and Export Data (32-bit)	SC	L Server Profiler		Virtual Machine Manager Console
SQL Server Installation Cente		Import and Export Data (64-bit)	Microsoft	System Center 2	Power	Chute Network Shut
Microsoft SQL Server 2012		Project Conversion Wizard	Co	ita Store Infiguration	1	Open PCNS 🗸
Data Profile Viewer	圕	Reporting Services Configuration	De Ma	ployment anager	Silect	
Database Engine Tuning Advisor		SQL Server Configuration	Co	perations onsole	¥	MP Author
Deployment Wizard	\$	SQL Server Data Tools	Dr Ma	perations anager Shell		User Guide
Deployment Wizard	Ē	SQL Server Error and Usage	Or Co	chestration onsole	VMwa	re
Download Microsoft SQL		SQL Server Installation Cente	Ru	nbook Designer		start VM Statistics Logging
Execute Package Utility		SQL Server Management	Vir Ma	tual Machine anager		
Pin to taskbar	Open new window	Run as Ru administrator	un as different user	Open file location		

To uninstall in silent mode:

- 1. Open a command prompt.
- 2. Type "C:\Program Files\APC\PowerChute\uninstall.exe" /S and press return.

Silently Installing the Software

Installing silently means the installation is unattended or non-interactive.



It is not possible to roll out your event configurations or shutdown settings using a silent installation. You can however, use pcnsconfig.ini to do this. See the section on INI files in the online help.



PowerChute only supports silent installation in Single, Redundant and Parallel UPS configurations.

Silent Install on Hyper-V

Perform the following steps:

Edit the silent installations file to set the required parameters; see Editing your silent installation file.

1. Type the following on one line at the Windows command line:

```
Setup.exe /S /F silentInstall.ini
```



If a silent installation fails, see Appendix A: Error codes for silent installations.

Editing your silent installation file

On Hyper-V, the file that guides silent installations is named silentInstall.ini

The file is a plain text file and can be edited with a standard text editor. Each field or line has a value that the installer needs in order to carry out the installation. The table below explains the fields available in the silent installation file.

Field name	Description
applicationDirectory=	Specifies the installation folder. Type the folder name after "=", ensuring it has valid characters for the operating system. Note : You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.
ACCEPT_EULA=yes	Yes signifies acceptance of the software license agreement. The installation will not proceed unless yes is specified here.
*INSTALL_JAVA= System PCNS	The value System here signifies you want to use the public JRE for your PowerChute installation. The value PCNS here signifies you want to use the private JRE.
*The installation detects whether the JRE r	neets the requirements, see JRE.
REGISTER_WITH_NMC= yes no	Using yes or no, specify whether PowerChute should be registered with the Network Management Card (NMC) or not.
MODE= single redundant parallel	Use single, redundant, or parallel to specify the UPS configuration mode. For detailed information, see "PowerChute Network Shutdown Operating Modes and supported UPS Configurations " here.
NETWORKCONFIG= IPv4 IPv6	Specify your Internet protocol with IPv4 or IPv6.
IPV6NETWORKCONFIG= unicast multicast	When you are using IPv6 only (you entered NETWORKCONFIG= IPv6 above) you must specify the communication mechanism here. See also UNICAST_ADDRESS= and MULTICAST_ADDRESS=. For detailed information, see "The Communications Process of PowerChute Network Shutdown" here.
IP_1= IP_2= IP_3= IP_4= IP_5= IP_6= IP_7= # IP_8= # IP_9=	On each line, specify the IP address of each NMC that will be communicating with this PowerChute installation. You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).

Field name	Description			
IP_1_Outlet= IP_2_Outlet=	This applies only to UPS devices with outlet groups (for example, Smart-UPS SMX and SMT devices). Specify the outlet group that supplies power to the PowerChute installation.			
IP_3_Outlet= IP_4_Outlet= IP_5_Outlet=	On a UPS that has only Switched Outlet Groups, "IP_1_Outlet" must be set to "1". If you enter "0", PowerChute may not correctly identify Outlet events associated with the first Outlet group.			
IP_6_Outlet= IP_7_Outlet= # IP_8_Outlet=	On a UPS that has both a Main Outlet Group (not switched) and Switched Outlet Groups, "IP_1_Outlet" must be set to "0".			
# IP_9_Outlet=	You can comment out entries not needed by putting the # character at the beginning of the line (see examples 8 and 9).			
PORT=	This is the NMC web port: 80 for HTTP; 443 for HTTPS.			
PROTOCOL= HTTP HTTPS	Use HTTP or HTTPS to specify which protocol you are using.			
ACCEPTCERTS= YES NO	When using the HTTPS protocol, SSL certificates are used to secure the connection. By default the NMC use a self-signed certificate, which needs to be accepted.			
	Select YES to automatically accept a self-signed certificate.			
	Select NO to accept a connection only if the NMC is configured with a valid certificate.			
USERNAME= PASSWORD= AUTHENTICATION_PHRASE=	Enter the user name, password, and authentication phrase to validate PowerChute communication with the NMC. (The authentication phrase reverts to the default if not specified).			
	NOTE : We recommend that you change the defaults for security reasons.			
	The acceptable characters for username and password are:			
	• the alphabet in both lowercase and uppercase (a to z and A to Z)			
	numbers from 0 to 9			
	• these characters: _! \ " # \$ % & ' () *+, / :; <=>?@^` { } []~			
	The password length must be from 3–32 characters, and the username from 3–10 characters. The authentication phrase must be 15–32 ASCII characters.			
LOCAL_IP_ADDRESS=	This information applies to a PowerChute server with multiple network cards. Use it to specify the IP address of the card that will communicate with PowerChute.			
UNICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and unicast in IPV6NETWORKCONFIG= unicast multicast, you must specify your unicast host address here.			
MULTICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and multicast in IPV6NETWORKCONFIG= unicast multicast, the Network Management card will send UDP packets to the multicast address you specify here.			
VIRTUALINSTALL= VMware Hyper-V	Specify Hyper-V to enable the Hyper-V/SCVMM virtualization features.			
CONFIGURATION_MODE = Managed Unmanaged	Specify Managed for configurations managed by SCVMM. Specify Unmanaged for unmanaged Hyper-V configurations.			
SCVMMSERVER_ADDRESS=	Specify the IP Address or the host name or the FQDN (Fully Qualified Domain Name) of the SCVMM Server.			
SNMPv1				

Field name	Description
ENABLE_SNMPV1_ACCESS = True False	Specify true to enable SNMPv1 access and false to disable SNMPv1 access.
NAME _COMMUNITY_N =	Enter the community name, up to 15 ASCII characters.
NMS_COMMUNITY_N=	Enter the IP address of the Network Management System.
ACCESS_TYPE_COMMUNITY_N = READONLY READWRITE DISABLED	 Specify the Access type of the SNMP community string: DISABLED: No SNMP GET or SET requests are permitted. READONLY: Only SNMP GET requests are permitted. READWRITE: SNMP GET and SET requests are permitted.
SNMP_PORT =	Specify the SNMP Port. 161 is the default.
NOTE: N indicates an integer (0-N)	
	SNMPv3
ENABLE_SNMPV3_ACCESS = True False	Specify True to enable SNMPv3 access and false to disable SNMPv3 access.
USERNAME_PROFILE_N =	Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.
AUTH_PASSPHRASE_PROFILE_N =	Enter the Authentication passphrase of 8-32 ASCII characters.
PRIV_PASSPHRASE_PROFILE_N =	Enter the Privacy passphrase of 8-32 ASCII characters.
AUTH_PROTOCOL_PROFILE_N = MD5 SHA1 SHA256 SHA512 NONE	Specify the Authentication protocol of the SNMPv3 user profile.
PRIV_PROTOCOL_PROFILE_N = AES128 AES192 AES192EX AES256EX AES256 DES NONE	Specify the Privacy protocol of the SNMPv3 user profile. See the "SNMP Troubleshooting" topic of the PowerChute Network Shutdown User Guide available on www.apc.com for more information on JRE requirements for AES-192/Ex and AES-256/Ex.
ACCESS_TYPE_PROFILE_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMPv3 user profile: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.
SNMP_PORT=	Specify the SNMP discovery Port. 161 is the default.
NOTE: N indicates an integer (0-N)	
	SNMP Traps
UPSCriticalEvents_Enabled = True False	Specify True to enable SNMP Traps for UPS Critical Events.
UPSCriticalEvents_SendClearingTrap = True False	Enter True to send a Trap once a UPS Critical Event has cleared.
UPSCriticalEvents_Delay =	Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.
UPSCriticalEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
UPSCriticalEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the UPS Critical Event is cleared.
UPSCriticalEvents_RepeatTimes =	Specify the number of times the trap is sent when the UPS Critical Event occurs.

Field name	Description
LostCommsEvents_Enabled = True False	Specify True to enable SNMP Traps for Lost Communication Events.
LostCommsEvents_SendClearingTrap = True False	Enter True to send a Trap once a Lost Communication Event has cleared.
LostCommsEvents_Delay =	Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterval =	Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCleared = True False	Specify True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes =	Specify the number of times the trap is sent when the Lost Communication Event occurs.
Enabled_TrapReceiver_N = True False	Enter True to enable the Trap Receiver.
NMS_TrapReceiver_N =	Enter the IP address of the Network Management System that will receive traps.
Port_TrapReceiver_N =	Enter the port number of the Trap Receiver.
Type_TrapReceiver_N = v1 v3	Enter the version of SNMP used to send the traps.
ProfileName_TrapReceiver_N =	Enter the User Name of the SNMPv3 User Profile used to send the traps.
NOTE: N indicates an integer (0-N)	

Installation Guide

PowerChute Network Shutdown

VMware

Installing PowerChute Network Shutdown with VMware Support

You have three different ways of deploying or installing PowerChute in order to monitor VMware hosts:

- Installing on Windows to Monitor VMware Hosts
- Deploying the PowerChute Virtual Appliance
- Installing on vSphere Management Assistant (vMA)

See also Upgrading the Software, Silently Installing the Software, Uninstalling.

Recommendations on Deploying/ Installing PowerChute

We recommend the following in a VMware environment:

VMware Setup	Recommended Deployment/ Installation of PowerChute
VMware Hosts in multiple clusters	PowerChute installed on a physical Windows machine
Single VMware host that is not managed by vCenter Server	PowerChute virtual appliance
VMware hosts in one cluster for Single, Redundant or Parallel UPS configurations	PowerChute virtual appliance or PowerChute installed on a physical Windows machine
VMware hosts managed by vCenter Server which is running on a physical machine	PowerChute installed on a physical Windows machine
Using vCenter Server running on a VM or vCenter Server Virtual Appliance (VCSA) for Single, Redundant or Parallel UPS configurations	PowerChute virtual appliance or PowerChute installed on a physical Windows machine
Advanced UPS configuration, see graphic below. See application notes for background information.	PowerChute installed on a physical Windows machine



If PowerChute is installed on a host that is part of a vSAN enabled cluster, that host cannot be placed into Maintenance Mode.

Advanced UPS Configuration: PowerChute can monitor both Single UPS's and groups of Redundant UPS's protecting your virtualization environment. If using Redundant UPS groups, redundancy levels can be set on a per group basis e.g. N+1, N+2.



Power Transmission System

Installing on Windows to Monitor VMware Hosts

PowerChute Network Shutdown can be installed on a physical Windows machine in order to remotely monitor VMware hosts. Follow these steps below.

1. Locate the PowerChute installation executable file for Windows, **Setup-x64.exe**, on the PowerChute CD or download it from the APC website. You must have administrator rights to run the installer.

Double-click on the file.

(If you downloaded from the website, you need to extract the exe file from the zip file).

2. A warning dialog, below, displays if you downloaded the exe from the web: click the **Run** button.

Open File	Security Warning	×
Do you	want to run this file?	
	Name: ministrator.SCVMMGAL\Downloads\Setup-x64.exe Publisher: Schneider Electric Type: Application From: C:\Users\administrator.SCVMMGAL\Downloads\Set	
☑ Al <u>w</u> a	<u>B</u> un <u>Cancel</u> vs ask before opening this file	
۲	While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>	

3. At the welcome dialog, click on **Next** to continue.

At the License Agreement dialog, if you agree with the terms, click I Agree to continue.

4. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your operating system.

5. Choose Enable VMware Support at the dialog below.



On a physical Windows machine with Hyper-V enabled or SCVMM console/ server installed, PowerChute cannot monitor VMware hosts, and the configure VMware Support option screen is not shown.

Please install PowerChute on a physical Windows machine that does not have Hyper-V enabled or SCVMM server/console installed.

PowerChute Network Shutdown Setup —			×
Configure VMware Support			
PowerChute Network Shutdown can be used to protect VMware Hosts and the Virtual Machines and provide safe network-based shutdown.	eir		
Select an option below:			
O Do not enable Virtualization Support.			
Enable VMware Support.			
O Enable Nutanix AHV Support.			
< Back Next >		Cancel	

A dialog displays to note that Advanced UPS Configuration is not supported if PowerChute is installed on a Virtual Machine. Click **OK** proceed.

- 6. Enter an installation folder location or accept the default and your installation proceeds.
- 7. When your Windows Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically by choosing **Yes** when prompted:

PowerChute Network Shutdown ports must be opened in the Windows Firewall to enable communication with the Network Management Card(s). Would you like this configuration to be performed automatically?

See Firewall for more information.

After installation, it is necessary to configure PowerChute in order to protect your system. The PowerChute Setup wizard opens automatically after you click the **Finish** button.





PowerChute Network Shutdown: Installation Guide

Deploying the PowerChute Virtual Appliance

The PowerChute Virtual Appliance is a virtual machine image with CentOS Linux 7 running PowerChute Network Shutdown v4.3 pre-installed.



The Schneider Electric Knowledge Base http://www.apc.com/site/support/index.cfm/ faq/index.cfm (FAQ ID is FA159775), provides information on installing the vSphere Client.

To deploy the virtual appliance using the vSphere Desktop client:

- 1. Download the PowerChute virtual appliance file from the APC website.
- 2. Log on to the VMware host or vCenter Server using your vSphere Client.
- 3. Select File Deploy OVF Template from the menu.



4. At the Deploy from a file or URL field, enter the path to the .OVA file.



5. The OVA details are displayed. Click the Next button.



- 6. When the End User License Agreement (EULA) is displayed, click Accept and then Next.
- 7. Accept the default name and specify the datacenter and then click on the + sign and highlight **Discovered virtual machine** if necessary, and click Next.

Deploy OVF Template	
Name and Location Specify a name and location	n for the deployed template
Source OVF Template Details End User License Agreement Name and Location Host / Cluster Resource Pool Disk Format Properties Ready to Complete	Name: PowerChute Network Shutdown for VMware The name can contain up to 80 characters and it must be unique within the inventory folder. Inventory Location: VCenter New-DC Test-DC Discovered virtual machine

8. This step is not relevant if you are deploying to a standalone host.

Specify a host or a cluster and click Next. If you specify a cluster, you will be asked to specify a host within that cluster.

Deploy OVF Template Host / Cluster On which host or duster de	you want to run the deployed template?	
Source OVF Template Details End User License Agreement Name and Location Host / Cluster Specific Host Resource Pool Disk Format Properties Ready to Complete	Test-DC	

9. This step is not relevant if you are deploying to a standalone host.

Specify a configured datastore on your system that has sufficient disk space to deploy the virtual appliance. Click Next.

VF Template Details nd User License Agreemer	Select a destination storage VM Storage Profile:	for the virtual mad	hine files:	· 🔺			
me and Location	Name	Drive Type	Capacity	Provisioned	Free	Туре	Thir
/ Cluster	Local Datastore-1	Non-SSD	227.75 GB	183.59 GB	164.86 GB	VMFS3	Sup
1001	Local Datastore-2	Non-SSD	227.75 GB	102.89 GB	150.70 GB	VMF53	Sup
	NAS1	Unknown	1.80 18	326.00 GB	1.55 18	NFS	Sup
							. b.
	Disable Storage DRS fr Select a datastore:	III or this virtual machin	ne				•

10. At Disk Format, choose the default disk layout option by clicking Next.

e (GB): vision Lazy Zeroe vision Eager Zeroe ision	Local Datastore-1 164.9 d	
vision Lazy Zeroed vision Eager Zerod ision	d ed	

11. This step is not relevant if you are deploying to a standalone host - to configure a static IP address when deploying to a standalone host, use the Network configuration menu displayed at first boot of the appliance - see Step 15.

At **Networking Properties**, if you want to use fixed IP-addressing, then fill in these field values as necessary, and refer to Step 13. If you are using DHCP, you do not need to fill in the fields, so just click Next.

roperties Customize the software solut	ion for this deployment.
VF Template Details nd User License Agreement ame and Location ost / Cluster esource Pool torage sk Format roperties	Networking Properties Default Gateway The default gateway address for this VM. Leave blank if DHCP is desired. DNS
eady to Complete	The domain name servers for this VM (comma separated). Leave blank if DHCP is desired. Network 1 IP Address The IP address for this interface. Leave blank if DHCP is desired.
	Network 1 Netmask The netmask or prefix for this interface. Leave blank if DHCP is desired.

NOTE: Network IP Address and Network Netmask are mandatory fields. The networking properties entered must be in IPv4 format (dotted-quad format). Invalid values entered will not be applied, and a DHCP IP address will be sought from the network by default.

12. The options you have chosen display again, click **Finish** to commence the installation. The time taken to deploy the appliance depends on your network speed.

If you have provided Networking Properties (Step 11), do not enable the option to **Power on after deployment**.

Are these the options you	want to use?	
ource DVF Template Details ind User License Agreement	When you dick Finish, the dep Deployment settings:	loyment task will be started.
lame and Location	OVF file:	C:/Virtual Appliance IPCNS_X.X_OVF10.ova
lesource Pool	Download size:	745.5 MB
torage	Size on disk:	3.0 GB
lisk Format	Name:	PowerChute Network Shutdown for VMware
roperties	Folder	Test-DC
teady to Complete	Host/Cluster:	Test-Cluster
	Datastore:	Local Datastore-1
	Disk provisioning:	Thick Provision Lazy Zeroed
	Network Mapping:	"Network 1" to "VM Network"
	Property:	gateway =
	Property:	DNS =
	Property:	ip0 =
	Property:	netmask0 =

This message box below displays when the installation has completed successfully and **PowerChute Network Shutdown 4.3 for VMware** displays as a VM in the inventory:

🕝 Deployment Completed Successfully	
Deploying PowerChute Network Shutdown for VMware	
Completed Successfully	
	Close

- 13. If you have provided Networking Properties (Step 11), configure the following settings to ensure they are applied:
 - a. Select the new Virtual Machine from the Inventory view, and click Edit Virtual Machine Settings.
 - b. On the subsequent dialog, ensure that vApp Options are enabled, and that the VMware Tools checkbox is selected in the OVF Environment Transport section of the OVF Settings panel, as follows:

PowerChute Network Shutdov	vn for VMware_EN - Virtua	I Machine Properties	- 🗆 X
Hardware Options Resources vs	ervices		Virtual Machine Version: 7
Settings	Summary	OVF Environment -	
General Options	PowerChute Netwo	View	The OVF environment is not available when the
vApp Options	Enabled		VM is powered off.
License Agreements	Present		
Properties	Configured		
OVF Settings	Enabled	OVF Environment Ir	ansport
Advanced	Configured	ISO Image	An ISO image, containing the OVF
VMware Tools	Shut Down		available CD-ROM drive.
Power Management	Standby		
Advanced			The MAnuel hade supering a sufficient of
General Course Market	Normal	VMware Tools	initialized with the OVF environment document.
CPUID Mask	Expose Nx flag to		
Memory/CPU Hotplug	Disabled/Disabled		
Soot Options	Normal Boot		
CDU/MMUD/intraliantian	Automotio	Installation Boot	
CPO/MMO Virtualization	Automatic Lies default eattings	Enable	The installation boot automatically gets reset
Swapme Locadon	Ose derault settings		upon hist power-on of the virtual machine.
		0 *	Specify the delay in seconds to wait for the
			until the VM is powered off by the quest.
		-	
			OK Cancel

Alternatively, these settings can be applied during the first boot configuration wizard, or any time later using standard CentOS 7 network management tools.

14. Power on your PowerChute virtual machine.

- 15. On first boot of the appliance:
 - a. Select the option to create a password for the root user.
 NOTE: Though CentOS provides a default root password, for security reasons it is essential that you create a new password. If you do not perform this step, you may lose access to the root account of the Virtual Machine.
 - b. Accept the CentOS end user license agreement.



NOTES: If networking properties (Step 11) are not supplied, the first connected network adapter is enabled by default, and a DHCP IP address is allocated by the network.

If multiple network adapters are added to the Virtual Machine, only the first connected adapter is enabled. To enable further network adapters, log in to the Virtual Machine and use standard CentOS network management tools to configure your networking. OVF Environment settings are persisted across reboots by Network Manager. If OVF Environment Transport is enabled, the OVF Environment settings are applied at each start up.To prevent this, disable OVF Environment Transport.

16. To access the PowerChute Network Shutdown user interface, you need to find out its URL. Click on the **Console** tab or right-click on the VM in the left-hand pane and select **Open Console**.

The welcome screen displays. The URL of the new installation of PowerChute will display following the sentence "**To configure PowerChute Network Shutdown**, browse to:".



17. Browse to https://<IP Address>:6547 to launch the PowerChute Setup wizard.

18. **NOTE:** SNMP is enabled by default in the PowerChute Virtual Appliance. Following installation, it is necessary to enable SNMP settings in the web user interface to make PowerChute accessible via SNMP.

NOTE: To reconfigure for a static IP Address, log in and use the CentOS networking tools.



To obtain the latest security-related updates, it is recommended to update the libraries installed on the Virtual Appliance.

To update the Virtual Appliance libraries:

- Log in to the PowerChute virtual appliance



- Run the command yum update



- Install the updates

PowerChute Network Shutdown for VMware EN									
Getting Started Summary Resource Aloca	tion Performa	nce Tasks & Events Alarms Console Perm	issions Maps	Storage	Views				
sudo	×86_64	1.7.2p1-29.e15_10	base	364	k				
tar	×86_64	2:1.15.1-32.e15_8	base	748	k				
tcl	×86_64	8.4.13-6.el5	base	1.3	М				
tzdata	×86_64	2014i-1.el5	updates	788	k				
udev	×86_64	095-14.32.el5	base	2.4	м				
util-linux	×86_64	2.13-0.59.el5_8	base	1.9	м				
vim-minimal	×86_64	2:7.0.109-7.2.e15	base	334	k				
vsftpd	×86_64	2.0.5-28.e15	base	143	k				
wget	×86_64	1.11.4-3.e15_8.2	base	583	k				
yum	noarch	3.2.22-40.el5.centos	base	1.0	м				
yum-metadata-parser	×86_64	1.1.2-4.el5	base	25	k				
zlib	i386	1.2.3-7.el5	base	51	k				
zlib	×86_64	1.2.3-7.e15	base	52	k				
Installing for dependencies:									
binutils	×86_64	2.17.50.0.6-26.el5	base	2.9	м				
readline	i386	5.1-3.el5	base	223	k				
sqlite	i386	3.3.6-7	base	213	k				
Transaction Summary									
Install 4 Package(s)									
Upgrade 109 Package(s)									
arga ta antiga ta r									
Total download size: 143 M Is this ok [y/N]: _									

- If a proxy server is used to connect to the Internet then the yum settings need to be updated to download the updates successfully. To do this edit /etc/yum.conf and add proxy details as shown:

PowerChute Network Shutdown for VMware_EN						
Getting Started Summary Resource Allocation Performance Tasks & Events Alarms Console	Perm					
[main]						
cachedir=/var/cache/uum						
keepcache=0						
debuglevel=2						
logfile=/var/log/yum.log						
distroverpkg=redhat-release						
tolerant=1						
exactarch=1						
obsoletes=1						
gpgcheck=1						
plugins=1	<i>.</i>					
DUGTRACKER URIENTED://DUGS.CENTOS.org/	⁄yu					
proxy_nctp.//203.107.7.120.00						
$\frac{proxy}{assigned}$						
proxg_passwora						

If you do not have Internet Connectivity and wish to update any of the libraries on the Virtual Appliance, the updated RPMs must be manually copied to the Virtual Appliance and installed using the RPM command as outlined in Knowledge Base FA234757.

To deploy the virtual appliance using the vSphere Web client:

- 1. Download the PowerChute virtual appliance file from the APC website.
- 2. Log on to the VMware host or vCenter Server using your vSphere Client.
- 3. Select vCenter Servers > Deploy OVF Template... from the menu.



vmware [,] vSphere Web Cl	ient 者 Ø		U i vmmadmingsommgatinet • I Help •	I Q Search
4 vCenter > 5 \$	VCenter Servers			1
🥙 «Center Servers 📰	Getting Started Objects			🔹 🗊 Recent Tasks 🛛
Powerthulescencer.commonal.net Addisspowerthule New Datacenter New Datacenter New Folder New Folder Settings Assign License Key Settings Assign Ticense Key Settings Assign Ticense Key Settings Assign Ticense Key Settings All vCenter Addons	enver systems for which you enver systems for which you enver systems for which enver systems for which you enver systems	LCetter Servers	¢	All Running Failed ✓ Set console window screen res Ø Nessus ✓ Set console window screen res Ø Nessus ✓ Set console window screen res Ø Nessus Ø Nessus Ø Nessus Ø Nessus Ø Nessus Ø Nessus Ø Nessus
	← Select a vCenter Server	Explore Further What is vCenter Server? How do I add a vCenter Server system? How do I manage vCenter Server systems?		Alarms All (10) New (Addmo 10.216.252.17 Host cannedian and pow
4. If the web client displays an error message to state that an update to the Client Integration Plug-in is required, download the Integration Plugin installer, close the web browser, run the installer and begin again at step 1.

ploy OVF Template
Source Is Select source Destination 2a Select name and folder 2b Select a resource 2c Select storage Ready to complete

At the Deploy OVF Template choose Select Source > Local file and browse to the .OVA file.

We	b Client 🔒 🖉	🖸 i vmmadmin@scvmmqal.net - i Help - i i	Q 8
	Deploy OVF Template	() »	
10	1 Source	Select source	
	✓ 1a Select source	Select the source location	Re
mgal	1b Review details	Enter a URL to download and install the OVF package from the Internet, or browse to a location accessible from your computer,	
	2 Destination	such as a local hard drive, a network share, or a CD/DVD drive.	
	2a Selectname and folder	OURL	
	2b Select a resource	۳	
	2c Select storage	Local file	
	3 Ready to complete	Browse C:/Users/wmmadmin.SCVMMGAL/Desktop/PCNS_4.1_OVF10.ova	
			asks ·
			2 100
			play 0
			noy c
			ala C
			1205
		Dark Navt Cirich Cancel	10.00
		Bach MEX FINISH Cancel	Host
			r mar e

5. The OVA details are displayed. Click the Next button.



6. When the End User License Agreement (EULA) is displayed, click Accept and then Next.



7. Specify a name for the deployed template, navigate to the datacenter, click to expand and highlight **Discovered virtual machine**, and click Next.



8. This step is not relevant if you are deploying to a standalone host.

Select a resource - specify a host or a cluster and click Next. If you specify a cluster, you will be asked to specify a host within that cluster.

Web Client 🔺 🖉	A.	💟 i vmmadmin@scvmmgal.net - i Halp - i 🌔	Q S
Deploy OVF Template		() »	
 1 Source 1a Select source 1b Review details 1c Accept EULAs 2 Destination 2a Select name and folder 2b Select a resource 2c Select storage 2d Setup networks 2e Customize template 3 Ready to complete 	Select a resource Select where to run the deployed template Select location to run the deployed template Select location to run the deployed template Select location to run the deployed template PONSLAB PONSLAB PONSDEV PONSDEV PONSDEV PONSDEV PONSDEV SES 10.216.252.122 (disconnected) 10.216.252.22	Select a cluster, host, wapp, or resource pool in which to run the deployed template	isks voko ploy C
		Back Next Finish Cancel	10.216 Host IF

9. This step is not relevant if you are deploying to a standalone host.

Select storage - specify a configured datastore on your system that has sufficient disk space to deploy the virtual appliance. Click Next.

reproj o zi rempione						
1 Source 1a Selectsource	Select storage Select location to store the	e files for the deployed temp	late			
1b Review details	Select virtual disk format	Thick Provision Lazy Zero	ed 🔹			
1c Accept EULAs	VM Storage Policy:	None		•		
2 Destination	The following datastores	are accessible from the de	stination resource that	- I vou selected. Select	the destination (jatastore for the
 2a Select name and folder 	virtual machine configurat	tion files and all of the virtua	I disks.	,		
2b Select a resource	Name	Capacity	Previsioned	Free	Type	Storage DRS
2c Select storage	prnslab1	999.75 GB	879.68 GB	282.35 GB	VMFS	
2d Setup networks	ESX3 Storage1 (1)	278.00 GB	307.05 GB	122.16 GB	VMFS	
2e Customize template	🗐 penslab2	499.75 GB	402.36 GB	101.86 GB	VMFS	
3 Ready to complete	SWLA83	599.75 GB	574.24 GB	81.05 GB	VMFS	
	ESX3 Storage2 (1)	278.50 GB	282.45 GB	75.69 GB	VMFS	
	ESX3 Storage3 (1)	279.25 GB	292.61 GB	57.79 GB	VMFS	
	SWLABHA	499.75 GB	694.07 GB	19.87 GB	VMFS	
	4	11				P

10. **Setup networks -** if using static IP allocation, fill in these field values as necessary. If you are using DHCP, you do not need to fill in the fields, so just click Next.

				0
1 Source ✓ 1a Selectsource	Setup networks Configure the networks the deployed tem	plate should use		
 1b Review details 	Source	Destination	Configuration	ion
 1c Accept EULAs 	Network 1	VM Network	- 0	
2 Destination				
 2a Select name and folder 				
 2b Select a resource 				
 2c Select storage 	IP protocol: IPv4	Pallocation: Static - Manual		
2d Setup networks		-		
2e Customize template				_
3 Ready to complete	Source: Network 1 - Description			
	Network 1			
	Destination: VM Network - Protocol sett	ings		
	No configuration needed for this network			
		Back Novt	Finish	ncal

11. This step is not relevant if you are deploying to a standalone host - to configure a static IP address when deploying to a standalone host, use the Network configuration menu displayed at first boot of the appliance - see Step 15 of Deploying the Virtual appliance using the vSphere Desktop Client.

Customize template - the option is presented to customize the deployment properties. Leave the option blank to choose the default options.

Deploy OVF Template		(?)	*
1 Source	Customize template Customize the deployment p	properties of this software solution	D R
 1b Review details 	All properties have valid	values Show next Collapse all	
 1c Accept EULAs 		4 settings	
2 Destination 2a Select name and folder	Default Gateway	The default gateway address for this MM Leave blank if DHCP is desired.	
2b Select a resource 2c Select storage	DNS	The domain name servers for this VM (comma separated). Leave blank if DHCP is desired.	
2d Setup networks 2e Customize template	Nebvork 1 IP Address	The IP address for this interface. Leave blank if DHCP is desired.	isics
 3 Ready to complete 	Network 1 Netmask	The netmask or prefix for this interface. Leave blank if DHCP is desired.	- 11
			A C
		Back Next Finish Cancel	10.2

NOTE: Network IP Address and Network Netmask are mandatory fields. The networking properties entered must be in IPv4 format (dotted-quad format). Invalid values entered will not be applied, and a DHCP IP address will be sought from the network by default.

12. Review the options that have been chosen and click **Finish** to commence the installation. The time taken to deploy the appliance depends on your network speed.



When the installation has completed successfully **PowerChute Network Shutdown 4.3 for VMware** displays as a VM in the inventory. To complete the configuration, continue from Step 14 of Deploying the Virtual Appliance using the vSphere Desktop client - Power on your PowerChute virtual machine.

- 13. If you have provided Networking Properties (Step 11), configure the following settings to ensure they are applied:
 - a. Locate and select the PowerChute Network Shutdown for VMware virtual machine.

🗗 PowerChute Network Shutdown for V 📑 🕨 🖾 🍪 Actions 🗸 🚍							
Getting Star Summary Monitor	Configure Permissions Snaps	hots Datastores Networks Update Ma					
••	vApp Options Edit						
	Application properties						
VM Options VM SDRS Rules	There are no properties to edit Deploym ent						
vApp Options	▶ IP allocation	Expand to view IP allocation settings					
GuestUser Mappings ▼ More	 Unrecognized OVF sections 	No unrecognized sections					
Policies	Authoring						
	▶ Product	Expand to view product details					
	▶ Properties						
	▶ IP allocation	Expand to view supported IP allocation settings					
	▼ OVF settings						
	OVF environment transport						
	Installation boot	Disabled					

b. Open the **Configure** tab and navigate to **Settings > vApp Options**:

c. Click the Edit... button to display this dialog:

🗗 PowerChute Netwo	PowerChute Network Shutdown for VMware_EN - Edit Settings						
Virtual Hardware VI	/I Options	SDRS Rules	vApp Optio	ins			
Enable vApp options When vApp options are enabled, you can configure OVF properties, use the OVF environment, and specify IP allocation and product information for this virtual machine.							
Application prope	rties						
There are no prop	perties to	edit					
Deploym ent							
▶ IP allocation		Expan	d for IP allo	ation settings			
 Unrecognized OVF 	sections	No un	recognized .	sections			
Authoring							
▶ Product		Name					
▶ Properties							
▶ IP allocation		Expand to edit supported IP allocation settings					
OVF environment		View		The OVF environment when the VM is power	it is only available ered on.)	
OVF environment tr	ransport	ISO image	9	An ISO image, conta environment docum first available CD-ROI	ining the OVF ent, is mounted o M drive.	on the	
		🖌 vMware To	ools	The VMware tools gu is initialized with the document.	iestInfo.ovfEnv va OVF environmen	riable t	
Installation boot		🗌 Enable		The installation boot reset upon first powe machine.	automatically ge er-on of the virtua	ts al	
		0	* *	Specify the delay in VM to power off. A va until the VM is power	seconds to wait fo alue of zero mean red off by the gue	or the s wait est.	
Compatibility: ESX/ESX	(i 4.0 and la	ter (VM version	7)		ОК	ancel	

- Open the vApp Options tab and ensure that the Enable vApp options checkbox is selected.
- Under the authoring section, expand the dialog to display **OVF Settings**.
- Under the OVF Environment transport settings, make sure that VMware Tools checkbox is selected.

To deploy the virtual appliance using the vSphere v6.5 Web client:

- 1. Download the PowerChute virtual appliance file from the APC website.
- 2. Log on to the VMware host using your vSphere Web Client.
- 3. On the Host view, select Create/Register VM.
- 4. In Step 1 of the New virtual machine wizard, select the Deploy a virtual machine from an OVF or OVA file option, and click Next.

🔁 New virtual machine		
New virtual machine Select a name and guest OS 3 Select storage 4 Customize settings 5 Ready to complete	Select creation type How would you like to create a Virtual Machine? Create a new virtual machine Deploy a virtual machine from an OVF or OVA file Register an existing virtual machine	This option guides you through creating a new virtual machine. You will be able to customize processors, memory, network connections, and storage. You will need to install a guest operating system after creation.
vm ware [.]		
		Back Next Finish Cancel

5. Insert a name into the **Enter a name for the virtual machine field** and select the OVF file you extracted in Step 1.

🔁 New virtual machine	
 1 Select creation type 2 Select OVF and VMDK files 3 Select storage 4 License agreements 5 Deployment options 6 Additional settings 7 Ready to complete 	Select OVF and VMDK files Select the OVF and VMDK files or OVA for the VM you would like to deploy Enter a name for the virtual machine.
	Click to select files or drag/drop
vm ware [®]	
	Back Next Finish Cancel

6. Select a configured datastore on your system that has sufficient disk space to deploy the virtual appliance, and click Next.

Select creation type Select OVF and VMDK files Select storage License agreements Deployment options	Select storage Select the datastore in which to a The following datastores are acc virtual machine configuration file	store the confi essible from the s and all of the	guration and dis ne destination re virtual disks.	k files. source that you	selected. S	Gelect the destination	on datastore for
Additional settings	Name	~	Capacity ~	Free ~	Туре	✓ Thin pro… ✓	Access ~
ready to complete	datastore1 (2)		925.5 GB	920.97 GB	VMFS5	Supported	Single
	pcnslab1		999.75 GB	177.33 GB	VMFS5	Supported	Single
	pcnslab2		499.75 GB	98.31 GB	VMFS5	Supported	Single
	SWLAB3		599.75 GB	118.05 GB	VMFS5	Supported	Single
	SWLABHA		499.75 GB	166.79 GB	VMFS5	Supported	Single
	vsanDatastore		1.35 TB	196.06 GB	vsan	Supported	Single
							6 items
vm ware							

- 7. When the End User License Agreement (EULA) is displayed, click I agree and then Next.
- 8. Review your deployment options. Select **Network mappings**, **Disk provisioning**, and **Power on automatically** as required, and click Next.

Dew virtual machine - PCNS_4_x_vapp							
✓ 1 Select creation type Deployment options							
 2 Select OVF and VMDK files 3 Select storage 	Select OVF and VMDK files Select deployment options						
✓ 4 License agreements							
✓ 5 Deployment options	Network mappings	VM Network VM Network					
6 Additional settings							
7 Ready to complete	Disk provisioning	Thin O Thick					
	Power on automatically	Z					
vm ware [*]							
		Back Next Finish Cancel					

9. This step is not relevant when you are deploying to a standalone host - to configure a static IP address when deploying to a standalone host, use the Network configuration

menu displayed at first book of the appliance - see Step 15 of To deploy the virtual appliance using the vSphere Desktop client. Any settings made here are ignored.

New virtual machine - PCNS_4_X_	vapp			
 ✓ 1 Select creation type ✓ 2 Select OVF and VMDK files ✓ 3 Select storage 	Additional settings Additional properties for the VM			
 ✓ 4 License agreements ✓ 5 Deployment entions 	✓ Networking Properties			
6 Additional settings	Default Gateway			0
7 Ready to complete	DNS			0
	Network 1 IP Address			0
	Network 1 Netmask			0
vm ware				
		Back	Next Finish	Cancel

10. The options you have chosen are displayed, verify them and click Finish to commence the installation. The time taken to deploy the virtual appliance depends on your network speed.

New virtual machine - PCNS_4_X_	vapp		
 1 Select creation type 2 Select OVF and VMDK files 3 Select storage 	Ready to complete Review your settings selection before fin	ishing the wizard	
 4 License agreements 5 Deployment options 6 Additional actions 	Product VM Name	PowerChute Network Shutdown 4.x for VMware	
 6 Additional settings 7 Ready to complete 	Disks	PCNS_4_Xvapp_en-disk1.vmdk	
	Datastore Provisioning type	datastore1 (2) Thin	
	Network mappings Guest OS Name	VM Network: VM Network Unknown	
	▶ Properties	Click to expand	
	Do not refresh your brow	ser while this VM is being deployed.	
vm ware [®]			
		Back Next Finish Cancel	

11. When the installation has successfully completed, the PowerChute Network Shutdown Virtual Appliance displayed as a virtual machine in your inventory. To complete the configuration, continue from Step 14 of To deploy the virtual appliance using the vSphere Desktop client.

Installing on vSphere Management Assistant (vMA)

PowerChute Network shutdown can also be installed on the vSphere Management Assistant (vMA).

There are two steps, see Deploying vMA on a VMware Host. and Installing PowerChute on the vMA.

Deploying vMA on a VMware Host.

The web page vSphere Management Assistant provides more information. Alternatively, you can call VMware customer support.

The Schneider Electric Knowledge Base http://www.apc.com/site/support/index.cfm/faq/ index.cfm (FAQ ID is FA159775), has some information on installing the vSphere Client.



vSphere Management Assistant (vMA) was previously known as VMware Infrastructure Management Assistant (VIMA).

Follow these steps to install vMA.

- 1. Download the vMA installation files from vSphere Management Assistant, and extract the files.
- 2. Log on to the VMware host or vCenter server using your vSphere Client.
- 3. Select File Deploy OVF Template from the menu.



4. At the **Deploy from a file or URL** field, enter the path to the .OVF file you extracted at step 1 above.



5. The vMA and OVF details are displayed. Click the Next button.

Deploy OVF Template		
OVF Template Details Verify OVF template details.		
Source OVF Template Details End User License Agreement Name and Location Storage Disk Format Ready to Complete	Product: Version: Vendor: Publisher: Download size: Size on disk: Description:	vSphere Management Assistant (vMA) 5.5.0.0 VMware, Inc. VMware, Inc. 587.0 MB 1.6 GB (thin provisioned) 3.0 GB (thick provisioned) The vSphere Management Assistant (vMA) allows administrators and developers to run scripts and agents to manage ESX/ESXi and vCenter Server systems.

6. When the End User License Agreement (EULA) is displayed, click Accept and then Next.

7. Accept the default vMA name (and location) or enter alternatives, and click Next.

Deploy OVF Template	
Name and Location Specify a name and location	n for the deployed template
Source	Name:
OVF Template Details	VSphere Management Assistant (vMA)
End User License Agreement Name and Location Storage Disk Format Ready to Complete	, The name can contain up to 80 characters and it must be unique within the inventory folder.

8. At **Disk Format**, choose the default disk layout option by clicking Next.

nt to store the virtual disks?		
Datastore: Available space (GB): Thick Provision Lazy Ze Thick Provision Eager 2 Thin Provision	datastore 1 (2) 89.2 eroed Zeroed	
	nt to store the virtual disks? Datastore: Available space (GB): Thick Provision Lazy Ze Thick Provision Eager Z Thin Provision	at to store the virtual disks? Datastore: datastore 1 (2) Available space (GB): 89.2 Thick Provision Lazy Zeroed Thick Provision Eager Zeroed Thin Provision

9. The options you have chosen display again, click **Finish**.

Ready to Complete Are these the options you	want to use?	
Source OVF Template Details End User License Agreement	When you dick Finish, the dep Deployment settings:	loyment task will be started.
Name and Location	OVF file:	Y:\Operating System Set II\VMA\VMA 5.5\vMA-5.5.0.0-1.
Storage	Download size:	587.0 MB
Deady to Complete	Size on disk:	3.0 GB
ready to complete	Name:	vSphere Management Assistant (vMA)-5.5
	Host/Cluster:	ESXI-SCVMM.SCVMMBLR.NET
	Datastore:	datastore1 (2)
	Disk provisioning:	Thick Provision Lazy Zeroed
	Make and Managines	"Mahurada 1" to "Mild Mahurada"

The vMA software is now installed, and it should be displaying in the left-hand pane.

- 10. Select the vMA in the left-hand pane.
- 11. Power on the vMA virtual machine, then follow the instructions on configuring the IP address, setting vi-admin password, etc.

Natura	k Configuration for othe
IPu4 A	ddress:
Notmas	k:
IPU6 A	ddress:
Prefix	:
Global	Configuration
IPv4 G	ateway:
IPv6 G	ateway:
Hostna	me: localhost
DNS Se	rvers:
Proxy	Server:
Main	Menu
ดา	Show Current Configuration (scrol) with Shift-Della/Dellaw)
1)	Fyit this program
2)	Default Catouru
3)	Hostnamo
41	INSTITUTE
51	Broyu Server
61	IP Address Allocation for eth0
Enter	a Menu number [A]:

Starting password configuration The root account is disabled in this vMA virtual мachine, which means no one can log in as root. The administrator account for vMA is called "vi-admin". In orde r to log in to vMA, you need to log in as this user. This user has been pre-crea ted in the vMA, and its password needs to be set поw. Please enter a secure pass word for the account поw.
Please provide a password for the vi-ad∺in user. If you are prompted for an old password for this user, press <enter>. Old Password: New password: Retype new password: _</enter>

Installing PowerChute on the vMA

You must have root privileges to perform the installation.

- 1. If you are installing from the CD, locate your installation files in the ESXi directory on the CD. Copy them to a temporary directory on your server.
- If you are installing from the website, locate this file on the APC website and copy it to a temporary directory on your server: pcns430ESXi.tar.gz
- 3. Change your working directory to the temporary directory. Then type the following commands:

```
sudo gunzip pcns430ESXi.tar.gz
sudo tar -xf pcns430ESXi.tar
```

4. Type: sudo ./install.sh



After a web download you need to grant execute permissions: sudo chmod +x install.sh

- 5. At the License Agreement, if you agree with the terms, type Yes and press the Enter key to continue. Type No to exit.
- 6. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your Windows operating system.
- 7. Go to a computer that has a browser and open the PowerChute user interface with: https://<server_ip_address>:6547

Follow the steps in the PowerChute Setup wizard to complete your configuration.



In the **vCenter Server Details** screen in the PowerChute Setup wizard, the username specified to connect to ESXi hosts must be in lowercase.

Upgrading the Software

Upgrading enables you to retain your existing configuration settings. Upgrades are only possible if your existing version of PowerChute is 3.1 or greater.

If you have v3.1 or higher of PowerChute already installed on your target machine, the installation process asks you whether you want to perform an upgrade rather than a complete installation.



PowerChute v4.3+ is a 64-bit only application and cannot be installed on a 32-bit operating system. If you have a 32-bit operating system, you cannot upgrade to v4.3+.

See the table below for information on upgrades:

PowerChute Install Type	Upgrade possible?
Installing on Windows to Monitor VMware Hosts	Yes
Deploying the PowerChute Virtual Appliance	No
Installing on vSphere Management Assistant (vMA)	Yes

Following the upgrade installation, to ensure that the PowerChute user interface enhancements are applied correctly, it is necessary to clear the browser history:

- In Internet Explorer select Tools > Safety > Delete browsing history
- In Chrome select Settings > Show advanced settings > Privacy > Clear browsing data
- In Firefox select **Open Menu > History > Clear Recent History**

Upgrading the Virtual Appliance

To upgrade the Virtual Appliance, you do not need to deploy a new copy of the Appliance and run the Setup wizard. You can now upgrade the version of PowerChute running on the Virtual Appliance using the ESXi installation files:

- 1. Copy the ESXi installation files to the Virtual Appliance.
- 2. Run./install.sh

Uninstalling

Uninstalling PowerChute on a a vMA:

- Run the uninstall script located in the PowerChute directory from a terminal prompt. /opt/APC/PowerChute/uninstall
- To uninstall in silent mode, run the uninstall script located in the PowerChute directory, with the -q option.

```
/opt/APC/PowerChute/uninstall -q
```

For a virtual appliance installation, you should delete the appliance from inventory:

• Right-click on the virtual appliance and choose **Delete from disk**.

Silently Installing the Software

Installing silently means the installation is unattended or non-interactive.



It is not possible to roll out your event configurations or shutdown settings using a silent installation. You can however, use pcnsconfig.ini to do this. See the section on INI files in the online help.



PowerChute only supports silent installation in Single, Redundant and Parallel UPS configurations.

Silent Install on VMware



You cannot install silently using the virtual appliance method, see Deploying the PowerChute Virtual Appliance.

Edit the silent installation file silentInstall.sample to set the required parameters; see Editing your silent installation file.

Type the following command to start the installation: sudo ./install.sh -f silentInstall.sample



If a silent installation fails, see Appendix A: Error codes for silent installations.

Editing your silent installation file

When monitoring a VMware host with PowerChute Network Shutdown, your silent installation file is named silentInstall.ini. For Linux installations, the file is named silentInstall.sample.

These are plain text files and can be edited with a text editor. The table below described the fields in the silent installation file to be configured:

Field name	Description	
The fields directly below, applicationDirectory and INSTALL_JAVA, are used when you are monitoring a VMware host from a Windows machine with PowerChute Network Shutdown (see Installing on Windows to Monitor VMware Hosts).		
applicationDirectory=	Specifies the installation folder. Type the folder name after "=", ensuring it has valid characters for the operating system. NOTE : You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.	
ACCEPT_EULA=yes	Yes signifies acceptance of the software license agreement. The installation will not proceed unless yes is specified here.	
INSTALL_JAVA= System PCNS	The value System here signifies you want to use the public JRE for your PowerChute installation. The value PCNS here signifies you want to use the private JRE. The installation detects whether the public JRE meets the requirements.	
The fields directly below, INSTALL_DIR and JAVA_DIR, are used when you are monitoring a VMware host from a VM with PowerChute Network Shutdown (see Installing PowerChute Network Shutdown with VMware Support).		
INSTALL_DIR=	Specifies the installation directory. Type the path where the public JRE is installed on the system e.g. \usr\bin. NOTE: You can't use multiple-byte characters (Chinese for example) and some single byte high-ASCII characters, e.g. ß, é, ä, in the installation path.	
JAVA_DIR=	Specifies the JRE directory. Type the directory name after "=", ensuring it has valid characters for the operating system. If this value is blank or absent, the private JRE is installed. Specify a public JRE for PowerChute by setting the path to the JRE executable. See JRE.	
REGISTER_WITH_NMC= yes no	Using yes or no, specify whether PowerChute should be registered with the Network Management Card (NMC) or not.	
MODE= single redundant parallel	Use single, redundant, or parallel to specify the UPS configuration mode. See the online help, UPS Configuration Options , for more information.	
NETWORKCONFIG= IPv4 IPv6	Specify your internet protocol with IPv4 or IPv6.	
IPV6NETWORKCONFIG= unicast multicast	When you are using IPv6 only (having entered NETWORKCONFIG= IPv6 above) you must specify the communication mechanism here. See also UNICAST_ADDRESS= and MULTICAST_ADDRESS=.	
	Network Shutdown" here.	

Field name	Description
IP_1=	On each line, specify the IP address of each NMC that will be communicating with this PowerChute installation.
IP_3=	You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).
IP_4=	
IP_5=	
IP_0=	
1F_/- # IP 8=	
# IP 9=	
	This applies only to LIPS devices with Outlet Groups (for example, Smart-LIPS
IP_1_Outlet= IP_2_Outlet=	SMX and SMT devices). Specify the outlet group that supplies power to the PowerChute installation.
IP_3_Outlet= IP_4_Outlet= IP 5 Outlet=	On a UPS that has only Switched Outlet Groups, "IP_1_Outlet" must be set to "1". If you enter "0", PowerChute may not correctly identify Outlet events associated with the first Outlet group.
IP_6_Outlet= IP_7_Outlet=	On a UPS that has both a Main Outlet Group (not switched) and Switched Outlet Groups, "IP_1_Outlet" must be set to "0".
# IP_8_Outlet= # IP_9_Outlet=	You can comment out unneeded entries by putting the # character at the beginning of the line (see examples 8 and 9).
PORT=	This is the NMC web port: 80 for HTTP; 443 for HTTPS.
PROTOCOL= HTTP HTTPS	Use HTTP or HTTPS to specify which protocol you are using.
ACCEPTCERTS= YES NO	When using the HTTPS protocol, SSL certificates are used to secure the connection. By default the NMC use a self-signed certificate, which needs to be accepted.
	Select YES to automatically accept a self-signed certificate.
	Select NO to accept a connection only if the NMC is configured with a valid certificate
USERNAME= PASSWORD= AUTHENTICATION_PHRASE=	Enter the user name, password, and authentication phrase to validate PowerChute communication with the NMC. (The authentication phrase reverts to the default if not specified).
	NOTE: We recommend that you change the defaults for security reasons.
	The acceptable characters for username and password are:
	• the alphabet in both lowercase and uppercase (a to z and A to Z)
	numbers from 0 to 9
	• these characters: _! \ "#\$%&' () *+,/:;<=>?@^` { } []~
	The password length must be from 3–32 characters, and the username from 3–10 characters. The authentication phrase must be 15–32 ASCII characters.
LOCAL_IP_ADDRESS=	This information applies to a PowerChute server with multiple network cards. Use it to specify the IP address of the card that will communicate with PowerChute.
UNICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and unicast in IPV6NETWORKCONFIG= unicast multicast, you must specify your unicast host address here.
MULTICAST_ADDRESS=	When you have specified IPv6 in NETWORKCONFIG= IPv4 IPv6 and multicast in IPv6NETWORKCONFIG= unicast multicast, he Network Management card will send UDP packets to the multicast address you specify here.

Field name	Description	
CONFIGURATION_MODE= Managed Unmanaged	Specify the mode in which your ESXi servers are configured. See the online help for more information on this.	
VCENTERSERVER_ADDRESS=	When the CONFIGURATION_MODE= field above is "managed", specify the IP Address or the host name or the FQDN (Fully Qualified Domain Name) of the vCenter server.	
VCENTERSERVER_USERNAME=	When the CONFIGURATION_MODE= field above is "managed", specify the user name of the vCenter server.	
VCENTERSERVER_PASSWORD=	When the CONFIGURATION_MODE= field above is "managed", specify the password of the vCenter server.	
VCENTERSERVER_PROTOCOL = http https	Specify the protocol by which vCenter Server communicates with PowerChute.	
VCENTERSERVER_PORT = 80 443	Specify the vCenter Server Port.	
ESXIHOST_ADDRESS=	When the CONFIGURATION_MODE= field above is "unmanaged", specify the IP Address or the host name or the FQDN (Fully Qualified Domain Name) of the ESXi host to be managed.	
ESXIHOST_USERNAME=	When the CONFIGURATION_MODE= field above is "unmanaged", specify the user name of the ESXi host.	
ESXIHOST_PASSWORD=	When the CONFIGURATION_MODE= field above is "unmanaged", specify the password of the ESXi host	
ESXIHOST_PROTOCOL = http https	Specify the protocol by which the ESXi Host communicates with PowerChute.	
ESXIHOST_PORT = 80 443	Specify the port of the ESXi Host.	
	SNMPv1	
ENABLE_SNMPV1_ACCESS = True False	Specify true to enable SNMPv1 access and false to disable SNMPv1 access.	
NAME _COMMUNITY_N =	Enter the community name, up to 15 ASCII characters.	
NMS_COMMUNITY_N=	Enter the IP address of the Network Management System.	
ACCESS_TYPE_COMMUNITY_	Specify the Access type of the SNMP community string:	
READONLY READWRITE	• DISABLED: No SNMP GET or SET requests are permitted.	
DISABLED	READONLY: Only SNMP GET requests are permitted. PEADWRITE: SNMP GET and SET requests are permitted.	
SNMP PORT =	Specify the SNMP Port, 161 is the default.	
NOTE: N indicates on integer (0 N)		
5NMPV3		
ENABLE_SNMPV3_ACCESS = True False	Specify True to enable SNMPv3 access and false to disable SNMPv3 access.	
USERNAME_PROFILE_N =	Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.	
AUTH_PASSPHRASE_PROFILE _N =	Enter the Authentication passphrase of 8-32 ASCII characters.	
PRIV_PASSPHRASE_PROFILE_ N =	Enter the Privacy passphrase of 8-32 ASCII characters.	

Field name	Description
AUTH_PROTOCOL_PROFILE_N = MD5 SHA1 SHA256 SHA512 NONE	Specify the Authentication protocol of the SNMPv3 user profile.
PRIV_PROTOCOL_PROFILE_N = AES128 AES192 AES192EX AES256EX AES256 DES NONE	Specify the Privacy protocol of the SNMPv3 user profile. See the "SNMP Troubleshooting" topic of the PowerChute Network Shutdown User Guide available on www.apc.com for more information on JRE requirements for AES-192/Ex and AES-256/Ex.
ACCESS_TYPE_PROFILE_N = READONLY READWRITE DISABLED	Specify the Access type of the SNMPv3 user profile: • DISABLED: No SNMP GET or SET requests are permitted. • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted.
SNMP_PORT=	Specify the SNMP discovery Port. 161 is the default.
NOTE: N indicates an integer (0-N	۱)
	SNMP Traps
UPSCriticalEvents_Enabled = True False	Specify True to enable SNMP Traps for UPS Critical Events.
UPSCriticalEvents_SendClearing Trap = True False	Enter True to send a Trap once a UPS Critical Event has cleared.
UPSCriticalEvents_Delay =	Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.
UPSCriticalEvents_RepeatInterva I =	Specify the time interval in seconds that the trap is re-sent.
UPSCriticalEvents_RepeatUntilCl eared = True False	Specify True if you want the trap to be sent at the repeat interval until the UPS Critical Event is cleared.
UPSCriticalEvents_RepeatTimes =	Specify the number of times the trap is sent when the UPS Critical Event occurs.
LostCommsEvents_Enabled = True False	Specify True to enable SNMP Traps for Lost Communication Events.
LostCommsEvents_SendClearing Trap = True False	Enter True to send a Trap once a Lost Communication Event has cleared.
LostCommsEvents_Delay =	Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterv al =	Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCl eared = True False	Specify True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes =	Specify the number of times the trap is sent when the Lost Communication Event occurs.
Enabled_TrapReceiver_N = True False	Enter True to enable the Trap Receiver.
NMS_TrapReceiver_N =	Enter the IP address of the Network Management System that will receive traps.
Port_TrapReceiver_N =	Enter the port number of the Trap Receiver.
Type_TrapReceiver_N = v1 v3	Enter the version of SNMP used to send the traps.

Field name	Description				
ProfileName_TrapReceiver_N =	Enter the User Name of the SNMPv3 User Profile used to send the traps.				
NOTE: N indicates an integer (0-N)					

Installation Guide

PowerChute Network Shutdown

Nutanix

Installing PowerChute Network Shutdown with Nutanix Support

See these sections:

- · Installing on Windows to Monitor Nutanix Hosts
- Uninstalling the Software

Using PowerChute in a Nutanix environment

PowerChute provides support for shutting down and starting up virtual machines running on a single Nutanix Cluster directly with Nutanix Acropolis Hypervisor (AHV). PowerChute also supports the shutting down and starting up of a Nutanix Cluster with VMware as your hypervisor.



NOTES:

- One or more Nutanix blocks are supported. However, all nodes in the blocks must be part of the same Cluster. **NOTE:** A block contains 4 or 8 nodes depending on your Nutanix model.
- In an advanced configuration, all blocks in the Cluster must be protected by the same UPS or UPS group.

Installing on Windows to Monitor Nutanix Hosts

To install PowerChute with Nutanix AHV:

Follow these steps below.

1. Locate the PowerChute installation executable file, **Setup-x64.exe**, on the PowerChute CD or download it from the APC website. You must have administrator rights to run the installer.

Double-click on the file.

(If you downloaded from the website, you need to extract the exe file from the zip file).

2. A warning dialog, below, displays if you downloaded the exe from the web: click the **Run** button.

Open File	Security Warning
Do you	want to run this file?
	Name: ministrator.SCVMMGAL\Downloads\Setup-x64.exe Publisher: Schneider Electric Type: Application From: C:\Users\administrator.SCVMMGAL\Downloads\Set
	<u>Bun</u> <u>Cancel</u> s ask before opening this file While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>

3. At the welcome dialog, click on Next to continue.

At the License Agreement dialog, if you agree with the terms, click I Agree to continue.

Enter an installation folder location or accept the default.

4. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your operating system.

Configure VNware Support			
PowerChute Network Shutdown can be used to prote Virtual Machines and provide safe network-based shu	ect VMware Hosts and thei utdown.	r	
Select an option below:			
O Do not enable Virtualization Support.			
O Enable VMware Support.			
Enable Nutanix AHV Support.			

- 7. Enter an installation folder location or accept the default and your installation proceeds.
- 8. When your Windows Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically by choosing **Yes** when prompted:

PowerChute Network Shutdown ports must be opened in the Windows Firewall to enable communication with the Network Management Card(s). Would you like this configuration to be performed automatically?

See Firewall for more information.

After installation, it is necessary to configure PowerChute in order to protect your system. The PowerChute Setup wizard opens automatically after you click the **Finish** button.



6.

In the **CVM/Cluster Details** screen in the PowerChute Setup wizard, it may be necessary to install the Java Cryptography Extension Policy Files before you can connect to a Nutanix Cluster that requires a 256-bit cipher.

For more information, see Knowledge Base article FA361427 available on the APC website.

To install PowerChute with Nutanix support on VMware:

Follow these steps below.

1. Locate the PowerChute installation executable file for Windows, **Setup-x64.exe**, on the PowerChute CD or download it from the APC website. You must have administrator rights to run the installer.

Double-click on the file. (If you downloaded from the website, you need to extract the exe file from the zip file).

2. A warning dialog, below, displays if you downloaded the exe from the web: click the **Run** button.

Open File	- Security Warning	×
Do you	want to run this file?	
	Name: ministrator.SCVMMGAL\Downloads\Setup-x64.exe Publisher: Schneider Electric Type: Application From: C:\Users\administrator.SCVMMGAL\Downloads\Set Bun Cancel	
I Al <u>w</u> a	ys ask before opening this file	
۲	While files from the Internet can be useful, this file type can potentially harm your computer. Only run software from publishers you trust. <u>What's the risk?</u>	

3. At the welcome dialog, click on **Next** to continue.

At the License Agreement dialog, if you agree with the terms, click I Agree to continue.

4. PowerChute includes a private Java Runtime Environment (JRE) that is bundled with the software. In this step, PowerChute installs this bundled JRE on your Windows operating system.

5.	Choose E	Enable VMware Support a	at the dialog below	N.			
	Ì	On a physical Windows m server installed, PowerCh VMware Support option s	nachine with Hype nute cannot monit creen is not show	er-V en or VMv /n.	abled vare ho	or SC\ osts, a	/MM console/ nd the configure
		Please install PowerChute Hyper-V enabled or SCVI	e on a physical W MM server/conso	/indows le insta	s mach lled.	ine tha	at does not have
	/ PowerC	hute Network Shutdown Setup		_		×	
	Configure PowerCh Virtual M	e VMware Support ute Network Shutdown can be used to achines and provide safe network-bas	o protect VMware Hosts a ed shutdown.	and their			
	Select	an option below:					
	OD	o not enable Virtualization Support.					
	() Er	nable VMware Support.					
	Oer	nable Nutanix AHV Support.					
			< Back Nex	t >	Cano	el	
ialc	og displays	to note that Advanced UF	S Configuration i	s not s	upport	ed if P	owerChute is

A dialog displays to note that Advanced UPS Configuration is not supported if PowerChute is installed on a Virtual Machine. Click **OK** proceed.

- 6. Enter an installation folder location or accept the default and your installation proceeds.
- 7. When your Windows Firewall is enabled, you can allow the PowerChute installation to configure the firewall automatically by choosing **Yes** when prompted:

PowerChute Network Shutdown ports must be opened in the Windows Firewall to enable communication with the Network Management Card(s). Would you like this configuration to be performed automatically?

See Firewall for more information.

After installation, it is necessary to configure PowerChute in order to protect your system. The PowerChute Setup wizard opens automatically after you click the **Finish** button.

PowerChute Setup: vCenter Server D	etails			
vCenter Server Protocol	https 🗸			
vCenter Server Port	(443			
vCenter Server IP Address/Hostname	127.0.0.1			
vCenter Server Username	administrator@vsphere.local			
vCenter Server Password	••••••			
vCenter Server running on a VM	\checkmark			
Enable Nutanix Support	\checkmark			
		Previous	Next	Cano
Enter your Nutanix connectior the PowerChute Setup wizard In the CVM/Cluster Details necessary to install the Jav connect to a Nutanix Cluste	n details in the CVM / 1. s screen in the Powe /a Cryptography Exte er that requires a 256	Previous Cluster Detai erChute Setup ension Policy F 5-bit cipher.	Next Is screen and wizard, it ma Files before y	Canc d compl ay be rou can

Upgrading the Software



You cannot upgrade from previous versions of PowerChute to v4.3 to configure PowerChute with Nutanix.

Nutanix support is available in PowerChute Network Shutdown version 4.3 and higher (4.3+). To configure PowerChute with Nutanix, you must manually uninstall versions prior to v4.3 and then do a full installation of PowerChute v4.3.

Uninstalling the Software

On Windows, use the **Uninstall** option under **PowerChute Network Shutdown** in the Windows Start menu.

On Windows Server Core, follow these steps.

- 1. Open a command prompt window.
- 2. Type C:\Program Files\APC\PowerChute\uninstall.exe and press Enter.

On Windows Server 2012, PowerChute must be uninstalled using Add/Remove Programs.

- 1. Right-click the PowerChute Network Shutdown menu option in the Start menu.
- 2. Click Uninstall in the options menu that displays on the bottom of the screen.

Apps by na	ame 🗸		
Microsoft SQL Server 2008	Import and Export Data (32-bit)	SQL Server Profiler	Virtual Machine Manager Console
SQL Server Installation Cente	Import and Export Data (64-bit)	Microsoft System Center 2	PowerChute Network Shut
Microsoft SQL Server 2012	Project Conversion	Data Store	Open PCNS ✓
	Wizard	Configuration	Interface
Data Profile Viewer	Reporting Services Configuration	5 Deployment Manager	Silect
Database Engine	SQL Server	Operations	MP Author
Tuning Advisor	Configuration	Console	
Deployment	SQL Server Data	Operations	User Guide
Wizard	Tools	Manager Shell	
Deployment	SQL Server Error	Orchestration	VMware
Wizard	and Usage	Console	
Download	SQL Server	. Runbook Designer	start VM Statistics
Microsoft SQL	Installation Cente		Logging
Execute Package	SQL Server	Virtual Machine	
Utility	Management	Manager	
Pin to taskbar Uninstall	Open new window Run as administrator	Run as different user location	

To uninstall in silent mode:

- 1. Open a command prompt.
- 2. Type "C:\Program Files\APC\PowerChute\uninstall.exe" /S and press return.

Appendix A: Error codes for silent installations

When using silent installations (and upgrades), you can use the list of error codes in the table below to understand what's going wrong when the installation fails.

For silent install using the shell script install.sh the error message is written to the terminal standard output. The error code can be retrieved using the \$? variable.

For Windows, the error code is written to a file called **PCNSinstall.log**.

Error Code	Error Message	Description
0		Success: Indicates that installation succeeded.
1	Usage: install.sh [-f <config file="">]: Silent install with configuration file. install.sh [-h -H]: Print help.</config>	Usage: Indicates that unrecognized parameters were passed to the installer.
4	Error: install.sh must be run with root privileges!	Administrator Only: Indicates that a non- administrator has tried to run the installer.
5	Error: Unknown OS.	Unsupported OS: The installer has detected an Operating System it cannot support.
6	PowerChute Network Shutdown is already installed. Upgrade is not supported for this version. Please uninstall the existing PowerChute to continue with installation of PowerChute v.4.3. Installation cancelled.	Upgrade Not Supported: Indicates that PowerChute cannot support upgrade from a previous installation of PowerChute. This can be due to the versioning being too old, or an attempted upgrade of a previous multiple install.
7	Installation cancelled.	User Abort: Indicates that the user has aborted installation.
8	You must remove the installed version of PowerChute Plus.	PC Plus Detected: Indicates that the installer has aborted due to the detection of a version of PowerChute Plus.
9	You must remove the installed version of PowerChute Business Edition Server.	PowerChute Business Edition Detected: Indicates that the installer has aborted due to the detection a version of PowerChute Business Edition.
10	You must remove the installed version of PowerChute Server.	PowerChute Server Detected: Indicates that the installer has aborted due to the detection of a version of PowerChute Server.

Error Code	Error Message	Description
12	One of: Error: Too many INSTALL_DIR in silentConfiguration.ini.	Invalid Install Directory: Indicates that the installer has aborted due to an invalid target directory.
	Error: INSTALL_DIR must start with '/'.	
	Installation directory must start with "/".	
	Error: INSTALL_DIR must not contain white space.	
	Error: INSTALL_DIR must not contain back slash "\".	
	Error: INSTALL_DIR is not configured.	
	Installation directory must not contain white space " ".	
	Installation directory must not contain back slash "\".	
	Failed to create directory <install directory="">.</install>	
13	Installation cancelled.	Invalid Java Version: Invalid version of Java specified in configuration file.
14	This version of PowerChute Network Shutdown does not support the Japanese language. Please consult www.apc.com for the required version of PowerChute Network Shutdown.	Unsupported Locale: The installer has detected an attempt to install an English build on a Japanese system.
15	Can't find <zip filename=""></zip>	Zipfile Missing: Indicates that the installer cannot find the zipfile, from which to extract the PowerChute install.
16	Error: Invalid file <filename></filename>	Silent Configuration Missing: Indicates that the installer has aborted because the specified silent configuration file could not be read.
17	Error: EULA must be accepted by setting ACCEPT_EULA=YES in config file	EULA Not Accepted: Indicates that the installer has aborted because the End User License Agreement was not accepted.
18	[Error]: <configuration value=""> is not defined in <configuration file="">.</configuration></configuration>	Silent Configuration Missing Parameter: Indicates that required parameters are missing from the silent configuration file.
19	[Error]: Too many <configuration value=""> in <configuration file=""></configuration></configuration>	Silent Configuration Multiple Parameters: Indicates that a parameter is duplicated in the silent configuration file.
20	One of:	Invalid Java Directory: Indicates that the installer has
	Error: Too many JAVA_DIR in <configuration file="">.</configuration>	aborted due to an invalid Java directory specified in the silent configuration file.
	Error: JAVA_DIR must start with "/".	
	Error: JAVA_DIR must not contain white space " ".	
	Error: JAVA_DIR must not contain back slash "\".	
	Error: Invalid JAVA_DIR. <directory> does not exist.</directory>	
	Java is not available on the path. Please specify a java directory.	
21	[Error]: <21> Installation cancelled.	Registry Failure: Indicates the installer has aborted due to an inability to write registry entries.

Error Code	Error Message	Description	
22	[Error]: <22> Installation cancelled.	Service Failure: The installer failed to register the PCNS service.	
23	[Error]: <23> Installation cancelled.	M11 Backup Failure: The installer has failed to back up the m11.cfg data store during an upgrade.	
24	ERROR: Invalid value for LOCAL_IP_ADDRESS specified in silent configuration file. Aborting with error code <error code="">.</error>	The IP address was not specified: The installer cannot determine the host IP address, due to multiple network adapters. Invalid Localhost specified in the silent install configuration file. The IP address specified is not associated with the target server.	
25	ERROR: Cannot write to specified ini configuration file: <ini file=""></ini>	Invalid INI. The silent installer cannot write to the pcnsconfig.ini file in the installation directory.	
28	ERROR: Invalid value for mode specified in silent configuration file.	Invalid Mode. Silent install configuration file specifies an invalid value for MODE.	
29	ERROR: Invalid value for port specified in silent configuration file.	Invalid Port. Silent install configuration file specifies an invalid value for PORT.	
30	ERROR: Invalid value for protocol specified in silent configuration file.	Invalid Protocol. Silent installation configuration file specifies an invalid value for PROTOCOL. The valid values are HTTP and HTTPS.	
31	ERROR: Not enough UPS Network Management Card addresses specified in silent configuration file for specified mode.	A minimum of 2 IP addresses are required for Redundant, Parallel, and Advanced UPS Configurations.	
32	UPS Network Management Card has not responded to registration attempt. Registration has failed due to a timeout.	Registration failed with NMC due to timeout. The NMC host address and the connection attempt were both fine, but the NMC failed to respond.	
33	Bad UPS Network Management Card host address supplied. Registration has failed.	The registration failed with NMC due to a bad host address.	
34	Could not connect to UPS Network Management Card. Registration has failed.	Registration failed with NMC because incorrect security information - user name, password, authentication phrase - was sent.	
35	Could not register with UPS Network Management Card. Please check your configuration.	Registration failed with NMC for a reason other than those cited in the error codes directly above.	
36	Incorrect security details given. Registration has failed.	Bad Security Values. Registration failed with NMC due to incorrect security credentials.	
37	UPS Network Management Cards specified are not part of a parallel setup.	Not Parallel: Parallel registration attempted, but the NMCs are not part of a parallel configuration.	
40	UPS Network Management Cards are not of the same family. Registration has failed.	Not Same Models. Registration failed due to one or more NMCs not having the same model type.	
41	Registration has failed due to untrusted SSL certificates presented from the UPS Network Management Card.	SSL Error. Registration failed due to one or more NMCs presenting an untrusted SSL Certificate.	
42	ERROR: Invalid value for <outlet group=""> specified in silent configuration file.</outlet>	Invalid outlet group. Silent installation configuration file specifies an invalid value for IP_ <n>_Outlet</n>	
43	ERROR: Invalid value for username specified in silent configuration file.	Invalid User Name specified in the silent install configuration file. The username has failed to pass the regex.	
Error Code	Error Message	Description	
---	---	--	--
44	ERROR: Invalid value for password specified in silent configuration file.	Invalid Password specified in the silent install configuration file. The password given has failed to pass the regex.	
45	ERROR: Invalid value for authentication phrase specified in silent configuration file.	Invalid Authentication Phrase specified in the silent install configuration file. The authentication phrase has failed to pass the regex.	
47	Failed to establish an SSL connection to the UPS Network Management Card. Please verify the address and port specified.	There was an SSL handshake error.	
48	A valid JRE has not been detected. Please go to www.java.com (http://www.java.com) and install java, or change INSTALL_JAVA in the silentInstall.ini file.	You need to install a supported public JRE or use the private JRE.	
49	Silent configuration file contains multiple UPS Network Management Card addresses. Only one is required for single mode.	There are too many NMC addresses set up: The silent installation configuration file specifies too many NMC addresses for the specified mode.	
50	ERROR: Invalid value for NetworkConfig specified in silent configuration file.	The NetworkConfig field value is invalid in the INI silent configuration file.	
51	ERROR: Invalid value for IPv6NetworkConfig specified in silent configuration file.	The IPv6NetworkConfig field value is invalid in the INI silent configuration file.	
59	ERROR: Network mode is <ipv4 ipv6="">.Please enter valid <ipv4 ipv6=""> address for <nmc_ip <br="">IP_1/LOCAL_IP_ADDRESS>key.</nmc_ip></ipv4></ipv4>	You have entered an IPv4 address instead of an IPv6 address or vice versa.	
Error codes 52–56 only apply in a VMware environment.			
52	ERROR: Invalid value for ESXiConfigurationMode specified in silent configuration file.	The ESXiConfigurationMode field value is invalid in the INI silent configuration file.	
53	ERROR: Connection to VCenter Server <vcenter Server IP/Hostname> failed.</vcenter 	There was a vCenter Server connection error.	
54	ERROR: Connection to ESXi Host <esxi hostname="" ip=""> failed.</esxi>	There was a VMware Host connection error.	
55	Invalid vCenter Server address.	You have entered an invalid vCenter Server hostname.	
56	Invalid ESXi Host address.	You have entered an invalid VMware hostname.	
64	Invalid SNMP Port.	You have entered an invalid SNMP Port, or the port may be in use.	
65	Invalid SNMP NMS.	You have entered an invalid IP address for the Network Management System.	
66	Invalid SNMP Access Type.	You have entered an invalid SNMP Access Type. Options are Disable, Read or Write.	
67	Invalid SNMP Authentication protocol.	You have entered an invalid SNMP Authentication Protocol. Options are MD5, SHA1, SHA256, or SHA512.	
68	Invalid SNMP Privacy Protocol.	You have entered an invalid SNMP Privacy Protocol. Options are AES-128, AES-192, AES-256 or DES.	

Error Code	Error Message	Description
69	Invalid SNMP Authentication passphrase.	You have entered an invalid Authentication passphrase. The Authentication passphrase must be 15-32 ASCII characters in length.
70	Invalid SNMP Privacy passphrase.	You have entered an invalid Privacy passphrase. The Privacy passphrase must be 15-32 ASCII characters in length.
71	Invalid SNMP Delay.	You have entered an invalid SNMP Delay. Enter a positive number of seconds.
72	Invalid SNMP Repeat Times.	You have entered invalid Repeat Times. Enter a positive whole number.
73	Invalid SNMP Repeat Interval.	You have entered an invalid SNMP Repeat Interval. Enter a positive whole number of seconds.
74	Invalid SNMP Trap Receiver Name.	You have entered an invalid SNMP Trap Receiver Name.
75	Invalid SNMP Trap Receiver NMS.	You have entered an invalid IP address for SNMP Trap Receiver NMS.
76	Invalid SNMP Trap Receiver Port.	You have entered an invalid port number for SNMP Trap Receiver Port.
77	Invalid SNMP Trap Receiver Type.	You have entered an invalid SNMP Trap Receiver Type. Options are v1 or v3.

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- Visit the APC by Schneider Electric web site, www.apc.com to access documents in the APC Knowledge Base and to submit customer support requests.
 - www.apc.com (Corporate Headquarters)
 Connect to localized APC by Schneider Electric web site for specific countries, each of which provides customer support information.
 - www.apc.com/support/ Global support searching APC Knowledge Base and using e-support.
- Contact the APC by Schneider Electric Customer Support Center by telephone or e-mail.
 - Local, country specific centers: go to www.apc.com/support/contact for contact information.
 - For information on how to obtain local customer support, contact the APC by Schneider Electric representative or other distributor from whom you purchased your APC by Schneider Electric product.

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