

APC

UPS

(Uninterruptible Power Supply)

&

PCNS

(PowerChute Network Shutdown)

Installation Guide

Version: 1.0



Release Date: 2/18/2025

designed by Rose Marie Johnson

Contents

Introduction	3
Prerequisites	4
Hardware	4
Software	4
Network	4
Installation Plan.....	5
Overview	5
VM Appliance Setup.....	5
VM Startup and Shutdown	7
Network Management Card Configuration	9
Modify PCNS to use HTTPS.....	11
Modify APC Host Name	11
Reset Credentials	12
Set Time/Date Mode.....	13
PowerChute Web Setup Configuration.....	14
Configure Events	20
Appendix.....	21
Reference Information.....	21
Field Test Validation Process.....	21
Shutdown Test.....	21
Power on Test.....	23
Installation Form.....	23

Introduction

The APC PCNS virtual appliance works in conjunction with the UPS Network Management Card (NMC) to provide virtual host-based power management for multiple virtual computer systems. This solution is intended to provide graceful and unattended shutdown and startup, in case of extended power outages. The number of protected systems is limited only by the capacity of the UPS.

This Installation Guide provides the necessary steps to install, configure, and test the APC PowerChute Network Shutdown (PCNS) solution while meeting the standards of the business. A link to the Installation Form can be found in the Appendix section of this guide.

Prerequisites

The following are prerequisites for UPS APC installation:

Hardware

1. APC Smart UPS 1000 with the APC NMC (network management card) Installed and configured
2. ESXi host meeting business standards (or higher):
 - 1.8 TB Raid 10 storage
 - 16GB RAM
 - 4 core CPU
3. Red network cable

Software

1. PowerChute Network Shutdown (PCNS) version v4.x (64-Bit) **ONLY** and VMware Virtual Appliance (for Single/Redundant/Parallel UPS Configurations) **ONLY**.

<https://www.apc.com/shop/hr/en/tools/software-firmware/N-8ikjh8Z1ctsszz>

Note: Additional reference information regarding the software/virtual appliance is available **[here](#)**.

Network

An available port on the core switch on the standard data VLAN is assigned for the data. IP address, subnet mask, and gateway values are used for PCNS appliance setup.

Installation Plan

Overview

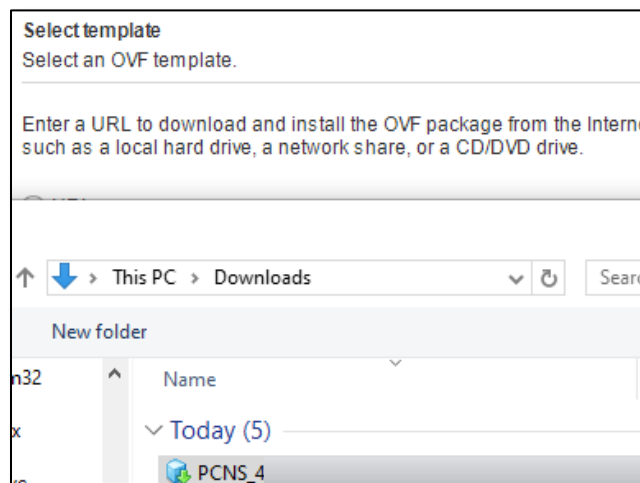
The following table lists high-level tasks to be performed:

#	Task
1	Acquire the APC PCNS 4.x Virtual Appliance (ova) from the business
2	Check for the latest PCNS version and update as necessary
3	Create new VM using the OVA file (process is automated)
4	Configure PCNS device, power, actions, and alerts settings
5	Test APC PCNS shutdown process and take corrective action

VM Appliance Setup

To install the PCNS appliance for VMware:

1. Log into the vCenter using **credentials provided by the business**.
2. Download the latest PCNS version (via the link above) to local computer and deploy OVF Template – Local File – browse file on local PC.



3. Name the new Virtual Machine using the standard naming convention (i.e. xxx-PCNS01).

4. Select the **Thin Provision** virtual disk format.

Select storage
Select location to store the files for the deployed template.

Select virtual disk format: **Thin provision**

☐ Show datastores from Storage DRS clusters

Filter

Datastores Datastore Clusters

Name	Status	VM storage policy
datastore1	✓ Normal	-
DS_ATA	✓ Normal	-

Customize template
Customize the deployment properties of this software solution.

All properties have valid values

▼ Uncategorized 4 settings

DNS Comma separated list of DNS hostnames or IP addresses
10.

Gateway Gateway IP address
10.

IP Static IP Address
10.

Netmask Netmask
255.

5. Click **Finish**.

Ready to complete
Review configuration data.

Name	223
Source VM name	PCNS_
Download size	921.1 MB
Size on disk	1.7 GB
Datacenter	223 -
Resource	10.
Storage mapping	1
Network mapping	1
IP allocation settings	IPv4, Static - Manual
Properties	DNS = 10. Gateway = IP = 10.32 Netmask =

Back Next **Finish** Cancel

VM Startup and Shutdown

To start up and shut down VM:

1. Click on the host, then click the **Configure** tab.
2. Under **Virtual Machines**, select **VM Startup/Shutdown**.
3. Click **Edit**.

Edit VM Startup and Shutdown

Default VM Settings

System influence ☒ Automatically start and stop the virtual machines with the system

Startup delay second(s) ☐ Continue immediately if VMware Tools starts.

Shutdown delay second(s)

Shutdown action

Per-VM Overrides

☒ ☐

Type	Order	VM Name	Startup Beha...	Startup Delay (s)	VMware T...	Shutdown ...	Shutdown Ac...	Shutd...
Automatic Startup								
	1		Custom	60	Do not ...	Use De...	Guest sh...	120
	2		Custom	120	Do not ...	Use De...	Guest sh...	120
	3		Custom	60	Do not ...	Use De...	Guest sh...	120
Any Order								
Manual Startup								

OK Cancel

4. Click the **System influence** checkbox.
5. In the **Startup delay** field, enter '0'.
6. In the **Shutdown action** dropdown, select **Guest shutdown**.
7. Select **<SiteCode-PCNS01>** VM and click the arrow up button to move this VM to the top of the list.

Note: VM SiteCode-PCNS01 needs to be the last VM to shut down, so it can perform its sequence of actions for the shutdown process. When PowerChute network shutdown kicks in, ESXi starts powering off the virtual machines that run on it. The order in which virtual machines are powered off is the **reverse of their startup order**. After the ESXi host powers off the first virtual machine, the host waits for the specified shutdown delay time, then powers off the next virtual machine. The ESXi host shuts down only after all virtual machines are powered off.

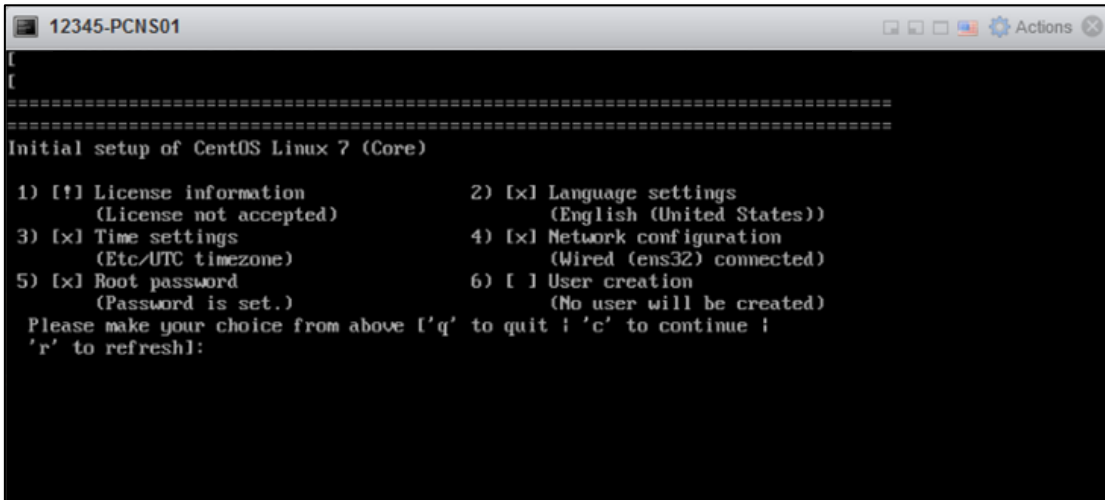
8. Under the **Startup Delay** column for **<SiteCode-PCNS01>**, double-click the startup delay value and enter '60' (for 60 seconds).

- Under the **VMware Tools** column, change value for all three VMs to **Do not continue if VMware Tools is installed**.

Note: By default, the **Continue if VMware Tools is installed** option displays. With this option, the ESXi host powers on the next virtual machine without waiting for the delay to pass. When selecting **Do not continue if VMware Tools is installed**, the ESXi host waits for the delay to pass.

PCNS Virtual Appliance Configuration

- Power ON the newly created PCNS.
- Open the new PCNS Virtual Machine console (**No GUI, it is text based**).



```

12345-PCNS01
[
[
=====
Initial setup of CentOS Linux 7 (Core)

1) [!] License information          2) [x] Language settings
   (License not accepted)          (English (United States))
3) [x] Time settings              4) [x] Network configuration
   (Etc/UTC timezone)             (Wired (ens32) connected)
5) [x] Root password              6) [ ] User creation
   (Password is set.)             (No user will be created)
Please make your choice from above ['q' to quit ; 'c' to continue ;
'r' to refresh]:

```

- Use the keyboard to navigate to options explained below:

Options	Explanation
License Agreement	Must be accepted (required)
Language Settings	Confirm English as default (optional)
Time Settings	Configure time zone to US / Pacific (required)
Network Configuration	Configure IP Address / Hostname settings (required and provided by the business)
Root Password	Password is auto generated – Change password - See KeePass
User Creation	Create ABC user / password with admin rights as provided by ABC – See KeePass