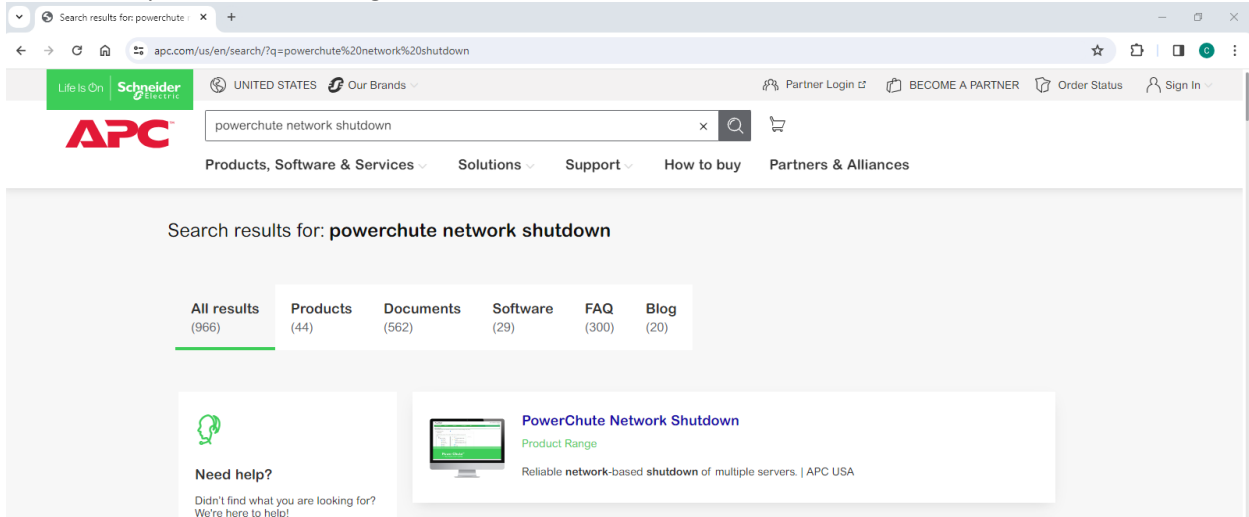
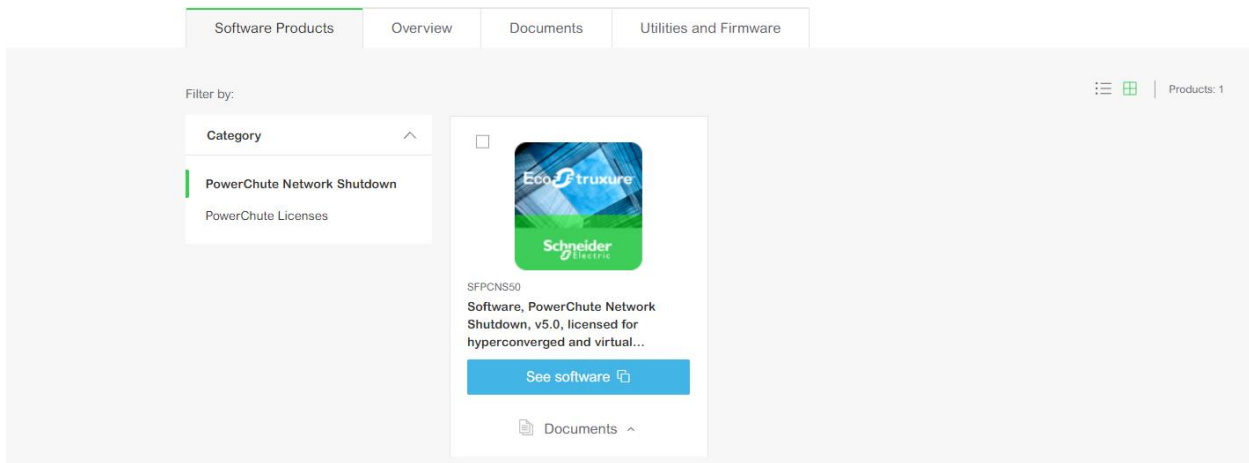


# How to install PowerChute Network Shutdown version 5.x onto a VMware ESXi host that VMware vCenter Server does not manage.

Open a web browser and go to SE.com or APC.com to download the PowerChute installer. In the example below, we navigated to APC.com and searched for PowerChute Network Shutdown.










Select PowerChute Network Shutdown, and on the next page, select See Software.

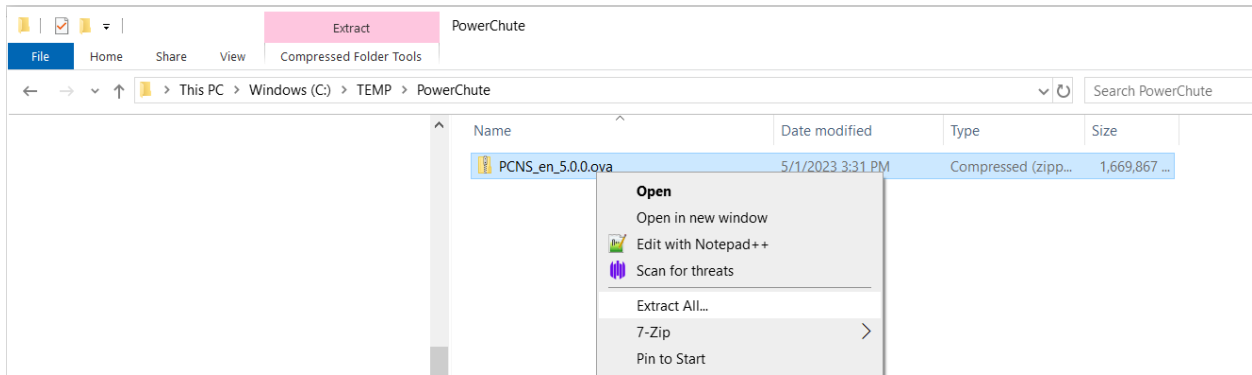


Select PowerChute Network Shutdown v5.0 VMware Virtual Appliance and click download.

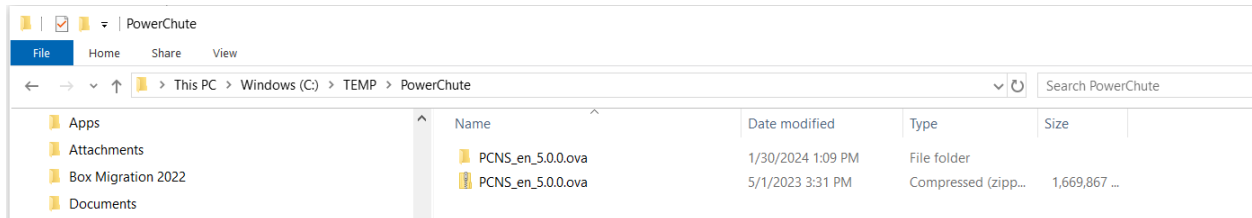
**Software, PowerChute Network Shutdown, v5.0, licensed for hyperconverged and virtual infrastr**

Available versions	Operating systems	Language	Format	Size	Date	
 PowerChute Network Shutdown v5.0 VMware Virtual Appliance (including Dell VxRail) (Version v5.0)	VMware Virtual Appliance	English	ZIP	1.6 GB	4/20/23	 
 PowerChute Network Shutdown v5.0 for Windows x64 (including Nutanix, Cisco HyperFlex, HPE SimpliVity, VMware vSAN, Hyper-V) (Version v5.0)	Microsoft Hyper-V, Windows 10, Windows Server 2016	English	ZIP	121.7 MB	4/19/23	
 PowerChute Network Shutdown v5.0 for Linux x64 (Version v5.0)	Linux, Red Hat Enterprise Linux, SUSE Enterprise Linux	English	GZ	86.5 MB	4/19/23	

Once the file has been downloaded, navigate to the download folder and uncompress the folder.



There will be an uncompressed folder named PCNS\_en\_5.x.x.ova for the English version.



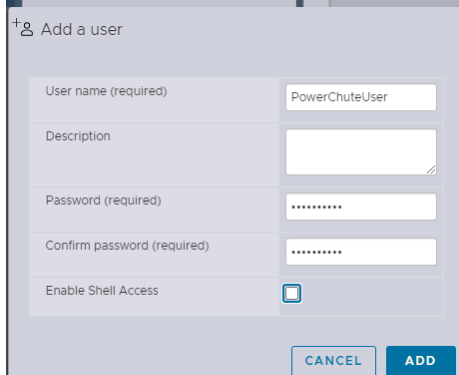
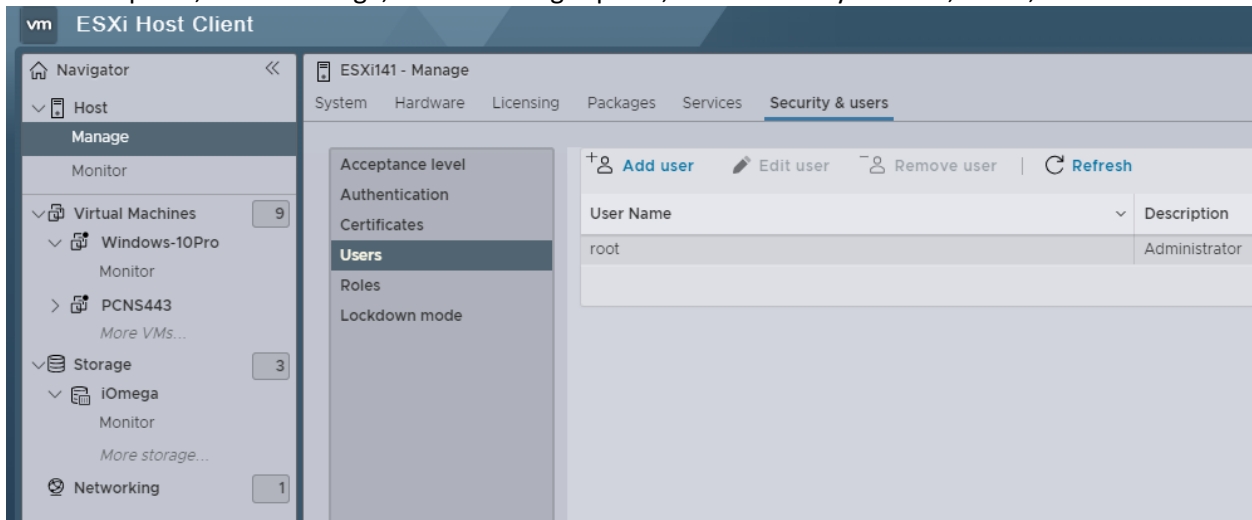
Next, log into the VMware ESXi host.

In the example below, we used a Chrome browser to log into a VMware ESXi version 8 host.

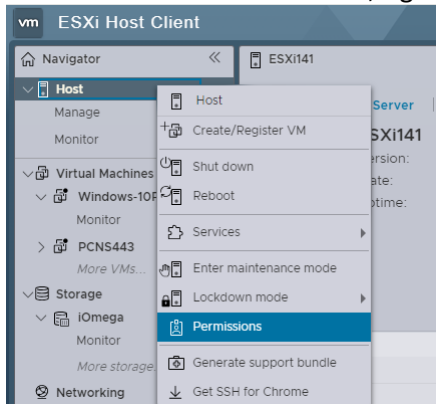


This next step is not necessary. However, we recommend creating an account that only PowerChute will use to communicate with the host.

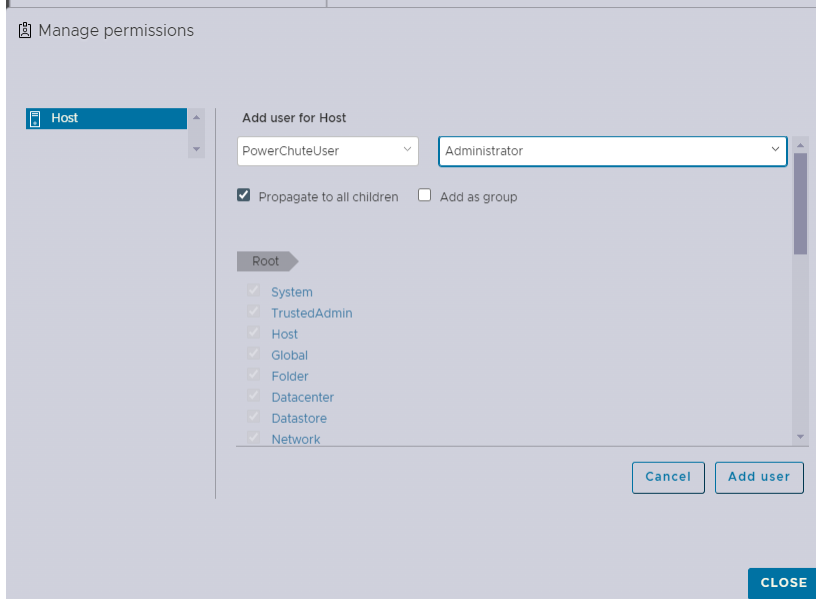
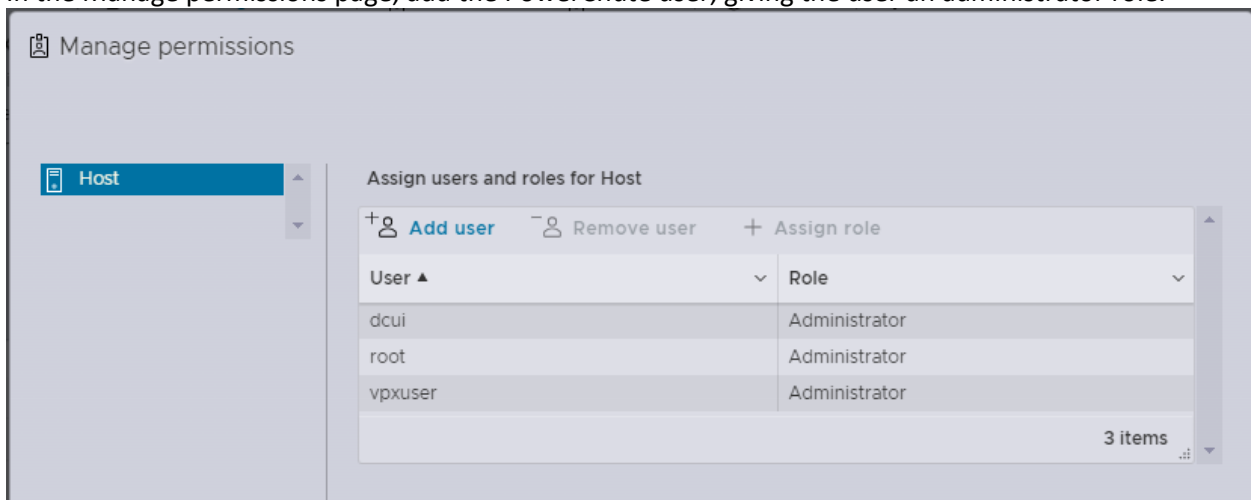
In the left panel, select Manage, then in the right panel, select Security & Users, Users, and add a user.



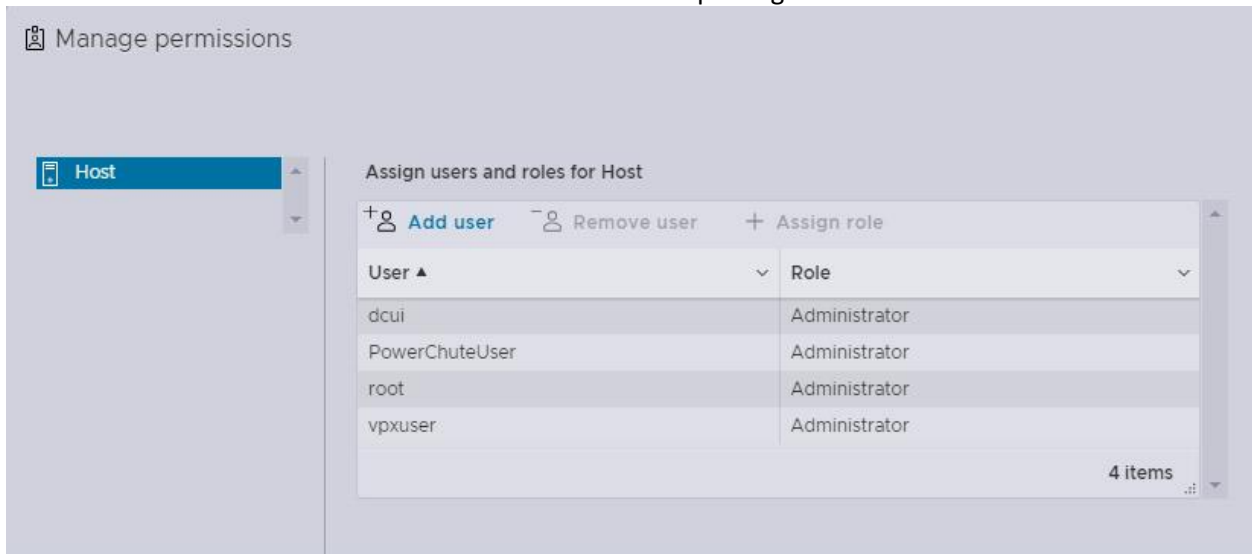
Once the user has been added, right-click Host in the left panel and select Permissions.



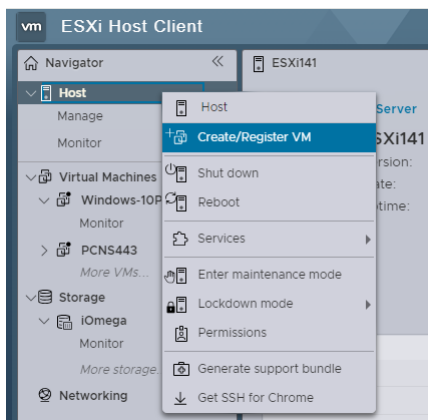
In the Manage permissions page, add the PowerChute user, giving the user an administrator role.



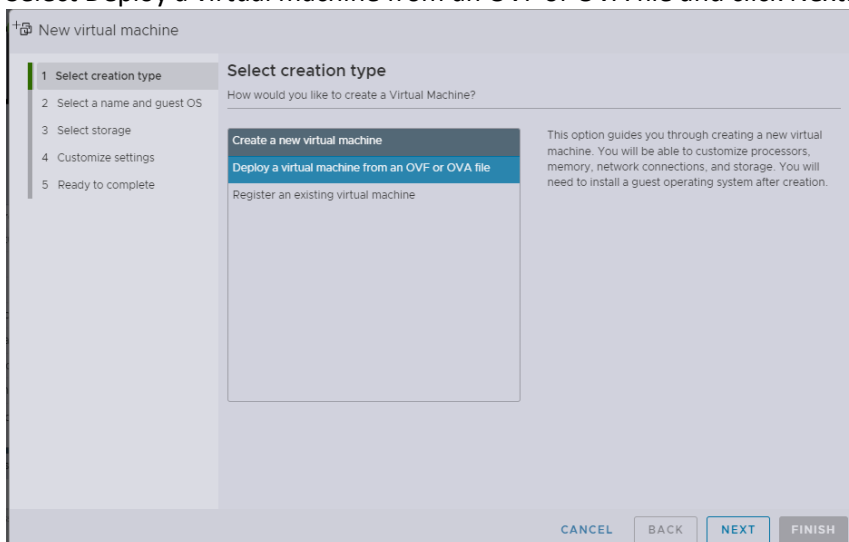
The PowerChute user has been added with Administrator privileges.



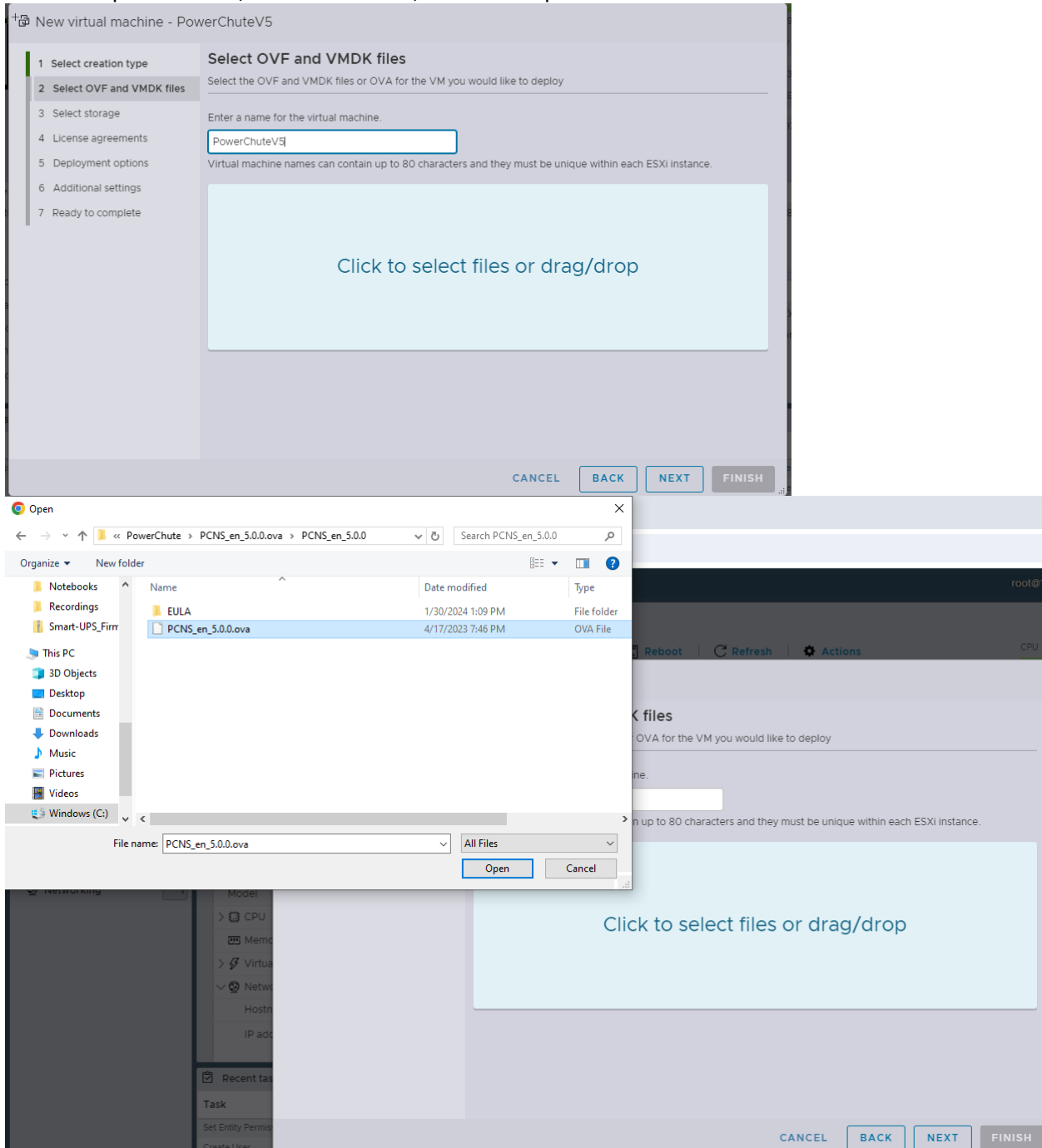
Next, install the PowerChute virtual appliance by right-clicking on Host in the left panel, Create/Register VM



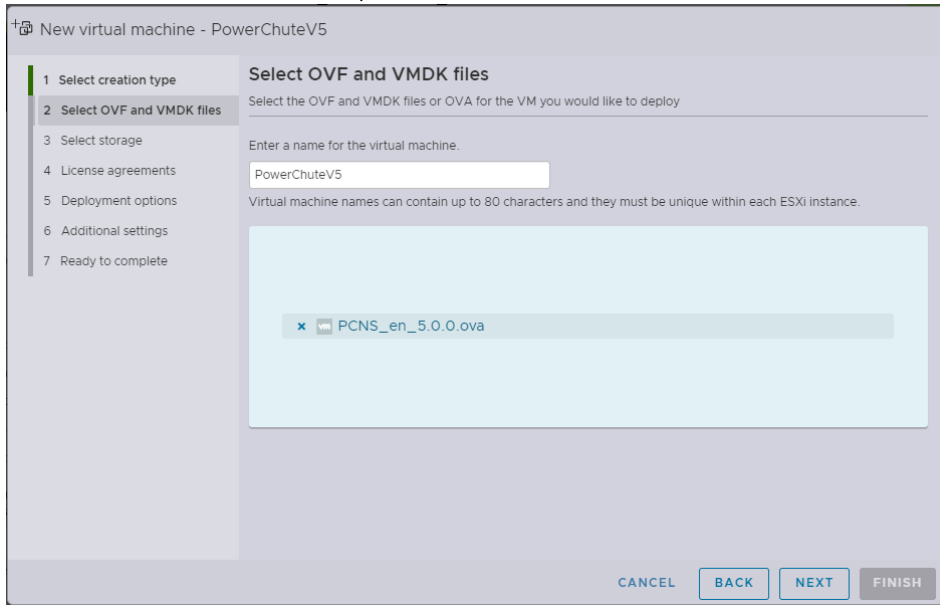
Select Deploy a virtual machine from an OVF or OVA file and click Next.



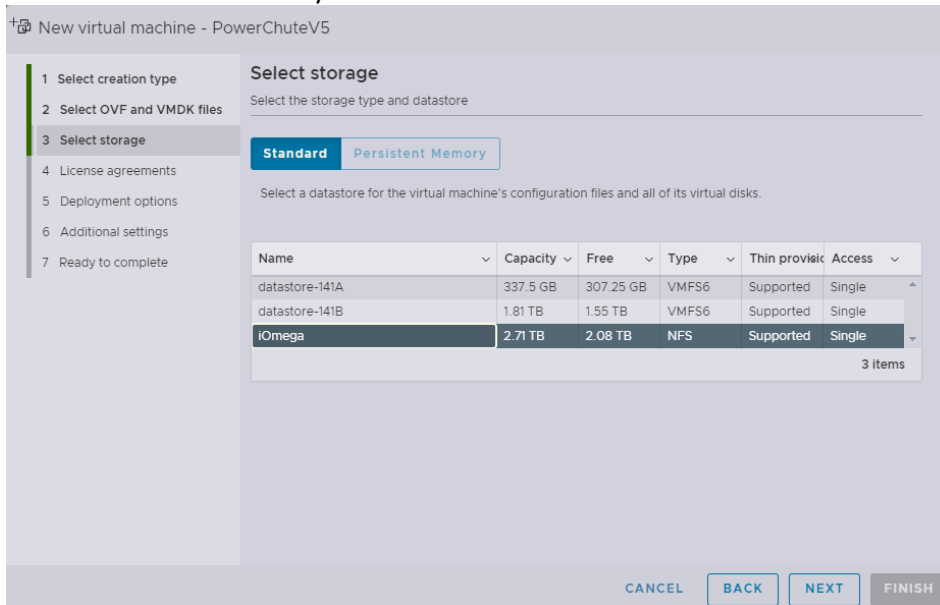
Give the VM a name and either drag and drop the uncompressed OVA onto the window or navigate to the uncompressed OVA, click on the OVA, and select open.



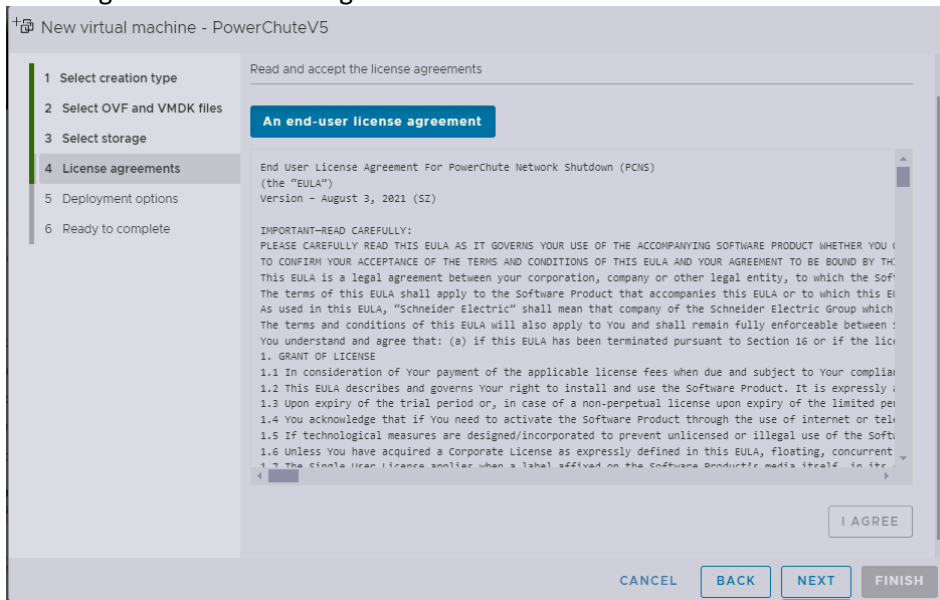
Once the ova has been added, click Next.



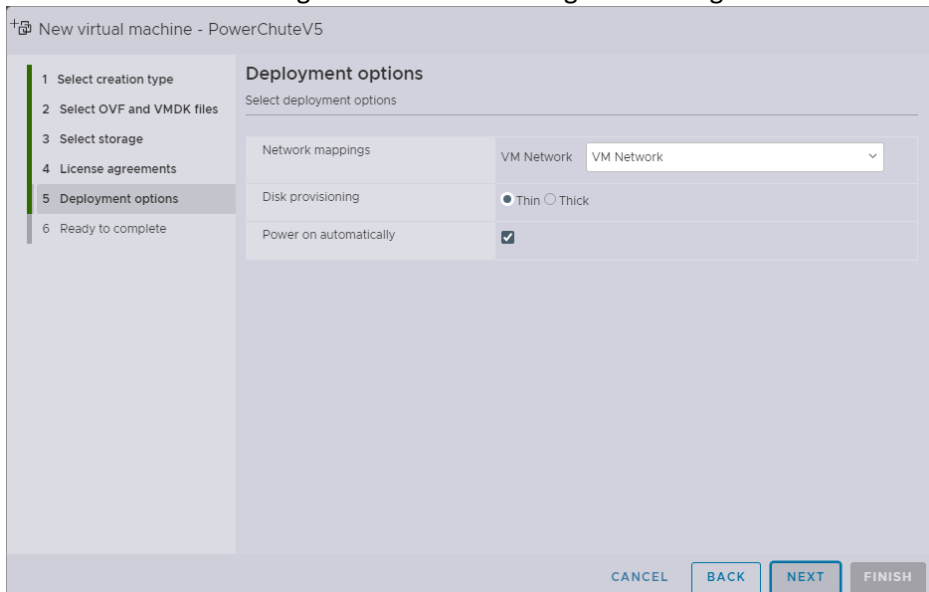
Select the drive on which you would like the VM installed and click Next.



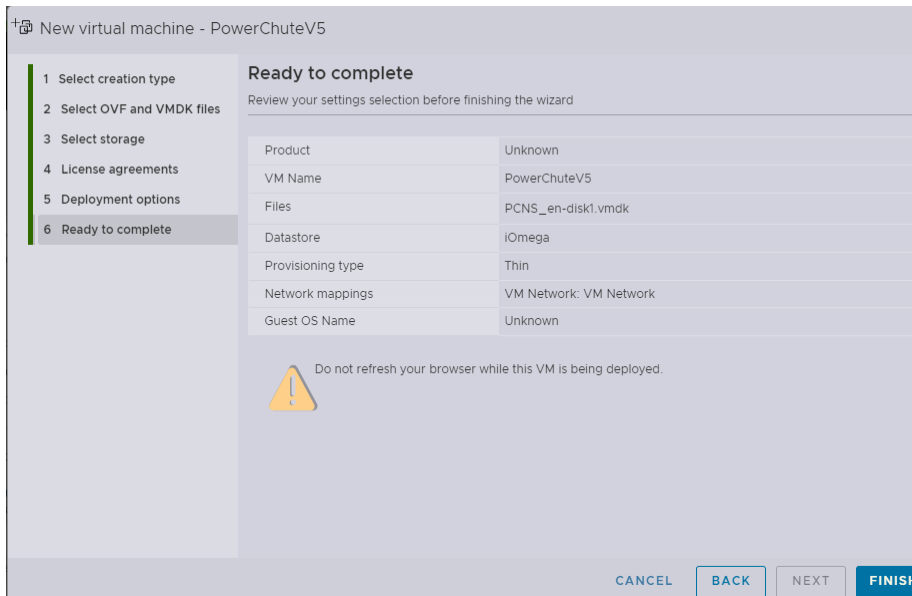
Click I Agree to the license agreement and click Next.



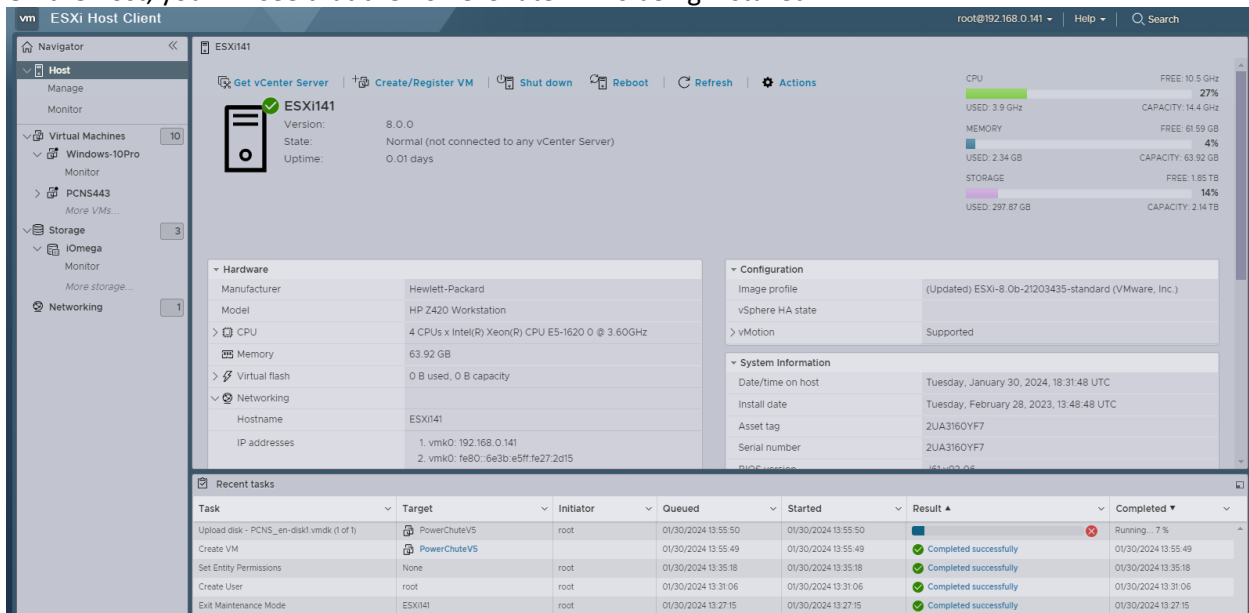
We recommend selecting Thin Disk Provisioning and clicking Next.



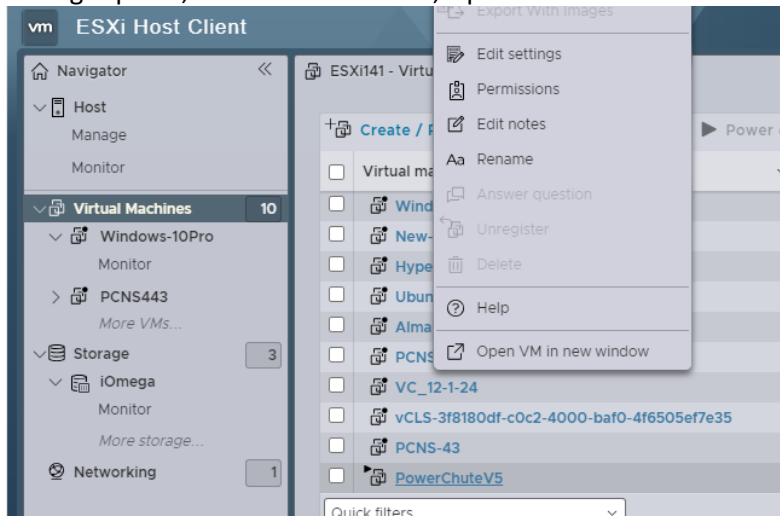
Click Finish to install the VM.



On the host, you will see that the PowerChute VM is being installed.

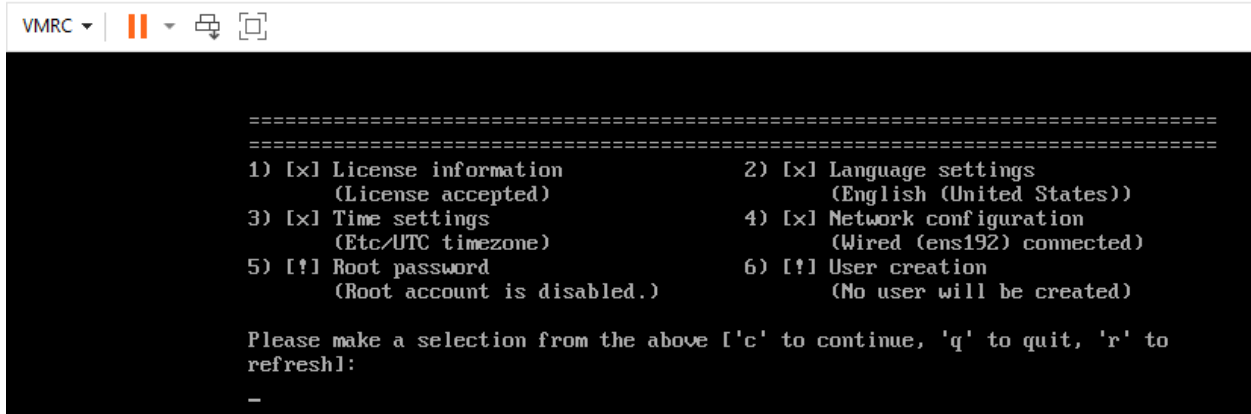


Once the VM has been installed, select Virtual Machines in the left panel, select the PowerChute VM in the right panel, and choose Console, Open Console in a new Window, or Launch remote console.

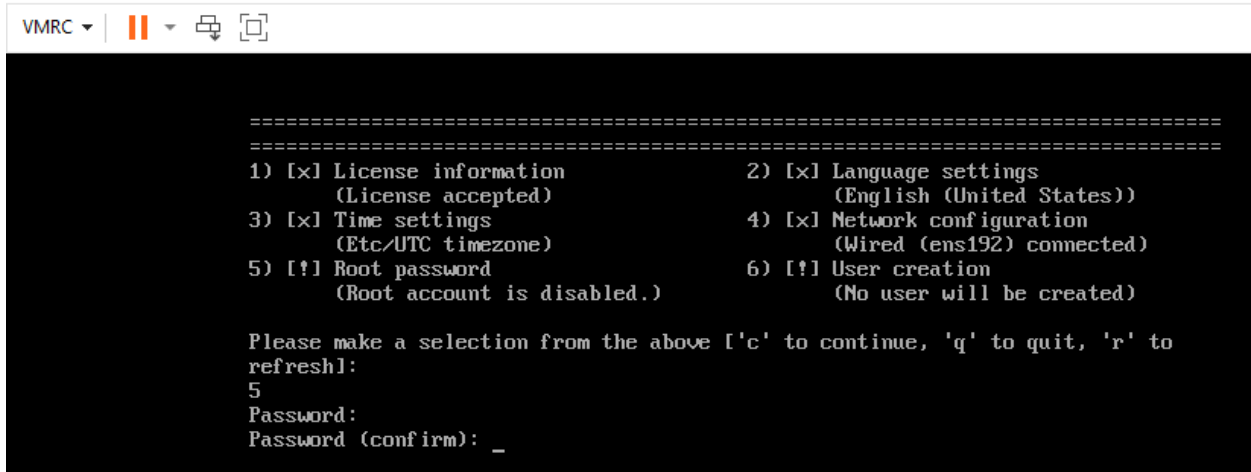


Next, you will be asked to configure the VM. You must set the root password. Enter 5, then enter the password and confirm the password.

PowerChuteV5 - VMware Remote Console



PowerChuteV5 - VMware Remote Console



You can also set the network setting (the default is DHCP), set the time zone, and add a user account. If the license agreement was not accepted earlier, you will be asked to accept it.

```
=====
=====
1) [x] License information          2) [x] Language settings
   (License accepted)             (English (United States))
3) [x] Time settings              4) [x] Network configuration
   (Etc/UTC timezone)             (Wired (ens192) connected)
5) [!] Root password              6) [!] User creation
   (Root account is disabled.)    (No user will be created)

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]:
5
Password:
Password (confirm):
=====
=====
1) [x] License information          2) [x] Language settings
   (License accepted)             (English (United States))
3) [x] Time settings              4) [x] Network configuration
   (Etc/UTC timezone)             (Wired (ens192) connected)
5) [x] Root password              6) [ ] User creation
   (Password is set.)             (No user will be created)

Please make a selection from the above ['c' to continue, 'q' to quit, 'r' to
refresh]:
-
Please select new root password. You will have to type it twice.
```

Once the configuration has been completed, enter c to continue.

NOTE: if you do not set the root password, you cannot log into the PowerChute VM. You must reinstall the VM at that point, as there is no backdoor password.

Next, log into the PowerChute VM.

```
Welcome to PowerChute Network Shutdown 5.0.0 for VMware

Please complete the PowerChute Setup wizard to ensure that your VMware Hosts and Virtual Machines
are protected.

To configure PowerChute Network Shutdown using the Setup Wizard, browse to:

https://192.168.0.167:6547/

PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.

localhost login: root
Password:
```

You will see a message stating, “PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.”

To correct the issue, start the PowerChute service and log into the PowerChute UI to set the credentials. To start the PowerChute service and to enable it to start each time the PowerChute VM is started, enter the command, **systemctl enable PowerChute; systemctl start PowerChute**.

```
localhost login: root
Password:
Last login: Tue Jan 30 19:38:22 on tty1

PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.

[root@localhost ~]# systemctl enable PowerChute ; systemctl start PowerChute
```

You will see a message that the symlink has been created.

```
localhost login: root
Password:
Last login: Tue Jan 30 19:38:22 on tty1

PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.

[root@localhost ~]# systemctl enable PowerChute ; systemctl start PowerChute
Created symlink /etc/systemd/system/default.target.wants/PowerChute.service + /etc/systemd/system/PowerChute.service.
[root@localhost ~]#
```

Next, verify that the PowerChute service has started. The command is **systemctl status PowerChute**.

```
localhost login: root
Password:
Last login: Tue Jan 30 19:38:22 on tty1

PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.

[root@localhost ~]# systemctl enable PowerChute ; systemctl start PowerChute
Created symlink /etc/systemd/system/default.target.wants/PowerChute.service + /etc/systemd/system/PowerChute.service.
[root@localhost ~]# systemctl status PowerChute
● PowerChute.service - PowerChute Network Shutdown
   Loaded: loaded (/etc/systemd/system/PowerChute.service; enabled; vendor preset: disabled)
   Active: active (running) since Tue 2024-01-30 19:35:27 UTC; 2min 32s ago
   Process: 6159 ExecStart=/usr/bin/PowerChute start (code=exited, status=0/SUCCESS)
   Main PID: 6178 (java)
     Tasks: 72 (limit: 11347)
    Memory: 349.7M
   CGroup: /system.slice/PowerChute.service
           └─6178 /opt/APC/PowerChute/jre-11.0.16.1+1/bin/java -Xrs -Xms32m -Xmx64m -Dfile.encoding=UTF-8 -Dservice=true -Dlog4j.configurationFile=log4j2.xml -D

Jan 30 19:35:24 localhost.localdomain systemd[1]: Starting PowerChute Network Shutdown...
Jan 30 19:35:24 localhost.localdomain PowerChute[6159]: PowerChute Network Shutdown, v5.0.0
Jan 30 19:35:24 localhost.localdomain PowerChute[6159]: Copyright (c) 1999-2023, Schneider Electric. All Rights Reserved.
Jan 30 19:35:27 localhost.localdomain PowerChute[6159]: Startup completed.
Jan 30 19:35:27 localhost.localdomain systemd[1]: Started PowerChute Network Shutdown.
lines 1-15/15 (END)
```

You should see active (running).

To get the prompt back, enter Ctrl c.

Next, open a web browser from a PC or laptop and navigate to the PowerChute UI. You will see the instructions when opening a PowerChute VM window.

```
Welcome to PowerChute Network Shutdown 5.0.0 for VMware

Please complete the PowerChute Setup wizard to ensure that your VMware Hosts and Virtual Machines
are protected.

To configure PowerChute Network Shutdown using the Setup Wizard, browse to:
https://192.168.0.167:6547/

PowerChute Services are disabled due to invalid credentials. Please refer to the PowerChute User Guide for recovery procedures.

localhost login: _
```

In our example, we must navigate to <https://192.168.0.167:6547>.

The first time you access the PowerChute web page, you will be warned that the connection is not private. The web browser does not recognize the PowerChute web page security certificate. PowerChute creates a default self-sign security certificate. See the [PowerChute Security Handbook](#) for more information.


Select Advanced and Proceed to the PowerChute IP address.



### Your connection is not private

Attackers might be trying to steal your information from **192.168.0.167** (for example, passwords, messages, or credit cards). [Learn more](#)

NET:ERR\_CERT\_AUTHORITY\_INVALID

 To get Chrome's highest level of security, [turn on enhanced protection](#)

Hide advanced

Back to safety

This server could not prove that it is **192.168.0.167**; its security certificate is not trusted by your computer's operating system. This may be caused by a misconfiguration or an attacker intercepting your connection.

[Proceed to 192.168.0.167 \(unsafe\)](#)

You will now see the PowerChute welcome page, and the setup wizard will walk you through completing the configuration.


Click Next.

PowerChute Setup: Welcome ?

---

Configure PowerChute Network Shutdown.

PowerChute Network Shutdown must be configured with the details of the Network Management Card(s) in the UPS(s) providing power. PowerChute cannot monitor the UPS(s) for critical events until this setup has been completed.

  
Previous Next Cancel

## Click Next.

### PowerChute Setup: Customer Experience Improvement Program

?

Configure PowerChutes: Customer Experience Improvement Program

PowerChute's Customer Experience Improvement Program ("CEIP") provides us with the information that enables us to improve our product and services, and helps us to advise you on how best to deploy and configure PowerChute.

As part of the CEIP, we will collect certain information about how you configure and use PowerChute Network Shutdown in your environment. This information is completely anonymous, and cannot be used to personally identify any individual. For more information, please refer to our [CEIP Frequently Asked Questions](#)

If you prefer not to participate in the PowerChute CEIP please uncheck the box below. You can join or leave the CEIP at any time.

Join PowerChute Customer Experience Improvement Program ("CEIP")

Previous

Next

Cancel

## Select the network type and click Next.

### PowerChute Setup: Network Configuration

?

Please select your network configuration.

- IPv4  
 IPv6

Previous

Next

Cancel

## Select Standalone VMware Host and click Next.

### PowerChute Setup: VMware Configuration

?

- Standalone VMware Host.  
 Host managed by vCenter Server.

Previous

Next

Cancel

## Enter the ESXi host's IP address or domain name and the credentials, and click Next.

### PowerChute Setup: VMware Host Details

?

Host details are required to perform graceful shutdown of the Host.

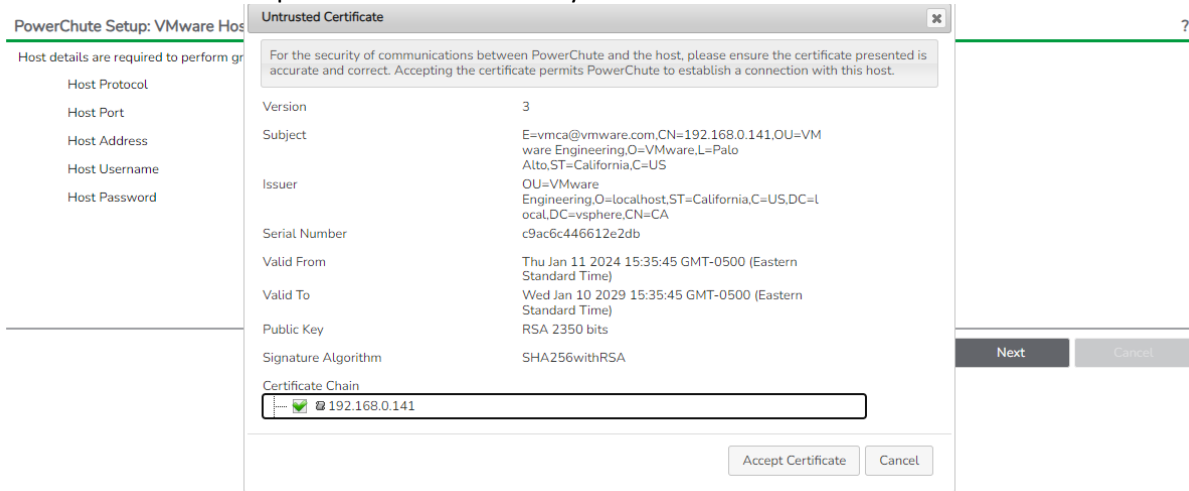
Host Protocol	<input type="text" value="https"/>
Host Port	<input type="text" value="443"/>
Host Address	<input type="text" value="192.168.0.141"/>
Host Username	<input type="text" value="PowerChuteUser"/>
Host Password	<input type="password" value="*****"/>

Previous

Next

Cancel

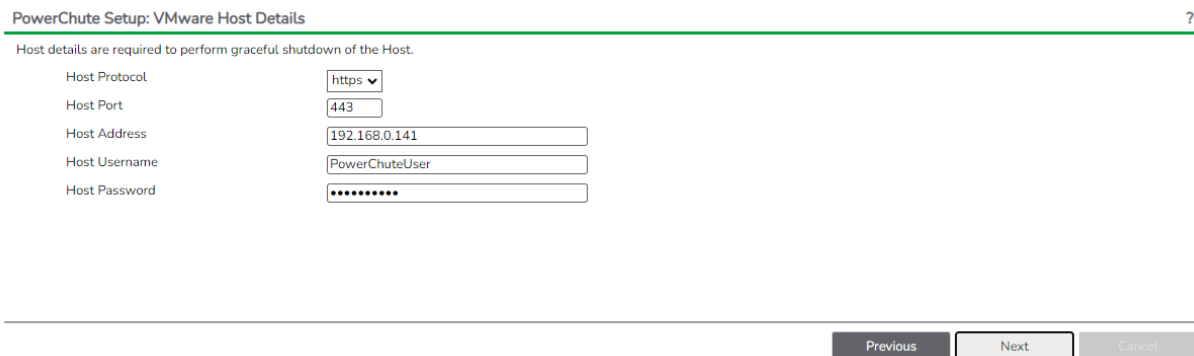
You will be asked to accept the ESXi host's security certificate to continue.




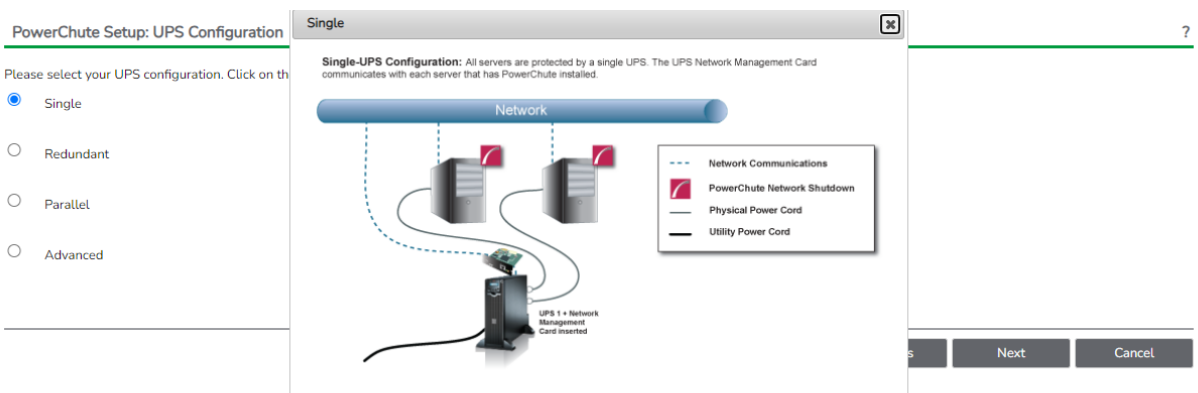
Note: if you do not accept the security certificate, you cannot proceed.

Also, if the security certificate has the canonical name, localhost PowerChute will not connect. See Schneider Electric [FAQ000257570](#) for assistance with correcting the canonical name.

After accepting the host's security certificate, click Next to continue.



On the next page, set the UPS type. The options are Single, Redundant, Parallel, and Advanced. Click on the  next to each option for a description of each option.



For our example, we selected Single and then Next to continue.

PowerChute Setup: UPS Configuration ?

---

Please select your UPS configuration. Click on the information icon for more detail.

Single ?

Redundant ?

Parallel ?

Advanced ?

---

You will be asked to enter the PowerChute username, password, and authentication phrase.

PowerChute Setup: Security ?

---

These details will be used for logging into PowerChute and for authentication with the Network Management Card.

User Name

Password

Authentication Phrase

---

The username entered and the authentication phrase must match the PowerChute username and authentication phrase assigned to the network management card(s) installed in the UPS(s) that PowerChute will communicate with. The password is unique to this PowerChute client.

Click on the question mark at the top right of the web page for information on the username, password, and authentication phrase requirements.

PowerChute Setup: Security ?

---

These details will be used for logging into PowerChute and for authentication with the Network Management Card.

User Name

Password

Authentication Phrase

---

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## Communications Settings

### PowerChute Access

HTTPS is enabled by default and provides secure access to the PowerChute user interface. You may change the Protocol to HTTP (unencrypted) and this will come into effect after you restart the PowerChute service. For more information, please see the [PowerChute Security Handbook](#) here.

### PowerChute Security

The Username and Authentication Phrase are used to authenticate communications between PowerChute and the NMC. Therefore, you must set these values to be the same in both PowerChute and the NMC.

- The maximum number of characters for the user name is 10.
- The authentication phrase must be 15 to 32 ASCII characters.
- The password specified here is unique to PowerChute. The password requires:
  - Minimum 8 and maximum 128 characters in length
  - One upper and lower case letter
  - One number and special character
  - The username cannot be part of the password.
  - Leading and trailing white spaces in passwords are removed.
  - Passwords containing a white space are kept.

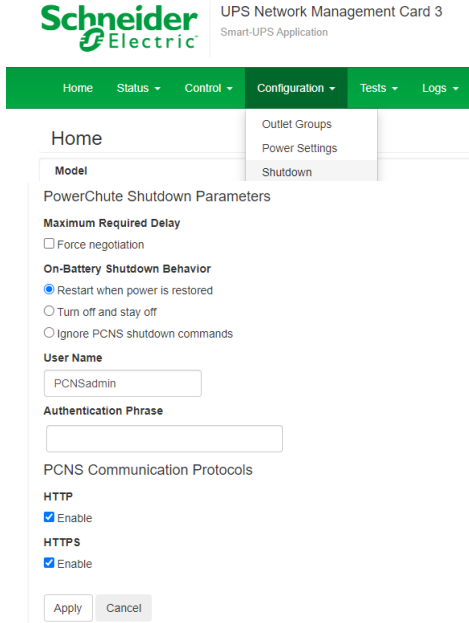
Changes to the Username, Password and Authentication Phrase are logged to the event log. For more information see [Non-Configurable Events](#).

 If you forget your password, see [Resetting your PowerChute username or password](#).

If PowerChute is registered with more than one NMC, they should all use the same administrator user name and authentication phrase.

Click the Check Details button, on the Communications Settings page to validate that the PowerChute settings are the same as the NMC(s).

The PowerChute parameters are set on the network card(s) under Configuration and Shutdown.



**Schneider Electric** UPS Network Management Card 3  
Smart-UPS Application

Home Status Control **Configuration** Tests Logs

Home

Model: Outlet Groups, Power Settings, Shutdown

**PowerChute Shutdown Parameters**

**Maximum Required Delay**

Force negotiation

**On-Battery Shutdown Behavior**

Restart when power is restored

Turn off and stay off

Ignore PCNS shutdown commands

**User Name**

PCNSadmin

**Authentication Phrase**

PCNS Communication Protocols

**HTTP**

Enable

**HTTPS**

Enable

Apply Cancel

Next, enter the IP address of the network management card and set the protocol. Click Next. The default protocol is HTTPS.

PowerChute Setup: UPS Details ?

---

Protocol	<input type="text" value="https"/>
Port	<input type="text" value="443"/>
IP Address	<input type="text" value="192.168.0.128"/>

---

You will be asked to Apply the settings.


PowerChute Setup: Confirm settings ?

---

Please confirm that the Network Management Card details below are correct.

Username:	PCNSadmin
Password:	*****
Authentication Phrase:	*****
PowerChute IP:	192.168.0.167
UPS Configuration:	Single
Network Management Card IP:	192.168.0.128
Network Management Card Protocol:	https
Network Management Card Port:	443

---




Next, you may see an error stating, “Error registering with the Network Management Card(s).” This is due to the network card(s) presenting an untrusted SSL certificate. To correct the error, click Fix Issue.

PowerChute Setup: Network Management Card Registration ?


---

Please wait while PowerChute registers with the Network Management Card(s). This may take a few minutes.

Error registering with the Network Management Card(s).

 **192.168.0.128**  
Connection error because PowerChute received an untrusted SSL certificate from <https://192.168.0.128:443>. Please add the certificate to the PowerChute keystore.  
[More information.](#)


---




Select Verify Certificate and accept the certificate.

PowerChute Setup: Certificate Management ?

Network Management Card connections cannot be established with untrusted certificates. Use the table below to verify the certificate details.


Alias	Expiry Date	Verify Certificate
192.168.0.128	2035-12-16T00:00:00Z	



Previous Next Cancel


PowerChute Setup: Certificate Management ?

Network Management Card connection

Alias	Verify Certificate
192.168.0.128	

**Untrusted Certificate**

For the security of communications between PowerChute and the host, please ensure the certificate presented is accurate and correct. Accepting the certificate permits PowerChute to establish a connection with this host.

Version	3
Subject	CN=apc1C7398,C=US
Issuer	CN=apc1C7398,C=US
Serial Number	2800e434550c0e03
Valid From	Sun Nov 05 2023 11:40:22 GMT-0500 (Eastern Standard Time)
Valid To	Sat Dec 15 2035 19:00:00 GMT-0500 (Eastern Standard Time)
Public Key	EC 726 bits
Signature Algorithm	SHA256withECDSA
Certificate Chain	 apc1C7398

Accept Certificate Cancel

Next Cancel

Note: if registering redundant UPSs, see Schneider Electric [FAQ000259214](#) for assistance with the network card certificates.

You will see “All certificates have been validated. Click next to continue”.

PowerChute Setup: Certificate Management ?

Network Management Card connections cannot be established with untrusted certificates. Use the table below to verify the certificate details.

All certificates have been validated. Click Next to continue.

Previous Next Cancel

## Click Next.

### PowerChute Setup: UPS Details

?

Protocol	<input type="text" value="https"/>
Port	<input type="text" value="443"/>
IP Address	<input type="text" value="192.168.0.128"/>

Previous Next Cancel

## Select Apply.

### PowerChute Setup: Confirm settings

?

Please confirm that the Network Management Card details below are correct.

Username:	PCNSadmin
Password:	*****
Authentication Phrase:	*****
PowerChute IP:	192.168.0.167
UPS Configuration:	Single
Network Management Card IP:	192.168.0.128
Network Management Card Protocol:	https
Network Management Card Port:	443



Previous Apply Cancel

## PowerChute will register with the network card.

### PowerChute Setup: Network Management Card Registration

?

Please wait while PowerChute registers with the Network Management Card(s). This may take a few minutes.

Registration with the Network Management Card(s) successful.

✓ **192.168.0.128**  
Communications established.

Show Log

Fix Issues Next Cancel

## If the UPS has outlet groups, you will be asked to select an outlet group and click Apply.

### PowerChute Setup: Select Outlet Group

?

Please select the UPS Outlet Group that the server is connected to.

✓ **192.168.0.128**  
Outlet Group:

- Unswitched Group: On
- Outlet Group 1: On

Previous Apply Cancel

PowerChute will register with the outlet group, then click Next.

PowerChute Setup: Outlet Group Registration

?

Please wait while PowerChute registers with the Outlet Group.

Outlet Group Registration successful.

✔ 192.168.0.128  
Successfully registered with Outlet Group: Outlet Group 1.

Fix Issues

Next

Cancel

On the next page, you will be asked to select UPS behavior and click Next. Then, select the question mark in the upper right of the page for a description of the shutdown options.

PowerChute Setup: UPS Shutdown

?

Please select required UPS behavior after connected servers have been gracefully shut down.

- Do not turn off the UPS
- Turn off the UPS
- Turn off the UPS Outlet Group

Previous

Next

Cancel

You would want PowerChute to turn off the UPS following an event to allow the UPS to preserve battery life and to start the system once AC has been restored.

The setup is now finished. Click Finish to exit to the PowerChute UI Home page.

PowerChute Setup: Finish

?

Click [here](#) for information on configuring shutdown events.

Automatically check for PowerChute update notifications.

Previous

Next

Finish

Event Log ?

Delete Log File Export Log

Display 20 events

Events 1 to 6 of 6

First Previous 1 Next Last

Date	Time	Event
01/30/2024	20:22:38	Communication has been established.
01/30/2024	19:36:14	PowerChute successfully accessed TCP port 6547.
01/30/2024	19:36:13	PowerChute is attempting to access TCP port 6547.
01/30/2024	19:36:05	PowerChute successfully accessed UDP port 3052.
01/30/2024	19:36:05	PowerChute is attempting to access UDP port 3052.
01/30/2024	19:36:05	PowerChute Network Shutdown version 5.0.0 monitoring started.

For assistance with configuring shutdown settings, see Schneider Electric [FAQ FA326148](#).

To run the setup wizard again, go to Configuration, PowerChute Setup.

The screenshot shows the PowerChute Network Shutdown interface with the Configuration menu open. The menu items are: Configure Events, Communications Settings, Shutdown Settings, SSH Settings, SNMP Settings, and PowerChute Setup (which is highlighted in green). The background shows the Event Log table with the same data as in the previous image.