PowerChute Configuration File

Using pcnsconfig.ini

990-9921A

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Using the PowerChute Configuration file

PowerChute Network Shutdown (PowerChute) stores configuration settings in an INI file. This document outlines the format of the INI file, and how it can be used.

The INI file can be used as follows:

- To copy your configuration settings from one PowerChute installation to another.
- To edit settings which are not configurable using the user interface.
- Create a backup of your configuration settings.

Copying Configuration Settings to other PowerChute installations

After configuring settings in one PowerChute installation, you can use that INI file to apply settings to other PowerChute installations. Certain information like the IP address of the PowerChute agent machine or the Network Management Card (NMC) may need to be changed.

To copy settings between installations:

1. Create a copy of the INI file and make any IP address changes necessary.
2. At the second PowerChute installation, stop the PowerChute service, and copy the edited version of pcnsconfig.ini to the group1 folder (where PowerChute is installed) in order to replace the existing version.
3. Re-start the PowerChute service to ensure that the new settings are applied.
4. Check the Event Log to make sure there were no errors while applying the changes.

INI Settings You Can Edit

Some examples of using the INI file to change your settings are given below.

- If you forget or lose your **password**, you can set a new one and also change the user name and authentication phrase by editing the pcnsconfig.ini file.
- When the **Event Log** file size reaches 1000 entries, the oldest third of the file is deleted. You can change this value using the INI file, see the Event Log section.
- The **Low Battery** event is not configurable through the user interface but it can be configured using the INI file. See the Event Configuration section.
- When the PowerChute server operating system issues a shutdown command, there is a pause of 70 seconds until it executes. This is made up of shutdownDelay (10 seconds) and shutdownCommandDuration (60 seconds) in the INI file.

Editing the INI File

The INI file can be edited using any text editor. It is recommended to make a copy of the INI file and save it outside the group1 folder where PowerChute is installed. A service re-start is required for the new settings to take effect.

INI File Format

INI files are simple text files with a basic structure. It consists of properties, sections, and comments, as detailed below.

Properties

Every property has a name and a value, separated by an equals sign (=).

For example:

name = value

Sections

Properties are grouped into sections. The section name appears on a line by itself enclosed in square brackets. Sections end at the next section declaration or the end of the file. Sections may not be nested.

For example:

[Section 1]

Comments

A hash (#) or a semicolon (;) indicates the start of a comment. Comments continue to the end of a line. Everything between the semicolon and the end of the line is ignored during any processing.

For example:

This is a comment

How PowerChute Uses the Configuration INI File

The INI files are in the installation directory and consist of:

- <installation folder>\group1\pcnsconfig.ini
- <installation folder>\group1\ pcnsconfig_backup.ini

Any configuration options you change using the user interface are written to these INI files. For example, when you enable a shutdown action for an event, the INI file is automatically updated.

The main INI file (pcnsconfig.ini) is read automatically when the PowerChute service starts. Its contents are also validated at that time.

Pcnsconfig_backup.ini is the backup INI file. When reading from the main INI, if a validation error occurs, the last known good value is sought in the backup. If this value can be substituted, it is, and a warning message is written to the PowerChute Event Log.

If a backup INI file value is missing or invalid, a default value is substituted where possible.

INI File Validation

The help text below describes how PowerChute validates the properties contained in the INI file.

Missing Entries

An entry is considered missing if it is not available in both the main and the backup INI files. In this case, the value is replaced by a default value if one exists.

If an entry is missing from the main INI file, but present in the backup INI file then PowerChute looks for the last known good value in the backup INI file. (PowerChute also looks at the backup file if values are invalid, e.g. text is present instead of a number).

Duplicate Entries

PowerChute applies the first value specified in a section only.

For example:

[NetworkManagementCard]

port = 80

port = 81

In this case the value applied by PowerChute is 80.

Missing Configuration File

If both INI files are missing, PowerChute will not run. If you have a backup copy of the files, you can copy them into the group1 folder and re-start the service. Otherwise PowerChute must be re-installed.

INI Error Messaging

As the INI file and its contents are validated, a number of error messages might be generated. These appear in the event log. These messages are given in the table below.

Error Message	Cause
ERROR: The ini file is missing the required [Section Name] section.	A required section is missing from the INI file.
WARNING: The ini file has entries defined outside of a section.	The INI contains values in the global area (outside of a section).
WARNING: The invalid section [section name] should be removed from the ini file.	An unrecognized section is defined in the INI file.
ERROR: The ini file is missing [key name] key from section [section name].	An INI property is missing. This will only occur if a property is missing from both main and backup INI files.

Error Message	Cause
ERROR: The ini file could not find IP address information in section [NetworkManagementCard].	No NMC card details are specified in the INI file.
WARNING: The ini file has detected duplicate values for [property name] in section [section name].	Duplicate properties are detected within a section. PowerChute will use the value for the first property.
WARNING: The invalid key [property name] should be deleted from section [section name] in the ini file.	Unrecognized additional properties are defined in sections.
ERROR: The ini contains an invalid value for [property name] in section [section name]	An invalid value for a property is specified. A substitute value is unavailable. (Substitute values are sought in the backup INI file, or a defined default is used).
ERROR: The ini contains an invalid value for [property name] in section [section name]. Using [property value] instead. Please validate the configuration.	An invalid value for a property is specified. A substitute value is available. Substitute values are sought in the backup INI file, or a defined default is used.
FATAL ERROR: PowerChute cannot find the configuration file (pcnsconfig.ini) or the backup configuration file (pcnsconfig_backup.ini). Shutting down.	The INI files are missing.
ERROR: The key [property name] in section [section name], failed to match the supplied regular expression.	A property value does not match its validating regular expression e.g. entering alphabetic characters where an integer value is expected.
ERROR: Could not convert the value of [property name] in section [section name] to its expected type.	The property value could not be converted to its expected type.
ERROR: Event [event name] is enabled for command file execution, but an invalid value for [property value] is specified.	An event is enabled for command file execution, but one of the command parameters has failed validation e.g. incorrect path to the command file.

Error Message	Cause
WARNING: Disabling command file execution for event [event name] due to bad parameters. Please validate the configuration.	An event is enabled for command file execution, but one of the command file parameters has failed validation.

Sections, Properties, and Values in pcnsconfig.ini

The following sections appear in pcnsconfig.ini:

- [NetworkManagementCard]
- [EventLog]
- [Shutdown]
- [Networking]
- [Events]
- [AdvancedConfig]
- [SNMP]
- [HostDetails] – Virtualization only
- [HostConfigSettings] – Virtualization only
- [VMPrioritization] - Virtualization only
- [advanced_ups_setup_X]
- [NutanixClusterDetails] - Virtualization only
- [SimpliVityClusterDetails] - Virtualization only
- [HyperFlexClusterDetails] - Virtualization only
- [SSHActionX]

[NetworkManagementCard]

This section stores configuration settings for the Network Management Card as outlined in the table below.

Property	Value|Format	Default	Description
mode	single|redundant|parallel|advanced		UPS Configuration type.
IP_1 – IP_9	IPv4|IPv6 Address		IP Addresses of the Network Management Cards.
IP_1_Outlet - IP_9_Outlet	0 – Main Outlet Group 1 – Switched Outlet Group1 2 – Switched Outlet Group2 3 – Switched Outlet Group3	0 or 1	If the UPS is outlet aware this represents the outlet group that the equipment is being powered by.
port	80 or 443	80	The port in use for the NMC Web Interface.
protocol	http|https	http	The protocol in use for the NMC Web Interface.

Property	Value|Format	Default	Description
enrolWithNMC	true|false	true	Specifies whether PowerChute should register with the NMC.
acceptCerts	true|false	false	This is used when PowerChute is configured to communicate with the NMC using HTTPS. If enabled PowerChute will accept self-signed SSL certs.
The properties below can be used to re-set the PowerChute username, password and authentication phrase. On service startup the values are read from the INI file, encrypted and stored internally. The properties and values are then deleted from the INI file for security reasons.			
username	10 alphanumeric characters		Used to access the PowerChute UI. Must match an admin user on the NMC.
password	3-32 ASCII characters		Used to access the PowerChute UI.
authenticationPhrase	15-32 ASCII characters		Used for authentication with the NMC.

[EventLog]

This section has configuration settings for the PowerChute event log.

Property	Value|Format	Default	Description
logsize	500 - 10000	1000	The maximum number of log entries in the event log. When this value is reached the oldest one-third of the file is deleted.
logfile	Path to the log file.	EventLog.txt	This is the path to the Event log file – by default this is located in the group1 folder where PowerChute is installed.

[Shutdown]

This section contains settings relating to the shutdown behavior for PowerChute.

Property	Value	Default	Description
shutdownCommand			This is the path to the command file or shell script that performs local OS shutdown.
shutdownCommandDuration	0-172800 seconds	60	Grace period once the OS shutdown starts.
shutdownCommandFileEnabled	true|false		

Property	Value	Default	Description
shutdownCommandFileDelay	0-172800 seconds	30	Delay before executing the command file
shutdownCommandFile	Path to command file		Users can configure a command file to execute prior to shutting down the OS.
shutdownCommandFileDuration	0-172800 seconds		Time allowed for shutdown command file to execute.
turnOffUps	true|false	false	Specifies whether PowerChute should issue a command to turn off the UPS during the shutdown sequence.
turnOffSOG	true|false	false	Specifies whether PowerChute should issue a command to turn off the UPS outlet group during a shutdown sequence.
shutdownDelay	0-172800 seconds	10	This is the delay before starting the OS shutdown when PowerChute is installed on a physical machine.
event_ShutdownStarting_enableLogging	true|false	true	Log an event when OS shutdown starts.
runtimeRemainingThreshold	0-172800 seconds	0	Value from the "Runtime Remaining Below Threshold" event shutdown action.
runtimeRemainingCmdFileThreshold	0-172800 seconds	0	Value from the "Runtime Remaining Below Threshold" event command file action.
executeCommandFileAfterHostShutdown	true|false	false	Managed VMware/SCVMM configurations where PowerChute is installed on a physical machine only.

[Networking]

This section contains network configuration settings for PowerChute.

Property	Value|Format	Default	Description
protocol	http|https	https	Protocol in use for the PowerChute UI
httpPort	3052	3052	HTTP Web UI port.
httpsPort	6547	6547	HTTPS Web UI port.
NetworkConfig	IPV4|IPV6	IPV4	Specifies whether PowerChute should use IPv4 or IPv6 to communicate with the NMC.
VirtualInstall	VMware|Hyper-V		Set during installation. Determines whether Virtualization support is enabled.

MulticastAddress	IPv6 Multicast address		IPv6 multicast address to register on the NMC.
IPv6NetworkConfig	unicast|multicast	unicast	Determines whether the NMC will send IPv6 unicast or multicast UDP packets to PowerChute.
localHostAddress	IPv4 address of the PowerChute machine.		IPv4 address for the PowerChute Network Interface card.
UnicastAddress	IPv6 Address		IPv6 unicast address to register on the NMC.
isPCNSonVM	true|false		This is enabled by default if PowerChute is running on a virtual machine. This setting should not be edited. (VMware only)

[Events]

This section stores configuration settings for all of the events that PowerChute supports. Some of the events are not configurable via the main UI. Some events are not applicable depending on your UPS model.

Every event has the event action properties listed below:

Property	Value|Format	Description
event_EventName_enableLogging	true|false	An entry is written to PowerChute event log. This is enabled by default for all events.
event_EventName_enableCommandFile	true|false	Execute a command file when the event occurs.
event_EventName_commandFilePath	C:\test.cmd	Full path to the command file.
event_EventName_commandFileDelay	0 – 172800 seconds	Delay after the event occurs before executing the command file.
event_EventName_commandFileDuration	0	This property is obsolete and should not be used.
event_EventName_enableShutdown	true|false	Start a shutdown sequence if the event occurs.
event_EventName_shutdownDelay	0-172800 seconds	Delay after the event occurs before starting the shutdown sequence.

Event Names

Event Names are listed in the table below.

Property	Description	Configurable in UI	Shutdown Enabled by Default
PowerFailed	UPS has switched to battery power.	Yes	No
PowerRestored	UPS is no longer running on battery power or output power has been turned on.	Yes	No
Overload	UPS output overload.	Yes	No
OverloadSolved	UPS overload condition has been corrected.	Yes	No
PowerOff	UPS has turned off.	Yes	No
RunTimeExceeded	Available runtime has been exceeded.	Yes	No
RunTimeWithinRange	Available runtime is sufficient.	Yes	No
BatteryDischarged	Battery is discharged.	Yes	No
BatteryChargeInRange	Battery has recharged.	Yes	No
LowBattery	Low-battery condition occurred.	No	Yes
ReturnFromLowBattery	UPS is no longer running on battery power or output power has been turned on.	No	No
FaultBypassEnabled	UPS in Bypass due to an internal hardware problem or UPS overload.	Yes	No
BypassEnabled	UPS has switched to bypass in response to the UPS front-panel or a user-initiated software command, typically for maintenance.	Yes	No
BypassManualEnabled	UPS has switched to bypass in response to the bypass switch at the UPS, typically for maintenance.	Yes	No
BypassDisabled	UPS no longer in Bypass.	Yes	No

Property	Description	Configurable in UI	Shutdown Enabled by Default
BypassContactorFailed	Bypass switch is not working properly.	Yes	No
BypassContactorOk	Bypass switch has been replaced.	Yes	No
CommunicationLostOnBattery	Communication has been lost while on battery.	Yes	No
CommunicationLost	Management Card cannot communicate with the UPS.	Yes	No
NetCommunicationLost	PowerChute cannot communicate with the Management Card.	Yes	No
CommunicationEstablished	Communication has been established.	No	No
CannotCommunicateResolved	Communication has been established.	No	No
CannotCommunicate	PowerChute cannot communicate with Network Communication Card	No	No
MonitoringStarted	PowerChute Network Shutdown version X monitoring started.	No	No
MinRedundancyLost	Minimum redundancy lost.	Yes	No
ParallelRedundancyLost	Parallel redundancy lost.	Yes	No
MinRedundancyRegained	Minimum redundancy restored.	Yes	No
ParallelRedundancyRegained	Parallel redundancy restored.	Yes	No
MaxInternalTempExceeded	UPS has overheated which can cause damage.	Yes	No
MaxInternalTempInRange	UPS is no longer overheated.	Yes	No
MinLoadCapabilityLost	The load has exceeded the user specified alarm threshold.	Yes	No

Property	Description	Configurable in UI	Shutdown Enabled by Default
MinLoadCapabilityRegained	The load no longer exceeds the user specified alarm threshold.	Yes	No
PowerSourceTurnOffInitiated	UPS Turn off has been initiated.	No	Yes
PowerSourceTurnOffCancelled	UPS Turn off has been cancelled.	No	No
TurnOffUpsStarting	Outlet on UPS is turning off / UPS is turning off.	No	No
ShutdownOnBattery	Internal only.	No	No
SinglePowerRestored	The On Battery UPS is no longer running on Battery power or output power has been turned on.	No	No
SingleOutletRestored	The On Battery UPS is no longer running on Battery power or output power has been turned on.	No	No
MultipleCriticalEvent	Multiple Critical Events occurred.	No	Yes
CriticalEvent	UPS Critical event <event name> has occurred.	No	Yes
MultipleCriticalEventResolved	Multiple Critical Events resolved.	No	No
CriticalEventResolved	UPS Critical event <event name> resolved.	No	No
ParallelSilconNotSupported	Parallel-UPS Configuration not supported at address [ip_address].	No	No
ParallelSilconSupported	Parallel-UPS Configuration supported at address [ip_address].	No	No
AccountLockOut	Three unsuccessful logon attempts detected.	No	No

Property	Description	Configurable in UI	Shutdown Enabled by Default
UPSOutletTurnOffInitiated	Turning off outlet [Outlet Name] on UPS [NMC IP Address]	No	Yes
OutletOff	Outlet Group X is turned off for NMC X.	No	No
UPSMainOutletTurnOffInitiated	Turning off outlet [Outlet Name] on UPS [NMC IP Address]	No	Yes
UPSOutletTurnOffInitiatedCancelled	Outlet group turn off cancelled.	No	No
OutletOn	Outlet group X has turned on.	No	No
RemoteShutdownEvent	An external manager has initiated a UPS critical event via the REST interface.	No	Yes
RemoteShutdownEventResolved	An external manager has resolved a UPS critical event via the REST interface.	No	No
The Events below relate to Environmental Monitoring using AP9810 and/or AP9631 + AP9335TH probe			
ContactFault1	Contact 1 Alarm.	Yes	No
ContactFault2	Contact 2 Alarm.	Yes	No
ContactFault3	Contact 3 Alarm.	Yes	No
ContactFault4	Contact 3 Alarm.	Yes	No
ContactNormal1	Contact 1 Normal.	Yes	No
ContactNormal2	Contact 2 Normal.	Yes	No
ContactNormal3	Contact 3 Normal.	Yes	No
ContactNormal4	Contact 4 Normal.	Yes	No
HumidityOutOfRangeProbe1	Humidity out of Range Probe 1.	Yes	No
HumidityOutOfRangeProbe2	Humidity out of Range Probe 2.	Yes	No
HumidityInRangeProbe1	Humidity In Range Probe 1.	Yes	No

Property	Description	Configurable in UI	Shutdown Enabled by Default
HumidityInRangeProbe2	Humidity In Range Probe 2.	Yes	No
TempOutOfRangeProbe1	Ambient Temperature Out Of Range Probe 1.	Yes	No
TempOutOfRangeProbe1	Ambient Temperature Out Of Range Probe 2.	Yes	No
TempInRangeProbe1	Ambient Temperature In Range Probe 1.	Yes	No
TempInRangeProbe1	Ambient Temperature In Range Probe 2.	Yes	No
EnvironmentCommunicationLost	Communication lost with Environmental Monitor.	Yes	No
EnvironmentCommunicationEstablished	Communication established with the Environmental Monitor.	Yes	No
EnvironmentNoCommunicationSinceLastReboot	Cannot communicate with the Environmental Monitor.	No	No
IntegratedEnvCommunicationEstablished	Communication established with the Environmental Monitor.	No	No

[AdvancedConfig]

This section applies for Redundant UPS Configurations only. The settings below are used to trigger a UPS/Outlet Group turn off if one UPS in the Redundant Configuration switches to Battery power.

Property	Value|Format	Default	Description
SinglePowerFailed_enableLogging	true|false	true	
SinglePowerFailed_enableCommandFile	true|false	false	
SinglePowerFailed_turnOffUps	true|false	false	Turn off Single UPS/Outlet group on battery.
SinglePowerFailed_turnOffUpsDelay	0-172800 seconds		
SingleOutletOff_enableLogging	true|false	true	PowerChute internal setting – do not modify.
SingleOutletOff_enableCommandFile	true|false	false	PowerChute internal setting – do not modify.

Property	Value|Format	Default	Description
SingleOutletOff_turnOffUps	true|false	false	PowerChute internal setting – do not modify.
SingleOutletOff_turnOffUpsDelay	0-172800 seconds	0	PowerChute internal setting – do not modify.
event_SingleOutletOff_enableShutdown	true|false	false	PowerChute internal setting – do not modify.

[SNMP]

This section stores the settings for the PowerChute SNMP configuration. Some of the settings are not configurable via the main UI (e.g. SNMP_DiscoveryPort).

Note: Properties containing the character *N* indicate a user profile number.

Property	Value|Format	Default	Description
SNMP_DiscoveryPort	Integer value	161	Enable SNMP and specify the SNMP discovery port. The default value is 161. Edit this value to change the port upon which PowerChute can be discovered via SNMP. **Note**: If this property is not defined, SNMP functionality will not be enabled in PowerChute.
SNMPv1_Enabled	true|false	true	Enter True to enable SNMPv1.
SNMPv1_Name_Profile_*N*	Alphanumeric		Enter the SNMPv1 community name, up to 15 ASCII characters.
SNMPv1_NMS_Profile_*N*	IPv4 | IPv6 Address	0.0.0.0	Enter the IP address of the Network Management System.
SNMPv1_AccessType_Profile_*N*	READONLY | READWRITE | DISABLED		Specify the Access type of the SNMP community: • READONLY: Only SNMP GET requests are permitted. • READWRITE: SNMP GET and SET requests are permitted. • DISABLED: No SNMP GET or SET requests are permitted.
SNMPv3_Enabled	true|false		Enter True to enable SNMPv3.

Property	Value|Format	Default	Description
SNMPv3_Name_Profile_*N*	Alphanumeric		Specify the user name of the SNMPv3 user profile, up to 32 ASCII characters.
SNMPv3_AUTH_PROTOCOL_Profile_*N*	SHA1 | SHA256 | SHA512 | MD5 | NONE		Specify the Authentication protocol of the SNMPv3 user profile.
SNMPv3_AUTH_PASSPHRASE_PROFILE_N	Alphanumeric		Specify the Authentication passphrase of the SNMPv3 user profile of 8-32 characters.
SNMPv3_PRIV_PROTOCOL_Profile_*N*	AES128 | AES192 | AES192EX | AES256 | AES256EX | DES | NONE		Specify the Privacy protocol of the SNMPv3 user profile.
SNMPv3_PRIV_PASSPHRASE_PROFILE_N	Alphanumeric		Specify the Privacy passphrase of the SNMPv3 user profile of 8-32 characters.
SNMPv3_ACCESS_TYPE_Profile_*N*	DISABLED | READONLY | READWRITE		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.
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	Integer value		Specify the length of time in seconds that the UPS Critical Event must persist before a trap is sent.
UPSCriticalEvents_RepeatInterval	Integer value		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.

Property	Value|Format	Default	Description
UPSCriticalEvents_RepeatTimes	Integer value		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	Integer value		Specify the length of time in seconds that the Lost Communication Event must persist before a trap is sent.
LostCommsEvents_RepeatInterval	Integer value		Specify the time interval in seconds that the trap is re-sent.
LostCommsEvents_RepeatUntilCleared	true|false		Select True if you want the trap to be sent at the repeat interval until the Lost Communication Event is cleared.
LostCommsEvents_RepeatTimes	Integer value		Specify the number of times the trap is sent when the Lost Communication Event occurs.
TrapReceiver_*N*_Enabled	true|false		Enter True to enable the Trap Receiver.
TrapReceiver_*N*_NMS	IPv4 | IPv6 Address		Enter the IP address of the Network Management System that will receive traps.
TrapReceiver_*N*_Port	Integer value	162	Enter the port number of the Trap Receiver.
TrapReceiver_*N*_Type	V1 | V3		Enter the version of SNMP used to send the traps.
TrapReceiver_*N*_ProfileName	Alphanumeric		Enter the User Name of the SNMPv3 User Profile used to send the traps.

[HostDetails]

This section is used when VMware or Hyper-V/SCVMM Support is enabled.

Property	Value|Format	Default	Description
ConfigurationMode	Unmanaged|Managed		When PowerChute is integrated with vCenter Server/SCVMM this is set to Managed. Otherwise Unmanaged will be set. This should not be modified.
Server	IP Address|Hostname|FQDN		vCenter Server|SCVMM Server|ESXi Host. This setting is not used for Hyper-V configuration.
Server_Protocol	http|https	https	Used to determine how PowerChute will connect to vCenter Server|ESXi Web Services URL. VMware only.
Server_Port	Integer value	443	vCenter Server|ESXi Host Web Services port. VMware only.
is_VCSA	true|false		Used when vCenter Server is running on a Virtual Machine.
The settings below are only for VMware Configurations.			
Skip_Cert_Check	true|false	true	If the value is set to true, only SSL certificates signed by a trusted CA will be accepted when connecting to vCenter Server and ESXi hosts. For information on how to import a trusted CA certificate to PowerChute, consult the PowerChute User Guide.
hyperconverged_support	nutanix|simplivity|hyperflex		Used to determine the hyperconverged infrastructure (HCI) support enabled.

[HostConfigSettings]

This section is used when VMware, Hyper-V/SCVMM, or Nutanix AHV support is enabled. It contains Virtualization Settings that are applied to VMs and Hosts during the shutdown sequence.

Managed VMware – PowerChute is configured to protect ESXi hosts that are managed by vCenter Server.

Managed SCVMM – PowerChute is configured to protect Hyper-V Hosts that are managed by SCVMM Server.

Unmanaged VMWare – PowerChute is configured to protect Standalone ESXi hosts.

Unmanaged Hyper-V – PowerChute is installed directly on each Hyper-V host.

Property	Format	Default	Description
The Settings below are for Managed VMWare Configurations only.			
VMware_connect_timeout	Integer value in Seconds	10	See the VMware troubleshooting section in the User Guide.
VMware_read_timeout	Integer value in Seconds	15	See the troubleshooting section in the VMware User Guide.
vm_prioritization_enabled	true|false	false	This is set to true when the VM Prioritization feature is enabled.
delay_after_exit_maintenance_mode	Integer value in Seconds	30	See the troubleshooting secton in the VMware User Guide.
delay_after_vcsa_powered_on_and_connected	Integer value in Seconds	30	See the troubleshooting secton in the VMware User Guide.
The Settings below are for Hyper-V Unmanaged and VMware Managed Configurations only.			
enable_guest_vm_migration	true|false	false	This is set to true when VM Migration is enabled.
guest_vm_migration_duration	0-172800 seconds	120	Time allowed for VMs to migrate other available Hosts when a UPS critical event occurs.
enable_custom_target_vm_migration	true|false	false	Set to true when “Select Target Hosts for Migration” is enabled.
custom_target_hosts	Host1|Host2		List of the target Hosts.
enable_guest_vm_shutdown	true|false	true	Set to true when VM Shutdown is enabled.
guest_vm_shutdown_duration	0-172800 seconds	120	Time allowed for VMs to shutdown when a UPS Critical event occurs.
enable_guest_vm_startup	true|false	false	Set to true when VM Startup is enabled.
guest_vm_startup_duration	0-172800 seconds	120	Time allowed for VMs to power on. For Single/Redundant/Parallel UPS configurations this is also the interval between starting VMs on each Host.

Property	Format	Default	Description
vm_startup_delay_duration	0-172800 seconds	0	This can be used to delay the startup between individual VMs. This is not available in the UI.
The Settings below are for Managed VMware Configurations only.			
force_VApp_shutdown	true|false	true	When enabled, PowerChute will shutdown a vApp even if some VMs are running on a Host that is not affected by the UPS Critical event.
Skip_Maintenance_Mode	true|false	false	When enabled, PowerChute will not start a maintenance mode task on hosts in the cluster.
delay_maintenance_mode	true|false	true	When enabled, PowerChute will start a maintenance mode task later in the shutdown sequence, after all VMs and vApps have shut down.
delay_maintenance_mode_timeout	0-172800 seconds	15	Time allowed for PowerChute to wait for the maintenance mode task to complete before shutting down the host and moving to the next host in the sequence.
vm_startup_rescan_hba_duration	0-172800 seconds	15	Time allowed for rescanning host bus adapter (HBA) storage devices before initiating the startup sequence.
enable_plugin	true|false	false	This will enable the vCenter Server plugin for either the Web Client or Desktop Client, see below.
plugin_type	web|legacy		Specifies whether to enable the vCenter Server plugin for the vSphere Web Client or Legacy Deskop client.
VCSA_shutdown_duration	0-172800 seconds	240	Time allowed to gracefully shutdown the vCenter Server VM.

Property	Format	Default	Description
startup_waits_for_all_hosts_online	true|false	true	When enabled PowerChute will wait for all ESXi hosts to come back online before powering on VMs.
The Settings below are for Managed VMware and SCVMM Configurations only.			
apply_vm_settings_to_all_nmcs	true|false	true	Advanced UPS configurations – Virtualization settings set globally will override values set for individual UPS Setups if this is enabled.
single_ups_groups_only	true|false		This is set automatically in an advanced configuration which comprises only Single UPS Setups. This should not be modified.
hostlist	Host1|Host2		This is the list of Hyper-V|ESXi hosts being protected by PowerChute for Managed Configurations. In an Advanced UPS configuration this property appears under the [advanced_ups_setup] sections.
The settings below are for Managed SCVMM Configurations only.			
enable_host_maintenance	true|false		When enabled PowerChute will issue a maintenance mode command to all Hosts via SCVMM.
host_maintenance_duration	0-172800 seconds		This is the time allowed for the Maintenance mode command to complete successfully.
enable_host_shutdown	true|false		When enabled PowerChute will issue a remote shutdown command to the Hosts being managed by SCVMM. Requires BMC settings to be enabled (iLO/DRAC)
The Settings below are for vSAN Configurations only.			

Property	Format	Default	Description
vsan_ftt_level	Integer value	1	When Fault Tolerance Threshold (FTT) is enabled, PowerChute will take the FTT value into consideration when starting a maintenance mode task. This value is linked to the number of critical Advanced UPS Setups. The FTT Level configured here should match the Fault Tolerance Threshold in the Storage Policy applied to the vSAN datastore.
vsan_sync_timeout	0-172800 seconds	120	The time PowerChute will wait when it detects that data re-synchronization is active on a host before shutting it down. PowerChute will wait the time specified and re-check until data re-synchronization is no longer active, or the retry limit (`vsan_sync_retry_limit`) has been reached.
vsan_sync_retry_limit	0-172800 seconds	10	The number of times PowerChute will wait for data re-synchronization to complete before shutting it down. Used in conjunction with `vsan_sync_timeout`.
witness_vm_startup_duration	0-172800 seconds	60	Time allowed for the Witness VM to power on.
The Settings below are for Nutanix configurations only – Nutanix AHV and VMware with Nutanix support.			
afs_shutdown_enable	true|false	true	This is set to true when Nutanix Files (Acropolis File Services) Shutdown is enabled.
afs_shutdown_duration	0-172800 seconds	180	Time allowed for Nutanix Files (Acropolis File Services) VMs to shut down.
afs_startup_enable	true|false	true	This is set to true when Nutanix Files (Acropolis File Services) Startup is enabled.

Property	Format	Default	Description
afs_startup_duration	0-172800 seconds	300	Time allowed for Nutanix Files (Acropolis File Services) VMs to start.
ongoing_replication_abort_delay_enable	true|false	true	This is set to true when Abort Active Replications is enabled.
ongoing_replication_abort_delay_duration	0-172800 seconds	120	The duration PowerChute will wait before aborting any active protection domain replications in the event of a critical UPS event.
ongoing_replication_abort_command_duration	0-172800 seconds	10	Time allowed for active replications to be aborted.
The Settings below are for Nutanix AHV, VMware with Nutanix support, and VMware with SimpliVity support only.			
cluster_shutdown_duration	0-172800 seconds	180	Time allowed for the cluster to shut down.
cluster_startup_duration	0-172800 seconds	120	Time allowed for the cluster to start.
cvm_shutdown_duration	0-172800 seconds	120	Time allowed for the Controller VMs to shut down.
cvm_startup_enable	true|false	True	This is set to true when Controller VM Startup is enabled.
cvm_startup_duration	0-172800 seconds	300	Time allowed for the Controller VMs to start.
cvm_connect_timeout	0-172800 seconds	10	The maximum duration allowed for connecting to Controller VMs.
The Settings below are for Nutanix AHV configurations only.			
uvm_shutdown_duration	0-172800 seconds	120	Time allowed for the User VMs to shut down.
uvm_startup_enable	true|false	true	This is set to true when User VM Startup is enabled.
uvm_startup_duration	0-172800 seconds	120	Time allowed for the User VMs to start.

Property	Format	Default	Description
uvm_poweroff_duration	0-172800 seconds	15	The time PowerChute will wait before attempting to power off the User VMs if User VM shutdown is unsuccessful.
uvm_forceoff_duration	0-172800 seconds	15	The time PowerChute will wait before attempting to force off the User VMs if User VM power off is unsuccessful.
The Settings below are for VMware with Nutanix support configurations only.			
metro_availability_disable	true|false	true	This is set to true when Disable Metro Availability is enabled.
metro_availability_re-enable	true|false	true	This is set to true when metro availability is enabled during the startup sequence.
The Settings below are for VMware with HPE SimpliVity support configurations only.			
ovc_shutdown_duration	0-172800 seconds	300	Time allowed for the OmniStack Virtual Controller VMs to shut down.
ovc_startup_enable	true|false	true	This is set to true when OmniStack Virtual Controller VM Startup is enabled.
ovc_startup_duration	0-172800 seconds	480	Time allowed for the OmniStack Virtual Controller VMs to start.
ovc_connect_timeout	0-172800 seconds	10	The maximum duration allowed for connecting to OmniStack Virtual Controller VMs.

[VMPrioritization]

This section is used for Managed VMware configurations only.

Property	Value|Format	Default	Description
vm_list_high	vm1|vm2|vm3		List of High priority VMs.
vm_list_medium	vm4|vm5|vm6		List of Medium priority VMs.
vm_list_low	vm7|vm8|vm9		List of Low priority VMs.

Property	Value|Format	Default	Description
vm_list_group_1	vm10|vm11|vm12		List of Group 1 priority VMs.
vm_list_group_2	vm13|vm14|vm15		List of Group 2 priority VMs.
vm_shutdown_duration_high	1-172800 seconds	0	Must be set to a value greater than 0 if there are VMs in the group.
vm_shutdown_duration_medium	1-172800 seconds	0	Must be set to a value greater than 0 if there are VMs in the group.
vm_shutdown_duration_low	1-172800 seconds	0	Must be set to a value greater than 0 if there are VMs in the group.
vm_shutdown_duration_group_1	1-172800 seconds	0	Must be set to a value greater than 0 if there are VMs in the group.
vm_shutdown_duration_group_2	1-172800 seconds	0	Must be set to a value greater than 0 if there are VMs in the group.
vm_shutdown_duration_none	1-172800 seconds	120	Must be set to a value greater than 0 if there are VMs in the group.
vm_migration_duration_high	0-172800 seconds	0	
vm_migration_duration_medium	0-172800 seconds	0	
vm_migration_duration_low	0-172800 seconds	0	
vm_migration_duration_group_1	0-172800 seconds	0	
vm_migration_duration_group_2	0-172800 seconds	0	
vm_migration_duration_none	0-172800 seconds	0	
vm_startup_duration_high	0-172800 seconds	0	
vm_startup_duration_medium	0-172800 seconds	0	
vm_startup_duration_low	0-172800 seconds	0	
vm_startup_duration_group_1	0-172800 seconds	0	
vm_startup_duration_group_2	0-172800 seconds	0	
vm_startup_duration_none	0-172800 seconds	0	

[advanced_ups_setup_X]

These sections contain configuration settings for individual UPS setups in an Advanced Configuration. “X” is related to the number of UPS Setups created, starting from 0. For example, if you have created 3 UPS Setups in an Advanced configuration there will be 3 sections – [advanced_ups_setup_0], [advanced_ups_setup_1] and [advanced_ups_setup_2].

Property	Value|Format	Default	Description
setup_name	Alphanumeric		User defined name for the UPS Setup
ip_addresses	IPv4|IPv6 Address		IP Addresses for the NMCs defined for the UPS Setup.
ups_required_for_load	Integer	1	Used to define the redundancy level for the UPS Setup – See “Shutdown Settings for Advanced UPS Configurations” in the User Guide.
shutdownCommandFileEnabled	true|false	false	Set to true if you have configured a command file to execute for the UPS Setup when a critical event occurs.
shutdownCommandFileDuration	0-172800 seconds	0	Time allowed for the command file to complete.
shutdownOnLostRedundancy	true|false	false	Related to the redundancy level for the UPS Setup – See “Shutdown Settings for Advanced UPS Configurations” in the User Guide.
turnOffUps	true|false	false	Set to true if you have configured PowerChute to turn off the UPS during the shutdown sequence.
turnOffSOG	true|false	false	Set to true if you have configured PowerChute to turn off the UPS Outlet Group during the shutdown sequence.
shutdownCommandFile	C:\test.cmd		Full path to shutdown command file.
The Settings below only apply to Managed VMware and SCVMM Configurations.			
executeCommandFileAfterHostShutdown	true|false	false	Set to true if the command file should execute after Hosts have been shut down.
shutdownCommandFileDelay	0-172800 seconds	0	Delay before executing the command file after Host shutdown command is sent.
ShutdownVirtualHosts	true|false	true – if there are no Hosts linked.	When enabled a critical event on this UPS setup will trigger a shutdown on all hosts being protected by PowerChute.

Property	Value|Format	Default	Description
shutdownPowerChuteServer	true|false	true – if there are no Hosts linked.	When enabled, PowerChute issues a local OS shutdown command at the end of the sequence.
The Settings below only apply to VMware Managed Configurations			
enable_guest_vm_migration	true|false	false	
guest_vm_migration_duration	0-172800 seconds	120	
enable_custom_target_vm_migration	true|false	false	
custom_target_hosts	Host1|Host2		
enable_guest_vm_shutdown	true|false	true	
guest_vm_shutdown_duration	0-172800 seconds	120	
enable_guest_vm_startup	true|false	false	
guest_vm_startup_duration	0-172800 seconds	120	
vm_startup_delay_duration	0-172800 seconds	0	
enable_VApp_shutdown	true|false	true	
force_VApp_shutdown	true|false	true	
VApp_shutdown_duration	0-172800 seconds	120	
enable_VApp_startup	true|false	false	
VApp_startup_duration	0-172800 seconds	120	
delay_maintenance_mode	true|false	True	
delay_maintenance_mode_timeout	0-172800 seconds	15	
The setting below only applies to vSAN configurations.			
vsan_sync_timeout	0-172800 seconds	120	
The property below is only displayed for UPS Setups that have Hosts linked to them. It is used for Managed VMware and SCVMM Configurations only.			
hostlist	Host1|Host2		This is the list of Hyper-V|ESXi hosts being protected by PowerChute.

Property	Value|Format	Default	Description
The settings below only apply to Managed SCVMM configurations.			
enable_host_maintenance	true|false		
host_maintenance_duration	Integer value in seconds.		
enable_host_shutdown	true|false		

[NutanixClusterDetails]

This section is used in a Nutanix AHV configuration and when Nutanix support for VMware is enabled only.

Property	Format	Default	Description
Nutanix_Cluster_Username	Alphanumeric	nutanix	The user account credentials used to connect to the Nutanix Cluster. You must use the “nutanix” credentials.
AHV_Username	Alphanumeric	root	The AHV host username.
Cluster_Ip	IPv4|IPv6 Address		The cluster IP address.
AFS_VMs	Alphanumeric		The Nutanix Files (Acropolis File Services) VMs in the cluster.
CVM_IPs	IPv4|IPv6 Address		The IP addresses of the Controller VMs in the cluster.
CVM_Names	IPv4|IPv6 Address		The names of the Controller VMs in the cluster.

[SimpliVityClusterDetails]

This section is used when HPE SimpliVity support for VMware is enabled only.

Property	Format	Default	Description
ovc_username	Alphanumeric	svtcli	The OmniStack Virtual Controller user name. The default is “stvcli” and it is not recommended to change this.

Property	Format	Default	Description
ovc_force_shutdown_delay	0-172800 seconds	60	The time PowerChute will wait before attempting to force off the OmniStack Virtual Controller VMs is OVC shut down is unsuccessful.
ovc_name_X	Alphanumeric		The name(s) of the OmniStack Virtual Controller VM(s) in the cluster.
ovc_ip_X	IPv4|IPv6 Address		The IP address(es) of the OmniStack Virtual Controller VM(s) in the cluster.
ovc_host_X	Alphanumeric		The hostname(s) of the OmniStack Virtual Controller VM(s) in the cluster.

[HyperFlexClusterDetails]

This section is used when HyperFlex support for VMware is enabled only.

Property	Format	Default	Description
cvm_name_X	Alphanumeric		The name(s) of the Controller VM(s) in the cluster.
cvm_host_X	Alphanumeric		The hostname(s) of the Controller VM(s) in the cluster.
cluster_stop_retries	Integer value	10	The number of times PowerChute will retry to shut down and start the HyperFlex cluster if shut down/start up is unsuccessful.
accept_all_Certs	true|false	true	
cluster_uuid	Integer value: Integer value		The cluster's universally unique identifier (UUID).
Cluster_Ip	IPv4|IPv6 Address		The cluster's IP address.
username	Alphanumeric	admin	The user name used to connect to the HyperFlex cluster.

[SSHActionX]

This section is used when SSH actions are enabled in the PowerChute UI. In an Advanced Configuration, SSH actions can be enabled and disabled for each UPS setup and “X” is related to the number of UPS Setups created, starting from 0. For example, if you have created 3 UPS Setups in an Advanced configuration there will be 3 sections – [SSHAction0], [SSHAction1] and [SSHAction2].

Property	Format	Default	Description
ssh_action_name	3-255 ASCII characters		A unique name for the SSH action.
ssh_target	IPv4|IPv6 Address		The IP address of the remote host that the SSH action will run on.
ssh_command_file			The path to the SSH command file. **NOTE:** In PowerChute v4.4+, the command file must be located in the user_files folder of the PowerChute installation directory.
ssh_action_enabled	true|false	true	
action_delay	0-172800 seconds	30	Time allowed for PowerChute to wait before connecting to the remote host and begin sending commands.
action_duration	0-172800 seconds	120	Time allowed for the SSH action to complete.
ssh_port	Integer value	22	The port of the target SSH component.
ssh_action_sequence	on_startup| before_host_shutdown| after_host_shutdown		Specifies when the SSH action will be run in the shutdown sequence.
ssh_keyfile_path			The path to the SSH keyfile. **NOTE:** In PowerChute v4.4+, the command file must be located in the user_files folder of the PowerChute installation directory.