

## README FOR THE LINUX OPERATING SYSTEM

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Please read the Installation and Release Notes help files also.

If you are installing on VMware vMA 5.0 or 5.1, see the instructions referenced under "Virtualization" at <http://swhelp.apcc.com/pcbe/help/productcenter/en/index.html>.

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### 1.0 System Requirements, and IPv6

See the latest version of the PowerChute Business Edition Operating System and Processor Compatibility Chart available on the Web at <http://www.apc.com/wp/?um=100>.

PCBE is a 32-bit application; on 64-bit operating systems additional system libraries might be required.  
See 8.9 below.

JavaScript must be enabled in your browser in order to use the PowerChute Agent Web user interface.

When you view the Agent, the browser will give an error saying the security certificate is not trusted.  
You should install the certificate to avoid getting this message every time you view the Agent by clicking on the button to trust the certificate.

IPv6 is compatible with the RJ45 Agent (see section 2.0 directly below). However the ability to use IPv6 is also dependent on which UPS device you have and the cable used to communicate with the UPS. During an installation, read any screen text carefully and follow the instructions.

The IPv6 address must be in one of these formats, see explanations on each line:

- fe80:0000:0000:0000:0204:61ff:fe9d:f156 // full form of IPv6
- fe80:0:0:0:204:61ff:fe9d:f156 // drop leading zeroes
- fe80::204:61ff:fe9d:f156 // collapse multiple zeroes to :: in the IPv6 address
- fe80:0000:0000:0000:0204:61ff:254.157.241.86 // IPv4 dotted quad at the end
- fe80:0:0:0:0204:61ff:254.157.241.86 // drop leading zeroes, IPv4 dotted quad at the end
- fe80::204:61ff:254.157.241.86 // dotted quad at the end, multiple zeroes collapsed
- ::1 // localhost
- fe80:: // link-local prefix
- 2001:: // global unicast prefix

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### 2.0 Installing the PowerChute Business Edition Agent

2.1 You must have root privileges to install PowerChute on a Linux computer. If you use PowerChute Console and PowerChute Server to manage your Agents, install v9.1.1 of those components (see the NOTE at the bottom of this section).

Important Note: If your system supports IPv6 but not IPv4, then you must read the UPS hardware descriptions that are presented during the installation.

## 2.2 Steps for Installing the Agent

Note: It is not possible to specify an installation directory or to perform an upgrade using the "install\_pbeagent\_linux.sh" script.

To perform an upgrade, in the rpms directory under the Linux directory (that is, /Linux/rpms), use  
rpm -U pbeagent-9.0.3-308.i386.rpm  
...if your UPS has a DB9 serial port. This port has 9 pins and has a shape that resembles  
the letter D on its side.

or

rpm -U pbeagent-9.1.1-308.i386.rpm  
...if your UPS has a RJ45 serial port. An RJ45 serial port resembles a network port.

Some upgrades are not permitted, depending on your hardware. This is checked immediately when you use one of the rpm commands above.

When the upgrade is completed, check your configuration settings to ensure that they have carried over as expected.

To install the Agent:

1. Start the installation with the "install\_pbeagent\_linux.sh" script.  
You can find this script in the Linux directory off the root of your CD, or on the website.

Carry out the following steps as a root user:

- mkdir /mnt/cdrom (if it doesn't already exist)
- mount /dev/cdrom /mnt/cdrom
- cd /mnt/cdrom/Linux
- sh install\_pbeagent\_linux.sh

2. On the presented screen, answer the questions that will determine which PowerChute Agent installation is suitable for your system.

The shape of an RJ45 serial port resembles a network port. A DB9 serial port has 9 pins and has a shape that resembles the letter D on its side.

3. Enter a username and password, and a communications port.  
If you are using PowerChute Server or PowerChute Console to manage multiple Agents, then you need to use the same values here as for those components.

4. On the following screen, check that the signal type and the communications port are correct. Type "y" for yes if they are, and "n" for no if they are not. (If you type "n", you will have to subsequently begin the installation procedure again).

5. Choose whether to start the Agent immediately.

Your installation is complete.

To launch the Agent after installation, open your browser, and type one of the following:  
http://<local host>:3052  
https://<local host>:6547

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NOTE: Your Linux download only includes the Agent component of the three PowerChute Business Edition software components.

The other two components only run on Windows; all three are described below.

1. PowerChute Business Edition Agent: Provides UPS status monitoring and, in the event of an extended power outage, system shutdown capabilities for your UPS-protected computers.

The Agent must be installed on each computer that is directly attached to one of the supported UPS systems.

2. PowerChute Business Edition Server: Used to configure and monitor the Agents.

The PowerChute Server gathers information from the PowerChute Agents and provides centralized event tracking, event notification, and a single point of contact for the PowerChute Console.

The Server software must be installed on one of your supported Windows networked computers.

3. PowerChute Business Edition Console: Connects to the PowerChute Business Edition Server to provide the user interface for managing and configuring your UPS-protected systems.

The Console can be installed on any supported Windows workstation, desktop, or laptop.

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### 3.0 Starting the PowerChute Business Edition Agent

The Agent runs automatically each time the operating system is started. To manually start the PowerChute Business Edition Agent after it has been deliberately stopped, you can enter the following command at the shell prompt from anywhere in the file system ...

```
/etc/init.d/PBEAgent start
```

Use the following ports to access PowerChute Business Edition with a firewall:

To access the Agent User Interface (Web UI) remotely, use

- 3052: HTTP
- 6547: HTTPS

To communicate with the Server or Console, unblock port 2161

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### 4.0 Stopping the PowerChute Business Edition Agent

To stop the PowerChute Business Edition Agent when it is running, you can enter the following

command from anywhere in the file system ...

```
/etc/init.d/PBEAgent stop
```

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## 5.0 Uninstalling the PowerChute Business Edition Agent

Use the -e (erase) rpm option to uninstall Powerchute Business Edition.  
For example:

```
rpm -e pbeagent
```

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## 6.0 Using the Linux Sample Shell Script

The "default.sh" file has basic information on running a command file on Linux. It is included in the installation at <PowerChute folder>/Agent/cmdfiles/

Here is the complete text of the "default.sh" file:

```
=====
#
# This command file is here for demonstration purposes only
#
# In order for PowerChute Business Edition to recognize additional
# command files they must be placed in the directory where
# this file currently resides.
#
# This file is not required for the correct operation of
# PowerChute Business Edition.
#
# Note: Before running any kind of scripts in Linux, be sure to
# include a #!/bin/(type of script) at the very top of your script file.
#
# For example:
# If you use shell script, then use #!/bin/sh
# If you use Bourne shell script, then use #!/bin/sh
# If you use Bourne Again shell script, then use #!/bin/bash
# If you use C shell script, then use #!/bin/csh
#
# If this does not work please contact your system administrator.
=====
```

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## 7.0 Hardware Abstraction Layer (HAL) UPS daemon disabled

A HAL policy file is automatically installed on Linux systems to disable the hald-addon-hid-ups module as it may conflict with the PowerChute Business Edition Agent's control of the UPS over USB.

This policy file is automatically removed if the Agent is uninstalled.

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## 8.0 Known Issues

8.1 Issue: The product does not perform properly with a Back-UPS or a UPS using Simple Signaling.

Solution: PowerChute Business Edition requires the 940-0020 or the 940-0128 cable for UPS communications using Simple Signaling.

If you were using the 940-0023 cable with a previous PowerChute product, you must replace it with the 940-0020 or 940-0128 cable when you use PowerChute Business Edition.

8.2 Issue: PowerChute Business Edition Agent does not install on a system which is using the SJIS locale.

Solution: The SJIS locale is not supported by PowerChute Business Edition. The Japanese locale supported by PowerChute is euc and UTF-8.

8.3 Issue: SNMP Communication cannot be configured.

Solution: SNMP communication is not available on PowerChute Business Edition Agent for Linux.

8.4 Issue: PowerChute Business Edition Agents running on Linux may not be able to send broadcast messages to Windows systems. If you are using Japanese-language systems, messages sent from Linux to Windows may not be readable.

Solution: These problems are the result of incompatibilities between Windows and Linux, and cannot be resolved through PowerChute.

8.5 Issue: During the boot process, the server momentarily pauses and displays messages similar to one of the following:

```
modprobe: modprobe: can't locate module char-major-4
```

Solution: This is an issue that will not affect the performance of PowerChute.

8.6 Issue: RPM uninstaller reports:

```
"error: cannot remove /opt/APC/PowerChuteBusinessEditionAgent directory not empty".
```

Solution: This is inaccurate. The directory is properly removed during the uninstall.

8.7 Issue: PowerChute Agent displays OS as Linux Kernel version number, i.e. 2.4.21-20.EL.

Solution: If you upgrade PowerChute on Linux using rpm -U, then the Console incorrectly specifies the operating system as the Linux Kernel version number. To avoid this, run config.sh which is stored in the Agent install directory.

8.8 Issue: When installing using rpm on Linux, a warning about a key is received

Solution: To avoid getting this error message, see Knowledge Base answer ID FA159700 at [www.apc.com/support](http://www.apc.com/support). Alternatively, you can ignore the message, the installation will proceed as normal.

8.9 Issue: Failed dependency error on terminal when installing on 64-bit Linux.

Solution: This is not a PowerChute Business Edition issue. It concerns a missing package in the x64 operating system installation.

The PowerChute Business Edition installation requires 32-bit editions of the glibc and libstdc++

libraries to be available on a x64 system. See Knowledge Base answer ID FA159745 at <http://www.apc.com/site/support/index.cfm/faq/index.cfm> for the steps to install the missing package.

8.10 Issue: During the Agent installation there is no option to communicate using the USB port.

Solution: There is a known issue in relation to Linux kernels where a panic can occur when a USB cable is disconnected. If the PowerChute installation cannot determine whether your kernel has the necessary patch that addresses this and does not display the USB port option, then you need to check with your OS provider whether your kernel has the fix included in it or not.

The USB option is available in RHEL v6.4 and above as the fix has been applied to its kernel.

The commit number for the patch is 1a8e8fab790ea7af81b8f964fdec706ad1ec2271. See also <http://git.kernel.org>.

8.11 Issue: PowerChute 9.1.1 Agent fails to install on RHEL 5.x x64, x86 after running `install_pbeagent_linux.sh`.

The following message appears:

```
Error: dl failure on line 864
Error: failed /bin/java/jre/1.7.0_25/lib/i386/server/libjvm.so, because
/bin/java/jre/1.7.0_25/lib/i386/server/libjvm.so:
cannot restore segment prot after reloc: Permission denied
```

Solution: This problem is caused by SELinux enforcing an access policy. The policy forbids the PowerChute Agent installer from changing the attributes for memory protection of a memory segment. RedHat Enterprise Linux has SELinux set to "Enforcing" mode by default.

1. Allow `libjvm.so` to text relocate by running the change context.  
Type the following into the command line:  
`chcon -t textrel_shlib_t /bin/java/jre/1.7.0_25/lib/i386/server/libjvm.so`
2. Run the PowerChute Agent configuration script to complete the installation.  
Type the following into the command line:  
`cd /opt/APC/PowerChuteBusinessEdition/Agent`  
`./config.sh`

Further information is in the KBase, FA173375.

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