

## Q

## Why are the battery charge LEDs flashing on my Smart-UPS® battery backup?



**A** The battery bar graph LED (light emitting diode) lights may flash in unison on a Smart-UPS® battery backup. The PowerChute® power management software might also simultaneously report that the batteries are discharged. This is NOT a failure indication.

When operating online, the runtime remaining (calculated by the Smart-UPS microprocessor) must be AT LEAST two minutes more than the low battery signal warning time. Otherwise, the battery charge graph LEDs will flash.

### There are multiple options to correct this particular situation:

**Option 1: Reset the low battery signal time to a lesser value.** Take, for example, a Smart-UPS with 15 minutes of runtime at full charge, and with the low battery signal warning time set for 7 minutes. If runtime remaining is 8 minutes or less, then the battery bar graph LEDs will flash in unison. Try setting the low battery signal warning time to a lesser value through the Configuration menu and then the UPS Shutdown Parameters submenu of PowerChute. Two minutes is the lowest setting option available.

Please keep in mind that when using PowerChute Business Edition server and console, the low battery signal time is set to 5 minutes and cannot be changed.

**Option 2: Reduce the load or replace the battery.** The firmware inside a Smart-UPS is designed to last for years, yet the batteries are consumable items. As the batteries age, they lose their ability to hold a charge and therefore available runtime will decrease over time. Once the runtime remaining is within 2 minutes of the low battery signal warning time, the battery charge LEDs will begin to flash and PowerChute software / SmartSlot accessories will report that the “UPS batteries are discharged”, even if the battery is at 100% capacity. In the case of an older unit running with a heavy load, try reducing the attached load. If the unit is an XL (Extended Run) model, then try adding an additional battery pack. Typical battery life is 3 - 6 years. If you have an older UPS, try replacing the battery.

**Option 3: Perform a Runtime Calibration.** This is a manual procedure and should not be confused with the runtime calibration performed through PowerChute software. The batteries inside of the Smart-UPS are controlled by a microprocessor within the UPS. Sometimes it is necessary

to reset this microprocessor, especially after the installation of new batteries. Stop the PowerChute software from running and disconnect the serial cable. There must be at least a 30% load attached to the UPS during this procedure, and this load cannot fluctuate more than +/- 5%. This process will cause the UPS to shut off and cut power to its outlets. Therefore, attach a non-critical load to the UPS and then force the UPS on battery by disconnecting it from utility power. Allow the unit to run on battery until it turns off completely. Make sure a 30% load is present! Plug the UPS back into the wall outlet and allow it to recharge (it will recharge more quickly turned off and with no load present). Once the unit has recharged, the “runtime remaining” calculation should be more accurate. Remember that if the unit is an older model, then the runtime will not improve significantly.



### Get the Answers You Need from APC Knowledge Base:

1. Go to [www.apc.com/promo](http://www.apc.com/promo)
2. Enter the keycode from the back of this magazine.
3. Click on the “Knowledge Base” link.