

How to Monitor your APC UPS Units

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For the example setup in this document there are some prerequisites that you need to have before you can successfully monitor your APC UPS units. These are:

- Serial or USB cable attached to the console port on your APC UPS
- The apcupsd software package installed, preferably on a Linux-based server
- Nagios monitoring

For this example, I will be monitoring a APC Smart-UPS 3000VA USB with 3 servers attached to it. The monitoring serving will be named apcmonitor. The other 2 servers are fileserver and mailserver. I'll be explaining how to setup the APCUPSD software first, then how to add a Nagios alert for battery time remaining. Finally, I'll show how to add one of the servers as a "slave" to the apcmonitor machine and as such, can be shutdown in conjunction to a power failure.

Setup APCUPSD

On the machine apcmonitor:

First, load the file `/etc/apcupsd/apcupsd.conf` into your favorite editor. Most of the options in this file can be left at their default values. These are ones you probably will want to customize for your environment:

UPSCABLE usb

This sets the type of cable our server is hooked up to the UPS unit's console port. In this case we're using

UPSTYPE usb

This defines the type of UPS unit we have.

DEVICE

For USB UPS units, leave the DEVICE field blank. For other types, like serial port-based, set the serial port here, for example `/dev/ttyS0`.

ONBATTERYDELAY 6

This defines how many seconds pass before the daemon is notified that the server is on battery power. The default is 6, but you might want to lower this for a faster response.

BATTERYLEVEL 5

This defines how much remaining battery percentage before apcupsd initiates a system shutdown. You might need to increase this if your servers take a while to shutdown.

MINUTES 3



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This is how many minutes remaining on battery (as reported by the UPS) before a system shutdown is initiated. Again, you might need to increase this if your server(s) take a while to shutdown.

ANNOY 300

This is how many seconds must pass before announcing to all users that the system is being shutdown. You can set this to 0 to disable warning users.

NOLOGON disable

This is a useful parameter for controlling if users are allowed to login to a server that is on battery power. Note that users already on the system are not affected by this setting, only new users logging into the server.

NETSERVER on

This will start a network information service which passes EVENT and STATUS data over the network. We'll need this to configure any remote servers attached to this UPS.

There are other parameters in this file, feel free to go through them all and customize to your needs.

Next, start up apcupsd by typing **service apcupsd start** or **/etc/init.d/apcupsd start**

Nagios Alert Setup

Next, we need to setup a Nagios alert for remaining battery time. We can also monitor other things like when a UPS unit goes on battery power, but for simplicity sake, let's just setup the battery time remaining. For our clients, we like to get an email alert when the battery remaining time drops below 10 minutes and a pager alert when the remaining time drops below 5 minutes.

First, setup the command definition:

```
# 'check_ups_timeleft' command definition
define command{
    command_name    check_ups_timeleft
    command_line    $USER1$/check_apcupsd -h $HOSTADDRESS$ -w 10 -c 5 timeleft
}
```

And then the alert:

```
define service{
    use                generic-service
    host_name          apcmonitor
    service_description UPS Time Remaining
    is_volatile        0
    check_period       24x7
    max_check_attempts 3
    normal_check_interval 5
    retry_check_interval 1
    contact_groups     spk_group
    notification_interval 60
    notification_period none
    notification_options w,u,c,r
    check_command       check_ups_timeleft
}
```

For the above command definition, you'll need to download the APCUPSD monitor plugin for Nagios at the Nagios Exchange:

http://exchange.nagios.org/directory/Plugins/Hardware/UPS/APC/check_apcupsd/details

Restart nagios and you'll be getting alerted when your UPS units are getting low on battery time.

Network UPS Monitoring

Our last part of this example is setting up one of our other servers to monitor the UPS unit via your LAN. This way you can perform actions on all servers attached to a single UPS unit when it switches to battery power. To do this, you'll need to install the apcupsd package on your server. But instead of setting it up as a monitoring server, we're going to have the apcupsd daemon contact the monitoring server to get status.

First, on the server fileserver, I edit the /etc/apcupsd/apcupsd.conf file and change these parameters:

UPSCABLE ether

This says to use the network to get the status of the UPS unit.

UPSTYPE net

DEVICE apcmonitor:3551

This says to use the server running on apcmonitor, port 3551 (default) to get status.

And that's it. You can now customize the other parameters like you did on apcmonitor. When apcmonitor detects that it's on battery power, it will send that event to all attached network daemons. They will respond as if they were directly attached to the UPS unit.



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Summary

There are a lot more options and customization you can do with APCUPSD. It really is a fantastic package for making sure your mission-critical servers and systems are protected from data loss in the event of a power failure.