equinux

APC Tracker

Version 4.4

User Manual

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Chapter 1:

Welcome to APC Tracker

This chapter introduces you to the all new APC Tracker, a Cocoa application for UPS devices in a network that powers specifically off Mac OS X and Xserve.

Getting started

Thank you for selecting APC Tracker.

Due to the complete rewrite of APC Tracker, we would recommend that you read this manual thoroughly prior to installation.

What is APC Tracker?

The equinux APC Tracker is a client/server application for UPS devices in a network, running under Mac OS X and designed for server environments such as the Apple Xserve. It can investigate the status of the UPS device and will properly shut down the client computer once power gets interrupted. APC Tracker is currently able to connect to the following network device/service:

- an APC UPS with USB support (USB Mode).
- an APC UPS with an APC Network Management Card built-in (SNMP Mode).
- an APC UPS connected to a Linux PC running APCUPSd

The equinux development team would be happy to receive your ideas, comments and suggestions via email to apctracker@equinux.com.

System Requirements

For set-up, APC Tracker requires both Mac OS X 10.2 or higher and the BSD subsystem from the Mac OS X installation.

Contact & Support

Web site: http://www.apctracker.com

Email: apctracker@equinux.com

Disclaimer

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Chapter 2:

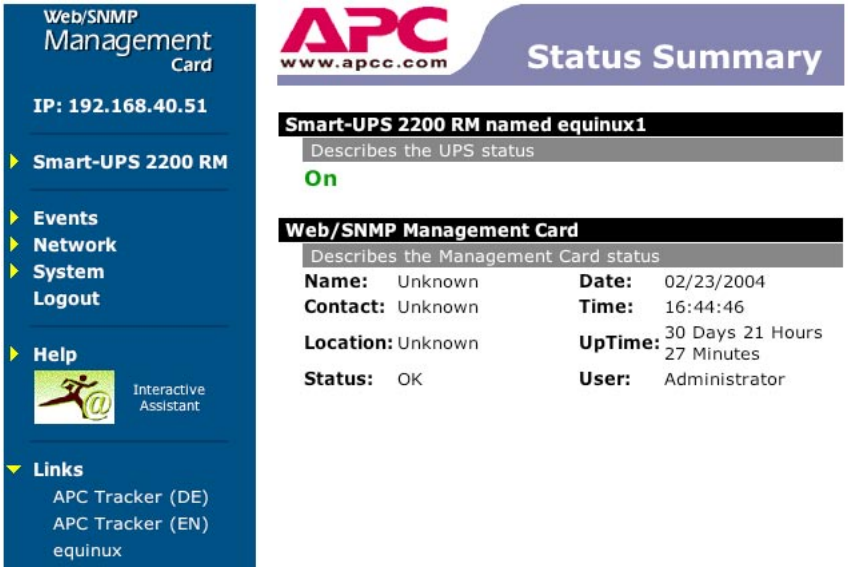
Getting APC Tracker up and running

Installation

Drag and drop the “APC Tracker Client” icon from the disk image to your Applictions folder to install the APC Tracker Client. Double click on the “APC Tracker Server” icon to activate installation of the server and start up scripts (Note: Only adminstrators are able to install the APC Tracker Server, for which authorization will be requested).

Setting up the Web/SNMP Card

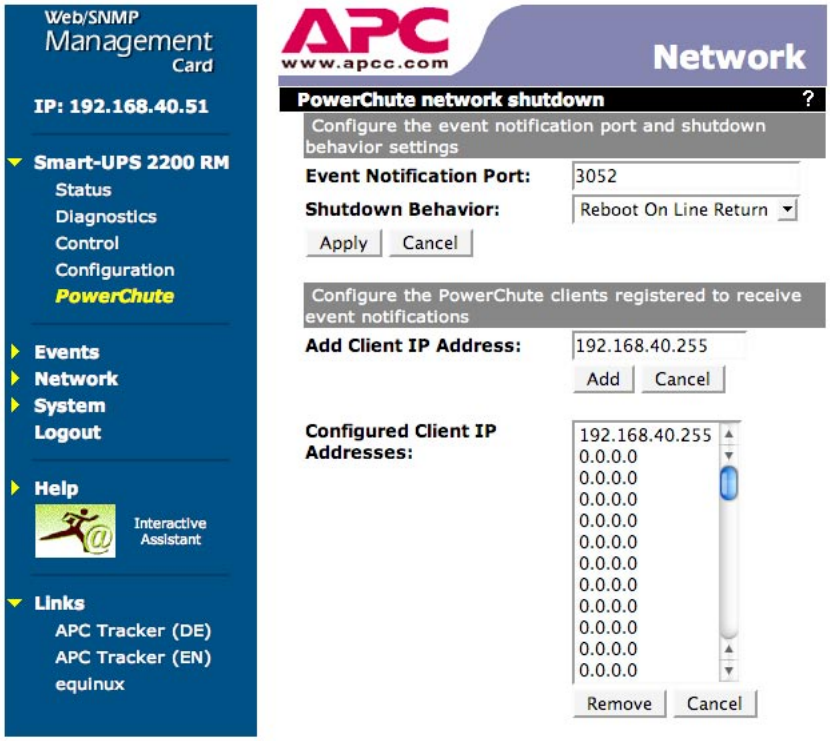
If you’d like to run APC Tracker in SNMP mode, you have to change some settings of your Web/SNMP card. Open a browser and connect to your APC device. In the screenshot below you see a typical welcome screen of an APC device.



In the navigation menu to the left, there’s an entry named like the model of your device (here: “Smart-UPS 2200 RM”). Click on this menu entry to open a submenu.

In the submenu select the entry “PowerChute”.

The PowerChute configuration page looks like shown in the picture below.



There are two important settings on this page. The first one is the Event Notification Port. Usually you don’t have to change it, but if you changed it, you also have to enter the same port number in APC Tracker, when configuring the SNMP mode.

The second important setting is the client list. Either add the addresses of all clients running APC Tracker Server to that list or add the broadcast address of a network segment (all computers within the network segment are then included automatically). In the example above the broadcast address has been used.

Setting up APCUPSd

If you'd like to run APC Tracker in APCUPSd mode, you have to activate the NIS mode within APCUPSd. To activate the NIS mode, it's enough to add the following two lines to */etc/apcupsd/apcupsd* and restart the daemon:

```
NETSERVER ON
NISPORT 3551
```

You may also choose a different NISPORT, just remember this setting as you have to enter the port number within the APC Tracker configuration page for the APCUPSd mode.

Setting up USB

USB supports plug and play, that means there are no settings you have to change, just plug in the USB device and select it from the list of offered devices on the USB configuration screen within APC Tracker.

Chapter 3:

Functionalities of APC Tracker

APC Tracker Structure

The APC Tracker consists of two components:

1) APC Tracker Server

2) APC Tracker Client

APC Tracker Server is an application that runs facelessly in the background as a system service. It starts automatically at boot time, permanently monitors the APC UPS device and remembers its last status. Whenever a shutdown criterion is met (e.g. battery level below a certain value), it will try to shutdown the system on which it is currently running.

APC Tracker Client is an application with a graphical user interface. It connects to APC Tracker Server and displays the current status of the APC. It is further used to configure the APC Tracker Server, e.g. in defining what the shutdown criteria actually are.

An APC Tracker Client can connect to multiple APC Tracker Servers simultaneously, running on different Macs within a local or remote network. It can also connect to a server running on the same machine as the client itself.

Shutdown Process

APC Tracker Server is capable of shutting down the system in one of two ways:

1) Soft Shutdown

2) Hard Shutdown

A Soft Shutdown means that the server will perform the same action as if you were shutting down your system manually: It will inform the Finder to shut the system down and be left to perform the task automatically.

It should be noted that this is not guaranteed work. First of all, it will fail if there is no user logged into the system (system still shows login screen) or if the system is in console mode (logged in as user "`>console`").

The second restriction is that any open application might block the shutdown process, e.g. before closing an open text document, the application questions if you really want to quit without saving. Unless you click this dialog away, the shutdown process is discontinued.

For such situations, the Hard Shutdown will kick in. You can determine the span of time for which APC Tracker Server will wait before switching from Soft- to Hard Shutdown (or whether it should immediately perform a Hard Shutdown).

A Hard Shutdown is not as "smooth-running" as a soft one, but it will still ensure that all processes are interrupted and all data within caches written to disc before the system powers down.

All applications receive a signal, asking them to be terminated at once and those that don't comply, will be aborted with force. It is inevitable that unsaved data in the memory, other than cache, will be lost, but still to be favoured over simply pulling the power plug (which is what happens if the APC runs out of power), causing everything, including all cached data, to be lost, possibly leaving the disc drives in a corrupted state and giving applications no chance to quit independently.

APC Tracker Client

The graphical user interface of the APC Tracker client should be pretty self explanatory once you have browsed through the menus and open windows. When running the APC Tracker Client on the same Mac as the APC Tracker Server, you could start, for example, by entering “localhost” (without the quotes) into the text field of the connect dialog, which opens on every startup of the client, and then clicking on “Connect” to see the status information of your APC device.

You can manage favorites, to which you can assign names and personal icons, making it possible to automatically reestablish your favorite connections on restarting the APC Tracker Client. Several tool tips will also appear to guide you through the user interface (whenever you are unsure about the function of a particular item, simply place your mouse over it and wait two seconds for annotation).

The toolbar above the status window allows you to open up the model or power drawer to receive more detailed information about the APC’s current state. To alter the configuration of the APC Tracker Server you are currently connected to (e.g. altering the shutdown criteria), click on “Configuration”. Here you will have the option of deciding if the APC Tracker Server runs in USB, SNMP Card or APCUPSd mode (on the connection tab). In addition, you can alter the configuration of the selected mode (have a look at the „Connection“ tab). Configuration changes will take effect immediately upon saving. After saving the configuration, status will turn blank for a few seconds, because a configuration update causes the APC Tracker Server to perform an internal status reset.

Custom Scripts Support

System administrators who are interested in running their own custom shell or Perl scripts now finally get a chance to do so. If you don‘t want to run your own custom scripts, just skip this section. You will find a set of sample scripts to demonstrate how to use the new scripting support in the directory:

/Library/Application Support/APC Tracker/Scripts

on the system where you installed the APC Tracker Server. There are four scripts:

- status_update - Executed once every minute with the current status as parameter
- on_battery - Executed whenever the APC detects a power failure and switches to battery mode
- on_line - Executed whenever the APC returns from battery mode once the power has been restored
- shutdown - Executed right before the APC Tracker Server decided to shutdown the system

It is necessary that the scripts are stored in this location, they also have to be named as shown above and they must be marked executable (the executable flag has to be set). All these conditions are met right after installation by default, so you are only required to customize the scripts for your personal needs.

The „status_update“ script is invoked with three arguments:

```
status_update <status> <battery_level> <time_left>
```

The status is either “ON_LINE“, “ON_BATTERY“ or “UNKNOWN“. The battery_level is the current battery power level in percent (0-100) and time_left is the remaining time in seconds. The other three scripts just receive battery_level and time_left as arguments:

```
on_battery <battery_level> <time_left>
on_line <battery_level> <time_left>
shutdown <battery_level> <time_left>
```

The sample scripts are passive since there are only comments inside. By default BASH is used as script interpreter, but you are free to use C-Shell or Perl scripts as well (every script interpreter installed on your system will be fine, just alter the first line of the scripts accordingly). Executing Apple Scripts (e.g. MyAppleScript.scpt) is a special case, since it has to be copied into the directory and then has to be invoked from within a shell script like this:

```
#! /bin/sh

/usr/bin/osascript MyAppleScript.scpt
```

Chapter 4:

Considerations and Feedback

Every user feedback is helpful to further improve APC Tracker Client in the future. We appreciate all kind of feedback, positive comments, negative comments, bug reports or questions are all equally welcome. Only if we receive feedback we can realistically evaluate our performance.

So, your feedback is important, welcome and **much** appreciated!