USER'S GUIDE
network management card

# Contents

# Introduction

## Product Description

### Features

The APC AP9617 Network Management Card *EX* is a web-based management product that uses multiple, open standards such as Telnet, HTTP, and SNMP to provide full management of supported devices:

- The following is a list of some of this Management Card's features:
  - Provides a Data Log accessible by FTP or a Web browser.
  - Provides an Event Log accessible by Telnet, FTP, or a Web browser
  - Detects connection speed of 10/100 MB per second.
  - Generates e-mail notifications for DC Power Plant events and system events.
  - Limits SNMP traps and e-mail notifications based on the severity level of the DC Power Plant or system events
  - For Magnum models, can be managed through InfraStruXure Manager.

### Initial set-up

You must define three TCP/IP settings for the Network Management Card before it can operate on the network.

- IP address of the Management Card
- Subnet mask
- IP address of the default gateway

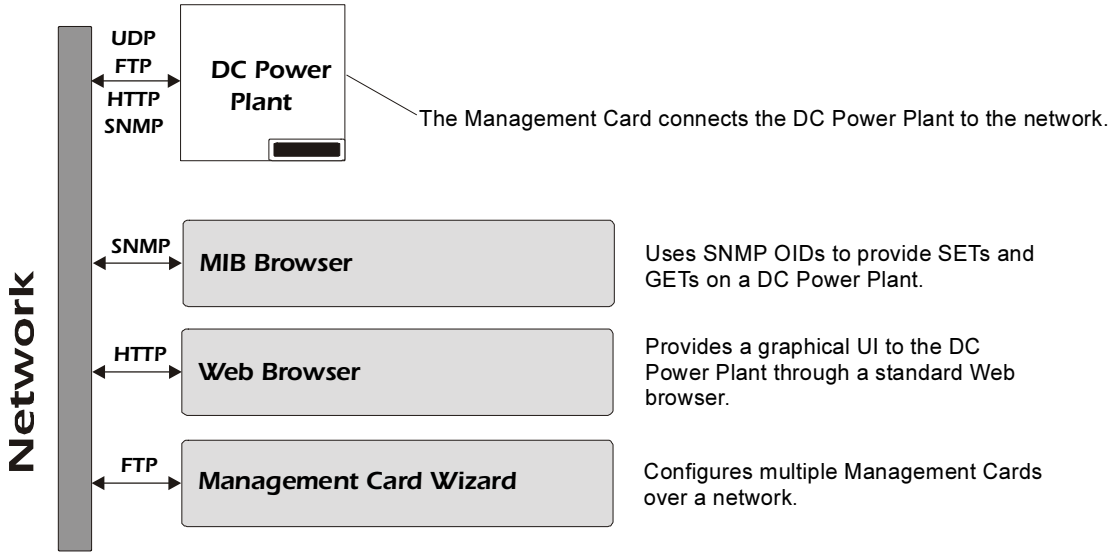
To configure the TCP/IP settings, see the Network Management Card *Quick-Start Manual* (.\doc\en\Qckguide), provided in printed form, and in PDF on the APC Network Management Card *utility* CD.

# Network management features

The Management Card can perform a variety of tasks. The figure that follows identifies and briefly describes the network management applications that can work with a DC Power Plant that connects to the network through the Management Card.

**Note**

The APC Management Card Wizard identified in the following figure can be used to configure multiple Management Cards, either serially or over the network. It cannot be used to download firmware upgrades.



# Internal Management Features

## Overview

The Management Card has two internal interfaces (control console and Web interface) which provide menus with options that allow you to manage the DC Power Plant and the Management Card. The Management Card's SNMP interface also allows you to use an SNMP browser with the PowerNet® Management Information Base (MIB) to manage the DC Power Plant.

For more information about the Management Card's internal user interfaces, see Control Console and Web Interface.


To use the PowerNet MIB with an SNMP browser, see the *PowerNet® SNMP Management Information Base (MIB) Reference Guide* (\doc\en\Dcmibgde.pdf), which is provided on the APC Network Management Card *utility* CD.

## Access priority for logging on

Only one user at a time can log onto the Management Card to use its internal user interface features. The priority for access is as follows:

- Local access to the control console from a computer with a direct serial connection to the Management Card always has the highest priority.
- Telnet access to the control console from a remote computer has priority over Web access.
- Web access either directly or through the InfraStruXure Manager (for InfraStruXure-compatible products), has the lowest priority.

For information about how SNMP access to the Management Card is controlled, see SNMP.

## Types of user accounts

The Management Card has two levels of access (Administrator and Device Manager), both of which are protected by **Password** and **User Name** requirements.

- An Administrator can use all of the management menus available in the control console and the Web interface. The Administrator's default **User Name** and **Password** are both **apc**.
- A Device Manager can use only these menus:
  - The **Device Manager** menu and its sub-menus in the control console, and all menus in the top section of the navigation panel of the Web Interface (**System**, **Power Modules**, **Distribution**, **Batteries**, **I/O**)
  - the **Log** option in the **Events** menu and in the **Data** menu in the Web interface. (A Device Manager can also access the Event Log in the control console by pressing CTRL-L)

  A Device Manager cannot access the **Network** menu or the **System** menu that are in the second part of the navigation panel in the Web interface and are sub-menus of the main **Control Console** menu in the control console.

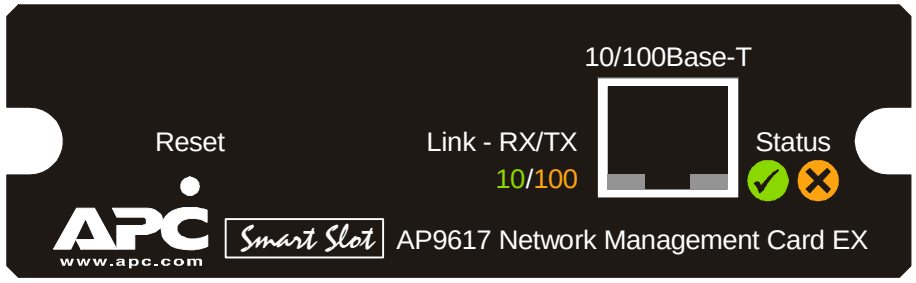
  The Device Manager's default **User Name** is **device**, and the default **Password** is **apc**.

For information about how to set Administrator and Device Manager **User Name** and **Password** settings, see User Manager.

# Front Panel

## Introduction

The front-panel features of the Network Management Card (AP9617) include Status LEDs, a Reset button, and a 10/100Base-T connector.




## Features

| Feature | Description |
|---|---|
| Reset button | Resets the Management Card while power remains on. |
| 10/100 Base-T connector | Connects the Management Card to the Ethernet network. |
| Link-RX/TX (10/100) LED | See Link-RX/TX (10/100) LED. |
| Status LEDs | See Status LEDs. |

## Link-RX/TX (10/100) LED

This LED indicates the network status.

| Condition | Description |
|---|---|
| Off | Either the Management Card is receiving no network traffic, or the device which connects the Management Card to the network is turned off or not operating correctly. |
| Flashing **Green** | The Management Card is receiving data packets from the network at 10 Megabits per second (Mbps). |
| Flashing **Orange** | The Management Card is receiving data packets from the network at 100 Megabits per second (Mbps). |

## Status LEDs

These LEDs indicate the Management Card's status.

| Condition | Description |
|---|---|
| Off | The Management Card has no power. |
| Solid **Green** | The Management Card has valid TCP/IP settings. |
| Flashing **Green** | The Management Card does not have valid TCP/IP settings.[1] |
| Solid **Orange** | A hardware failure has been detected in the Management Card. Contact APC Worldwide Customer Support. |
| Flashing **Orange** | The Management Card is making BOOTP[2] requests. |

1. If you do not use a BOOTP server, see the Network Management Card *Quick-Start Manual* (.\doc\en\Qckguide) provided in printed format and in PDF on the APC Network Management Card *utility* CD for information about how to configure the Management Card's TCP/IP settings.
2. To use a BOOTP server, see the *Management Card Addendum* (.\doc*Addendum.pdf*) on the APC Network Management Card *utility* CD.

# Watchdog Features

## Overview

To detect internal problems and recover from unanticipated inputs, the Management Card uses internal, system-wide watchdog mechanisms. When it reboots itself to recover from an internal problem, a **System: Warmstart** event is recorded in the Event Log.

## Network interface watchdog mechanism

The Management Card implements internal watchdog mechanisms to protect itself from becoming inaccessible over the network. For example, if the Management Card does not receive any network traffic for 9.5 minutes (either direct traffic, such as SNMP, or broadcast traffic, such as an Address Resolution Protocol [ARP] request), it assumes that there is a problem with its network interface and reboots itself.

## Resetting the network timer

To ensure that the Management Card does not reboot if the network is quiet for 9.5 minutes, the Management Card attempts to contact the Default Gateway every 4.5 minutes. If the gateway is present, it responds to the Management Card, and that response restarts the 9.5-minute timer. If your application does not require or have a gateway, specify the IP address of a computer that is running on the network most of the time and is on the same subnet. The network traffic of that computer will restart the 9.5-minute timer frequently enough to prevent the Management Card from rebooting.

# Control Console

## How To Log On

### Overview

You can use either a local (serial) connection, or a remote (Telnet) connection with a computer on the Management Card's subnet to access the control console.

Use case-sensitive **User Name** and **Password** entries to log in (by default, **apc** and **apc**, for an Administrator, or **device** and **apc**, for a Device Manager).

If you cannot remember your **User Name** or **Password**, see How to Recover from a Lost Password.

### *Remote access to the control console*

You can use Telnet to log into the control console from any computer on the same subnet as the Management Card.

1. At a command prompt, type `telnet` and the Management Card's System IP address, and then press ENTER. For example:

   ```
   telnet 139.225.6.133
   ```

2. Enter your **User Name** and **Password**.

## Local access to the control console

You can use a local computer that connects to the Management Card through the Management Card's serial port. The type of cable to use depends on the location of the Management Card in the DC Power Plant:

- **Type 1:** The Management Card is an integrated part of the DC System Controller. The DC System Controller front panel has the following connectors:
  - A female DB-9 connector for connection to the control console.
  - An RJ-45 10/100BaseT connector for connection to the network.

  For Type 1 equipment, use the straight-through serial cable (940-0085 or 0129-6) supplied with the DC Power Plant.
- **Type 2:** The Management Card is not a part of the DC System Controller. It is installed separately from the controller. The female DB-9 connector for connection to the control console is next to the Management Card.

  For Type 2 equipment use a smart-signaling (advanced signaling) cable (940-0024 or 940-1524) supplied with the DC Power Plant.

### To connect Type 1 equipment:

1. Select a serial port at the local computer, and disable any service that uses that port.
2. Use the Type 1 cable (940-0085 or 0129-6) to connect the selected port to the serial port on the DC System Controller.

### To connect Type 2 equipment:

1. Select a serial port at the local computer, and disable any service that uses that port.
2. Use the smart-signaling (advanced signaling) cable (940-0024 or 940-1524) to connect the selected port to the serial port on the mounting bracket of the Management Card.


Do not attach the cable to the serial port on the front panel of the DC System Controller

### To continue the procedure for either type of equipment:

3. Run a terminal program (such as HyperTerminal®), and configure the selected port for 2400 bps, 8 data bits, no parity, 1 stop bit, and no flow control, and save the changes.
4. Press ENTER to display the **User Name** prompt.
5. Enter your user name and, at the **Password** prompt, your password.

# How to Recover from a Lost Password

You can use a local computer that connects to the Management Card through the serial port at the Management Card's mounting bracket to access the control console.

1. Select a serial port at the local computer, and disable any service which uses that port.
2. Use the type 1 or type 2 serial cable as described in Local access to the control console to connect the selected port to the Management Card's serial port.
3. Run a terminal program (such as HyperTerminal®), and configure the selected port for 2400 bps, 8 data bits, no parity, 1 stop bit, and no flow control, and save the changes.
4. Press ENTER to display the **User Name** prompt.
5. Press the Reset button on the Management Card, which causes the Management Card to restart, a process that typically takes approximately 15 seconds.
6. Press ENTER as many times as necessary to redisplay the **User Name** prompt, then use **apc** for the user name and password. (If you take longer than 30 seconds to log on after the **User Name** prompt is redisplayed, you must start the login procedure again at step 4.)
7. From the **Control Console** menu, select **System**, then **User Manager**.
8. Select **Administrator**, and change the **User Name** and **Password** settings, both of which are now defined as **apc**.
9. Press CTRL-C and log off.


Reconnect any cable that you disconnected in **step 2** and restart any service that you disabled in **step 1**.

# Main Screen

## Example main screen

The following is an example of the screen that appears when you log onto the control console at a Network Management Card (AP9617).

```
User Name: apc
Password : ***

American Power Conversion              Network Management Card AOS      v1.0.7
<c> Copyright 2004 All Rights Reserved  MX28B DC APP                    v1.1.1
-------------------------------------------------------------------------------
Name       : Plant1                                    Date: 04/15/2004
Contact    : Tom_Adams                                 Time: 05:49:30
Location   : TestLab                                   User: Administrator
Up Time    : 1 Day 4 Hours 5 Minutes                   Stat: P+ N+ A+

DC Power Plant  : No Alarms Present

-------- Control Console ------------------------------------------------------

      1- Device Manager
      2- Network
      3- System
      4- Logout

      <ESC>- Main Menu, <ENTER>- Refresh, <CTRL-L>- Event Log
>
```

# Information and status fields

## Main screen information fields.

- Two fields identify the APC operating system (AOS) and application (APP) firmware versions. The application firmware uses a name that identifies the type of DC Power Plant that the Management Card connects to the network. In the Example main screen, the Management Card uses the application firmware for the DC Power Plant.

```
Network Management Card AOS   v1.0.7
MX28B DC APP                  v1.1.1
```

- Three fields identify the system **Name**, **Contact**, and **Location** values.

```
Name      : Plant1
Contact   : Tom_Adams
Location  : TestLab
```

To set the **Name**, **Contact**, and **Location** values, see System Menu.

- An **Up Time** field reports how long the Management Card has been running since it was last turned on or reset.

```
Up Time   : 1 Day 4 Hours 5 Minutes
```

- Two fields identify when you logged on, by **Date** and **Time**.

```
Date : 04/15/2004
Time : 05:49:30
```

- A **User** field identifies whether you logged on as an **Administrator** or **Device Manager**.

```
User : Administrator
```

### Main screen status fields.

- A **Stat** field reports the Management Card status.

```
Stat : P+ N+ A+
```

| | |
|---|---|
| P+ | The APC operating system (AOS) is functioning properly. |
| N+ | The network is functioning properly. |
| N? | A BOOTP request cycle is in progress. |
| N- | The Management Card failed to connect to the network. |
| N! | Another device is using the Management Card's IP address. |
| A+ | The application is functioning properly. |
| A- | The application has a bad checksum |
| A? | The application is initializing |
| A! | The application is not compatible with the AOS. |


If the AOS status is not P+, contact APC Worldwide Customer Support, even if you can still access the Management Card.

- A **DC model and name** field reports the status of the DC Power Plant. For example:

```
DC Power Plant : No Alarms Present
```

# Control Console Menus

## Overview

The control console dynamically expands to provide options that you use to manage a Management Card and the DC Power Plant.

## Main menu

The main **Control Console** menu has options that provide access to the control console's management features:

```
1- Device Manager
2- Network
3- System
4- Logout
```

Note

When you log on as Device Manager, you can access only the **Device Manager** menus and the **Logout** menu.

## Menu structure

The menus in the control console list options by number and name. To use an option, type the option's number and press ENTER, then follow any on-screen instructions.

Some options access a new menu; other options allow you to change a setting. Menus that allow you to change a setting have an **Accept Changes** option which you must use before you exit a menu to save the changes you made.

While in a menu, you can also do the following:

- Type ? and press ENTER, to access brief menu option descriptions (if the menu has help available)
- Press ENTER, to refresh the menu
- Press ESC, to go back to the menu from which you accessed the current menu
- Press CTRL-C, to return to the main (**Control Console**) menu
- Press CTRL-L, to access the Event Log.

For information about the Event Log, see Event-Related Menus.

## Device Manager option

This option accesses the **Device Manager** menu. This menu's options allow you to select the device that you want to manage. For example:

```
1- DC Power Plant
```

## Network option

To do any of the following tasks, see Network Menu:

- Configure the Management Card's TCP/IP settings.
- Use the Ping utility
- Define settings that affect the Management Card's FTP, Telnet, Web interface, SNMP, e-mail, and DNS features

## System option

To do any of the following tasks, see System Menu:

- Control **Administrator** and **Device Manager** access
- Define the system **Name**, **Contact**, and **Location** values
- Set the **Date** and **Time** used by the Management Card
- Reboot the Management Card
- Reset control console settings to their default values
- Access system information about the Management Card

# Web Interface

## Introduction

### Overview

The Web interface provides options that you use to manage a Management Card and the DC Power Plant.

### Web menu options

Two **Web** menu options affect access to the Web interface.

- **Access**: Enables (by default) or disables the Web interface.
- **Port**: Defines the Web-server port (80, by default) used for the Web interface.

For more information about the Access and Port options, see FTP Server, and Telnet & Web options.

## Supported Web browsers

As your browser, you can use Microsoft® Internet Explorer (IE) 5.0 (and higher) or Netscape® 4.0.8 (and higher) to access the Management Card through its Web interface.

Some Web interface features (data verification, Event Log, and Data Log) require that you enable the following for your Web browser:

- JavaScript
- Java
- Cookies

In addition, the Management Card cannot work with a proxy server. Therefore, before you can use a Web browser to access its Web interface, you must do one of the following:

- Configure the Web browser to disable the use of a proxy server for the Management Card
- Configure the proxy server so that it does not proxy the specific IP address of the Management Card

# How to Log On

## Overview

You can use a Management Card's DNS name or System IP address for the URL address of the Web interface. Use your case-sensitive **User Name** and **Password** settings to log on (by default, **apc** and **apc**, for an Administrator, or **device** and **apc**, for a Device Manager).

For information about the Web page that appears when you log onto the Web interface, see Summary Page.

## URL address formats

Type the Management Card's DNS name or IP address in the Web browser's URL address field and press ENTER. Except as noted below, `http://` is automatically added by the browser.


If the error "You are not authorized to view this page" occurs (Internet Explorer only), someone is logged onto the Web interface or control console. If the error "No Response" (Netscape) or "This page cannot be displayed" (Internet Explorer) occurs, Web access may be disabled, or the Management Card may use a non-default Web-server port that you did not specify correctly in the address.

For more information, see FTP Server, and Telnet & Web options.

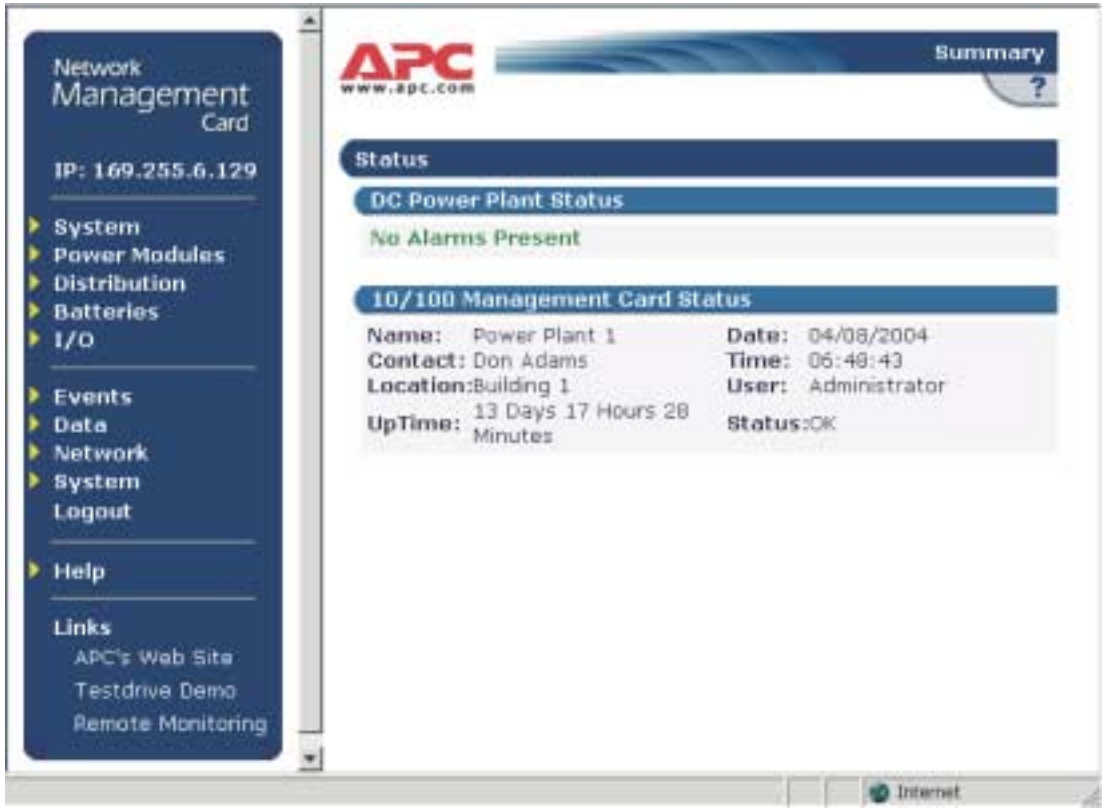
- For a DNS name of Web1, the entry would be:
  `http://Web1`
- For a System IP address of 158.205.12.114, when the Management Card uses the default port (80) at the Web server, the entry would be:
  `http://158.205.12.114`
- For a System IP address of 158.205.12.114, when the Management Card uses a non-default port (5000, in this example) at the Web server, the entry would be:
  `http://158.205.12.114:5000`


For Internet Explorer, you must type `http://` as part of the address when any port other than 80 is used. Omitting `http://`causes the error "This page cannot be displayed." For more information, see FTP Server, and Telnet & Web options.

# Summary Page

## Example Web page

The following is an example of the navigation menu (see Navigation Menu) and Summary page that appear when you log onto the Web interface at a Network Management Card.



## Summary page fields

The Summary page has two sections:

- The **DC** section reports the status of a connected DC Power Plant.
- The Management Card section reports the following information:
  - The **Name**, **Contact** and **Location** information for the Management Card
  - The login **Date** and **Time**
  - Type of **User** (**Administrator** or **Device Manager**)
  - How long (**Up Time**) the Management Card has been continuously running since it was turned on or reset
  - The **Status** of the Management Card

## Help icon on quick status tab

Click on the question mark (?) in the quick status tab in the upper-right corner of any Web interface page to access the online help for that page.

# Navigation Menu

## Overview

When you log onto the Web interface, the navigation menu (left frame) includes the following elements:

- The Management Card's IP address
- DC menus to manage the DC Power Plant and its components
  - **System** menu with **DC Parameters** and **Active Alarms** as options
  - **Power Modules** menu, with **Rectifiers** and **Converters** as options
  - **Distribution** menu, with **Breakers** and **Fuses** as options
  - **Batteries** menu, with **Parameters** and **LVD** as options.
  - **I/O** menu, with **Input** and **Output** as options.
- Menus to manage the logs, network connection, system parameters
  - **Events** menu
  - **Data** menu
  - **Network** menu
  - **System** menu


When you log on as a Device Manager, the **Network** and **System** menus do not appear in the navigation menu.

- **Logout** option
- **Help** menu
- **Links** menu

## Selecting a menu to perform a task

Use the menus to perform tasks as follows:

- To manage a DC Power Plant, see DC Power Plant & Device Manager Menus
- To do the following, see Event-Related Menus:
  - Access the Event Log
  - Configure the actions to be taken based on an event's severity level
  - Configure SNMP Trap Receiver settings for sending event-based traps
  - Define who will receive e-mail notifications of events
- To do the following, see Data Menu (Web Interface Only):
  - Access the Data Log
  - Define the log interval (how often data will be sampled and recorded) for the Data Log
- To do the following, see Network Menu:
  - Configure new TCP/IP settings for the Management Card
  - Identify the Domain Name Service (DNS) Server and test the network connection to that server
  - Define settings that affect FTP, Telnet, the Web interface, SNMP, and E-mail

For information about how the **Network** menu's **Telnet/Web** option can affect access to the Web interface, see Web menu options.

- To do the following, see System Menu.
  - Control **Administrator** and **Device Manager** access
  - Define the system **Name**, **Contact**, and **Location** values
  - Set the **Date** and **Time** used by the Management Card
  - Reboot the Management Card
  - Reset control console settings to default settings
  - Select **Fahrenheit** or **Celsius** for temperature displays
  - Define the URL addresses used by the Web interface's user and APC logo links, as described in Links menu

## Help menu

When you click **Help**, the **Contents** for the online help is automatically displayed to provide for easy navigation to a specific online help topic. However, from any of the Web interface pages, you can use the question mark (**?**) that appears in the quick status bar to link to the section of the online help that covers that page's content.

The **Help** menu also has an **About System** option you use to view information about the Management Card's **Model Number**, **Serial Number**, **Hardware Revision**, **Manufacture Date**, **MAC Address, Application Module** and **APC OS (AOS) Module**, including the date and time these modules were loaded.


In the control console, the **About System** option, which is a **System** menu option, identifies the **Flash Type** used.

## Links menu

Provides three user-definable URL link options. By default, these links access the following APC Web pages:

- **APC's Web Site** accesses the APC home page
- **Testdrive Demo** accesses a demonstration page where you can use samples of APC web-enabled products
- **APC Monitoring** accesses the "APC Remote Monitoring Service" page where you can find more information about pay-for-monitoring services available from APC

You can use the following procedure to redefine these links so that they point to other URLs.

1. Click on **Links** in the **System** menu.
2. Define any new names for the **User Links**.
3. Define any new URL addresses that you want the **User Links** to access.
4. Click **Apply**.

# Network Menu

## Introduction

### Overview

The **Network** menu has the options that you use to do the following tasks:

- Define TCP/IP settings, including BOOTP server settings, when a BOOTP server is used to provide the needed TCP/IP values
- Use the Ping utility
- Define settings that affect the Management Card's FTP, Telnet, Web interface, SNMP, e-mail, and DNS features


Only an Administrator has access to the **Network** menu.

### Menu options

Unless noted, the following menu options are available in the control console and Web interface:

- TCP/IP
- DNS
- Send DNS Query (Web interface only)
- Ping utility (control console)
- FTP Server, and Telnet & Web options
- SNMP
- Email

# Option Settings


These options are combined in the Web interface (the **TCP/IP & DNS** option) but separate in the control console.

## TCP/IP

Use this option to enable or disable BOOTP, and when BOOTP is disabled, to define the three TCP/IP settings that the Management Card needs to operate on the network.

- The Management Card's System IP address
- The subnet mask value
- The IP address of the default gateway

For information about the watchdog role of the default gateway, see Resetting the network timer.

When BOOTP is enabled (by default), you can affect only the BOOTP setting: A BOOTP server will provide the Management Card with its TCP/IP settings whenever the Management Card is turned on, reset, or rebooted.


To use BOOTP, see the Network Management Card Addendum (.\doc\en\addendum.pdf) provided on the APC Network Management Card *utility* CD.

***Current TCP/IP settings fields.*** The current values for **System IP**, **Subnet Mask**, **Default Gateway**, and the Management Card's **MAC Address** are displayed above the TCP/IP settings in the control console and Web interface.

## DNS

This control console option is part of the **TCP/IP & DNS** option in the Web interface.

***Configure Domain Name Server Settings fields.*** Use these fields to define the IP addresses of the primary and secondary Domain Name Servers (DNS) used by the Management Card's e-mail feature.

See E-mail Feature and DNS servers.

***Send DNS Query (Web interface only).*** Use this option, available only through the **TCP/IP & DNS** menu in the Web interface, to send a DNS query that tests the setup of your DNS servers.

Use the following settings to define the parameters for the test DNS request; you view the result of the test DNS request in the **Last Query Response** field (**Passed**, **Failed**, or **Not Responding**).

- Use the **Query Type** setting to select the method to use for the DNS query:
  - The URL name of the server (**By Name**)
  - The IP address of the server (**By IP**)
  - The Mail Exchange used by the server (**By MX**)
- Use the **Query Question** text field to specify the value to be used for the selected **Query Type**:
  - For **Name**, specify the URL
  - For **IP**, specify the IP address
  - For **MX**, specify the Mail Exchange address
- Use the **DNS Server to Query** to select whether you want to query the **Primary DNS Server** or **Secondary DNS Server**.

## Ping utility (control console)

Select this option, available only in the control console, to check the Management Card's network connection by testing whether a defined IP address responds to the Ping network utility.

By default, the default gateway IP address (see TCP/IP) is used. However, you can use the IP address of any device known to be running on the network.

## FTP Server, and Telnet & Web options


The **Telnet** and **Web** options are combined in the Web interface but separate in the control console.

Each of these options has a setting which enables (by default) or disables **Access**, and a **Port** setting that identifies the TCP/IP port used for communications with the Management Card. The default **Port** settings are **21** (FTP), **23** (Telnet), and **80** (Web interface).

To enhance the protection provided by **User Name** and **Password** settings, change the Port setting to a unique port number from 5000 to 65535. After this change, when you log on, you must add a colon (:) and the non-default Port number to the IP address used. The following examples show the FTP, Telnet, and Web interface commands needed when the Port numbers have been changed to 5000 for FTP, 59401 for Telnet, and 65002 for HTTP at a management card with a System IP address of 159.215.12.114:

```
ftp 159.215.12.114:5000
telnet 159.215.12.114:59401
http://159.215.12.114:65002
```


To use FTP to download configuration files, see the *Management Card Addendum* (.\doc\en\addendum.pdf) on the APC Network Management Card *utility* CD.

To use FTP to access a text version of the Management Card's Event Log or Data Log, see How to use FTP to retrieve log files.

## SNMP

An **Access** option (the **Settings** option in the control console) enables (by default) or disables SNMP. When SNMP is enabled, the **Access Control** settings allow you to control how each of the four available SNMP channels is used.

To define up to four NMSs to serve as trap receivers, see Trap Receiver settings.

| Setting | Definition |
|---|---|
| Community Name | Defines the password (maximum of 15 characters) which an NMS that is defined by the **NMS IP** setting below uses to access the channel. |
| NMS IP | Limits access to the NMS or NMSs specified by the format used for the IP address.<br>• 162.245.12.1 allows only the NMS with that IP address to have access.<br>• 162.245.12.255 allows access for any NMS on the 162.245.12 segment.<br>• 162.245.255.255 allows access for any NMS on the 162.245 segment.<br>• 162.255.255.255 allows access for any NMS on the 162 segment.<br>• 0.0.0.0 or 255.255.255.255 allows access for any NMS. |

| Setting | Definition | |
|---|---|---|
| Access Type | Selects how the NMS defined by the NMS IP setting can use the channel, when that NMS uses the correct **Community Name**. | |
| | Read | The NMS can use GETs at any time, but it can never use SETs. |
| | Write | The NMS can use GETs at any time, and can use SETs when no one is logged onto either the control console or Web interface. |
| | Disabled | The NMS cannot use GETs or SETs. |
| | Write+ | The NMS can use GETs and SETs at any time, even when someone is logged onto the control console or Web interface. |

## Email

Use this option to define two SMTP settings (**SMTP Server** and **From Address**) used by the Management Card's e-mail feature.

For more information about these settings, see SMTP settings; for more information about e-mail as it relates to the Management Card, see E-mail Feature.

# System Menu

## Introduction

### Overview

The **System** menu has the options that you use to do the following tasks:

- Configure system identification, date and time settings, and Administrator and Device Manager access
- Synchronize the Management Card's real-time clock with a Network Time Protocol (NTP) server
- Download configuration files
- Reset or reboot the Management Card
- Define the URL links available in the Web interface
- Access hardware and firmware information about the Management Card
- Set the units (Fahrenheit or Celsius) used for temperature displays


Only an Administrator has access to the **System** menu.

## Menu options

Unless noted, the following menu options are available in the control console and Web interface:

- User Manager
- Identification
- Date & Time
- Tools
- Preferences (Web interface)
- Links (Web interface)
- About System


The **About System** option is a **Help** menu option in the Web interface.

# Option Settings

## User Manager

Use this option to define the access values shared by the control console and the Web interface.

| Setting | Definition |
|---|---|
| Auto Logout | The number of minutes (3, by default), before a user is automatically logged off because of inactivity. |
| **Administrator and Device Manager User** | |
| User Name | Defines the case-sensitive name (maximum of 10 characters) used to log onto the control console or Web interface (**apc**, by default, for **Administrator**, and **device**, by default, for **Device Manager User**). |
| Password | Defines the case-sensitive password (maximum of 10 characters). **apc** is the default for both **Password** settings. |

## Identification

Use this option to define the System **Name**, **Contact**, and **Location** values used by the Management Card's SNMP agent. The option's settings provide the values used for the MIB-II **sysName**, **sysContact**, and **sysLocation** Object Identifications (OIDs).


For more information about the MIB-II OIDs, see the PowerNet® *SNMP Management Information Base (MIB) Reference Guide* (.\doc\en\Dcmibgde.pdf) provided on the APC Network Management Card *utility* CD.

## Date & Time

Use this option to set the time and date used by the Management Card. The option displays the current settings, and allows you to change those settings manually, or through a Network Time Protocol (NTP) Server.

***Set Manually.*** Use this option in the Web interface, or **Manual** in the control console, to set **Date** and **Time** for the Management Card.

Note

An **Apply Local Computer Time to Network Management Card** option, which is available in the Web interface only, sets these values to match the date and time settings of the computer you are using to access the Web interface.

**Synchronize with Network Time Protocol (NTP) Server.** Use this option, which is called **Network Time Protocol (NTP)** in the control console, to have an NTP Server automatically update the **Date** and **Time** settings for the Management Card.

Note

In the control console, use the **NTP Client** option to enable or disable (the default) the NTP Server updates. In the Web interface, use the **Set Manually** option to disable the updates.

| Setting | Definition |
|---|---|
| Primary NTP Server | Identifies the IP address of the primary NTP server. |
| Secondary NTP Server | Identifies the IP address of the secondary NTP server, when a secondary server is available. |
| TIme Zone | Defines the offset to be used from Greenwich Mean TIme (GMT) based on the Management Card's time zone. |
| Update Interval | Defines how often, in weeks, the Management Card will access the NTP Server for an update (**1** week minimum, **52** weeks maximum). Use **Update Using NTP Now** to initiate an immediate update as well. |

## Tools

Use this option to reboot the Management Card or to reset some or all of its configuration settings to their original, default values.

| Action | Definition |
|---|---|
| Reboot | Restarts the Management Card. |
| Reset to Defaults | Resets all configuration settings. |
| Reset to Defaults Except TCP/IP | Resets all configuration settings except the TCP/IP settings. |
| XMODEM (control console only) | Allows you to download firmware using a terminal-emulation program when you use a local connection to the control console only. To connect to the control console locally, see Local access to the control console. |

## Preferences (Web interface)

Use this option to define whether temperature values are displayed as **Fahrenheit** or **Celsius** in the Web interface and the control console.

## Links (Web interface)

Use this option to modify the links to APC Web pages.

| Setting | Definition |
|---|---|
| User Links | |
| Name | Defines the link names that appear in the **Links** menu (by default, **APC's Web Site**, **Testdrive Demo**, and **Remote Monitoring**). |
| URL | Defines the URL addresses used by the links. By default, the following URL addresses are used:<br>• **http://www.apc.com** (**APC's Web Site**)<br>• **http://testdrive.apc.com** (**Testdrive Demo**)<br>• **http://rms.apc.com** (**Remote Monitoring**)<br>**NOTE**:For information about these pages see Links menu. |
| Access Links | |
| APC Home Page | Defines the URL address used by the APC logo at the top of all Web interface pages (by default, **http://www.apc.com**). |

## About System

This option identifies hardware information for the Management Card, including its **Model Number**, **Serial Number**, **Hardware Revision**, **Manufacture Date**, **MAC Address**, and **Flash Type.**

This information is set at the factory and cannot be changed.


In the Web interface, except for **Flash Type**, this hardware information is reported by the **About System** option in the **Help** menu.

# DC Power Plant & Device Manager Menus

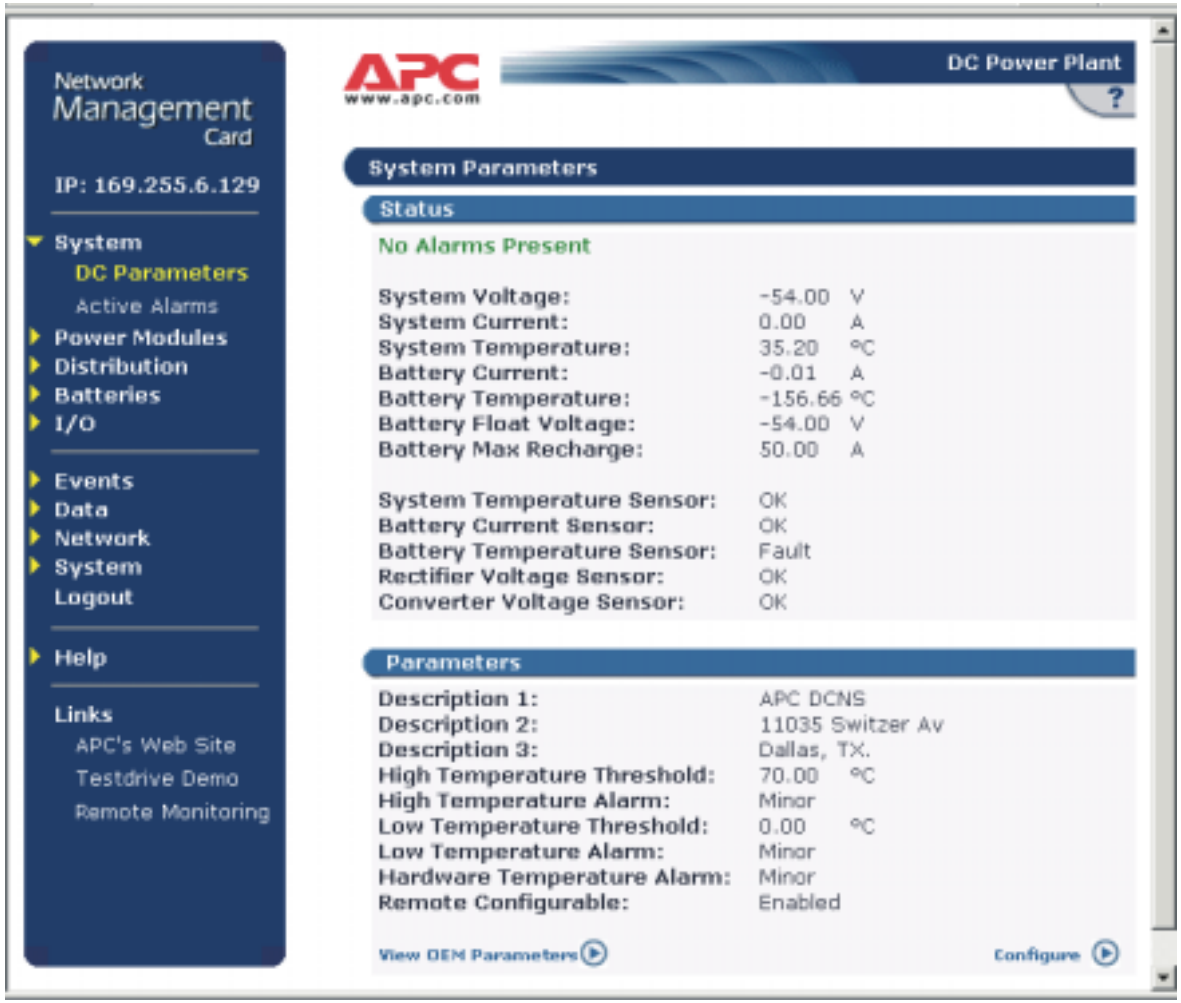
## Status Options

### System and battery status

To display system and battery status, do either of the following:

- In the Web interface, select the **DC Parameters** option of the first menu item (**System**)
- In the control console, select, in order, **Device Manager**, **DC Power Plant**, **DC System**, and **DC System Parameters**.

**Web interface.** The Web interface displays the **DC Power Plant** page.



***Control Console.*** The **DC Power Plant** screen displays the same status information as the **DC Power Plant** page of the Web interface.

```
DC System Voltage          (V)    : -54.30
DC System Current          (A)    :   0.21
DC System Temperature(degC)       :  32.90
Battery Current            (A)    :   0.014
Battery Temperature  (degC)       :  30.11
Battery Float Voltage      (V)    : -58.00
Battery Max Recharge       (A)    :  50.00
```

In the control console only, you can set alarm thresholds for the last two values. See the description of the first two menu items on the **Battery Thresholds** submenu: 1- Float Voltage and 2- Max Recharge. (For the **Battery Thresholds** submenu, select, in order, **Device Manager**, **DC Power Plant**, **DC System**, **Batteries**.)

# Management Options

## DC Power Plant options

***Control Console and Web Interface.*** To access the following menu options to manage the DC Power Plant:

- In the control console, select **Device Manager** and **DC Power Plant**.
- In the Web interface, use the menus in the top section of the navigation panel.

| Control Console | Web interface | Link to Description |
|---|---|---|
| 1 - DC System | **System>DC Parameters** | DC System: DC System Parameters & OEM Parameters |
| 2 - Power Modules | **Power Modules** | Power Modules: Rectifiers and Converters |
| 3 - Distribution | **Distribution** | Distribution: Breakers and Fuses |
| 4 - Batteries | **Batteries>Parameters** | Batteries: Status, Thresholds and Alarms |
| 5 - Relays | **I/O** | Relays: Output Relays and Input Relays |
| 6 - LVD | **Batteries>LVD** | LVD (Low Voltage Disconnect) |
| 7 - Power Plant Alarms/ Internal Log | **System>Active Alarms** (Internal Log not available) | Power Plant Alarms/Internal Log |
| 8 - About DC Power System | not available | About DC Power Plant System |

**Note**

In the Web interface, you display Power Plant alarms by selecting **Active Alarms** from the first menu (**System**) in the navigation panel.

## DC System: DC System Parameters & OEM Parameters

**Web Interface.** DC System Parameters are displayed at the bottom of the **DC Power Plant** page, which you access by selecting **DC Parameters** at the first menu (**System**) in the navigation panel. At the bottom of the page are two links:

- To configure the **DC System Parameters**, click **Configure**.
- To display **OEM Parameters**, click **View OEM Parameters**.

For descriptions of the parameters, see Control Console.

***Control Console.*** From **Device Manager**, type `1` to select **DC Power Plant**, then type `1` again to select **DC System**. The following options are displayed.

```
1- DC System Parameters
2- OEM Parameters
```

From the **DC System** menu, type `1` to select **DC System Parameters**, which displays the following menu items:

| Menu Item | Description |
|---|---|
| 1- Description1 | Descriptions related to your DC Power Plant system.<br>*Maximum per field*: 16 characters. |
| 2- Description2 | |
| 3- Description3 | |
| 4- High Temperature | The ambient high temperature threshold.<br>*Minimum:* 0 ° Celsius<br>*Maximum:* 100.00° Celsius |
| 5- High Temperature Alarm | The alarm action to occur when the ambient high temperature threshold (item 4 above) is violated.<br>**Allowed values:** any standard alarm selection.[a] |
| 6- Low Temperature | The ambient low temperature threshold.<br>*Minimum:* – 100.00° Celsius<br>*Maximum:* 100.00° Celsius |
| 7- Low Temperature Alarm | The alarm action to occur when the ambient low temperature threshold (item 6 above) is violated.<br>**Allowed values:** any standard alarm selection.[a] |

[a] Standard alarm selections
- **Major** activates the major relay.
- **Minor** activates the minor relay.
- **Relay** 1 through **Relay 6** activates the relay specified.
- **Ignore** ignores the alarm.

| Menu Item | Description |
|---|---|
| 8- Hardware Temperature Alarm | The alarm action to occur in response to any of the following<br>• No temperature probe cable is connected<br>• A faulty temperature probe cable is connected<br>• The temperature probe itself is faulty.<br>This alarm action occurs only if temperature compensation is enabled. See Battery Thresholds.<br>**Allowed values:** any standard alarm selection.[a] |
| 9- Remote Configurability | Disables remote write access to the DC Power Plant. You can re-enable access only from the DC Power Plant's front panel. |
| Accept Changes | Use this option to save your changes. |

[a] Standard alarm selections
- **Major** activates the major relay.
- **Minor** activates the minor relay.
- **Relay** 1 through **Relay 6** activates the relay specified.
- **Ignore** ignores the alarm.

From the **DC System** menu, type 2 to select **OEM Parameters**, which displays the following calibration parameters, which are set at the factory and cannot be changed:

| Menu Item | Description |
|---|---|
| Rectifier Offset | Rectifier offset adjustment in volts. |
| Rectifier Gain | Rectifier measurement gain adjustment. |
| Converter Offset | Converter offset adjustment in volts. |
| Converter Gain | Converter measurement gain adjustment. |
| Shunt Offset | Battery shunt offset adjustment in amps. |
| Shunt Gain | Battery shunt measurement gain adjustment. |

## Power Modules: Rectifiers and Converters

From the **Device Manager** menu, type `1` to select **DC Power Plant**. Then type `2` to select **Power Modules**. The following options are displayed.

```
1- Rectifiers
2- Converters
```

Each option has sub-menus for parameters, alarms, and status.

**Rectifiers.** From the **Rectifiers** sub-menu, type `1` for configurable **Rectifier Parameters.**

| Rectifier Parameters | Description |
|---|---|
| 1- High Voltage Threshold (V) | If rectifier voltage exceeds this value, a rectifier high voltage alarm occurs. To set the alarm action, see Rectifier Alarms. |
| 2- Low Voltage Threshold (V) | If rectifier voltage drops below this value, a rectifier low voltage alarm occurs. To set the alarm action, see Rectifier Alarms. |
| 3- Fail Safe (V) | The value sent to rectifier controllers to use if communication is lost with the master controller or if the master controller board fails. |
| 4- Communications Fail (sec) | The time in seconds (60 by default) that a rectifier waits for communication with the master controller before resetting all its values to their defaults. |
| 5- Accept Changes | Use this option to save your changes. |

From the **Rectifiers** sub-menu, type 2 for configurable **Rectifier Alarms**:

| Rectifier Alarms | Description |
|---|---|
| 1- High Voltage Alarm | The alarm action that occurs if the High Voltage Threshold has been violated. See Rectifier Parameters.<br>*Allowed values:* any standard alarm selection[a]. |
| 2- Low Voltage Alarm | The alarm action that occurs if the Low Voltage Threshold has been violated. See Rectifier Parameters.<br>*Allowed values:* any standard alarm selection[a]. |
| 3- Configuration Alarm | The alarm action that occurs if a new rectifier is detected that was not present when the system was rebooted or powered on.<br>*Allowed values:* any standard alarm selection[a]. |
| 4- 1 of N Alarm | The alarm action that occurs if one rectifier fails in a DC Power Plant with multiple rectifiers<br>*Allowed values:* any standard alarm selection[a]. |
| 5- 2 of N Alarm | The alarm action that occurs if two or more rectifiers fail.<br>*Allowed values:* any standard alarm selection[a]. |
| 6- Diagnostic Alarm | The alarm action that occurs in response to a diagnostic alarm for the rectifier controller.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 7- Imbalance Alarm | The alarm action that occurs for rectifier imbalance.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |

[a] Standard alarm selections:

- **Major** activates the major relay.
- **Minor** activates the minor relay.
- **Relay 1** through **Relay 6** activates the relay specified.
- **Ignore** ignores the alarm.

[b] ***n* of N** activates the alarm setting for menu item 4 (1 of N) if one rectifier fails, or activates the alarm setting for menu item 5 (2 of N) if two or more rectifiers fail.

| Rectifier Alarms | Description |
|---|---|
| 8- Current Limit Alarm | The alarm action that occurs if one or more rectifiers have been forced into the "current limited" mode.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 9- Standby Alarm | The alarm action that occurs if the control unit is holding one or more rectifiers in the standby mode.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 10- Fan Failure Alarm | The alarm action that occurs if the fan fails in one or more rectifiers.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b] |
| 11- Failure Alarm | The alarm action that occurs if the output of one or more rectifiers fails. |
| 12- Hardware Voltage Alarm | The alarm action that occurs if rectifier voltage is outside reasonable limits or if a voltage measurement failure occurs.<br>**Note:** There is a single rectifier voltage for all rectifiers.<br>*Allowed values:* any standard alarm selection[a]. |
| 13- Accept Changes | Use this option to save your changes. |

[a] Standard alarm selections:

- **Major** activates the major relay.
- **Minor** activates the minor relay.
- **Relay 1** through **Relay 6** activates the relay specified.
- **Ignore** ignores the alarm.

[b] ***n* of N** activates the alarm setting for menu item 4 (1 of N) if one rectifier fails, or activates the alarm setting for menu item 5 (2 of N) if two or more rectifiers fail.

From the **Rectifiers** sub-menu, type `3` for **Rectifier Status**. Then at the prompt, enter the number of a rectifier for a report of its status.

| Status Field | Description |
|---|---|
| Device Type | The device type of the rectifier, including voltage and amperage. All rectifiers in a DC Power Plant must be the same type. |
| In Standby | Reports `Yes` if the control unit is holding the rectifier in standby mode. |
| Firmware Version | The firmware revision of the rectifier device. |
| Rect Fail Alarm | Reports `Yes` if the rectifier has failed. |
| PCB Serial No. | The PCB (Printed Circuit Board) serial number of the rectifier. |
| Rect Voltage | The system-level rectifier voltage. |
| Self Test Result | Reports whether the rectifier has passed or failed its diagnostic testing. |
| Rect Current | The DC output current in amps. |
| Fan Fail | Reports `Yes` if the rectifier fan has failed. |
| Current Limit | Reports `Yes` if the rectifier has been forced into its current-limited mode. |

**Converters.** From the **Converters** sub-menu, type `1` for configurable **Converter Parameters**.

| Converter Parameters | Description |
|---|---|
| 1- High Voltage Threshold (V) | If converter voltage exceeds this value, a converter high voltage alarm occurs. To set the alarm action, see Converter Alarms. |
| 2- Low Voltage Threshold (V) | If converter voltage drops below this value, a converter low voltage alarm occurs. To set the alarm action, see Converter Alarms. |
| 3- Fail Safe (V) | The value sent to the converter controllers to use if communication is lost with the master controller or if the master controller board fails. |
| 4- Set Point (V) | The initial set point used in the voltage control loop. |
| 5- Fail Max (V) | The value sent to the converter controllers to define the maximum set point allowed (the converter fail maximum limit). |
| 6- Fail Min (V) | The value sent to the converter controllers to define the minimum set point allowed (the converter fail minimum limit). |
| 7- Communications Fail (sec) | The time in seconds (60 by default) that a converter waits for communication with the master controller before resetting all its values to their defaults. |
| 8- Accept Changes | Use this option to save your changes. |

From the **Converters** sub-menu, type 2 for configurable **Converter Alarms**.

| Converter Alarms | Description |
|---|---|
| 1- High Voltage Alarm | The alarm action that occurs if the High Voltage Threshold has been violated. See Converter Parameters.<br>*Allowed values:* any standard alarm selection[a]. |
| 2- Low Voltage Alarm | The alarm action that occurs if the Low Voltage Threshold has been violated. See Converter Parameters.<br>*Allowed values:* any standard alarm selection[a]. |
| 3- Configuration Alarm | The alarm action that occurs if a new converter is detected.<br>*Allowed values:* any standard alarm selection[a]. |
| 4- 1 of N Alarm | The alarm action that occurs if one converter fails in a DC Power Plant with multiple converters.<br>*Allowed values:* any standard alarm selection[a]. |
| 5- 2 of N Alarm | The alarm action that occurs if two or more converters fail.<br>*Allowed values:* any standard alarm selection[a]. |
| 6- Diagnostic Alarm | The alarm action that occurs in response to a diagnostic alarm for the converter controller.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 7- Imbalance Alarm | The alarm action that occurs for converter imbalance.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |

[a] Standard alarm selections:

**Major** activates the major relay.
**Minor** activates the minor relay.
**Relay 1** through **Relay 6** activates the relay specified.
**Ignore** ignores the alarm.

[b] ***n* of N** activates the alarm setting for menu item 4 (1 of N) if one converter fails, or activates the alarm setting for menu item 5 (2 of N) if two or more converters fail.

| Converter Alarms | Description |
|---|---|
| 8- Current Limit Alarm | The alarm action that occurs if one or more converters have been forced into the "current limited" mode.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 9- Standby Alarm | The alarm action that occurs if one or more of the converters are in standby mode.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 10- Fan Failure Alarm | The alarm action that occurs if the fan fails in one or more converters.<br>*Allowed values:* any standard alarm selection[a] or *n* of N[b]. |
| 11- Failure Alarm | The alarm action that occurs if the output of one or more converters fails. |
| 12- Hardware Voltage Alarm: | The alarm action that occurs if converter voltage is outside reasonable limits or if a voltage measurement failure occurs.<br>**Note:** There is a single converter voltage for all converters.<br>*Allowed values:* any standard alarm selection[a]. |
| 13- Accept Changes | Use this option to save your changes. |

[a] Standard alarm selections:

**Major** activates the major relay.
**Minor** activates the minor relay.
**Relay 1** through **Relay 6** activates the relay specified.
**Ignore** ignores the alarm.
[b] ***n* of N** activates the alarm setting for menu item 4 (1 of N) if one converter fails, or activates the alarm setting for menu item 5 (2 of N) if two or more converters fail.

From the **Converters** sub-menu, type `3` for **Converter Status**. Then at the prompt, enter the number of a converter for a report of its status.

| Status Field | Description |
|---|---|
| Device Type | The device type of the converter. |
| In Standby | Reports `Yes` if the control unit is holding the converter in standby mode. |
| Firmware Version | The firmware revision of the converter device. |
| Conv Fail Alarm | Reports `Yes` if the converter has failed. |
| PCB Serial No. | The PCB (Printed Circuit Board) serial number of the converter. |
| Conv Voltage | The system-level converter voltage. |
| Self Test Result | Reports whether the converter has passed or failed its diagnostic testing. |
| Conv Current | The DC output current in amps. |
| Fan Fail | Reports `Yes` if the converter fan has failed. |
| Current Limit | Reports `Yes` if the converter has been forced into its current-limited mode. |

## Distribution: Breakers and Fuses

From **Device Manager**, type `1` to select **DC Power Plant**. Then type 3 to select **Distribution**. The following options are displayed.

```
1- Breakers (range of numbers)
2- Fuses (range of numbers)
```

From the **Distribution** sub-menu, type `1` for **Breakers** or `2` for **Fuses**. Then at the prompt, enter the number of a distribution breaker or fuse to display its state (open or closed), its configurable name, and its configurable alarm setting.

- The name can be up to 16 characters.
- You can specify any of the standard alarm settings:
  - **Major** activates the major relay.
  - **Minor** activates the minor relay
  - **Relay 1** through **Relay 6** activates the relay specified.
  - **Ignore** ignores the alarm.

## Batteries: Status, Thresholds and Alarms

From **Device Manager**, type `1` to select **DC Power Plant**. Then type `4` to select **Batteries**. The following options are displayed.

```
1- Battery Status
2- Battery Thresholds
3- Battery Alarms
```

**Battery Status.** From the **Batteries** sub-menu, type `1` for **Battery Status**:

| Menu Item | Description |
|---|---|
| Float Voltage (V) | The DC Power Plant voltage, in volts. To set this value, see Battery Thresholds. |
| Maximum Recharge (A) | The battery maximum recharge rate, in amps. To set this value, see Battery Thresholds. |
| Amp/Hour Capacity (AHr) | Battery amp-hour size. To set this value, see Battery Thresholds. |
| Compensation Temp Coefficient (mV/degC/cell) | Compensation temperature coefficient, in millivolts. To set this value, see Battery Thresholds. |
| High Knee Temperature (0V/degC/cell) | The temperature (in Celsius) above which Float Voltage no longer changes to compensate for increase in temperature. To set this value, see Battery Thresholds. |
| Low Knee Temperature (0V/degC/cell) | The temperature (in Celsius) below which Float Voltage no longer changes to compensate for decrease in temperature. To set this value, see Battery Thresholds. |
| Current (A) | The battery current, in amps. |
| Temperature | The battery temperature, in degrees Celsius. |
| Current Sane | Indicates, by `yes` or `no`, whether battery current is within an acceptable range. |
| Temperature Sane | Indicates, by `yes` or `no`, whether battery temperature is within an acceptable range. |

**Battery Thresholds.** From the **Batteries** sub-menu, type 2 to display and configure **Battery Thresholds**:

| Menu Item | Description |
|---|---|
| 1-Float Voltage (V) | The DC Power Plant voltage, in volts<br>*Minimum:* – 58.00<br>*Maximum:* – 40.00 |
| 2- Max Recharge (A) | The battery maximum recharge rate, in amps.<br>*Minimum:* 0<br>*Maximum*: The maximum possible output power of your specific DC Power Plant model. |
| 3- Discharge Threshold (A) | If battery output current exceeds this threshold (in amps), the battery discharge alarm occurs.<br>*Minimum:* 0<br>*Maximum:* 200.00 |
| 4- High Voltage Threshold (V) | If system battery voltage exceeds this threshold (in volts), the battery high voltage alarm occurs.<br>*Minimum:* – 60.00<br>*Maximum:* – 40.00 |
| 5- Low Voltage Threshold (V) | If system battery voltage drops below this threshold (in volts, the battery low voltage alarm occurs.<br>*Minimum:* – 60.00<br>*Maximum:* – 30.00 |
| 6- High Temperature Threshold | If system battery temperature in Celsius exceeds this threshold, the battery high temperature alarm occurs.<br>*Minimum:* – 100.00<br>*Maximum:* 200.00 |
| 7- Low Temperature Threshold | If system battery temperature in Celsius drops below this threshold, the battery low temperature alarm occurs.<br>*Minimum:* – 100.00<br>*Maximum:* 200.00 |

| Menu Item | Description |
|---|---|
| 8- Amp Hours (AHr) | The battery amp-hour size, in amp-hours. |
| 9- Compensation Method | **On** enables and `Off` disables battery temperature compensation. |
| 10- Comp Temp Coefficient (mV/degC/cell) | The compensation temperature coefficient, in millivolts.<br>*Minimum:* – 4.99<br>*Maximum:* 0 |
| 11- High Knee Temperature (mV/degC/cell) | The temperature (in Celsius) above which Float Voltage no longer changes to compensate for increase in temperature.<br>*Minimum:* 0<br>*Maximum:* 100.00 |
| 12- Low Knee Temperature (mV/degC/cell) | The temperature (in Celsius) below which Float Voltage no longer changes to compensate for decrease in temperature.<br>*Minimum:* – 100.00<br>*Maximum:* 100.00 |
| 13- Accept Changes | Use this option to save your changes. |

**Battery Alarms.** From the **Batteries** sub-menu, type 3 to display and configure **Battery Alarms**:

| Menu Item | Description |
|---|---|
| 1- Discharge Alarm | The alarm action that occurs if battery output current exceeds the Discharge Threshold. See Battery Thresholds.<br>*Allowed values:* any standard alarm selection[a]. |
| 2- High Voltage Alarm | The alarm action that occurs if system battery voltage exceeds the High Voltage Threshold. See Battery Thresholds.<br>*Allowed values:* any standard alarm selection[a]. |
| 3- Low Voltage Alarm | The alarm action that occurs if system battery voltage drops below the Low Voltage Threshold. See Battery Thresholds.<br>*Allowed values:* any standard alarm selection[a]. |
| 4- High Temperature Alarm | The alarm action that occurs if system battery temperature exceeds the High Temperature Threshold. See Battery Thresholds.<br>*Allowed values:* any standard alarm selection[a]. |
| 5- Low Temperature Alarm | The alarm action that occurs if system battery temperature drops below the Low Temperature Threshold. See Battery Thresholds.<br>*Allowed values:* any standard alarm selection[a]. |
| 6- Hardware Current Alarm | The alarm action that occurs if the battery current is outside reasonable limits or if a measurement fault occurs.<br>*Allowed values:* any standard alarm selection[a]. |
| 7- Hardware Temperature Alarm | The alarm action that occurs if the battery temperature is outside reasonable limits or if a measurement fault occurs.<br>*Allowed values:* any standard alarm selection[a]. |

[a] Standard alarm selections:

- **Major** activates the major relay.
- **Minor** activates the minor relay.
- **Relay 1** through **Relay 6** activates the relay specified.
- **Ignore** ignores the alarm.

| Menu Item | Description |
|---|---|
| 8- Accept Changes | Use this option to save your changes. |
| [a] Standard alarm selections:<br>• **Major** activates the major relay.<br>• **Minor** activates the minor relay.<br>• **Relay 1** through **Relay 6** activates the relay specified.<br>• **Ignore** ignores the alarm. | |

## Relays: Output Relays and Input Relays

From **Device Manager**, type `1` to select **DC Power Plant**. Then type `5` to select **Relays**. The following options are displayed.

```
1- Input Relays
2- Output Relays
```

Type `1` for a menu of Input Relays, or type `2` for a menu of Output Relays, including the Minor and Major Relay.

From either menu, to display the status (On or Off) and the following configurable options of a relay, type the menu option number for that relay.

| Menu Item | Description |
|---|---|
| 1- Name | The name of the relay.<br>*Maximum:* 16 characters |
| 2- Alarm Delay (sec) | If the condition causing the alarm clears before this delay expires, the Management Card does not initiate the action associated with the alarm.<br>*Minimum:* 0 seconds<br>*Maximum:* 60.00 seconds<br>**Note:** If menu item **3- Alarm** is set to **MAJOR** or **Minor**, you cannot configure an alarm delay |
| 3- Alarm | *Allowed values:* any standard alarm selection:<br>**Major** activates the major relay.<br>**Minor** activates the minor relay.<br>**Relay 1** through **Relay 6** activates the relay specified.<br>**Ignore** ignores the alarm.<br>**Note:** You cannot change this value for the Major or Minor Relay. |
| 4- Accept Changes | Use this option to save your changes. |

## LVD (Low Voltage Disconnect)

From **Device Manager**, type `1` to select **DC Power Plant**. Then type 6 to select LVD.

At the prompt, enter the number of a Low Voltage Disconnect (LVD) on your system to view the status (Opened or Closed) and to configure options for that LVD. The following table uses LVD 1 as an example.

| Menu Item (for LVD 1) | Description |
|---|---|
| 1- LVD 1 Name | The name of the low voltage disconnect (LVD).<br>*Maximum:* 16 characters |
| 2- LVD 1 Enable | **Enabled** (the default) turns on the LVD. Use **Disabled** if no LVD is installed. |
| 3- LVD 1 Trip (V) | Voltage above this threshold trips (opens) the LVD.<br>*Minimum:* – 58.00 Volts<br>*Maximum:*– 30.00 Volts |
| 4- LVD 1 Reset (V) | Voltage above this threshold resets (closes) the LVD.<br>*Minimum:* – 58.00 Volts<br>*Maximum:* – 30.00 Volts |
| 5- LVD 1 Open Alarm | Alarm condition indicating that the LVD is tripped (Opened).<br>*Allowed values:* any standard alarm selection[a]. |
| 6- LVD 1 Hardware Alarm | Alarm condition indicating that a conflict exists between the commanded position and sensed position of the LVD.<br>*Allowed values:* any standard alarm selection[a]. |
| 7- Accept Changes | Use this option to save your changes. |

[a] Standard alarm selections:

**Major** activates the major relay.
**Minor** activates the minor relay.
**Relay 1** through **Relay 6** activates the relay specified.
**Ignore** ignores the alarm.

## Power Plant Alarms/Internal Log

From **Device Manager**, type 1 to select **DC Power Plant**. Then type 7 to select **Power Plant Alarms/Internal Log**. The following options are displayed:

```
1- Power Plant Status
2- Power Plant Internal Log
```

***Alarm Status.*** From the **Power Plant Alarms/Internal Log** sub-menu, type `1` for **Power Plant Status** to display the status of all DC Power Plant alarms.

Interpret an alarm status item as follows:

- For the meaning of each active alarm status item, see the descriptions of the alarms displayed on the Control Unit menus, as listed in your DC Power Plant product manual.
- The last character of an alarm item is one of the following:
  - The number of the relay that the alarm has activated
  - m for a minor alarm
  - M for a major alarm

In the following example, item 1 indicates that the System Low Voltage Alarm is on and is a major alarm, item 3 indicates the System Low Temperature Alarm is on and is a minor alarm, and item 4 indicates that the Battery Low Voltage alarm is on and has activated relay 2.

```
1: Sys LV Alm On   M
2: Load LV Alm On  M
3: Sys LT Alm On   m
4: Batt LV Alm On  2
5: Hdwr Batt T Alm 4
```

**Power Plant Internal Log.** From the **Power Plant Alarms/Internal Log** sub-menu, type 2 to display, on the first screen, the ten most recent DC Power Plant events and the date and time at which each event occurred. Press ENTER to scroll through earlier events. You can view this DC Power Plant event log only in the control console, and you cannot clear this DC Power Plant event log.

## About DC Power Plant System

From **Device Manager**, type 1 to select **DC Power Plant**. Then type 8 to select **About DC Power System**.

The screen displays the model, hardware revision, and firmware revision of the DC Power Plant.

You cannot view this information in the Web interface.

# Event-Related Menus

## Introduction

### Overview

The **Events** menu provides access to the options that you use to do the following tasks:

- Access the Event Log
- Define the actions to be taken when an event occurs, based on the severity level of that event
  - Event logging
  - SNMP trap notification
  - E-mail notification


You can only use the Web interface to define which events will use which actions, as described in Event Log and How to Configure Individual Events.

- Define up to four SNMP trap receivers, by NMS-specific IP address, for event notifications by SNMP traps.
- Define up to four recipients for event notifications by email.

## Menu options

In the Web interface, all of the events options are accessed through the **Events** menu. In the control console, access the available events-related options as follows:

- Use the **Email** option in the **Network** menu to define the SMTP server and e-mail recipients.
- Use the **SNMP** option in the **Network** menu to define the SNMP trap receivers.
- Use Ctrl-L to access the Event Log from any menu.

For information about the settings available for the **Events** menu options, and for a detailed description of the e-mail feature, see the following descriptions:

- Event Log
- Event Actions (Web Interface only)
- Event Recipients
- E-mail Feature
- How to Configure Individual Events

# Event Log

## Overview

The DC Power Plant supports an event-logging capability for all DC Power Plant application firmware modules. This allows you to record and view DC Power Plant and Management Card events. You can use any of the following to view the Event Log:

- Web interface
- Control console
- FTP

## Logged events

By default, any event which causes an SNMP trap will be logged, except for SNMP authentication failures. Additionally, the Management Card will log its abnormal internal system events. However, you can use the **Actions** option in the Web interface's **Events** menu to disable the logging of events based on their assigned severity level, as described in Event Actions (Web Interface only).


Some System (Management Card) events do not have a severity level. Even if you disable the Event Log for all severity levels, events with no severity level will still be logged.

To access a list of the System (Management Card) and DC (DC Power Plant) events, see "Event List" page.

## Web interface

The **Log** option in the **Events** menu accesses the Event Log. This log displays all of the events that have been recorded since the log was last deleted, in reverse chronological order. The **Delete Log** button clears all events from the log.

## Control console

When logged on at the control console, press CTRL-L to display up to 300 events from the Event Log, with the most recent events displayed first. Use the SPACE BAR to scroll through the recorded events. While viewing the log, type `d` and press ENTER to clear all events from the log.


After events are deleted, they cannot be retrieved.

## How to use FTP to retrieve log files

You can use FTP to retrieve a tab-delineated Event Log (*event.txt*) or Data Log (*data.txt*) file that you can import into a spreadsheet application.

- The file reports all of the events (*event.txt*) or data (*data.txt*) recorded since the log was last deleted.
- The file includes information that the Event Log or Data Log does not display.
  - The version of the file format (first field)
  - The **Date** and **Time** the file was retrieved
  - The **Name**, **Contact**, **Location**, and IP address of the Management Card
  - In the *event.txt* file, the unique **Event Code** for each recorded event


The Management Card uses a 4-digit year for log entries. You may need to select a four-digit date format in your spreadsheet application to display all four digits of the year.

To use FTP to retrieve the *event.txt* or *data.txt* file:

1. At a command prompt, type `ftp` and the Management Card's IP address, and press ENTER. If the **Port** setting for **FTP Server** in the **Network** menu has changed from its default value (*21*), you must use the non-default value in the FTP command. For some FTP clients, you must use a colon to add the port number to the end of the IP address. For Windows FTP clients, use the following command (including spaces):

   `ftp>open ip_address port_number`

To use non-default port values to enhance security, see Port assignments.

2. Use the case-sensitive **User Name** and **Password** for either an Administrator or a Device Manager User to log on.
   - For Administrator, **apc** is the default for **User Name** and **Password**.
   - For Device Manager, **device** is the default for **User Name**, and **apc** is the default for **Password**.
3. Use the **get** command to transmit the text version of the Event Log to your local drive.

   ```
   ftp>get event.txt
   ```

   or

   ```
   ftp>get data.txt
   ```

4. You can use the **del** command to clear the contents of the Event or Data Log.

   ```
   ftp>del event.txt
   ```

   or

   ```
   ftp>del data.txt
   ```

   You will not be asked to confirm the deletion.
   - If you clear the Data Log, a Deleted Log event will be recorded in the Event Log.
   - If you clear te Event Log, a new *event.txt* file will be created to record the Deleted Log event
5. Type `quit` at the `ftp>` prompt to exit from FTP.

# Event Actions (Web Interface only)

## Overview

The **Actions** option is available only in the Web interface's **Events** menu. This option allows you to do the following:

- Select which actions will occur for events that have a specified severity level:
  - **Event Log** selects which severity levels cause an event to be recorded in the Event Log. See Event log action.
  - **SNMP Traps** selects which severity levels cause SNMP traps to be generated. See SNMP traps action
  - **Email** selects which severity levels cause e-mail notifications to be sent. See Email action.
- Click **Details** to access a complete list of the System (Management Card) and DC (DC Power Plant) events that can occur, and then edit the actions that will occur for an individual event, as described in How to Configure Individual Events. Click **Hide Details** to return to the **Actions** option.

## Severity levels

With the exception of some System (Management Card) events that do not have a severity level assigned, events are assigned a default severity level based on the seriousness of the event.

- **Informational:** Indicates an event that requires no action, such as a notification of a return from an abnormal condition.
- **Warning:** Indicates an event that may need to be addressed should the condition continue, but which does not require immediate attention.
- **Severe:** Indicates an event that requires immediate attention. Unless resolved, severe Device and System events can cause incorrect operation of the DC Power Plant or its Management Card.

## Event log action

You can disable the recording of events in the event log. By default, all events are recorded, even events that have no severity level assigned.


Even if you disable the event log action for all severity levels, System (DC Power Plant) events that have no severity level assigned will still be logged.

For more information about this log, see Event Log.

## SNMP traps action

By default, the **SNMP Traps** action is enabled for all events that have a severity level assigned. However, before you can use SNMP traps for event notifications, you must identify the network management stations (NMSs) that will receive the traps by their IP addresses.

To define up to four NMSs as trap receivers, see Event Recipients.

## Email action

By default, the **Email** action is enabled for all events that have a severity level assigned. However, before you can use e-mail for event notifications, you must define the e-mail recipients. See E-mail Feature.

# Event Recipients

## Overview

The Web interface and control console both have options that allow you to define up to four trap receivers and up to four e-mail addresses to be used when an event occurs that has the SNMP traps or e-mail enabled. See Event Actions (Web Interface only).

## Trap Receiver settings

To access the **Trap Receiver** settings that allow you to define which NMSs will receive traps:

- In the Web interface, use the **Recipients** option in the **Events** menu.
- In the control console, use the **SNMP** option in the **Network** menu.

| Item | Definition |
|---|---|
| Community Name | This setting defines the password (maximum of 15 characters) used when traps are sent to the NMS identified by the **Receiver NMS IP** setting. |
| Receiver NMS IP | Identifies by IP address the NMS that will receive traps. If this setting is **0.0.0.0** (the default value), traps will not be sent to any NMS. |
| Generation (Web interface)<br><br>Trap Generation (control console) | Enables (by default) or disables the sending of any traps to the NMS identified by the **Receiver NMS IP** setting. |
| Authentication Traps | Enables or disables the sending of authentication traps to the NMS identified by the **Receiver NMS IP** setting. |

## Email options

See E-mail Feature.

# E-mail Feature

## Overview

You can use the Simple Mail Transfer Protocol (SMTP) to send e-mail to a maximum of four recipients when an event occurs.

To use the E-mail feature, you must define the following settings:

- The IP addresses of the primary and secondary Domain Name Service (DNS) servers, as described in DNS servers
- The DNS name of the **SMTP Server** and the **From Address** settings for SMTP, as described in SMTP settings
- The e-mail addresses for a maximum of four recipients, as described in Email Recipients


You can use the **To Address** setting of the **Email Recipients** option to send e-mail to a text-based pager.

## DNS servers

The Management Card cannot send any e-mail messages unless the IP address of the primary DNS server is defined (see DNS).

The Management Card will wait a maximum of 15 seconds for a response from both the primary and (if specified) the secondary DNS servers. If the Management Card does not receive a response within that time, e-mail cannot be sent. Therefore, use DNS servers that are on the same segment as the Management Card or on a nearby segment (but not across a WAN).

Once you define the IP addresses of the DNS servers, verify that DNS is working correctly by entering the DNS name of a computer on your network to test whether you can look up the IP address for that DNS name.

## SMTP settings

The **Email** option in the **Network** menu accesses the following settings:

| Setting | Description |
|---|---|
| SMTP Server | Defines the SMTP server by its DNS name.<br>**NOTE**: This definition is required only when the **SMTP Server** option (see Email Recipients) is set to **Local**. |
| From Address | Defines the contents of the **From** field in the e-mail messages sent by the Management Card.<br>**NOTE**: The SMTP server's configuration may require that you use a valid user account on the server for this setting. See the server's documentation for more information. |

## Email Recipients

***Web interface.*** The **Recipients** option in the **Events** menu or the **Configure the Email recipients** link in the "Email Configuration" page accesses the settings you use to identify up to four e-mail recipients. Use the **Email Test** option to send a test message to a configured recipient.

***Control console.*** The **Email** option in the **Network** Menu, accesses the e-mail recipient settings.

| Setting | Description |
|---|---|
| To Address[1] | Defines the user and domain names of the recipient. To use e-mail for paging, use the e-mail address for that recipient's pager gateway account (for example, `myacct100@skytel.com`). The pager gateway pages the recipient.<br>**NOTE**:The recipient's pager must be able to use text-based messaging. |
| Use SMTP Server | Selects one of the following methods for routing e-mail:<br>• Through the Management Card's SMTP server (the recommended option, **Local**). This option ensures that the e-mail is sent before the Management Card's 20-second time-out, and, if necessary, is retried several times. Also do one of the following:<br>  • Enable forwarding at the Management Card's SMTP server so that it can route e-mail to external SMTP servers. Typically, SMTP servers are not configured to forward e-mail. Always check with the administrator of your SMTP server before changing its configuration to allow forwarding.<br>  • Set up a special e-mail account for the Management Card to forward e-mail to an external mail account.<br>• Directly to the recipient's SMTP server (the **Recipient's** option). On a busy remote SMTP server, the time-out may prevent some e-mail from being sent, and with this option the Management Card tries to send the e-mail only once.<br>When the recipient uses the Management Card's SMTP server, this setting has no affect. |
| Generation | Enables (by default) or disables sending e-mail to the recipient. |

1. You can bypass the DNS lookup of the mail server's IP address by using the IP address in brackets instead of the e-mail domain name. For example, use jsmith@[xxx,xxx.x.xxx] instead of jsmith@company.com. This is useful when DNS lookups are not working correctly.

| Setting | Description |
|---|---|
| Format | Selects the format used for e-mail messages:<br>**Short**: Identifies only the event that occurred. For example:<br>DC: Communications Lost<br>**Long**: Includes information about the Management Card and the DC Power Plant, as well as the event. For example:<br>Name : PowerPlant1<br>Location : Testing Lab<br>Contact : John Winslow<br>http://159.223.55.157<br>Serial # : JA0217009306<br>Date: 11/01/2002<br>Time: 02:42:48<br>Code: 0x0D02<br>Severe - DC: Communications Lost |

1. You can bypass the DNS lookup of the mail server's IP address by using the IP address in brackets instead of the e-mail domain name. For example, use jsmith@[xxx,xxx.x.xxx] instead of jsmith@company.com. This is useful when DNS lookups are not working correctly.

# How to Configure Individual Events

## "Event List" page

The **Actions** option in the **Events** menu opens the "Event Actions Configuration" page. You use the **Details** button in this page to access a complete list of the System (Management Card) and DC (DC Power Plant) events that can be reported by your Management Card.

Each event is identified by its unique code, its description, and its assigned severity level, as shown in the following examples.

For information about severity levels and how they define the actions associated with events, see Event Actions (Web Interface only).

| Code | Description | Severity |
|---|---|---|
| 0x0008 | System: Password changed. | Informational |
| 0x0D06 | DC: A Minor alarm is active in the DC power plant. | Warning |

## Detailed Event Action Configuration page

The event codes provide a link to a page that allows you to do the following:

- Change the selected event's severity level
- Enable or disable whether the event uses the Event Log, SNMP traps, or e-mail notifications

# Data Menu (Web Interface Only)

## Log Option

Use this option to access a log that stores information about the DC Power Plant and the power input to that DC Power Plant.

The information in the Data Log is sampled and stored based on the log interval defined by the **Data** menu's Configuration Option. Each entry is listed by the date and time the data was recorded, and provides the data in a column format.

For descriptions of the recorded data that is specific to the DC Power Plant, see the online help in your Management Card's Web interface; for information about how you can retrieve the Data Log as a text file, see How to use FTP to retrieve log files.

# Configuration Option

Use this option to access the “Data Log Configuration” page. This page reports how much data can be stored in the Data Log based on the **Log Interval** setting, which defines how often data is sampled and recorded in the Data Log. If you change the **Log Interval**, the report updates to reflect the effect of the new setting.

The minimum interval is **60** seconds; the maximum interval is **8** hours, **10** minutes, **15** seconds.

# Security

## Security Features

### Planning and implementing security features

As a network device that passes information across the network, the Network Management Card is subject to the same exposure as other devices on the network.

Use the information in this section to plan and implement the security features appropriate for your environment.

### Port assignments

If a Telnet, FTP, or Web server uses a non-standard port, a user must specify the port when using the client interface, such as a Web browser. The non-standard port address becomes an extra "password," hiding the server to provide an additional level of security. The TCP ports for which the Telnet, FTP, and Web servers listen are initially set at the standard "well known ports" for the protocols. To hide the interfaces, use any port numbers from 5000 to 32767.

### User names, passwords, community names

All user names, passwords, and community names for SNMP are transferred over the network as plain text. A user who is capable of monitoring the network traffic can determine the user names and passwords required to log in to the accounts of the Control Console or Web interface of the Network Management Card. This security limitation of the protocols affects any device using Telnet, a Web server, or an SNMP version 1 agent.

## Summary of access methods

| Interface | Security Access | Notes |
|---|---|---|
| Serial Control Console | Access is by user name and password. | Always enabled. |
| Telnet Control Console | These methods are available:<br>• User name and password<br>• Selectable server port<br>• Server Enable/Disable | The user name and password are transmitted as plain text. |
| SNMP | These methods are available:<br>• Community Name<br>• NMS IP filters<br>• Agent Enable/Disable<br>• Four access communities with read/write/disable capability | The NMS IP filters allow access from designated IP addresses.<br>• 162.245.12.1 allows only the NMS with that IP address to have access.<br>• 162.245.12.255 allows access for any NMS on the 162.245.12 segment.<br>• 162.245.255.255 allows access for any NMS on the 162.245 segment.<br>• 162.255.255.255 allows access for any NMS on the 162 segment.<br>• 0.0.0.0 or 255.255.255.255 allows access for any NMS. |
| FTP Server | These methods are available:<br>• User name and password<br>• Selectable server port<br>• Server Enable/Disable | Only the Administrator account has access. |
| Web Server | These methods are available:<br>• User name and password<br>• Selectable server port<br>• Server Enable/Disable | In basic HTTP authentication mode, the user name and password are transmitted base-64 encoded (with no encryption). |

# Authentication

## Authentication versus encryption

The Network Management Card controls access by providing basic authentication through user names, passwords, and IP addresses, but provides no type of encryption. These basic security features are sufficient for most environments, in which sensitive data is not being transferred.

## Firewalls

Although some methods of authentication provide a higher level of security than others, complete protection from security breaches is almost impossible to achieve. Well-configured firewalls are an essential element in an overall security scheme.

# Troubleshooting

## Management Card

### Management Card access problems

For problems that are not described in the following table, see SNMP issues. If you still cannot resolve the problem, see Warranty and Service.

| Problem | Solution |
|---|---|
| Unable to ping the Management Card | If the Management Card's Status LED is green, try to ping another node on the same network segment as the Management Card. If that fails, it is not a problem of the Management Card.<br>If the Status LED is not green, or if the ping test succeeds, perform the following checks:<br>• Verify all network connections.<br>• Verify the IP addresses of the Management Card and the NMS.<br>• If the NMS is on a different physical network (or subnetwork) from the Management Card, verify the IP address of the default gateway (or router).<br>• Verify the number of subnet bits for the Management Card's subnet mask. |
| Cannot access the Web interface | • Verify that HTTP access is enabled.<br>• Verify that you can ping the Management Card.<br>• Verify that you are using either Internet Explorer, version 5.0 or higher, or Netscape, version 4.0.8 or higher. |

## SNMP issues

| Problem | Solution |
|---|---|
| Unable to perform a GET | • Verify the read (GET) community name.<br>• Use the control console or Web interface to ensure that the NMS has access. See SNMP. |
| Unable to perform a SET | • Verify the read/write (SET) community name.<br>• Use the control console or Web interface to ensure that the NMS has write (SET) access. See SNMP. |
| Unable to receive traps at the NMS | Query the **mconfigTrapReceiverTable** PowerNet MIB OID to check whether the NMS IP address is listed correctly and whether the community name defined for the NMS matches the community name in the table. Use SETs to the **mconfigTrapReceiverTable** OIDs, or use the control console or Web interface to make any necessary corrections. See SNMP. |
| Traps received at an NMS are not identified | See your NMS documentation to verify that the traps are properly integrated in the alarm/trap database. |

# Product Information

## Warranty and Service

### Limited warranty

APC warrants the Network Management Card to be free from defects in materials and workmanship for a period of two years from the date of purchase. Its obligation under this warranty is limited to repairing or replacing, at its own sole option, any such defective products. This warranty does not apply to equipment that has been damaged by accident, negligence, or misapplication or has been altered or modified in any way. This warranty applies only to the original purchaser.

### Warranty limitations

**Except as provided herein, APC makes no warranties, express or implied, including warranties of merchantability and fitness for a particular purpose.** Some jurisdictions do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

**Except as provided above, in no event will APC be liable for direct, indirect, special, incidental, or consequential damages arising out of the use of this product, even if advised of the possibility of such damage.**

Specifically, APC is not liable for any costs, such as lost profits or revenue, loss of equipment, loss of use of equipment, loss of software, loss of data, costs of substitutes, claims by third parties, or otherwise. This warranty gives you specific legal rights and you may also have other rights, which vary according to jurisdiction.

## Obtaining Service

If you could not resolve the problem using the information in Troubleshooting, contact APC Worldwide Customer Support and be ready to provide the following:

- The Management Card's serial number. To find the serial number of the Management Card, use the **About System** menu option.
- The date you obtained the card, either as part of your DC Power Plant or as a replacement for the original card
- A description of the problem
- Information about your service contract.

If phone consultation cannot solve the problem, you need on-site service by an APC technician. See your service contract for information.


**Do not attempt to remove the Management Card without prior authorization. The terms of your warranty and service contract may require that service be performed by an authorized APC technician only.**

# Life-Support Policy

## General policy

American Power Conversion (APC) does not recommend the use of any of its products in the following situations:

- In life-support applications where failure or malfunction of the APC product can be reasonably expected to cause failure of the life-support device or to affect significantly its safety or effectiveness.
- In direct patient care.

APC will not knowingly sell its products for use in such applications unless it receives in writing assurances satisfactory to APC that (a) the risks of injury or damage have been minimized, (b) the customer assumes all such risks, and (c) the liability of American Power Conversion is adequately protected under the circumstances.

## Examples of life-support devices

The term *life-support device* includes but is not limited to neonatal oxygen analyzers, nerve stimulators (whether used for anesthesia, pain relief, or other purposes), autotransfusion devices, blood pumps, defibrillators, arrhythmia detectors and alarms, pacemakers, hemodialysis systems, peritoneal dialysis systems, neonatal ventilator incubators, ventilators (for adults and infants), anesthesia ventilators, infusion pumps, and any other devices designated as “critical” by the U.S. FDA.

Hospital-grade wiring devices and leakage current protection may be ordered as options on many APC UPS systems. APC does not claim that units with these modifications are certified or listed as hospital-grade by APC or any other organization. Therefore these units do not meet the requirements for use in direct patient care.


**THE NETWORK MANAGEMENT CARD IS SENSITIVE TO STATIC ELECTRICITY. WHEN HANDLING THE MANAGEMENT CARD, TOUCH ONLY THE END PLATE WHILE USING ONE OR MORE OF THESE ELECTROSTATIC-DISCHARGE DEVICES (ESDS): WRIST STRAPS, HEEL STRAPS, TOE STRAPS, OR CONDUCTIVE SHOES.**

# Specifications

## Electrical

| Item | Specification |
|---|---|
| Acceptable input voltage | 19-30 VDC |
| Maximum total current draw | 110 mA |

## Physical

| Item | Specification |
|---|---|
| Size (H × W × D) | 1.46 × 4.75 × 4.3 in<br>(3.7 × 12.1 × 10.9 cm) |
| Weight | .25 lb (.11 kg) |
| Shipping weight | .8 lb (.36 kg) |

# Index

## Numerics



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# APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)

    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**

    Global support searching APC Knowledge Base and using e-support.
- Contact an APC Customer Support center by telephone or e-mail.
  - Regional centers:

| | |
|---|---|
| Direct InfraStruXure Customer Support Line | (1)(877)537-0607 (toll free) |
| APC headquarters U.S., Canada | (1)(800)800-4272 (toll free) |
| Latin America | (1)(401)789-5735 (USA) |
| Europe, Middle East, Africa | (353)(91)702000 (Ireland) |
| Japan | (0) 35434-2021 |
| Australia, New Zealand, South Pacific area | (61) (2) 9955 9366 (Australia) |

  - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

Contact the APC representative or other distributor from whom you purchased your APC product for information on how to obtain local customer support.

# Copyright



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**NOTE:** All Magnum models of the DC Power Plant can be managed through the InfraStruXure Manager. Other DC Power Plant models cannot.