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**Management
Card**

Addendum

APC[®]

APC® Management Card

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APC® Management Card

Web/SNMP Management Card Wizard

Introduction

Capabilities

The APC Web/SNMP Management Card Wizard is a Windows® application used to pre-configure, reconfigure, and upgrade single or multiple Management Cards. The Wizard works locally through the serial port of your computer or remotely over your TCP/IP network. Using the Wizard to configure the Management Card, you can:

- Automatically discover unconfigured Management Cards remotely or locally
- Preconfigure multiple Management Cards before deployment
- Reconfigure multiple Management Cards after deployment
- Upgrade the firmware of the Management Card
- Create a configuration file for BOOTP
- Create a configuration file

System Requirements

You can use the Wizard on Intel-based workstations running Windows 95, Windows 98, Windows NT (version 4.0), and Windows 2000.

Obtaining updated versions of the Wizard

Updated versions of the Wizard are available from the Download Software page at <http://www.apcc.com>. Access to some of the new features may require a firmware upgrade, which you may have to purchase. To update the Management Card's firmware, see **Firmware & Configuration File Transfers on page 12**.

Configuring Management Card settings

Using the Wizard, you can configure all of the Management Card's settings locally or remotely, except the URL names and links.

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Web/SNMP Management Card Wizard

Introduction *continued*

Installing the Wizard

If autorun is enabled on your CD-ROM drive, the installation program starts automatically when you insert the CD. Otherwise, run the setup.exe installation program in the Wizard directory and follow the on-screen instructions. The installation creates a shortcut link in the **Start** menu you can use to launch the Wizard application.

Online Help

To access the Wizard's online help, click **Help** in the left hand corner of the Wizard screen.

Quick Configuration of the required settings

To use the Wizard to configure only the required TCP/IP settings, see **Configuring the required TCP/IP settings on page 4**.

Pre-configuring multiple Management Cards before deployment

To pre-configure multiple Management Cards before they are deployed, use one of the following options:

- Use the Wizard to pre-configure and deploy the Management Card's settings locally or the TCP/IP settings remotely through auto-discovery of the Management Card. See **Pre-configuring the Management Card on page 5**.
- Deploy your Management Cards without any pre-configuration let a BOOTP server assign the TCP/IP settings (System IP, Subnet Mask, and Default Gateway addresses), and use the Wizard to reconfigure any of the Management Card's settings remotely. See **Configuring deployed Management Cards on page 6**.
- Deploy your Management Cards without any pre-configuration, let a BOOTP server assign the TCP/IP settings (System IP, Subnet Mask, and Default Gateway addresses), and specify a configuration file (.cfg extension). The Management Card will assume all settings specified in the configuration file. To use the Wizard to create configuration files, see **Configuring deployed Management Cards on page 6**.

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Web/SNMP Management Card Wizard

Introduction *continued*

Reconfiguring multiple Management Cards after they are deployed

To reconfigure multiple Management Cards after they are deployed, use one of the following options:

- Use the Wizard to reconfigure any of the Management Card's settings remotely. See **Configuring deployed Management Cards on page 6**.
- Use the Wizard to create a configuration file (.*cfg* extension), then transmit that file to the Management Cards. See **Configuring deployed Management Cards on page 6**.
- Use the I2C Configuration Utility to create a configuration file (.*cfg* extension), then use FTP or the Wizard to transmit that file to the Management Cards. See **I2C Configuration Utility on page 9**.

Upgrading firmware using the Wizard

To use the Wizard to upgrade the firmware of many Management Cards simultaneously, see **Upgrading firmware on page 8**.

Web/SNMP Management Card Wizard

Using the Management Card Wizard

Configuration Options

This section provides instructions on how to pre-configure, reconfigure, and upgrade Management Cards using the Management Card Wizard. Use the procedure that best fits your needs.

Configuring the required TCP/IP settings

To configure the Management Card's required TCP/IP settings:

1. Use the link in the **Start** menu to launch the Wizard. The Wizard automatically detects unconfigured Management Cards and prompts you to configure the network settings.
2. Configure the Management Card's TCP/IP settings.

Note: **Step a** and **Step b** apply to a local configuration only. For a remote configuration, go to **Step c** when the Wizard prompts you for the TCP/IP settings.

- a. Select the **Express (Recommended)** option from the "Installation Options" screen, then click **Next >**.
 - b. Select the **Locally (via Serial Port)** option from the "Express Configuration" screen, then click **Next >**.
 - c. Configure your network settings. At a minimum, you must configure the TCP/IP settings (**System IP**, **Subnet Mask**, **Default Gateway** addresses). Contact your network administrator to obtain valid TCP/IP settings. If the Management Card's TCP/IP settings are configured before deployment, the Management Card can be reconfigured remotely at a later time.
3. Select the **Start a Web browser when finished** option to connect over the Web to the Management Card.
 4. Click **Finish** and wait for the Management Card to reboot and launch your default Web browser.
 5. Enter the correct, IP-formatted information, and click **Finish** to transmit the TCP/IP settings. If the Wizard notifies you that the IP address is in use on the network, enter a valid IP address, click **Finish**, and follow the on-screen instructions.

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Web/SNMP Management Card Wizard

Using the Management Card Wizard *continued*

Pre-configuring the Management Card

To pre-configure the Management Card:

1. Use the link in the **Start** menu to launch the Wizard.
2. When the Wizard appears, click **Next >**.
3. Select the **Custom (Advanced)** option from the “Installation Options” screen, then click **Next >**.
4. Select the **Define a New Configuration File (Typical)** option from the “Custom Installation” screen, then click **Next >**.
5. Configure your network settings. At a minimum, you must configure the TCP/IP settings (**System IP**, **Subnet Mask**, **Default Gateway** addresses). If the Management Card’s TCP/IP settings are configured before deployment, the Management Card can be reconfigured remotely at a later time.
Note: If you intend to use the Wizard to reconfigure Management Cards after deployment, do not disable **FTP Server Access**.
6. Click **Next >** to cycle through the Management Card’s settings. Skip any setting that you do not want to configure.
7. Stop at the “Customize the settings that will be transmitted to the Management Card” screen. Choose to transmit the TCP/IP settings (**System IP**, **Subnet Mask**, **Default Gateway** addresses, and **BOOTP**) and any other newly configured settings, then click **Next >**.
8. in the “Configuration Summary” screen, verify your selections. You can save the settings to load them into the Wizard at a later time. Click **Next >**.
9. Select the **Locally (via serial port)** option from the “Transmit Current Settings” screen, then click **Next >**.
10. Follow the on-screen instructions. Click **Apply** to transmit the new settings to the Management Card, and wait until the transmission is complete.
11. To define the TCP/IP settings for the next Management Card, click **Rewind** on the “Transmit Settings Locally” screen.

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Web/SNMP Management Card Wizard

Using the Management Card Wizard *continued*

Configuring deployed Management Cards

You can use any of the following methods to configure deployed Management Cards:

- Create a configuration file to be used by a BOOTP server.
- Create a configuration file to be used by the Wizard.
- Use the Wizard to reconfigure the Management Cards now.

Basic Procedure. To create a configuration file for BOOTP or the Wizard, or to use the Wizard with FTP:

1. Use the link in the **Start** menu to launch the Wizard.
2. When the Wizard appears, click **Next >**.
3. Select the **Custom (Advanced)** option from the “Installation Options” screen, then click **Next >**.
4. Select the **Define a New Configuration File (Typical)** option from the “Custom Installation” screen, then click **Next >**.
5. Click **Next >** to cycle through the Management Card’s settings. Skip any setting that you do not want to configure.

Note: For a BOOTP file, select only settings that are generic across multiple Management Cards. If you want to use the Wizard to reconfigure Management Cards after they are deployed, do not disable **FTP Server Access**.

6. Stop at the “Customize the settings that will be transmitted to the Management Card” screen, choose the settings you want to transmit, then click **Next >**.

Note: Deselect the TCP/IP settings (**System IP**, **Subnet Mask**, **Default Gateway** addresses, and **BOOTP**) and **FTP Server Access** to avoid overwriting these settings when you transfer the configuration file.

7. In the “Configuration Summary” screen, verify your selections. All settings that have a **YES** in the **Send** column will be transmitted, overwriting existing settings. Then do the following:
 - To use the Wizard to configure deployed Management Cards now, click **Next >** and see **Wizard configuration without a configuration file on page 8**.
 - To create a configuration file (.cfg extension) to be used with a BOOTP server or the Wizard, click **Save**. This automatically creates a text-editable configuration file (.ini extension), and a binary configuration file (.cfg extension) which contains only the settings selected in **Step 6**. Then see **BOOTP configuration file** or **Wizard configuration file** on the next page to use the .cfg file.

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Web/SNMP Management Card Wizard

Using the Management Card Wizard *continued*

Configuring deployed Management Cards, continued

BOOTP configuration file. To use a configuration file with BOOTP:

1. Perform the **Basic Procedure** on the preceding page.
2. Specify the Management Card's System IP, Subnet Mask, and Default Gateway addresses in the BOOTPTAB file of your BOOTP server. For the **Bootup Filename**, specify the binary configuration file (.cfg extension) that was saved in **Step 7** on the preceding page.
3. Install or reboot the Management Card to make a BOOTP request. To reboot the Management Card:
 - In the Control Console or Web Interface, use the **System->Tools** menu.
 - In SNMP, use the **mcontrolRestartAgent** OID.
 - On the Management Card's faceplate, use the **Reset** button.
4. When the Management Card receives the BOOTP response, it assumes the System IP, Subnet Mask, and Default Gateway addresses, and attempts to download the file specified by the BOOTP Filename.
 - The Management Card first makes a TFTP request for the Bootup Filename from the same IP address that supplied the BOOTP response. If a TFTP server is present on that computer, and the configuration file is in the appropriate directory, the Management Card downloads the configuration file and assumes all of the specified settings.
 - If the TFTP request fails, the Management Card makes an FTP request for the Bootup Filename from the same computer which supplied the BOOTP response. The FTP request uses the FTP Client User Name and Password (defaults for both are **apc**) previously configured in the Management Card to log in to the FTP server. If the FTP server is present, and the configuration file is in the appropriate directory, the Management Card downloads the configuration file and assumes all of the specified settings.

Wizard configuration file. To use a configuration file with the Wizard:

1. Perform the **Basic Procedure** on the previous page.
2. Transmit the binary configuration file (.cfg extension) to the Management Cards. For information about file transfer options, see **Firmware & Configuration File Transfers on page 12**.

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Web/SNMP Management Card Wizard

Using the Management Card Wizard *continued*

Configuring deployed Management Cards, continued

Wizard configuration without a configuration file. To use the Wizard to reconfigure deployed Management Cards immediately:

1. Perform the **Basic Procedure on page 6**.
2. Select the **Remotely (over network via FTP Server)** option from the “Transmit Current Settings” screen, then click **Next >**.
3. In the “Remote File Transfer” screen, add the IP address, **FTP Server Port**, and Administrator **User Name** and **Password** for each Management Card to which you are transmitting the settings.
Note: If you have a saved list of Management Card IP addresses, you can click **Load...** to import that list.
4. When you finish adding the IP addresses, click **Next >**.
5. Click **Apply** in the “Remote File Transfer via FTP” screen to transmit the new settings to the Management Cards specified in **Step 3**.

Upgrading firmware

To upgrade the firmware for deployed Management Cards:

1. Make sure that the Management Cards have had their TCP/IP settings configured and that they are connected to the network.
2. Use the link in the **Start** menu to launch the Wizard, then when the Wizard appears, click **Next >**.
3. Select the **Custom (Advanced)** option from the “Installation Options” screen, then click **Next >**.
4. Select the **Upgrade Firmware** option from the “Custom Installation” screen, then click **Next >**.
5. Click **Browse** for both the APC Operating System and Application Firmware Modules, and select the appropriate file for each. To obtain new firmware modules from APC, see **Firmware & Configuration File Transfers on page 12**.
6. Add the IP address, **FTP Server Port**, and Administrator **User Name** and **Password** for each Management Card you want to upgrade.
Note: If you have a saved list of Management Card IP addresses, you can click **Load...** to import that list.
7. Click **Next >**.
8. Click **Apply** to transmit the new firmware to the Management Cards specified in **Step 6**.

APC® Management Card

I2C Configuration Utility

Introduction

Overview

The I2C Configuration Utility converts a text-editable configuration (INI) file to a binary-formatted configuration (CFG) file. You can then transfer the CFG file to one or more Management Cards.

- You can use the Web/SNMP Management Card Wizard to transfer the changes to one or more Management Cards. See **Using the Wizard to Transfer a Configuration (CFG) File on page 11**.
- You can use FTP to transfer the changes to a single Management Card over the network. See **Updating settings using an FTP Client on page 22**.

Features

The I2C utility currently, which works with Windows 95, Windows 98, Windows NT 4.0, and Windows 2000, is the only method available for simultaneous configuration of the following settings for multiple Management Cards:

- Event action settings
- Email settings
- DNS settings
- MasterSwitch device configuration settings

Note: You cannot configure and transmit these settings by using the Web/SNMP Management Card Wizard alone.

I2C Configuration Utility

Creating the Configuration (CFG) File

Edit the INI file

A **default.ini** file, which contains all of the available configuration settings, is provided with the I2C utility.

1. Make a copy of the **default.ini** file.
2. Comment out (or delete) the configuration settings you do not want to set, so that you do not overwrite those settings when you transfer the CFG file to a Management Card.

Convert the INI file to a CFG file

After editing the INI file, convert that file to a file with a CFG format:

1. Open an MS-DOS command prompt window on a computer that is connected to the network.
2. Go to the directory that contains the I2C utility and the INI file (in this example, the C:\apc directory)
3. Convert the file. To convert an INI file named **my.ini**, you enter the command lines shown in **bold**:

```
C:\>cd\apc
```

```
C:\apc>i2c301 my.ini -o new.cfg
```

This converts the **my.ini** file. The optional command, **-o**, allows you to chose the name for the CFG file (**new.cfg**, in this example).

You can now use this CFG file to update one or more Management Cards.

- To use the Web/SNMP Management Card Wizard to update one or more Management Cards, see **Using the Wizard to Transfer a Configuration (CFG) File** on the next page.
- To use FTP to update a single Management Card over the network, see **Updating settings using an FTP Client on page 22**.

I2C Configuration Utility

Using the Wizard to Transfer a Configuration (CFG) File

- Transfer Procedure** To use the Web/SNMP Management Card Wizard to transfer a CFG file that you created with the I2C utility:
1. Use the link in the **Start** menu to launch the Wizard.
 2. When the Wizard appears, click **Next >**.
 3. Select the **Custom (Advanced)** option from the “Installation Options” screen, then click **Next >**.
 4. When the “Open Default Configuration File” screen appears, select the **Binary Files (*.cfg)** option from the **Files of type:** drop-down menu.
 5. Navigate to the directory that contains the CFG file you created in **Step 3** on the preceding page.
 6. Double-click the CFG file on the screen.
 7. In the “Remote File Transfer” screen, do the following:
 - a. To use a list of IP addresses that you previously saved, click **Load...**
 - b. To create a saved list, or to add to a loaded list, type the IP address of a Management Card you want to update into the text box next to the **Add IP** button.
 - c. If necessary, update the **Administrator User Name**, **Password**, and **FTP Server Port** settings to match the settings used by that Management Card, and then click **Add IP**.
 - d. Repeat **Step a** and **Step b** until all of the Management Cards have been added to the list.
 - e. Click **Save...** to save the list as a file you can use again.
 - f. Click **Next>**.
 8. Click **Apply** on the “Remote File Transfer via FTP” screen to initiate the transfers. This screen will report the status of each file transfer. A popup message box informs you when the transfers are complete.
 9. When done, click **Close**.

APC[®] Management Card

Firmware & Configuration File Transfers

Introduction

Overview

The Management Card automatically recognizes two types of binary files: firmware and configuration. A file of either type contains a header and one or more Cyclical Redundancy Checks (CRCs) to ensure that the data in the file is not corrupted before or during the transfer operation.

When new firmware is transmitted to the Management Card, the program code is updated and new features become available.

When a configuration file is transmitted to the Management Card, the configuration settings are updated accordingly, and the Management Card ignores any other type of files transmitted.

The following descriptions provide information about the options available for transferring files to the Management Card:

- **Upgrading the Firmware on page 13**
- **Using FTP to Upgrade on page 15**
- **Using XMODEM to Upgrade on page 17**
- **Verifying Upgrades and Updates on page 18**
- **Updating the Configuration Settings on page 19**

Firmware & Configuration File Transfers

Upgrading the Firmware

Firmware defined Firmware is specialized software that allows the Management Card to perform useful work, such as managing a UPS and its Environmental Monitoring SmartSlot Card, a MasterSwitch device, or an Environmental Monitoring Unit.

Benefits of upgrading firmware New firmware has the latest bug fixes, performance improvements, and features. Keeping the firmware versions consistent across your network simplifies management, since all Management Cards will support the same features in the same manner.

Firmware files A firmware upgrade consists of two files: an APC Operating System module (AOS), and an application module.

The AOS module must be transmitted to the Management Card first. For instructions on how to transfer both modules to the Management Card, see **Upgrade methods** on the next page.

For information about how you can obtain the latest firmware versions, see **Obtaining latest firmware version**, also on the next page.

The AOS module. This binary file contains the operating system and network stack. The AOS module file name has the following format:

`aos*.bin`

where * is a 3-number code that indicates the version number for the AOS file. For example, **aos300.bin** is version 3.0.0.

The application module. This file provides the Management Card with several user interfaces and the ability to communicate with a UPS and its Environmental Monitoring SmartSlot Card, a MasterSwitch unit, or an Environmental Monitoring Unit. Which application a Management Card uses depends on the device it supports.

- Symmetra[®] Power Array[™] (**sy*.bin**)
- Smart-UPS[®] and Matrix-UPS[®] (**sumx*.bin**)
- Silcon[™] DP300E series UPS (**dp3e*.bin**)
- MasterSwitch (**ms*.bin**)
- MasterSwitch plus (**mSP*.bin**)
- Environmental Monitoring Unit (**em*.bin**)

Note: The asterisk reports the 3-digit version number of the application file. For example, a code of 253 indicates v2.5.3.

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Firmware & Configuration File Transfers

Upgrading the Firmware *continued*

Obtaining latest firmware version

To see if any new firmware is available to download, visit the Software Download page at the APC Web site (<http://www.apcc.com>), or contact APC Customer Support. The firmware upgrade consists of the two files described in **Firmware files** below: the APC Operating System (AOS) module and the application module.

Upgrade methods

To upgrade the Management Card's firmware, do one of the following:

- Use the Web/SNMP Management Card Wizard to upgrade a single Management Card locally, or to upgrade Management Cards over the network. See **Web/SNMP Management Card Wizard on page 1**.
- Use FTP to upgrade Management Cards over the network. See **Using FTP to Upgrade on page 15**.
- Use XMODEM to upgrade Management Cards that are not available on the network. See **Using XMODEM to Upgrade on page 17**.

Firmware & Configuration File Transfers

Using FTP to Upgrade

Upgrading a single Management Card on the network

To upgrade a single Management Card by using a command prompt FTP Client, the Management Card must be:

- Configured with its TCP/IP (**System IP**, **Subnet Mask**, and **Default Gateway** addresses) settings.
- Attached to the network.
- Set up so that **FTP Server** is enabled.

Perform the following steps:

1. Open an MS-DOS command prompt window on a computer that is connected to the network. Go to the directory that contains the firmware upgrade files (in this example the C:\apc directory contains the files for a Symmetra Power Array) and enter the commands shown in **bold**:

```
C:\>cd\apc
```

```
C:\apc>dir
```

```
Volume in drive C has no label
Volume Serial Number is 405F-1BD2
Directory of C:\apc

.                <DIR>      10-08-98  4:59p.
..               <DIR>      10-08-98  4:59p..
AOS300 BIN      327,680 10-08-98  1:02paos300.bin
SY300 BIN       458,752 10-08-98  1:02psy300.bin
                2 file(s)                786,432 bytes
                2 dir(s)    763,691,008 bytes free
```

```
C:\apc>
```

2. Open an FTP client session:

```
C:\apc>ftp
```

```
ftp>
```

3. Connect to the Management Card. In this example, the Management Card's IP address is 150.250.6.10:
 - If the Management Card's **FTP Server Port** setting is **21** (the default), the command would be:

```
ftp> open 150.250.6.10
```

- If the Management Card's **FTP Server Port** has been changed to **21000** from its default setting of **21**, the command would be:

```
ftp> open 150.250.6.10:21000
```

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Firmware & Configuration File Transfers

Using FTP to Upgrade *continued*

Upgrading a single Management Card on the network, continued

4. Log in using the Administrator **User Name** and **Password**. This example uses **apc**, which is the default for both:

```
Connected to 150.250.6.10.  
220- APC FTP server ready.  
220  
User (150.250.6.10:(none)):apc  
331 User name okay, need password.  
Password:apc  
230 User logged in, proceed.  
ftp>
```

5. Upgrade the AOS. This example uses the AOS file associated with a Management Card that is used with a Symmetra *Power Array*:

```
ftp> bin  
200 Command okay.  
ftp>  
ftp> put aos300.bin  
200 Command okay.  
150 Opening data connection for aos300.bin  
250 Requested file action okay, completed.  
Management Card Rebooting....  
327680 bytes sent in 5.99 seconds (54.70 Kbytes/sec)  
ftp>
```

6. Close the FTP client session:

```
ftp>quit  
C:\apc>
```

7. Wait 20 seconds.

8. Repeat **Step 3** through **Step 7** for the application module. In **Step 5**, use the application module file name (**sy300.bin** for this example) in place of the AOS module file name.

Upgrading multiple Management Cards on the network

To upgrade multiple Management Cards using an FTP client, write a script which automatically performs the steps in **Upgrading a single Management Card on the network** above.

Firmware & Configuration File Transfers

Using XMODEM to Upgrade

Procedure for upgrading using XMODEM

To upgrade the firmware using XMODEM:

1. Select a serial port at a computer to be used for a terminal-emulation connection with the Management Card.
2. Disable any service that currently uses that serial port, such as PowerChute *plus* or UNIX Respond.
3. Connect the smart-signaling cable (940-0024) that came with the Management Card to the serial port on the computer and to the serial port at the Management Card's device.

Note: If the Management Card is used at a UPS, and the computer uses smart-signaling PowerChute *plus* with that UPS, omit **Step 3**: A smart-signaling cable (940-0024 or 940-1524) is already installed.

4. Run a terminal program, such as HyperTerminal.
5. Configure the serial port for **2400 bps, 8 data bits, no parity, 1 stop bit**, and **no flow control**, then save the changes.
6. Press ENTER (several times, if necessary) to display the **User Name** prompt.
7. Enter your Administrator **User Name** and **Password**.

Note: The default for both is **apc**.

8. Start an XMODEM transfer:
 - a. Select option 3—**System**.
 - b. Select option 4—**File Transfer**.
 - c. Select option 2—**XMODEM**.
 - d. Type **Yes** at the prompt to continue with the transfer.
9. Select the baud rate appropriate to your computer. Upgrades occur more quickly at higher baud rates.
10. Change the terminal program's baud rate to match the one you selected in **Step 9**, and press ENTER to continue.
11. From the terminal program's menu, select the binary AOS file.
12. After the transfer is complete, set the baud rate to **2400**. The Management Card will automatically reboot.

Note: Removing the Management Card during the reboot cycle will damage the Management Card. The reboot cycle is complete when the status LED turns off, then turns solid green or slowly flashes red after 20 seconds.

13. Repeat **Step 6** through **Step 12** to install the application module. In **Step 11**, substitute the application module for the AOS module.

Firmware & Configuration File Transfers

Verifying Upgrades and Updates

Verification Options

To verify that the firmware upgrade or the last configuration file transfer was successful, see the **Last Transfer Result** message. This message is available in the **File Transfer** option in the **System** menu, or by using an SNMP GET to the **mfiletransferStatusLastTransferResult** OID.

Last Transfer Result codes

You can check the APC Operating System and application module versions in the **About Card** option in the **System** menu, or by using an SNMP GET to the MIB II **sysDescr** OID.

The following table lists the possible **Last Transfer Result** codes.

Code	Description
Successful	The file transfer was successful.
Result not available	There are no recorded file transfers.
Failure unknown	The last file transfer failed for an unknown reason.
Server inaccessible	The TFTP or FTP server could not be found on the network
Server access denied	The TFTP or FTP server denied access.
File not found	The TFTP or FTP server could not locate the requested file.
File type unknown	The file was downloaded but the contents were not recognized.
File corrupt	The file was downloaded but at least one cyclical redundancy check (CRC) was bad.

Firmware & Configuration File Transfers

Updating the Configuration Settings

Configuration settings

The Management Card stores its configuration settings internally. These include TCP/IP, TFTP, FTP, Web, Device Manager, password, and system settings.

Editing configuration settings

To edit the Management Card's configuration settings, do either of the following:

- Log into either the Web interface or the Control Console (either serially or through Telnet).
- Use SNMP to perform SETs. When you use SNMP, only settings which have OIDs defined as read-write in the MIB can be edited.

Configuration files

Configuration files provide another way to alter the settings of a Management Card. A configuration file is a binary-encoded file that includes a header, multiple cyclical redundancy checks (CRCs), and configuration data; it is not editable in a text editor.

After you transfer a configuration file to the Management Card, the Management Card assumes all of the new settings specified in the file. A configuration file will have a `.cfg` extension.

Creating configuration files

You can create configuration files by using the Web/SNMP Management Card Wizard or the I2C Configuration Utility, both of which run on Windows 95, Windows 98, Windows NT 4.0, and Windows 2000. See [Web/SNMP Management Card Wizard on page 1](#) or [I2C Configuration Utility on page 9](#).

Transferring configuration files to a Management Card

To transfer a configuration file to a Management Card, do any of the following:

- Specify the configuration file as the **Bootup Filename** in a BOOTP response.
- Use the Web/SNMP Management Card Wizard to transfer the configuration file to one or more Management Cards.
- Use FTP to upload the configuration file to the Management Card.
- Initiate a TFTP or FTP download of a configuration file using the Web interface, Control Console, or SNMP.

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating using a BOOTP bootup filename

To update the configuration settings using a BOOTP bootup filename:

1. Create a configuration file by using the Wizard (see **Configuring deployed Management Cards on page 6**) or the I2C utility (see **I2C Configuration Utility on page 9**).
2. In the BOOTPTAB file of your BOOTP server, specify the Management Card's TCP/IP settings (**System IP**, **Subnet Mask**, and **Default Gateway** addresses). Specify the binary configuration file (.cfg extension) as the **Bootup Filename**.
Note: The **Bootup Filename** must be less than 33 characters, and can contain path information.
3. Install or reboot the Management Card to make a BOOTP request. To reboot the Management Card:
 - In the Control Console or Web Interface, use the **System->Tools** menu.
 - In SNMP, use the **mcontrolRestartAgent** OID.
 - On the Management Card's faceplate, use the **Reset** button.

When the Management Card receives the BOOTP response it assumes the System IP, Subnet Mask, and Default Gateway addresses supplied by BOOTP, and attempts to download the file specified as the Bootup Filename.

The Management Card will make a TFTP request for the **Bootup Filename** from the same IP address that supplied the BOOTP response.

- If a TFTP server is present on that computer and the configuration file is in the appropriate directory, the Management Card downloads the configuration file and assumes the specified settings.
- If the TFTP request fails, the Management Card will make an FTP request for the **Bootup Filename** from the computer that supplied the BOOTP response. The FTP request will use the FTP Client **User Name** and **Password**, previously configured in the Management Card, to log in to the FTP server. If the FTP server is present and the configuration file is in the appropriate directory, the Management Card downloads the configuration file and assumes that file's specified settings.

Verifying the update

To verify whether the file transfer was successful, see **Verifying Upgrades and Updates on page 18**.

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating using the Web/SNMP Management Card Wizard

To update the configuration settings using the Web/SNMP Management Card Wizard, do the following steps:

Note: For a detailed description of how to update the configuration settings of one or more Management Cards, see **Web/SNMP Management Card Wizard on page 1**. The following procedure does not address many of the available options.

1. Install (if necessary) and run the Web/SNMP Management Card Wizard. See **Installing the Wizard on page 2**.
2. If you have a saved INI file, load it and change any settings as needed. You can also create and save new settings.
3. Click **Finish**.
4. Select the settings you want to transmit to the Management Card and click **Next>**.
5. You can view, print, and save your new settings. When finished click **Next>**.
6. Choose the **Network (via FTP)** option and click **Next>**.
7. If you have saved a list of Management Card IP addresses, load that list. If you do not have a saved list, enter the IP address, **FTP Server Port**, and Administrator **User Name** and **Password** for each Management Card to which you are transmitting the settings.
8. Save the new IP address list and click **Next>**.
9. Click **Apply** to transmit the configuration settings to the specified Management Cards.

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating settings using an FTP Client

To update the configuration settings using an FTP Client:

1. Create a configuration file by using the Wizard (see **Configuring deployed Management Cards on page 6**) or the I2C utility (see **I2C Configuration Utility on page 9**).
2. Open an MS-DOS command prompt window on a computer that is connected to the network.
3. Go to the directory containing the configuration file (C:\apc for this example) and enter the commands shown in **bold**:

```
C:\>cd\apc
```

```
C:\apc>dir
```

```
Volume in drive C has no label
Volume Serial Number is 405F-1BD2
Directory of C:\apc

.                <DIR>      10-08-98  4:59p  .
..               <DIR>      10-08-98  4:59p  ..
MYCONFIG CFG     146    10-08-98  1:02p  myconfig.cfg

                1 file(s)      146 bytes
                2 dir(s)  763,691,008 bytes free
```

```
C:\apc>
```

4. Open an FTP client session:

```
C:\apc> ftp
ftp>
```

5. Connect to the Management Card. In this example, the Management Card's IP address is 150.250.6.10:
 - If the Management Card's **FTP Server Port** is **21** (the default), the command would be:

```
ftp> open 150.250.6.10
```

- If the Management Card's **FTP Server Port** has been changed to **21000** from its default setting of **21**, the command would be:

```
ftp> open 150.250.6.10:21000
```

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating settings using an FTP Client, continued

6. Log in using the Administrator **User Name** and **Password**. This example uses **apc**, which is the default for both:

```
Connected to 150.250.6.10.  
220- APC FTP server ready.  
220  
User (150.250.6.10:(none)):apc  
331 User name okay, need password.  
Password:apc  
230 User logged in, proceed.  
ftp>
```

7. Upload the configuration file, This example uses **myconfig.cfg**:

```
ftp> bin  
200 Command okay.  
ftp>ftp> put myconfig.cfg  
200 Command okay.  
150 Opening data connection for myconfig.cfg  
250 Requested file action okay, completed.  
System Restarting....  
146 bytes sent in 0.00 seconds (146000.00 Kbytes/sec)  
ftp>
```

8. Close the FTP client session:

```
ftp>quit  
C:\apc>
```

9. Verify that the file transfer was successful. See **Verifying Upgrades and Updates on page 18**.

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating by initiating a TFTP download

To update the configuration settings using a TFTP download:

1. Create a configuration file by using the Wizard (see **Configuring deployed Management Cards on page 6**) or the I2C utility (see **I2C Configuration Utility on page 9**).
2. Configure the **TFTP Remote Server IP** to the address of the TFTP server by using one of the following methods:
 - Web Interface: Log in as the administrator, select **TFTP/FTP** in the **Network** menu, and configure the **TFTP Client Remote Server IP** setting.
 - Control Console: Log in as the Administrator, select **TFTP Client** in the **Network** menu, and configure the **Remote Server IP** setting.
 - SNMP: Set the **mfiletransferConfigTFTPServerAddress** OID.
3. Set the name of the configuration file by using one of the following methods:
 - Web Interface: Select **File Transfer** in the **System** menu, and set **Filename** to the name of the configuration file. **Filename** can include path information.
 - Control Console: Select **Settings** from the **File Transfer** option in the **System** menu, and set **Filename** to the name of the configuration file. **Filename** can include path information.
 - SNMP: Set the **mfiletransferConfigSettingsFilename** OID to the name of the configuration file. The OID value can include path information.
4. Initiate the TFTP download using one of the following methods:
 - Web Interface: Select **File Transfer** in the **System** menu, select **TFTP** from the **Initiate File Transfer Via** drop-down menu, and click **Apply**.
 - Control Console: Select **TFTP Client** from the **File Transfer** option in the **System** menu, and type **Yes**.
 - SNMP: Set the **mfiletransferControllInitiateFileTransfer** OID to **initiateFileTransferDownloadViaTFTP**.
5. Verify that the file transfer was successful. See **Verifying Upgrades and Updates on page 18**.

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Firmware & Configuration File Transfers

Updating the Configuration Settings *continued*

Updating by initiating a FTP download

To update the configuration settings using a FTP download:

1. Create a configuration file by using the Wizard (see **Configuring deployed Management Cards on page 6**) or the I2C utility (see **I2C Configuration Utility on page 9**).
2. Configure the **FTP Remote Server IP, User Name, and Password** settings by one of the following methods:
 - Web Interface: Log in as the Administrator, select **TFTP/FTP** in the **Network** menu, and configure the settings.
 - Control Console: Log in as the Administrator, select **FTP Client** in the **Network** menu, and configure the settings.
 - SNMP: Set the **mfiletransferConfigFTPServerAddress, mfiletransferConfigFTPServerUser, and mfiletransferConfigFTPServerPassword** OIDs.
3. Set the name of the configuration file through one of the following methods:
 - Web Interface: Select **File Transfer** in the **System** menu, and set **Filename** to the name of the configuration file. **Filename** can include path information.
 - Control Console: Select **Settings** from the **File Transfer** option in the **System** menu, and set **Filename** to the name of the configuration file. **Filename** can include path information.
 - SNMP: Set the **mfiletransferConfigSettingsFilename** OID to the name of the configuration file. The OID value can include path information.
4. Initiate the FTP download by one of the following methods:
 - Web Interface: Select **File Transfer** in the **System** menu, select **FTP** from the **Initiate File Transfer Via** drop-down menu, then click **Apply**.
 - Control Console: Select **FTP Client** from the **File Transfer** option in the **System** menu, then type **Yes**.
 - SNMP: Set the **mfiletransferControllInitiateFileTransfer** OID to **initiatefFileTransferDownloadViaFTP**.
5. Verify that the file transfer was successful. See **Verifying Upgrades and Updates on page 18**.



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