

Command Line Interface Guide

UPS Network Management Card 3

AP9640, AP9641, AP9643

990-91149B-001

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Command Line Interface (CLI)

How To Log On

Overview

To access the command line interface, you can use either a local, serial connection, or a remote connection (Telnet or SSH) with a computer on the same network as the Network Management Card (NMC).



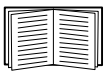
To access the Command Line Interface detailed in this CLI Guide, the NMC must have the Smart-UPS or Single Phase Symmetra firmware installed, and the NMC must be installed in a Smart-UPS or Single Phase Symmetra model UPS. For more information on UPS models compatible with your NMC, see Knowledge Base article [FA237786](https://www.apc.com/support) on the APC support website, www.apc.com/support

Use case-sensitive user name and password entries to log on (by default, **apc** and **apc** for a Super User). The default user name for a Device User is **device**. A Read-Only User cannot access the command line interface.

NOTE: You will be prompted to enter a new password the first time you connect to the NMC with the Super User account.

Security Lockout. If a valid user name is used with an invalid password consecutively for the number of times specified in the NMC web interface under **Configuration > Security > Local Users > Default Settings**, the Device User account will be locked until a Super User or Administrator re-enables the account.

See the UPS Network Management Card 3 [User Guide](#) (for AP9640, AP9641, AP9643) for more information on these options.

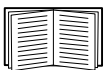


If you cannot remember your user name or password, see “How to Recover from a Lost Password” in the [User Guide](#).

Remote access to the command line interface

You can access the command line interface through Telnet or SSH. Only SSH is enabled by default.

To enable or disable these access methods, use the Web interface. On the **Configuration** menu, select **Network > Console > Access**.



You can also enable or disable Telnet or SSH access through the command line interface. See “console” on page 13.

SSH for high-security access. If you use the high security of SSL/TLS for the Web interface, use SSH for access to the command line interface. SSH encrypts user names, passwords, and transmitted data. The interface, user accounts, and user access rights are the same whether you access the command line interface through SSH or Telnet, but to use SSH, you must first configure SSH and have an SSH client program installed on your computer. Enabling SSH also enables SCP (Secure Copy), for secure file transfer.

1. Use the following example command to use SSH to access the NMC:

```
ssh -c aes256-ctr apc@156.205.14.141
```

NOTE: This SSH command is for OpenSSH. The command may differ depending on the SSH tool used.

2. Enter the user name and password.

NOTE: You will be prompted to enter a new password the first time you connect to the NMC with the Super User account.

Telnet for basic access. Telnet provides the basic security of authentication by user name and password, but not the high-security benefits of encryption.

To use Telnet to access the command line interface:

1. From a computer that has access to the network on which the NMC is installed, at a command prompt, type `telnet` and the IP address for the NMC (for example, `telnet 139.225.6.133`, when the NMC uses the default Telnet port of 23), and press ENTER.

NOTE: This example works for command prompt based Telnet clients. The commands may differ for different Telnet clients.

If the NMC uses a non-default port number (from 5000 to 32768), you must include a colon or a space, depending on your Telnet client, between the IP address (or DNS name) and the port number. (These are commands for general usage: some clients don't allow you to specify the port as an argument and some types of Linux might want extra commands).

2. Enter the user name and password.

NOTE: You will be prompted to enter a new password the first time you connect to the NMC with the Super User account.

Local access to the command line interface

For local access, use a computer that connects to the Network Management Card through the USB virtual serial port to access the command line interface:

1. Connect the provided micro-USB cable (part number 960-0603) from a USB port on the computer to the console port at the NMC.
2. In Windows Search, type "Device Manager", or open it from the Control Panel. Select "Ports" and note the COM port number the NMC was assigned.
3. Run a terminal program (e.g. 3rd party terminal emulator programs like HyperTerminal, PuTTY, or Tera Term) and configure the COM port (noted in step 2) for 9600 bps, 8 data bits, no parity, 1 stop bit, and no flow control. Save the changes.
4. Press ENTER, repeatedly if required, to display the **User Name** prompt.
5. Enter the user name and password.

NOTE: The user name will be "apc" at first log for the Super User account. You will be prompted to enter a new password after you log in.

Main Screen

Sample main screen

Following is an example of the screen displayed when you log on to the command line interface at the Network Management Card (NMC).

```
Schneider Electric                      Network Management Card AOS  vx.x.x
(c)Copyright 2020 All Rights Reserved Smart-UPS & Matrix-UPS APP  vx.x.x
-----
Name      : Test Lab                      Date : 10/30/2020
Contact   : Don Adams                     Time : 5:58:30
Location  : Building 3                     User : Super User
Up Time   : 0 Days, 21 Hours, 21 Minutes  Stat : P+ N4+ N6+ A+
-----

                        Network Protocols Configuration Summary
-----
Protocol   | Status   | Protocol   | Status   | Protocol   | Status
-----
HTTP       | disabled | HTTPS      | enabled  | FTP        | enabled
Telnet     | disabled | SSH/SFTP   | enabled  | SNMPv1     | enabled
SNMPv3     | disabled | Modbus TCP | enabled  |             |
IPv6       | disabled | IPV4       | enabled  | Ping       | enabled
-----

Type ? for command listing
Use tcpip command for IP address(-i), subnet(-s), and gateway(-g)

apc>
```

Information and status fields

Main screen information fields.

- Two fields identify the American Power Conversion operating system (AOS) and application (APP) firmware versions. The application firmware name identifies the device that connects to the network through this NMC. In the example above, the NMC uses the application firmware for a Smart-UPS UPS.

```
Network Management Card AOS  vx.x.x
Smart-UPS & Matrix-UPS APP  vx.x.x
```

- Three fields identify the system name, contact person, and location of the NMC.

```
Name      : Test Lab
Contact   : Don Adams
Location  : Building 3
```

- The **Up Time** field reports how long the NMC management interface has been running since it was last turned on or reset.

```
Up Time: 0 Days 21 Hours 21 Minutes
```

- Two fields report when you logged in, by date and time.

Date : 06/30/2020

Time : 5:58:30

- The **User** field reports whether you logged in through the **Super User**, **Administrator**, **Device Manager**, **Network-Only** or **Read-Only** account.
When you log on as Device Manager (equivalent to Device User in the user interface), you can access the event log, configure some UPS settings, and view the number of active alarms.

User : Super User

Main screen status fields.

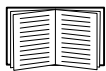
- The **Stat** field reports the NMC status. The middle status varies according to whether you are running IPv4, IPv6, or both, as indicated in the second table below.

Stat : P+ N+ A+

P+	The operating system (AOS) is functioning properly.
----	---

IPv4 only	IPv6 only	IPv4 and IPv6*	Description
N+	N6+	N4+ N6+	The network is functioning properly.
N?	N6?	N4? N6?	A DHCP or BOOTP request cycle is in progress.
N-	N6-	N4- N6-	The NMC did not connect to the network.
N!	N6!	N4! N6!	Another device is using the IP address of the NMC.
* The N4 and N6 values can be different from one another: you could, for example, have N4- N6+.			

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 P+ is not displayed, see customer support at <http://www.apc.com/site/support/>.

How to Use the Command Line Interface

Overview

The command line interface provides options to configure the network settings and manage the UPS and its Network Management Card (NMC).

How to enter commands

At the command line interface, use commands to configure the NMC. To use a command, type the command and press ENTER. Commands and arguments are valid in lowercase, uppercase, or mixed case. Options are case-sensitive.

While using the command line interface, you can also do the following:

- Type `?` and press ENTER to view a list of available commands, based on your account type.
To obtain information about the purpose and syntax of a specified command, type the command, a space, and `?` or the word `help`. For example, to view RADIUS configuration options, type:
`radius ?`
or
`radius help`
- Press the UP arrow key to view the command that was entered most recently in the session. Use the UP and DOWN arrow keys to scroll through a list of up to ten previous commands.
- Type at least one letter of a command and press the TAB key to scroll through a list of valid commands that match the text you typed in the command line.
- Type `ups -st` to view the status of the UPS.
- Type `exit` or `quit` to close the connection to the command line interface.

Command syntax

Item	Description
-	Options are preceded by a hyphen.
< >	The definitions of options are enclosed in angle brackets. For example: <code>-pw <user password></code>
[]	If a command accepts multiple options or an option accepts mutually exclusive arguments, the values may be enclosed in brackets.
	A vertical line between items enclosed in brackets or angle brackets indicates that the items are mutually exclusive. You must use one of the items.

Syntax examples

A command that supports multiple options:

```
user -n <user name> -pw <user password>
```

Here, the `user` command accepts both the option `-n`, which specifies the user name, and the option `-pw`, which changes the password.

For example, to change a password to XYZ:

```
user -n apc -pw XYZ
```

NOTE: Super User also requires the current password when changing the password remotely. See the “user” section.

A command that accepts mutually exclusive arguments for an option:

```
alarmcount -p [all | warning | critical]
```

In this example, the option `-p` accepts only three arguments: `all`, `warning`, or `critical`. For example, to view the number of active critical alarms, type:

```
alarmcount -p critical
```

The command will not work if you type an argument that is not specified.

Command Response Codes

The command response codes enable scripted operations to detect error conditions reliably without having to match error message text.

The CLI reports all command operations with the following format:

```
E [0-9][0-9][0-9]: Error message
```

Code	Error message
E000	Success
E001	Successfully Issued
E002	Reboot required for change to take effect
E100	Command failed
E101	Command not found
E102	Parameter Error
E103	Command Line Error
E107	Serial communication with the UPS has been lost
E108	EAPoL disabled due to invalid/encrypted certificate

Command Descriptions



The availability of the commands and options below can vary between UPS devices.

?

Access: Super User, Administrator, Device User

Description: View a list of all the CLI commands available to your account type. To view help text for a specific command, type the command followed by a question mark.

Example: To view a list of options that are accepted by the `alarmcount` command, type:
`alarmcount ?`

about

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: View hardware and firmware information. This information is useful in troubleshooting and enables you to determine if updated firmware is available at the website.

alarmcount

Access: Super User, Administrator, Device User, Read Only

Description:

Option	Arguments	Description
-p	all	View the number of active alarms reported by the NMC. Information about the alarms is provided in the event log.
	warning	View the number of active warning alarms.
	critical	View the number of active critical alarms.
	informational	View the number of active informational alarms.

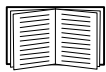
Example: To view all active warning alarms, type:

`alarmcount -p warning`

bacnet

Access: Super User, Administrator, Device User

Description: View and define the BACnet settings.



For more information on the UPS data points made available via BACnet, see the BACnet Application Maps available on the APC website, www.apc.com.

Option	Arguments	Description
-s	enable disable	Select the option to enable or disable BACnet. If BACnet is disabled, the NMC cannot be accessed via BACnet. BACnet is disabled by default. NOTE: BACnet cannot be enabled until the Device Communication Control Password (-pw) is set.
-d	0-4194303	A unique identifier for this BACnet device, used for addressing the device.
-n	<device name>	A name for this BACnet device, which must be unique on the BACnet network. The default device name is "BACn"+ the last eight digits of the NMC MAC address. The minimum length is 1, the maximum length is 150 characters, and special characters are permitted.
-t	1000 - 30000	Specify the APDU timeout; the number of milliseconds the NMC will wait for a response to a BACnet request. The default value is 6000.
-r	0 - 10	Specify the APDU retries; the number of BACnet requests attempts that the NMC will make before aborting the request. The default value is 3.
-pw	<password>	<p>The Device Communication Control service is used by a BACnet client to instruct a remote device (e.g. a BACnet-enabled NMC) to stop initiating, or stop responding to all APDUs (except the Device Communication Control service) for a specified duration of time. This service can be used for diagnostic purposes.</p> <p>Specify the Device Communication Control password to ensure that a BACnet client cannot control the BACnet communication of an NMC without first providing the password set here. The password is required to be between 8 and 20 characters, and must contain:</p> <ul style="list-style-type: none"> • A number. • An uppercase character. • A lowercase character. • A special character. <p>It is recommended to update the password when you first enable BACnet. You do not need to know the current password to update the password.</p>
BACnet IP options:		
-o	47808, 5000-65535	Specify the UDP/IP port the NMC uses to send and receive BACnet/IP messages. NOTE: The address of a BACnet/IP-enabled NMC is defined as the IP address of the NMC and the local port.

Option	Arguments	Description
-fdre	enable disable	Specify enable to register the NMC with a BACnet broadcast management device (BBMD). NOTE: You need to register your NMC as a foreign device with a BBMD if there is no BBMD currently on the subnet of the NMC, or if the NMC uses a different local port to the BBMD. See the NMC User Guide for more information on Foreign Device Registration.
-rip	IP address	The IP address or fully qualified domain name (FQDN) of the BACnet broadcast management device with which this NMC card will be registered.
-rpo	5000 - 65535	The port of the BBMD with which this NMC card will be registered.
-fttl	1-65535	The number of seconds (Time To Live) that the BBMD will maintain the NMC as a registered device. If the NMC does not re-register before this time expires, the BBMD will delete it from its foreign-device table, and the NMC will no longer be able to send and receive broadcast messages via the BBMD.
-fsl		The foreign device registration status.

Example:

```

bacnet
E000: Success
Enabled: yes
Device ID: 1013
Device name: BACnB7D7E5F2
Network Protocol: BACnet/IP
APDU timeout (ms): 6000
APDU retries: 3
IP Port: 47808 (0xBAC0)
Registration Enabled: no
Registration Status: Foreign device registration inactive
Registration BBMD: 0.0.0.0
Registration BBMD port: 47808 (0xBAC0)
Registration TTL: 7200

```

boot

Access: Super User, Administrator, Network-Only User

Description: Define how the NMC will obtain its network settings, including the IP address, subnet mask, and default gateway. Then configure the BOOTP or DHCP server settings.

Option	Argument	Description
-b <boot mode>	dhcp bootp manual	Define how the TCP/IP settings will be configured when the NMC turns on, resets, or restarts.
-c	enable disable	dhcp boot modes only. Enable or disable the requirement that the DHCP server provide the APC cookie.
The default values for these three settings generally do not need to be changed:		
-v	<vendor class>	APC.
-i	<client id>	The MAC address of the NMC, which uniquely identifies it on the network.
-u	<user class>	The name of the application firmware module.

Example: To use a DHCP server to obtain network settings:

1. Type `boot -b dhcp`
2. Enable the requirement that the DHCP server provide the APC cookie:
`boot -c enable`

bye

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Exit from the command line interface session. This works the same as the exit or quit commands.

Example:

```
bye
```

```
Connection Closed - Bye
```

cd

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Navigate to a folder in the directory structure of the NMC.

Example 1: To change to the `ssh` folder and confirm that an SSH security certificate was uploaded to the NMC:

1. Type `cd ssh` and press ENTER.
2. Type `dir` and press ENTER to list the files stored in the SSH folder.

Example 2: To return to the previous directory folder, type:

```
cd ..
```

cfgshutdn

Access: Super User, Administrator, Device User

Description: Configure the shutdown parameters: this enables you to show and configure UPS Shutdown Delay, UPS Return Delay, UPS Low Battery Duration, UPS Sleep Time, UPS Minimum Battery Charge, and UPS Min Return Runtime.



These options are not available with all UPS devices.

Option	Argument	Description
-all		Show all applicable shutdown parameters for this UPS.
-sd	000 090 180 270 360 450 540 630	Set the shutdown delay in seconds.
-lo	02 05 08 11 14 17 20 23	Set the low battery duration in minutes.
-rd	000 060 120 180 240 300 360 420	Set the UPS return delay in seconds, that is, the delay time before the UPS turns on again.
-rrt	0-3600	Set the minimum return runtime in seconds, that is, the battery runtime to support the load must reach this value before the UPS turns on again.
-sl	0.0-359.9	Set the sleep time, in hours. The argument can have any number between 0.0 and 359.9.
-rsc	00 15 30 45 60 75 90	Set the minimum battery charge, as a percentage of the total capacity.

Example:

```
cfgshutdn -all
```

```
E000: Success
```

```
Low Battery Duration: 4 min
```

```
Sleep Time: 0.0 hr0
```

cfgpower

Access: Super User, Administrator, Device User

Description: Configure the power parameters: this enables you to show and configure transfer points, sensitivity and output voltage.



These options are not available with all UPS devices.

Option	Argument	Description
	These values can vary with different devices.	
-all		Show all applicable power parameters for this UPS.
-l	97-106	Set the low transfer point, in VAC.
-h	127-136	Set the high transfer point, in VAC.
-ov	100 120 110	Set the outlet voltage, in VAC.
-s	Normal Reduced Low	Set the sensitivity, using one of the three arguments.
-bu	127 130 133 136 139 142 145 148	Set the bypass upper voltage in VAC; when the voltage rises above this value, the device goes into bypass.
-bl	086 088 090 092 094 096 098 100	Set the bypass lower voltage in VAC; when the voltage drops below this value, the device goes into bypass.
-rda	Never n+1 n+2	Set an alarm to occur if available redundant power drops below n+1 or n+2. Enter Never to prevent an alarm in response to any loss of redundancy. This option is available for Symmetra model UPS only.
-lda	Never 01.0 02.0 03.0 04.0 05.0 06.0 07.0 08.0 09.0 10.0 12.0 14.0 16.0	Set an alarm to occur if the load exceeds the specified kVA load level. Enter Never to prevent an alarm in response to changes to the load level. This option is available for Symmetra model UPS only.
-rta	Never 005 010 015 030 045 060 120 180 240 300 360 420 480	Set an alarm to occur if the Available Battery Runtime drops below the specified number of minutes. Available Battery Runtime is the number of minutes the UPS can support the current load while operating on battery power. Enter Never to prevent an alarm in response to a drop in available battery runtime. This option is available for Symmetra model UPS only.

Example:

```
cfgpower -all
E000: Success

Low Transfer Voltage: 106 VAC
High Transfer Voltage: 127 VAC
Sensitivity: Normal
```

clrrst

Access:

Super User, Administrator

Definition: Clear the network interface reset reason. See “lastrst” on page 22.

console

Access: Super User, Administrator, Network Only

Description: Define whether users can access the command line interface using Telnet, which is disabled by default, or Secure Shell (SSH), which is enabled by default, which provides protection by transmitting user names, passwords, and data in encrypted form. You can change the Telnet or SSH port setting for additional security. Alternately, disable network access to the command line interface.

Option	Argument	Description
-s	enable disable	Enable or disable SSH. Enabling SSH enables SCP.
-t	enable disable	Enable or disable Telnet.
-pt	<telnet port number>	Specify the Telnet port number used to communicate with the NMC (23 by default). The other range is 5000–32768.
-ps	<SSH port number>	Specify the SSH port number used to communicate with the NMC (22 by default). The other range is 5000–32768
-b	2400 9600 19200 38400	Configure the serial baud rate (9600 by default).

Example 1: To enable SSH access to the command line interface, type:

```
console -s
```

Example 2: To change the Telnet port to 5000, type:

```
console -pt 5000
```

date

Access: Super User, Administrator

Definition: Configure the date used by the NMC.



To configure an NTP server to define the date and time for the NMC, see the [User Guide](#).

Option	Argument	Description
-d	<"datestring">	Set the current date. Use the date format specified by the <code>date -f</code> command.
-t	<00:00:00>	Configure the current time, in hours, minutes, and seconds. Use the 24-hour clock format.
-f	mm/dd/yy dd.mm.yyyy mmm-dd-yy dd-mmm-yy yyyy-mm-dd	Select the numerical format in which to display all dates in this user interface. Each letter m (for month), d (for day), and y (for year) represents one digit. Single-digit days and months are displayed with a leading zero. NOTE: The date format configured in the user settings in the NMC UI will override this setting at next login.
-z	<time zone offset>	Set the difference with GMT in order to specify your time zone. This enables you to synchronize with other people in different time zones.

Example 1: To display the date using the format yyyy-mm-dd, type:

```
date -f yyyy-mm-dd
```

Example 2: To define the date as October 30, 2009, using the format configured in the preceding example, type:

```
date -d "2009-10-30"
```

Example 3: To define the time as 5:21:03 p.m., type:

```
date -t 17:21:03
```

delete

Access: Super User, Administrator

Description: Delete a file in the file system. (To delete the event log, see the [User Guide](#)).

Argument	Description
<file name>	Type the name of the file to delete.

Example: To delete a file:

1. Navigate to the folder that contains the file. For example, to navigate to the `logs` folder, type:
`cd logs`
2. To view the files in the `logs` folder, type:
`dir`
3. Type
`delete <file name>`

detbat



This command is not available on all UPS devices.

Some UPS devices with the SRT prefix have different options available.

Access: Super User, Administrator, Device User

Description: View detailed UPS battery information.

Option	Arguments	Description
-all	<#>	Show all battery information.
-f	<#>	Pack firmware revisions.
-t	<#>	Pack temperatures.
-pe	<#>	Pack battery status.
-s	<#> <#>	Pack or cartridge health.
-ph	<#>	Pack health. NOTE: This option is only available on some UPS devices with the SRT prefix.
-rd	<#> <#>	Pack or cartridge recommended replace battery dates.
-pr	<#>	Pack recommended replace battery dates. NOTE: This option is only available on some UPS devices with the SRT prefix.
-id	<#> <#> <"datestring">	Pack or cartridge battery install date in current date format.
-pi	<#> <"datestring">	Pack battery install date in current date format. NOTE: This option is only available on some UPS devices with the SRT prefix.
-ce	<#> <#>	Pack or cartridge battery status.

Example:

```
detbat -all
```

```
E000: Success
```

```
Firmware Revision (IP): BMC 12.5
```

```
Temperature (IP): 26.00C
```

```
Pack Status (IP): No Errors
```

```
Health (IP, C1): Battery Life OK
```

```
Predicted Replacement Date (IP, C1): 07/02/2019
```

```
Installation Date (IP, C1): 02/12/2015
```

```
Status (IP, C1): OK
```

detstatus

Access: Super User, Administrator, Device User

Description: View the detailed status of the UPS. See also the -st option in “ups” on page 36.

Option	Description
-all	Show all applicable status information for this UPS.
-rt	Runtime remaining, in hours and minutes.
-ss	UPS status summary: on line, on battery, etc.
-soc	UPS battery charge, as a percentage of the total capacity.
-om	Output measurements: voltage, frequency, watts percentage, VA percentage, current.
-im	Input measurements: voltage and frequency.
-bat	Battery voltage
-tmp	Internal temperature of the UPS
-dg	Diagnostic test results: self-test result and date, calibration result and date.

Example:

```
detstatus -rt
```

```
E000: Success
```

```
Runtime Remaining: 9 hr 22 min 30 sec
```

dir

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: View the files and folders stored on the NMC.

Example:

```
dir
E000: Success
1024 Jan  2  4:34  apc_hw21_aos_1.1.0.15.bin
6249332 Jan  2  4:34  apc_hw21_su_1.1.0.15.bin
45000 Sep 30 1996  config.ini
      0 Apr 23 18:53  db/
      0 Apr 23 18:53  ssl/
      0 Apr 23 18:53  ssh/
      0 Apr 23 18:53  logs/
      0 Apr 23 18:53  sec/
      0 Apr 23 18:53  fw1/
      0 Apr 23 18:53  email/
      0 Apr 23 18:53  eapol/
      0 Apr 23 18:53  tmp/
      0 Apr 23 18:53  upsfw/
```

dns

Access: Super User, Administrator, Network-Only User

Description: Configure and display the manual Domain Name System (DNS) settings.

Option	Argument	Description
-OM	enable disable	Override the manual DNS.
-y	enable disable	Synchronizes the system and the hostname. This is the same as using "system -s".
-p	<primary DNS server>	Set the primary DNS server.
-s	<secondary DNS server>	Set the secondary DNS server.
-d	<domain name>	Set the domain name.
-n	<domain name IPv6>	Set the domain name IPv6.
-h	<host name>	Set the hostname.

Example:

```
dns -OM
E000: Success
Override Manual DNS Settings:  enabled
```

eapol

Access: Super User, Administrator

Description: Configure EAPoL (802.1X Security) settings.

Option	Argument	Description
-S	enable disable	Enable or disable EAPoL.
-n	<supplicant name>	Set the supplicant name.
-p	<private key passphrase>	Set the private key passphrase.

Example 1: To display the result of an `eapol` command:

```
apc>eapol
E000: Success
Active EAPoL Settings
-----
Status:enabled
Supplicant Name:NMC-Supplicant Passphrase:<hidden>
CA file Status:Valid Certificate
Private Key Status:Valid Certificate
Public Key Status:Valid Certificate
Result:Success
```

Example 2: To enable EAPoL:

```
apc>eapol -S enable
E000: Success
Reboot required for change to take effect.
```

email

Access: Super User, Administrator, Network-Only User

Description: Use the following commands to configure parameters for email, used by the NMC to send event notification.

Option	Argument	Description
-g[n]	<enable disable>	Enables (default) or disables sending email to the recipient.
-t[n]	<To Address>	The e-mail address of the recipient.
-o[n]	<long short> (Format)	The long format contains name, location, contact, IP address, serial number of the device, date and time, event code, and event description. The short format provides only the event description.
-l[n]	<Language Code>	The language in which the emails will be sent. This is dependent on the installed language pack.

Option	Argument	Description
-r [n]	<Local recipient custom> (Route)	<p>Set the SMTP Server options:</p> <ul style="list-style-type: none"> • Local (recommended): Choose this option if your SMTP server is located on your internal network, or is set up for your e-mail domain. Choose this setting to limit delays and network outages. If you choose this setting, you must also enable forwarding at the SMTP server of the device, and set up a special external e-mail account to receive the forwarded e-mail. NOTE: Check with your SMTP server administrator before making these changes. • Recipient: This setting sends email directly to the recipient's SMTP server, which is determined by an MX record lookup of the domain of the To: Address. The device tries only once to send the e-mail. A network outage or a busy remote SMTP server can cause a time-out and cause the e-mail to be lost. This setting requires no additional administrative tasks on the SMTP server. • Custom: This setting allows each email recipient to have its own server settings. These settings are independent of the settings given by option -s[n].
-f [n]	<From Address>	The sender email address used by the NMC in the From: field of the email sent.
-s [n]	<SMTP Server>	The IPv4/IPv6 address or DNS name of the local SMTP server. Use this when option -r[n] is set to Local.
-p [n]	<Port>	The SMTP port number, with a default of 25. Alternative ports: 465, 587, 2525, 5000 to 32768.
-a [n]	<enable disable> (Authentication)	Enable if the SMTP server requires authentication.
-u [n]	<User Name>	If your mail server requires authentication, type your user name and password here.
-w [n]	<Password>	
-e [n]	<none ifsupported always implicit> (Encryption)	<ul style="list-style-type: none"> • None: The SMTP server does not require nor support encryption. • If Supported: The SMTP server advertises support for STARTTLS but doesn't require the connection to be encrypted. The STARTTLS command is sent after the advertisement is given. • Always: The SMTP server requires the STARTTLS command to be sent on connection to it. • Implicit: The SMTP server only accepts connections that begin encrypted. No STARTTLS message is sent to the server.
-c [n]	<enable disable > (Required Certificate)	This should only be enabled if the security policy of your organization does not allow for implicit trust of SSL/TLS connections. If this is enabled, a valid root CA certificate must be loaded onto the NMC for encrypted emails to be sent.

Option	Argument	Description
-i[n]	<Certificate File Name>	This field is dependent on the root CA certificates installed on the NMC and whether or not a root CA certificate is required. The file must have an extension of .crt or .cer.
n=	Email Recipient Number (1,2,3, or 4)	Specifies the recipient of the e-mail, identified by the recipient number.

Example: To enable email to be sent to email recipient 1 with email address recipient1@apc.com, using the local SMTP server:

```
email -g1 enable -r1 local -t1 recipient1@apc.com
```

```
E000: Success
```

eventlog

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: View the date and time you retrieved the event log, the status of the UPS, and the status of sensors connected to the NMC. View the most recent device events, and the date and time they occurred. Use the following keys to navigate the event log:

Key	Description
ESC	Close the event log and return to the command line interface.
ENTER	Update the log display. Use this command to view events that were recorded after you last retrieved and displayed the log.
SPACEBAR	View the next page of the event log.
B	View the preceding page of the event log. This command is not available at the main page of the event log.
D	Delete the event log. Follow the prompts to confirm or deny the deletion. Deleted events cannot be retrieved.

exit

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Exit from the command line interface session.

firewall

Access: Super User, Administrator, Network-Only User

Description: Enable, disable, or configure the internal NMC firewall feature.

Option	Argument	Definition
-s	<enable disable>	Enable or disable the firewall.
-f	<file name to activate>	Name of the firewall policy file to activate.
-t	<file name to test>	Name of the firewall to test, and duration time in minutes.
-fe		Shows a list of active file errors.
-te		Shows a list of test file errors.
-c		Cancel a firewall test.
-r		Shows a list of active firewall rules.
-l		Shows a firewall activity log.
-Y		Skip the firewall test prompt.

Example: To enable firewall policy file example.fwl, enter the following:

```
firewall -f example.fwl
```

```
E000: Success
```

format

Access: Super User, Administrator

Description: Reformat the file system of the NMC and erase all security certificates, encryption keys, configuration settings, and the event and data logs. Be careful with this command.



To reset the NMC to its default configuration, use the `resetToDef` command instead.

ftp

Access: Super User, Administrator, Network-Only User

Description: Enable or disable access to the FTP server. Optionally, change the port setting to the number of any unused port from 5001 to 32768 for added security. **NOTE:** FTP is disabled by default, and Secure CoPy (SCP) is automatically enabled when the Super User password is set via SSH.

Option	Argument	Definition
-p	<port number>	Define the TCP/IP port that the FTP server uses to communicate with the NMC (21 by default). The FTP server uses both the specified port and the port one number lower than the specified port.
-s	enable disable	Configure access to the FTP server.

Example: To change the TCP/IP port to 5001, type:

```
ftp -p 5001
```

help

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: View a list of all the CLI commands available to your account type. To view help text for a specific command, type the command followed by `help`.

Example 1: To view a list of commands available to someone logged on as a Device User, type:

```
help
```

Example 2: To view a list of options that are accepted by the `alarmcount` command, type:

```
alarmcount help
```

lang

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Language in Use

Example:

```
lang
```

```
Languages
```

```
enUS - English
```

lastrst

Access: Super User, Administrator

Description: Last network interface reset reason. Use the output of this command to troubleshoot network interface issues with the guidance of technical support.

Option	Definition
02 NMI Reset	The network interface was reset via the Reset button on the NMC faceplate.
09 Coldstart Reset	The network interface was reset by removing power from the hardware.
12 WDT Reset	The network interface was reset via a firmware command.

Example:

```
lastrst
```

```
09 Coldstart Reset
```

```
E000: Success
```


ledblink

Access: Super User, Administrator

Description: Sets the status LED of the NMC to blink for the specified amount of time. Use this command to help visually locate the NMC.

Parameters: Time in minutes

Example: `ledblink 2`

E000: Success

logzip

Access: Super User, Administrator

Description: Creates a single, compressed archive of the log files available from the NMC and UPS device. These files can be used by technical support to troubleshoot issues.

Option	Argument	Definition
-m	<email recipient> (email recipient number (1-4))	The identifying number of the email recipient to which the zip file will be sent. Enter the number of one of the four possible email recipients configured.

Example:

```
logzip -m 1
```

```
Generating files
```

```
Compressing files into /dbg/debug_ZA1752123456.tar
```

```
Emailing log files to email recipient - 1
```

E000: Success

modbus

Access: Super User, Administrator, Device User

Description: View and configure the Modbus parameters.

Option	Argument	Definition
-a	<enable disable> (Modbus status)	Enable or disable Modbus Serial. ¹
-br	<9600 19200> (baud rate)	Set the baud rate in bits per second. ¹
-pr	event odd none	Set the parity bit. ¹
-s	<1-F7> (slave address in hex)	Set the hexadecimal Modbus slave address. ¹

Option	Argument	Definition
-rDef		Reset the Modbus configuration to defaults. ¹
-tE	<enable disable> (Modbus TCP status)	Enable or disable Modbus TCP. ²
-tP		Specify the Modbus TCP port number. The default port number is 502, and can be set to a value between 5000 and 32768. ²
-tTo		Specify the Modbus TCP communication timeout in seconds, where 0 indicates that the connection never times out. ²
¹ Modbus Serial is supported on the AP9641 and AP9643 cards only.		
² Modbus TCP is supported on the AP9640, AP9641 and AP9643 cards.		

Example:

```
modbus
E000: Success
Slave Address = 0x1
Status = ENABLED
Baud Rate = 9600
Parity = none
TCP Status = ENABLED
TCP Port Number = 502
```

netstat

Access: Super User, Administrator, Network-Only User

Description: View the status of the network and all active IPv4 and IPv6 addresses.

Example:

```
netstat

Current IP information
```

Family	mHome	Type	IP Address	Status
IPv6	4	auto	FE80::2C0:B7FF:FEEA:D325/64	configured
IPv4	0	manual	10.125.43.115/22	configured
IPv6	0	manual	::1/128	configured
IPv4	0	manual	127.0.0.1/32	configured

ntp

Access: Super User, Administrator, Network-Only User

Description: View and configure the Network Time Protocol parameters.

Option	Argument	Definition
-OM	enable disable	Override the manual settings.
-p	<primary NTP server>	Specify the primary server.
-s	<secondary NTP server>	Specify the secondary server.
-e	enable disable	Enables or disables the use of NTP.
-u	<update now>	Immediately updates the NMC time from the NTP server.

Example 1: To enable the override of manual setting, type:

```
ntp -OM enable
```

Example 2: To specify the primary NTP server, type:

```
ntp -p 150.250.6.10
```

ping

Access: Super User, Administrator, Device User, Network-Only User

Description. Determine whether the device with the IP address or DNS name you specify is connected to the network. Four inquiries are sent to the address.

Argument	Description
<IP address or DNS name>	Type an IP address with the format xxx.xxx.xxx.xxx, or a DNS name.

Example: To determine whether a device with an IP address of 150.250.6.10 is connected to the network, type:

```
ping 150.250.6.10
```

portspeed

Access: Super User, Administrator, Network-Only User

Description:

Option	Arguments	Description
-s	auto 10H 10F 100H 100F	Define the communication speed of the Ethernet port. The <code>auto</code> command enables the Ethernet devices to negotiate to transmit at the highest possible speed.

Example: To configure the TCP/IP port to communicate using 100 Mbps with half-duplex communication (communication in only one direction at a time), type:

```
portspeed -s 100H
```



NOTE: The Port Speed setting can be changed to 1000 Mbps. However, this change can only be made via the Web UI. See “Port Speed screen” in the [User Guide](#) for more information.

prompt

Access: Super User, Administrator, Device User, Network-Only User

Description: Configure the command line interface prompt to include or exclude the account type of the currently logged-in user. Any user can change this setting; all user accounts will be updated to use the new setting.

Option	Argument	Description
-s	long	The prompt includes the account type of the currently logged-in user.
	short	The default setting. The prompt is four characters long: <code>apc></code>

Example: To include the account type of the currently logged-in user in the command prompt, type:

```
prompt -s long
```

pwd

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Used to output the path of the current working directory.

quit

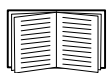
Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Exit from the command line interface session (this works the same as the exit and bye commands).

radius

Access: Super User, Administrator, Network-Only User

Description: View the existing RADIUS settings, enable or disable RADIUS authentication, and configure basic authentication parameters for up to two RADIUS servers.



For a summary of RADIUS server configuration and a list of supported RADIUS servers, see the [User Guide](#).

Additional authentication parameters for RADIUS servers are available at the user interface of the NMC.

For detailed information about configuring your RADIUS server, see the [Security Handbook](#).

Option	Argument	Description
-a	local radiusLocal radius	Configure RADIUS authentication: local — RADIUS is disabled. Local authentication is enabled. radiusLocal — RADIUS, then Local Authentication. RADIUS and local authentication are enabled. Authentication is requested from the RADIUS server first. If the RADIUS server does not respond or is unreachable over the network, local authentication is used. radius — RADIUS is enabled. Local authentication is disabled.
-p1 -p2 -o1 -o2	<server IP>	The server name or IP address of the primary or secondary RADIUS server. NOTE: RADIUS servers use port 1812 by default to authenticate users. To use a different port, add a colon followed by the new port number to the end of the RADIUS server name or IP address. The NMC supports ports 1812, 5000 to 32768.
-s1 -s2	<server secret>	The shared secret between the primary or secondary RADIUS server and the NMC.
-t1 -t2	<server timeout>	The time in seconds that the NMC waits for a response from the primary or secondary RADIUS server.

Example 1:

To view the existing RADIUS settings for the NMC, type `radius` and press ENTER.

Example 2: To enable RADIUS and local authentication, type:

```
radius -a radiusLocal
```

Example 3: To configure a 10-second timeout for a secondary RADIUS server, type:

```
radius -t2 10
```

reboot

Access: Super User, Administrator, Network-Only User

Description: Restart the network management interface of the NMC.



This does not affect the output power of the device in which the NMC is installed.

resetToDef

Access: Super User, Administrator

Description: Reset all configurable parameters to their defaults.

Option	Arguments	Description
-p	all keepip	<p>Caution: This resets all configurable parameters to their defaults.</p> <p>Reset all configuration changes, including event actions, device settings, and, optionally, TCP/IP configuration settings.</p> <p>Choose keepip to retain the settings that determine how the NMC obtains its TCP/IP configuration values, which by default is DHCP.</p>



Certain non-configurable parameters are not reset using resetToDef, and can only be erased from the NMC by formatting the file system using the **format** command.

Example: To reset all of the configuration changes *except* the TCP/IP settings for the NMC, type:

```
resetToDef -p keepip
```

session

Access: Super User, Administrator

Description: Records who is logged in (user), the interface, the address, time and ID.

Option	Arguments	Description
-d	<session ID> (Delete)	Delete the session for the current user with the specified session ID.
-m	<enable disable> (Multi-User Enable)	Enable to allow two or more users to log on at the same time. Disable to allow only one user to log in at a time.
-a	<enable disable> (Remote Authentication Override)	The NMC supports RADIUS storage of passwords on a server. Enable Remote Authentication Override to allow a local user to log on using a username and password for the NMC that is stored locally on the NMC.

Example:

```
session
```

User	Interface	Address	Logged In Time	ID
apc	Telnet	10.169.118.100	00:00:03	19

smtp

Access: Super User, Administrator, Network-Only User

Description: IConfigure the settings for the local e-mail server.

Option	Arguments	Description
-f	<From Address>	The address from which e-mail will be sent by the NMC.
-s	<SMTP Server>	The IPv4/IPv6 address or DNS name of the local SMTP server.
-p	<Port>	The SMTP port number, default is 25. Port options are 25, 465, 587, 2525, 5000 to 32768
-a	<enable disable>	Enable this if your SMTP server requires authentication.
-u	<User Name>	If the SMTP server requires authentication, type the user name and password here.
-w	<Password>	
-e	<none ifavail always implicit>	Encryption options: <ul style="list-style-type: none">• none: The SMTP server does not require/support encryption• ifavail: The SMTP server advertises support for STARTTLS but does not require the connection to be encrypted.• always: The SMTP server requires the STARTTLS command to be sent upon connection to the server.• implicit: The SMTP server only accepts connections that begin encrypted. No STARTTLS message is sent to the server.
-c	<enable disable>	Require CA Root Certificate: This should only be enabled if the security policy of your organization does not allow for implicit trust of SSL/TLS connections. If this is enabled, a valid root CA certificate must be loaded onto the NMC for encrypted emails to be sent.
-i	<Certificate File Name>	This field is dependent on the root CA certificates installed on the NMC and whether or not a root CA certificate is required.

Example:

```
From: address@example.com
Server: mail.example.com
Port: 25
Auth: disabled
User: User
Password: <not set>
Encryption: none
Req. Cert: disabled
Cert File: <n/a>
```

snmp

Access: Super User, Administrator, Network-Only User

Description: Enable or disable and configure SNMPv1. **NOTE:** SNMPv1 is disabled by default. The Community Name (`-c[n]`) must be set before SNMPv1 communications can be established.

In the table below, n is the access control number: 1,2,3, or 4.

Option	Arguments	Description
<code>-s</code>	<code>enable disable</code>	Enable or disable SNMPv1.
<code>-c[n]</code>	Community	Specify a community name or string.
<code>-a[n]</code>	<code>read write writeplus disable</code>	Indicate the usage rights.
<code>-n[n]</code>	IP or Domain Name	Specify the IPv4/IPv6 address or the domain name of the Network Management Station.

Example: To enable SNMP version 1, type:

```
snmp -S enable
```

snmpv3

Access: Super User, Administrator, Network-Only User

Description: Enable or disable and configure SNMPv3. **NOTE:** SNMPv3 is disabled by default. A valid profile must be enabled with passphrases (`-a[n]`, `-c[n]`) set before SNMPv3 communications can be established.

In the table below, n is the access control number: 1,2,3, or 4.

Option	Arguments	Description
<code>-S</code>	<code>enable disable</code>	Enable or disable SNMPv3.
<code>-u[n]</code>	<User Name>	Specify a user name, an authentication phrase and encryption phrase.
<code>-a[n]</code>	<Authentication Phrase>	
<code>-c[n]</code>	<Crypt Phrase>	
<code>-ap[n]</code>	<code>sha md5 none</code>	Indicate the type of authentication protocol.
<code>-pp[n]</code>	<code>aes des none</code>	Indicate the privacy (encryption) protocol.
<code>-ac[n]</code>	<code>enable disable</code>	Enable or disable access.
<code>-au[n]</code>	<User Profile Name>	Give access to a specified user profile.
<code>-n[n]</code>	<IP or hostname for NMS>	Specify the IPv4/IPv6 address or the hostname for the Network Management Station.

Example: To give access level 2 to user "JMurphy", type:

```
snmpv3 -au2 "JMurphy"
```


snmptrap

Access: Super User, Administrator, Network-Only User

Description: Enable or disable SNMP trap generation.

Option	Arguments	Description
-c[n]	<Community>	Specify a community name or string.
-r[n]	<Receiver NMS IP>	The IPv4/IPv6 address or host name of the trap receiver.
-l[n]	<Language> [language code]	Specify a language. A language pack containing the desired language must be installed, and the language codes are: <ul style="list-style-type: none">• enUS - English• deDe - German• ruRu - Russian• zhCn - Chinese• jaJa - Japanese• koKo - Korean• itIt - Italian• ptBr - Portuguese• frFr - French• esEs - Spanish
-t[n]	<Trap Type> [snmpV1 snmpV3]	Specify SNMPv1 or SNMPv3.
-g[n]	<Generation> [enable disable]	Enable or disable trap generation for this trap receiver. Enabled by default.
-a[n]	<Auth Traps> [enable disable]	Enable or disable authentication of traps for this trap receiver, SNMPv1 only.
-u[n]	<profile1 profile2 profile3 profile4> (User Name)	Select the identifier of the user profile for this trap receiver, SNMPv3 only.
n= Trap receiver number = 1, 2, 3, 4, 5 or 6		

Example: To enable and configure an SNMPv1 trap for Receiver 1, with the Community Name of public, receiver 1 IP address of 10.169.118.100, using the default English language, enter the following command:

```
snmptrap -c1 public -r1 10.169.118.100 -l1 enUS -t1 snmpV1 -g1 enable
```

E000: Success

ssh

Access: Super User, Administrator

Description: Show, delete, and generate SSH server keys. **NOTE:** The options in the table below are available with the `ssh key` command.

Option	Arguments	Description
-s		Display the current SSH server key in use.
-f		Display the current SSH server key's fingerprint.
-d		Delete the current SSH server key in use.
-i	<File Name>.pk15	Import the SSH server key from a PKCS #15 file.
-ecdsa	256	Generate an Elliptic Curve Digital Signature Algorithm (ECDSA) SSH server key with the specified size in bits.
-rsa	1024 2048 4096	Generate a Rivest–Shamir–Adleman (RSA) SSH server key with the specified size in bits.

Example 1: To display the current SSH server key, type:

```
ssh key -s
E000: Success.
```

Example 2: To import the SSH server key from a .p15 file generated by the NMC Security Wizard CLI Utility, type:

```
ssh key -i nmc.p15
E000: Success.
```

ssl

Access: Super User, Administrator, Network-Only User

Description: Configure and manage the NMC's public key and Web UI certificate, and create a Certificate Signing Request (CSR).

NOTE: There are three sets of options for this command, indicated below (`key`, `csr`, and `cert`).

Configure public keys (`key`):

Option	Arguments	Description
-s		Display the current public key in use.
-d		Delete the current public key in use.
-i	<File Name>.p15	Import the public key from a PKCS #15 file.
-ecdsa	256 384 521	Generate an Elliptic Curve Digital Signature Algorithm (ECDSA) public key with the specified size in bits.
-rsa	1024 2048 4096	Generate a Rivest–Shamir–Adleman (RSA) public key with the specified size in bits.

Example 1: To generate a new ECDSA-521 public key, type:

```
ssl key -ecdsa 521
```

E000: Success.

Example 2: To import the public key from a .p15 file generated by the NMC Security Wizard CLI Utility, type:

```
ssl key -i nmc.p15
```

E000: Success.

Configure Certificate Signing Request (csr):

Option	Arguments	Description
-s	<File Name>	Display the current Certificate Signing Request (CSR).
-q	<File Name>	Create a Certificate Signing Request (CSR) from active configuration.
-CN	<Common Name>	Create a custom Certificate Signing Request (CSR). The Common Name is the fully qualified domain name (FQDN) of the NMC. For example, its IP address or *.nmc.local.
Custom Certificate Signing Request (CSR) options.		
NOTE: The below options are only available for -CN.		
-O	<Organization>	The name of your organization.
-OU	<Organizational Unit>	The division of your organization handling the certificate.
-C	<Country>	The two-letter country code of where your organization is located.
-san	<Common Name IP Address>	The Common Name or IP address of the NMC.

NOTE: Created Certificate Signing Requests will be stored in the NMC's ssl directory. See [dir](#).

Example 3: To create a quick Certificate Signing Request (CSR) from active configuration, type:

```
ssl csr -q
```

E000: Success

Example 4: To create a minimal Certificate Signing Request (CSR), type:

```
ssl csr -CN 190.0.2.0 -C US
```

E000: Success

Example 5: To create a custom Certificate Signing Request (CSR), type:

```
ssl csr -CN apcXXXXXX.nmc.local -C US -san *.nmc.local -san 190.0.2.0
```

E000: Success

Configure the Web UI's certificate (cert):

Option	Arguments	Description
-s	<File Name>	Display the specified certificate. NOTE: Executing this option without an argument will display the current certificate in use.
-f	<File Name>	Display the specified certificate's fingerprint. NOTE: Executing this option without an argument will display the current certificate's fingerprint.
-i	<File Name>	Import a certificate.

Example 6: To display the active certificate, type:

```
ssl cert -s
```

Example 7: To display nmc.crt located in the ssl directory, type:

```
ssl cert -s ssl/nmc.crt
```

Example 8: To import other.crt, type:

```
ssl cert -i other.crt
```

system

Access: Super User, Administrator

Description: View and set the system name, the contact, the location and view up time as well as the date and time, the logged-on user, and the high-level system status P, N, A (see "Main screen status fields").

Option	Argument	Description
-n	<system name>	Define the device name, the name of the person responsible for the device, and the physical location of the device. NOTE: If you define a value with more than one word, you must enclose the value in quotation marks. These values are also used by StruxureWare Data Center Expert, or EcoStruxure IT Expert and the NMC's SNMP agent.
-c	<system contact>	
-l	<system location>	
-m	<system-message>	Show a custom message or banner on the logon page of the web UI or the CLI.
-s	enable disable	Synchronize the system and the hostname. This is the same as using "dns -y".

Example 1: To set the device location as Test Lab, type:

```
system -l "Test Lab"
```

Example 2: To set the system name as Don Adams, type:

```
system -n "Don Adams"
```

tcpip

Access: Super User, Administrator, Network-Only User

Description: View and manually configure these IPv4 TCP/IP settings for the NMC:

Option	Argument	Description
-s	enable disable	Enable or disable TCP/IP v4.
-i	<IPv4 address>	Type the IP address of the NMC, using the format xxx.xxx.xxx.xxx
-s	<subnet mask>	Type the subnet mask for the NMC.
-g	<gateway>	Type the IP address of the default gateway. <i>Do not</i> use the loopback address (127.0.0.1) as the default gateway.
-d	<domain name>	Type the DNS name configured by the DNS server.
-h	<host name>	Type the host name that the NMC will use.

Example 1: To view the network settings of the NMC, type `tcpip` and press ENTER.

Example 2: To manually configure an IP address of 150.250.6.10 for the NMC, type:

```
tcpip -i 150.250.6.10
```

tcpip6

Access: Super User, Administrator, Network-Only User

Description: Enable IPv6 and view and manually configure these IPv6 TCP/IP settings for the NMC:

Option	Argument	Description
-s	enable disable	Enable or disable TCP/IP v6.
-man	enable disable	Enable manual addressing for the IPv6 address of the NMC.
-auto	enable disable	Enable the NMC to automatically configure the IPv6 address.
-i	<IPv6 address>	Set the IPv6 address of the NMC.
-g	<IPv6 gateway>	Set the IPv6 address of the default gateway.
-d6	router statefull stateless never	Set the DHCPv6 mode, with parameters of router controlled, statefull (for address and other information, they maintain their status), stateless (for information other than address, the status is not maintained), never.

Example 1: To view the network settings of the NMC, type `tcpip6` and press ENTER.

Example 2: To manually configure an IPv6 address of 2001:0:0:0:0:FFD3:0:57ab for the NMC, type:

```
tcpip -i 2001:0:0:0:0:FFD3:0:57ab
```

uio

Access: Super User, Administrator, Device User

Description: This command is available for an AP9641 or AP9643 Network Management Card 3 with a connected Dry Contact I/O Accessory (AP9810).

Option	Argument	Description
-rc <UIO port #>	open close	Change the state of a connected output, and specify the UIO (universal input/ output) port number.
-st	<UIO port #> <UIO port #>, <UIO port #> <UIO port #>--<UIO port #>	View the status of the sensors connected to the Dry Contact I/O Accessory. To view the status of a specific sensor or several sensors, type their UIO port numbers.
-disc	<UIO port #> <UIO port #>, <UIO port #> <UIO port #>--<UIO port #>	Identify new input contact or output relay connections.

Example 1: To open the output, type:

```
uio -rc 2 open
```

Example 2: To view the status of the devices connected to a Dry Contact I/O Accessory that is installed in universal input/ output port 2, type:

```
uio -st 2
```

ups



Some **ups** options are dependent on the UPS model. Not all configurations may support all options of the **ups** command.

Access: Super User, Administrator, Device User

Description: Control the UPS and view status information. See the [User Guide](#) for information on how these options relate to that screen.

Option	Arguments	Description
-c	reboot	Restarts the attached equipment by doing the following: <ul style="list-style-type: none"> • Turns off power at the UPS. • Turns on power at the UPS after the UPS battery capacity returns to at least the percentage configured for Minimum Battery Capacity. See “cfgshutdn”.
	on	Turns on power at the UPS.
	off	Turns off the output power of the UPS immediately, without a shutdown delay. The UPS remains off until you turn it on again.
	graceoff	Turns off the outlet power of the UPS after the Maximum Required Delay .
	gracereboot	This action is similar to reboot above, but with an additional delay before the shutdown. The attached equipment shuts down only after the UPS waits the Maximum Required Delay , which is calculated as described in the User Guide topic “Shutdown delays and PowerChute Network Shutdown”.
	sleep	Puts the UPS into sleep mode by turning off its output power for a defined period of time. The UPS turns off output power after waiting the time configured as Shutdown Delay . When input power returns, the UPS turns on output power after the configured Sleep Time . See “cfgshutdn”.
-c	gracesleep	Puts the UPS into sleep mode (turns off power for a defined period of time): <ul style="list-style-type: none"> • The UPS turns off output power after waiting the Maximum Required Delay to allow time for PowerChute Network Shutdown to shut down its server with protection, and its Shutdown Delay. • When input power returns, the UPS turns on output power after the configured Sleep Time. See “cfgshutdn”.
-r	start stop	Initiate or end a runtime calibration. A calibration recalculates remaining runtime and requires the following: <ul style="list-style-type: none"> • Because a calibration temporarily depletes the UPS batteries, you can perform a calibration only if battery capacity is at 100%. • The load must be at least 15% to guarantee that a calibration will be accepted.
-s	start	Initiate a UPS self-test.
-b	enter exit	Control the use of bypass mode. This command is model-specific and may not apply to your UPS.

Option	Arguments	Description
-o#	Off DelayOff On DelayOn Reboot DelayReboot Shutdown DelayShutdown Cancel	<p>Control the UPS outlet groups. Replace # with the outlet group number.</p> <p>When the state of the outlet group is on, the option accepts the following arguments:</p> <ul style="list-style-type: none"> • Off — Turn off the group immediately. • DelayOff — Turn off the group after the number of seconds configured as Power Off Delay. • Reboot — Turn off the group immediately, then turn it on after the number of seconds configured as Reboot Duration and Power On Delay. • DelayReboot — Turn the outlet group off after the number of seconds configured as Power Off Delay, then turn it on after the number of seconds configured as Reboot Duration and Power On Delay. • Shutdown — If the UPS is online, this reboots the outlet group. If the UPS is on battery, this shuts down the group and waits for AC utility power before turning on the group again. • DelayShutdown — Shut down the outlet group after the number of seconds configured as Power Off Delay. • Cancel — Cancel your previous commands, e.g. turning off. <p>When the state of the outlet group is off, the option accepts two arguments:</p> <ul style="list-style-type: none"> • On — Turn on the group immediately. • DelayOn — Turn on the group after the number of seconds configured as Power On Delay. <p>The Power On Delay, Power Off Delay, and Reboot Duration must be configured at the user interface.</p>
-os#		<p>View the status (on, off, or rebooting) of all the outlet groups.</p> <p>To view the status of a specific outlet group, specify its number. For example, type <code>ups-os1</code> to view the status of outlet group 1.</p> <p>But:</p> <p>a) When you use this option on a UPS with a Main Outlet Group: 1 identifies the Main Outlet Group, 2 identifies Switched Outlet Group 1, 3 identifies Switched Group 2, etc.</p> <p>b) On a UPS with NO main outlet group: 1 identifies Switched Outlet Group 1, etc.</p>
-st		View the status of the UPS.
-a	start	Test the UPS audible alarm.

Example 1: To initiate a runtime calibration, type:

```
ups -r start
```

Example 2: To immediately turn off outlet group 2 at a Smart-UPS XLM, type:

```
ups -o2 off
```


The ups command options for MGE Galaxy-specific UPS devices:



These commands are only available on the MGE Galaxy 300 and MGE Galaxy 7000 UPS. Some options may only be available based on the individual UPS model.

Option	Argument	Description
-input	<phase#> all	Display the input measurements for the chosen phase of the UPS. Typing "all" displays the information for all phases of the UPS.
	voltage current frequency all	Specify the input measurement for the ups command. Example: ups -input 2 frequency Displays the frequency for phase 2 of the UPS.
-bypass	<phase#> all	Display the input measurements for the chosen phase of the bypass main. Typing "all" displays all phases of the bypass main.
	voltage current frequency all	Specify the input measurement for the ups command. Example: ups -bypass 2 current Displays the current for phase 2 of the bypass main.
-output	<phase#> all	Display the output measurements for the chosen phase of the UPS. Typing "all" displays the information for all phases of the UPS.
	voltage current load power perclload pf frequency all	Specify the output measurement for the ups command. Example: ups -output 2 perclload Displays the percentage of load for phase 2 of the UPS.
-batt		Display the battery status of the UPS
-about		Displays information about the UPS.
-al	c w i	Display all existing alarms. Specifying "c", "w", or "i" limits the display to either Critical (c), Warning (w), or Informational (i) alarms.

Example 3: To display the battery status of the MGE Galaxy device, type:

```
ups -batt
```

upsabout



All UPS information listed by the **upsabout** command might not be available for all UPS devices.

Access. Super User, Administrator, Device User.

Description: Displays information about the UPS including:

Model, SKU, Serial Number, UPS Firmware Revision, Manufacture Date, Apparent Power Rating, Real Power Rating, Internal Battery SKU and External Battery SKU.

upswupdate



This command might not be available for all UPS devices.

Access. Super User, Administrator, Device User.

Description: Initiate an update of the UPS firmware:



Follow the instructions in the CLI to determine if the output of your UPS needs to be turned off in advance of a firmware update.

- See the Knowledge Base article IDs [FA164737](#) and [FA170679](#) on the [APC website](#) for information on obtaining a firmware update file.
- To update via USB (AP9641 and AP9643 only):
 - The USB drive must support USB v1.1, and be in FAT, FAT16 or FAT32 format.
 - The firmware update file can be saved to the root of the USB drive, or to a /upsw/ directory on the USB drive.
 - The drive must be inserted into the USB port of the NMC.



NOTE: Firmware update can take a few minutes. Do not remove the USB drive from the NMC until the UPS firmware update has completed. If you remove the USB drive before completion, the firmware update will not be successful.

Option	Argument	Description
-install	<code>-file <filepath> -ver <firmware version></code>	<p>NOTE: This option is not available on all UPS devices.</p> <p>Install a UPS firmware update from a USB drive inserted into the USB port of the NMC. Include the file path to the firmware update file on the USB drive. The USB drive is mounted on the NMC with drive letter <code>c:\</code></p> <p>If there are multiple firmware files on the USB drive, provide the firmware version in the format:</p> <p>[UPS ID number] [UPS Firmware version]</p> <p>NOTE: The UPS ID number can be found by using the <code>-info</code> command described below.</p>
-info	<code>-file <filepath> -ver <firmware version></code>	<p>See information about the firmware available on the USB drive inserted into the USB port of the NMC.</p> <p>Include the file path to the firmware update file on the USB drive. If there are multiple firmware files on the USB drive, provide the firmware version in the format:</p> <p>[UPS ID number] [UPS Firmware version]</p>
-list		Display a list of available firmware versions present on a USB drive inserted into the USB port of the NMC.
-status		Check the status of a firmware update that is already initiated.

Option	Argument	Description
-lastresult		View the result of the last attempted firmware update.

Example 1:

```

upsfwupdate -info -ver "ID11 UPS 03.8"
Searching for version 'UPS 03.8'... found.
Version 'UPS 03.8' at C:\SMX11UPS_03-8.enc
E000: Success
Update File:          C:\SMX11UPS_03-8.enc
Compatible with UPS: Yes
Update Version: UPS 03.8

```

Example 2:

```

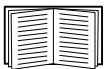
upsfwupdate -status
E000: Success
Status: 3k/257k (1%)

```

user

Access: Super User, Administrator

Description: Configure the user name and password for each account type, and configure the inactivity timeout. (You can't edit a user name, you must delete and then create a new user).



For information on the permissions granted to each account type (Super User, Administrator, Device User, Read-Only User, Network-Only User), see the [User Guide](#).

Option	Argument	Description
-n	<user>	Indicate the user.
-cp	<current password>	For a Super User, you must specify the current password. NOTE: The -cp option is only required when changing the Super User's password remotely.
-pw	<user password>	Specify these options for a user. NOTE: Description must be enclosed in quotation marks.
-pe	<user permission>	
-d	<user description>	
-e	enable disable	Enable or disable access for the particular user account.
-te	enable disable	Enable touch screen access.
-tp	<touch screen access pin>	This option is only available on certain devices.

Option	Argument	Description
-tr	enable disable	Enable the touch screen remote authorization override. This option is only available on certain devices. If you enable this override, the NMC will allow a local user to log on using the password for the NMC that is stored locally on the NMC.
-st	<session timeout>	Specify how long a session lasts waits before logging off a user when the keyboard is idle.
-sr	enable disable	Bypass RADIUS by using the serial console (CLI) connection, also known as Serial Remote Authentication Override
-el	enable disable	Indicate the Event Log color coding.
-lf	tab csv	Indicate the format for exporting a log file.
-ts	us metric	Indicate the temperature scale, fahrenheit or celsius.
-df	<mm/dd/yyyy dd.mm.yyyy mmm-dd-yy dd-mmm-yy yyyy-mm-dd>	Specify a date format.
-lg	<language code (e.g. enUs)>	Specify a user language. For a list of available languages and corresponding language codes, type <code>lang</code> at the command prompt.
-del	<user name>	Delete a user.
-l		Display the current user list.

Example: To change the log off time to 10 minutes for user “JMurphy”, type:

```
user -n "JMurphy" -st 10
```

userdfit

Access: Super User, Administrator

Description: Complimentary function to “user” establishing default user preferences. There are two main features for the default user settings:

- Determine the default values to populate in each of the fields when the Super User or Administrator-level account creates a new user. These values can be changed before the settings are applied to the system.
- For remote users (user accounts not stored in the system that are remotely authenticated such as RADIUS) these are the values used for those that are not provided by the authenticating server.

For example, if a RADIUS server does not provide the user with a temperature preference, the value defined in this section will be used.

Option	Argument	Definition
-e	<enable disable> (Enable)	By default, user will be enabled or disabled upon creation. Remove (Enable) from the end.

Option	Argument	Definition
-pe	<Administrator Device Read-Only Network-Only> (user permission)	Specify the user's permission level and account type.
-d	<user description>	Provide a user description. Description must be enclosed in quotation marks.
-st	<session timeout> minute(s)	Provide a default session timeout.
-bl	<bad login attempts>	Number of incorrect login attempts a user has before the system disables their account. Upon reaching this limit, a message is displayed informing the user the account has been locked. The Super User or an Administrator-level account is needed to re-enable the account to allow the user to log back in. NOTE: A Super User account cannot be locked out, but can be manually disabled if necessary.
-el	<enable disable> (Event Log Color Coding)	Enable or disable event log color coding.
-lf	<tab csv> (Export Log Format)	Specify the log export format, tab or CSV.
-ts	<us metric> (Temperature Scale)	Specify the user's temperature scale. This setting is also used by the system when a user preference is not available (for example, email notifications).
-df	<mm/dd/yyyy dd.mm.yyyy mmm-dd-yy dd-mmm-yy yyyy-mm-dd> (Date Format)	Specify the user's preferred date format.
-lg	<language code (e.g. enUS)>	Specify a user language. For a list of available languages and corresponding language codes, type <code>lang</code> at the command prompt.
-sp	<enable disable>	Enable/disable strong password.
-pp	<interval in days>	Required password change interval.

Example. To set the default user's session timeout to 60 minutes:

```
userdflt -st 60
```

```
E000: Success
```

web

Access: Super User, Administrator, Network-Only User

Description: Enable access to the user interface using HTTP or HTTPS.

For additional security, you can change the port setting for HTTP and HTTPS to any unused port from 5000 – 32768. Users must then use a colon (:) in the address field of the browser to specify the port number. For example, for a port number of 5000 and an IP address of 152.214.12.114:

`http://152.214.12.114:5000`

Option	Argument	Definition
-h	enable disable	Enable or disable access to the user interface for HTTP. HTTP is disabled by default.
-s	enable disable	Enable or disable access to the user interface for HTTPS. HTTPS is disabled by default. When HTTPS is enabled, data is encrypted during transmission and authenticated by digital certificate using SSL/TLS.
-mp	<minimum protocol>	Specify the minimum protocol used by the web interface: SSL v3.0, TLS v1.1, or TLS v1.2.
-ph	<http port #>	Specify the TCP/IP port used by HTTP to communicate with the NMC (80 by default). The other available range is 5000–32768.
-ps	<https port #>	Specify the TCP/IP port used by HTTPS to communicate with the NMC (443 by default). The other available range is 5000–32768.
-lsp	enable disable	Enable or disable access to the Limited Status page in the Web UI.
-lsd	enable disable	Enable or disable the Limited Status page being used as the default page when accessing the device's IP or hostname in a web browser.
-cs	<0 1 2 3 4>	Select the level of security of TLS v1.2 cipher suites between 0 - 4, where 4 is the highest level of security, and 0 is the lowest level of security. The default value is 4. NOTE: The -cs option is only applied when -mp is set to TLS v1.2. When a value between 0 - 4 is entered, the CLI responds with a list of the currently allowed SSL cipher suites.

Example: To prevent all access to the user interface for HTTPS, type:

```
web -s disable
```

whoami

Access: Super User, Administrator, Device User, Read-Only User, Network-Only User

Description: Provides login information on the current user

Example:

```
apc> whoami
E000: Success
apc
```

wifi

Access: Super User, Administrator

Description: Enable or disable wi-fi and configure the wi-fi network's settings.



This command requires the optional APC USB Wi-Fi Device (AP9834) to be inserted in a USB port of an AP9641/AP9643 card.

Option	Argument	Definition
-s	enable disable	Enable or disable wi-fi. Disabled by default. NOTE: Enabling/disabling wi-fi will disable/enable the wired LAN connection.
-n	<network name (SSID)>	Specify the network name (SSID) of the wi-fi network. The maximum length is 32 characters.
-t	WPA WPA2-AES WPA2-Mixed WPA2-TKIP WPA2-Enterprise	Specify the security type (authentication and encryption) of the wi-fi network.
-p	<wifi password>	Specify a password for the wi-fi network. The maximum length is 64 characters. NOTE: This is required for WPA, WPA2-AES, and WPA2-Mixed security types.
-eu	<WPA2-Enterprise user name>	The user name for WPA2-Enterprise authentication. The maximum length is 32 characters.
-ep	<WPA2-Enterprise password>	The password for WPA2-Enterprise authentication. The maximum length is 32 characters.
-eo	<WPA2-Enterprise outer identity>	Specify the WPA-2-Enterprise outer identity. This is an optional unencrypted identification used by the WPA-2-Enterprise server. For example: user@example.com or anonymous. The maximum length is 32 characters.
-fw	<path/ filename>	Specify the firmware file to upgrade the APC USB Wi-Fi Device's firmware. This must be an .ism file located on a USB drive inserted into the USB port of the NMC. NOTE: The wi-fi network will be unavailable during the firmware upgrade.

Example 1: To enable wi-fi and configure the wi-fi network's settings, type:

```
wifi -s enable -n NETGEAR06 -t WPA2-AES -p apc123
```

Example 2: To upgrade the APC USB Wi-Fi Device's firmware, type:

```
wifi -fw apc_uw01_wni_1-26-7.ism
```

xferINI

Access: Super User, Administrator. This command only works through serial/local console CLI.

Description: Use XMODEM to upload an .ini file while you are accessing the command line interface through a serial connection. After the upload completes:

- If there are any system or network changes, the command line interface restarts, and you must log on again.
- If you selected a baud rate for the file transfer that is not the same as the default baud rate for the NMC, you must reset the baud rate to the default to re-establish communication with the NMC.

xferStatus

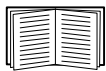
Access: Super User, Administrator

Description: View the result of the last file transfer.

Example: xferStatus

```
E000: Success
```

```
Result of last file transfer: OK
```



See the [User Guide](#) for descriptions of the transfer result codes.

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