Command Line Interface Guide

UPS Network Management Card 4

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Schneider Electric

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Command Line Interface (CLI)

How To Log On

Overview

To access the command line interface, use a remote connection (SSH over ports 22, 5000 - 32768).

Use case-sensitive user name and password entries to log on (by default, **apc** and **apc** for a Super User). **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 UI under **Configuration > Security > Local Users > Default Settings**, the user accounts will be locked for one hour or until the Super User or an Administrator-level account unlocks the account.

Remote access to the command line interface

You can access the command line interface through SSH. SSH is enabled by default, on port 22.

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

SSH for high-security access. If you use the high security of TLS for the Web interface, use SSH for access to the command line interface. SSH encrypts user names, passwords, and transmitted data. To use SSH, you must have an SSH client program installed on your computer. For example:

```
ssh apc@156.205.14.141
```

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

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 4 x.x.x
(c)Copyright 2023 All Rights Reserved   Galaxy VS 150kW
-------------------------------------------------------------------------
UPS Name : Test Lab                                  Date : 10/30/2021
Contact  : Don Adams                                 Time : 5:58:30
Location : Building 3                                User : apc
Up Time  : 0 Days 21 Hours 21 Minutes                Type : super_user
-------------------------------------------------------------------------
Protocol     | Status    | Protocol    | Status    | Protocol    | Status
-------------------------------------------------------------------------
IPv6         | disabled  | IPv4        | enabled   | Ping        | disabled
HTTP         | disabled  | HTTPS       | enabled   | FTP         | disabled
SSH/SFTP/SCP| disabled  | SNMPv1      | disabled  | SNMPv3      | enabled
Modbus TCP   | disabled  | EAPoL       | disabled  |             |
-------------------------------------------------------------------------

Type help for command listing

apc>
```

Information and status fields

Main screen information fields.

- The below field identifies the firmware version of the application.

  ```
  Network Management Card 4 x.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 : 10/30/2020
  Time : 5:58:30
  ```

- The **User** and **Type** fields display the logged in user name and access level.

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). Commands, arguments and options are case sensitive.

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.

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

- Type `help` 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 DNS configuration options, type:

  ```
  dns ?
  ```

  or

  ```
  dns help
  ```

- Calling a command without any options provides an overview of the settings associated with the command. For example, type `boot` and press ENTER:

  ```
  Boot Mode: dhcp_only
  DHCP Cookie: disabled
  Vendor Class: APC
  Client ID: 28:29:86:1d:ca:86
  User Class: GVS
  ```

- 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 for a list of valid commands that match the text you typed in the command line.
- Type `exit`, `quit` or `bye` 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: `-p <user password>`
`[ ]`	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.

Supported Languages

The **email** and **snmptrap** commands accept languages supported by the NMC. For example, `email -i 0 -l German`. The languages supported by the NMC are:

- English – this is the default language
- German
- Russian
- Chinese
- Japanese
- Korean
- Italian
- Portuguese
- French
- Spanish

Syntax examples

A command that supports multiple options:

```
user -n <user name> -P <current password> -p <new password> -c <confirm password>
```

Here, the `user` command accepts both the option `-n`, which specifies the user name, the option `-P` which specifies the current password, the option `-p`, which specifies the new password, and `-c`, the current password, to change the password.

For example, use “testuser” to create a user account with “userpass” as the password, and default settings:

```
user -n testuser -P password123 -p userpass -c userpass
```

A command that accepts mutually exclusive arguments for an option:

```
boot -b [dhcp | bootp | manual]
```

In this example, the option `-b` accepts only three possible values as an argument: `dhcp`, `bootp`, or `manual`. For example, to set the boot mode to manual, type:

```
boot -b manual
```

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

A command that accepts a string for an option:

```
system -n <system name>
```

In this example, the option `-n` accepts a string for the system name. If there is a space in the provided string, it must be enclosed in quotation marks. For example:

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

If there is no space in the provided string, it does need to be enclosed in quotation marks. For example:

```
system -n DonAdams
```

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
E101	Command not found
E102	Parameter error
E108	EAPoL disabled due to invalid/encrypted certificate

Command Descriptions

about

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

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
```

boot

Access: Super User, Administrator, Network Only

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, Network Only, Read Only

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, Network Only, Read Only

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 ..`

date

Access: Super User, Administrator

Description: Configure the date and time used by the NMC.

NOTE: Configuring the NMC's date and time settings via the CLI will revert the date/time mode to manual. If you have a NTP server configured, you must re-configure its settings via the Web UI (**Configuration > General > Date/Time**).

Option	Argument	Description
`-d`	`<date string>`	Set the current date. Use the date format YYYY-MM-DD.
`-t`	`<time string>`	Configure the current time, in hours, minutes, and seconds. Use the 24-hour clock format, HH:MM:SS.
`-z`	`<utc offset>`	Set the system offset from Coordinated Universal Time (UTC). Use the format, +/- HH:MM. The UTC offset can be set to any value between the range of -12:00 and +14:00.

Example 1: To change the UTC offset to 1 hour ahead of UTC time, type:

```
date -z +01:00
```

Example 2: To define the date as February 25, 2020, type

```
date -d 2020-02-25
```

Example 3: To define the time as 17:21:03, type

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

delete

Access: Super User, Administrator

Description: Delete a file in the file system.

Example: To delete a file:

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

dir

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

Description: View the files and folders stored on the Network Management Card.

Example:

```
dir
E000: Success
0 Mar 30 2023 ./
0 Mar 30 2023 ../
0 Mar 30 2023 config.ini
0 Mar 30 2023 dbg
0 Mar 30 2023 ddf.zip
0 Mar 30 2023 eapol
0 Mar 30 2023 email
0 Mar 30 2023 fwl
0 Mar 30 2023 logs
0 Mar 30 2023 sec
0 Mar 30 2023 ssh
0 Mar 30 2023 ssl
0 Mar 30 2023 syslog
0 Mar 30 2023 waveforms
```

dns

Access: Super User, Administrator, Network Only

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.
-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.

eapol

Access: Super User, Administrator, Network Only

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. To configure EAPoL with an empty passphrase, use -p “”.
-r		Forces EAP re-authentication.

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

```
apc>eapol
E000: Success
Active EAPoL Settings
---------------------
Status:                          enabled
Supplicant Name:                 user@example.org
Passphrase:                      <set>
CA file Status:                  /eapol/ca.crt
Private Key Status:              /eapol/user.key
Public Key Status:               /eapol/user.crt
Result:                          Unsuccessful
```

Example 2: To enable EAPoL:

```
apc>eapol -S enable
E000: Success
```

email

Access: Super User, Administrator, Network Only

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

Option	Argument	Description
`-i`	`1 | 2 | 3 | 4 | 5`	Select the recipient instance to add and modify email settings. **NOTE:** This option must be present in every `email` command if using other options.
`-g`	`enable | disable`	Enable or disable sending emails to the recipient. The default value is `disable`.
`-t`	`<To Address>`	The email address of the recipient.
`-o`	`long | short`	Select the format of emails sent by the NMC. 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. The default value is `long`.
`-l`	`<Language>`	The language in which emails will be sent. The default language is English. See **Supported Languages** for a list of all supported languages.

Option	Argument	Description
-r	Local | custom	Set the SMTP server options: • **Local** (recommended): Choose this option if your SMTP server is located on your internal network, or is set up for your email 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 email account to receive the forwarded email. **NOTE:** Check with your SMTP server administrator before making these changes. • **Custom:** This setting allows each email recipient to have its own server settings. These settings are independent of the settings given by the smtp command. The default value is Local.
-D		Delete the email recipient for the specified instance. For example, email -i 3 -D
Custom route options:		
-f	<From Address>	The address from which email 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. Common ports are 25 and 2525 for unencrypted e-mail, and 465 and 587 for SSL/TLS encrypted e-mail. You can change the port setting to any port from 1 to 65535.
-a	enable | disable	Enable or disable authentication of the SMTP server. Enable this option if your mail server requires authentication. The default value is disable.
-u	<User Name>	If the SMTP server requires authentication, type the user name and password here.
-w	<Password>	
-d	<Confirm Password>	Confirm the user password provided in option -w.

Example 1: To enable emails to be sent to email recipient 1 with email address recipient1@se.com, from address sender@se.com, using the local SMTP server, type:

```
email -i 1 -g enable -r local -t recipient1@se.com -f sender@se.com
```

Example 2: To delete email recipient 3, type:

```
email -i 3 -D
```

eventlog

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

Description: Prints the event log. **NOTE:** The `eventlog` command must be called without arguments.

Example:

```
eventLog
---- Event Log -------------------------------------
Date: 6/07/2019 Time: 17:42:42 Page: 1
-----------------------------------------------------
Date        Time      User    Event
2019-07-06 17:42:37  System Network service could not start
2019-07-06 17:41:32  System Firewall Disabled
[..]
2019-07-06 17:41:10  Device The battery temperature is below the Alarm setting
<E>- Exit, <R>- Refresh, <B>- Back <N>- Next, <D>- Delete
```

NOTE:

- The return button (⏎) will go to the next page of the event log, and exit the event log if the end has been reached.
- `E`⏎ exits the event log and returns to the `apc>` prompt.
- `R`⏎ refreshes the event log and returns to the first page.
- `N`⏎ goes to the next page of the event log.
- `B`⏎ goes to the previous page of the event log.
- `D`⏎ deletes the event log. This option is only available to the Super User and Administrator user accounts.

exit

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

Description: Exit from the command line interface session.

gencert

Access: Super User, Administrator, Network Only

Description: Generate a new self-signed certificate and key pair. **NOTE:** Ensure that the current self-signed certificate and key pair are not in use before executing this command.

Example: To generate a new self-signed certificate and key pair, type:

```
gencert
```

help

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

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
```

ls

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

Description: View the files and folders stored on the Network Management Card.

Example:

```
ls
E000: Success
0 Mar 30 2023 ./
0 Mar 30 2023 ../
0 Mar 30 2023 config.ini
0 Mar 30 2023 dbg
0 Mar 30 2023 ddf.zip
0 Mar 30 2023 eapol
0 Mar 30 2023 email
0 Mar 30 2023 fwl
0 Mar 30 2023 logs
0 Mar 30 2023 sec
0 Mar 30 2023 ssh
0 Mar 30 2023 ssl
0 Mar 30 223 syslog
0 Mar 30 2023 waveforms
```

modbus

Access: Super User, Administrator

Description: View and configure the Modbus parameters.

Option	Argument	Definition
`-a`	`enable | disable`	Enable or disable Modbus Serial. The default value is `disable`.
`-b`	`baud_2400 | baud_9600 | baud_19200 | baud_38400 |`	Set the baud rate in bits per second. The default value is `baud_19200`.
`-p`	`parity_even | parity_odd | parity_none`	Set the parity bit. The default value is `parity_even`.
`-s`	`1-247`	Set the Modbus slave address. The default value is `1`.
`-S`	`1 | STOP_BITS_ONE | 2 | STOP_BITS_TWO`	Set the stop bits. The default value is 1
`-e`	`enable | disable`	Enable or disable Modbus TCP. The default value is `disable`.

Option	Argument	Definition
-n	502 | 5000-32768	Set the Modbus TCP port number. The default value is 502.
-R		Reset the Modbus configuration to defaults.

Example:

```
modbus -a enable -b baud_9600 -p parity_odd -s 22 -e enable -n 5555
E000: Success
Slave Address: 22
Status: enabled
Baud Rate: baud_9600
Parity: parity_odd
TCP Status: enabled
TCP Port Number: 5555
```

netstat

Access: Super User, Administrator, Network Only

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

Example:

```
netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address            Foreign Address            State
tcp   0      0      10.125.43.115:22         10.125.43.115: 58252       ESTABLISHED
tcp   0      0      ::ffff:10.125.43.115:443 ::ffff:10.125.43.115:59569 ESTABLISHED
```

perf

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

Description: Displays the performance information of the NMC.

Example:

```
Memory Total: 250580 kB
Memory Free: 28176 kB
Memory Available: 91320 kB
Load Average: 0.16 0.23 0.21
CPU Usage:
   cpu0: 6%
   cpu1: 4%
File System Usage: 4%
```

ping

Access: Super User, Administrator, Device, Network Only

Description: Determine whether the device with the IPv4 address or DNS name you specify is connected to the network. Four inquiries are sent to the address.

Argument	Description
`<IPv4 address or DNS name>`	Type an IPv4 address with the format *xxx.xxx.xxx.xxx*, or a DNS name.

Example: To determine whether a device with an IPv4 address of 150.250.6.10 is connected to the network, type:

```
ping 150.250.6.10
```

pwd

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

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

quit

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

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

resetToDef

Access: Super User, Administrator, Network-Only User

Description: Reset all configurable parameters to their defaults.

Option	Arguments	Description
`-p`	`all | keepip`	Caution: This resets all configurable parameters to their defaults. Reset all configuration changes, including event actions, device settings, and, optionally, TCP/IP configuration settings. Choose `keepip` to retain the settings that determine how the NMC obtains its TCP/IP configuration values, which by default is DHCP. When `all` is selected, the TCP/IP will be reset to this default value of DHCP.

The file system of the NMC is also reset using this command. All user-uploaded files are removed, and self-signed certificates are regenerated.

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

```
resetToDef -p keepip

Warning: resetting NMC settings to default will automatically log out all users.
Do you wish to continue? [y/n]:
Resetting...
E000: Success
```

session

Access: Super User, Administrator

Description: List the current user sessions, and delete user sessions.

Option	Arguments	Description
-d	<User Name>	Delete the session for the user specified. **NOTE:** Using this option without any argument will delete all sessions for the user.
-i	<Interface>	To be used with the -d option, delete the user sessions on the specified interface only.

Example 1: To view all active sessions, type:

```
session
```

Example output:

```
Session
User       Interface       Address         Logged in Time
-----------------------------------------------------------
User1       Web            10.216.118.100  00:01:01
```

Example 2: To delete the web session of the user with user name “User1”, type:

```
session -d User1 -i web
```

smtp

Access: Super User, Administrator, Network Only

Description: Configure the settings for the local email server.

Option	Arguments	Description
-f	<From Address>	The sender email address used by the NMC in the **From:** field of the email sent.
-s	<SMTP Server>	The IPv4/IPv6 address or DNS name of the local SMTP server.
-p	<Port>	The SMTP port number, by default is 25. Common ports are 25 and 2525 for unencrypted e-mail, and 465 and 587 for SSL/TLS encrypted email. You can change the port setting to any port from 1 to 65535.

Option	Arguments	Description
-a	enable | disable	Enable or disable authentication of the SMTP server. Enable this option if your mail server requires authentication. The default value is disable.
-u	<User Name>	If your SMTP server requires authentication, type the user name and password here.
-w	<Password>	
-d	<Confirm Password>	Confirm the user password provided in option -w.

Example:

```
From: address@example.com
Server: mail.example.com
Port: 25
Auth: disabled
User: User
```

snmp

Access: Super User, Administrator, Network Only

Description: Enable or disable and configure SNMPv1. These settings are also used for SNMPv2c.

NOTE: SNMPv1 is disabled by default. The Community Name (-c) must be set before SNMPv1 communications can be established.

NOTE: There are two sets of options for this command, indicated below.

Enable/disable SNMP:

Option	Arguments	Description
-S	enable | disable	Enable or disable SNMPv1. The default value is disable.

Configure SNMP settings:

Option	Arguments	Description
-i	1 | 2 | 3 | 4	Access control of users. **NOTE:** This option must be present in every snmp command if using other options.
-c	<Community>	Specify a community name or string.
-a	READ_ACCESS | WRITE_ACCESS | DISABLE	Indicate the usage rights. The default value is DISABLE.
-n	<IP or Domain Name>	Specify the IPv4/IPv6 address or the domain name of the Network Management Station.

Example: To change Community Name, Access Type and IP/Domain for user with access control 2, type:

```
snmp -i 2 -c myCommunity -a WRITE_ACCESS -n 10.222.22.22
```

snmptrap

Access: Super User, Administrator, Network Only

Description: Enable or disable SNMP trap generation.

Option	Arguments	Description
`-i`	`1 | 2 | 3 | 4 | 5 | 6`	Select trap instance. **NOTE:** This option must be present in every `snmptrap` command if using other options.
`-c`	`<Community>`	Specify a community name or string.
`-r`	`<Receiver NMS IP>`	The IPv4/IPv6 address or hostname of the trap receiver.
`-p`	`162 | 5000-55162`	Specify the SNMP trap port for SNMPv1 and SNMPv3 trap receivers. The default port is 162.
`-l`	`<Language>`	The language in which traps will be sent. The default language is English. See **Supported Languages** for a list of all supported languages.
`-t`	`snmpV1 | snmpV3`	Specify SNMPv1 or SNMPv3. The default value is `snmpV1`.
`-g`	`enable | disable`	Enable or disable trap generation for this trap receiver. The default value is `disable`.
`-a`	`enable | disable`	Enable or disable authentication of traps for this trap receiver, SNMPv1 only. The default value is `disable`.
`-u`	`<User Name>`	Select the user name for this trap receiver, SNMPv3 only. **NOTE:** This must match a user name set for `snmpv3 -u`.
`-D`		Delete the trap receiver for the specified instance. For example, `snmptrap -i 3 -D`

Example: To enable and configure an SNMPv1 trap for Receiver 1, with a Community Name of myCommunity, receiver 1 IP address of 10.169.118.100, using the default English language, type:

```
snmptrap -i 1 -c myCommunity -r 10.169.118.100 -l english -t snmpV1 -g enable
```

snmpv3

Access: Super User, Administrator, Network Only

Description: Enable or disable and configure SNMPv3.

NOTE: SNMPv3 is disabled by default. A valid user profile must be enabled with passphrases (`-a`, `-p`) set before SNMPv3 communications can be established.

NOTE: There are three sets of options for this command, indicated below.

Enable/disable SNMPv3:

Option	Arguments	Description
`-S`	`enable | disable`	Enable or disable SNMPv3. The default value is `disable`.

Configure privacy and authentication settings:

Option	Arguments	Description
`-i`	`1 | 2 | 3 | 4`	Access control of users. **NOTE:** This option must be present in every `snmpv3` command if using other options.
`-u`	`<User Name>`	Specify a user name, an authentication phrase and encryption phrase. **NOTE:** The phrases must of minimum 16 and maximum 31 characters in length.
`-a`	`<Auth Phrase>`	
`-p`	`<Crypt Phrase>`	
`-A`	`sha | md5 | none`	Indicate the type of authentication protocol. The default value is `none`.
`-P`	`aes | des | none`	Indicate the privacy (encryption) protocol. The default value is `none`.

Example 1: To set the authentication and encryption phrases and protocols for “JMurphy”, type:

```
snmpv3 -i 3 -u JMurphy -a myAuthPhrase -p myCryptPhrase -A md5 -P aes
```

Enable/disable individual users’ access and NMS IP/domain:

Option	Arguments	Description
`-i`	`1 | 2 | 3 | 4`	Access control of users. **NOTE:** This option must be present in every `snmpv3` command if using other options.
`-e`	`enable | disable`	Enable or disable SNMPv3. The default value is `enable`.
`-u`	`<User Name>`	Give access to a specified user name. **NOTE:** The default value is `apc smmp profile1`. The entered value must be in the format `apc snmp profile[X]`, where `X` is a number.

Example 2: To give access to “apc snmp profile1” with any NMS IP address, type:

```
snmpv3 -i 3 -e enable -u “apc snmp profile1”
```

ssh

Access: Super User, Administrator, Network Only

Description: Enable or disable and configure SSH.

Option	Arguments	Description
`-S`	`enable | disable`	Enable or disable SSH. The default value is `enable`.
`-ps`	`22 | 5000-32768`	Configure the SSH port. The default value is `22`.

Example: To change the SSH port to 5677, type:

```
ssh -ps 5677
```

system

Access: Super User, Administrator

Description: View and set the system name, the contact, and the location. Configure system messages, 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.

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

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. The default value is `enable`.
`-i`	`<IP 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.

Option	Argument	Description
-g	<gateway>	Type the IP address of the default gateway. *Do not* use the loopback address (127.0.0.1) as the default gateway.
-b	dhcp | manual | bootp	Define how the TCP/IP settings will be configured when the NMC turns on, resets, or restarts.

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

Description: Enable IPv6 and view and manually configure these IPv6 TCP/IP settings for the NMC. **NOTE:** TCP/IPv6 must be enabled to configure its settings.

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

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:
`tcpip6 -i 2001:0:0:0:0:FFD3:0:57ab`

uio

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

Description: View the universal I/O (UIO) status.

NOTE: This command is only relevant when a temperature (AP9335T) or temperature/humidity (AP9335TH) sensor is connected to the NMC.

Option	Description
`-d`	Displays the probe type connected: • `Not Connected` – No probe connected to the NMC • `t` – Temperature-only probe (AP9335T) • `th` – Temperature/humidity probe (AP9335TH)
`-s`	Displays the probe status: • `NA` – No probe connected to the NMC. • `Comm Lost` – A probe was connected to the NMC, but is no longer connected, or is no longer communicating with the NMC. • `U1.21.3 C:ok` – The temperature values and units, and the status of the temperature measurement for a temperature-only probe (AP9335T). • `U1:21.3 C:ok:67 %:ok` – The temperature and humidity values and units, and the statuses of the temperature and humidity measurements for a temperature/humidity probe (AP9335TH).

Example: To view the status of a connected temperature probe, type `uio -s` and press ENTER.

user

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

Description: Configure the user settings for each account type, and create and delete user accounts. (You cannot edit a user name, you must delete and then create a new user)

NOTE: The default values for each option for a new user are defined using the **userdflt** command. The user name (`-n`), password (`-p`), and confirm password (`-c`) options do not have default values, and must be specified to create a new user.

Option	Argument	Description
`-n`	`<user>`	Indicate the user. This option displays the settings for the indicated user if no other options are specified.
`-P`	`<current password>`	To edit the Super User settings, you must specify the current password.
`-a`	`Admin | Device | Read_Only | Network_Only`	Specify these options for a user. **NOTE:** User Description must be enclosed in quotation marks.[1]
`-d`	`<user description>`	
`-e`	`enable | disable`	Enable or disable access for the particular user account.[1]
`-t`	`<session timout>`	Specify how long a session lasts, in minutes, before logging off a user when the keyboard is idle due to inactivity.[1]

Option	Argument	Description
-l	tab | csv	Indicate the format for exporting a log file.
-s	us | metric	Indicate the temperature scale, Fahrenheit or Celsius.
-p	<new password>	Specify the new password for a user, and re-enter the new password to confirm. **NOTE:** These options are required when creating a new user.
-c	<confirm password>	
-D	<user name>	Delete a user. **NOTE:** You cannot delete the Super User account.[1]
[1] -a, -d, -e, -t and -D are options only available to a Super User or Administrator.		

Example 1: To change the log off time to 10 minutes for user JMurphy, type:

```
user -n JMurphy -t 10
```

Example 2: To create a new Read Only user, type:

```
user -n read -p myPassw0rd -c myPassw0rd -a Read_Only
```

Example 3: To edit the temperature scale for the Super User account, type:

```
user -n apc -P myPassw0rd -s us
```

userdflt

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) these are the values used for those that are not provided by the authenticating server.

Option	Argument	Definition
-e	enable | disable	By default, user will be enabled or disabled upon creation. The default value is enable.
-a	Administrator | Device | Read_Only | Network_Only	Specify the user's permission level and account type. The default value is Read_Only.
-d	<user description>	Provide a user description. Description must be enclosed in quotation marks.
-t	<session timeout> minute(s)	Provide a default session timeout. The default value is 3.

Option	Argument	Definition
-b	<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. The default value is 0 (unlimited attempts). **NOTE:** A Super User account cannot be locked out, but can be manually disabled if necessary.
-l	tab | csv	Specify the log export format, tab or CSV. The default value is tab.
-s	us | metric	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). The default value is metric.
-q	enable | disable	Enable/disable strong password. The default value is enable.
-i	<interval in days>	Required password change interval. The default value is 0 (no password change interval).

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

```
userdflt -t 60
E000: Success
```

web

Access: Super User, Administrator, Network Only

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
```

NOTE: After changing configuration sessions using the `web` command, the Web UI session may expire and you may have to log in again.

Option	Argument	Definition
`-h`	`enable | disable`	Enable or disable access to the user interface for HTTP. The default value is `disable`.
`-s`	`enable | disable`	Enable or disable access to the user interface for HTTPS. The default value is `enable`. When HTTPS is enabled, data is encrypted during transmission and authenticated by digital certificate using SSL/TLS.
`-mp`	`<TLS1.1 | TLS1.2 | TLS1.3>`	Specify the minimum protocol used by the web interface: TLS v1.1, TLS v1.2, or TLS v1.3. The default value is 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, except 8000 and 8883.
`-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, except 8000 and 8883.

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

```
web -s disable
```

whoami

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

Description: Provides login information on the current user

Example:

```
apc> whoami

E000: Success

apc
```

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