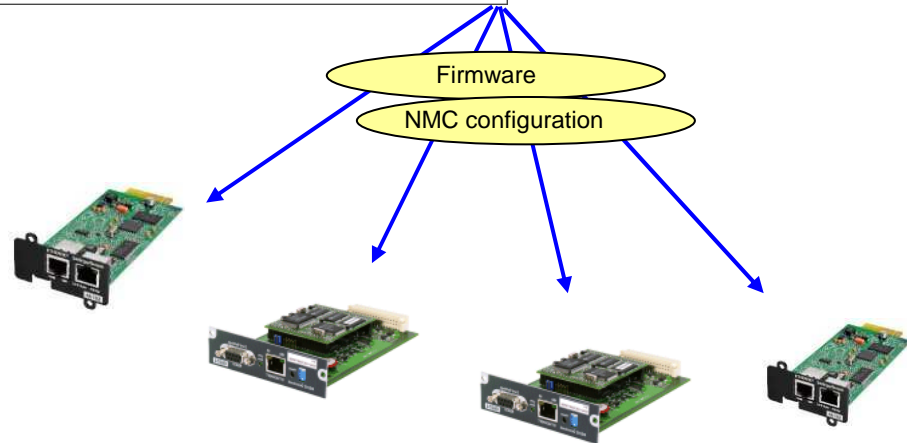
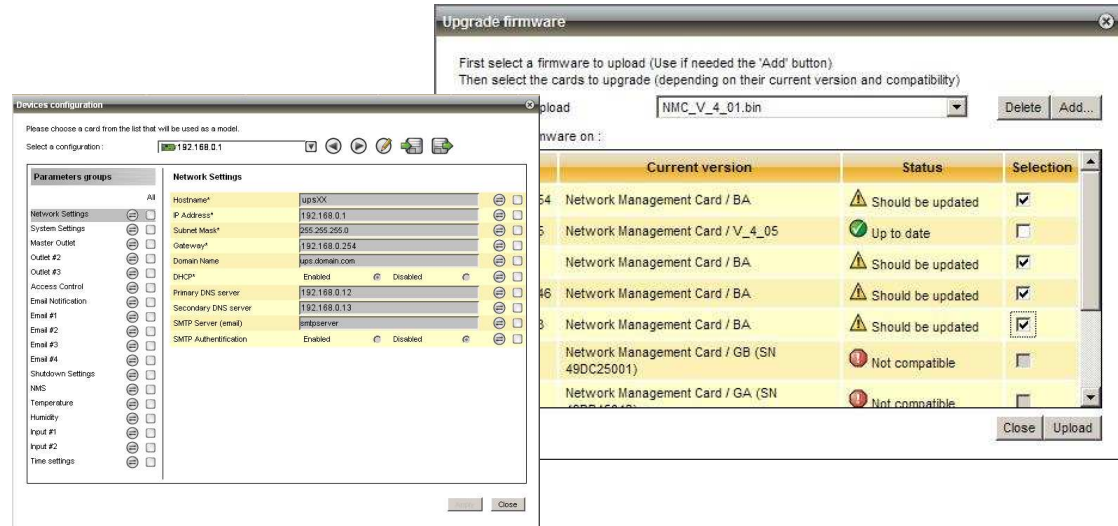


NMC Tool

User manual



NMC Tool

User manual

Table of Contents

1	Introduction.....	4
2	Pre-requisites.....	4
	2.1 Installation pre-requisites.....	4
	2.2 Web browser.....	4
	2.3 Card compatibility list.....	4
3	Installation and Use.....	5
	3.1 Step 1 (Installation).....	5
	3.2 Step 2 (Discovery).....	5
	3.3 Step 3 (Select cards).....	5
	3.4 Step 4 (Configure the password).....	6
	3.5 Step 5 (Upload firmware).....	6
4	Card configuration.....	8
	4.1 Defining a new configuration.....	8
	4.2 Card configuration synchronisation.....	10
5	Appendices.....	11
	5.1 Installation result.....	11
	5.2 Uninstall the product.....	11
	5.3 « Power Device List» page.....	11
	5.3.1 Functions and information.....	11
	5.3.2 "UPS properties" access using NMC Tool.....	12
	5.3.3 Select discovered cards.....	12
6	FAQ and error messages.....	14
7	Acknowledgements.....	15

1 Introduction

This document describes [installation and use](#) of the "NMC Tool" which provides the following functions:

- Discovery of Network Management Cards connected to the network.
- Update of their « on-board software» also called « micro-software» or « Firmware ».
- Save, import and modification of NMCs configuration. Mass deployment of NMC configuration.

For a list of compatible solutions, refer to the [card compatibility list](#).

2 Pre-requisites

2.1 Installation pre-requisites

You can install the NMC Tool on a machine running with **Windows 2000/XP (Home or Pro) / 2003 / Vista**.

To avoid access conflicts on the network ports 8080 (http), we recommend you install the NMC Tool on a machine on which there are no other Web servers using this port. If absolutely necessary, this port can be configured in:

C:\Program Files\MGEOPS\NetworkManagementCardTool\bin\webserver\conf\Config.pi3

Note: remote access to the NMC Tool is disabled.





2.2 Web browser

The NMC Tool graphical interface has been tested with:

- Mozilla Firefox 1.5 and 2
- Microsoft Internet Explorer v6 and 7

2.3 Card compatibility list

MGE has tested the compatibility of the NMC Tool with the following network communication cards:

Name of EATON Device	Image	Discovery	Access to Web Server	Upload	Configuration
Network Management Card Minislot 2006 Edition SNMP/Web – 66102 (Minimum technical level: BA)		OK	OK	OK	OK (Minimum technical level: EA)
Network Management Card & Modbus/JBus – 66103 (through Ethernet Network)		OK	OK	OK	OK (Minimum technical level: EA)
Network Management Card Transverse SNMP/Web – 66074		OK	OK	OK	Not available
Network Management Card Minislot SNMP/Web – 66244		OK	OK	OK	Not available

3 Installation and Use

To get started with the NMC Tool, perform the following steps:

3.1 Step 1 (Installation)

- On a Windows 2000/XP (Home or Pro)/2003/Vista workstation, start the « NMC Tool » installer with an administrator account.

At the end of installation, your Web browser is launched on the following HTML page:



«Power device list» window

3.2 Step 2 (Discovery)

- In the **Power device list** page, click **Quick scan**.
In a few seconds, you can discover the following cards:
> Network Management Card ref 66102 /BA, 66103 & 66074 & 66244.

The screenshot shows the "Power Device List" window after a quick scan. The table now contains four rows of data:

Status	Name	MAC address	Location	Contact	Login	Password	Class	Selection	Link
	ups030	00-E0-D8-0A-03-0F	Computer Room	Computer Room Manager			NMC (66074) Transverse / GCb3 (SN)	<input type="checkbox"/>	
	ups285	00-E0-D8-0A-28-53	Labo SSW	D.CUZ			NMC (66074) Transverse / GB (SN 49EE20096)	<input type="checkbox"/>	
	ups3ee	00-E0-D8-0A-3E-E0	E2-B015 MultiSlot sous bureau B	B.TH SSw			NMC (66074) Transverse / GB (SN 49EE49455)	<input type="checkbox"/>	
	upsb84	00-E0-D8-09-B8-40	Computer Room	Computer			NMC (66244) Minislot / GB (SN 49DD45046)	<input type="checkbox"/>	

List of cards discovered by the NMC Tool

3.3 Step 3 (Select cards)

You can select the discovered cards in one of the following ways:

- Select the line
- Select the tools in the **Select an action** drop-down list

3.4 Step 4 (Configure the password)

From the **Select an action ->Access configuration** drop-down list, to be able to upload the firmware, you **must** fill in the **Login** and **Password** fields (these are the identifiers to access the card).

Notes :

- In the **Access configuration**, window, use the 'check box' option located to the right of the input field to force configuration of more than one card at the same time when the values already configured are not identical.
- In the **Power Device List** window, you can check if the **Login** and **Password** are correctly configured. The following window shows the three statuses possible for access information (Login and Password): Correct / Verification underway / Incorrect

Login	Password	Class
MGE LIPS	*****	NMC (66074) Transverse / GCb3 (SN)
MGE OPS	*****	NMC (66074) Transverse / GB (SN 49EE20096)
		NMC (66074) Transverse / GB (SN 49EE49455)







3.5 Step 5 (Upload firmware)

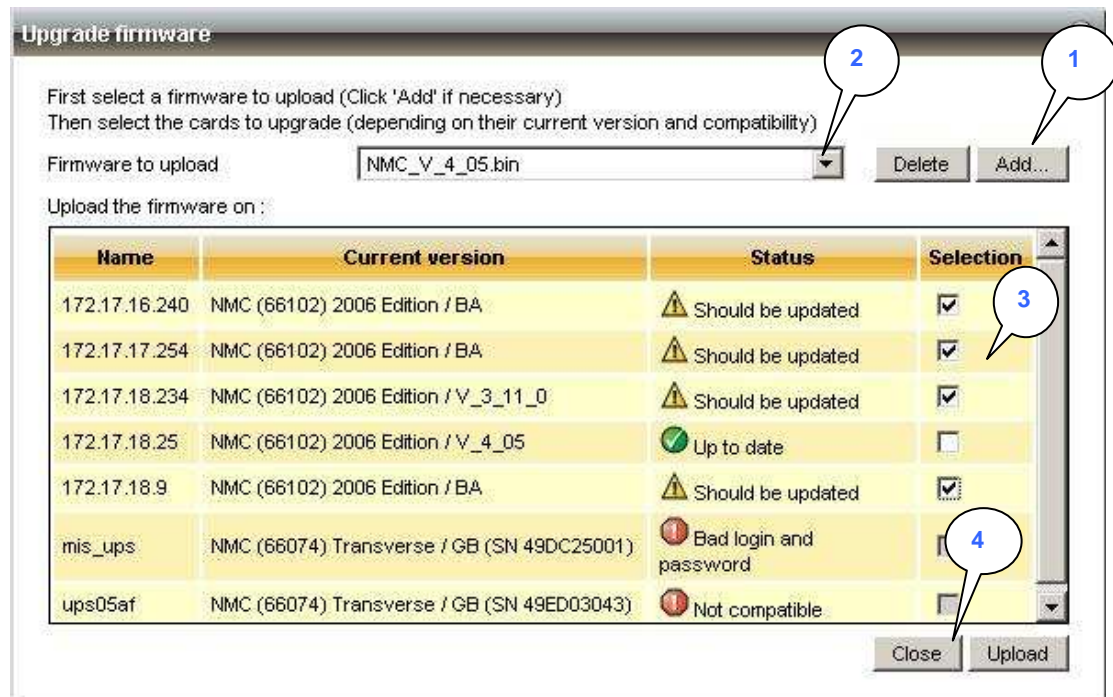
Perform this procedure to upload the firmware:

- Select the cards in the main interface (Step 3)
- Configure the access password for these cards (Step 4) (**mandatory**)
- From the **Select an action -> Add firmware...** list box; the uploading window appears.
 - (1) Click **Add...** to display the selection dialog box
 - > Click **Browse ...** to select the firmware from a disk accessible from the PC.

- (2) Select this firmware from the drop-down list.
The status of the cards with respect to the firmware selected is updated.

The following four statuses are possible:

-  Up to date
-  Should be updated
-  Not compatible
-  Unknown check access status
-  Bad login and password
-  Communication lost










Upgrade firmware

First select a firmware to upload (Click 'Add' if necessary)
Then select the cards to upgrade (depending on their current version and compatibility)

Firmware to upload:


Upload the firmware on :



Name	Current version	Status	Selection
172.17.16.240	NMC (66102) 2006 Edition / BA	 Should be updated	<input checked="" type="checkbox"/>
172.17.17.254	NMC (66102) 2006 Edition / BA	 Should be updated	<input checked="" type="checkbox"/>
172.17.18.234	NMC (66102) 2006 Edition / V_3_11_0	 Should be updated	<input checked="" type="checkbox"/>
172.17.18.25	NMC (66102) 2006 Edition / V_4_05	 Up to date	<input type="checkbox"/>
172.17.18.9	NMC (66102) 2006 Edition / BA	 Should be updated	<input checked="" type="checkbox"/>
mis_ups	NMC (66074) Transverse / GB (SN 49DC25001)	 Bad login and password	<input type="checkbox"/>
ups05af	NMC (66074) Transverse / GB (SN 49ED03043)	 Not compatible	<input type="checkbox"/>

(3) Select the cards to upload (check box)

(4) Click **Upload**

A bar-graph displays the uploading progression for each card

nmc1	Network Management Card / Minislot / GB (SN 49DD45046)	 15 %	<input checked="" type="checkbox"/>
------	--	--	-------------------------------------

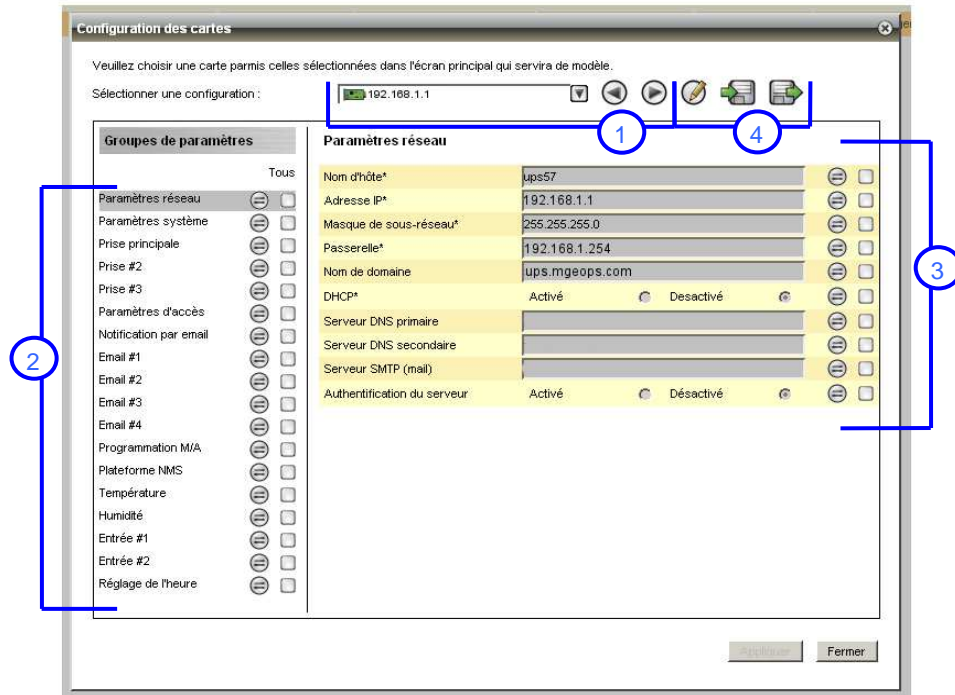
When uploading is complete, the status switches from «  Should be Updated » to «  Up to date »

Note : You can select as many cards as you like; these cards are uploaded simultaneously.

4 Card configuration

NMC Tool allows the configuration of all compatible NMCs to be displayed and managed. Proceed as follows to access card configuration:

- select one or more compatible cards from the list
- then select **Card configuration** from the drop-down list of actions
- after a few seconds, the configuration window appears:



Communication card configuration window

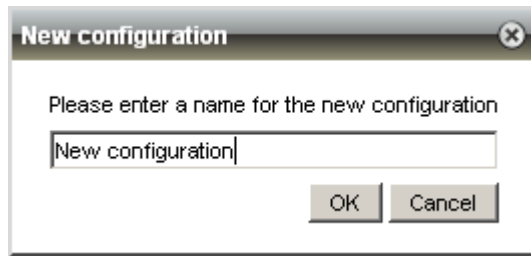
- The drop-down list and scroll keys (1) at the top of the window allow you to browse through the configurations.
- The various configuration parameters of an NMC are split into groups. Zone (2) can be used to switch from one group to another in order to display the group's settings.
- Zone (3) shows the configuration parameters. Each group is followed by a code indicating whether the parameter values are the same for each NMC:
 - ⊖ The value of the parameter is the same for all selected NMCs
 - ⊕ Not all values are identical
- And zone (4) allows the following 3 operations to be carried out:
 - Copy the currently displayed configuration. This creates a modifiable configuration based on the current configuration. See [4.1 Defining a new configuration](#).
 - Save the currently displayed configuration to a file.
 - Load a configuration file that has previously been saved in the configuration interface.

4.1 Defining a new configuration

NMC configurations cannot be directly modified. A user copy must first be created before the configuration parameters can be modified.

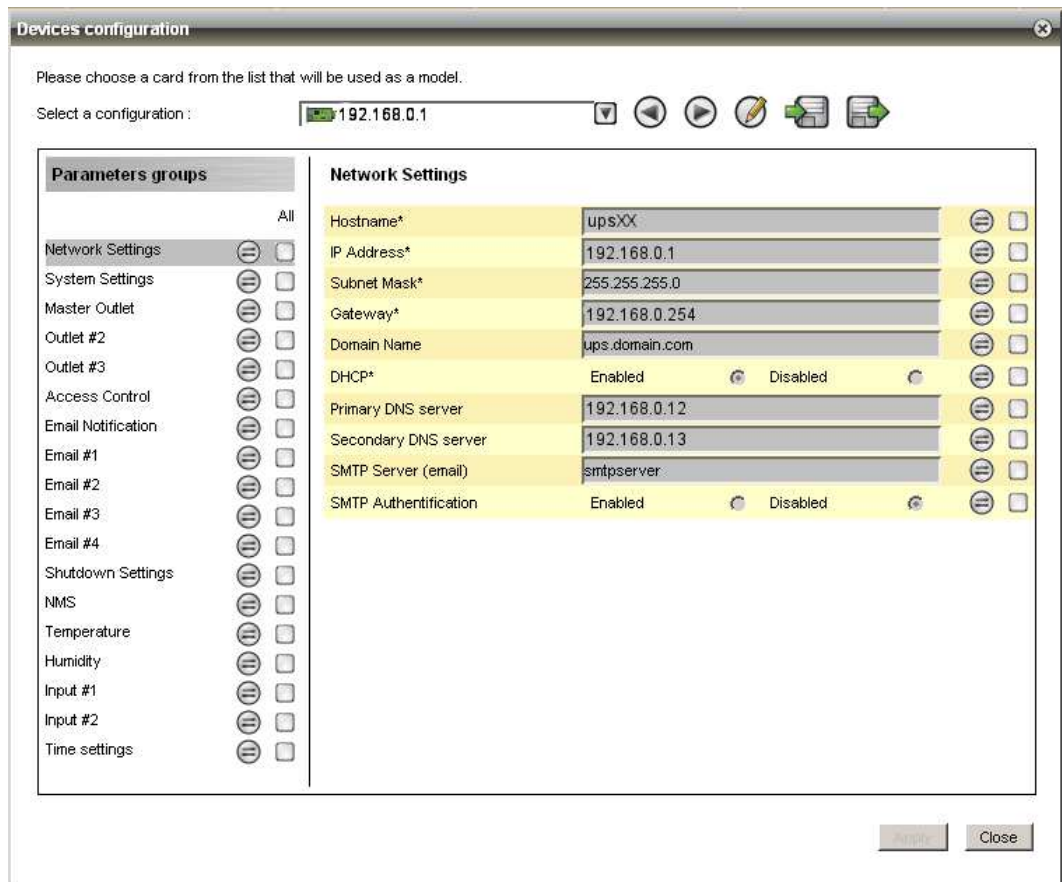
To do this, select the NMC to be used as a model from the card configuration window, then click on the modify button .

You may now enter a configuration name in the dialogue box that pops up, or keep the default name.



New configuration prompt

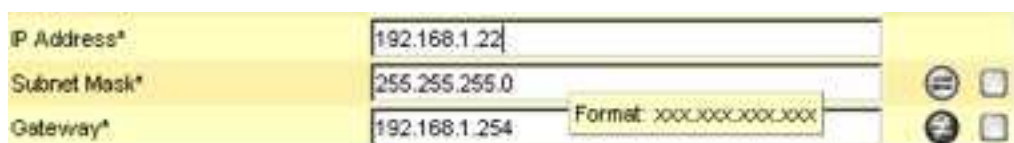
Once it has been created, the display automatically switches to the new configuration.



User-defined configuration

Note that the icon in the drop-down list has changed (📄) to indicate that you are now working on a user defined configuration.

- You are able to modify the values in the user configurations fields.
- After each modification, the new values are temporarily saved automatically. It is therefore possible to close the configuration window, or even the browser, and come back to the configuration later.
Note: the configuration is lost after a period of inactivity of one hour or if NMC Tool is restarted. To keep a configuration beyond this period, simply click on the 📄 button to save your work.
- Specific types of values are required in some fields. If necessary, an information box will appear when the mouse cursor is passed over the field.



Example of an information box

In addition, a visual indicator tells you if the value entered is not of the correct type. The red background in the example below indicates that the IP address entered contains an error.

IP Address*	192.168.1.355
Subnet Mask*	255.255.255.0

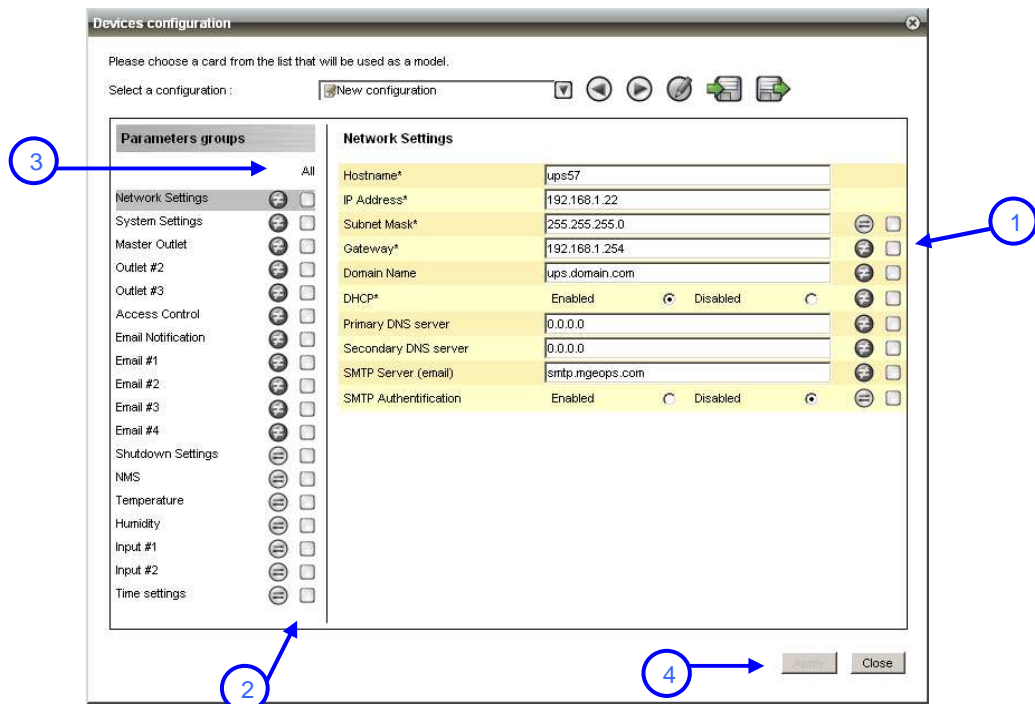
Example of a value error

- Once the modifications have been made, they can be propagated to all selected NMCs. See [“4.2 Card configuration synchronisation”](#).

4.2 Card configuration synchronisation

NMC Tool allows the values of one or more parameters to be synchronised to any number of NMCs.

- To do this, first select the parameters to be synchronised by ticking the box to the right of the parameter (1).
Note: if the parameter input field has a red background, the box cannot be ticked until the value has been corrected. Furthermore, if a parameter is “unique” (e.g. IP address or host name), there will only be a box that can be ticked if a single NMC has been selected, so as not to duplicate the value to several NMCs.
- All the parameters of a group can be selected by ticking the box to the right of the group name (2). All the parameters of all the groups can be selected by clicking on “All” (3) at the top of the list of groups.






- When you are happy with the selection of parameters to be synchronised, click on “Apply” (4) to send the configuration parameters to the NMCs. Parameter synchronisation can be observed via the symbols.

Note: creating an intermediary user configuration is not compulsory if you wish to synchronise the parameters of an NMC with other NMCs without modifying their values. Simply select the parameters to be synchronised directly in the “source” NMC configuration and start synchronisation.

5 Appendices

5.1 Installation result

- At the end of installation, the following shortcuts are created in the Program group:
Start -> Programs -> " MGEOPS " ->"Network Management Card Tool"

Name	Description
 1.Starting Network Management Card Tool	1. Starts the main graphical interface for NMC Tool and the services
 2.Stopping Network Management Card Tool	2. Stops the services
 3.Uninstall	3. Uninstalls the program

- The « MGE NMC Tool – Acquisition engine» service is created; this is the acquisition engine for the database. The program queries the UPSs connected to the network on a regular basis to determine the state.
The Web server service called « MGE NMC Tool – Web Server» is also created.

5.2 Uninstall the product

To uninstall, you can:

- Use the icon group "Start -> Programs -> MGEOPS -> Network Management Card Tool -> 3.Uninstall "
- You can also select **NMC Tool** program in the **Control Panel** and **Add/Remove programs**.

5.3 « Power Device List» page

5.3.1 Functions and information

- Quick discovery**
In the **Power device list** bar, click on **Quick Scan**.
In just a few seconds, you can discover the following cards:
> Network Management Card ref 66074 & 66244 and 66102 /BA, 66103

The discovery process is based on network queries in broadcast mode; access to the cards can be limited by the configuration of routers and switches

- Clear list**
Perform this operation to delete all devices discovered in the previous operation.

Status	Name	MAC address	Location	Contact	Login	Password	Class	Selection	Link
	ups05af	00-E0-D8-0A-05-AF	Multislot Haut	D.CUZIN			NMC (66074) Transverse / GB (SN 49ED03043)	<input type="checkbox"/>	
	ups2853	00-E0-D8-0A-28-53	Labo SSW	D.CUZIN			NMC (66074) Transverse / GB (SN 49EE20096)	<input type="checkbox"/>	
	ups4447	00-E0-D8-0A-44-47	Computer Room	Computer Room Manager			NMC (66074) Transverse / GB (SN 49EF02446)	<input type="checkbox"/>	
	ups56cc	00-E0-D8-0A-56-CD	e2-B023, MultiSlot sous bureau	Bernard THOMAS, SSw, 33 63			NMC (66074) Transverse / GB (SN 49EF26232)	<input type="checkbox"/>	

List of discovered cards

The following information appears in this page:

- Status This icon represents the status of the device and can have the following values:

Icon	Device status
	Normal. The status of the device is normal.
	Loss of network communications between the card and the NMC Tool. or Loss of serial communication between the UPS and the card.

- Name IP address (or DNS name)
- MAC address Unique identifier of a device connected to the Ethernet network. This MAC (Medium Access Control) address is printed on the card and can therefore be used to find the IP address when it has been allocated by a DHCP server.
- Location The location of the device (value of the syslocation object or value configured on a dedication page of the device).
- Contact the « contact » person in charge of the device (value of the syscontact object or value configured in the Configuration->Supervisor device page).
- Login The user account used to access the card.
- Password The access password for the card.
- Class information describing the card: Commercial name/Firmware version.
- Selection Check box used to Select/deselect the card and display its link selection status.
- Link Link to the device Web server (if available).

5.3.2 "UPS properties" access using NMC Tool

As the cards have an on-board web server, you can access the properties of your card using the NMC Tool. Click on the Web link associated with this icon available in the Status tab.

The screenshot shows the 'UPS Properties' page in the NMC Tool. On the left is a sidebar with navigation menus: 'UPS' (with sub-items: UPS Properties, UPS Control, Weekly Schedule, Shutdown Parameters), 'Logs and Notification' (with sub-items: Measurements, Event Log, System Log, Email Notification), 'Settings' (with sub-items: Network, System, Notified Applications, Access Control, Time, Firmware Upload), and 'Environment' (with sub-items: Status, Settings, Log). The main content area is titled 'UPS Properties' and features a 'UPS Status' dropdown menu. Below this, there are several sections: 'Power source', 'Output load level' (0%), 'Output' (with status indicators for Master, Group1, and Group2, all set to 'On'), 'Battery' (with 'Battery load level' at 100% and 'Charging' status), 'Remaining backup time' (5 h 02 mn 43 s), and 'Battery status' (OK). A table on the right shows 'AC Output' parameters: Voltage (231 V), Current (0.2 A), Frequency (50.0 Hz), Load level (0 %), Apparent Power (0.0 kVA), and Active Power (0.0 kW). At the bottom, it says 'Last update : 2008/10/08 11:25:28'.

Access to "UPS properties"

5.3.3 Select discovered cards

To select the cards, you can:

- Select the line in the interface or

- Use the tools in the **Select an action** drop-down list

Status	Name	MAC address	Location	Contact	Login	Password	Link
	ups05a1	00-E0-D8-0A-05-AF	Multislot Haut	D.CUZIN			
	ups2853	00-E0-D8-0A-28-53	Labo SSW	D.CUZIN			
	ups4447	00-E0-D8-0A-44-47	Computer Room	Computer Room Manager			
	ups56cd	00-E0-D8-0A-56-CD	e2-B023, MultiSlot sous bureau	Bernard THOMAS, SSW, 33 63			
	ups5dce	00-E0-D8-0A-5D-CE	Computer Room	Computer Room Manager			
	ups915b	00-E0-D8-09-91-5B	Local Onduleurs services	Patoche sav		NMC (66244) Minislot / GB (SN 49DD02091)	<input checked="" type="checkbox"/>

Selection possibilities

Selection using the interface

- Click on the corresponding line to select/unselect an element.
=> The check box is then selected and the line turns dark orange
- With the left button of the mouse pressed, move the cursor to perform a multiple selection

Selection via the scrolling list

These possibilities are provided in the list box:

Select all devices	Select the devices in the list.
Unselect all devices	Unselect all devices in the list
Invert selection	Invert the selection underway.
Select by keyword...	You can select the lines according to the words contained in these lines. The selection is exclusive (the new elements replace the selection underway).

6 FAQ and error messages

Uploading problem.

After uploading, the firmware of the card has not been updated and the status of the card is still set to « Should be updated ».

Solution: With 66102 card when upgrading from /BA to /CA version the reset is not always performed at the end of downloading process.

Problem with discovering the cards configured by default

Solution: To discover the Network Management Cards in their factory configuration (172.17.xxx.xxx) from a computer housing the NMC Tool and configured in another network, you can change the routing table of your PC with the following command:

ROUTE ADD 172.17.0.0 MASK 255.255.0.0 «IP address of the computer»

Operating problem after uploading

Solution1: Check if your card has changed its IP address (e.g. if it is configured in DHCP)

Solution2: Consult the release note of the firmware and check if a specified operation is necessary after software update (reset to factory configuration, save Trap receptors, for example)

Problem: 66074 or 66244 card not accessible after uploading

Solution: If the 66074 or 66244 cards are no longer accessible after a problematic uploading operation, use the uploading by Msupgrade.exe serial link utility available with the EATON software support.

Problem: 66102 card not accessible after uploading

Solution: If the 66102 card is not accessible after a problematic uploading operation, request a reprogramming procedure in TFTP for the card 66102 available from EATON software support.

Problem: 66074 / 66244 or 66102 card impossible to upload

Solution : For the 66074 / 66244 cards, check that the option « update by network » in the « IP configuration » page has not been deactivated.

For the card 66102, check the configuration in the Configuration-->System page.

Problem: NMC Minislot 2006 66102 card impossible to discover with the NMC Tool

Solution : Check the firmware version in the NMC card.

The AA version is not compatible with the tool.

To make the card compatible with the tool, you must first upload firmware to the card with a minimum technical level of: BA (by using the Web server of the card).

Problem: On 66102 card it is not possible to download a previous firmware version

Solution: The downgrade from version /CA to version /BA is not allowed. Contact the software support for the right compatibilities.

Problem: On 66102 card the firmware versions detected by NMC Tool are inconsistent

Solution: Don't change the firmware names.

Problem : Accessing the web interface of the card is slow or impossible, update or configuration operations from NMC Tool fail

Solution : If the security mode of the card is set to SSL, choose a non-SSL security mode instead

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<http://www.sqlite.org/>.

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Pi3Web

A big thank you from the EATON development team to the Pi3Web project
<http://pi3web.sourceforge.net/>

PHP

A big thank you from the EATON development team to the PHP project.
<http://www.php.net/>

This product includes the Zend Engine, available at no charge at <http://www.zend.com>

wxWidgets

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