MuxLab Pro Digital Network Controller (MNC)
(Model: 500811)

Operation Manual

P/N: 94-000785-B SE-000785-B

Table of Contents

1. Overview

1.1. Description

The MuxLab Pro Digital Network Controller is a Linux-based PC that allows users to control hub-installed MuxLab products.

When installed on a local area network (LAN), the MuxLab Pro Digital Network Controller can scan the LAN for MuxLab products and allows the user to configure and control these products through an Ethernet Web interface.

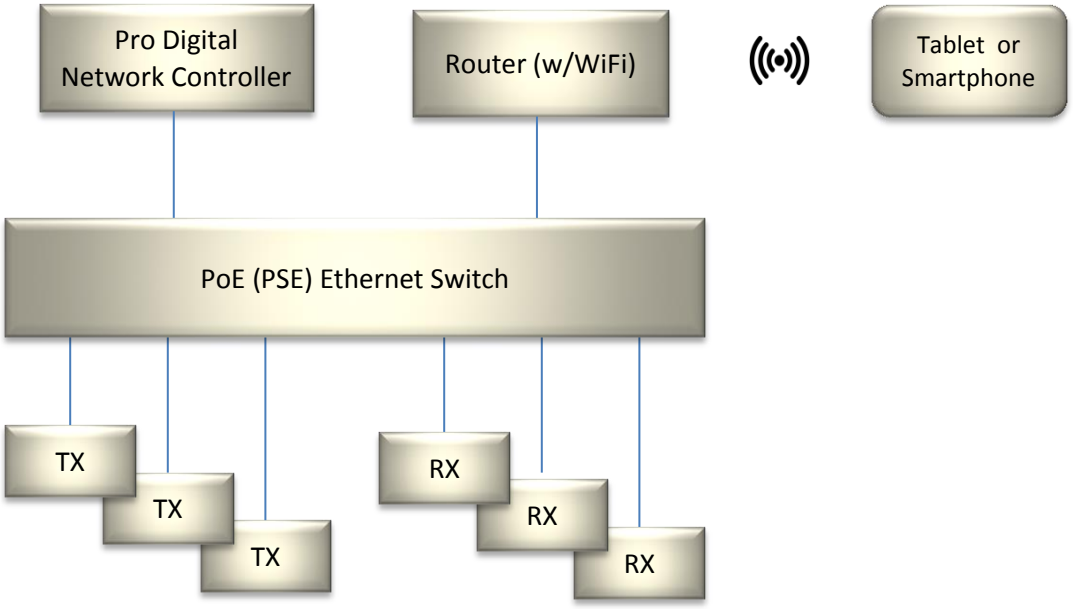


Figure 1: System Overview

Applications include but are not limited to commercial and residential AV systems, classroom projector systems, digital signage, video wall systems, boardroom systems, multi-room systems, classroom training, retail systems, collaborative PC systems, and medical information systems.

1.2. Features

(Front View) (Rear & Side View)

Figure 1: Pro Digital Network Controller

Front Panel

- Power LED
- Power button

Back Panel

- VGA video port
- HDMI video port
- LAN port (RJ-45 jack)
- Audio in (3.5 mm)
- Audio out (3.5 mm)
- Micro SD memory slot
- K lock
- Power connector

Side Panel

- Three (3) USB 2.0 ports

2. Technical Specifications

MuxLab ProDigital Network Controller	
CPU	Intel Z3735F
Memory	2GB DDR3
BIOS	AMI BIOS
VGA	Resolution up to 1920 x 1200
Keyboard and Mouse	USB keyboard and mouse (sold separately)
Peripherals	• USB 2.0 ports (3x) • micro SD slot (1x) • Network interface (1x) • Audio in and out
Operating System	Ubuntu 15.04
Operating Temperature	5 ºC to 50 ºC
Dimensions	4.52 x 4.52 x 1.4 inch (115 x 115 x 35 mm)
Weight	1.1lbs (0.5kg)
Accessories Included	External Power Adaptor
Regulatory	FCC, CE, RoHS, WEEE
Order Information	500811 Pro Digital Network Controller

Table 1: Technical Specifications

3. Installation and Use

3.1. Part List

The MuxLab Pro Digital Network Controller comes with the following parts:

- Base unit (1x)
- External Power Adapter (1x)

Please verify that both parts are present before proceeding.

Figure 2: Base Unit

Figure 3: External Power Adaptor

3.2. Product Overview

The external connections and connection indicators of the MuxLab Pro Digital Network Controller are detailed in

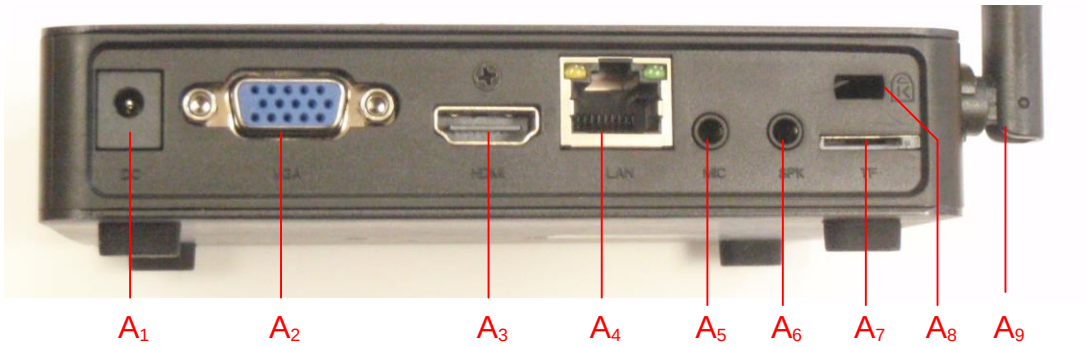


Figure 4: Rear Panel and **Figure 5: Side Panel**. Please familiarize yourself with them before installing the unit.

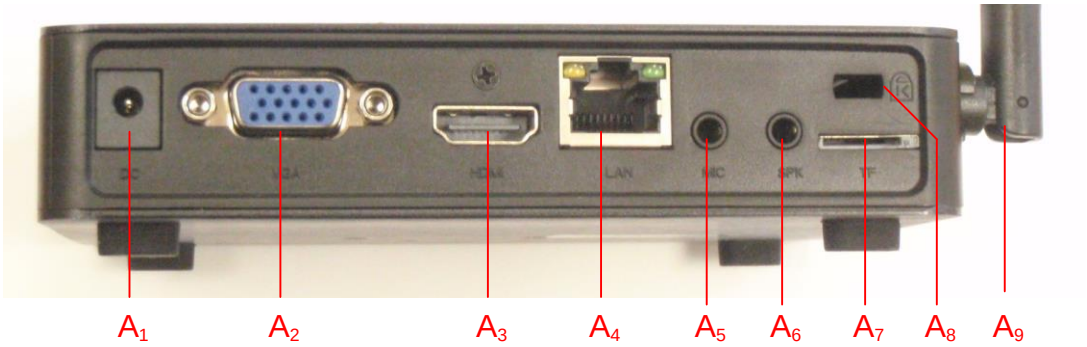


Figure 4: Rear Panel

A_1 = DC Power
A_2 = VGA video
A_3 = HDMI video
A_4 = RJ45 Ethernet
A_5 = Audio in
A_6 = Audio out
A_7 = Micro SD Memory Slot
A8 = K Lock
A9 = Wifi antenna

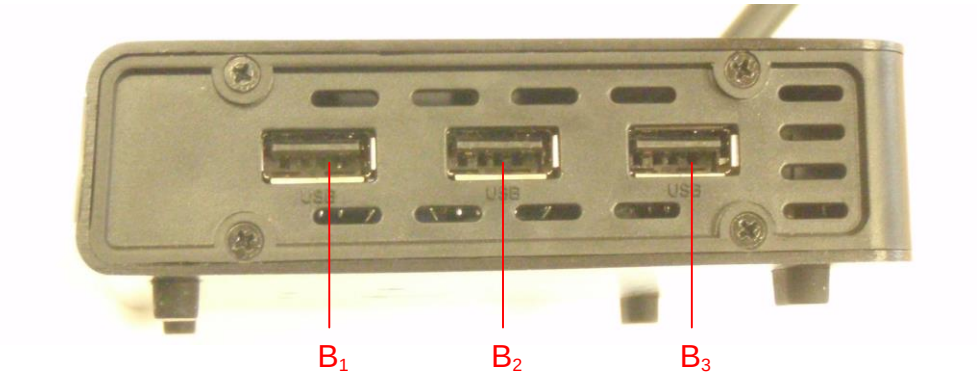


Figure 5: Side Panel

B_1 = USB 2.0 #1
B_2 = USB 2.0 #2
B_3 = USB 2.0 #3

3.3. Installation Procedure

Note that the examples below assume that the Ethernet Switch used does not support WiFi, and a Router with WiFi capability is required in order to communicate with smartphones and tablets for control purposes.

Setting the Ethernet Switch & Router to the same Subnet as MuxLab Devices:

The MuxLab Pro Digital Network Controller comes with a default static IP address of 192.168.168.50 (with DHCP disabled). The MuxLab AV over IP Transmitters and Receivers are set to support DHCP by default. When no DHCP server is available the AV over IP Transmitters and Receivers fallback to a static IP address of 192.168.168.55 (for the 500752, 500753, 500754 and 500756 Transmitters) and 192.168.168.56 (for the 500752, 500753, 500754 and 500756 Receivers), and 192.168.168.58 (for the 500758 and 500759 Transmitters) and 192.168.168.59 (for the 500758 and 500759 Receivers).

These MuxLab products (MNC, and the AV over IP Transmitters & Receivers) work in conjunction with a PoE (PSE) Ethernet Switch (MuxLab recommends the Cisco SG300 Series) and a Router of your choice with WiFi capability to be able to communicate with a smartphone or tablet. The use of a smartphone or tablet to manage the MuxLab devices with third party software applications is optional but is the most common method of control and generally preferred, however MuxLab devices may also be managed via the Pro Digital Network Controller web interface.

In order for the DHCP server within the Ethernet Switch to support the MuxLab device subnet, set the static IP of the Ethernet Switch to **192.168.168.1** (recommended setting). Refer to the Ethernet Switch manual for instructions on how to accomplish this. MuxLab also has a guide specific to the Cisco SG300 Series, see document SE-000819-A (Configuring Network Setting of the Ethernet Switch & MuxLab AV over

IP Devices), which can be found on MuxLab's website under any of the AV over IP product pages (as a download under the Operation Manual sub-category).

The Router with WiFi capability, must also be placed on the same subnet as the MuxLab devices and it should be set with a Static IP address, we recommend using a Static IP address of **192.168.168.2**. Refer to your Router documentation on how to accomplish this.

Setting MuxLab Devices, Ethernet Switch and Router to an Existing Subnet:

If the MuxLab AV over IP devices are being installed in an existing environment that has a working subnet already configured that cannot be easily changed, then the subnet of the MuxLab devices, the Ethernet Switch (if a new Ethernet Switch is required), and the Router with Wifi (if a new Router is required) must be changed in order to match the existing subnet. For this case we will use **192.168.2.x** as an example subnet already in place and which must be supported. Note that this is only an example and may not necessarily reflect your actual subnet address.

If the Ethernet Switch does not already reside in the example subnet of 192.168.2.x, then set the static IP of the Ethernet Switch to a free static IP address (for the sake of this example we will use an IP address of **192.168.2.1**). Refer to the Ethernet Switch manual for instructions on how to accomplish this. MuxLab also has a guide specific to the Cisco SG300 Series, see document SE-000819-A (Configuring Network Setting of the Ethernet Switch & MuxLab AV over IP Devices), which can be found on MuxLab's website under any of the AV over IP product pages (as a download under the Operation Manual sub-category).

If the Router with WiFi does not already reside in the example subnet of 192.168.2.x, then set the static IP of the Router to a free static IP address (for the sake of this example we will use an IP address of **192.168.2.2**). Refer to your Router documentation on how to accomplish this.

The MuxLab AV over IP Transmitters and Receivers are set by default to support DHCP, and will automatically be set to the subnet specified by the DHCP Server. These units need only be physically connected into the network as described in their respective Installation Guides and by using the 500811 Pro Digital Network Controller to discover them. But before the MNC can be used, the new MNC subnet must also be set.

To change the subnet of the MNC requires a two-step process:

Process 1: Configuring the IP address of the MNC
Process 2: Physically installing the MNC in the network

Note:

- An example subnet address of 192.168.2.x of the existing network on which the MNC will be installed is assumed for this example process.

• The MNC comes with a static IP address of **192.168.168.50** and with DHCP disabled. This process explains how to change it to the example subnet of 192.168.2.x.

Process 1: Configuring the IP address of the MNC

Refer to

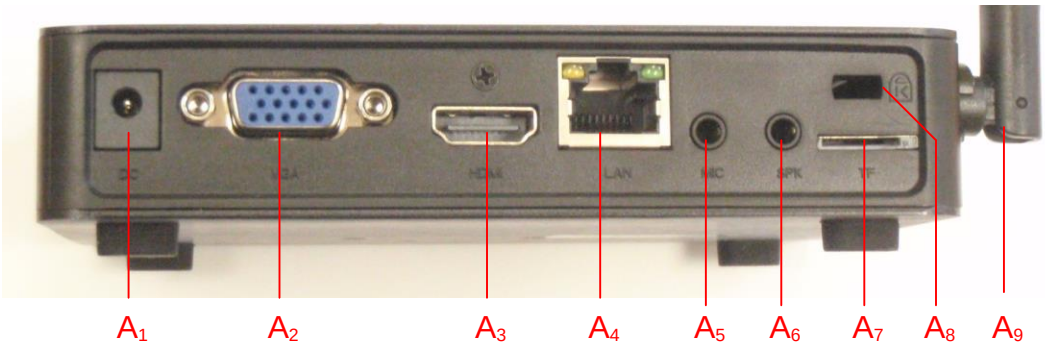


Figure 4: Rear Panel and **Figure 5: Side Panel**.

1. On the back panel of the MNC:
   A. Plug the supplied power adaptor into the DC power jack. Ensure that the other end of the power adaptor is plugged into a power socket.
   B. Ensure that the power switch on the front of the unit is in the ON position (front button • pressed in).
   C. Connect one end of an Ethernet cable to the Ethernet port. Ensure that the other end of the Ethernet cable is connected to a computer.

Refer to **Figure 6: Internet Browser Entry**.

2. On the computer to which the MNC is connected, open up an Internet browser (Explorer, Chrome, Firefox, etc.) and type the following address in the address bar near the top of the screen:

   http://192.168.168.50/mnc/

   NOTE: **mnc** must be written in lower case

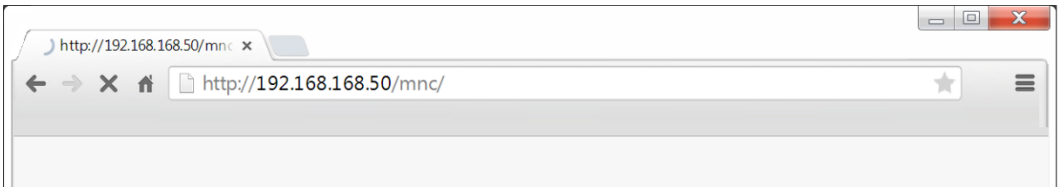


Figure 6: Internet Browser Entry

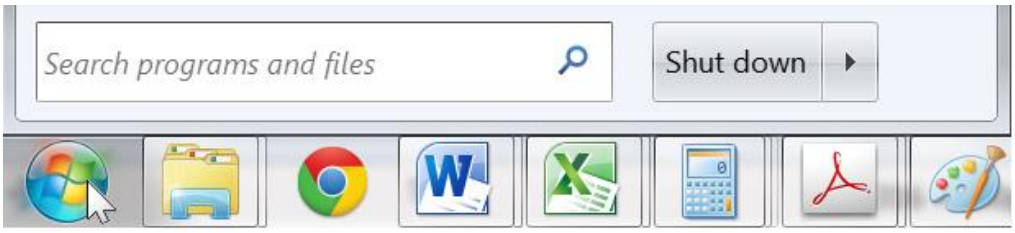
3. Press **Enter** on the keyboard. If the browser connects to the MNC, go to Step 7.

4. If the browser fails to connect to the MNC, a failure message will appear. Perform the following steps (steps 4 through 6) in order to set the computer to the same subnet as the MNC, to be able to then change the MNC subnet (from step 7 onward) to match the subnet of the existing installation (refer to **Figure 7: Determining Computer IP Address**):

   A. Move the mouse to the bottom of the screen and click on the **Start** button at the lower left.

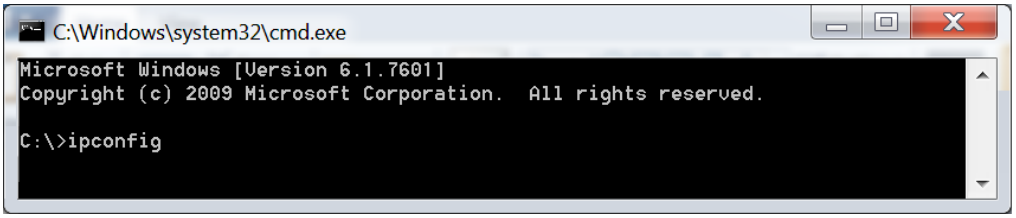
   B. Click into the *Search programs and files* field just above the **Start** button and type `cmd`. Press **Enter** on the keyboard.

   C. A DOS window will appear. Type `ipconfig` and press **Enter** on the keyboard.



Step 4A

Step 4B



Step 4C

Figure 7: Determining Computer IP Address

The following screen will appear (See

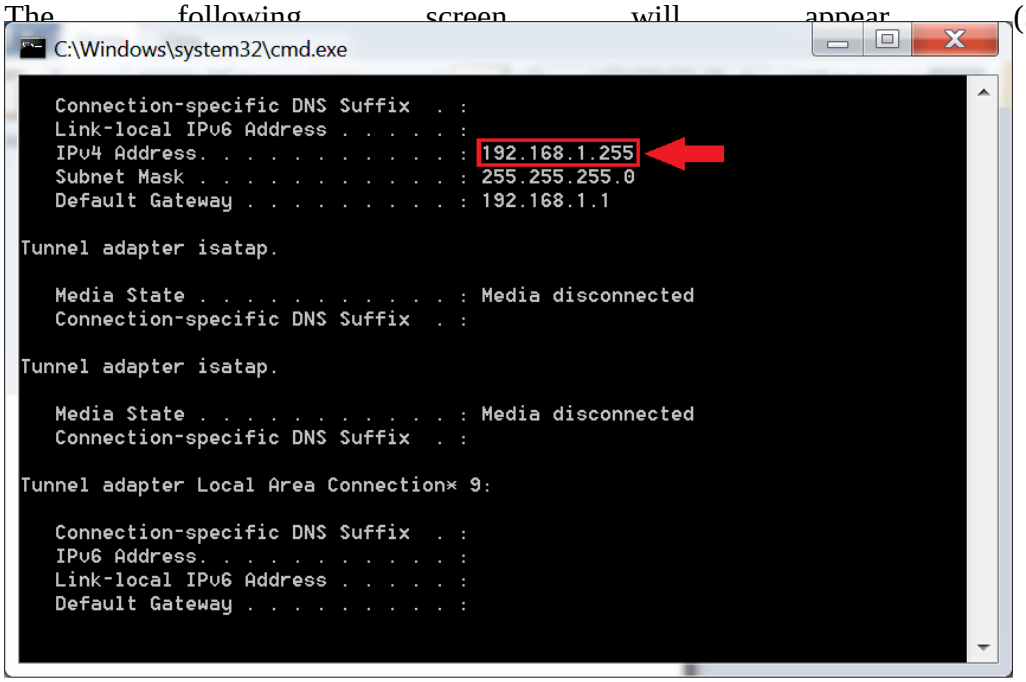


Figure 8: Computer IP Address).

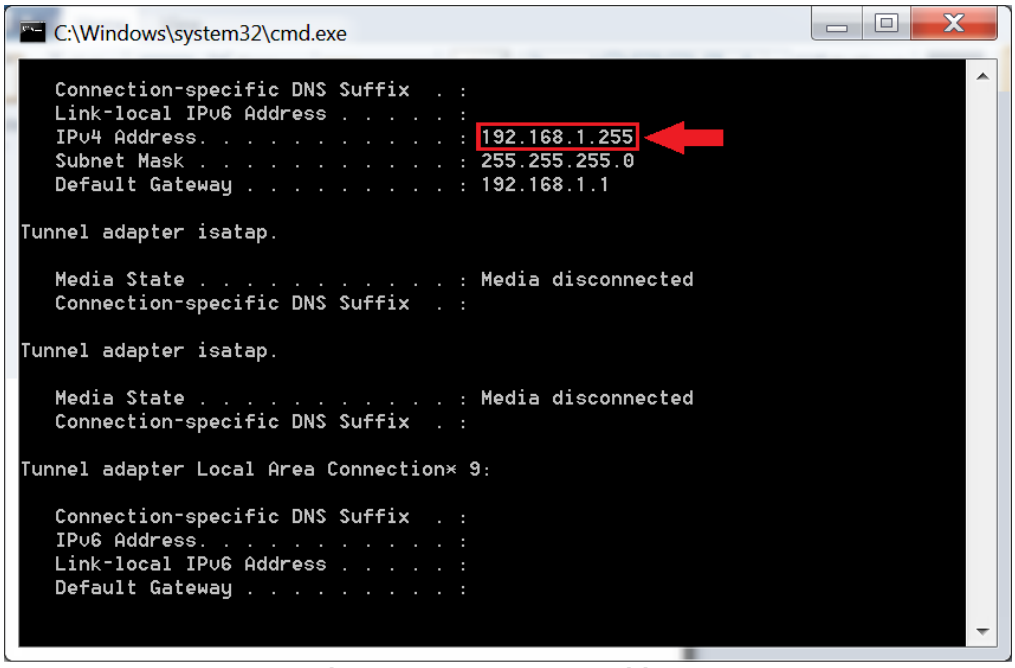


Figure 8: Computer IP Address

5. If the `IPv4 Address` (shown in the red box of Figure 8) does NOT begin with the numbers `192.168.168.x`, then perform the following steps (refer to **Figure 9** through **Figure 12**):

   A. Type `exit` and press **Enter** on the keyboard.

   B. Move the mouse to the bottom of the screen and click on the **Start** button at the lower left.

C. Click on **Control Panel**

D. Click on **Network and Internet**

E. Click on **Network and Sharing Center**

F. Click on **Local Area Connection**

G. Click on **Properties**

H. Click on **Internet Protocol Version 4 (TCP/IPv4)**. It will turn blue.

I. Click on **Properties**

J. Click the **Use the following IP address** radio button.

K. In the **IP address** field, type the following:

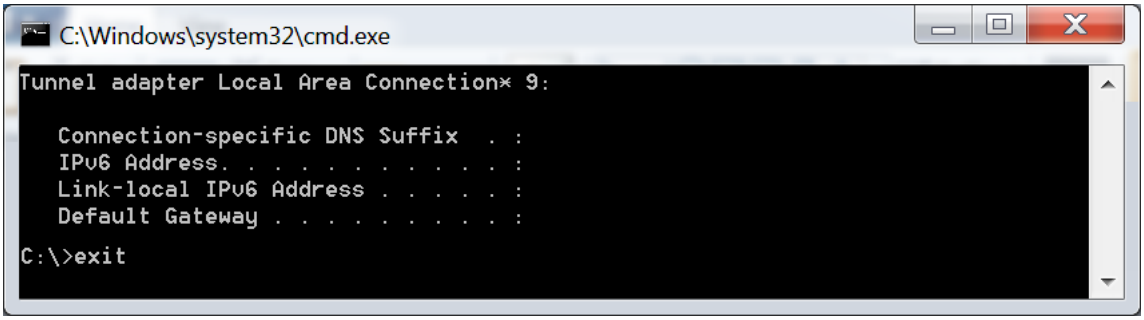
192.168.168.*x*

Where *x* can be any number from 2 to 254 except for 50 (since 50 is the MNC address). The example in **Figure 12** has the PC set to a Static IP address of **192.168.168.12**

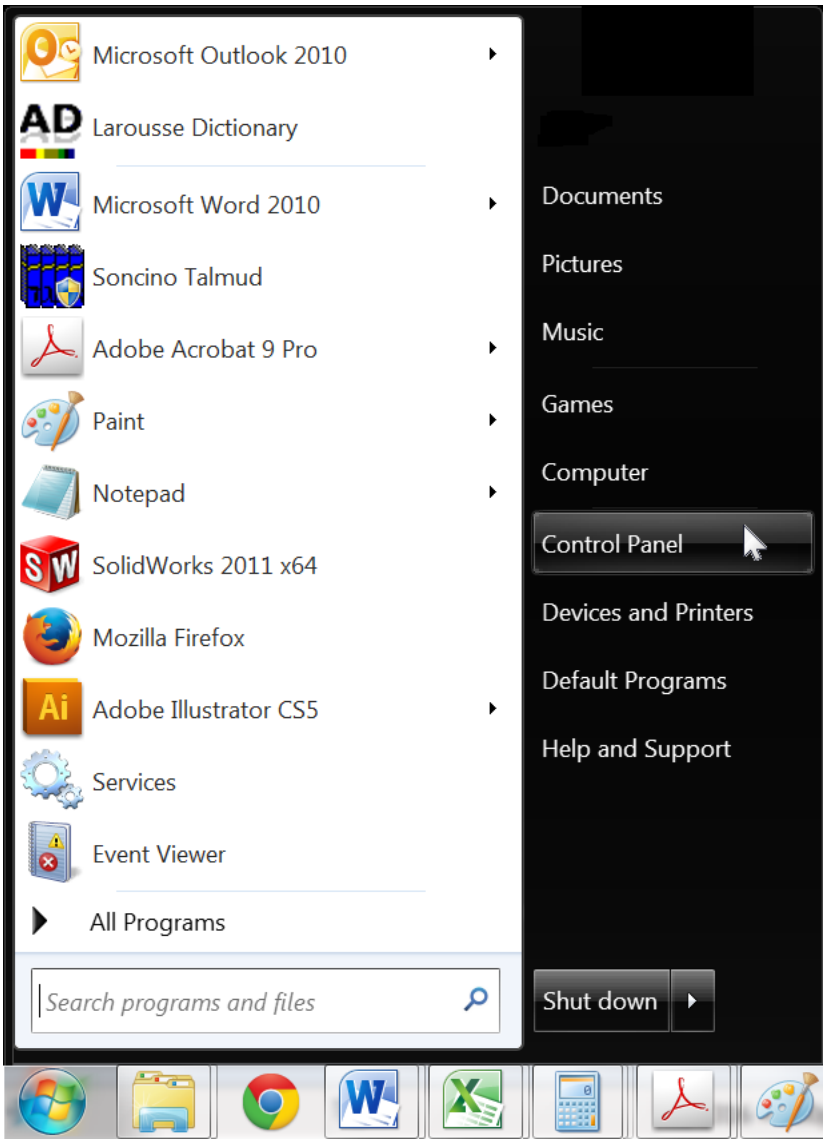
L. In the **Subnet mask** field, type the following:

255.255.255.0

M. Click on **OK**.

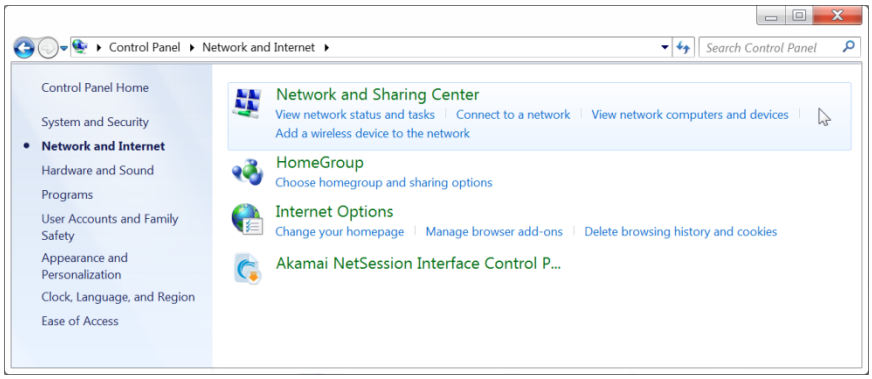


Step 5A

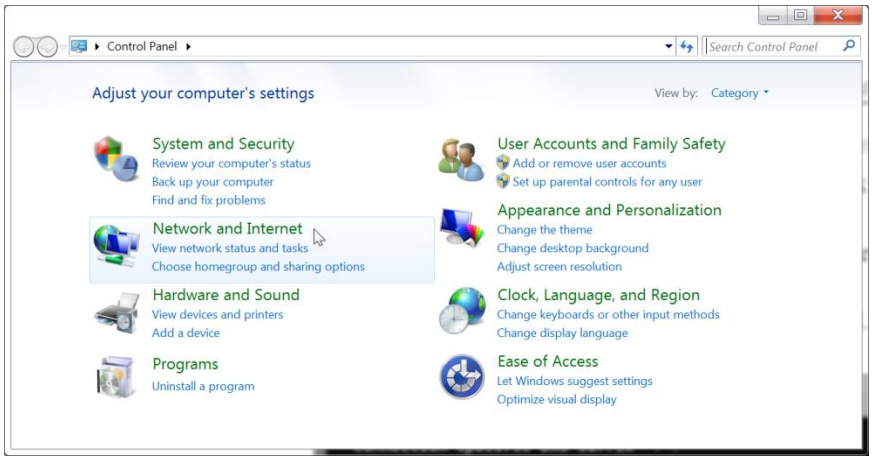


Steps 5B-5C

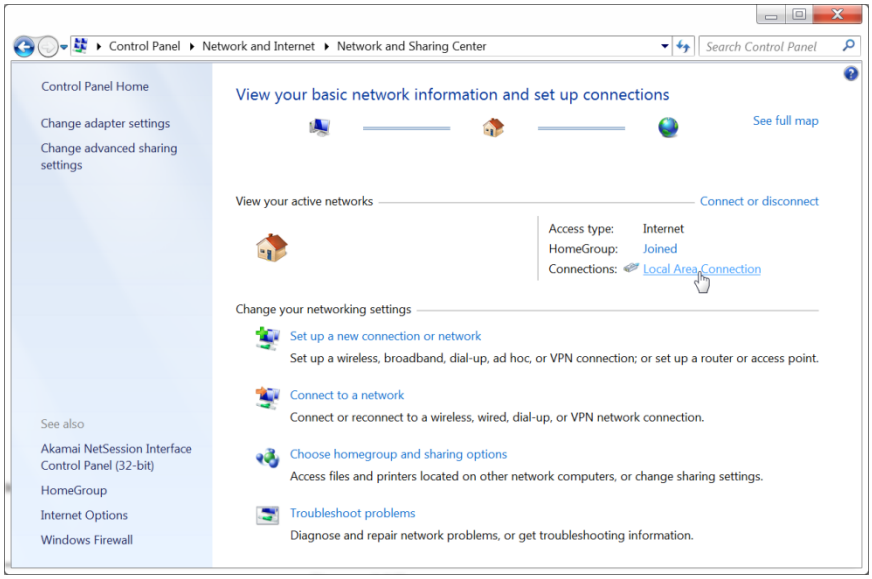
Figure 9



Step 5D

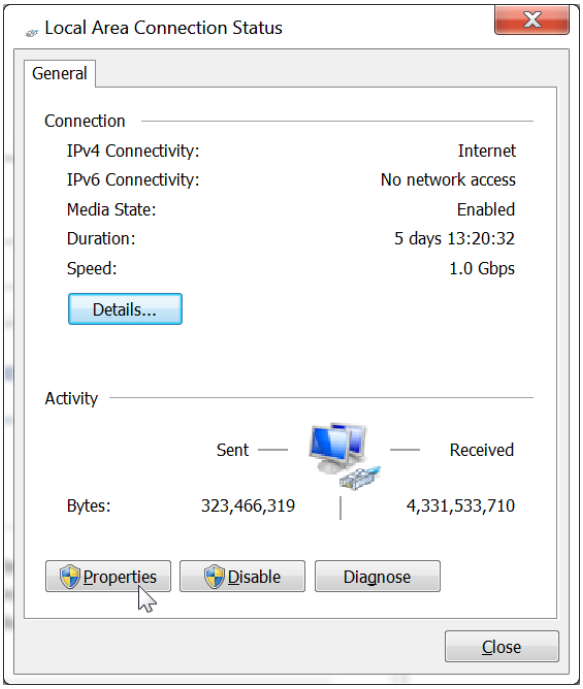


Step 5E

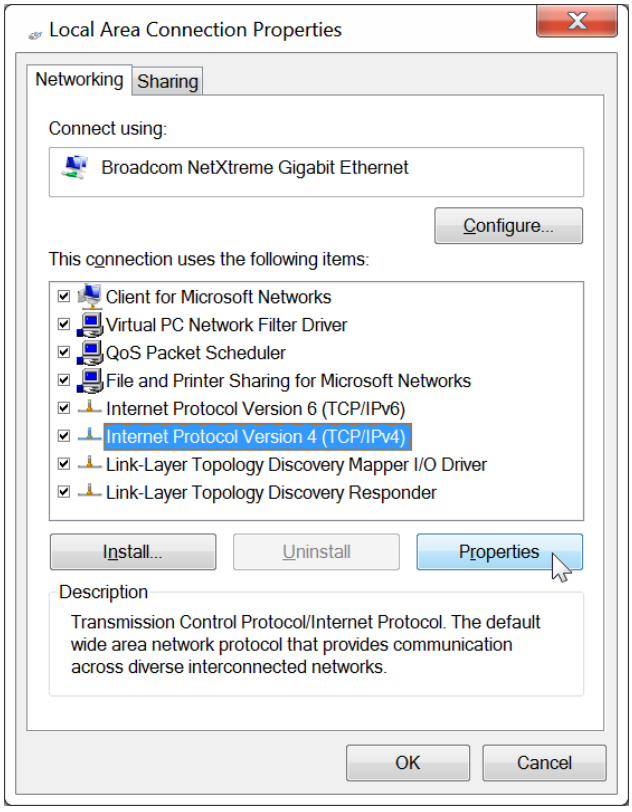


Step 5F

Figure 10

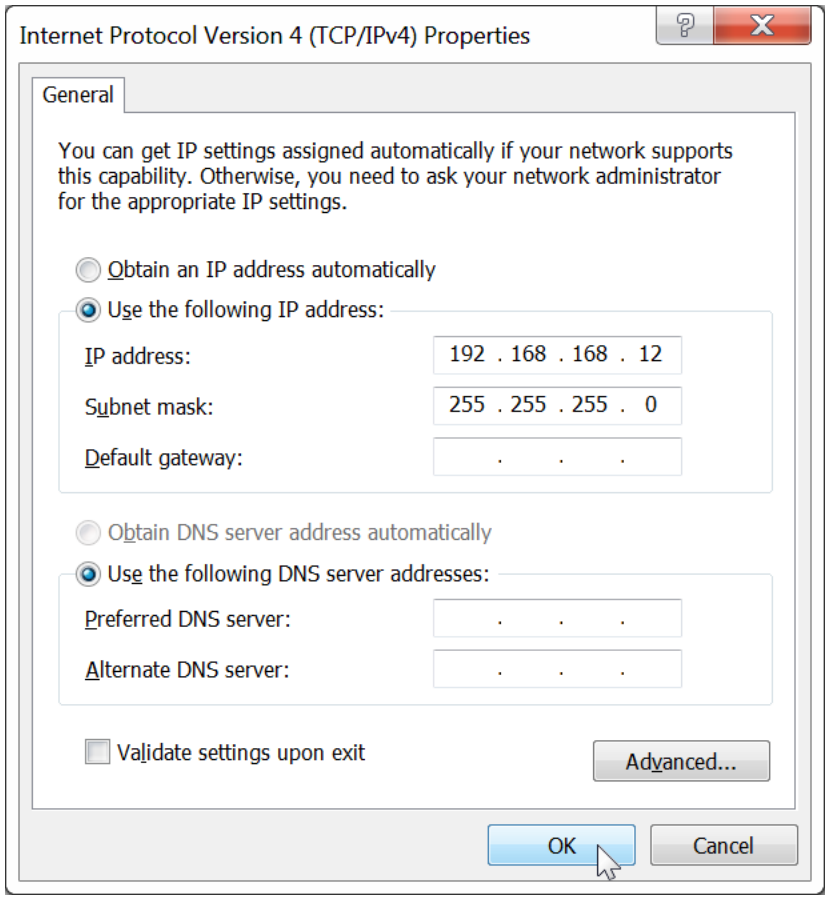


Step 5G



Steps 5H-5I

Figure 11



Steps 5J-5K-5L-5M

Figure 12

The computer is now ready to communicate with the MNC.

Refer to **Figure 13: Internet Browser Entry**.

6. Open up an Internet browser (Explorer, Chrome, Firefox, etc.) and type the following address in the address bar near the top of the screen:

   http://192.168.168.50/mnc/

   NOTE: **mnc** must be written in lower case

Figure 13: Internet Browser Entry

Refer to **Figure 14 Login Screen**

7. The MuxLab Pro Digital Network Controller Web interface **Login Screen** will appear.

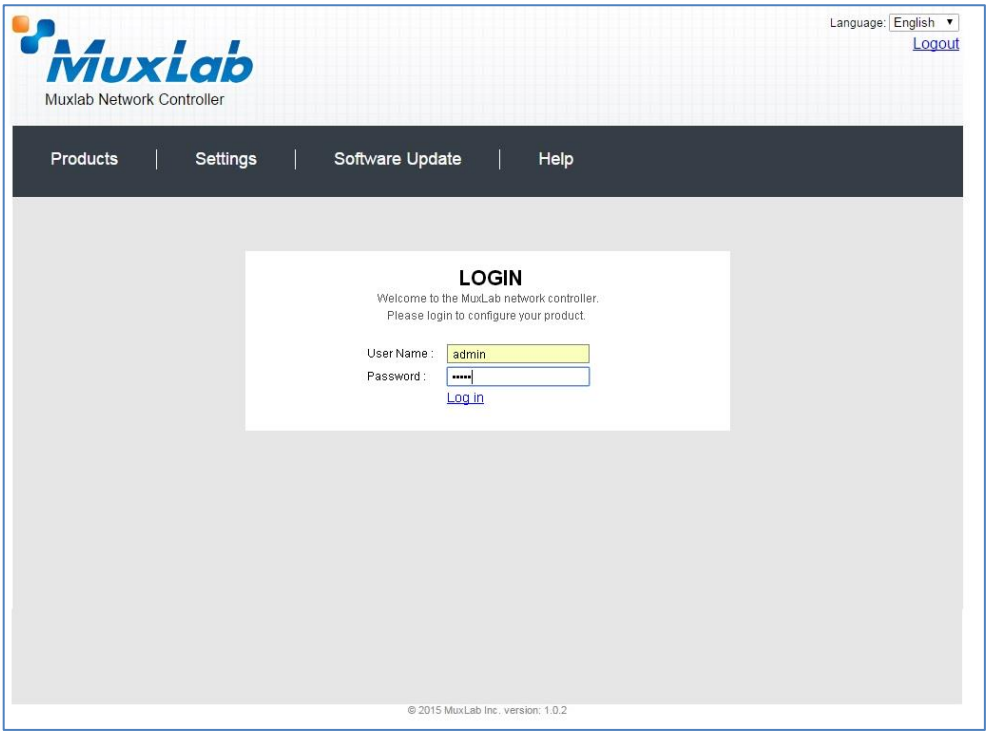
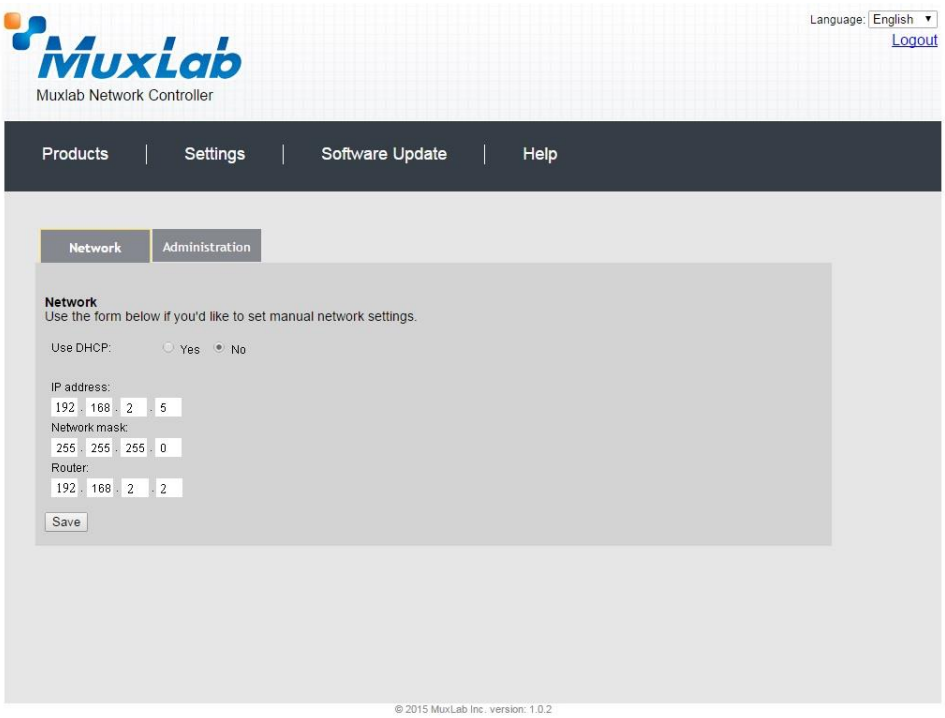


Figure 14 Login Screen

8. In the **User Name** field, type admin. Use lower case.
9. In the **Password** field, type admin. Use lower case.
10. Click **Log in**.



Refer to

Figure 15 Network Settings Screen

11. Click the **Settings** tab. The Network Settings screen will appear.
12. Next to **Use DHCP**, ensure that the **No** radio button is selected.
13. In the **IP address** field, type the first 3 entries of the IP address of the network subnet on which the MNC will be installed, which in our example is 192.168.2.x.

    For example, type the following in the MNC **IP address** field:

192.168.2.*x*

Where *x* in our example can be any number from 3 to 254, and since "1" was used above for the Ethernet Switch and "2" was used for the Router, then for this example we will

select “5” for a Static IP address of **192.168.2.5,** see

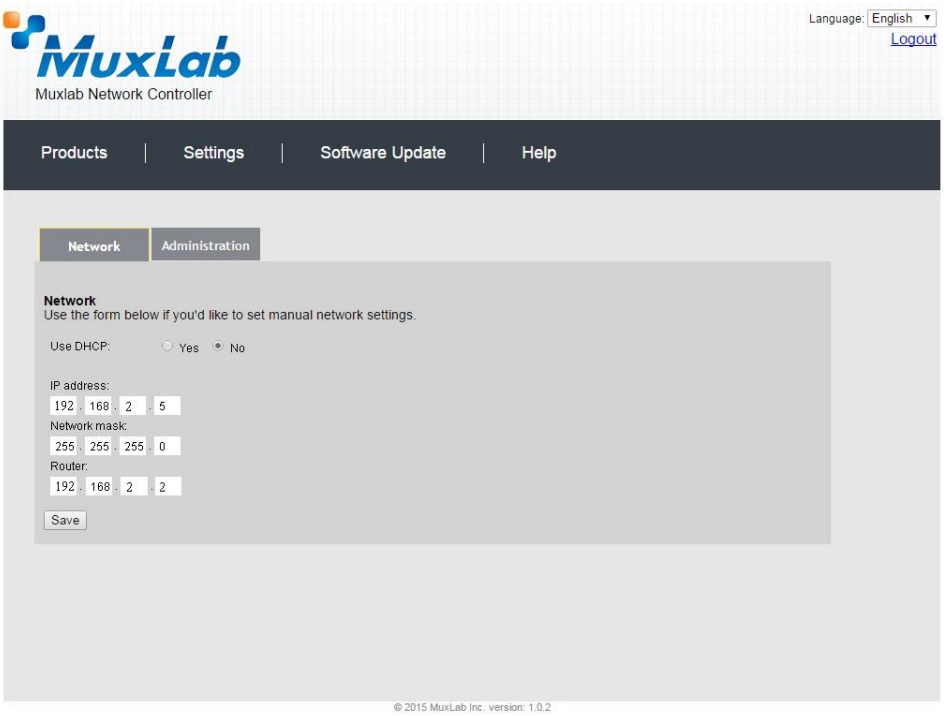


Figure 15. Just make sure the Static IP address for the MNC does conflict with the Static IP address of the Ethernet Switch and the Router or any other Static IP address already pre-assigned in the given network.

14. In the **Network mask** field, type **255.255.255.0**
15. In the **Router** field, type the IP address of the network Router (which in our example is **192.168.2.2**).

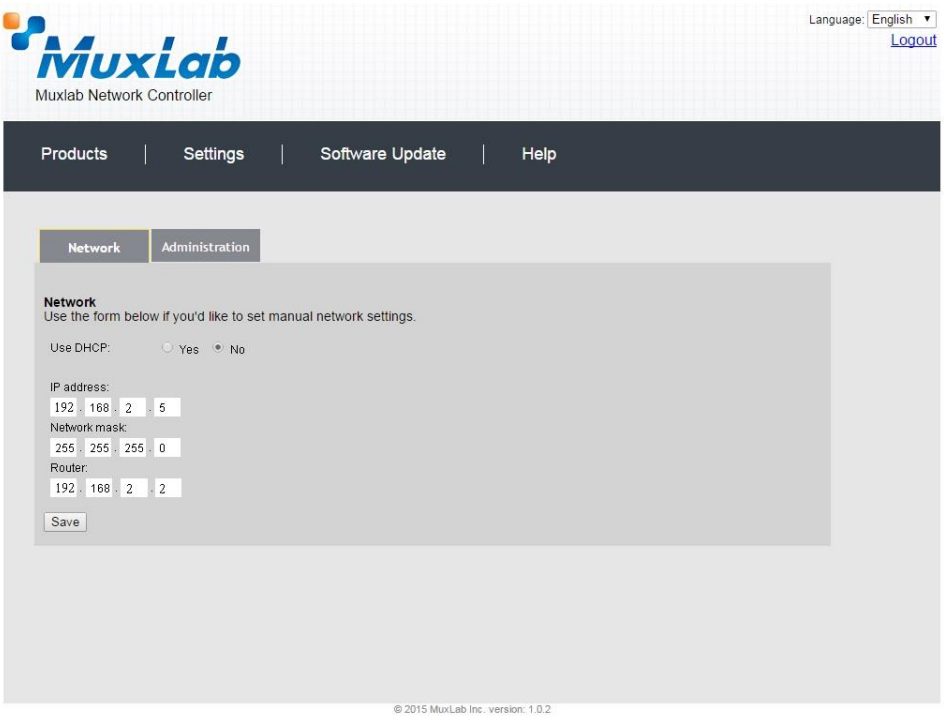
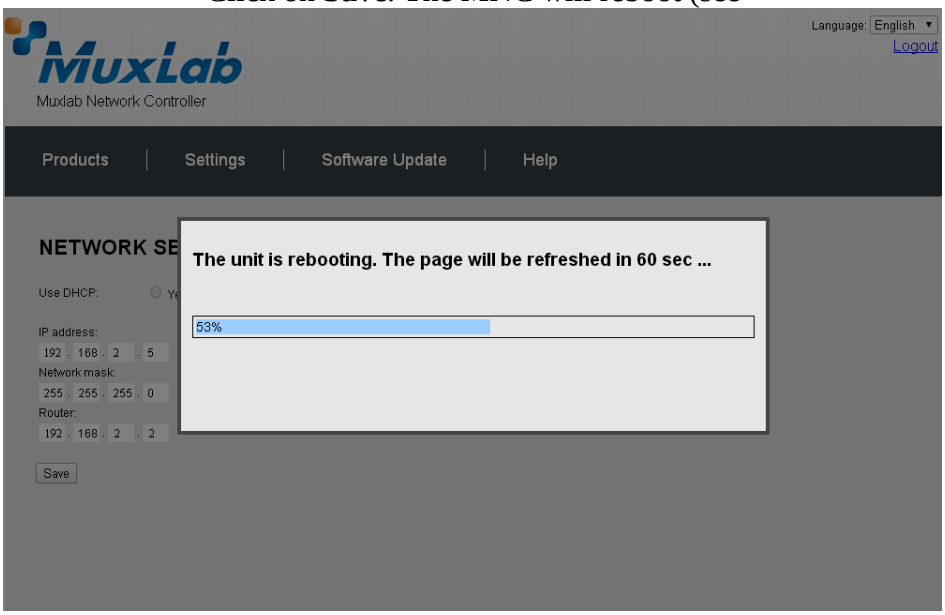


Figure 15 Network Settings Screen

Click on **Save**. The MNC will reboot (see



1. **Figure 16 MNC Reboot Screen**).

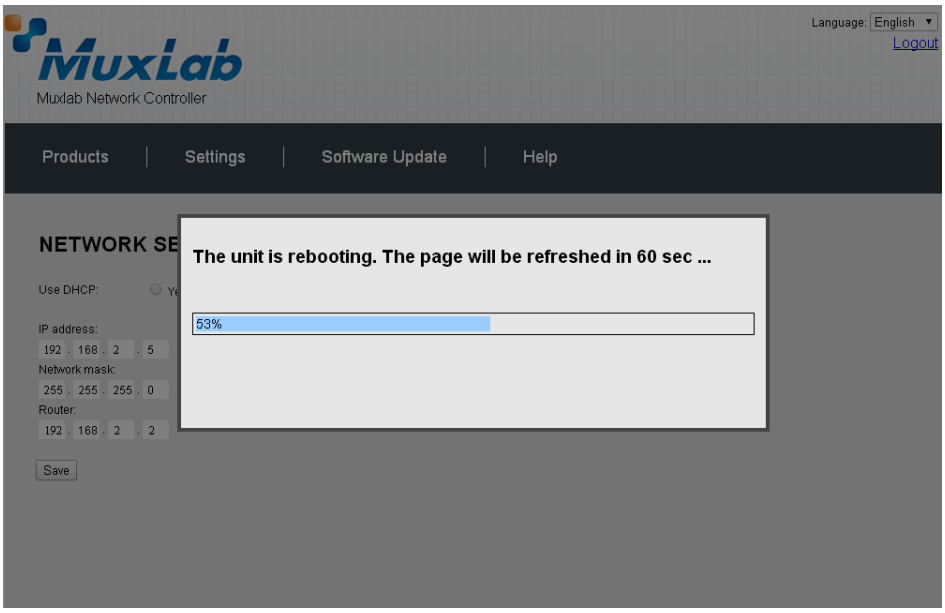


Figure 16 MNC Reboot Screen

The MNC is now configured to work with your network router.

Process 2: Physically installing the MNC to the network

1. Disconnect the Ethernet cable from the computer and connect it to either the Router or the Ethernet Switch. Ensure that the other end is still connected to the MNC. Also make sure that the Router is connected to the Ethernet Switch.

3.4. Ethernet Web Interface – Device Management

The Ethernet Web interface allows the user to manage the MNC and the AV over IP product family of extenders remotely from a Windows based computer. Make sure the computer is set to a Static IP address in the same subnet, which in our example is **192.168.2.x**. Follow steps 4, 5 & 6 in section 3.3 on how to accomplish this, but set using the subnet 192.168.2.x

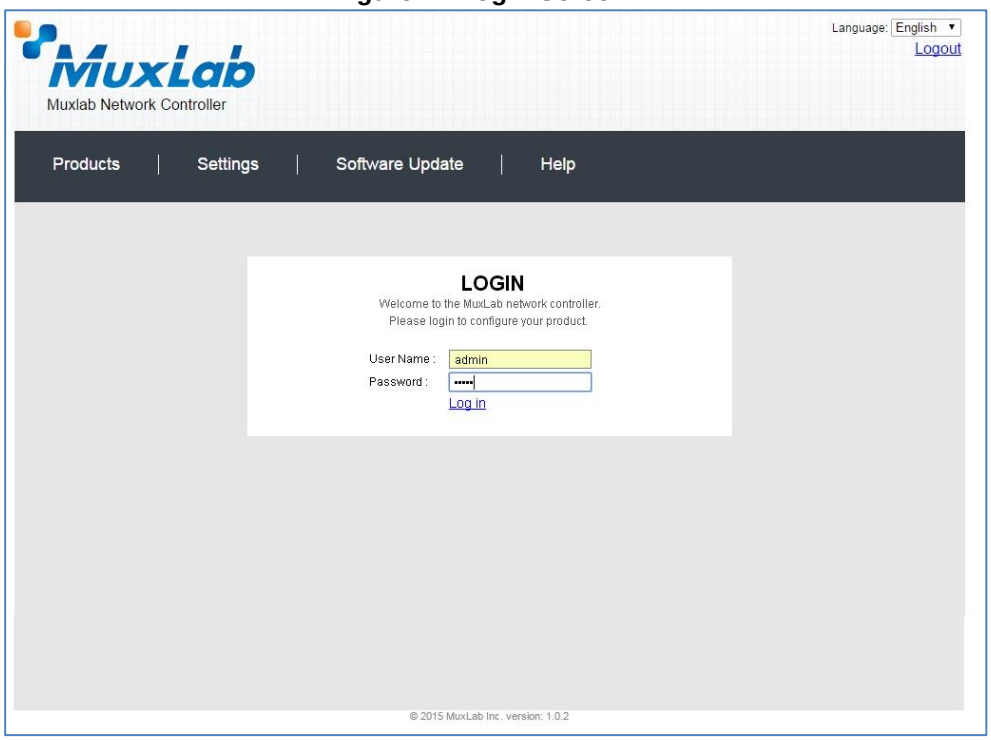
Ensure that the computer is connected by an Ethernet cable to the network router on which the MNC is physically installed. Open up an Internet browser (Explorer, Chrome, Firefox, etc.) and type in the MNC IP address in the address bar near the top of the screen, such as, which in our example is 192.168.2.5:

192.168.2.5/mnc/

NOTE: **192.168.2.x** represents the first three IP address entries of the network subnet on which the MNC is physically installed.

The MuxLab Network Controller Web interface **Login Screen** will appear (**Figure 17**).

Figure 17 Login Screen



In the **User Name** field, type admin. Use lower case.

In the **Password** field, type admin. Use lower case.

Click **Log in**.

You are now ready to manage the MuxLab Pro Digital Network Controller.

Products Screen

Once the user has logged in, the **Products** screen will appear (**Figure 18)**.

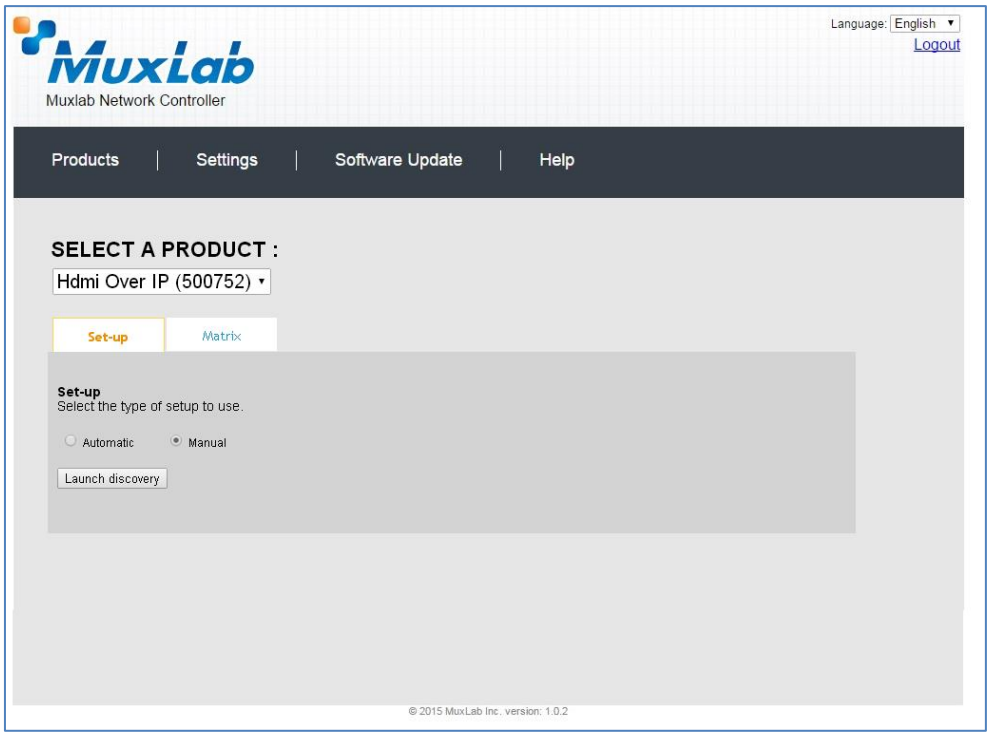


Figure 18: Products Screen

In the following section we will be using the **MuxLab 500752 HDMI over IP Extender** as an example of how to use the MuxLab Pro Digital Controller to manage MuxLab AV over IP devices.

In the **SELECT A PRODUCT** drop down box, click on **HDMI over IP (500752)** as shown in Figure 18.

A dialog box will appear, asking the user if he wants to load a previously saved device list (in case such a list has already been stored). This dialog box will appear even if no device list was previously saved.

Two tabs appear in the **Products** screen (**Set-up** and **Matrix**), with the **Set-up** tab being active by default.

The **Set-up** tab offers the user two options for the type of set-up allowed: **Automatic** or **Manual**.

> **Automatic** means that the software will scan the system for every dip-switch enabled device and override its manual dip-switch address settings and place these units under software address control.
>
> **Manual** means that the software will allow the manual dip-switch address settings of any found device to remain active.

After selecting **Automatic** or **Manual**, click on **Launch discovery**. The system will then scan the network for all source side devices (in this example 500752 Transmitters) and display side devices (in this example 500752 Receivers), and will display the scan results in tabular form (see **Figure 19**).

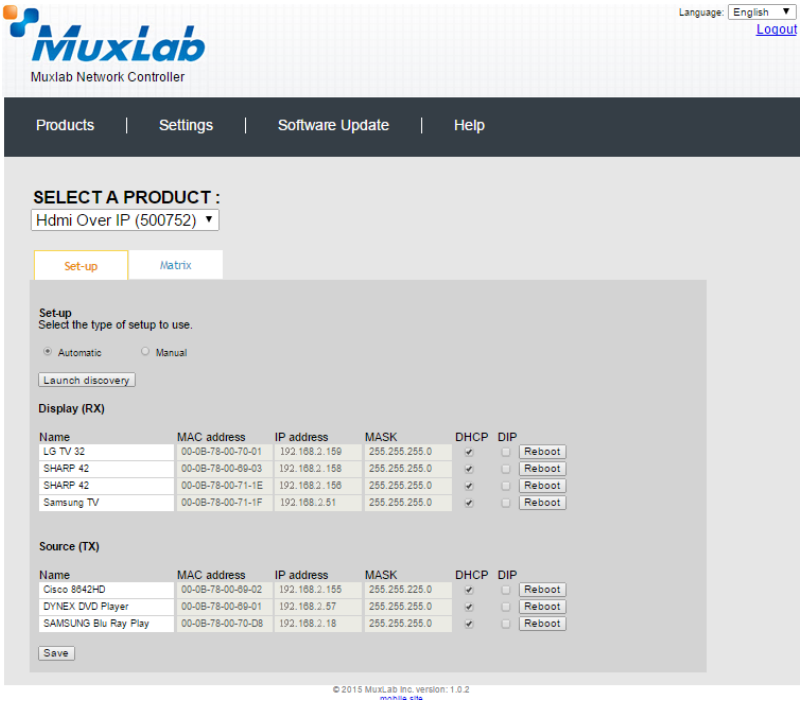


Figure 19: Sources and Displays

Each 500752 Transmitter and Receiver can be assigned an arbitrary descriptive name, normally reflecting the end device that it is terminated to. To change the name of any Display (RX) or Source (TX) device, click the **Name** field to edit its contents. Several **Name** fields can be edited before saving changes (as shown in

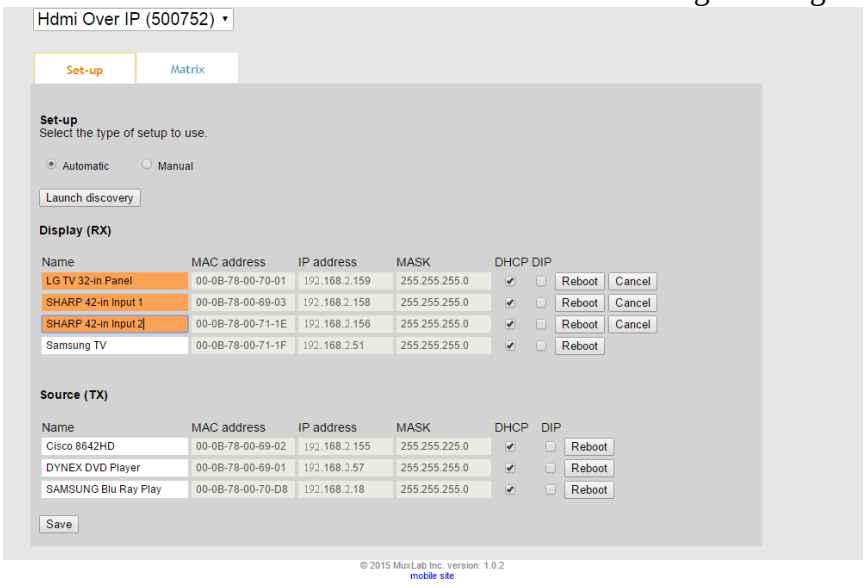


Figure 20).

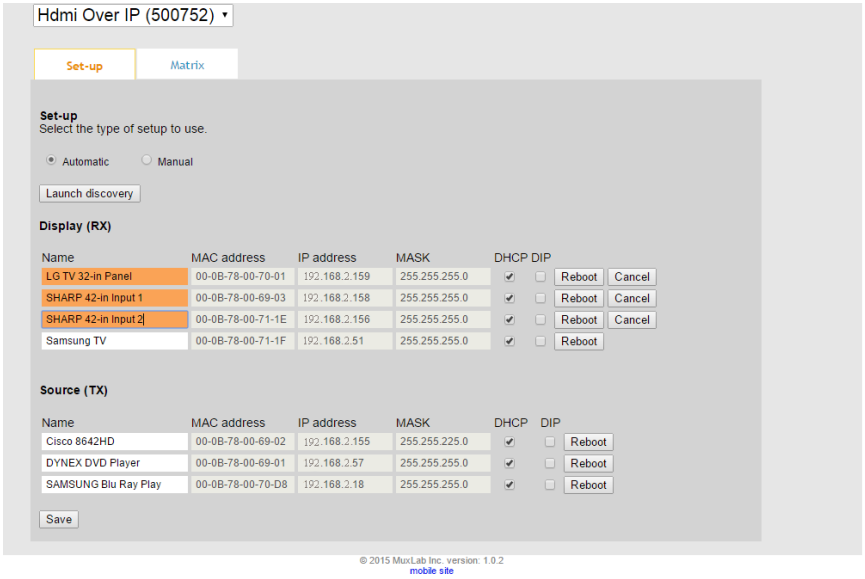


Figure 20: Name Changes

To save all name changes, click on **Save**. A green UPDATED tag will appear next to newly changed names (see **Figure 21)**.

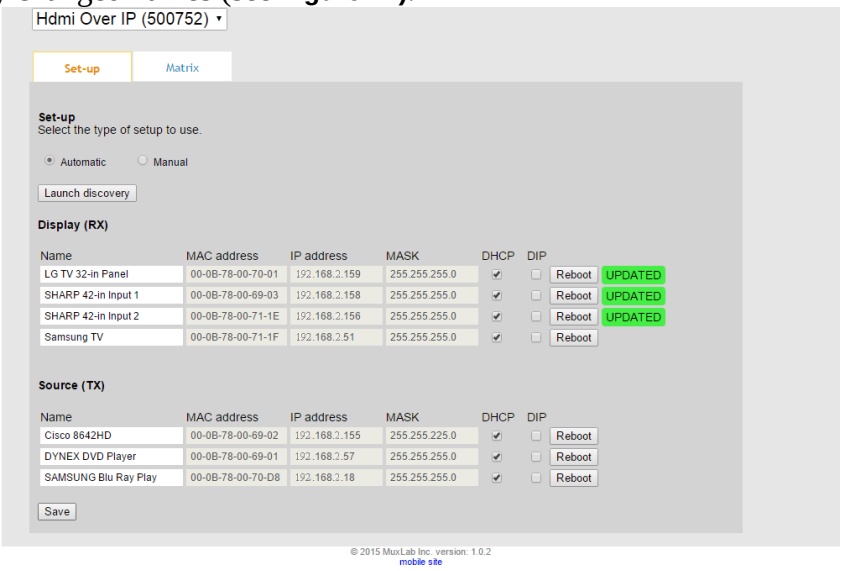


Figure 21: Saving Name Changes

The **Matrix** tab of the **Products** screen allows the user to connect any Display to any Source. The user also has the option of using **Presets** to save connection schemes (“presets”), as well as to edit and delete existing presets (see **Figure 22**).

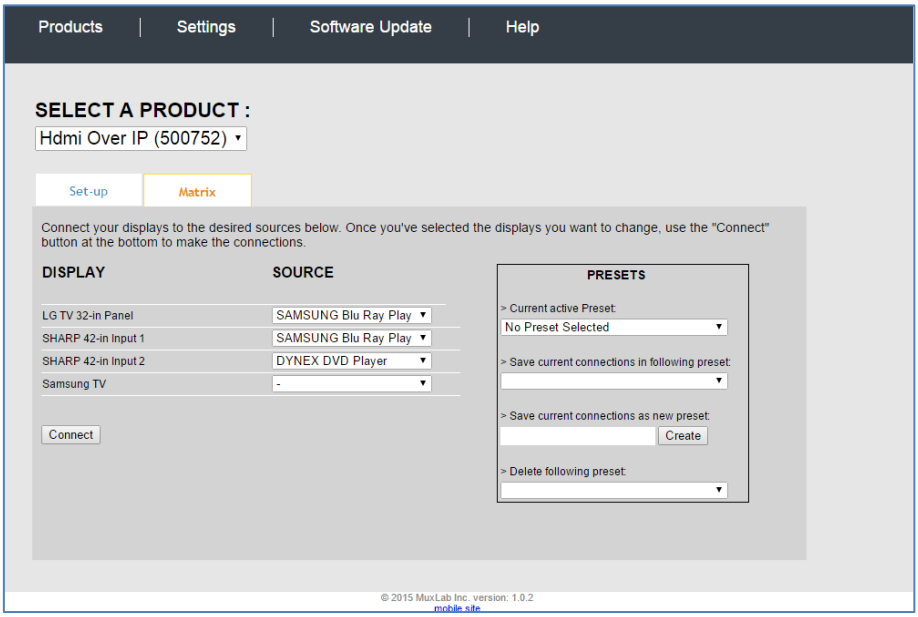


Figure 22: Matrix Tab

Figure 23 and **Figure 24** demonstrate how to connect a display to a source. The user clicks on the drop-down list next to the given display (for example "Samsung TV") and selects which source to connect to (**Figure 23**).

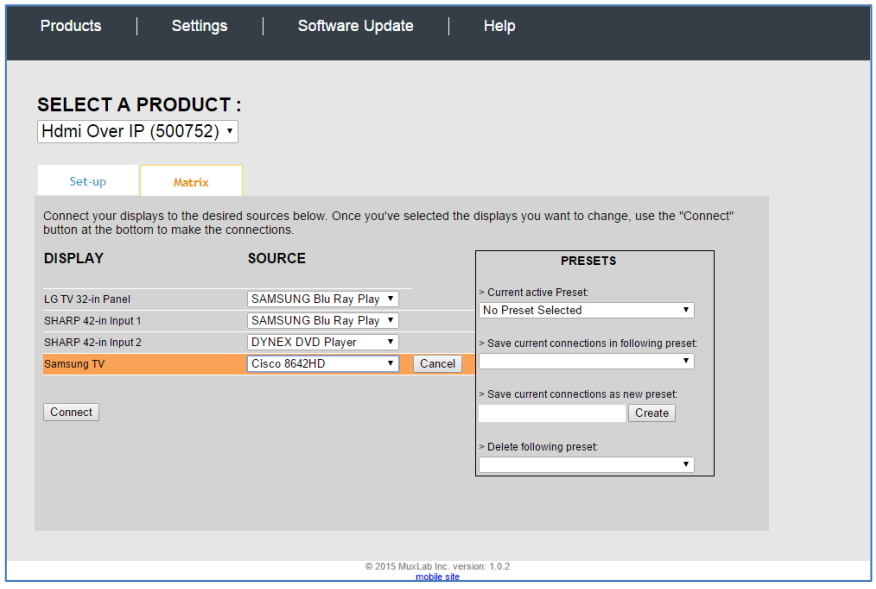


Figure 23: Change Connection

Once the selection is made (the user can change any or all connections between displays and sources), click on **Connect** to finalize the change. A green SUCCESS tag will appear next to the new or changed connection (**Figure 24**).

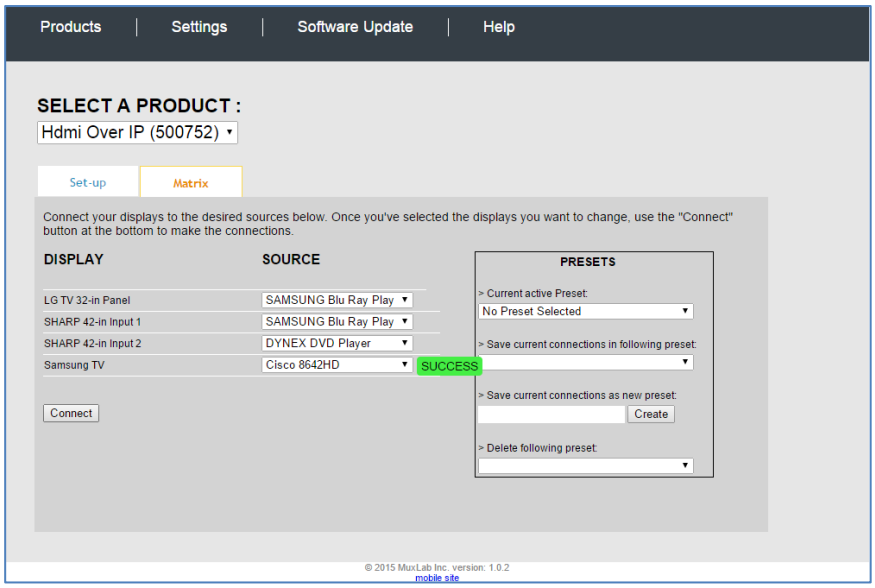


Figure 24: Finalize Change

To create a new preset, the user clicks the **> Save current connections as new preset** field (see Figure 25) and types a name. This assigned preset name will be linked to the existing connection scheme being shown within the **Matrix** tab.

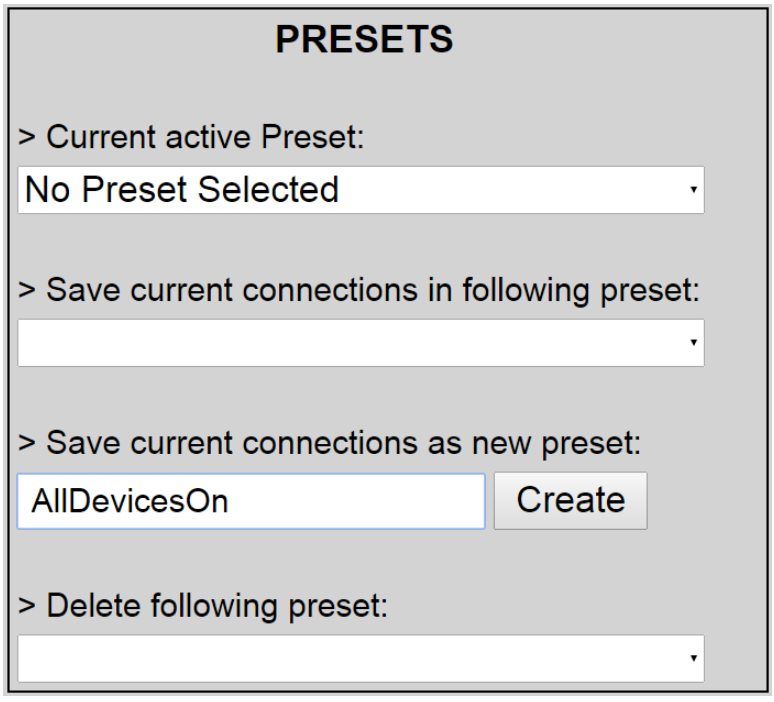


Figure 25: Create New Preset

To save this preset, the user clicks on **Create**. A green SUCCESS tag will appear next to the > **Save current connections as new preset** field (see **Figure 26**).

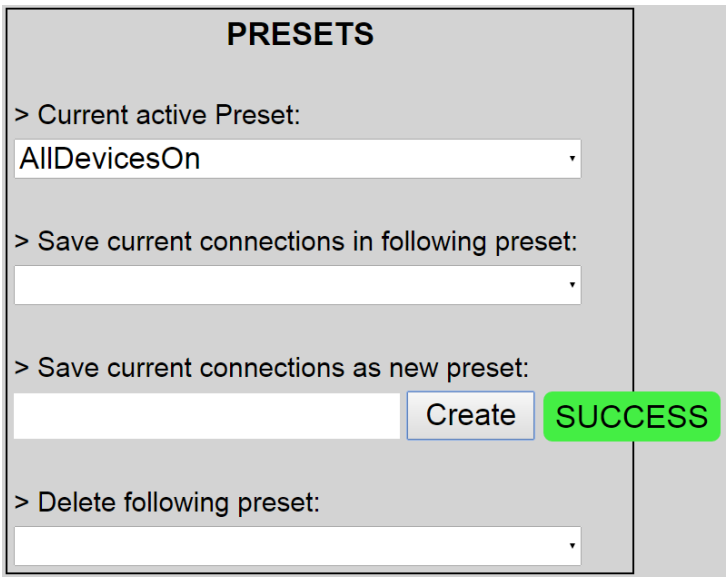


Figure 26: Confirmation of New Preset

To delete a preset, the user clicks the > **Delete following preset** drop-down box and selects a preset name from the list shown (as in **Figure 27**).

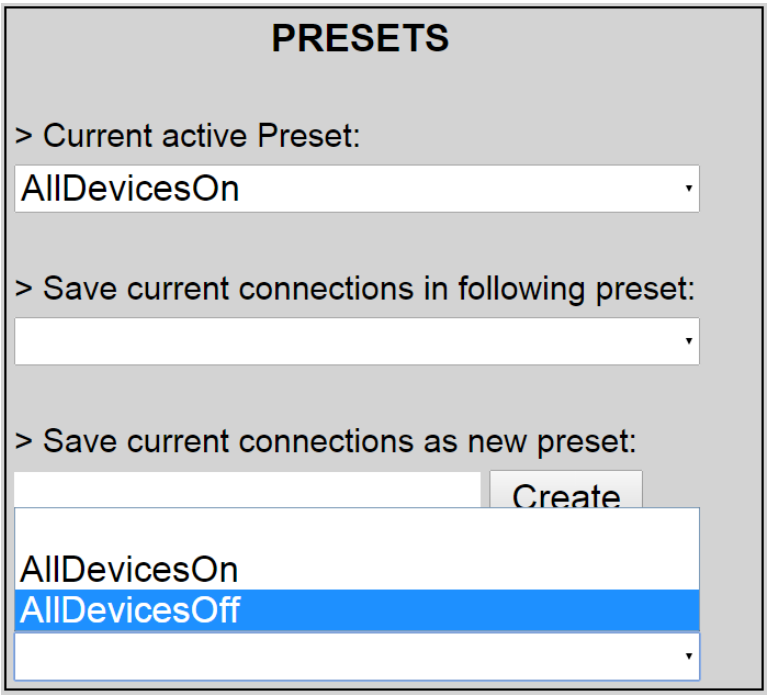


Figure 27: Delete Preset

Once selected, the preset will be deleted and a green SUCCESS tag will appear next to the > **Delete following preset** field (see **Figure 28**).

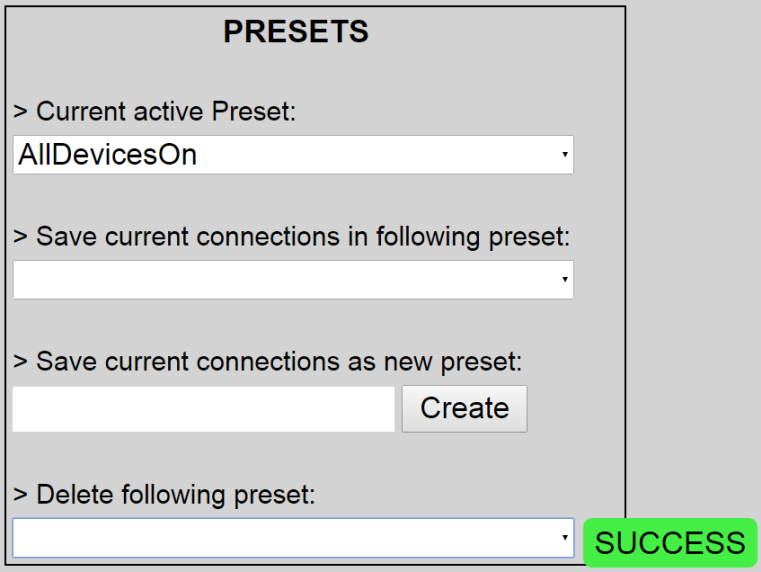
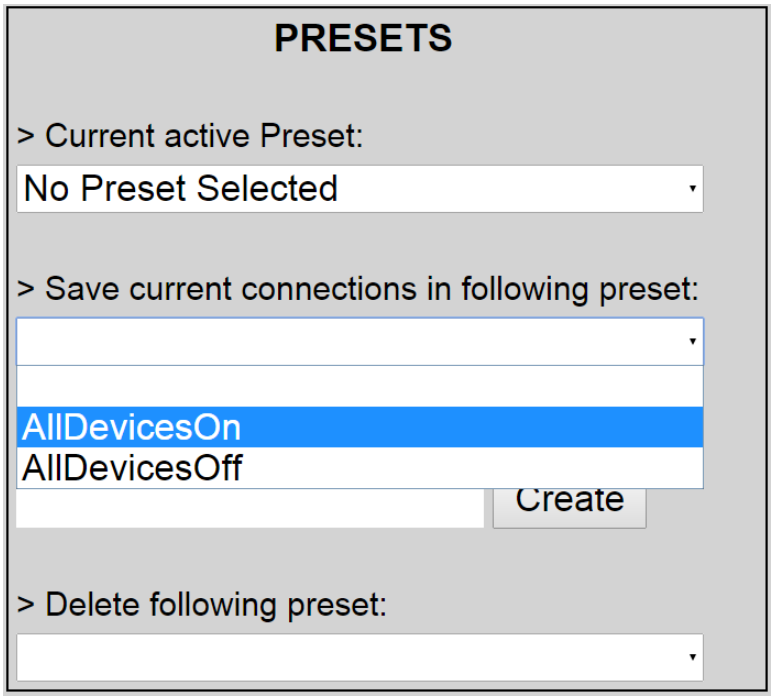


Figure 28: Confirmation of Deleted Preset

To re-save the current connections as displayed in the **Matrix** tab under an existing **Preset** name, the user clicks the > **Save current connection in following preset** drop-down box and selects a preset name (**Figure 29**).

Figure 29: Change Current Active Preset



Once selected, the **Preset** will be saved and a green SUCCESS tag will appear next to the **> Save current connections in following preset** field (see **Figure 30**).

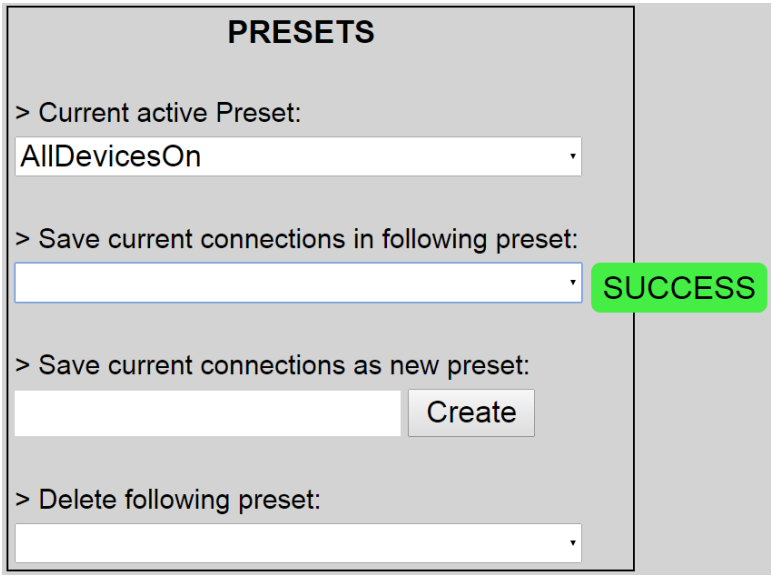


Figure 30: Confirmation of Changed Preset Name

In order to activate an existing **Preset**, select **> Current active Preset**, and select the **Preset** name from the drop-down box and the **Preset** will become active. In addition the active **Preset** will be displayed in the **Current active Preset** field.

Settings Screen

The Settings screen contains two tabs: **Network** and **Administration**.

The **Network** tab (see **Figure 31**) is used to change the IP address of the MuxLab Network Controller (MNC), the network mask, as well as the router IP address. It also allows the user to enable or disable DHCP.

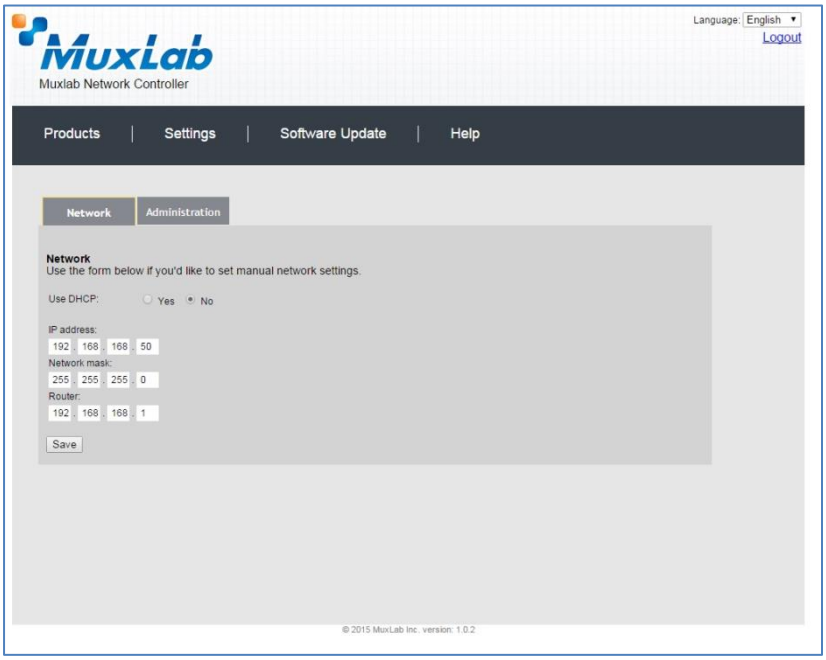


Figure 31: Settings Screen: Network Tab

The **Administration** tab (see **Figure 32**) is used to change administrator passwords. The user must enter their:

- Existing Password
- Their new password
- And their new password a second time (to confirm that there are no entry errors)

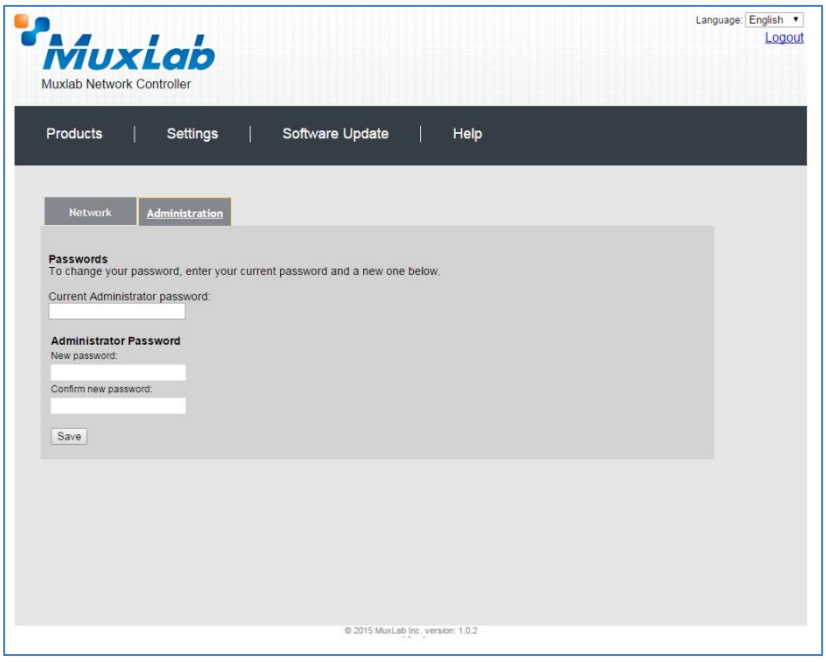
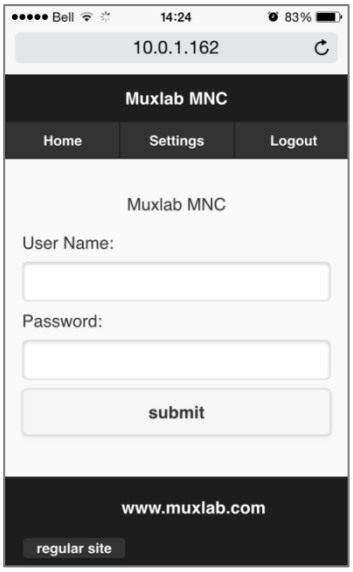


Figure 32: Settings Screen: Administration Tab

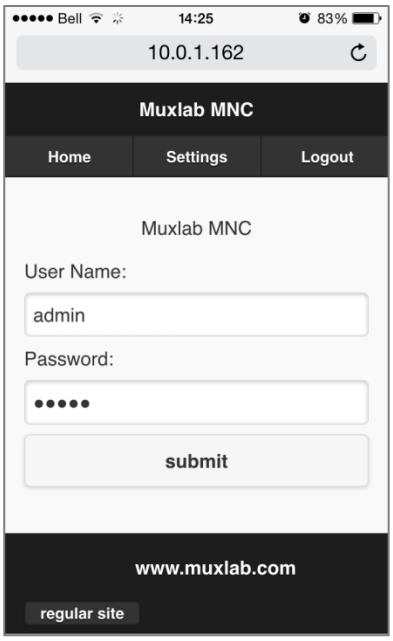
3.5. Mobile Interface

The mobile interface is presented below in a series of annotated snapshots. Note that at any time, the user can navigate to the regular website by clicking **regular site** at the bottom of the screen. The mobile device must be connected to the same WiFi network as configured on the router.

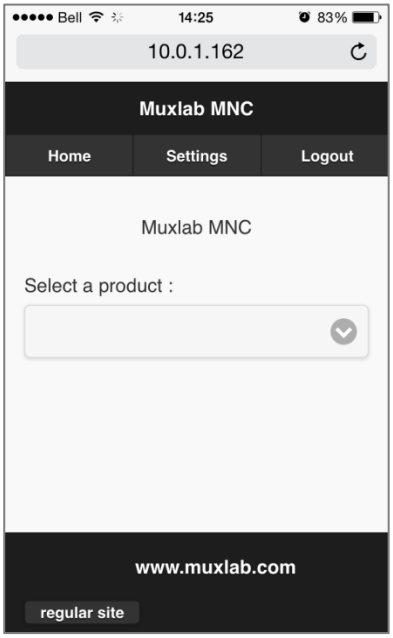


The home page of the MuxLab MNC mobile interface presents the user with two entry fields: **User Name** and **Password**.

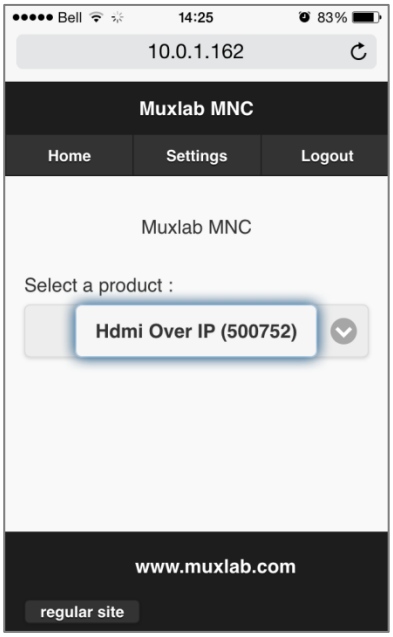
By default, both the **User Name** and **Password** are admin (case-sensitive for **Password**).



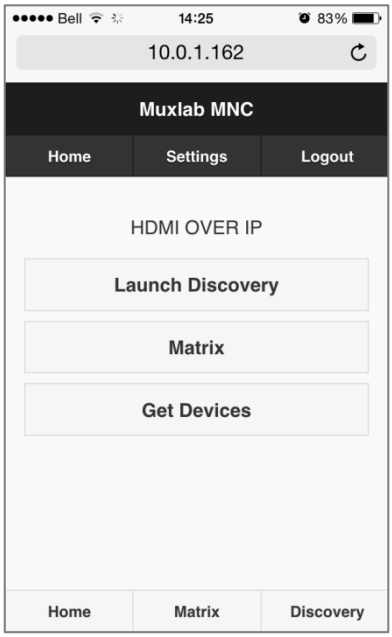
The user is prompted to select a product from a drop-down list.



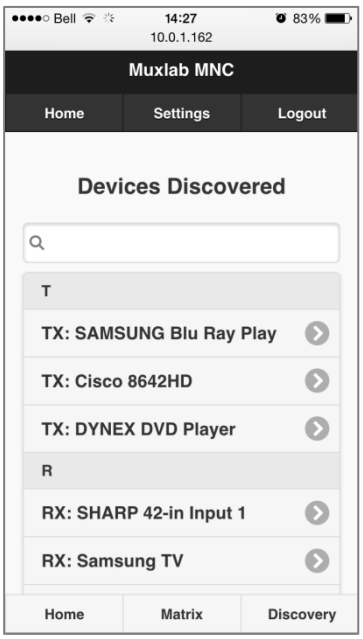
As per our earlier product example, the user can then select the:
Hdmi Over IP (500752).



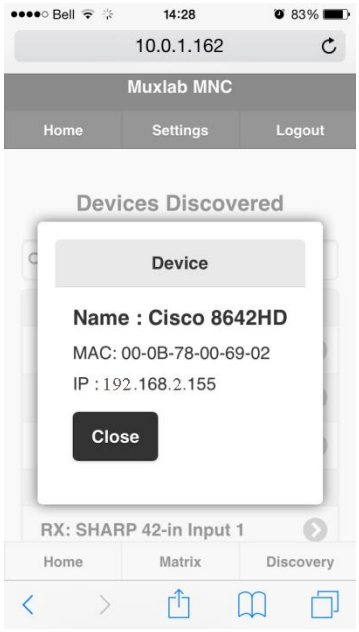
The selected product (HDMI OVER IP) appears at the top of the sub-menu.
The user has three options from the sub-menu, Launch Discovery, Matrix and Get Devices.



After selecting **Launch Discovery** in the sub-menu, the user is presented with a list of Sources (TX) and Displays (RX).



After selecting any Source or Display from the list, the user is presented with the MAC and IP Address of the device in question.



4. Troubleshooting

Table 6 lists common problems, as well as their possible causes and solutions. If the information below does not solve the problem, technical support contact information can be found at the end of this section.

PROBLEM	POSSIBLE SOLUTIONS
Unable to connect computer to MNC	Ensure the computer IP subnet address matches the IP subnet address of the MNC
	Ensure that http://192.168.168.50/mnc/ is written in lower case
Unable to connect computer to Ethernet Switch or to the Router	Ensure the computer IP subnet address matches the IP subnet address of the Ethernet Switch and Router.
General communication problem between devices	As a general rule, all devices required to communicate together on the same local network, must have an IP address in the same subnet Static IP address must be unique and in the same subnet. DHCP addresses must be assigned within the same subnet and configured at the DHCP server not to overlay with any assigned Static IP addresses.

Table 6: Troubleshooting

When contacting your nearest MuxLab dealer or MuxLab Technical Support at 877-689-5228 (toll free in North America) or (+1) 514-905-0588 (International), please have the following information ready:

- Unit model number.
- Description of problem.
- List of tests performed.

5. Appendix

A. IP Commands

Please note that commands are case sensitive and arguments must be separated by a single space. Commands must be entered as shown and ended with a carriage return.

The IP command API use HTTP POST with JSON data. Each IP command must be sent to the following URL: http://aaa.bbb.ccc.ddd/mnc/secure_api.php

Each IP command must contain the MuxLab Network Controller (MNC) username and password:

aaa.bbb.ccc.ddd the MNC IP address

p_userName the MNC username

p_password the MNC user password

FORMAT

The IP command (JSON data) has the following formats:

Command **without** data parameters:

```
{"p_targetId":<target id>,"p_cmd":"<command
name>","p_userName:"<MNC User Name >","p_password":"<MNC password
>"}
```

Response format **without** additional data:

```
{"p_targetId":<target id>,"p_cmd":"<command
name>","p_rspStatus:"<command status>","p_msg":"<a message>"}
```

Command **with** data parameters:

```
{"p_targetId":<target id>,"p_cmd":"<command
name>","p_userName:"<MNC User Name >","p_password":"<MNC password
>", "p_data":[{"key1":value1,"key2":value2,… }]}
```

Response format **with** additional data:

```
{"p_targetId":<target id>,"p_cmd":"<command
name>","p_rspStatus:"<command status>","p_msg":"<a
message>","p_data":[{"key1":value1,"key2":value2,… }]}
```

The "p_data" field will depend on the associated command.

The "**p_targetId**" value is:

"0" to send a command for the MNC
"1" to send a command for the "500752" product

COMMAND/RESPONSE LIST

1. Automatic Discovery

Description:

The system will retrieve all the devices in the network and automatically send all the necessary updates to the devices in order to configure them properly (duplicate IP addresses will not be solved by the system; the user must resolve this kind of issue). The system will then return a list of devices found with their attributes.

Command:

{"p_targetId":*1***,"p_cmd":"launch_discovery_auto","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***"}**

Response:

{"p_targetId":*1***,"p_cmd":"launch_discovery_auto","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***",**
"p_data":[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>"}, { … }, …]

NOTE: Red text signifies additional attributes for RX devices.

2. Manual Discovery

Description:

The system will retrieve all the devices in the network and will return a list of devices found with their attributes. No other actions will be performed.

Command:

{"p_targetId":*1***,"p_cmd":"launch_discovery","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***"}**

Response:

{"p_targetId":*1***,"p_cmd":"launch_discovery","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***",**
"p_data":[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>"}, { … }, …]

NOTE: Red text signifies additional attributes for RX devices.

3. Get Devices from the Database

Description:

The system will retrieve all the devices currently stored in the database

Command:

{"p_targetId":*1***,"p_cmd":"get_devices","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***"}**

Response:

{"p_targetId":*1***,"p_cmd":"get_devices","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>"}, { … }, …]

NOTE: Red text signifies additional attributes for RX devices.

4. Update Some Device Attributes

Description:

The system will update the devices specified with the new attributes provided. Note that the devices to be updated MUST already exist in the MNC database.

Command:

{"p_targetId":*1***,"p_cmd":"update_devices","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{<"mac":"<device mac address>", <***attribute name***>:<***attribute value***>,…"}, {<"mac":"<device mac address>", <***attribute name***>:<***attribute value***>,…"},…]}**

List of attribute names that can be modified:

"customName" Set the custom name to give to this device
"ip" Set the device IP address (Eg. "192.168.1.80")
"mask" Set the device mask (Eg. "255.255.255.0")
"isDhcp" Set the DHCP on (1) or off (0) (Eg. 1)
"isDipSwitchEnabled" Set the dip switch on(1) or off(0) (Eg.: 0)

Response:

{"p_targetId":*1***,"p_cmd":"update_devices","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"productName":"<value>","modelName":"<value>","customName":"<value>","mac":"<value>","ip":"<value>","mask":"<value>","isDhcp":<0/1>,"multicastGroupIp":"<value>","videoResolution":"<value>","videoFrameRate":"<value>","audioFormat":"<value>","isVideoSignalDetected":<0/1>,"isIrOn":<0/1>,"isDipSwitchEnabled":<0/1>,"isDisplayConnected":<0/1>,"isScreenImageOn":<0/1>,"isScreenTextOn":<0/1>,"connectedMac":"<value>"}, { … }, …]

NOTE: Red text signifies additional attributes for RX devices.

5. Reboot Device

Description:
The system will reboot the devices

Command:
{"p_targetId":*1***,"p_cmd":"reboot_devices","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"mac":"<device mac address>"}, {…}, …]}**

Response:
{"p_targetId":*1***,"p_cmd":"update_devices","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"mac":"<device mac address>","rspStatus":"SUCCESS or FAILED","msg":""}, …]}

6. Connect/Disconnect Device

Description:
Perform a connect/disconnect between devices

Command:
{"p_targetId":*1***,"p_cmd":"connection","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>"}, {…}, …]}**
"macRx" : the RX mac address to connect/disconnect
"macTx": - To disconnect, use "00-00-00-00-00-00"
- To connect, use the TX device MAC address

Response:
{"p_targetId":*1***,"p_cmd":"connection","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>","rspStatus ":"SUCCESS or FAILED","msg":""}]

7. Select and Apply a Preset

Description:
Apply a (an existing) preset

Command:
{"p_targetId":*1***,"p_cmd":"select_preset","p_userName:"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"presetId":"<preset id number>"]}**

Response:
{"p_targetId":*1***,"p_cmd":" select_preset ","p_rspStatus:"***SUCCESS***","p_msg":"***<a message>***","p_data":**[{"macRx":"<Rx device mac address>","macTx":"<Tx device mac address>","rspStatus ":"SUCCESS or FAILED","msg":""}, …]

NOTE: **"p_data"** *will return all connection results that took place.*

8. Save Current Matrix Connections in a Specific Preset

Description:

Save the current matrix connections in a specific (existent) preset

Command:

{"p_targetId":*1***,"p_cmd":"save_preset","p_userName":"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"presetId":"<preset id number>"]}**

Response:

{"p_targetId":*1***,"p_cmd":" save_preset ","p_rspStatus":"***SUCCSESS***","p_msg":"***<a message>***","p_data":**[{"presetId":"<preset ID number >"}]

9. Save Current Matrix Connections in a NEW Preset Name

Description:

Save the current matrix connections in a NEW preset name

Command:

{"p_targetId":*1***,"p_cmd":"create_preset","p_userName":"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"presetName":"<a new preset name>"]}**

Response:

{"p_targetId":*1***,"p_cmd":" create_preset ","p_rspStatus":"***SUCCSESS***","p_msg":"***<a message>***","p_data":**[{"prestName": "<name of the preset>", presetId":"<preset ID number >"}]

10. Delete a Preset

Description:

Delete a preset

Command:

{"p_targetId":*1***,"p_cmd":"delete_preset","p_userName":"***<MNC User Name >***","p_password":"***<MNC password >***","p_data":[{"presetId":"<preset id number>"]}**

Response:

{"p_targetId":*1***,"p_cmd":"delete_preset ","p_rspStatus":"***SUCCSESS***","p_msg":"***<a message>***","p_data":**[{"presetId":"<preset ID number >"}]

11. Modify Network Setting of the MNC

Description:

Modify any network settings of the MNC (ip/mask/gateway/dhcp)

Command:

{"p_targetId":*0*,**"p_cmd":"modifyNetSettings","p_userName:"***<MNC User Name >*","**p_password":"***<MNC password >*","**p_data":[{"dhcp":"<0/1>"}, {"ip":"<ip address>"},{"mask":"<mask address>"},{"gateway":"<gateway address>"}]}**

Response:

{"p_targetId":0,"p_cmd":"modifyNetSettings","p_rspStatus:"*SUCCESS/FAILED*","**p_msg":"***<a message>*"}

12. Modify Administrator password of the MNC

Description:

Modify the administrator password of the MNC

Command:

{"p_targetId":*0*,**"p_cmd":"changeAdminPswd","p_userName:"***<MNC User Name >*","**p_password":"***<MNC password >*","**p_data":[{"usrname":"<the user name>"}, {"currpswd":"<current passsword>"},{"newpswd":"<new password>"}}]}**

Response:

{"p_targetId":0,"p_cmd":"modifyNetSettings","p_rspStatus:"*SUCCESS/FAILED*","**p_msg":"***<a message>*"}

6. Product Warranty Policy

Items Under Warranty - Company Policy

MuxLab guarantees its products to be free of defects in manufacturing and workmanship for the warranty period from the date of purchase. If this product fails to give satisfactory performance during this warranty period, MuxLab will either repair or replace this product at no additional charge, except as set forth below. Repair and replacement parts will be furnished on an exchange basis and will be either reconditioned or new. All replaced parts and products become the property of MuxLab. This limited warranty does not include repair services for damage to the product resulting from accident, disaster, misuse, abuse, or unauthorized modifications or normal decay of battery driven devices. Batteries, if included with the product, are not covered under this warranty.

Limited warranty service can be obtained by delivering the product during the warranty period to the authorized MuxLab dealer from whom you purchased the product, or by sending it to MuxLab. MuxLab will not accept any such product for repair without a Return Material Authorization number (RMA#) issued by its Customer Service Department and a proof of purchase date. If this product is delivered to MuxLab by mail, you agree to assume risk of loss or damage in transit, to prepay shipping charges to the warranty service location, and to use the original shipping container or equivalent.

THE ABOVE LIMITED WARRANTY IS THE ONLY WARRANTY COVERING YOUR MUXLAB PRODUCT. THERE ARE NO OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SOME STATES DO NOT ALLOW LIMITATIONS ON IMPLIED WARRANTIES, SO THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

IF THIS PRODUCT IS NOT IN GOOD WORKING ORDER, YOUR SOLE REMEDY SHALL BE REPAIR OR REPLACEMENT AS PROVIDED FOR ABOVE. IN NO EVENT SHALL MuxLab BE LIABLE TO YOU FOR ANY DAMAGES, INCLUDING ANY LOSS OF PROFITS, LOST SAVINGS, OR OTHER INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OF OR INABILITY TO USE THIS PRODUCT, EVEN IF MUXLAB OR AN AUTHORIZED MuxLab DEALER HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES; NOR WILL MUXLAB BE LIABLE FOR ANY CLAIM BY ANY OTHER PARTY. SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES FOR CONSUMER PRODUCTS, SO THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY ALSO HAVE OTHER RIGHTS WHICH MAY VARY FROM STATE TO STATE.

Warranty Periods

Any product found to be defective within three (3) months of invoice, including one (1) month shelf life, may be returned for replacement by a new unit or a satisfactory repair within one (1) month of receiving any returned product. The customer must provide MuxLab with the serial number and proof of purchase of the defective unit being returned. All R.M.A.'s issued are subject to inspection by MuxLab, and will be returned to customer if not properly package – units must be returned in original container or equivalent. MuxLab will not accept any such product for repair without an authorization for its Technical Support department and without a return authorization number issued by MuxLab Customer Service department. For credit & replace R.M.A., customer will be liable to pay replacement invoice if defective products are not returned.
Product more than six months old, including shelf life.

The defective unit must be returned prepaid to MuxLab and then the unit will be repaired or if repair is not possible, replaced by an equivalent unit and returned to the customer within one (1) month of receiving any returned product. There is no charge for repair (parts and labor) during the full warranty period.

Items Defective and not under Warranty

For products which are no longer under warranty the policy is repair and return. An amount of 25% of the products published list price at the time of purchase will be charged. Customer must issue a purchase order to cover the cost of repair.
Each unit will be returned to the customer within one (1) month from receipt of the unit by MuxLab. The defective unit must be returned prepaid to MuxLab. The repaired unit will be returned to the customer FOB MuxLab. The repaired unit has a 90 day warranty.

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