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M2M Management System Release Version: 1.1

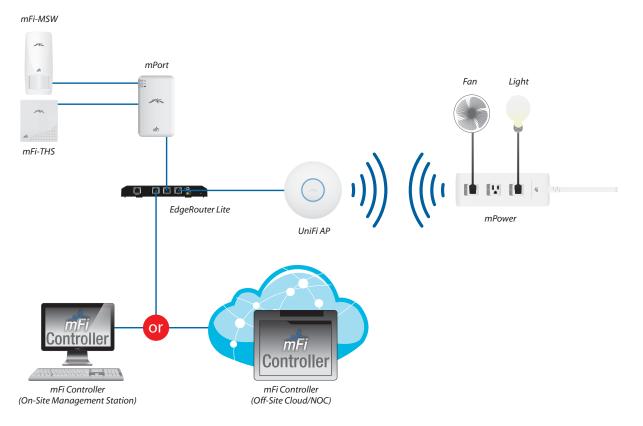
User Guide

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Chapter 1: System Setup

mFi System Overview

mFi[™] is a M2M management software solution from Ubiquiti Networks, Inc. that is designed to work with Ubiquiti's mFi product line. The software interface design is based on the popular and easy to use UniFi[™] software interface.

The *mFi Example Diagram* above illustrates an example of an mFi network.

The *mFi Controller* is connected to a router (in the example the EdgeRouter Lite is used but not required). The router is connected via Ethernet to the *mPort* (the *mPort* can alternatively be connected wirelessly to a Wi-Fi Access Point). The *mPort* has a motion sensor (*mFi-MSW*) and temperature sensor (*mFi-THS*) connected using RJ45 cabling.

The router is connected to a Wi-Fi access point, which in this example is the *UniFi AP* (recommended, but not required). The *UniFi AP* is connected wirelessly to the *mPower* power strip which is controlling a fan and a light.

The *mFi Controller* software allows you to create rules that trigger actions based on data from your mFi sensors. Using the example network above, a rule could be created to turn the light on when motion is detected by the *mFi-MSW*. Another rule could power on the fan when a temperature is detected above a specified level by the *mFi-THS*.

mFi Controller

The mFi Controller software allows you to monitor and manage your mPort, mPower, mSensor, and third party devices from your web browser.

The mFi Controller software can run on a computer that meets the following minimum requirements:

- Microsoft Windows 7, Windows Vista, Windows XP, Mac OS X, or Ubuntu Linux version 11.04. 64-Bit Operating System Recommended (32-Bit only supports 2 GB Database)
- 2 GB RAM is highly recommended
- Java Runtime Environment 1.6 (1.6.0_26 or above recommended)

The mFi Controller requires a web browser for configuration with the following requirements:

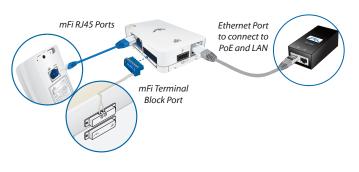
- Web browser: Mozilla Firefox, Google Chrome, or Microsoft Internet Explorer 8 (or above)
- FlashPlayer 10

mFi Hardware

The Ubiquiti Networks mFi platform has multiple solutions for connecting devices to the mFi Controller.

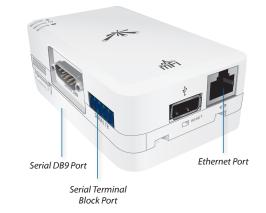
mPort

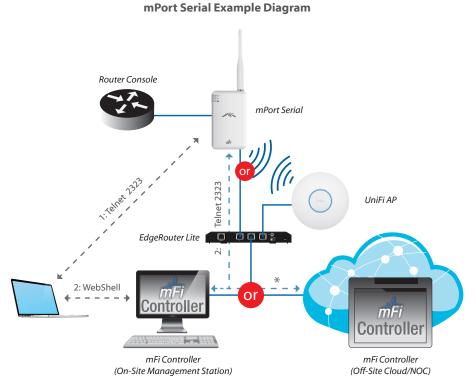
The mPort has two mFi RJ45 connectors and a terminal block connector. It has built-in Wi-Fi and Ethernet to connect to the IP network.



mPort Serial

The mPort Serial features RS232/422/485 serial connectivity through a standard DB9 serial port or a terminal block connector. It has built-in Wi-Fi and Ethernet to connect to the IP network.





* Need port 2323 open if the cloud is outside a firewall

mPower

mPower is a mFi Power Strip with independent, switchable AC ports, and energy monitoring. It has built-in Wi-Fi to connect to the IP network.



mSensors

Ubiquiti Networks offers a variety of sensors to connect to the mPort and your mFi network. These sensors connect to the mPort using a standard RJ45 cable, except for the mFi-DS, which connects using a terminal block connector.







Ceiling Mount Motion Sensor Motion Sensor mFI-MSC

Wall Mount Temperature Sensor mFi-MSW mFi-THS

Current Sensor Door Sensor mFi-DS

mFi-CS

Hardware Installation

Follow the directions in the Quick Start Guide that accompanied your Ubiquiti Networks mFi product.

For third party products, refer to any documentation you may have for the product. You may also want to check our mFi user forum at forum.ubnt.com.

For pinout information, refer to "Pinouts" on page 33.

Software Download and Installation

The mFi Controller software is installed just once when you initially create a mFi network. Devices can be added at any time through the controller interface but you do not need to go through the software installation process every time you add another mFi device.

The mFi Controller software can be downloaded from the Ubiquiti Networks website.

- 1. Go to downloads.ubnt.com/mfi
- 2. Mac users should download mFi.dmg and Windows users should download mFi-installer.exe.
- 3. Follow the instructions for your computer type.

Mac Users

1. Click the **Install** icon.



Click Continue and follow the on-screen instructions to install the software.



3. Go to **Go** > **Applications** and double-click the **mFi** icon.



Proceed to "Configuring the mFi Controller Software" on page 4.

mFi[™] User Guide

PC Users

- 1. Launch **mFi-installer.exe**.
- 2. Click Install.



3. If your computer doesn't have Java 1.6 or above installed, you will be prompted to install it. Click **Install** to continue.

a Setup - Welcome				♦ Sun
juvu	Welcome	e to Java"		
Java provides safe a From business solut yi		utilities and e	ntertainment, J	
Note: No persona Click here	l information is for more infor			
Click Install to a	accept the licen	nse agreeme	nt and install Jr	wa now.
Change destination folder			Cancel	Install >

4. Ensure the *Start mFi Controller after installation* option is checked and click **Finish**.





Note: The mFi Controller software can also be launched from **Start** > **All Programs**.

Ubiquiti AirVision NVR	
Ubiquiti mFi	
😝 Uninstall mFi 🗟	
퉬 Ubiquiti Networks	*
4 Back	
Search programs and files	P

Configuring the mFi Controller Software

1. The mFi Controller software startup will begin. Click Launch a Browser to Manage Network.

mFi Controller	
1.0.2	mFi
Copyright © 2005-2012 Ubiquiti Networks In	c All Rights Reserved.
SmFi Controller (1.0.2) started.	Hide
Launch a Browser to I	

2. The *mFi Configuration Wizard* will appear the first time you launch the mFi Controller software. On the *Welcome* screen, select your language and country. Click **Next**.

Thank you for purchasing a Ubiquiti mFi solu minutes.	tion. You will be able to set up your	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
		system in a few
First, please select the language of your pre	ference	
English	*	
Select your country		
United States	*	
		Next
		_

 Any devices that have already been discovered at this point. Select the device(s) that you want to configure. The **Refresh** button can be used to refresh the list of devices. Click **Next** to continue.



Note: Devices that you have already connected to your DHCP enabled network will appear here, unless already managed by another mFi Controller. Once the mFi Controller software is installed, you can add devices to mFi at any time. Devices can be added later. It is not necessary to install all devices during software installation.

we	come	discover	password	finish
Please	select the devices you	u'd like to config.		
1	MAC Address	IP Address	Version	Uptime
V	00:27:22:6e:e9:21	192.168.25.251	master.719	43m 8s
1	00:27:22:7c:10:b6	192.168.25.231	master.719	1m 6s
efresh				Back Next

4. Enter an administrator name in the *Admin Name* field. Enter a password in the *Password* and *Confirm* fields. Click **Next**.

mFi			
welcome	discover	password	finish
Please enter an administrato Admin Name Password Confirm	r name and passwor	d for mFi Controller access.	
			Back Next

5. Click **Finish** to confirm your settings.



6. A login screen will appear for the mFi Controller management interface. Enter the *Admin Name* and *Password* that you created and click **Login**.



Methods of Adoption

Devices that were not found or connected during the mFi Controller software configuration can be added afterwards. The mPort and mPort Serial can be connected via Ethernet or Wi-Fi. The mPower must be configured via Wi-Fi.

Devices that are not on the same Layer 2 network as the mFi Controller and devices being added via Wi-Fi must be added through the Configuration Portal of the device. Refer to <u>"Adopting the mPort, mPort Serial, or mPower via the Device's Configuration Portal" on page 6.</u>

Adopting the mPort or mPort Serial via Layer 2 Ethernet

If the mPort or mPort Serial that you want to add to an mFi network is connected to the same layer 2 network as the mFi Controller, perform the following steps to add it:

1. Connect an Ethernet cable to the Ethernet port.



2. Connect the other end of the Ethernet cable to the Ethernet port labeled **POE** on the *PoE Adapter*.



3. Connect an Ethernet cable from your LAN to the Ethernet port labeled **LAN** on the *PoE Adapter*.



4. Connect the power cord to the power port on the *PoE Adapter*. Connect the other end of the power cord to a power outlet. The Power LED should light up.



5. Go to the mFi Controller interface and click on the MAC address of the device listed under pending.



6. Click the **Adopt** button.



7. The device will appear in the left panel. Click the **x** in the upper right to close the *Details* window.



Adopting the mPort, mPort Serial, or mPower via the Device's Configuration Portal

The *Device Configuration Portal* is embedded in the hardware. It can be accessed with a wired Ethernet or wireless connection.

Wired

To adopt the mPort or mPort Serial by a mFi Controller that is not located on the same layer 2 network, you must enter the IP address and login information of the mFi Controller in the *Device Configuration Portal*. To do so, performing the following steps:

- 1. Make sure that your host machine is connected directly to the mPort or mPort Serial via Ethernet.
- 2. Configure the Ethernet adapter on your host system with a static IP address on the 192.168.1.x subnet.
- Launch your web browser and type http://192.168.1.20 in the address field. Press enter (PC) or return (Mac).



4. Enter your network information:

Please select a network - rescan	
miFi Controller Address:	
User Name: Password:	
(Save Settings)	

- a. Enter the mFi Controller address.
- b. Enter the User Name.
- c. Enter the Password.
- d. Click Save Settings.

Wireless

To configure the mPower, you must connect wirelessly to the SSID of the device. The devices have a default SSID (wireless network name) labeled *mFi* followed by the last six characters of the MAC address. To access the SSID, perform the following steps for your specific computer operating system:

Windows

1. Go to Connect to Network.

- Windows 7 Right-click the Network 🔚 icon.
- Windows Vista Go to Start > Connect To.
- Windows XP Right-click the Wireless Network 2 icon in the System Tray (lower right corner of the screen). Click View Available Wireless Networks.
- 2. Select the wireless network (SSID) that begins with *mFi* and then click **Connect**. Go to *Accessing the Configuration Portal* after the Mac instructions.

Mac

- 1. Click the *AirPort* icon in the menu bar (top left side of the screen).
- 2. Select the wireless network (SSID) that begins with *mFi*. Once connected, the *AirPort* $\widehat{\neg}$ icon will change from gray to solid black.

Accessing the Configuration Portal

1. Launch your web browser. Type **config.mfi** in the address field. Press **enter** (PC) or **return** (Mac).

00		
	🕂 🛛 🕙 config.mfi	

2. The *Configuration Portal* will appear. Select the wireless network name (SSID) of your existing wireless network from the drop-down list. To refresh the list, click *rescan*.

mFi	mPower
Please select a network - rescan	
mFI Controller Address: User Name:	
Password:	
(save settings)	

3. Enter your network information:

mFi	mPower	
Please select a network - rescan UBNT-OC		
WPA Authentication:	РК	
WPA Preshared Key:		
	Show	
mFi Controller Address:	192.168.25.161	
User Name:	ubnt	
Password:		
(Save Settings)		

- a. Enter your Wi-Fi security credentials. The options that appear are based on the encryption method used on your Wi-Fi network.
- b. Enter the mFi Controller address.
- c. Enter the User Name.
- d. Enter the Password.
- e. Click Save Settings.
- 4. A screen will appear with information about checking the device for connection status. Verify the *Status* LED is blue. It may take a few moments.

mFi	mPower	
Check device for connection sta	tus.	
Blue is solid when connecte	d to mFi	
When blinking, WIFI is connect and the device is attempting to connect to the mFi controller.	ed Ø	
Yellow blinks when connectin	g to WiFi	
Solid yellow indicates the mPc set to factory defaults. This can restored by holding the reset p	rt is de in.	

LED Activity	Description
Flashing Yellow	Connecting to WiFi. After a minute or so, if it fails to connect it will revert back to captive portal mode (solid yellow)
Flashing Blue	Attempting to connect to server (once successfully connected to WiFi, it will stay in this state until it connects successfully to the server). If after 5 minutes it has not connected, such as if the server information was wrong, the reset button can be pressed for 5 seconds to revert back to Captive Portal mode.
Solid Yellow	Captive Portal mode. mPower needs configured.

- 5. Reconnect to your existing wireless network by selecting the SSID from your wireless network utility.
- 6. The mPower device appears with the mPower () icon in the left panel under the *Drag on to Map* heading. Once you've customized your map, you can position the mPower device in the appropriate location.



Chapter 2: Using the mFi Software

The mFi software has a browser-based interface for easy configuration and management.

To access the interface, perform the following steps:

- Launch the mFi application if hasn't already been started. Windows users go to Start > All Programs > Ubiquiti mFi > mFi.
- 2. A window will open as the application is starting. Once it is ready to launch, you will be able to click the **Launch a Browser to access mFi** button.

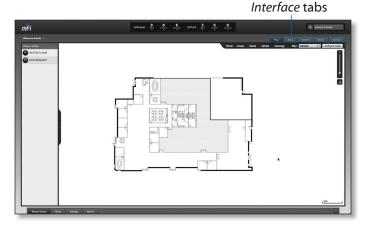
🕲 Ubiquiti MFi Controller	
MFi Controller	mFi
Copyright @ 2005-2012 Ubiquiti Networks Inc. All	Rights Reserved.
MFi Controller (1.0) started.	Hide
Launch a Browser to Manage Ne	twork

3. The login screen will appear. Enter the admin name and password in the appropriate fields and click **Login**.



Interface Tabs

The mFi software consists of five primary tabs.

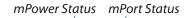


This User Guide covers each tab with a chapter. For details on a specific tab, refer to the appropriate chapter.

- <u>"Map Tab" on page 11</u>
- <u>"Data Tab" on page 16</u>
- <u>"Events Tab" on page 19</u>
- <u>"Rules Tab" on page 21</u>
- <u>"Devices Tab" on page 25</u>

Common Interface Options

The common interface options are accessible from all tabs in the mFi interface.





mPower Status

mPower is a power strip with energy monitoring and management capabilities when used with the mFi Controller software. Power can be enabled or disabled for each power outlet on the strip and energy costs can be monitored. Clicking on a mPower in any of the lists will display the mPower's *Configuration* tab.

- **active** Drop-down clickable list of all of active mPower units.
- **inactive** Drop-down clickable list of all mPower units that were once active but are not currently active.
- **pending** Drop-down clickable list of pending mPower units. Pending devices have been discovered but have not yet been assigned to be managed by an mFi Controller. Select a device from this list, then click the **Adopt** button from the device's *Details* tab to manage it from this Controller.

mPort Status

mPorts are points of connection for your sensors, machines, and/or devices. The mPort supports mFi RJ45 and terminal block connections. The mPort Serial supports serial-based connections. Clicking on a mPort in any of the lists will display the mPort's *Configuration* tab.

- **active** Drop-down clickable list of all of the mPorts that are online.
- **inactive** Drop-down clickable list of all of the mPorts that were once active but are not currently active.
- **pending** Drop-down clickable list of pending mPorts. Pending devices have been discovered but have not yet been assigned to be managed by an mFi Controller. Select a device from this list, then click the **Adopt** button from the device's *Details* tab to manage it from this Controller.

Refresh





Choose an option from the *Refresh Rate* pull-down menu to change how often the screen is refreshed. Options include *Manually, Every 5 Seconds, Every 15 Seconds, Every 30 Seconds, Every Minute, Every 2 Minutes*, and *Every 5 Minutes*. By default, the screen is refreshed every 2 minutes. When you select *Manually*, the screen will only update when you click the **Refresh** button.

Recent Events



Recent Events, Alerts, Settings and Admin

Displays a list of recent device related events. Date/time, device, and the event trigger are displayed.

Search	Details link	Events slider
Recent Events Alerbs Settings	Admin	
Search		1 - 8 / 500
Dute/Time	Message	
2012/96/25 11:50:00	[Board Room emperature] (25.17) triggered Board Room Temperature	
2012/06/25 11:49:48	[Board Room Temperature] (25.17) triggered Board Room Temperature	
2012/06/25 11:49:36	[Board Room Temperature] (25.22) triggered Board Room Temperature	
2012/06/25 11.49/24	(Board Room Temperature) (25.17) triggered Board Room Temperature	
2012/06/25 11.49(13	[Board Room Temperature] (25.19) triggered Board Room Temperature	
2012/06/25 11:49:02	[Board Room Temperature] (25.15) triggered Board Room Temperature	
2012/06/25 11:48:50	(Board Room Temperature) (25.22) triggered Board Room Temperature	
2012/06/25 11.48/39	(Board Room Temperature) (25.24) triggered Board Room Temperature	

Search Allows you to search for specific text. Simply begin typing, there is no need to press enter. The results are filtered in real-time as soon as you type two or more characters.

Date/Time Displays the date and time that the event took place. The year/month/day and hour:minute:seconds are displayed.

Message Displays the device, triggering value, and event triggering information. Click the highlighted **Details** link to open the *Details* window.

Events Slider If there is more than one page of events for viewing, the *Events* slider will appear. Drag the slider to the page you wish to view or click the arrows on the side of the slider to go forward or backward page by page.

Alerts

Alerts displays a list of network management related notifications.

Search	Show Archived Archive All	1 - 8 / 475 +		
Date/Time	Message			Actions
2012/06/21 10:48:49	[00:27:22:7c:10:31] was disconnected			Archive
2012/06/21 10:23:33	[00:27:22:7c:10:31] was disconnected			Archive
2012/06/21 10:07:26	[00:27:22:7c:10:35] was discovered and waiting for adoption		Adopt	Archive
2012/06/21 10:06:33	[00:27:22:7c:10:23] was disconnected			Archive
2012/06/21 09:29:33	[Conference Room] was disconnected			Archive
2012/06/21 05:55:22	[00:27:22:6ex9:2e] was discovered and waiting for adoption		Adopt	Archive
2012/06/21 04:26:22	[00:27:22:7c:10:a6] was discovered and waiting for adoption		Adopt	Archive
2012/06/20 20:49:26	[Conference Room] was disconnected			Archive

Search Allows you to search for specific text. Simply begin typing, there is no need to press enter. The results are filtered in real-time as soon as you type two or more characters.

Show Archived Displays a list of all archived messages.

Archive All Archives all of the current messages.

Date/Time Displays the date and time that the event took place. The year/month/day and hour:minute:seconds are displayed.

Message Details of the alert are listed here. Some messages contain clickable links which are highlighted in blue. These links will open the device details window.

Actions

- Archive Click this button to archive the alert message to the left of the button.
- Adopt Click this button to adopt a pending mPort.

Events Slider If there is more than one page of events for viewing, the *Events* slider will appear. Drag the slider to the page you wish to view or click the arrows on the side of the slider to go forward or backward page by page.

Settings contains System and Admin Settings.

Statem States and and settings Administrations	

System

ystem Configuration		
	System Name ubri-ace	
	Country United States 1	
	TimoBana Paulos Nandard Torre (-8.00) das	
	Temperature Unit O Celuiu Sifatnosheit	
	Currency Symbol (op. 5)	
	Energy Cost	
ervices		
	Automatic Upprade 🔷 Automatically upprade firmware Metwork Discovery 🧭 Mains mill discoverable via UPmil	
	Mull/SMIP Server Server anto-providen Port 567	
	Damanic ediduction Passorit	

System Configuration

System Name mFi System name.

Country Select the country the product is being used in from the drop-down list.

Time Zone Select the appropriate time zone from the drop-down list.

Temperature Unit Select Celsius or Fahrenheit for temperature data.

Currency Symbol (eg \$) Enter the currency symbol to be used with the energy price.

Energy Price Enter a price per kWh to be used with mPower devices to calculate an estimate of power costs.

Note: The energy price is just a rough estimate. Many utilities have time-of-use billing, meaning the price varies through the day and/or prices that vary based on the overall amount of energy used in a month. Use an average number from a previous utility bill.

Services

Automatic Upgrade Option to enable automatic firmware upgrades.

Network Discovery Allows you to *Make mFi discoverable via UPnP* (Universal Plug and Play) over the network.

Remote Logging Option to *Enable Remote Syslog*. When enabled, you need to enter the server address and port number.

- Server The address of the Remote Syslog Server.
- **Port** The port used for the Remote Syslog Server. The default port is 514.

Mail/SMTP Server The Mail/SMTP Server settings are necessary to allow mFI to send out email notifications.

- Server Enter the SMTP (outgoing) mail server address.
- **Port** Enter the port used for communication with the SMTP server.
- **Username** Enter the email username of the account that will be used to send email notifications.

• **Password** Enter the password associated with the username that will be used to send email notifications.

Apply Click Apply to save changes.

Admin Settings

Real Visio C Alsta Subaja Adean	
Settings > Admin Settings - Admin Preferences	
Admin Name	ada
Passeord	and a second
Confirm	
Language	tepte B
Apply	

Admin Name Displays the current admin name used to login. To change the admin name, simply enter a new name and click **Apply**.

Password A new password can be entered in this field. Be sure to enter the password again in the Confirm field and then click **Apply** to save your new password.

Confirm Used to confirm your new password.

Language Selects the language for use in the interface.

Apply Click Apply to save changes.

Admin

Recent Events	Alerts	Settings	Admin		
-Server Inform	ation			Version	162
Backup				Download	Redux Database
Restore				Branse	(Choose File)
-Support Info				Download	Dramioud Surgeon Infa

Server Information

Version The software version is displayed here. If there is an update, mFi will automatically download it and display it here.

Backup

Download Click **Backup Database** to download a backup of the data. You will have the option to select the time period of the data that you backup. Click **Download** to backup the mFi database for the selected time period.

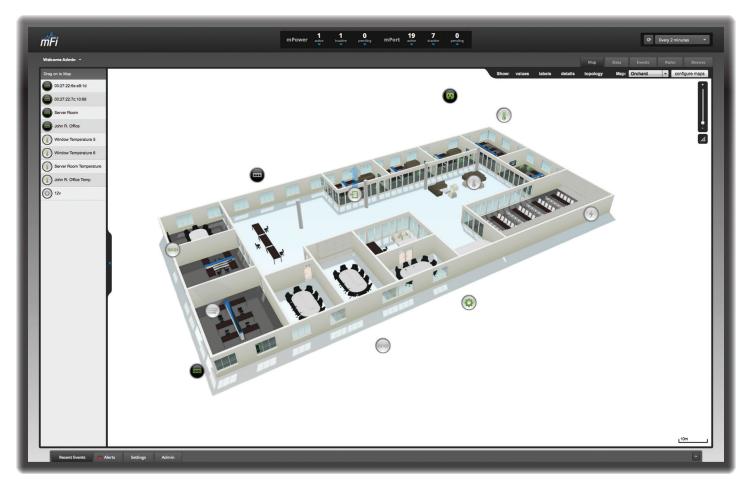


Restore

Browse Click **Choose File** to locate a previously saved backup configuration file to restore.

Support Info

Download Click **Download Support Info** to download a file to your computer with information about your configuration that can be emailed to our support team.



Chapter 3: Map Tab

The mFi Controller software allows you to upload custom map images of your location for a visual representation of your mFi device layout. When you initially launch mFi, a default sample map is displayed.



You can have multiple maps with device locations placed and stored separately for each map. This allows you to manage/monitor everything connected in your mFi network whether it is in a different room, floor, or building.

Adding a Map

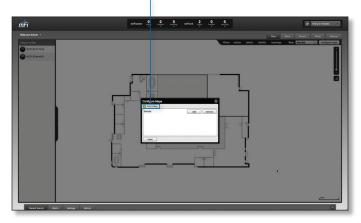
To add a custom map, you must first create the image. You can add an image you've created or photo that you've taken as a map image background. You can use an illustration, image editing, or blueprint application to create a map or take a photo of your location. Map files can be in .jpg, .gif, or .png file formats.

Once you've created the map, you can upload it to the mFi software by performing the following steps:

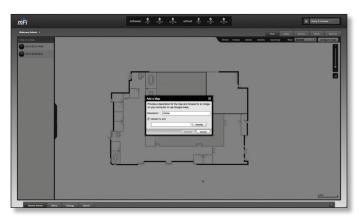
1. Click Configure Maps.

2. Click Add a Map.

Add a Map



3. Enter a map name in the *Description* field and click **Upload my own**. Click the **Browse** button to locate the file to use as a map (valid file formats are .jpg, .gif, and .png). Click **Continue**.



4. Click Close.



5. You can adjust the zoom using the slider on the right.

Zoom Slider Use to zoom the map detail in and out.



6. Drag *Device* (1), mPower (1), and *mPort* (1) icons from the list on the left to the appropriate location on the map. The icons will appear where you place them and remain linked to the map that you place them on until you remove them.



Repeat steps 1-6 to add additional rooms, floors, or buildings connected to your mFi network. After you've added all of the locations, you can switch between them using the *Map Selector*.



Device Icons

Device icons are placed on the map to show the location of your devices. Click and hold the icon to drag the *Device* to another location on the map.



Current This icon represents an electrical current sensor. Current sensors measure values in amps.



Door/Window This icon represents a door or window sensor. These sensors indicate whether a door or window is open or closed.



Generic This icon represents a generic device that doesn't fall into another category. It returns an on or off value.



Humidity This icon represents a humidity sensor. Humidity sensors provide a percentage value measurement.



Motion This icon represents a motion detection sensor. A visual representation of the motion detection field is displayed and can be edited on the map. When motion is detected, this field changes colors on the map.



Sensor Outlet This icon represents a power outlet on an mPower device. It returns an on or off value and displays watts used.



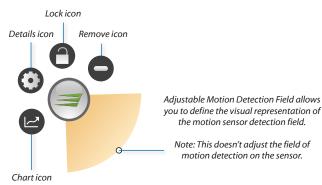
Serial-Based Device This icon represents a serial-based device such as a switch that is connected via a serial port.



Temperature This icon represents a temperature sensor. Temperature values can be displayed in degrees Celsius or Fahrenheit.

Click on the *Device* icon to reveal additional options. Click a blank area of the map to hide the additional options.

Motion Sensor



Serial Based Device

Sensor Outlet



Shell icon

Power icon — Turns on/off power. Green when powered.

Chart Displays a chart of color coded values representing low, average, and high values or event frequency based on the type of device. The time frame of the chart can be changed by clicking the letters in the upper right corner. See the chart below for values:

н	Displays data for the last hour.
D	Displays data for the last 24 hours.
W	Displays data for the last week.
М	Displays data for the last month.
Y	Displays data for the last year.
	Chart Time Frame Selections



Note: This option is not available for serial-based devices.

Shell Opens up a command line interface shell (only available for serial-based devices).



Note: If your mFi Controller is outside of a firewall, be sure that TCP port 2323 (inbound) is open on your firewall.



Power Toggles power off or on. Icon is green when powered on. (available only on Sensor Outlet icons and Generic device icons with output 5v, 12v, or 24v).

 \bigcirc

Details Brings up the *Device Details* window.

		Television
Details	Data Even	ts
		Device
	Name	Television @
	Model	Ubiquiti mFi-CS
	mPort	Conference Room
	Port	2
	Value	
	Reported At	2012/06/25 08:43:23
	ď3	Detach 9 Locate

The *Device Details* window includes the *Details*, *Data*, and *Events* tabs.

- **Details** Displays the Name, Model, mPort, and Port.
- Data Displays data from the last H|D|W|M|Y.
- Events Displays a searchable list of events. Event details such as the time, date, sensor, sensor type, the value, and the rule that triggered the event are displayed here.

Refer to <u>"Device Details" on page 27</u> for additional information.



Lock Locks the selected sensor to the current location on the map and disables the *Remove* icon functionality for this sensor while locked.



Remove Remove the sensor from the location on the map.

Motion Sensor Detection Field States



mPower Icons

mPower icons can be placed on the map to show the location of the mPower device. Click and hold the icon to drag the *mPower* icon to another location on the map.



mPower This icon represents a mPower device. It can be a mPower Mini, mPower, or mPower Pro outlet.

Click on the *mPower* icon to reveal additional options. Click a blank area of the map to hide the additional options.





Details Brings up the *mPower Details* window.

			Office	
Configuration	Deta	ils		
Outlet 1 Port is unuse	d ¥		+	•=
Outlet 2				
mPower Light	×	۰	+	•=
Outlet 3				
Floor Fan	*		+	•_

The *mPower Details* window contains two tabs.

- Configuration Displays the devices that are currently connected and allows you to add or change devices. You can also click to view details and detach the device.
- **Details** Displays the Name, Type, Last Contact, MAC Address, Model, Firmware, IP Address, and Uptime. There are also *Locate*, *Restart*, and *Remove* buttons.



Lock Locks the selected mPower to the current location on the map and disables the *Remove* icon functionality for this mPower while locked.



Remove Remove the mPower from the location on the map.

mPort Icons

mPort icons can be placed on the map to show the location of the mPort. Click and hold the icon to drag the *mPort* to another location on the map.



mPort This icon represents a mPort.



mPort-Serial This icon represents a mPort-S.

Click on the *mPort* icon to reveal additional options. Click a blank area of the map to hide the additional options.





Details Brings up the *mPort Details* window.

Con	figuration	Details				
		Sele	ct Devices			
1	Server Roor	n Temperatu	re (Ubiquiti mFi-THS)	*	۰	4
2	Port is ur	nused		*		4
3	Port is ur	nused		-	0	4

The *mPort Details* window contains two tabs.

- **Configuration** Displays the devices that are currently connected and allows you to add or change devices.
- **Details** Displays the Name, Last Contact, Last Alert, Last Event, MAC Address, Model, Firmware, IP Address, and Uptime.



Lock Locks the selected mPort to the current location on the map and disables the *Remove* icon functionality for this mPort while locked.



Remove Remove the mPort from the location on the map.

Map Display Options

Show: Select to show values, labels, details and topology. The following are the options available:

- Values Displays real-time values of *Device* data. Buttons display the current state of the device.
- Labels Displays the name of the Device or mPort.
- **Details** Displays details for the *Device* or *mPort*.
- **Topology** Displays which sensors are connected to which *mPorts*.

Map: If multiple maps have been uploaded, you can select which map you want to view using this option.

Configure Maps Use this option to add maps, edit the name of an existing map, or remove a map from the list.

Zoom Slider Use to zoom the map detail in and out.



Set Map Scale Use this option to define the scale of the map. You will draw a line and define the distance that the line represents.

Setting the Map Scale

1. Click the **Set Map Scale** dutton.

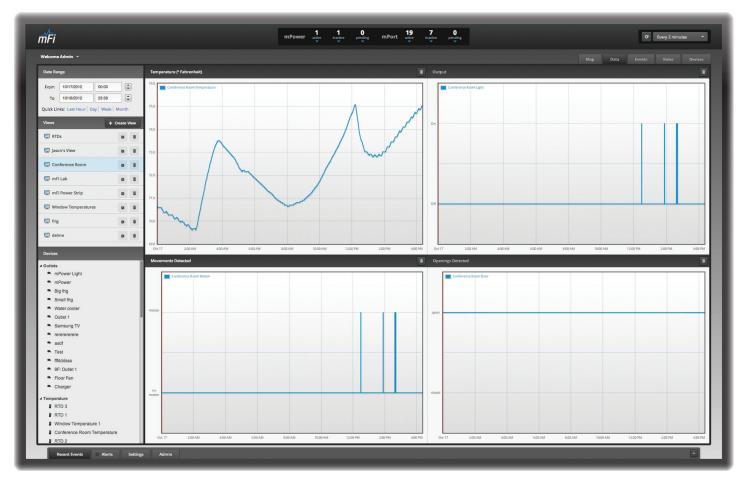


 Click and hold to draw a line in the area that you want to use to set the scale of the map. If you need to redraw the line, just click and hold again to draw a new line. Once you're happy with the line, click Next.



3. Enter the distance that the line represents in the *Distance*: field. The distance is specified in meters by default but you can switch to feet using the drop-down selection menu on the right. Click **Confirm**.

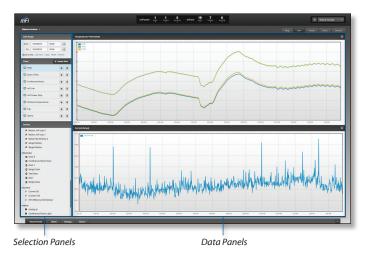




Chapter 4: Data Tab

The *Data* tab allows you to view device data. You can set a date range for data results, create customized views, and compare data.

On the left side of the screen there are three selection panels: *Date Range, Views*, and *Devices*. On the right side of the screen, data is displayed based on the selections made in the selection panels.



Date Range

Date Ran	ge							
From	06/2	27/201	12		00:59			
То	0		Jui	ne 20	12		0	-
Quick Lin	Su	Мо	Ти	We	Th	Fr	Sa	
						1	2	_
	3	4	5	6	7	8	9	
	10	11	12	13	14	15	16	
	17	18	19	20	21	22	23	
	24	25	26	27	28	29	30	

- From Click in the *From* date field and a calendar will appear that will allow you to select a beginning date. Click the time field and either manually enter a time or use the arrows to select an hour.
- To Click in the *To* date field and a calendar will appear that will allow you to select an ending date. Click the time field and either manually enter a time or use the arrows to select an hour.

Quick Links Quick links display the data values for the selected time period:

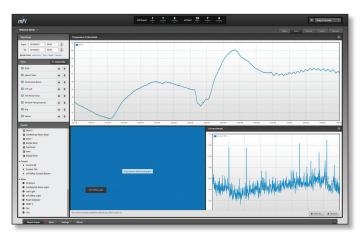
- Last Hour Displays data for the last hour.
- Day Displays data for the last day.
- Week Displays data for the last week.
- Month Displays data for the last month.

Views

Custom views can be created, saved, and selected for viewing here.



Create View Click to create a new view. Drag and drop devices from the selection panel on the left side of the screen to the data panel on the right side of the screen to display data from multiple devices in one view. Sizing and positioning are determined by where you drop the device data in the view. You can drag and drop similar devices into the same data grid to compare values.



Save As... Click to save a new view. You will be prompted to enter a name for the new view. Enter the name and click **Save**. Click *Cancel* if you don't wish to save the view.

Discard Click if you do not wish to save the new view.

Renaming or Deleting a View

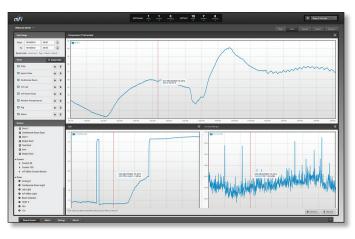
To rename or delete a view, click the view name to select the view. The edit and delete icons will appear to the right of the view name.



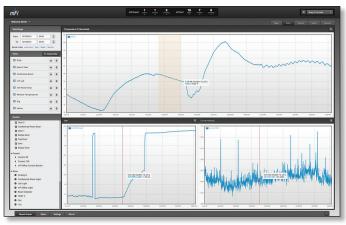
- Config Click the Config icon and the Rename View window will open. Change the name and click Save. Click Cancel if you don't wish to rename the view.
- Remove Click the *Remove* icon next to the view name. There is no confirmation, so be sure you want to delete the view.

Data Panel Mouseover Functionality

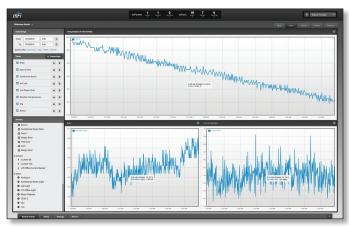
Use the mouse to hover over the data timeline and view specific details.



Click and highlight specific areas of the timeline to zoom in on a specific section of the timeline. A magnifying glass icon will appear and the timeframe you select will be highlighted with a beige color. After making your selection, all of the devices in the view will zoom to the timeframe you specify. Use the Quick Links under the Data Range selection if you need to zoom back out.

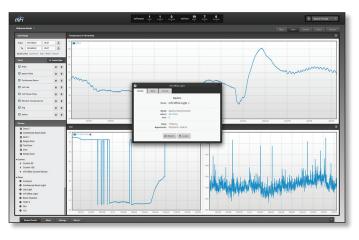


Selecting the zoom area



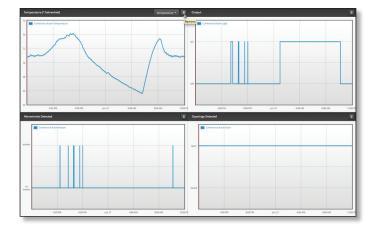
Detailed data from the zoom selection

Device names can be clicked on in the data panel to open the *Device Details* window.



For information on the Device Details window, go to **"Device Details" on page 27**.

If you wish to remove a device from the view, click the remove icon to the far right of the device name. If you wish to save the modified view, click **Save**. If you wish to save it as a new view, click **Save As..**. If you want to revert to the previous view setting, click **Discard**.

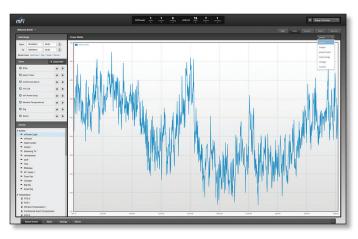


Devices

Displays a list of the available devices categorized by type. Click on a specific device to view the data for the device in the data panel. When creating custom views, devices are dragged from this selection panel to the data panel.

⊿ Outle	ots
40,	Conference Room Outlet Light
4 h	testing
⊿ Temp	perature
8	Window Temperature 5
∦ ⊿ Motio	Window Temperature 6
=	Motion: mFi Lab 2
=	Motion: mFi Lab 1
⊿ Perin	neter
Ð	Door 2
⊿ Curre	ent
+	Current 100
+	Current 30
⊿ Othe	r
0	Analog In

Different data sets can be selected for Outlets in the Data Panel from the upper right corner. Select the type of data to display from the drop-down menu.



- **Power** Displays a chart of the power being used by the device (in Watts) during the selected time frame.
- **Output** Displays a chart showing the on and off state during the selected time frame.
- **Power Factor** Displays a chart of efficiency during the selected time frame. A value of 1 is very good.
- **Total Energy** Displays a chart of the accumulation of energy during the selected time frame.
- Voltage Displays a chart of the voltage during the selected time frame. Device is off when 0 volts.
- **Current** Displays a chart of the amps flowing through the device during the selected time frame.

Nelcome Admin 🔫															
Velcome Admin 👻											Мар	Data	Events	Rules	Devi
Filter	Events (10/16/2012 16:19 - 10/17/2012 16:1	9)												▲ Hide Dis	ributio
Clear Date Range	Temporal Distribution												Motion By V Motion By V Motion by Window 2 8%		
From 10/16/2012 16:19 To 10/17/2012 16:19 Quick Links: Last Hour Day Week Month	4														
Devices	1													Conference Ro Motion 83%	am
✓ a Temperature ✓ RTD 3 ✓ RTD 1	5.00 PM 7.00 PM	9:00 PM 11:	30 PM 1:00 AM	3:00 AM	5:00 AM	7:00 AM		9:00 AM 1	11:00 AM	1:00 PM	3:00 PM				
Window Temperature 1 Conference Room Temperature	Time	▼ Device			٥	Туре	٥	Value	≎ Rule						
RTD 2	2012/10/17 14:41:01		nce Room Motion			motion		motion		e Room Motion					
Test THS 2	2012/10/17 14:40:18		nce Room Motion			motion		motion		e Room Motion					
Window Temperature 5	2012/10/17 14:40:05		nce Room Motion			motion		motion		e Room Motion					
Server Room Temperature 6	2012/10/17 14:38:46		nce Room Motion							e Room Motion					
John R. Office Temp						motion		motion							
Window Temperature 2	2012/10/17 14:36:55		nce Room Motion			motion		motion		on in Building Af	ter Hours				
Test THS	2012/10/17 14:36:55		nce Room Motion			motion		motion	Conference	e Room Motion					
Window Temperature 3	2012/10/17 13:53:07	Confere	nce Room Motion			motion		motion	NEW: Moti	on in Building Af	ter Hours				
Window Temperature 4 MID 4	2012/10/17 13:53:07	Confere	nce Room Motion			motion		motion	Conference	e Room Motion					
Sergio Temperature	2012/10/17 12:28:59	Confere	nce Room Motion			motion		motion	NEW: Moti	on in Building Af	ter Hours				
Sergio's RTD	2012/10/17 12:28:59	Confere	nce Room Motion			motion		motion	Conference	e Room Motion					
Window Temperature 2	2012/10/16 20:29:16	Motion	By Window 3			motion		motion	NEW: Moti	on in Building Af	ter Hours				
A Motion	2012/10/16 19:10:29		by Window 2			motion		motion		on in Building Af					
© Door 2 ♥ Conference Room Door ♥ Door 1 ♥ Sergio Door ♥ door ♥ Sergio Door ♥ Sergio Door															

Chapter 5: Events Tab

The *Events* tab displays event information that can be filtered by search strings, date ranges, or devices. It also displays distribution information in visual charts.

Filter



Filter Allows you to filter data using specific search criteria. Any text that is entered is used as real-time search criteria and anything that doesn't match the entered characters will be removed from the view. Click **Clear** or delete the search string to return to a normal view.

Date Range



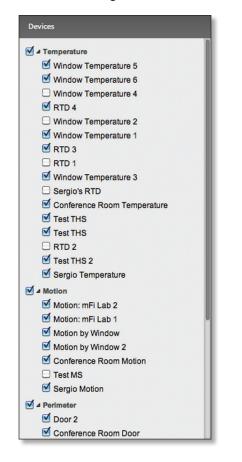
- From Click in the *From* date field and a calendar will appear that will allow you to select a beginning date. Click the time field and either manually enter a time or use the arrows to select an hour.
- To Click in the *To* date field and a calendar will appear that will allow you to select an ending date. Click the time field and either manually enter a time or use the arrows to select an hour.

Quick Links Quick links display the data values for the selected time period:

- Last Hour Displays data for the last hour.
- Day Displays data for the last day.
- Week Displays data for the last week.
- Month Displays data for the last month.

Devices

Allows you to control which devices are included in the event data that is displayed. Select or deselect individual devices or entire device categories.



Events

Show/Hide Distribution Toggles between showing or hiding the distribution graphs.

Temporal Distribution

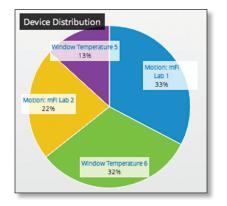
Tempora	I Distribution											
200												
150												
100												
50										_		
0												
	9:00 AM	11:00 PM	1:00 PM	3.00 AM	5:00 PM	7:00 AM	9:00 PM	11:00 AM	1:00 AM	3:00 PM	5:00 AM	7:00 PM

Temporal Distribution displays a bar graph representation of events generated during a specific timeframe. By default, 2 hour increments during a 24 hour period are displayed.

Click on any bar to display the specific events generated during the selected timeframe. The *Device Distribution* graph will also update to reflect the device distribution during this timeframe. Click on the area outside of the graph to return to the overview.

Event data can be filtered by using the *Filters, Date Range,* and *Devices* selections. Clicking on a *Quick Link* will change the timeframe reference of the graphs to the *Last Hour, Day, Week,* or *Month.*

Device Distribution



Device Distribution displays a pie chart representation of events generated by specific devices during a specific timeframe.

If specific timeframes are selected on the *Temporal Distribution* graph, the timeframe will also be applied to the *Device Distribution* graph.

The *Device Distribution* graph also updates when event data is filtered using the *Filters*, *Date Range*, and *Devices* selections or if a *Quick Link* is selected.



Placing the mouse over an event will display the current location of the device on the map, a 24 hour snapshot of values, when the event occurred, the alarmed value, and the last reported value.

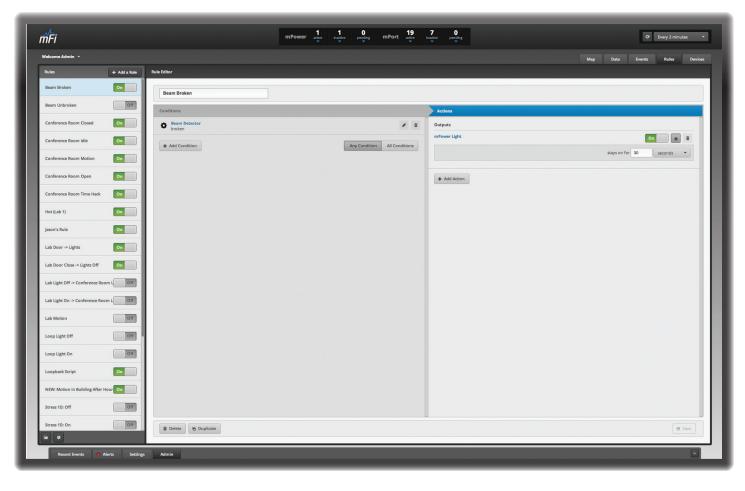
Time Displays the date and time that an event occurred. Click on the *Time* header to toggle the display order between oldest and most recent events.

Device Displays the name of the device that generated the event. Click on the *Device* header to toggle the alphabetical display order from a-z to z-a.

Type Displays the type of event. Click on the *Type* header to toggle the alphabetical display order from a-z to z-a.

Value Displays the value that triggered the event. Click on the *Value* header to toggle the numerical and alphabetical display order from 0-9 to 9-0 and a-z to z-a.

Rule Displays the name of the rule that triggered the event. Click on the *Rule Name* header to toggle the alphabetical display order from a-z to z-a.

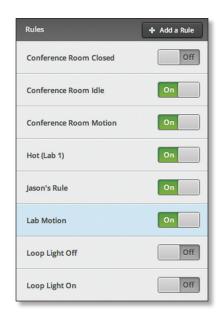


Chapter 6: Rules Tab

The *Rules* tab is where you can define conditions that trigger actions and what actions occur once conditions are met.

n.in		Rufe Editor			Map Data Events Rules Devices
Bears Brüten		Beam Bryles			
Beam Unibrahen	Cer	Conditions		Actives	
Conference Room Closed	-	O Brown Switter	× 1	Outputs	
Conference Room Idle	-	+ Add Candition	Any Condition All Conditions	miteaur Light	• • •
Conference Room Motion					skays on for 30 seconds *
Conference Room Open	-			+ Add Anton	
Conference Room Time Hack					
Het Eab 10	-				
jason's Rule					
Lab Door -> Lights					
Lab Door Doos > Lights Diff	•				
Lab Light Off -> Conference Re					
Lab Light On > Conference Re					
Lab Motion	Cer				
Loop Light Off	Off				
Loop Light On	64				
Leophack Stript					
NEW Metion in Building Aller	~				
Stress 10: 0#	Cer				
Stress 10: On	CHI.	B Deleter & Duplicate		8	8 fax
• •					e un
Record Events	Alaria Sating	n Alein			٦

Rules



Click on a rule to display the conditions and actions in the *Rule Editor* or click *Add a Rule* to define a new rule.

Add a Rule Click to create a rule.

Creating Rules

Rules trigger actions when a specified condition or conditions occur. For example, a rule might be created to turn on a light when a door is opened. The door opening is the condition and the action that is triggered is the light turning on. Note that if the light is manually turned off while the door is open, the rule will not trigger again until the door has been closed and re-opened.

				Pules Devices
NAN H ANGAN	Rule Silter			
Bears Brahan	Please onlar new rule name			
Baan Unbruhan	Conditions		Actions	
Conference Boom Closed	Server 1	1	Please select a sensor and set conditions and this section will update according	
Conference Boom Ville	Schedule Consistent Set			
Conference Room Motion	• Cancel • Add			
Conference Room Open				
Conference Room Time Hask				
Het Sale 1)				
jeon's Rule				
Leb Dear Lights 💽				
Lalo Door Close + Lights Off				
Lab Light DIT > Cardwance Room 1				
Lab Light Dr Conference Room L				
Lab Motion				
Less Light Off				
Leop Light Do				
Leoptack Script				
NDM Medan in Building After Hour				
Stress 1D: Off				
Seres 10: 0e	B Deves & Duplices			B Int

- 1. Enter the name for the rule in the field with the text *Please enter new rule name.*
- 2. Click Add Condition.
- 3. Select a Sensor, Schedule, or Condition Set.
- Sensor Select this if you want an action to occur when a sensor detects or is in a specific state.

Neume Admin 🔹							freeds Roles Do	
***	+ Ant + Bale Solitor							
Beart Braken	Com Please order to	w rule name						
Bears Unitralian (Conditions			-	Actions	_		÷
Conference Room Closed	Con Server				Please select a sensor and set conditions and this sector	en mill update assendingly.		Т
Conference Room Idle	• • •							
Conference Room Mation	(M							
Conference Room Open	•							
Conference Room Time Hask	•							
Heldah D	•							
jean's Rule								
Lub Door - Lights								
Lale Door Close + Lights DV	•							
Lab Light DIT > Cardwara Room (
Lab Light Dn -> Conference Room L								
Lab Motion	COM .							
Loop Light Off								
Loop Light On [000							
Leophack Script	•							
NDM: Motion in Building After Hour	•							
Stress 1D: Off								
Stress 10: On	OH B Drive B						B Save	-

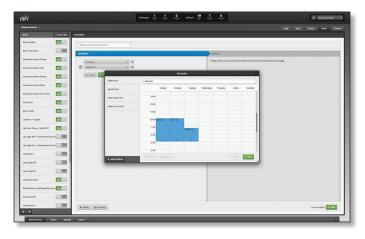
- a. Select a device from the drop-down list.
- b. Once a device is selected, applicable states for the device are made available. For example, a condition for a temperature sensor could be defined when the temperature is above or is below a certain temperature. Select a state.
- c. Click Add.

- Schedule The Schedule can be used for two things:
 - Scheduling an Action If a schedule is the only condition of a rule, then the action will take place at the scheduled start time. If an output is turned on, it will turn off when the schedule period ends.



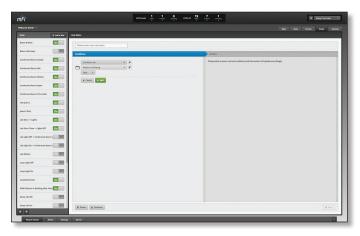
Note: If a scheduled time is used as a condition and an output timer with a shorter duration is used on the action, then the output will shut off after the time of the output timer has expired.

- Setting Activity Times If a rule contains conditions with a scheduled time (or multiple) and one or more sensor conditions or condition sets, then the rule is only active during the scheduled time(s). For example, if you were to create a schedule called "Active", and create a rule with the Active schedule, motion sensors, and All Conditions selected, then the rule is only triggered if motion is detected during the hours defined in the Active schedule.

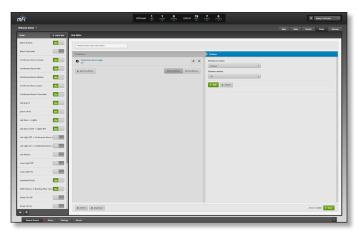


- a. Click the + symbol next to Schedule.
- b. Enter a name for the schedule.
- c. Click to highlight times for each day on the schedule.
- d. Click Save.
- **Condition Set** A condition set can contain sensor states, scheduled times, or other condition sets.

The use of Conditions sets and the *Any Condition/All Conditions* selector allows for arbitrarily complex logic conditions to be created (similar to nested and/or logic).



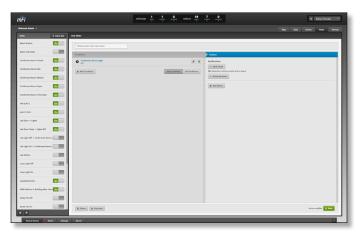
- 4. (Optional) To add additional conditions, click **Add Condition**.
- 5. Select whether Any Condition or All Conditions must be met to trigger the action.
 - Any Condition Action is triggered if any of the defined conditions occur.
 - All Conditions All conditions listed in the rule must occur before the action is triggered.
- 6. Click Add Action.
- 7. Choose an Action:
- Script A script is a block of text that is sent out to the serial port of the corresponding mPort Serial. This option allows you to run a script.



- a. Choose a device from the drop-down list.
- b. Choose a script from the drop-down list or click the *New Script* button. If you select *New Script*, the *New Script* window will appear. Enter a name for the script, the script details, and click **Save**.
- c. Click Add.
- **Output** Allows you to set the state of a device.

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denne Admin 🔹						Map Data Beerts	Rafes Devic
Ma .	+ A44+344 844	1diar					_
Beam Brahen	•	Please enter new rule neme					
Beam Unbraiken	01	Conditions		Antine			
Conference Room Clesed		O Conference Room Light	2.7	Cheese an action			
Conference Room Idle				Output	-		
		& Add Condition	Any Carolitian All Conditions	Choose a device			
Conference Room Mation	-			Q ₂	-		
Conference Room Open	<u>•</u>			+ Add IX Canol			
Conference Boorn Time Hack							
Het Sub 1)							
Jacon's Rule							
Lab Dear -> Lights							
Lab Deer Close + Lights Off							
Lab Light Diff > Carderence Ree							
Lab Light De> Conference Roo							
Lab Motion	IOT						
Loop Light Off	00						
Loop Light On							
Leoplank Script							
NDM Motion in Building After 1	~						
Stress 10: Off	01						
Stress 10: On							_
		B Deleter & Duplinate				Actor and	ifed in Sec.

- b. Click Add.
- c. Select whether you want the device **On** or **Off**.
- d. Click the gear icon if you want to define how long the device should stay on. A field will appear allowing you to enter a number. Select *Seconds, Minutes,* or *Hours* from the drop-down.
- Notification Allows you send an email notification, event, or system alert when rule conditions are met.



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Note: In order for email notifications to work properly, Mail/SMTP server settings must be configured on the *Settings* > *System* page. Refer to <u>"Services" on page 10</u> for additional details.

- a. Select Notification and click Add.
- b. Select Send Email, Generate Event or both options:
 - Send Email Click to send an email notification when rule conditions are met. Enter emails in the *Add Email(s)* field and separate additional emails with a space. Enter the amount of time to wait before an action triggers another email by entering a time in minutes in the *Hold additional email alerts for this event for* <u>minute(s)</u> field.
 - Note: To send text messages, enter the address of the Mail-to-SMS Gateway. For example, for AT&T wireless, you would enter **areacodephonenumber@txt.att.net**. A list of gateways can be found on Wikipedia at **en.wikipedia.org/wiki/List of SMS gateways**
 - **Generate Event** Click to generate an event when rule conditions are met. A system alert can also be generated by clicking on the Create System Alert button. Enter the amount of time to wait before an action triggers another event by entering a time in minutes in the *Don't create an event again for* ______ *minute(s)* field.
- You can add additional actions by clicking the Add Action button. Once you've finished creating your rule, click Save.

Rule Management

Rules that have been saved can be viewed by highlighting the rule in the *Rules* panel. You can modify the rule by making changes and saving the rule again. There are also links to *Delete Rule* and *Make a copy of this rule*.

An Funding Al Conditions	theme attention and the set of
Any Conditions	theme attention and the set of
Any Conditions	theme attention and the set of
Any Condition At Conditions	e de canalita de la capacita de la capac en capacita de la capacit
Ry Condition Al Conditions	nan mulijen emela meto 1 pana. Imana Banara en en anen applen for 200 menoago
Any Conditions Al Conditions Davi on	ander Exemption () © Create System Mark) ete en novers agen for 20 minute(b)
Dantes	
+.A0	Contra

Existing rules can be enabled or disabled by clicking on the On/Off button to the right of the rule name.

Lab Motion	On
Lab Motion	Off

Velcom	e Admin 👻								Мар	Data Events	Rules Device
Devices											+ Add Device
Searc	1 - 13 of 64 🔘 O										
	Connected Device	٥	mPort Status	Model	(Device (port)		Value	Reported At	٥	Actions
#	Motion by Window		Active	Ubiquiti mFi-MSC		00:15:6d:33:33:00 (1)		no motion	2012/07/13 19:15:03		Locate
Ð	Door 2		Active	Ubiquiti mFi-DS		00:15:6d:33:00:00 (2)		closed	2012/10/17 16:22:50		Locate
ß	RTD 3		Active	RTD		00:15:6d:01:01:00 (3)		76.25 °F	2012/10/17 16:22:51		Locate
8	RTD 1		Active	RTD		00:15:6d:22:00:00 (3)		76.05 °F	2012/10/17 16:22:48		Locate
8	Window Temperature 1		Active	Ubiquiti mFi-THS		00:15:6d:be:ef:07 (2)		73.02 °F	2012/10/17 16:22:51		Locate
8	Conference Room Temperature		Active	Ubiquiti mFi-THS		Conference Room (2)		75.02 °F	2012/10/17 16:21:41		Locate
‡ ⊪	mPower Light		Active	Outlet		mFi Office (2)		0.000000 watts	2012/10/17 16:22:50		Locate Turn on
=	Motion by Window 2		Active	Ubiquiti mFi-MSC		00:15:6d:33:33:00 (2)		motion	2012/10/16 19:10:36		Locate
Ð	Conference Room Door		Active	Ubiquiti mFi-DS		Conference Room (3)		open	2012/10/16 19:10:53		Locate
=	Conference Room Motion		Active	Ubiquiti mFi-MSW		Conference Room (1)		no motion	2012/10/17 14:41:21		Locate
•	Analog In		Active	Input Analog		00:15:6d:99:99:99 (3)		0.0000 volts	2012/10/17 16:22:51		Locate
S.	RTD 2		Active	RTD		00:15:6d:33:00:00 (3)		80.45 °F	2012/10/17 16:22:50		Locate
Ð	Door 1		Active	Ubiquiti mFi-DS		00:15:6d:33:00:00 (1)		open	2012/10/17 16:22:50		Locate
mFi Ma	nagement										
Search	1 - 10 of 28 🔘 🔘										
	Name/MAC Address	Status	Model	\$	Devices	Channel	≎ Up	time	C Last Seen	Actions	
-	00:15:6d:33:33:00	Active	mPort		2	1 (ng)	Zd	38m 17s	8s ago	Locate	Restart Upgrade
-	00:27:22:7c:10:23	Inactive	mPort		3		2h	13m 30s	116d 23h 39m ago	Locate	
-	dc:9f:db:12:91:ce	Inactive	mPort		3		2m	25	40d 23h 54m ago	Locate	
-	00:27:22:7c:10:71	Active	mPort		2	1 (ng)	2d	40m 26s	9s ago	Locate	Restart Upgrade
10101	00:27:22:7c:10:9f	Inactive	mPort Seria				1m	131s	78d 1h 27m ago	Locate	
0	dc:9f:db:29:01:9f	Inactive	mPower		1		417	385	53d 22h 57m ago	Locate	
œ	00:27:22:6e:e9:1d	Active	mPort		1	1 (ng)	2d	38m 22s	5s ago	Locate	Restart Upgrade
-	00:27:22:6e:e9:26	Active	mPort		1	1 (ng)	2d	39m 59s	1s ago	Locate	Restart Upgrade
œ	Conference Room Wall	Active	mPort		1	1 (ng)	2d	40m 33s	2s ago	Locate	Restart Upgrade
-	00:27:22:aa:9a:6f	Inactive	mPort				24	d 28m 37s	29d 22h 30m ago	Locate	

Chapter 7: Devices Tab

The *Devices* tab displays a list and details of the connected devices and mPorts.

Devices

Device													Add Device
Dear												1 - 9 of 39	00
	Connected Device	0	mhort Ratus C	Model	0	Device (port)	0	Value	٥	Reported AL	0	Actions	
#	Motion: mFi Lab 2			Ubiquiti mFI-MSW				no motion		2012/06/27 21:00:23		Locate	Remove
#	Motion: mFi Lab 1		Active	Ubiquiti mFi-MSW		001568-01-01-00-(0)		no motion		2012/06/28 20:55:12		Locate	
8	Window Temperature 5		Adive	Ubiquiti mFi-THS		001566.010100(0)		69.03 °F		2012/06/29 00:34:52		Locate	
8	Window Temperature 6		Adive	Ubiquiti mFi THS		00.15/64/99/99/00		16.38 VF		2012/06/29 00:34:55		Locate	
#	Mation by Window		Adive	Ubiquiti mili-MSC		00156633330000		no motion		2012/06/28 29:55:11		Locate	
۰	Case		Active	Serial		00156659(00:00(0)						Locate	
8	Window Temperature 4			Ubiquiti mFi-THS								Locate	Remove
8	RTD 4			RTD								Locate	Remove
8	Window Temperature 2			Ubiquiti mili THS				14.00 %		2012/06/28 20:51.18		Locate	Remove

Add Device Click to add a device. If you have multiple mPorts, you will select the appropriate mPort.

Search Allows you to search for specific characters. Any text that is entered is used as real-time search criteria and anything that doesn't contain the entered characters will be removed from the view. Delete the search string to return to a normal view.

Connected Device Displays the name of the device. Click on the name of the device to display the *Device Details* window. For additional information on the *Device Details* window, refer to <u>"Device Details" on page 27</u>.

mPort Status Displays the status of the mPort the device is associated with.

Model Displays the model information.

Device (port) Displays the name or MAC address of the mPort the device is associated with and the port it is connected to is displayed in parenthesis.

Value Displays the last reported value from the device.

Reported At Displays the time of the last reported value.

Actions Use the *Locate* button to display the device on the map. Click *Remove* to remove an unattached device from the system. Click *Turn on* or *Turn Off* for available devices to change the state of the device.

mFi Management

-	inagement																	
Deard																1-7 ef 2	•	0
	Name/MAC Address	٥	Satus	0	Model	٥	Devices	٥	Channel	¢	Uptime	0	Last Seen	٥	Actors			
-	021563999999		Active		mPort		3		1 (ng)		0h 52m 27s		10s ago		Locate	Ansart	Up	grade
-	0015.689w0000		Active		mPort Serial		1		10pp		Sh Ster 45s		Ss ago		Locate	Restart	Up	eberg
œ	001568010100		Active		mbet		3		10mp		8h \$1m 14s		3s ago		Locate	Restart	ų	grade
-	02155ddewf.04		Inactive		mPort						1d 6h 31m		35d 7h 52m ago		Locate			
-	0015-64320000		Active		mPort		3		10mp		8h 51m 32s		3s ago		Locate	Antart	Up	eberg
-	001566220000		Active		mbot		3		1000		8h 51m 23s		10s ago		Locate	Restart	ų	grade
-	0215663333300		Active		mPot		2		10mp		Bh 50m 13s		4s ago		Locate	Restart	1	pade

Search Allows you to search for specific characters. Any text that is entered is used as real-time search criteria and anything that doesn't contain the entered characters will be removed from the view. Delete the search string to return to a normal view.

Name/MAC Address Displays the name or MAC address of the mPort. Click on the name or MAC address of the mPort to display the *mPort Details* window. For additional information on the *mPort Details* window, refer to <u>"mPort Details" on page 29</u>.

Status Indicates if the mPort is active.

Model Displays the model of the mPort.

Devices Displays the number of devices configured with the mPort.

Channel Displays the wireless channel being used by the mPort.

Uptime Displays the total uptime of the mPort.

Last Seen Displays the amount of time it had been since the mPort was last seen when the page was loaded. To refresh the values, reload the web page or navigate to another tab and then back again.

Actions Use the *Locate* button to display the mPort on the map. Click *Restart* to restart a mPort from the list. Click *Upgrade* to upgrade to new firmware.

Chapter 8: Device Details

Details Device



Name Displays the name of the device To edit the name, click the pencil icon.

Model Displays the device model information.

mPort Displays a clickable link to the mPort the device is associated with.

Port Displays the port number that the device is using on the mPort.

Value Displays the last reported value.

Reported At Displays the date and time of the last reported value.

Active This option is only displayed on devices that have an on/off state. It will display the current state of the device.

Detach Used to detach the device from a mPort.

Locate Click this to locate the device on the map. The sensor will be highlighted with a flashing beacon.

Data



Displays a visual representation of data for the specific device during the selected time period. By default, D is selected showing data from the last 24 hours.

- H Displays data for the last hour.
- D Displays data from the last 24 hours.
- W Displays data from the last week.
- M Displays data from the last month.
- Y Displays data from the last year.

Binary devices will display event frequency for the selected time period.

Details	Data	Event	5			
			Outp	ut		H[0]W[M]
7500	n					output
5000						
2500						
	PM 5:	00 PM	9:00 PM	1:00 AM	5.00 AM	9:02 AM

Events

8	Window Tem	perature 5		
Details Data	Events			
Search	1 - 10 of 48	0 0		
Time 🔺	Device 0	Туре 🗘	Value 🗘	Rule
8/22/2012 11:20:53 AM	Window Temperature 5	temperature	74.70	Hot (Lab 1)
8/22/2012 11:50:55 AM	Window Temperature 5	temperature	73.56	Hot (Lab 1)
8/22/2012 12:20:59 PM	Window Temperature 5	temperature	72.48	Hot (Lab 1)
8/22/2012 12:51:01 PM	Window Temperature 5	temperature	71.62	Hot (Lab 1)
8/22/2012 1:21:04 PM	Window Temperature 5	temperature	71.89	Hot (Lab 1)
8/22/2012 1:51:07 PM	Window Temperature 5	temperature	71.56	Hot (Lab 1)
8/22/2012 2:21:10 PM	Window Temperature 5	temperature	71.56	Hot (Lab 1)
8/22/2012 2:51:13 PM	Window Temperature 5	temperature	71.40	Hot (Lab 1)
8/22/2012 3:21:16 PM	Window Temperature 5	temperature	71.13	Hot (Lab 1)
8/22/2012 3:51:19 PM	Window Temperature 5	temperature	71.51	Hot (Lab 1)

Search Allows you to search for specific characters. Any text that is entered is used as real-time search criteria and anything that doesn't contain the entered characters will be removed from the view. Delete the search string to return to a normal view.

Time Displays the date and time that an event occurred. Click on the *Time* header to toggle the display order between oldest and most recent events.

Device Displays the name of the device that generated the event. Click on the *Device* header to toggle the alphabetical display order from a-z to z-a.

Type Displays the type of event. Click on the *Type* header to toggle the alphabetical display order from a-z to z-a.

Value Displays the value that triggered the event. Click on the *Value* header to toggle the numerical and alphabetical display order from a-z to z-a.

Rule Displays the name of the rule that triggered the event. Click on the *Rule Name* header to toggle the alphabetical display order from a-z to z-a.



Serial-Based Device Details



Device

Name Displays the name of the device. To edit the name, click the pencil icon.

Model Displays the device model information.

mPort Displays a clickable link to the mPort the serial-based device is associated with.

IP Address Displays the IP address used to communicate with the device.

Port Displays the port used for Telnetting to the device.

Protocol Displays the protocol that is used to communicate with the device.

Connected Host Displays the IP address of the Telnet client connected to the mPort Serial. If the device is connected via WebShell, it will display the IP address of the mFi Controller. The *Disconnect* button will disconnect the client.

Serial Configuration

Mode Displays the mode, RS232 or RS485.

Port DB9 or Terminal Block. When RS485 mode is selected, the option to enable 120Ω Term is available. 120 Ohm termination enables a built-in 120 Ohm termination resistor between the TX and RX lines.

Termination Displays termination method.

Speed Speed can be between 300 and 115200

Parity None, odd, or even.

Antenna Displays internal or external antenna.

Configure Use this button to change Serial Configuration settings.

Detach Used to detach the device from a mPort.

Locate Click this to locate the device on the map. The sensor will be highlighted with a flashing beacon.

Web Shell Opens up a command line interface shell.



Chapter 9: mPort Details

mPort Configuration

Config	uration	Details				
		Sel	ect Devices			
1	Server Root	n Temperat	ure (Ubiquiti mFi-THS)	-	۵	4
2	Port is u	nused		-		4
3	Port is u	nused		+		4

Select Devices

Ubiquiti devices that are connected to the mFi RJ45 port are detected as present. There will be a message stating *unconfigured sensor (detected)*. Ubiquiti devices connected via terminal block or any other third party devices will not appear as detected

Add New Device

1. Click the + sign next to the appropriate port.

Configuration	Details			
	Select Devices			
1 Server R		*		×
Se	lect device type 🔹			
Please	e enter device name here			
x C	incel 🗄 Save			
2 Port i	s unused	*	0	+
3 Port i	s unused	-	0	+

2. Select device type from the drop-down selection list.

Device Type	Description
Input Analog	Used to read raw voltages, without converting them. Reports analog value between -2 and +2 volts, as measured on the A- and A+ inputs
Input Digital	Reports a read on/off (closed/open) state from a device such as an external mechanical switch. Reports "on" if a voltage is received on the Input (I) pin, and "off" otherwise. +24V is provided on the Output (O) pin, and +12V is provided on the Power (P) pin, which can be used by an external device to switch back to the Input (I) pin.
RTD	RTD (Resistance Temperature Detector) reports industrial temperature measurements using 2-wire PT-100. Measures temperature between -50 and +250° C.
Output 5v	Signal an external device that requires a 5V signal, such as an AC switch. Outputs 5V on the Output (O) pin, when the port is on, and 0v otherwise. This type of machine displays an on/off button in the mFi Controller interface, and can be selected as an output when creating a rule from the <i>Rules</i> tab.
Output 12v	Switch an external 12V relay. Outputs 12V on the Output (O) pin, when the port is on, and 0v otherwise. This type of machine displays an on/ off button in the mFi Controller interface, and can be selected as an output when creating a rule from the <i>Rules</i> tab.

Device Type	Description
Output 24v	Switch an external 24V relay. Outputs 24V on the Output (O) pin, when the port is on, and 0v otherwise. This type of machine displays an on/ off button in the mFi Controller interface, and can be selected as an output when creating a rule from the <i>Rules</i> tab.
Ubiquiti mFi-CS Current Sensor	The <i>Current Sensor</i> measures the root-mean- square (RMS) voltage being received on the A+ and A- pins and converts it to a current measurement (using a conversion factor of 1V = 100 amps). It is optimized for linear loads (non- linear loads will have reduced accuracy).
Ubiquiti mFi-DS Door Sensor	The <i>Door Sensor</i> uses an open/closed magnetic contact sensor interface that outputs 24V on the Output (O) pin. A <i>closed</i> door sensor sends the voltage back to the door sensor to be read by the Input (I) pin. An <i>open</i> door sensor does not return the voltage indicating that the door is open.
Ubiquiti mFi-MSC Ceiling Mount Motion Sensor	The Ceiling Mount Motion Sensor is powered by 12V it receives from the mPort. It also receives 24V from the Output (O) pin, which the motion sensor sends back to the Input (I) pin if motion is not detected. When motion is detected, the motion sensor opens the circuit so that the mPort does not receive the voltage back. This indicates to the mPort that motion is detected.
Ubiquiti mFi-MSW	The Wall Mount Motion Sensor is powered by 12V it receives from the mPort. It also receives 24V from the Output (O) pin, which the motion sensor sends back to the Input (I) pin if motion is not detected. When motion is detected, the motion sensor opens the circuit so that the mPort does not receive the voltage back. This indicates to the mPort that motion is detected.
Ubiquiti mFi-THS Temperature Sensor	The Temperature Sensor is powered by 12V it receives from the mPort. The temperature sensor outputs a voltage that is read by the mPort's A+ and A- pins. The received voltage is multiplied by thirty minus ten (V x 30 - 10) and the result is the temperature in Celsius degrees.

3. Enter a device name in the *Please enter device name here* field and click **Save**.

Details



Overview

Name Displays the MAC address or name of the mPort. Click on the pencil icon to the right of the name to edit the name.

Last Contact Displays the last time and date of contact upon page load.

Last Alert Displays the last alert message and time and date of the last alert.

Last Event Displays the most recent event.

MAC Address Displays the MAC address of the mPort.

Model Displays the model information of the mPort.

Firmware Displays the version of firmware installed on the mPort.

IP Address Displays the IP address of the mPort.

Uptime Displays the total time the mPort has been running uninterrupted.

Locate Click to view the location of the mPort on the map.

Restart Click to restart the mPort.

Upgrade Click to upgrade device firmware.

Remove If you no longer wish to manage this mPort, click the *Remove* button.

mPort Serial

Configuration

Configuration			
	Serial Device Name		
1 T3-4AO (Se	rial)	*	1
	Add a New Serial Device		
Please enter devi	ce name here		
UART Mode:	RS232		l
Baud Rate:	115200	-	
Parity:	NONE	•]
Antenna:	internal	-	1

Serial Device Name

Devices need to be added via *Add a New Serial Device*. Once your device is added, you can select it from the drop-down. Add a New Serial Device

Please enter device name here Enter the device name in this field.

UART Mode Select RS232 or RS485.

Baud Rate Select the baud rate from the drop-down list.

Parity Select odd or even parity or select none.

Antenna Select internal or external antenna.

Add New Device After making your selections, click this button to create the new device.

Details

Configuration Deta	ills	
	Overview	
Name	mPort-S CR2 /	
Last Contact	10/19/2012 7:31 PM	
Last Alert	EVT_AP_Lost_Contact	
	9/17/2012 6:19 PM	
Last Event	EVT_AP_Connected	
	2012-10-20T01:18:40Z	
Mac Address	00:27:22:7c:10:93	
Model	mPort Serial	
Firmware	1.1.0.888	
IP Address	10.1.1.115	
Uptime	4d 3h 49m	
Locate Ó Res	tart 🐺 Upgrade	a Remove

Overview

Name Displays the MAC address or name of the mPort Serial. Click on the pencil icon to the right of the name to edit the name.

Last Contact Displays the last time and date of contact upon page load.

Last Alert Displays the last alert message and time and date of the last alert.

Last Event Displays the most recent event.

MAC Address Displays the MAC address of the mPort Serial.

Model Displays the model information of the mPort Serial.

Firmware Displays the version of firmware installed on the mPort Serial.

IP Address Displays the IP address of the mPort Serial.

Uptime Displays the total time the mPort Serial has been running uninterrupted.

Locate Click to view the location of the mPort Serial on the map.

Restart Click to restart the mPort Serial.

Upgrade Click to upgrade device firmware.

Remove If you no longer wish to manage this mPort Serial, click the *Remove* button.

Chapter 10: mPower Details

Configuration



Outlet x When the outlet number heading is black the outlet hasn't been associated with a machine and the text will state *Select a machine*. Once the outlet has been associated with a machine, the outlet number heading is green and the name of the machine will be displayed.

Associating a Device with an Outlet

To associate a device with an outlet, click the + icon to the right of the outlet. The *Add a Machine* field will have a cursor ready for you to type in the name of the device you want to associate with the outlet. Type in the name and hit enter (or return).

ew Configuration S	aved			
Outlet 1				
Samsung TV	٣	۰	+	•=
Outlet 2				-
mPower Light	*	0	+	•=
Outlet 3				
Floor Fan	*	۰	+	•
				đi

Reassigning a Device to Another Outlet

If you want to switch a device to another outlet, you can reassign the device by selecting it from the drop-down list of devices under the outlet number heading of the new outlet the device will be plugging into. This allows the device data and rules to be preserved with the device on the new outlet.

	ower Light				
	tlet 1	- 14			
	erererere	- 15	nFi Offi		
Cc Sar	nsung TV	it			
Sm	all frig	- 1		0	
Tes	t	- 1			-
Por	t is unused	-	0	•	•=
	rt 2				
Outle				+	• -
_	ower Light	*	*	- 1	
_		•			
Outle		•	¢		•=

To confirm that you want to reassign the device to the new outlet, you need to click **Move Device**. Otherwise, click *Cancel* to revert to the original device assignment.



Device Details and Data

Once the machine is added, click the *Details* button to view/edit details.

Outlet Device Details

n		mPower Light	
Details	Data		
		Device	
	Name	mPower Light 🖉	
	Model	Outlet	
	Power Strip	mFi Office	
	Outlet	2	
	Reported Value	off	
	Output	Off	
		30 Day Statistics	
	Monthly Power	1.56 KW-Hours	
	Monthly Cost		

Device

Name Displays the name of the device. Click on the pencil icon to the right of the name to edit the name.

Model Displays model information.

Power Strip Clickable link with the mPower device name that links back to the mPower *Configuration* window.

Outlet Displays the number of the outlet the device is connected to.

Reported Value Displays the last reported value.

Output Displays the current powered on or powered off state of the device.

30 Day Statistics

Monthly Power Price per kilowatt hour. This value is entered manually in the *Energy Price* field under *System* > *Settings*.

Monthly Cost Estimated cost based on calculations of hours running and energy cost.

Detach Click to detach the device from the mPower.

Locate Click to view the location of the device on the map.

Outlet Device Data



Displays a visual representation of data for the specific device during the selected time period. By default, D is selected showing data from the last 24 hours.

- H Displays data for the last hour.
- D Displays data from the last 24 hours.
- W Displays data from the last week.
- M Displays data from the last month.
- Y Displays data from the last year.

The chart can be display cost (default) or energy.

Details



Overview

Name Displays the MAC address or name of the mPort. Click on the pencil icon to the right of the name to edit the name.

Type Displays the number of power outlets.

Last Contact Displays the last time and date of contact upon page load.

MAC Address Displays the MAC address of the mPower.

Model Displays the model information of the mPower.

Firmware Displays the version of firmware installed on the mPower.

IP Address Displays the IP address of the mPower.

Uptime Displays the total time the mPower has been running uninterrupted.

Locate Click to view the location of the mPower on the map.

Restart Click to restart the mPower.

Upgrade Click to upgrade the device firmware.

Remove If you no longer wish to manage this mPower, click the *Remove* button.

Appendix A: Pinouts

mPort-S Serial DB9

Pins 2, 3, 5, 6, and 9 are used for serial DB9 communication and grounding.

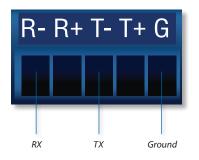


mPort-S Terminal Block

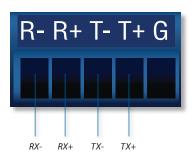
The Terminal Block port is labeled for RS485 pinout.

RS232

R+ and T+ are not used with RS232 connections.



RS422/RS485



The table below lists the pinouts for RS232, RS422, and RS485.

Function	RX		т	Ground	
	R-	R+	т-	T+	G
RS232	~		~		~
RS422	~	\checkmark	\checkmark	\checkmark	*
RS485	~	~	~	1	*



Note: RX-/TX- and RX+/TX+ can be jumpered for 2-wire RS485 networks.

Appendix B: Contact Information

Ubiquiti Networks Support

Ubiquiti Support Engineers are located in the U.S. and Europe and are dedicated to helping customers resolve software, hardware compatibility, or field issues as quickly as possible. We strive to respond to support inquiries within a 24 hour period.

Email: support@ubnt.com

Phone: 408-942-1153 (9 a.m. - 5 p.m. PST)

Online Resources

Wiki Page: wiki.ubnt.com

Support Forum: forum.ubnt.com

Downloads: downloads.ubnt.com



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