

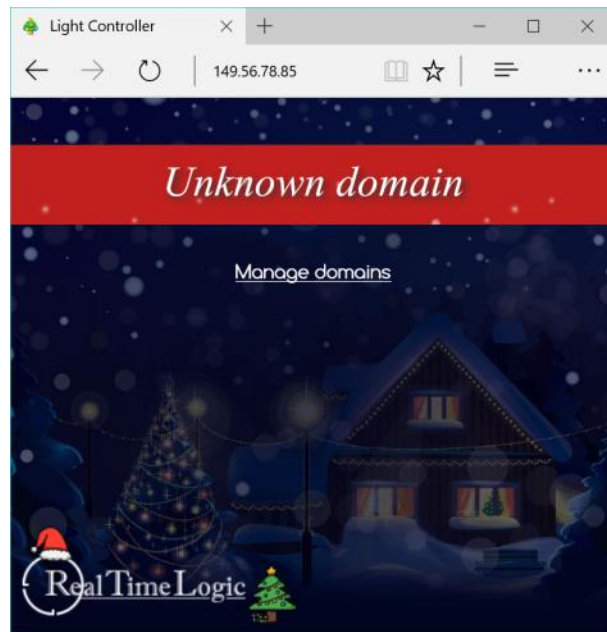
Light Controller Manual

This manual covers using the online server's web interface and configuring the light controller device. The manual does not provide instruction on how to setup the online server or how to install the device firmware. Refer to the [Light Controller Information](#) page for details on setting up the online server and for installing the firmware in the device.

The Administrator Web Interface

When the Light Controller server application is installed on a server, such as on an online VPS, use a browser and navigate to the IP address of the server. You should see the web interface to the right.

Click on "Manage domains". This will take you to the administrator page.

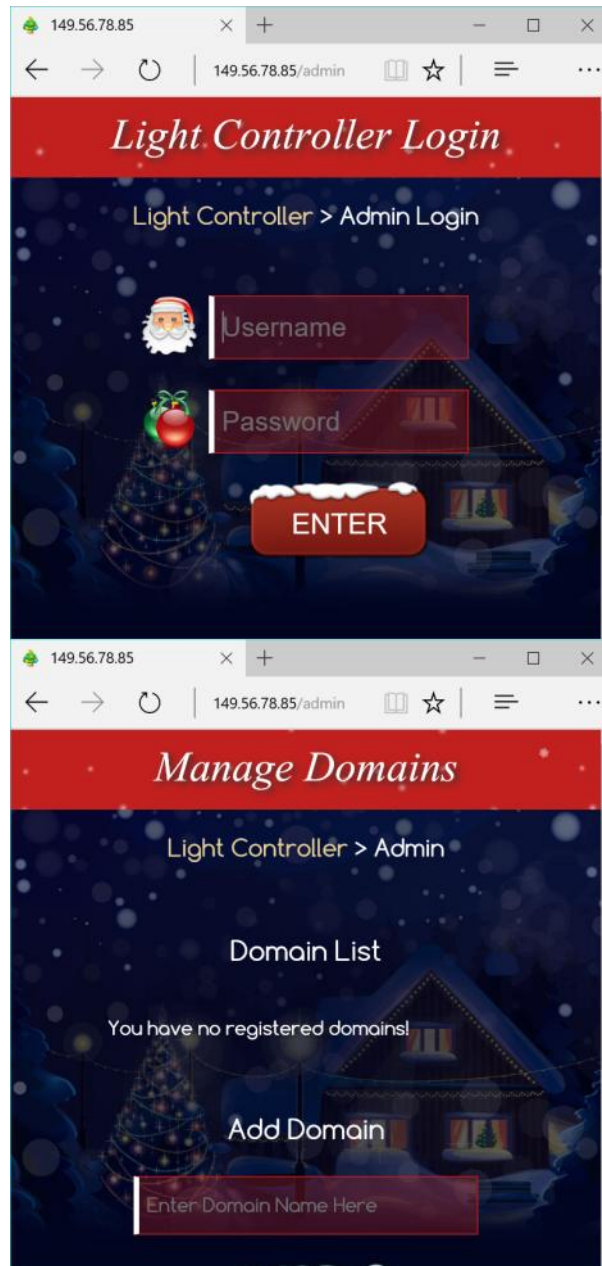


On the administrator page, login using your administrator credentials. These are the credentials you set during the installation of the server software.

Note that the main page for the administrator is:
<http://your-ip-address/admin/>

You should see the administrator's main page after authenticating.

The first time you visit the administrator page, the list of domain names will be empty. The light controller is designed for making it possible to control several homes (light controller sets), where each light controller set has its own domain name. You must add at least one domain name. However, before adding any domain name, you must register the domain and configure the domain to point to the server's IP address.



You may use any domain name service, however, a recommendation is to use one of the free domain name registrars such as www.freenom.com.

As an example, the screenshot to the right shows how we have used www.freenom.com and configured the DNS settings for our registered domain xmaslights.ml. We have configured xmaslights.ml and www.xmaslights.ml to point to the IP address for our online VPS. Note that it takes some time before the DNS settings for the domain works.

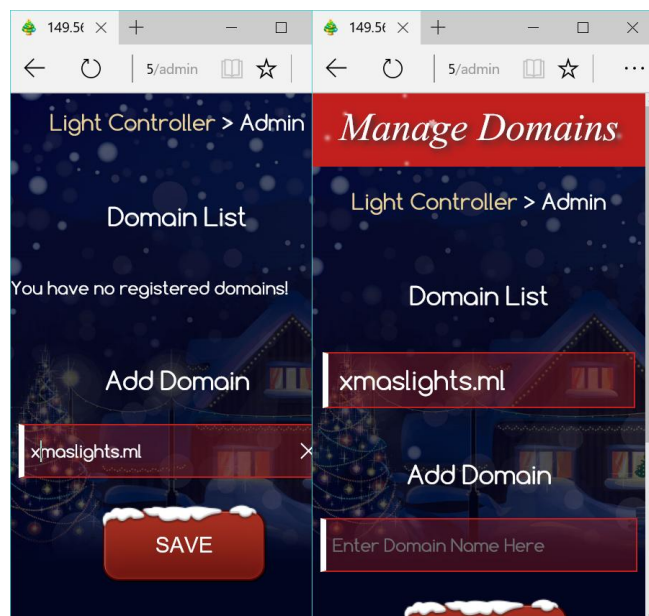
After you have registered a domain name, navigate back to the light controller administrator page, add the registered domain name, and click the save button. The new domain name will then show up in the "Domain List". The screenshot to the right shows the admin page when the Domain List is empty, just before clicking the Save button, and when the domain name has been saved.

To continue, click the new domain name you added to the list.

DNS MANAGEMENT for xmaslights

[Back to domain details](#)

Name	Type	TTL	Target
	A	14440	149.56.78.85
www	A	14440	149.56.78.85

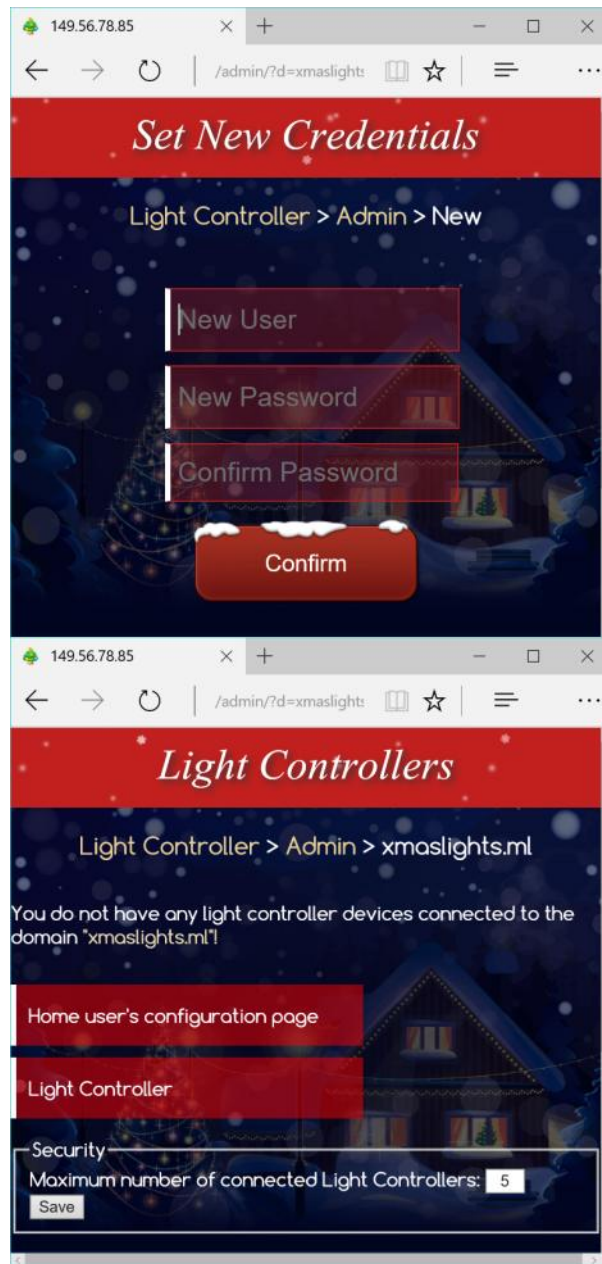


The first time you click a new domain name in the Domain List, you will be asked to set the credentials for the user of the domain name. Recall that each light controller set added to the server must have its own domain name. You can use the same credentials as the administrator credentials if you are the only user of the server. Otherwise, set a name and password for the user of the light controller set.

After setting the user's credentials and clicking the Confirm button, you will see the web page to the right.

At this point, you do not have any light controller devices connected, thus you will see the text "*You do not have any light controller devices connected..*"

The two links you see on this page direct you to the user's configuration page and to the main page -- the public light controller.



You must verify that the domain name is working before you connect a light controller device to the online server. Click the "Light Controller" link in the above web page. If the DNS is working, you should see the main light controller page, where visitors can turn lights on and off. Note that it can take up to 48 hours for the DNS settings you configured for the domain name to replicate across the Internet.

You may configure and setup light controller devices when the DNS is working for the domain. See configuring [light controller devices](#) for more information. The light controller devices connected to the domain shows up on the above web page.

As soon as you connect a light controller to the above web page, the web page will transform into a page that looks similar to the one to the right.

Each light controller device is referred to as a light bank and you can connect any number of banks to the online server for the specific domain, but you must adjust the security setting "Maximum number of connected Light Controllers" accordingly.



Each light bank may control one to N lights, where N depends on the hardware connected. Our reference hardware can control four lights.

Each light is given a default name that is based on the name configured into the light controller device (bank), see configuring light controller devices for information on setting the name of the bank. You should set a name for each light if the light is in use in the bank or disable the light by clicking the checkbox in the "Enable" column to disable the light. You should also set the color of the light if it is not white. The name of the light and the color is shown on the light controller's main page for the domain, where visitors can turn lights on and off. The test button turns the light on and off 8 times. The purpose with this button is to verify that the light is working and to identify the light connected. When the light is identified, set a suitable name for the light and click the save button.

When connecting more than one bank, use the Priority slider for setting the bank's ranking and priority. Multiple connected banks are merged into one coherent user interface on the main page, and setting a priority makes it possible to correctly configure the lightshows such as clicking the "Wave" button.

The data you set on this page is permanently stored on the online server and is visible even if the light controller goes offline. A light controller that is offline shows a different color and you will see an additional button that enables you to remove the bank. You may want to remove a bank that is no longer in use.

The User's (Owner's) Web Interface

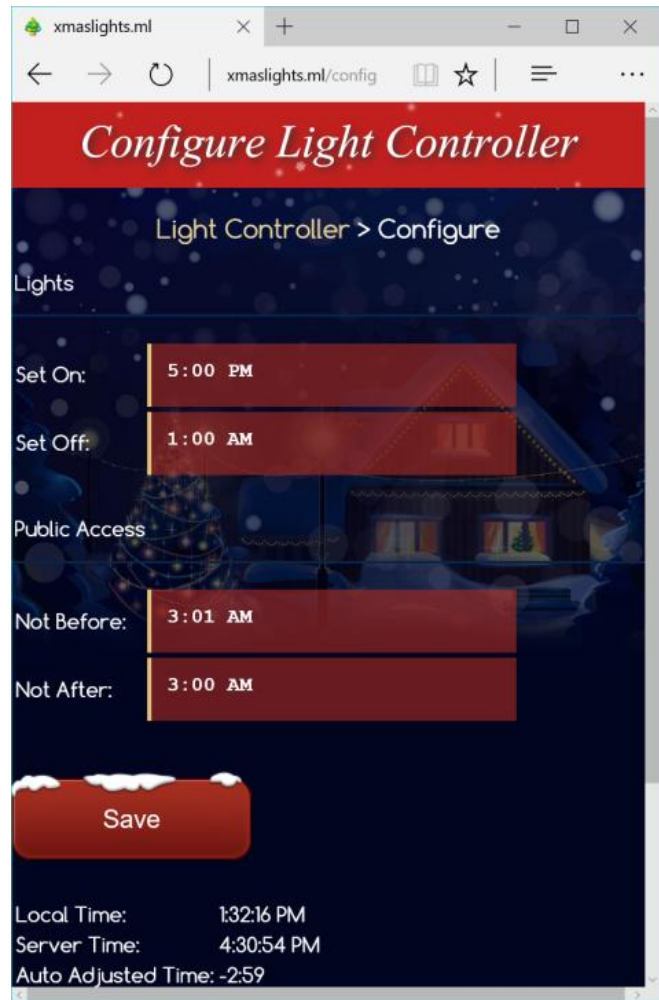
A web page that enables the user to configure their light controller is created for each domain name added to the light controller.

The URL to the user's configuration page is: <http://domainname/config/>

The user is presented with the page to the right after logging in using the credentials set by the administrator.

The "Lights" setting lets the user set what time the lights should be on. The default is from 5PM till 1AM.

The "Public Access" setting lets the user set the time he/she allows public access to the lights. The defaults are set such that they are always accessible. Setting the "Not Before" and "Not After" to the same time disables all public access.



The user is allowed to control the lights at any time by first logging into the website by visiting the [http://domainname /config/](http://domainname/config/) page and thereafter navigating to the main page <http://domainname/>.

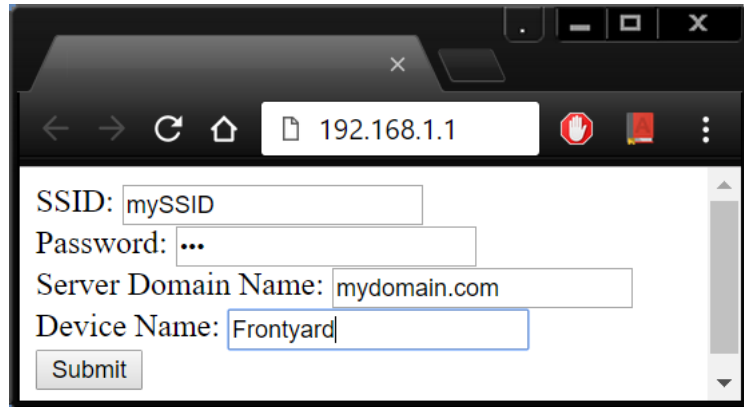
Note that the online server may not be in the same time zone as the actual lights. The way this is managed is by sending the time from the browser to the server when the user visits the </config/> page. It is for this reason important to make sure the time is correct for the computer where the browser is used. For example, when using a smartphone and navigating to the </config/> page, make sure the time on the smartphone is correct prior to navigating to the </config/> page.

Configuring Light Controller Devices

See the [Light Controller Information](#) page for firmware installation instructions.

You may immediately start using the device after uploading the firmware. The light controller initially starts as an access point with the SSID (the Wireless Network Name) "LightController". Use a WiFi device such as your phone and connect to this access point. When connected, start your browser and navigate to <http://192.168.1.1>. You should see the following web interface.

Enter the home/business WiFi **SSID** and the WiFi **Password**. The **Server Domain Name** is one of the domain names you have registered using the [Administrator Web Interface](#). You must make sure this domain name is working as explained in the Administrator Web Interface section above.



The screenshot shows a web browser window with the address bar set to 192.168.1.1. The page contains a form with the following fields and values:

SSID:	mySSID
Password:	...
Server Domain Name:	mydomain.com
Device Name:	Frontyard

Below the fields is a "Submit" button.

The **Device Name** is a name you give this device. This name shows up on the Administrator Web Interface when the device is connected to the online server. Click **Submit** to save the data and to restart the device.

The device now starts in station mode, connects to your WiFi network, and then connects to the online server via your WiFi network.

The device reports the startup sequence via the first 3 relays. The LEDs associated with each relay is also turned on. The lights are turned on solid while the operation is in progress. Light one is turned on to indicate the device is booting in station mode, light 2 is turned on when attempting to connect to the the WiFi network, and light 3 is turned on when attempting to connect to the online server. The light will start to blink should the connection fail.

The device reboots and enters Access Point Mode should the initial connection to the online server fail. You can then re-connect to the "LightController" Access Point and fix any incorrect settings.

A device that has successfully connected to the online server will not enter Access Point Mode if the device is restarted. The device will simply attempt to reconnect, reboot, and continue this cycle until it connects. You can force the device into Access Point Mode by clicking the reset button (right of USB) and then keep the left button pressed when the device reboots. You have two seconds to click the button when the device starts if you want to force it into Access Point Mode.

A connected device can also be forced into Access Point Mode by clicking the reset button on the administrator's configuration page for the device/domain-name. In addition, all connected devices are forced to Access Point Mode if the Terminate Service button is clicked.

Lights (and LEDs) Status Codes

- All lights blinking with four seconds interval: the device is in Access Point Mode and requires that you configure the device using a browser.
- All lights solid for two seconds at boot: the device will soon enter Station Mode. You have two seconds to press the left button and force the device into Access Point Mode.
- First light solid: the device is starting in Station Mode and will shortly connect to your WiFi.
- Second light solid: the device is connecting to your WiFi.
- Second light blinking: the device is unable to connect to your WiFi.
- Third light solid: the device is connecting to the online server.
- Third light blinking: the device is unable to connect to the online server either due to network error or incorrect domain name.
- Fourth light blinking. The device was connected to the online server, but the connection was lost. The device will soon reboot.