

OptiRain Open 2 Installation Guide for Linux

This guide provides general instructions for installing OptiRain Open 2 on a Linux based server. Updated for version 2.30, see last page for updates.

Introduction

OptiRain Open 2 is a sophisticated irrigation scheduling application that provides easy, high-capacity, smart local weather forecast control and scheduling for EtherRain sprinkler valve controllers on Linux and Unix servers including Raspbian.

OptiRain Open version 2 allows the definition of up to 5 independent irrigation controllers with each controller capable of supporting 5 EtherRain modules. A maximum of 200 zones can be managed. Most installations will only require a single controller in which case OptiRain Open 2 can provide support for 8, 16, 24, 32 or 40 zone installations.

OptiRain Open 2 provides support for the Weather Underground Contributors weather feeds for optimal weather aware irrigation. The Weather API weather feed is also supported.

OptiRain Open uses an embedded SQL database along with the cron function provided by your Linux or Unix server to provide accurate scheduling. OptiRain Open is a complete solution requiring no programming or scripting for use.

OptiRain Open 2 can be installed in servers that use standard Linux distributions. OptiRain Open can be installed in QNAP and Synology NAS servers that have the latest system managers installed.

QNAP and Synology use modified versions of Linux and so have separate installation documents. Please contact QuickSmart to request these additional documents.

Pre-Installation

Pre-installation consists of configuring the Linux server with the required support applications.

OptiRain Open is a web application and is dependent on the availability of several widely used programs in order to function. The following programs are required:

1. Apache Web Server
2. PHP 7 or 8 (PHP 7 minimum required)
3. SQLite 3
4. wGet
5. (Optional) Message transfer agent for email (Exim or equivalent)

Your server should have a working webserver with PHP and with added support for SQLite3. In addition, you should have wget installed. You'll need to transfer files to the server so your server will need an FTP server. In addition, you'll need to set file ownership and permissions, so you'll need to be able to telnet into the server.

For PHP 7 on Debian 8 or 9 the following packages needed to be installed:

```
apt-get install apache2
apt-get install php7.0-sqlite3
apt-get install libapache2-mod-php7.0
apt-get install php7.0-xml
apt-get install php7.0-curl
```

After installing, restart the Apache server:

```
service apache2 restart
```

Existing Version

Before installing OptiRain Open 2.30 over a an existing OptiRain install, make sure to first disable the scheduler.

If installing OptiRain Open 2 to replace an existing OptiRain Open 2 installation just copy all of the files over. The database has the same structure and your existing data should be preserved.

Installation

OptiRain Open 2 is a web application consisting of a single folder of html, php script files, and images.

Before installing OptiRain Open you should verify that your web server is properly configured and working. You should run a test php script that displays the result of the `phpinfo()` function. The `phpinfo()` display should show the following:

1. PHP 7 (or 8) is installed
2. PDO support is enabled
3. PDO driver for SQLite 3 is enabled
4. SQLite support is enabled
5. Sockets support is enabled
6. Libxml php extension is installed and enabled (for weather retrieval)
7. Support for Curl is enabled (for weather retrieval)
8. Time zone - you may have to set the default time zone. See below.

In addition, you should check that `wget` is installed on your server.

You should know the document root folder for your Apache web server, and you should know the username that the web server runs as. For example, under Debian, the HTTP user is `www-data`. OptiRain supports Virtual Hosts under Apache2. See note below.

OptiRain Open 2 can send email alerts; for email support you must have a message transfer agent installed and configured on your server.

OptiRain Open can be installed by using FTP to copy the "optirain" directory into the document root directory of your web server. Copy or FTP the complete directory, preserving directory names. Copy the provided `index.html` file and `info.php` file into the document root.

After all files are copied, you will need to change permissions on the directory and index file so that the web server can read and execute them.

From the Apache document root directory, issue the following command:

```
sudo chmod -R 0775 optirain
```

Then, issue the following command:

```
sudo chmod 0644 index.html
sudo chmod 0644 info.php
```

In addition, you must change the owner and group of the "optirain" directory to the Web User.

```
sudo chown -R <web user> optirain <enter>
sudo chgrp -R <web user> optirain <enter>
```

(where <web user> is the name of user that your Apache server runs as)

Make sure to include the "-R" parameter; this will ensure that Apache will be able to create the database and the new directories needed to house data files.

System Configuration

After installing, point your browser to your Linux server. The OptiRain Index file should be displayed.

From the left nav, select "System Configuration." Set the operating platform. If your system has multiple Ethernet interfaces, or an Ethernet interface with a non-standard name, you'll need to enter the name of the Ethernet interface that is attached to the network that serves your EtherRain controllers. Most installations will leave the interface name blank. View the help pages, available from the left nav, for more information.

OptiRain Open 2 has been successfully installed on the following operating systems and platforms:

- Debian
- Ubuntu
- Centos
- QNAP NAS
- Synology NAS
- Raspberry Pi (Debian and Raspbian)

For installation on QNAP or Synology please see the separate installation documentation for those platforms.

Set PHP Time Zone

Default PHP time zone is UTC. OptiRain does not offer time zone configuration so if the time is not correct when it is displayed on the OptiRain Open Status page then you'll need to modify the PHP.ini file with the correct Time Zone.

Location of the PHP.ini file varies by distribution but it can be found by displaying the phpinfo() function. A file named info.php is included in the OptiRain Open installation

set for this purpose. The directory for your PHP.ini file is found in the row "Loaded Configuration File."

Using on-line resources, modify the php.ini file with the PHP time zone parameter for your location.

For example:

```
Loaded configuration file: /etc/php/7.0/apache2/php.ini
[Date]
; Defines the default timezone used by the date functions
; http://php.net/date.timezone
date.timezone = America/Los_Angeles
```

After modifying, restart Apache2.

Apache Name Based Virtual Hosts

OptiRain Open can be installed within an Apache name-based virtual host on a Linux system. Virtual hosting allows you to run multiple sites on a single web server. From a practical standpoint, use of virtual hosts on a Linux server makes sense only when the virtual hosts are accessible from the various computers within your local network. In order to achieve this access, you will need a local name server that allows you to register these virtual hosts. Today most routers provide local name service as an extension of their DHCP function. But they may only register the main host name of the computer. For local virtual hosting you must have a name server that allows you to register your virtual hosts so that the names can be resolved to an IP address on your local network. Optionally, for individual device access, you could modify the Hosts file with the name of the virtual host and the server's IP address.

Follow these steps to use OptiRain Open in a name-based virtual host on your Linux server:

1. Set up a name-based virtual host on your apache2 server. Refer to on-line Apache2 virtual host documentation. Ensure that mod rewrite is enabled.
2. Ensure that the name of your virtual host can be resolved by a name server on your local network or modify the Hosts file on computers that you want to access OptiRain with.
3. Modify the Hosts file on your Linux computer to associate the local host address with your OptiRain Open virtual host. For example if your virtual host is named optirain.debian, then modify /etc/hosts to include the second line:

```
127.0.0.1      localhost
127.0.0.1      optirain.debian8
```

Version 2.30 Updates

Added support Weather API weather feed. Removed support for Open Weather because the free Open Weather API was changed to provide a reduced weather data set. If you previously used Open Weather you should check your location coordinates. No key is required to use Weather API.

In addition, because Weather Underground no longer delivers weather icons a set of weather icons for Weather Underground is included in the images folder.

Should run on PHP 8 - a deprecated command was removed.. Some database code was modernized in the controller configuration pages.

Version 2.25 Updates

Added support for OpenWeather weather feed. Removed support for Yahoo! Weather as the Yahoo! API has been discontinued.

Version 2.12 Updates

Updated Yahoo Weather Access using new API

Version 2.1 Updates

Support for PHP 7;
Updated Yahoo Weather Access;
Support for Apache2 Virtual Hosts

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