

## Introduction

A Web server is a program that uses HTTP (Hypertext Transfer Protocol) to serve the files that form Web pages to users, in response to their requests, which are forwarded by their computers' HTTP clients. Dedicated computers and appliances may be referred to as Web servers as well. Typically, in a Pharos Installation, a web server would be used to show a web interface allowing control over and feedback on the installation.

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## Typical Usage

Every Pharos Controller (LPC, TPC, LPC X, VLC) contains a built in web server which hosts the Default Web Interface. This default web interface displays information about the current status of the installation and controller, allows control over the installation and can be used to configure the controller without using Designer.

For the majority of installations, this Default Web Interface is all that is required, but some installation will require a Custom Web Interface. These can be used to provide more precise custom functionality or simply to arrange the information in a way that is better for the customer. Custom Web Interfaces are also hosted on the built-in web server. This web server simply returns the requested file to the client's web browser.

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## Advanced Usage

In rare circumstances an external web server may be required. These can include:

- Interacting with multiple installations
- Linking the installation with online APIs
- Hosting large or graphically intensive interfaces

### Interacting with multiple installations

Files served by a controller's built in web server are only capable of interacting with the project running on that controller (it can interact with other controller's in the project). If you want a web interface to display information about multiple separate installations, the interface will need to be hosted on a separate web server which can in turn interact with the separate installations.

### Linking the installation with online APIs

In some circumstances, interacting with online APIs will require a web server to sit between the controller and API, sending requests to the online API and either returning the data directly the to controller, or interpreting it within the server and firing triggers on the controller.

### Hosting large or graphically intensive interfaces

Pharos Controllers are first and foremost lighting controllers, so there are limited resources available to run the web server. If your web interface is particularly large or intensive, then it could either cause a degradation in the lighting output, or in extreme cases result in the controller rebooting.

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## Web Servers

There are many types of web server that could be used for these purposes and typically servers that allow for some element of scripting will be preferable over servers that will simply return the requested page as they allow for additional functionality.

A low-cost option for running this web server is to use nodeJS, this uses JavaScript to create the web server and it is extendable through plugins to allow the server to communicate with external APIs e.g. to get events from a Google Calendar or request data from a weather API.

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## Interaction between Web Server and Installation

Typically it will be necessary to allow some interaction between the web server and the controller running the installation.

The main way to do this is through the controller's web API. This uses HTTP requests to fire triggers and control timelines and scenes.

When firing a trigger, it is also possible to pass data into the controller (provided the trigger is capable of receiving the data e.g. with a script).

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## Further information

For further information on the Default Web interface, please see Designer Help > Reference > Web Interface > Default Web Interface.

For further information on Custom Web interfaces and the web API, please see Designer Help > Reference > Web Interface > Custom Web Interface.

If you require any further assistance, please contact Pharos Support.