Using OpenSprinkler 3.0 with Wired Ethernet Connection

This document explains how to use OpenSprinkler 3.0 (which has built-in WiFi but no wired Ethernet) with a wired-only connection (if this is the only option you have or you've got no WiFi at all). This is done by using a **travel router with AP mode support** -- (search on Amazon for 'travel router AP' and you will find plenty of options). In AP mode, the router will serve as a seamless interface between wired Ethernet and WiFi, allowing OpenSprinkler 3.0 to connect as if it's plugged directly into the wired Ethernet. For security, this WiFi network **can be hidden** (no SSID broadcast) and can be **password protected**.
(Note: you can also use the 'Router' mode, but in that case you will need to setup port forwarding as the router will create two separate networks. In contrast, AP mode allows OpenSprinkler 3.0 to be on the same network as your wired Ethernet).

Step 1: Configure travel router in 'AP' mode.
Many pocket routers can function in multiple modes. For this setup, you will need to configure it in AP mode. This allows multiple wireless devices to share a single wired connection. During the setup, you will need to provide an SSID and password. In the example below, we will use **OS30** as SSID, and **opendoor** as password. Both of these can be changed as you need.

## Step 2: Plug in wired Ethernet cable to the travel router

Step 3: Connect OpenSprinkler 3.0 to the OS30 WiFi network
Follow the OpenSprinkler 3.0 starting guide to connect the OpenSprinkler device to the OS30 WiFi network. It will obtain a dynamically allocated IP address that's compatible with your wired Ethernet. In the following example, let's call this the OpenSprinkler Client IP, for example, it might be 192.168.1.120.

Step 4: Test Access
Open a browser and type in OpenSprinkler's Client IP. It should connect to the OpenSprinkler device, and bring up the web interface. For mobile devices, you can connect them to the OS30 WiFi network and that way they can access the device too.

The diagram below illustrates the network topology:
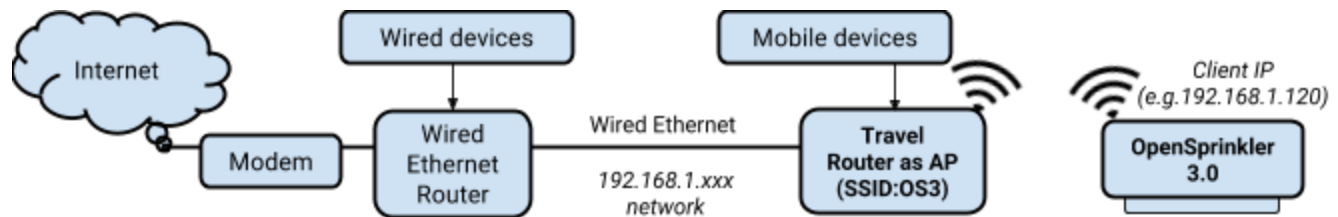
As you can see, the travel router in AP mode is a seamless interface between the wired network and OS30 WiFi network. OpenSprinkler 3.0 will get assigned an IP address that's compatible with your wired network.

Step 6: Security
At the minimum, your travel router should be password protected. If you need, you can also disable SSID broadcasting (i.e. hidden network), and you can even enable MAC address filtering to authorize only OpenSprinkler 3.0's MAC address. This prevents unauthorized access by other devices.

Recommended Travel Routers:
Travel Routers that have been tested (that have AP mode support):
- [7inova 7R508 Travel Router](): low-cost, versatile, USB powered, supports hidden SSID (to do so,, before setting it to AP mode, go to Wireless Settings and disable Broadcast SSID). Also supports 3G. [Amazon product link]().
- [MediaLink Travel Router](): low-cost, comes with built-in power plug. However, no hidden SSID support.
- [TP-Link TL-WR710N Mini Router](): medium-cost, comes with built-in power plug, more bulky than MediaLink, supports hidden SSID.
- [TP-Link TL-WR702N / TL-WR802N](): compact size, USB powered, versatile and powerful. More expensive though.

There are plenty of other options that we haven't tried. There are also 3G/4G travel routers that connecting to cellular network.