

Building your local network for Enkadia Synexsis

Equipment used:

Let's build a simple AV over IP system for use with Synexsis. For our example, we have:

- Unmanaged Switch
- PC with touch display to be used as the a/v system controller.
- Projector
- Camera
- Video Switcher
- Audio Processor

We want to use the unmanaged switch to connect all the other equipment together. Unmanaged switches are not configurable like managed switches but they're less expensive. We'll set static private IP addresses for all the equipment.

Setting the Static Address on the PC

If you are connected to the internet using an ethernet cable and have Dynamic Host Configuration Protocol (DHCP) turned on, you PC should get an IP address assigned automatically. But we want a static IP address before we move to the switch.

Follow the steps below to change to a static IP address on Windows:

1. On the lower corner of the screen click on the Start menu, type **cmd** and enter.
2. A command prompt should appear. On the command prompt, type **ipconfig /all** and enter.
3. Record the following lines from the output, you'll use this information later:

```
IPv4.....: 192.168.1.10
Subnet Mask.....: 255.255.255.0
Default Gateway..: 192.168.1.1
DNS Server.....: 8.8.8.8
                  8.8.4.4
```

In the example above, IPv4 is the **IP address** (192.168.1.10) of the PC.

Subnet Mask tells computers how to separate network and host addresses.

Default Gateway is the address of your router.

DNS Servers contain databases of public IP address and hostnames.

4. Return to the **Start** menu and type **Control Panel** and press enter.
5. Click the link titled View network status and tasks under the Network and Internet heading.
6. Click the link on the left of the window labeled Change adapter settings.
7. On the newly opened window, you should see an Ethernet icon with a green checkmark. If you have a red cross on it, then you aren't connected to the internet.
8. Right click on the Ethernet icon and click properties.
9. On the Ethernet properties window, select Internet Protocol Version 4 (TCP/IPv4) and click on the Properties button just below on the right.
10. On the General tab of Internet Protocol Version 4 (TCP/IPv4) Properties, you should see Obtain an IP address automatically. Select the option: Use the following IP address:

The dynamically assigned IP address was already using 10. DHCP starts from the lowest number and keeps increasing, so you want to select a number that is high enough and wouldn't cause a clash with any DHCP assignments. Let's select 150 and press enter. Leave the Subnet Mask, Gateway and DNS Server settings unchanged. Press enter. And the result should look like this.

```
IPv4.....: 192.168.1.150
Subnet Mask.....: 255.255.255.0
Default Gateway..: 192.168.1.1
DNS Server.....: 8.8.8.8
                  8.8.4.4
```

IPv4 should reflect the new static address.

Now you can disconnect your PC from the router and connect it to the switch.

Setting Static Addresses for other devices

You can set the static address for other devices in a similar manner. You will have to consult the instruction manual to find out how to reach the network settings of each device. You must use the same Subnet Mask, (Default Gateway and DNS Server are optional for a simple network). The only thing, you will change is the IPv4. For each device, increment by a number you like, so you can select something like 192. 168. 1. 152 and up but remember you can't go beyond 254.

Using multiple network adapters

There is a problem with setting our network in this way, you've disconnected your PC from the Internet. What if you want to keep your internet connection and setup a local Synexsis network for development and testing? That's where multiple network adapters come in.

If you have a laptop, you've probably already got multiple adapters; one for your wifi connection and one for a wired port. If that's the case, simply use the wifi for your connection to the outside world and connect your wired port to your Synexsis network.

With a desktop, there's probably an extra internal slot for an additional network card. Add a second card and use it to create your Synexsis network. Remember though, you'll need to set it to a different **subnet** otherwise there will be conflicts. And no one likes conflict. Follow the steps above for changing your network adapter properties but this time change the third set of numbers in the IP address.

For example, change 192.168.1.150 to 192.168.200.150

You'll also need to change the addresses on your devices to move them from, *as network admins would say*, the dot one to the dot two hundred subnet.