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# **NETWORKING TUTORIALS**



# POE SWITCHES W/ BUILT IN POE UNITS

## WHY USE EXTERNAL SWITCHES WITH BUILT IN POE RECORDERS

The most common reason for using an external PoE switch on a job site where the recorder has a built in PoE switch is to bring a further reach of a building back to one central point so only one wire will need to be ran back to the main network or the recorder. Other reasons could be for further transmission where runs would be too long from the recorder, or if the recorder supports more channels than it has in PoE ports an external switch needs to be used to utilize the extra channels.

## CONNECTING THE EXTERNAL SWITCH CORRECTLY

When connecting an external PoE switch to a recorder with built in PoE the external switch needs to be plugged into the recorder's main non-PoE NIC port. This port is meant to be used for external networking and cameras, where the built in PoE ports are only meant to handle data from one camera and give out only one IP address. External PoE switches can also be plugged into the customer's main network that the recorder is also on.

When using an external PoE switch that is connected to the back of the recorder directly make sure that the uplink port from the switch is being used to connect internet to the switch. If a second uplink port is available use it to connect to the recorder, if a second one is not available a PoE port can be used it will not hurt the recorder.

All cameras that are plugged into the external PoE switch will need to be assigned an IP address on the main network's gateway. The recorder that is also plugged into the PoE switch will need to be assigned an IP address on the main network's gateway. IE The recorder's internal PoE switch will give IP addresses automatically to the cameras that are plugged into it, normally 172.16.0.xxx. The cameras that are on the external PoE switch will be on DHCP by default if a router is plugged into the switch, they will automatically grab an IP from the router. If there is no router an IP address will need to be given to them to match the recorder's NIC port such as 192.168.1.xxx. The recorder will also need to be on the same network as the cameras if a router is attached, the recorder is not on DHCP by default. To place the recorder on DHCP log into the main menu of the recorder and navigate to System > Network and check on the DHCP check box and then save. Otherwise while in the Network settings assign the recorder a static IP address on the same gateway as the router. If there is no router give the recorder a static IP and gateway of your choice and save the setting, remember whatever static gateway is assigned the cameras will need to be configured to match that gateway.



### ADDING EXTERNAL CAMERAS IF THEY NEED TO BE ON A POE RESERVED CHANNEL

When trying to add cameras to the recorder from an external PoE switch the recorder may tell you that the upper channel limit. This is because the built in PoE ports have reserved channels to use to connect on. These channels can be changed from Plug and Play channels to manually added camera channels.

1. Open the main menu of the recorder and navigate to Cameras > Cameras (IP Cameras).
2. In the camera menu from the recorder double click on the camera to modify it. On the web browser select the camera and then click on the modify button at the top of the screen.
3. Next in the modify menu change the Add Mode to Manual from Plug-and-Play
4. After it is changed to manual click the search button to automatically locate cameras on the network or manually fill out the form and click save.
5. Repeat steps 2-4 for each camera that needs to be added from the external switch.

The screenshot shows the UNV web interface. The top navigation bar includes 'Live View', 'Playback', and 'Setup'. The left sidebar shows a menu with 'Client', 'System', 'Camera', and 'VCA'. The 'Camera' menu is expanded to show 'IP Camera' and other options. The main content area is titled 'IP Camera' and 'Advanced Settings'. The 'Add Mode' dropdown is set to 'Manual'. Other fields include Protocol (Uniview), IPv4 Address (192.168.0.117), Port (80), Username (admin), Password (masked), and Remote Camera ID (1). The 'Extended Transmission' is set to 'Off'.