Technical Note Description

This Technical note describes how to manually add IP cameras to the Uniplex NVR.

Product Models Covered

Uniplex series NVRs

How to …..Manually add IP cameras to the Uniplex NVR.

The simplest, fastest and easiest way to add NetVu SmartVu cameras to a Uniplex NVR for recording and display is to connect the cameras to the internal camera (endpoint) ports of the NVR (Uniplex Appliance) or to the camera (endpoint) ports of NetVu NVSE network extender(s) connected to the Uniplex NVR. If NetVu SmartVu cameras are connected to the Uniplex NVR in this way and the Uniplex configuration mode is set to Auto then the cameras will be automatically detected, assigned secure IP addresses on the camera (CIPTV) LAN and given a physical channel number on the NVR.

If neither the Uniplex Appliance NVR endpoint ports nor NetVu NVSE Network Extenders are being used, it is strongly recommended that cameras are still segregated by the Camera Subnet and network. This can be achieved using either a suitable configured managed switch, or as a minimum, with a dumb switch connected to the Camera VLAN / Subnet Ethernet port of the NVR. On the UPXA and UPXD this is the ETH-B port by default.

Cameras can also be allocated on the client's main network, referred to as the 'corporate network'.   However, this offers little Cyber security or management of the endpoints and is not recommended practice.

Also, if on the Camera Endpoint Subnet, or the same subnet on the corporate connection, Cameras can be identified by MAC address, so if these are noted during installation, the correct channel and IP address can be allocated automatically.

IP addresses will NOT be changed on the corporate network as part of the discovery process, as it is assumed that any cameras and their IP addresses on the Corporate network will be managed by the person with IT responsibility for that network.

IP addresses on the Camera Subnet will be automatically set in the Camera according to the standard NetVu IP numbering scheme.

To manually add NetVu SmartVu IP cameras to the Uniplex NVR take the following steps.
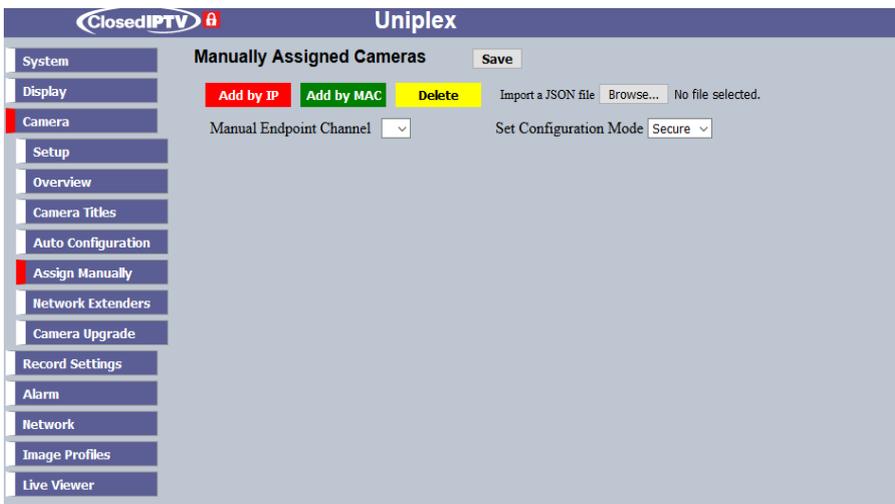
Use your browser (Firefox or similar browser) to view the system web page of the Uniplex NVR.
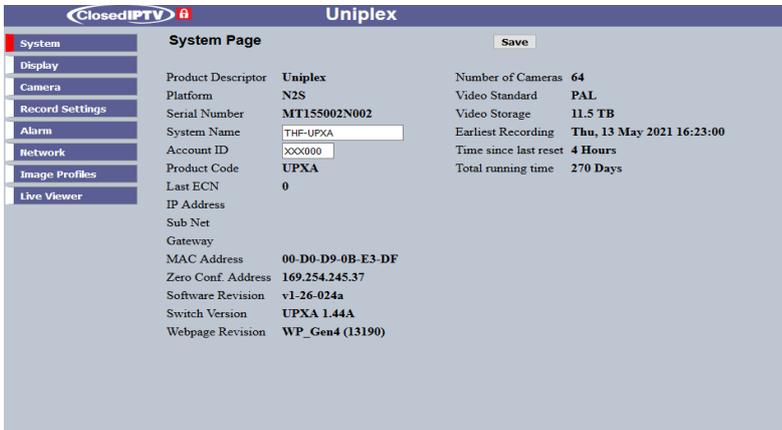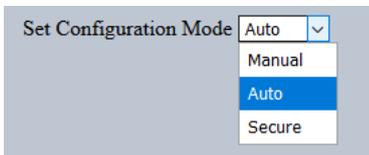

Click on the **Camera** menu button, and then click on the **Assign Manually** sub-menu button.

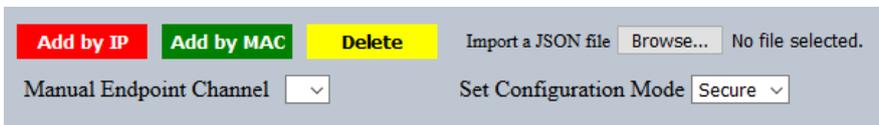The following web page will then appear:

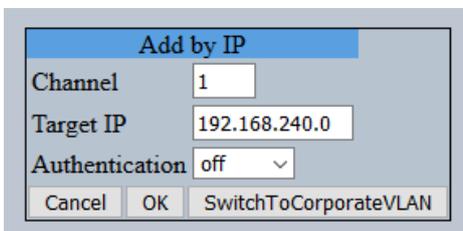Start by clicking on the down arrow in the **Set Configuration Mode** field.

You can now add individual cameras one at a time, using either their IP address or their MAC address.

Manually adding cameras by IP address

Click on the red **Add by IP** button. The following window will open:

Enter the channel number (1-64) on which you want the new cameras to appear.

Enter the IP address of the camera to be added. This must have already been set as the static IP address in the camera itself.

If the new camera is connected to the CIPTV camera network and has a CIPTV IP address (The first three octets are always 192.168.240) then set the final octet to that configured in the camera. Cameras added in this way should be connected to the camera endpoint ports of the Uniplex, or to camera endpoint ports of attached NetVu NVSE extenders.

If the new camera is connected to a third-party network infrastructure then click on **SwitchToCorporateVLAN**. When you do that you will notice that the Target IP field changes to the same range as that set for the Uniplex NVR for connection to the outside world.

For example, if the IP address of the Uniplex is set to 192.168.1.1 then clicking on **SwitchToCorporateVLAN** will change the Target IP field to 192.168.1.0
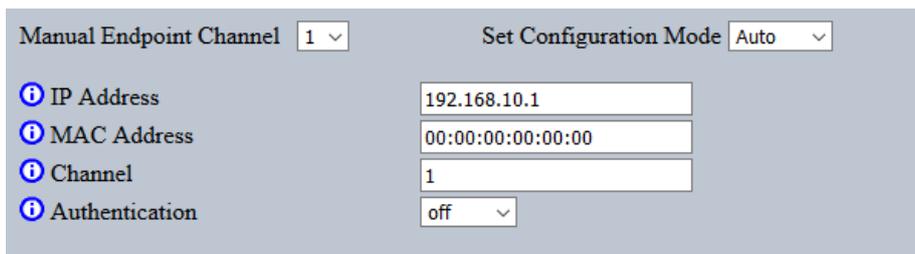
Enter the static IP address previously configured in the camera. In this case the camera must be connected via the corporate network port of the Uniplex. However, this offers little Cyber security or management of the endpoints and is not recommended practice.

The authentication field allows the NVR and cameras to comply with the requirements of Secure by Design in that all network devices should have unique access credentials (username and password).

If the Authentication field is set to level0 then the NVR assigns a unique account to the camera, which it will use to access it. As only the NVR "knows" the account credentials this prevents unauthorised camera access across the network.

Consequently the preferred setting for Authentication is level0
When you are ready, click on **OK**

The details entered will be displayed:

Manual Endpoint Channel	1 ▾		Set Configuration Mode	Auto ▾
ⓘ IP Address			192.168.10.1	
ⓘ MAC Address			00:00:00:00:00:00	
ⓘ Channel			1	
ⓘ Authentication			off ▾	

If a camera is detected at the IP address entered then it's MAC address will be displayed.

The channel displayed below the MAC address is the **streaming channel**.
The channel number on the NVR to be used by this camera is the **Manual Endpoint Channel.**

When you are happy that everything is correct, click on **Save.** The camera will now be added to the NVR, it will be recorded and displayed. You can check this by going to the **Camera Overview** page of the Uniplex, where the new camera should now be listed.

Don't forget to return the **Set Configuration Mode** to **Secure** when you are finished, so that the cyber security features of the Uniplex are once more active.

After configuration mode has been set to secure do not forget to update the camera fail wizard and activity wizard with the new camera details.

Manually adding cameras by MAC address
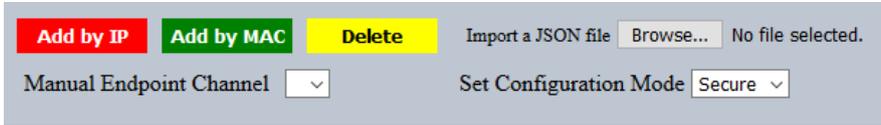
Click on the red **Add by MAC** button. The following window will open:
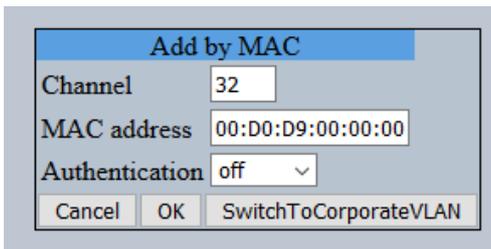
Enter the channel number (1-64) on which you want the new cameras to appear.

Enter the MAC address of the camera to be added. This is printed on the camera label and is shown on its system webpage.

The authentication field allows the NVR and cameras to comply with the requirements of Secure by Design in that all network devices should have unique access credentials (username and password).

If the Authentication field is set to level0 then the NVR assigns a unique account to the camera, which it will use to access it. As only the NVR "knows" the account credentials this prevents unauthorised camera access across the network.

Consequently the preferred setting for Authentication is level0

When you are ready, click on OK

The details entered will be displayed:
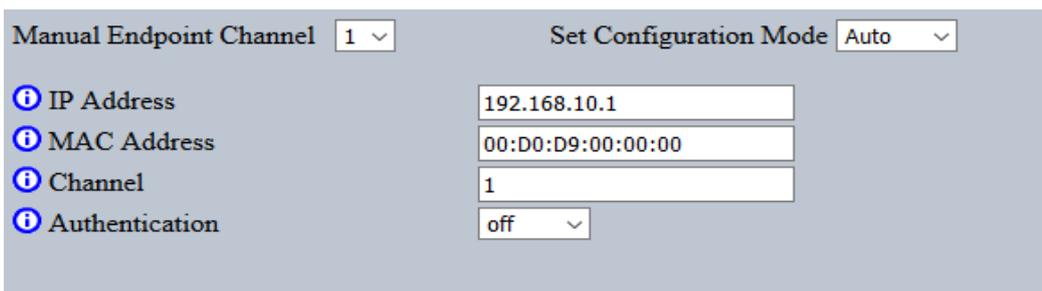
If a camera is detected at the MAC address entered then it's IP address will be displayed.

The channel displayed below the MAC address is the **streaming channel**.
The channel number on the NVR to be used by this camera is the **Manual Endpoint Channel.**

When you are happy that everything is correct, click on **Save.** The camera will now be added to the NVR, it will be recorded and displayed. You can check this by going to the **Camera Overview** page of the Uniplex, where the new camera should now be listed.

Don't forget to return the **Set Configuration Mode** to **Secure** when you are finished, so that the cyber security features of the Uniplex are once more active.

After configuration mode has been set to secure do not forget to update the camera fail wizard and activity wizard with the new camera details.

Manually adding cameras by using a JSON file

Rather than adding the cameras one at a time, if all of the camera details are known then they can all be manually added at the same time, using a JSON file i.e. a file with a .JSON extension.

This format of file can be easily produced on a Windows PC using the Notepad++ App and text editor apps like TextWrangler on MAC.

The contents of the JSON file should be as follows:

```
1  [
2    {
3        "ip_addr" : "192.168.240.55",
4        "mac" : "00D0D90B0C0D",
5        "phys_chan" : 55
6    },
7    {
8        "ip_addr" : "192.168.240.56",
9        "mac" : "00D0D90B0C0E",
10       "phys_chan" : 56
11   }
12 ]
13
```

Using the format shown above, for each camera there should be:

- one line which gives the IP address of the camera
- one line which gives the MAC address of the camera
- one line which sets which channel of the NVR (1-64) that the camera is to be mapped to

In the above the example the cameras will be mapped to channels 55 and 56 of the NVR

The JSON file can have any name, but it is probably a good idea to give it a name which is appropriate to the installation, for example, the name of the site.

Once you have created the JSON file click on the **Browse** button.
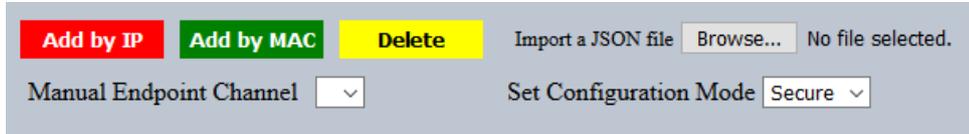
Select the file from your computer and then click on OK.

The name of the file will appear to the right-hand side of the **Browse…** button

When you are happy that everything is correct, click on **Save.** The cameras will now be added to the NVR, and will be recorded and displayed. You can check this by going to the **Camera Overview** page of the Uniplex, where the new cameras should now be listed.

Don't forget to return the **Set Configuration Mode** to **Secure** when you are finished, so that the cyber security features of the Uniplex are once more active.

After configuration mode has been set to secure do not forget to update the camera fail wizard and activity wizard with the new camera details.