Networking URE Book 4
Console Networking

Having looked at all the component parts to build our network, now we can look at how our consoles and hardware will sit in a network and work together. For the ease of this guide we will look at two types of console, the MA2 and ETC EOS series.

Reasons for Networking Consoles

There are many reasons you may want to put two console together in a network. Putting aside the basic reasons of reliability and backup, having a network allows you to have multi user session running.

This means that multiple programmers can be working at the same time on the same show, increasing speed. For example, one programmer could be working with the lighting designer plotting cues live at speed while the other clears up the damages, tidies up blocked cues and marks all the moving lights, this means the LD and first programmer can plough on not worrying about any mess they may leave behind, and still come back to do updates with a beautifully tracked show file.

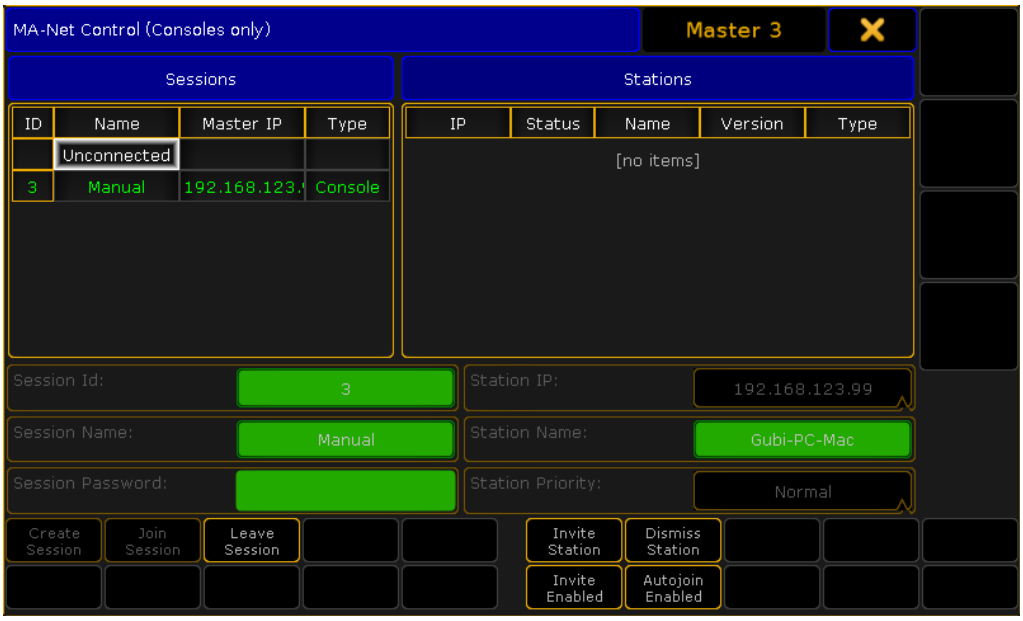
MA2

In an MA2 Network, there are a few specific bits of hardware that come into play. The most important one is the NPU:

The NPU is effectively a desk in a rack unit without the buttons. The advantage of this is that should our desk go down the NPU will continue to run the show file until we can get our console back. Also the NPU adds parameters to the session, which allows us to use more lights, media servers or other units requiring control from our console.

Configuring the MA2 Network

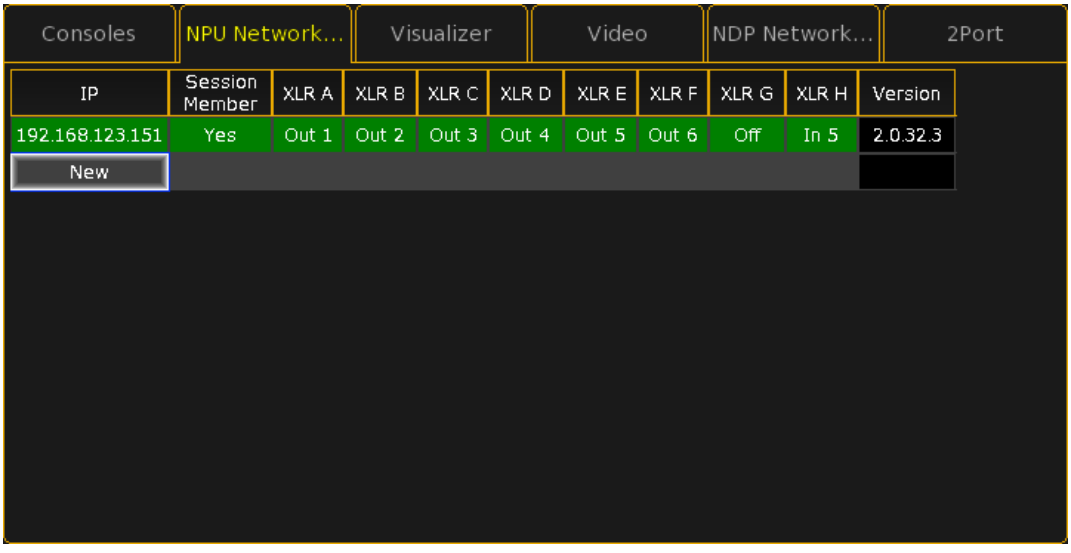
Configuring an MA2 Network is done from within the MA Network Control window, which can be found after pressing setup. (This differs from MA 1, where it is in the tools menu). The window looks like this.



In the left hand column we can see all the active sessions our console could join, and in the right column we see any station in the currently selected session. Since the currently selected session is “unconnected”, we don’t see anything here at the moment, however should a console come onto the network and not join a session it would be listed here where we could invite it into one.

Adding NPU’s

If we wish to add NPU’s to the session we need to go to the MA Network configuration window and select the NPU tab. Like below, we will see all the NPU’s in our network and can choose which universes to output from which DMX port.



Once added to the session, NPU's will track any updates you make and save their show files automatically.

Outputting ArtNET/sACN

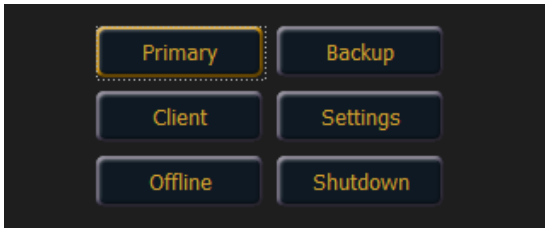
If we wish to output other network protocols, we need to go to the Network Protocols window and choose which ones we want to output and how many universes. It is important to know there are two ethernet ports on the back of an MA2. Port 1 is for every protocol except ArtNET, and then port 2 is dedicated to ArtNET.

There is always more to know about MA2 networking but this should at least let you get into a session and started.

EOS

In an EOS network, very little configuration beside IP Addresses is required. This is because ETC net is based off sACN which is designed to work with very little configuration on the console end, and is supported by many devices out of the box.

An EOS network differs from an MA2 network in that one console is always the master of the session. When you start up an EOS you get the following options, before it automatically becomes the primary console (if it has never been used in a network before):



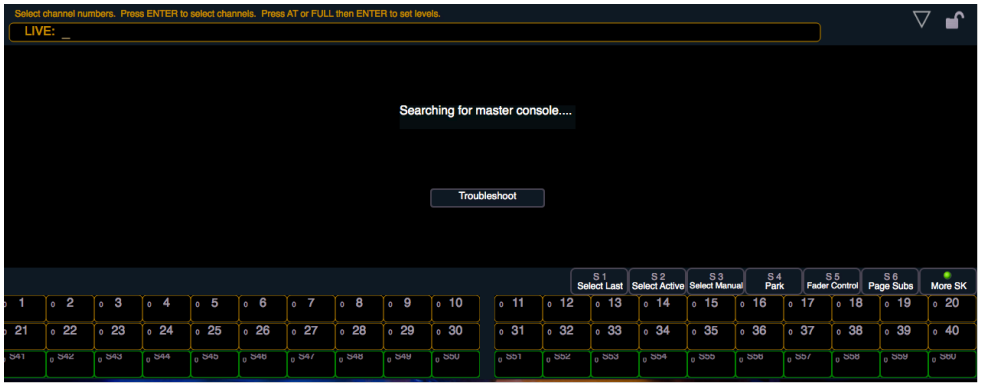
There is no directly equivalent piece of kit like the MA2 NPU, however ETC does have a Remote Processor Unit which performs a similar function and is shown below:

Configuring the Network

When building an EOS network, you first must decide which console is going to be the primary console in the system. This will usually be your largest, and most powerful console (for example an EOS Ti). An EOS console or piece of network hardware can have one of 3 roles in a network:

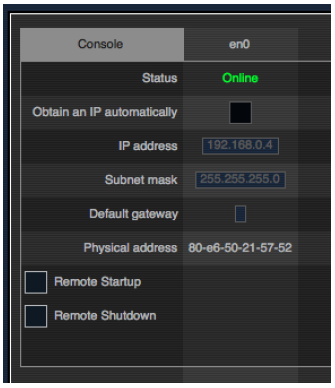
Primary	Charged with processing the output of the rig, and the centre of the network.
Backup	Also processes the output of the rig but will only send physical data should it notice the primary console has failed.
Client	Has access to the Showfile and can change data in cues, but doesn't do any processing work.

If you start a console in primary mode, it will boot up as you would normally expect an EOS to. However if you boot up as client or backup you will see this screen:



This is the beauty of EOS based networking; because as long as you have setup your IP addresses correctly and have only one Master console in the network, each individual client or backup will go an find the master console by themselves, downloading the show file and beginning their role in the network.

If the IP addresses are wrong, you will need to go into the shell setting window to change them. The window can be found under Shell Settings > Network and will be a window that looks like this:

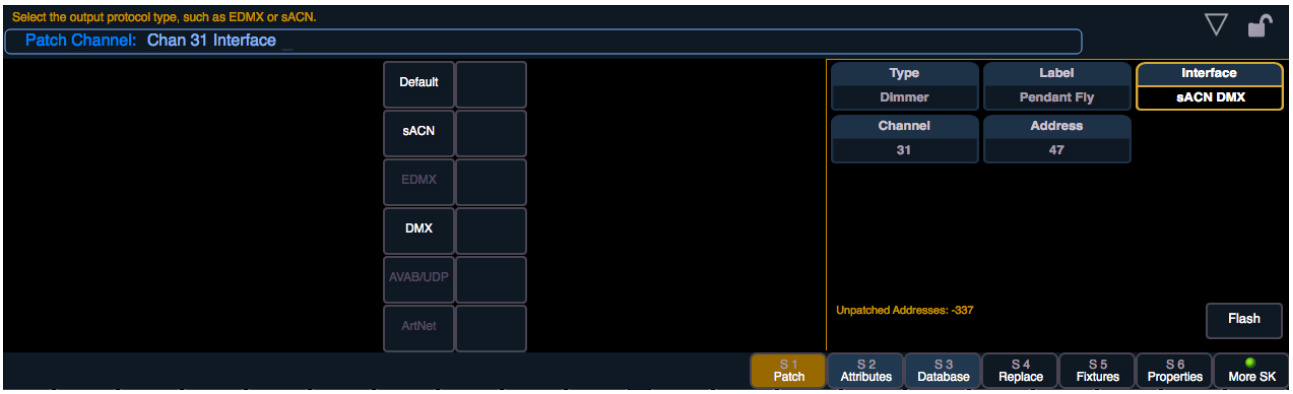


Make sure that the IP address is set to ETC's recommended ranges.

Outputting other Protocols

To output another network protocol from an EOS, all you need to do is say so in the patch window.

When you patch a fixture, there is an option to select the interface. Normally this is set to sACN/DMX but if you click on it you can see there is a range of options. Simply pick from the list which one you desire to use



(*ArtNET is greyed out here as because this tutorial was done on an offline PC, the network card was not correctly configured)*