iKON AMPRACK Connection Application Note

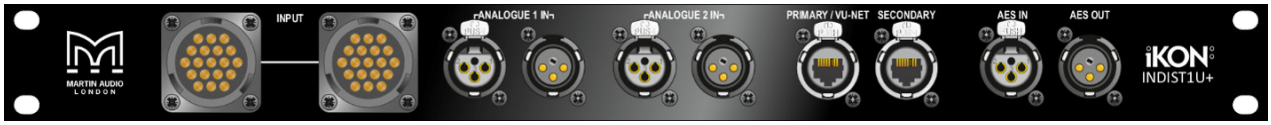
This application note describes the processes for connecting VU-NET to iKON amplifiers and iKON racks and explains the troubleshooting steps required when connection is not successful.

For any further support, please email technical@martin-audio.com.

Connections

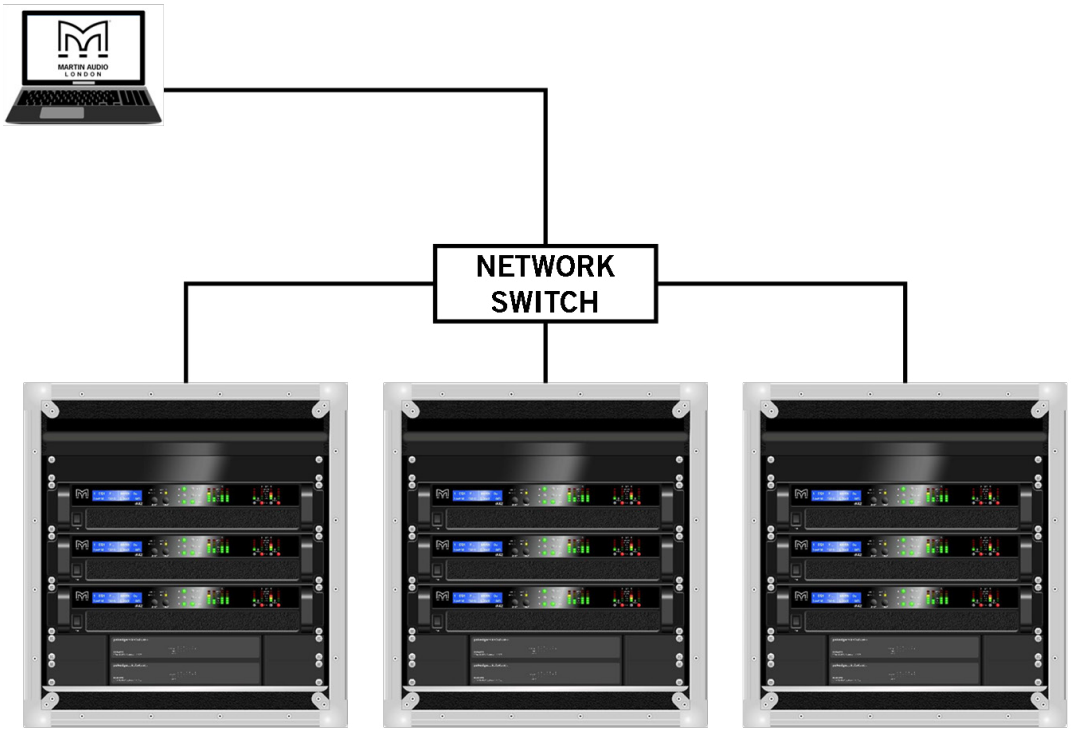
To secure connection between a computer and iKON, first ensure all devices including the network switches are powered on. A power LED and activity lights for each port can be seen on the network switches' front panel. The ethernet port on the rear panel of iKON also displays activity lights when connected.

Each iKON rack has an INDIST1U+ input distribution panel that features two Ethercon ports for network connectivity. They are labelled *Primary/VU-NET & Secondary*.



To connect an iKON to VU-NET, connect the laptop/PC to the Primary/VU-NET port on the panel.

If multiple amplifier racks are used within a system, it is recommended to connect all racks to an external network switch. The control laptop/PC is then connected to this switch to obtain access to all devices in VU-NET.



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Addressing

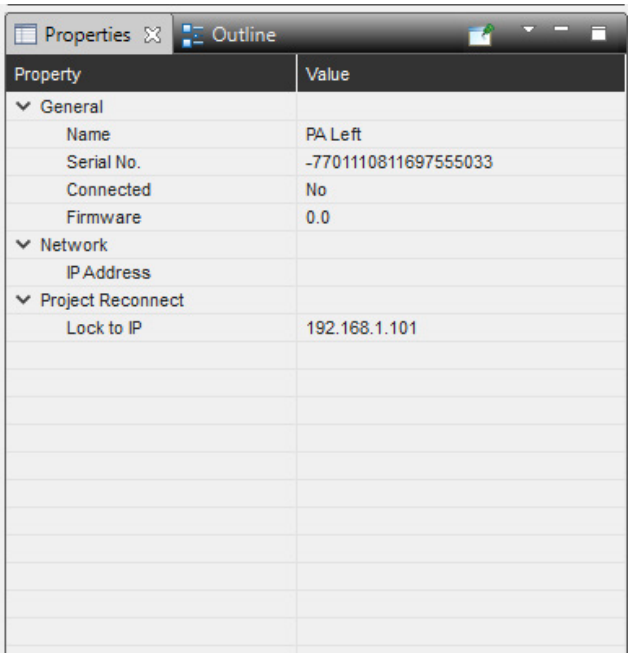
When connecting a laptop/PC to an iKON amplifier rack, automatic or static IP addressing can be used.

The default IP mode is automatic and all connected amplifiers will obtain an IP address from a connected DHCP server. If no DHCP server is present on the network; the amplifier's will self-address using the Link-Local IPv4 protocol, 169.254.0.0/16

To view the amplifier's IP address, select *Utility* on the amplifier's front panel then push the up arrow once. Here the front panel will display the current IP address for the device.

Whilst convenient connection can be made using automatic (or dynamic) IP addressing, this method should be limited to a small system where connection to a couple of amplifiers is all that is required.

For larger, or more complex setups a statically addressed is preferred. VU-NET offers the ability for users to create offline project files that target an amplifier's static IP address and push the settings through.



Having a well-managed static system also means that troubleshooting a faulty device is much easier. Replacing a faulty amplifier that has the correct settings for the system is easy to achieve with a static setup as the virtual device can be synchronised to a physical device that share the same IP address.

This would be a manual process when using automatic IP addressing.

For static IP addressing, four ranges can be selected on the iKON's front panel, these are:

- 192.168.0.0/8
- 169.254.0.0/16
- 10.0.0.0/24
- 172.0.0.0/24

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To set a static address for iKON, select *Utility* on the amplifier's front panel then push the up arrow twice. Here you can toggle between *Auto* and *Static* modes using the right encoder.

Once set to static, push the up arrow once more to access the addressing page. The left encoder will select the relevant part of the IP address and the right encoder is used to change its value.

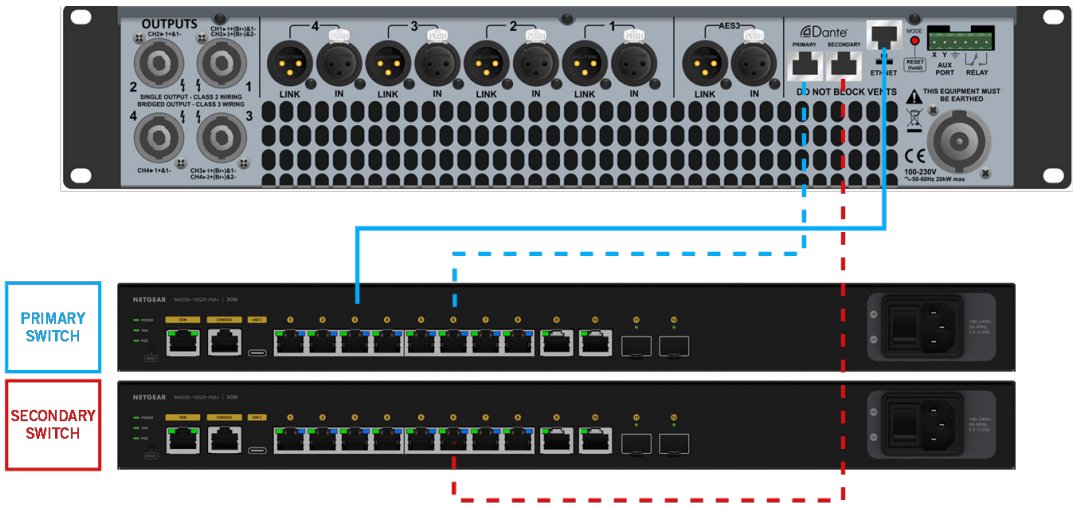
There is no need to confirm the entered address. Once selected, push the *Utility* button to return the screen to the home page, here the iKON's static address will flash along the top of the screen.

Note that if static IP addressing is used, all devices including the system laptop/pc must be set within the same range to establish secure connection.

Dante

An optional Brooklyn series Dante card is available for iKON amplifiers. When in use, the primary port of the Dante card is connected to the same physical switch as the control ports carrying VU-NET data.

The secondary port of the Dante card is connected to a separate network switch containing only the redundant Dante streams. The secondary port on the input distribution panel is connected to this switch.



Just like iKON's ethernet control, the Dante card has the option to use automatic or static IP addressing. If a DHCP server is connected to the primary port of the rack, then both control and Dante primary ports will receive IP addresses from the server. If no DHCP server is present, a link-local address will be used.

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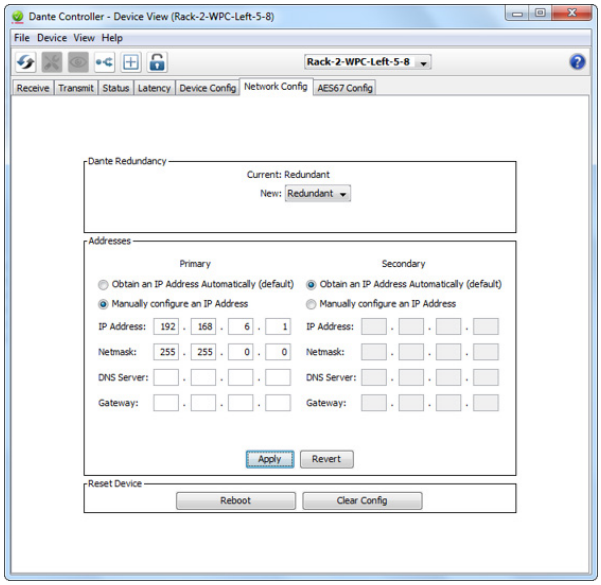
Dante's secondary network can also be supplied addresses from a DHCP server, or they will self-address, this time in a 172.0.0.0/24 range.

Static addressing can be assigned to both the Dante's primary and secondary networks independently, this can be achieved using Audinate's Dante Controller application.



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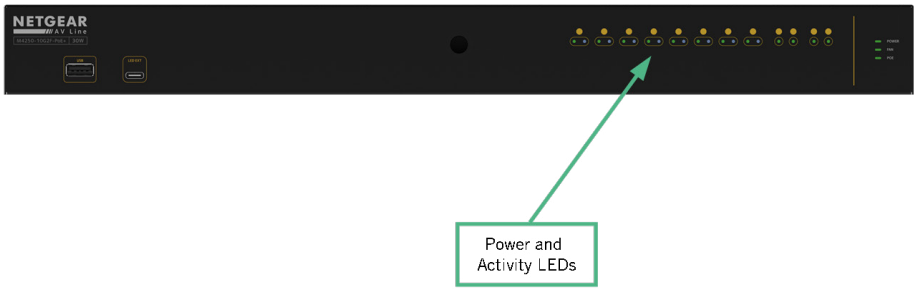
Troubleshooting

If secure connection cannot be established between a laptop/pc and iKON please check the following steps.

Device Power

Check that all devices are powered on and network activity is present. This can be checked using the activity LEDs on the network switches or iKON's ethernet port.

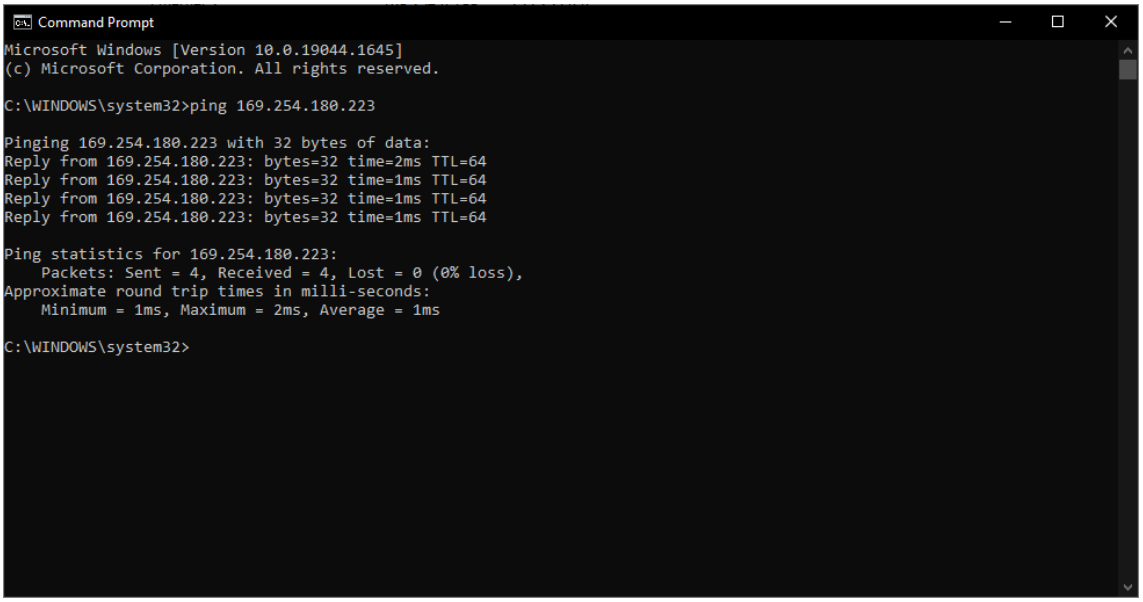


Network Setup

All devices are within the same network range. See "Addressing" to learn how to view or set iKON's IP address. Check the system laptop/pc's network settings too.

If a DHCP server is being used on the network, check to make sure all devices (iKON and the connected laptop/PC) are receiving an IP address from the server. This can be checked from iKON's front panel.

To establish network robustness, you can use the *Ping* command in *Command Prompt* to check that communication exists between devices.



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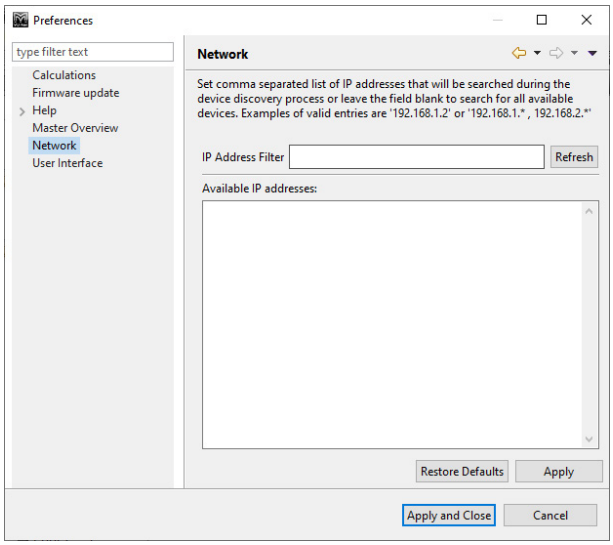
VU-NET Preferences

Open VU-NET and check the network preferences. Under the *Edit>Preferences* menu, select *Network*. Here an IP Address filter can be applied to separated specific addresses that will be searched during the discovery process.

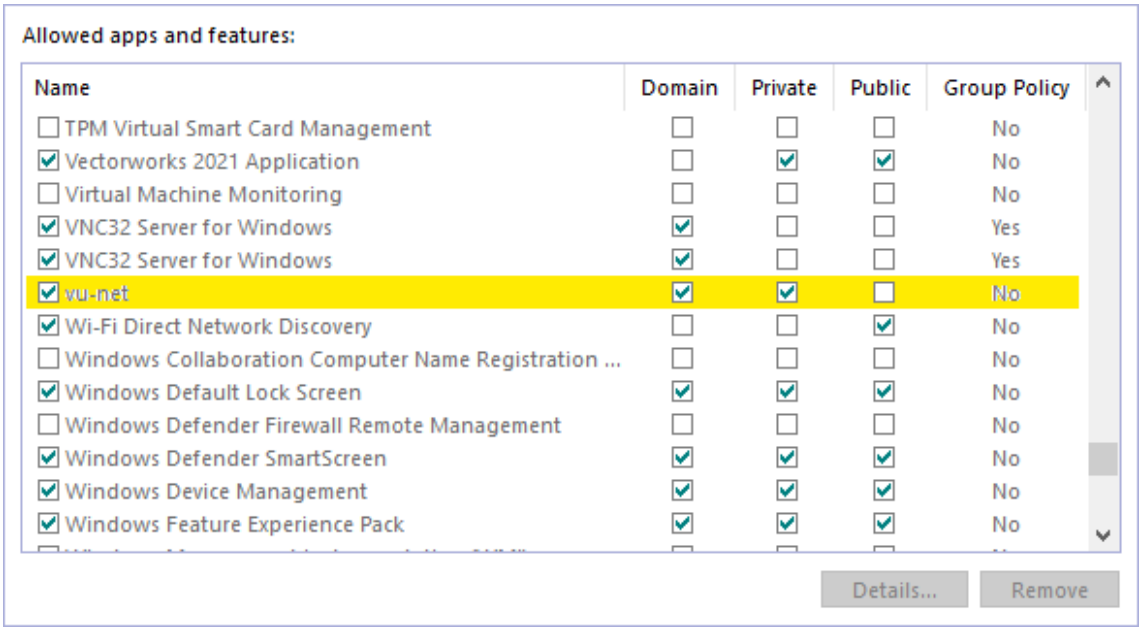


The *Restore Defaults* button will remove any filters that may be applied.

The available IP addresses dialogue shows all discoverable devices on the network. Ensure all device addresses are displayed here.

Firewall Settings

Ensure that any apps or features containing VU-NET are allowed through any active firewalls.



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TCP Port Allocation

VU-NET communicates with iKON using two TCP ports. These are 6002 and 54077.

The VU-NET networking log file will show whether a connection error is present. The log file can be accessed either by exporting them under the Help menu inside VU-NET, or navigate to the following folder:

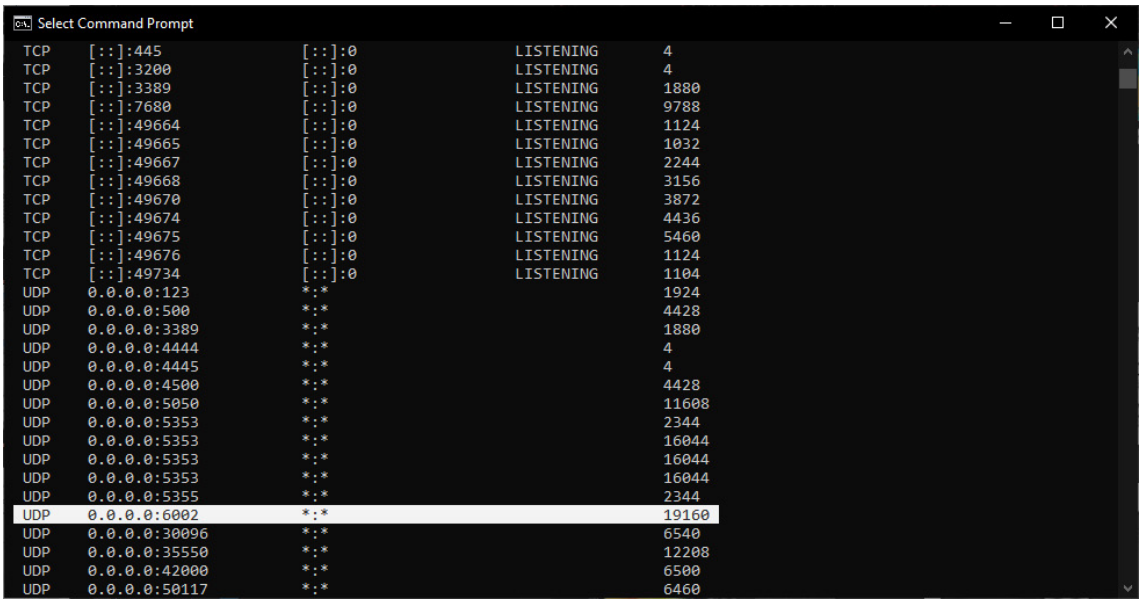
This PC > Local Disk (C:) > Users > username > .VU-NET > logs

If ports 6002 or 54077 are being used by another application the log file will display the following message:

ERROR [main] networking – NGIN Discovery: error creating multicast receive socket on port 6002

To rectify this, first close VU-NET and open a command prompt window. Enter the following: *netstat -aon* followed by the enter key.

All network addresses including TCP port addresses are displayed in a list. Search the list for any TCP address that include ports 6002 or 54077.



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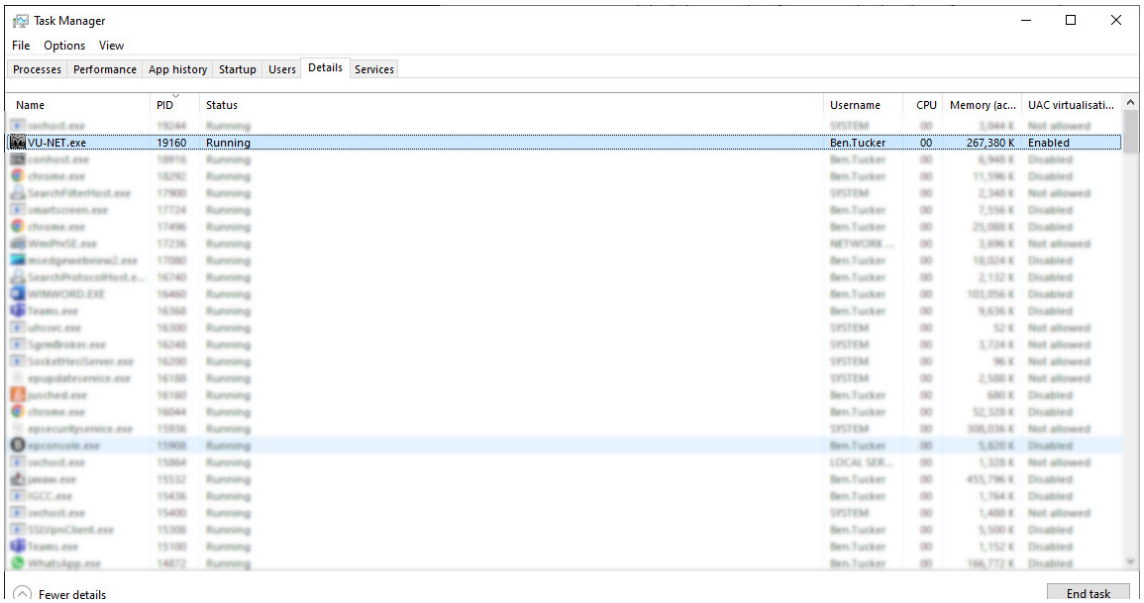
Make a note of the PID (process identifier) that the port is using.

Open *Task Manager* and select the *Details* column. Organise the table by PID value (click the PID header) and search for the process that matches the PID value identified in the previous step.



Select the process and *End Task*.

Re-open VU-NET and discover the devices.