

Tech Note: Static Routing 101 for ACCESS and BRIC-Link

Most network setups for Comrex codecs are simple—take the static IP address, netmask, gateway and DNS info provided by your IT department (or figure them out if you *are* the IT department), and away you go. But sometimes, especially in the case of multiple network attachment or in the case of private WANs, it becomes necessary to “kick it up a notch”. There might be multiple gateways on your network that allow access to different subnets. In this case you might need to add a Static Route.

Under most circumstances, inbound packets can find their way to codecs without much trouble. As long as the IP address and port number are correct, inbound packets will be accepted and used the right way. Trouble comes when outbound traffic has more than one option for transmission. If you leave the choice of how to route **outbound** traffic to the codec, it might not always get it right.

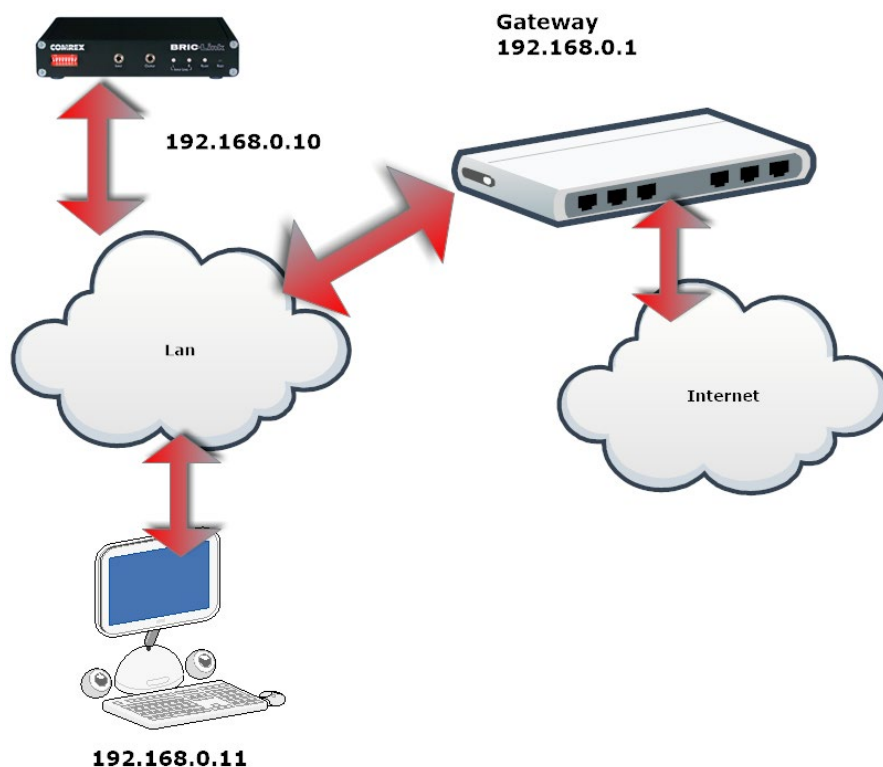


Fig. 1

As shown in Fig 1, a typical LAN uses a gateway address to bridge from the LAN to the Internet. Using the entries you apply when you set things up, the codec can figure this out based on the Netmask and Gateway settings. Any addresses outside the Netmask get sent to the gateway and on to the Internet. Addresses inside the Netmask are assumed to be on the LAN and are sent directly to those addresses—and not the gateway.

But in Fig 2, there’s an additional router and an additional gateway address. This is designed to allow access to a subnet LAN with its own IP address scheme.

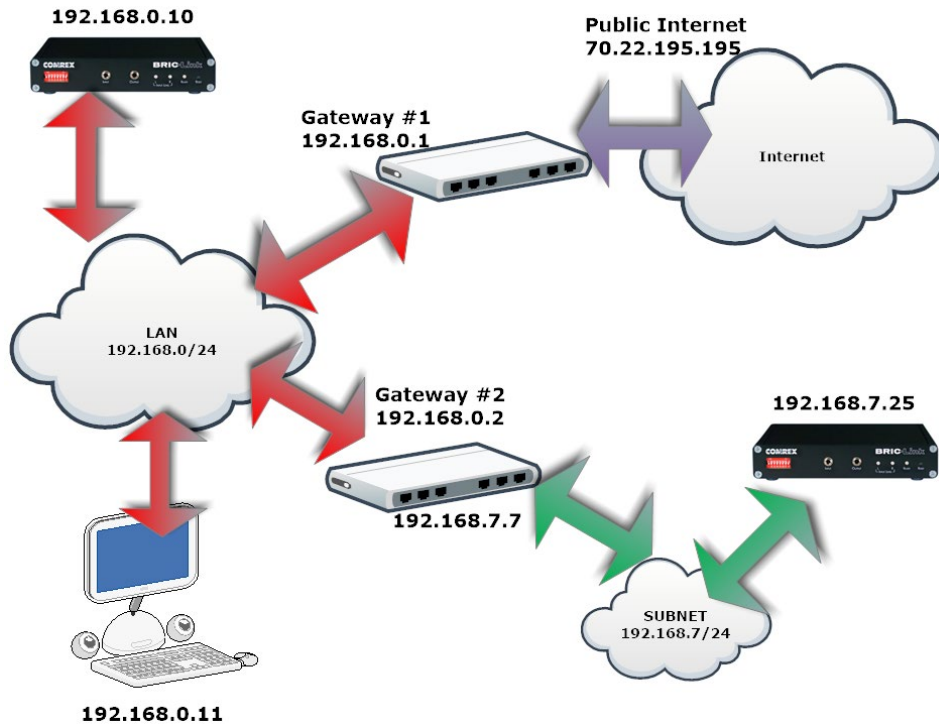


Fig 2

We need a way to instruct the codec that addresses within this secondary subnet are neither local LAN addresses nor public Internet addresses, and must be sent to this secondary gateway for relay to the subnet.

When the codec has an outbound packet ready to send, it will consult an internal “routing table” it maintains in software, which includes information about the networks to which it is directly connected, as well as any defined default gateways. Static routes are basically a way to edit this “routing table” for a certain range of IP addresses, giving the option to send specific packets to a specific gateway as shown in Fig 2.

When a codec has more than one network attached and active (e.g. when using CrossLock over multiple networks) each network will generally be programmed with an outbound Gateway address as shown in Fig 3.

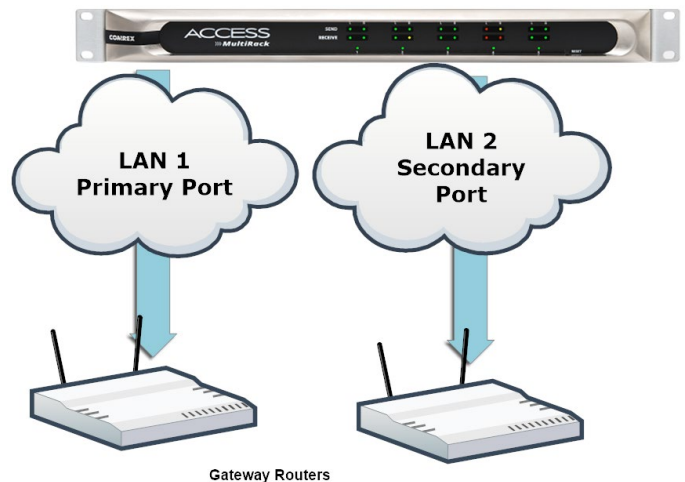


Fig 3

The basic network settings allow for defining a Gateway address for each port. If both of these Gateway routers attach to the public Internet, this works fine – the codec implements connection-based policy routing, which makes a note of which interface a connection was created with, and makes sure that outgoing packets associated with that connection always use the same interface. For outgoing connections, either route would work fine, but the connection-based policy routing makes sure that it will not later switch to a different route.

But for example if the secondary port shown in Fig 3 is a private network (e.g. sending packets to another codec with split Public/Private networking), it matters a lot which port sends the packets. Packets sent on the Primary will not reach the receiver's private network port, and packets sent from the Secondary will not reach the public Internet.

By creating a static route, we can instruct the codec to send packets with specific outbound addresses to a specific gateway.

Setting Static Routes on ACCESS/BRIC-Link

Network setup on ACCESS/BRIC-Link involves defining “locations” that hold the vital entries for that network. Multiple locations can be created if you tend to move your codec between networks. But most stationary codecs have just one location defined, called “default”. Whether you're using a custom designed location or the default, Static Routes are added within the location settings.

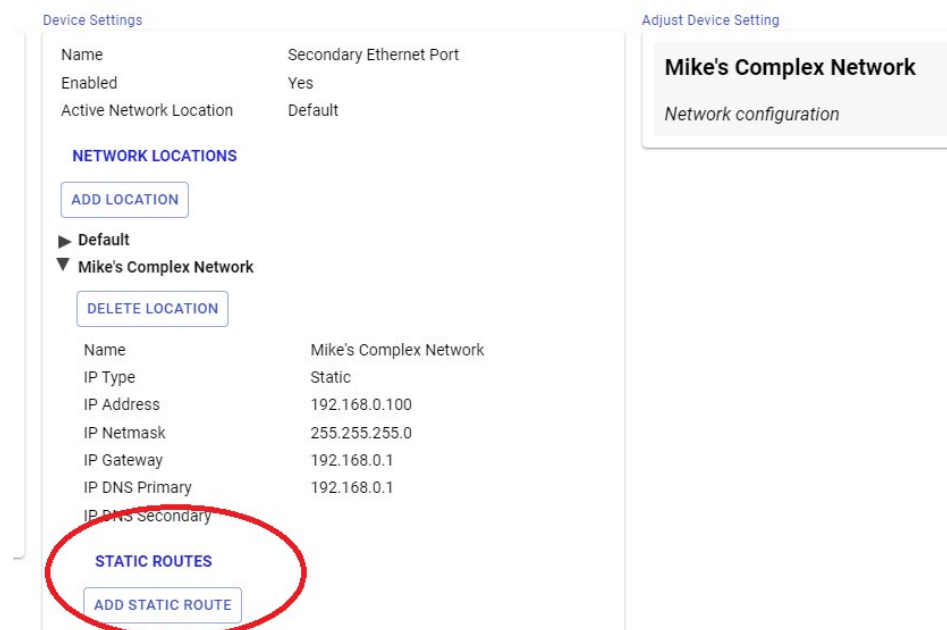


Fig 4

Let's assume you've created a location on your Secondary Ethernet adapter (or set the default location correctly) and want to add a static route. Enter the Network Manager via your web browser and select the Ethernet adapter to show a list of locations currently assigned to it. Choose default or create a new location and set the standard static IP info as in Fig 4. Select “Add Static Route” and you'll get the options in Fig 5.

Service Settings

Name	Secondary Ethernet Port
Enabled	Yes
Active Network Location	Default

NETWORK LOCATIONS

[ADD LOCATION](#)

► Default

▼ Mike's Complex Network

[DELETE LOCATION](#)

Name	Mike's Complex Network
IP Type	Static
IP Address	192.168.0.100
IP Netmask	255.255.255.0
IP Gateway	192.168.0.1
IP DNS Primary	192.168.0.1
IP DNS Secondary	

STATIC ROUTES

[ADD STATIC ROUTE](#)

▼ Gateway to Oz

[DELETE STATIC ROUTE](#)

Name	Gateway to Oz
Address	192.168.7.2
Netmask	255.255.255.0
Gateway	192.168.0.2
Metric	1

Adjust Device Setting

Gateway to Oz

Static route configuration

Fig 5

Add the following information to the appropriate fields:

- 1) Name - Any familiar name for your subnet goes here.
- 2) IP address - Any IP address within the range you wish to route statically. For example, if your subnet consists of 192.168.7.0->192.168.7.255, you can put the address of 192.168.7.2 here.
- 3) Netmask - This entry, along with the IP address, defines the range of addresses that will be routed statically.
- 4) Gateway - The address on the LAN that contains the gateway for this subnetwork. All data sent to the subnet by the codec will be sent to this address. This address will not be on the destination subnetwork, but rather will be an address on the local LAN.
- 5) Metric - A priority setting for those with multiple subnets. Leave this at default of 1 for most users.

When finished, click the “Apply Changes” button to save the Static Route info. Back at the adapter’s main settings section, set this location as the “Active” location for this adapter.

You may set up multiple Static Routes to address multiple subnets on each network adapter.

In our example, packets sent to 192.168.7.x will be sent to the Oz Gateway, over the Secondary port. Packets sent to 192.168.0.x will be sent directly to their destination over the Secondary Lan. And outbound Packets outside these ranges will be sent to the default Gateway on either Network port.

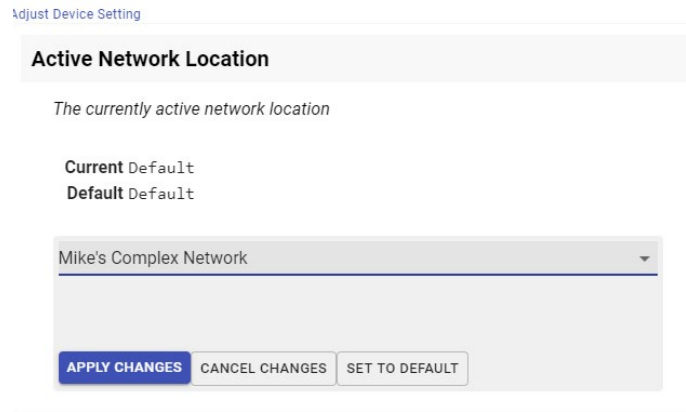


Fig 6

About Default Gateways

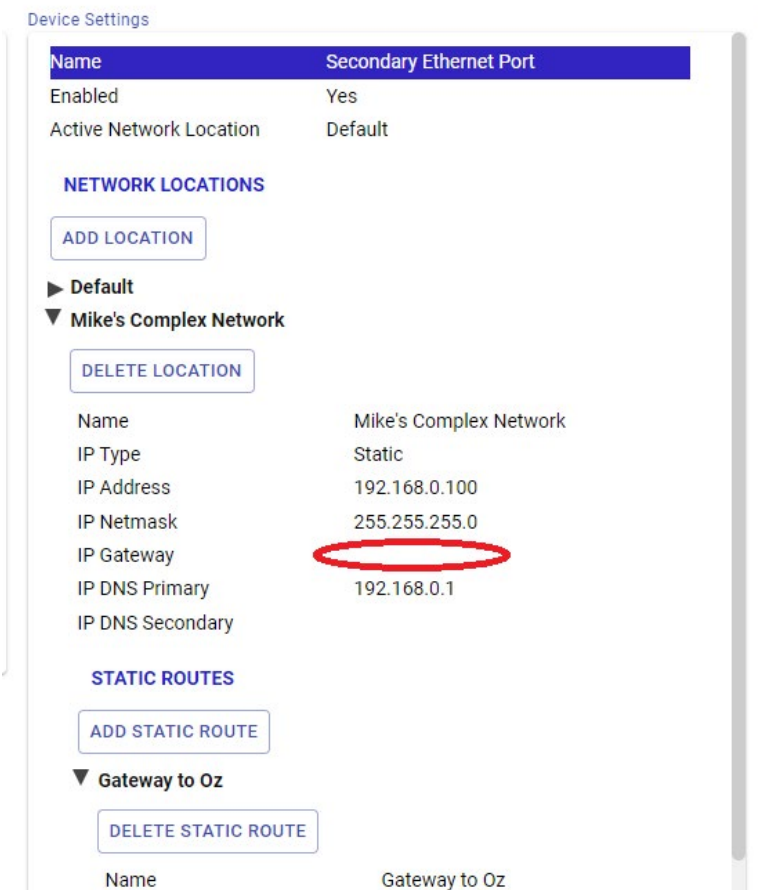


Fig 7

The directions above assume your chosen network port has Gateways to access both the public Internet and a private subnet. When this isn’t the case, you should remove the default Gateway from the adapter’s main settings as shown in Fig 7. This way, the default outbound route for the codec will not send any Internet-bound traffic to this port. Note this is the “main” Gateway setting, not the setting within the static route settings.

**Have questions
or need support?**

Call our tech support team
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