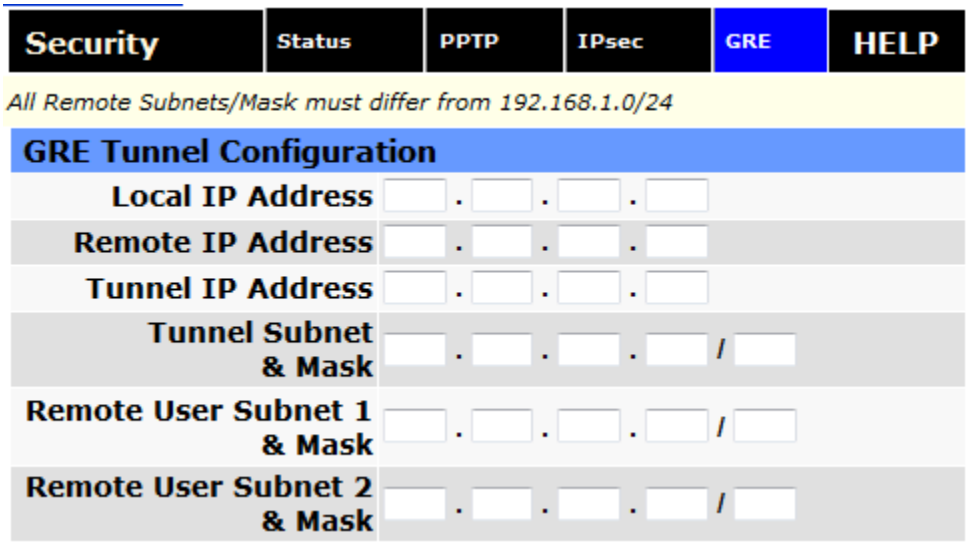
GRE Tunneling

The main goal of this application note is to demonstrate the Vanguard 3000 ***GRE Tunneling*** feature and how to create a MESH network between Vanguard 3000 private LAN's through the cellular network.

The Vanguard 3000 ***GRE Tunneling*** is located under *Security - GRE*



Feature Overview

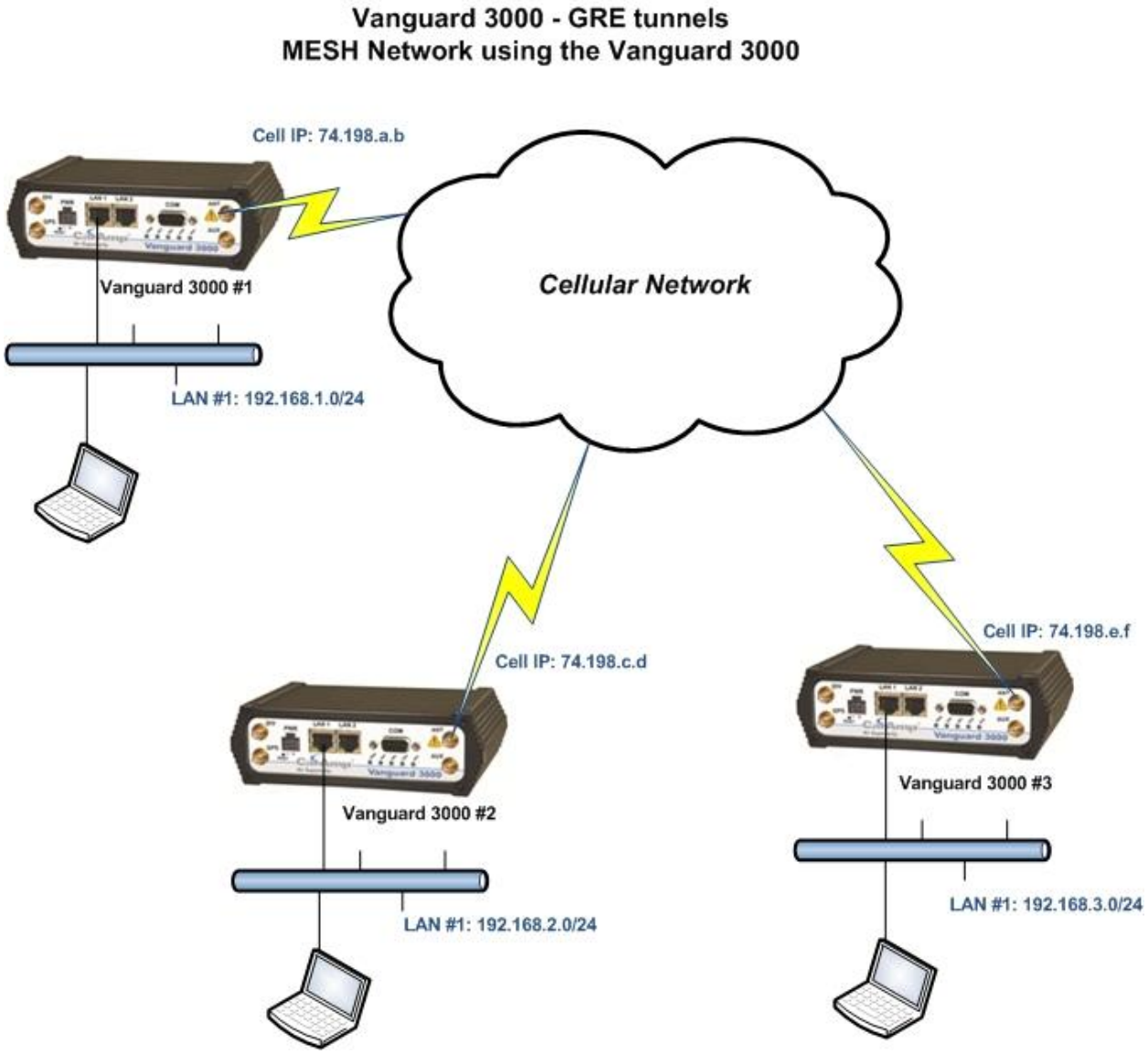
The GRE page is used to add and delete GRE (Generic Route Encapsulation) tunnels. Current tunnels are listed below. Up to two networks that lie beyond the tunnel may be specified and routes to those networks are automatically created when the tunnel is established. Static local and remote IP addresses are necessary to allow for the tunnel automatic (re)connection.

Where:

Local IP Address:	The PPP IP Address of the local Vanguard 3000
Remote IP Address:	The PPP IP Address of the remote Vanguard 3000
Tunnel IP Address:	The GRE local end point IP Address
Tunnel Subnet & Mask:	The GRE tunnel network Address
Remote User Subnet 1 & Mask:	The local network1 Address of the remote Vanguard 3000
Remote User Subnet 2 & Mask:	The local network2 Address of the remote Vanguard 3000

Network Example - Overview

Each Vanguard 3000 is required to have a static cellular IP Address and distinct LAN IP networks.

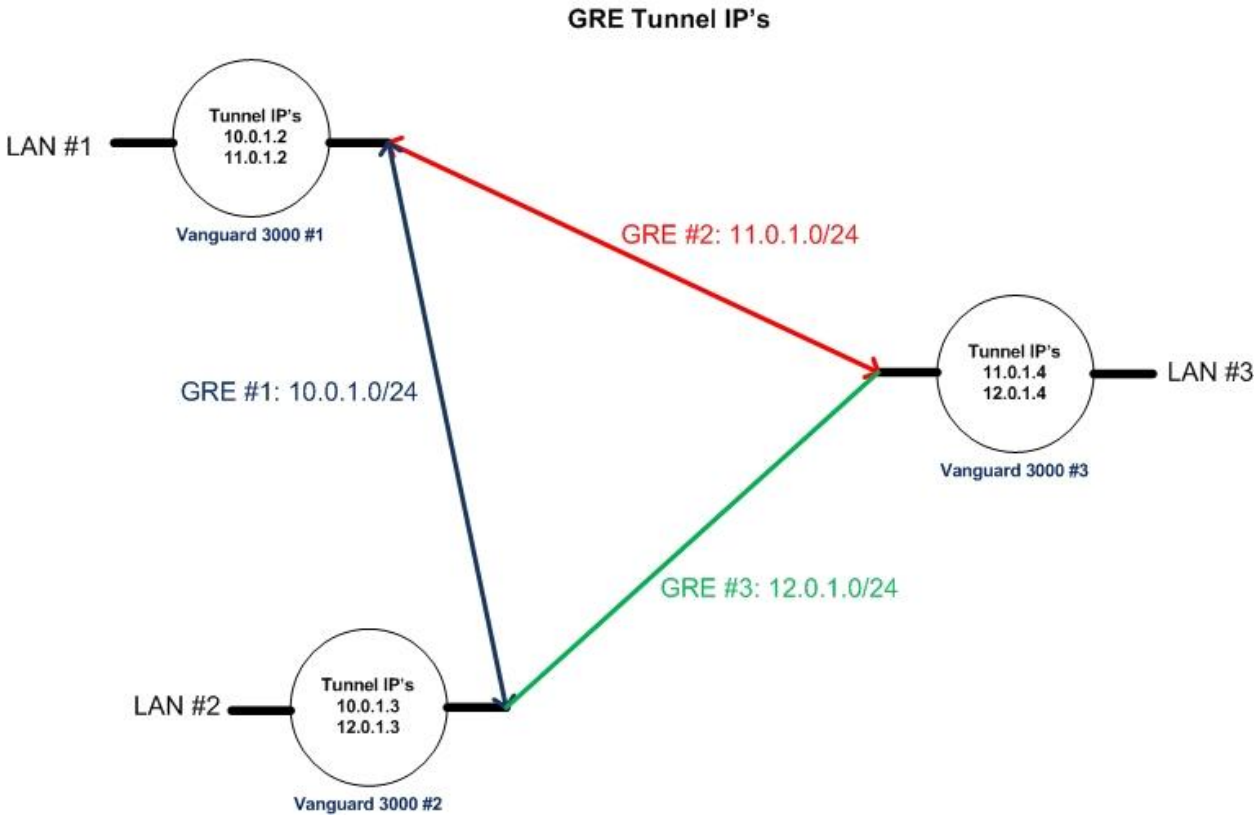


Network Example#2 – GRE Overview

In order to create a point to point connection between the Vanguard 3000 LAN networks, we will have to define GRE tunnels between the units. The example below demonstrates three Vanguard 3000s that require communicating LAN2LAN. In that case, two GRE tunnels per unit will be added.

Note: Each GRE tunnels must be part of different network as well as the LAN networks.

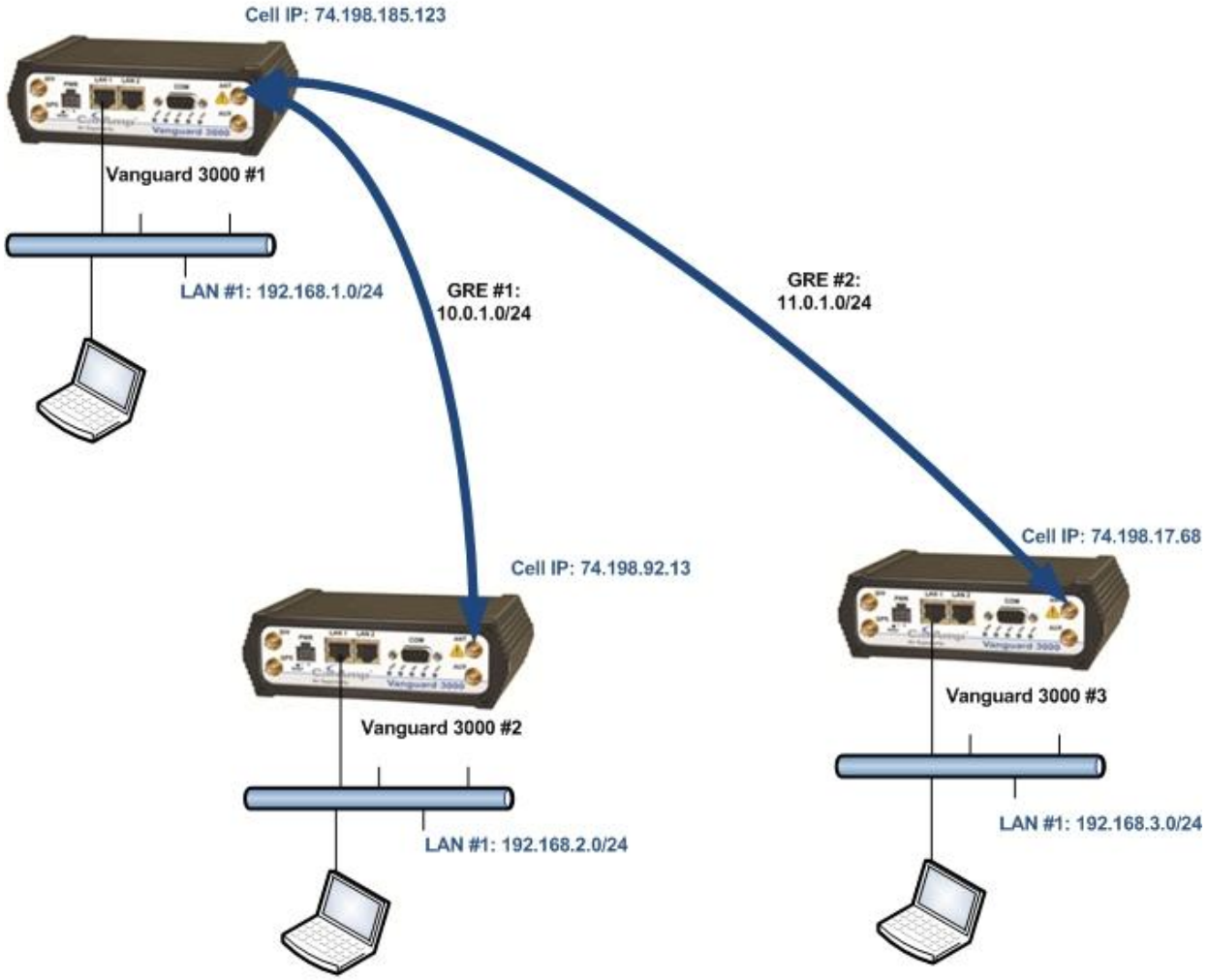
GRE#1: 10.0.1.0/24, GRE#2: 11.0.1.0/24, GRE#3: 12.0.1.0/24



Vanguard 3000#1 GRE Configuration

Browse into the Vanguard 3000 #1 web interface under: ***Security – GRE*** and configure two GRE tunnels.

Vanguard 3000 #1 GRE Configuration



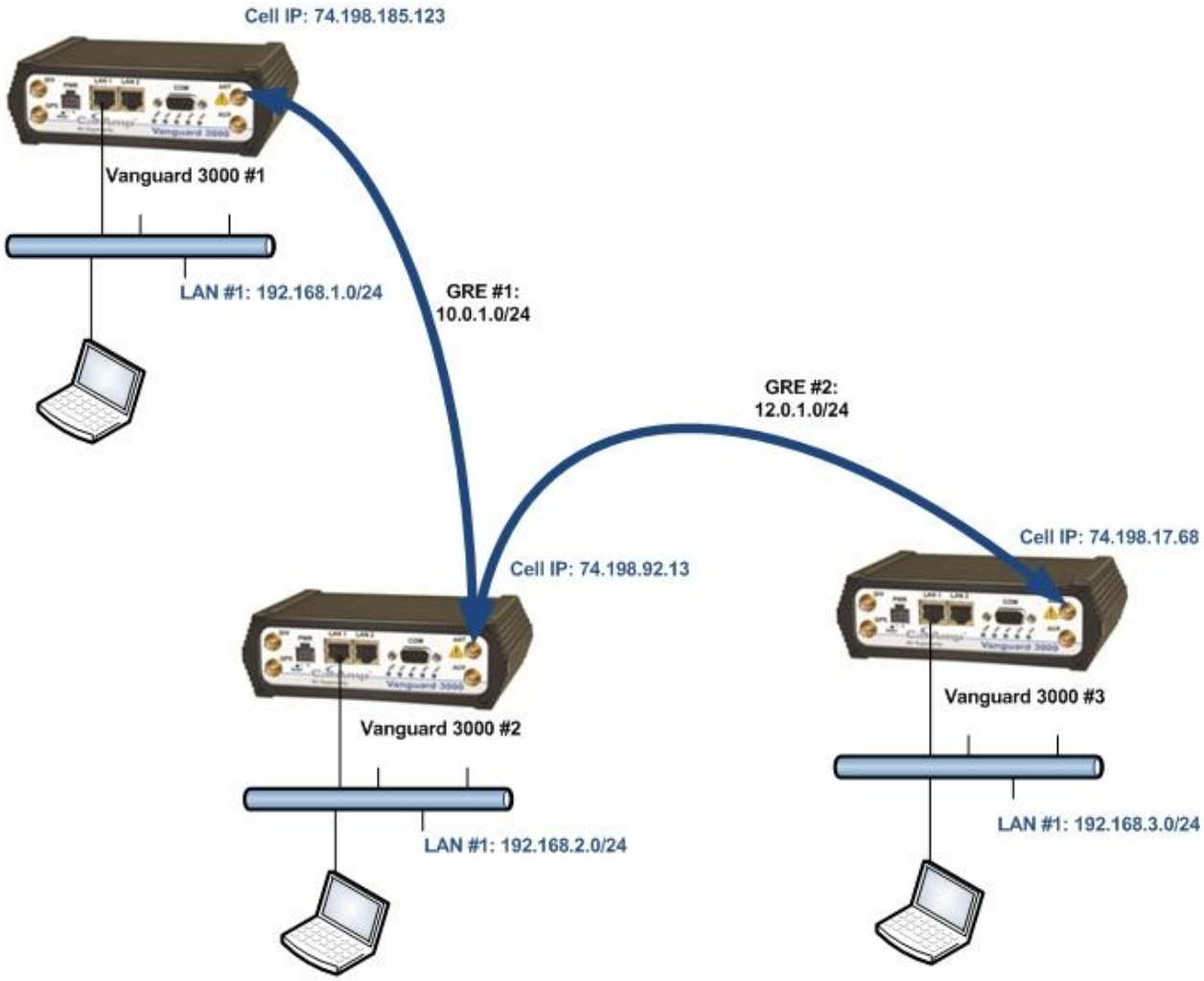
Vanguard 3000 #1 GRE Tunnel List

Tunnel List						
Local IP	Remote IP	Tunnel IP (Gateway)	Tunnel Subnet/Mask	Rem. User 1 Subnet/Mask	Rem. User 2 Subnet/Mask	Delete
74.198.185.123	74.198.92.13	10.0.1.2	10.0.1.0/24	192.168.2.0/24	N/A	Del
74.198.185.123	74.198.17.68	11.0.1.2	11.0.1.0/24	192.168.3.0/24	N/A	Del

Vanguard 3000#2 GRE Configuration

Browse into the Vanguard 3000 #2 web interface under: ***Security – GRE*** and configure two GRE tunnels.

Vanguard 3000 #2 GRE Configuration



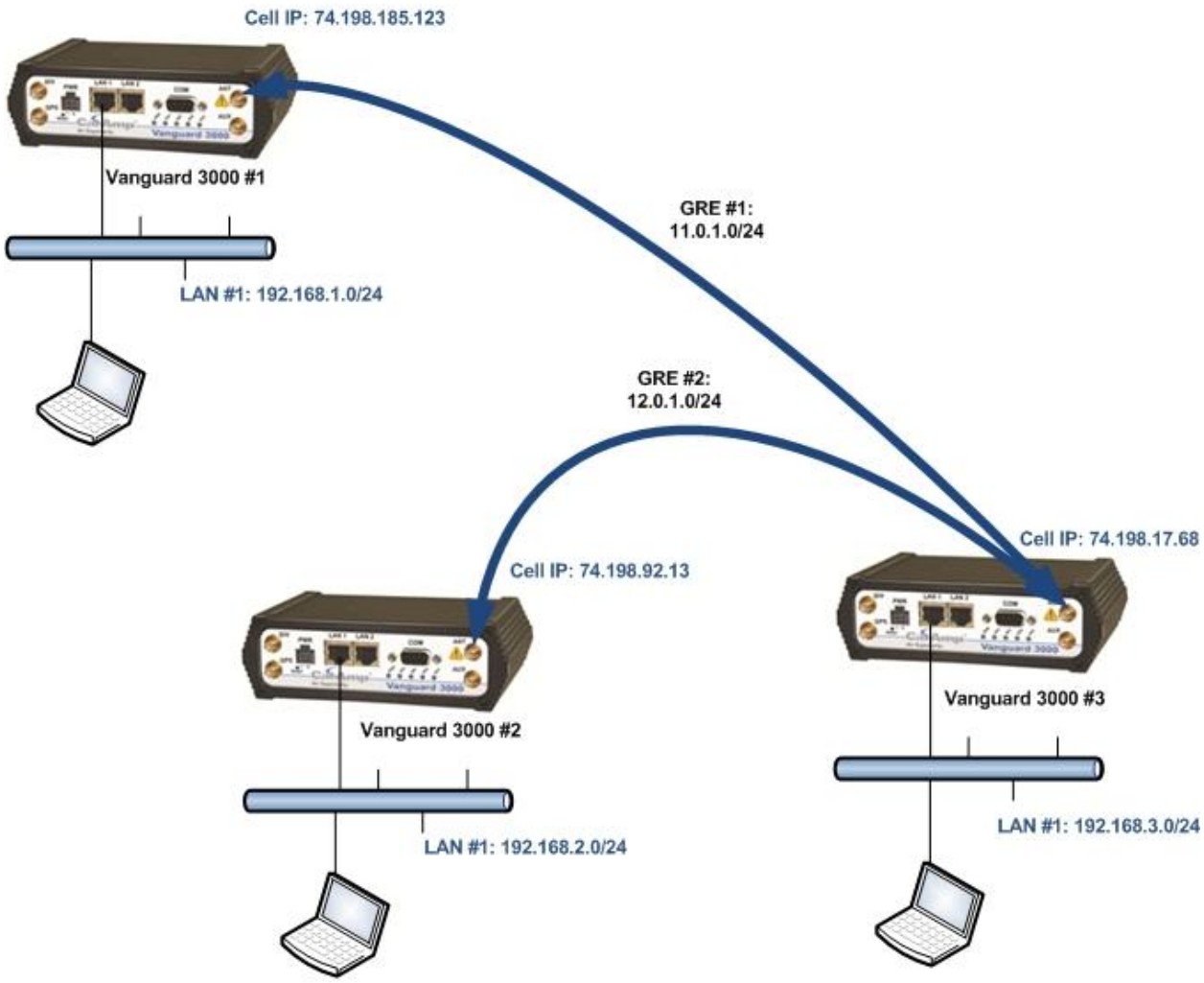
Vanguard 3000 #2 GRE Tunnel List

Tunnel List						
Local IP	Remote IP	Tunnel IP (Gateway)	Tunnel Subnet/Mask	Rem. User 1 Subnet/Mask	Rem. User 2 Subnet/Mask	Delete
74.198.92.13	74.198.185.123	10.0.1.3	10.0.1.0/24	192.168.1.0/24	N/A	Del
74.198.92.13	74.198.17.68	12.0.1.3	12.0.1.0/24	192.168.3.0/24	N/A	Del

Vanguard 3000#3 GRE Configuration

Browse into the Vanguard 3000 #3 web interface under: ***Security – GRE*** and configure two GRE tunnels.

Vanguard 3000 #3 GRE Configuration



Vanguard 3000 #3 GRE Tunnel List

Tunnel List						
Local IP	Remote IP	Tunnel IP (Gateway)	Tunnel Subnet/Mask	Rem. User 1 Subnet/Mask	Rem. User 2 Subnet/Mask	Delete
74.198.17.68	74.198.185.123	11.0.1.4	11.0.1.0/24	192.168.1.0/24	N/A	Del
74.198.17.68	74.198.92.13	12.0.1.4	12.0.1.0/24	192.168.2.0/24	N/A	Del

LAN2LAN Communication tests:

When the GRE tunnels are established between the Vanguard 3000s, a communication test will be done to ensure LAN2LAN communications through GRE.

Test#1: Connect a laptop to the ***Vanguard 3000 #1*** @ 192.168.1.100 with a default gateway of 192.168.1.50 (VG 3000 #1 LAN IP Address).

- Ping the Vanguard 3000 #2 LAN IP Address – Pings should reply
- Ping the Vanguard 3000 #3 LAN IP Address – Pings should reply

Test#2: Connect a laptop to the ***Vanguard 3000 #2*** @ 192.168.2.100 with a default gateway of 192.168.2.50 (VG 3000 #2 LAN IP Address).

- Ping the Vanguard 3000 #1 LAN IP Address – Pings should reply
- Ping the Vanguard 3000 #3 LAN IP Address – Pings should reply

Test#3: Connect a laptop to the ***Vanguard 3000 #3*** @ 192.168.3.100 with a default gateway of 192.168.3.50 (VG 3000 #3 LAN IP Address).

- Ping the Vanguard 3000 #1 LAN IP Address – Pings should reply
- Ping the Vanguard 3000 #2 LAN IP Address – Pings should reply