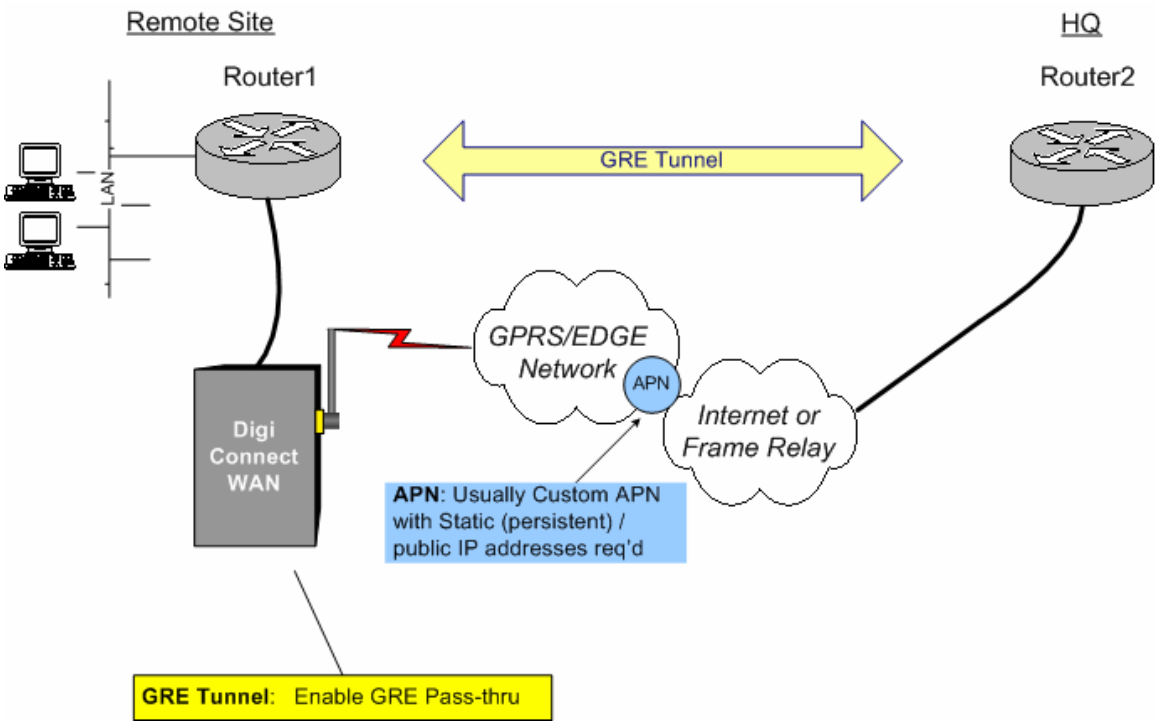
Digi Connect® WAN Application Guide Extra:
Configuring a GRE Tunnel on Cisco Routers with the Digi Connect WAN

Introduction

This document explains how to set up a simple GRE tunnel across the Digi Connect WAN using two Cisco routers. In the following examples you will find all the commands and instructions needed to setup the Cisco routers and the Digi Connect WAN.

Network Diagram

The following diagram illustrates the network to be configured. The GRE will allow end-to-end communication between the remote site and HQ.



Cisco Routers

The Cisco units should be running IOS 12.1.4 or higher and should have two interfaces. The first interface is a public IP interface that can be reached from the outside. In this example, the interface Ethernet0 is the public, external interface. The second interface on the Cisco unit can be any other network at the remote site. In this example, Ethernet1 will be the internal IP address and subnet.

NAT (Network Address Translation)

The Cisco router may be configured to do NAT from the internal address to the external address, but this is not required. The Digi Connect WAN uses NAT from the cellular mobile interface to the Ethernet network.

IP Configuration

IP and subnet configuration for this example will be as follows:

Digi Connect WAN External IP address (will assigned by the carrier) 166.213.136.36/32
Internal IP address 192.168.1.1/24

Router1 External IP address: 192.168.1.2/24
Internal IP address: 10.10.10.1.24
Tunnel0 IP address: 172.16.1.1/24

Router2 External IP address: 20.20.20.20/24
Internal IP address: 11.11.11.1/24
Tunnel0 IP address: 172.16.1.2/24

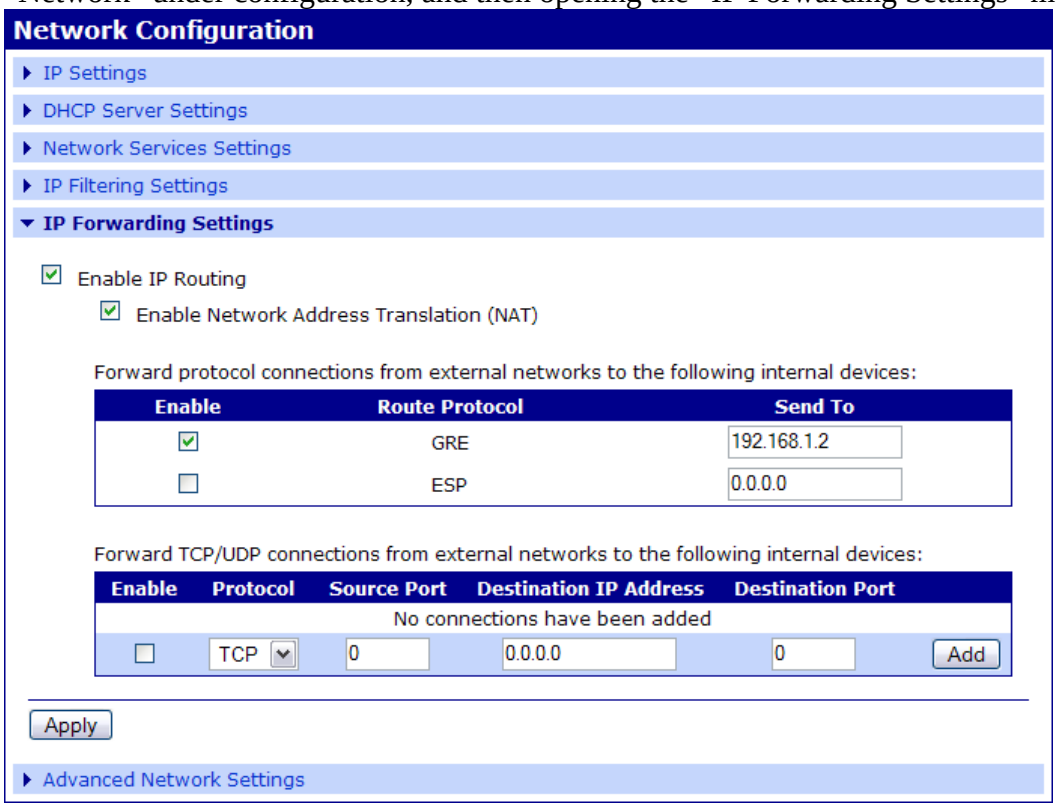
The Cisco units will create a tunnel that will allow traffic to flow from the local subnets on each device (10.10.10.0/24 to/from 11.11.11.0/24). The Digi Connect WAN will simply pass the GRE tunnel through to the Cisco router attached to its Ethernet port.

General steps:

1. Configure the Digi Connect WAN for GRE forwarding
2. Configure Ethernet and tunnel interfaces
3. Create static routes across the tunnel interface

Configure the Connect WAN for GRE Forwarding

You will need to set up the GRE Forwarding as shown in the following image. You can find this screen by logging into the web interface of the Digi Connect WAN, selecting "Network" under configuration, and then opening the "IP Forwarding Settings" menu.



Configure the Cisco Routers

The following sections will list the commands you must issue to the Cisco routers.

Configure the interfaces on Router1:

```
config t
Interface Eth0
Description External Ethernet Interface
Ip address 192.168.1.2 255.255.255.0
exit
Interface Eth1
Description Internal Ethernet Interface
ip address 10.10.10.1 255.255.255.0
exit
Interface Tunnel0
Description GRE Tunnel Interface
Ip address 172.16.1.1 255.255.255.0
Tunnel source ethernet0
Tunnel destination 20.20.20.20
```

Create the static routes on Router1:

```
config t
ip route 11.11.11.0 255.255.255.0 tunnel0
```

Configure the interfaces on Router2:

```
config t
Interface Eth0
Description External Ethernet Interface
Ip address 20.20.20.20 255.255.255.0
exit
Interface Eth1
Description Internal Ethernet Interface
ip address 11.11.11.1 255.255.255.0
exit
Interface Tunnel0
Description GRE Tunnel Interface
Ip address 172.16.1.2 255.255.255.0
Tunnel source ethernet0
Tunnel destination 166.213.166.36
```

Create the static routes on Router2:

```
config t
ip route 10.10.10.0 255.255.255.0 tunnel0
```

Where to Get More Information

Refer to the Digi Connect WAN user documentation and Digi technical support website at www.digi.com/support for more information. Technical assistance is available at http://www.digi.com/support/eservice/eservicelogin.jsp.

For sales and product information, please contact Digi International at 952-912-3444 or via www.digi.com.