Tech Note 6 How to setup and test a IPSEC VPN tunnel using two RAM or SN devices

Abstract:

This document provides a step-by-step procedure for setting up a LAN-to-LAN tunnel using IPSEC between two SN/RAM units and how to test end-to-end communication.

Product:

Any SN/RAM product

Use Case/ Problem Solved:

In many Machine-to-Machine (M2M) applications sensitive data needs to be secured when traversing a public medium. This can be accomplished using a VPN Tunnel using IPSec. IPSec uses encryption and authentication to secure potentially sensitive data across a public medium. Host to host communication can be encrypted using IPSec as well.

Key points to consider:

- It is critical that subnets for the Client and Server are not the same
- In this case the client is 192.168.**0.x** and the Server is 192.168.**1.x**
- Also, ensure the Gateway addresses are configured correctly
- Beside the addresses in the IPSEC configuration, almost all other parameters should be the same for both client and server (beside

being client and server)

- Multiple clients can be added to the system
- Other VPN tunnel types are available

Required Software:

Web Browser

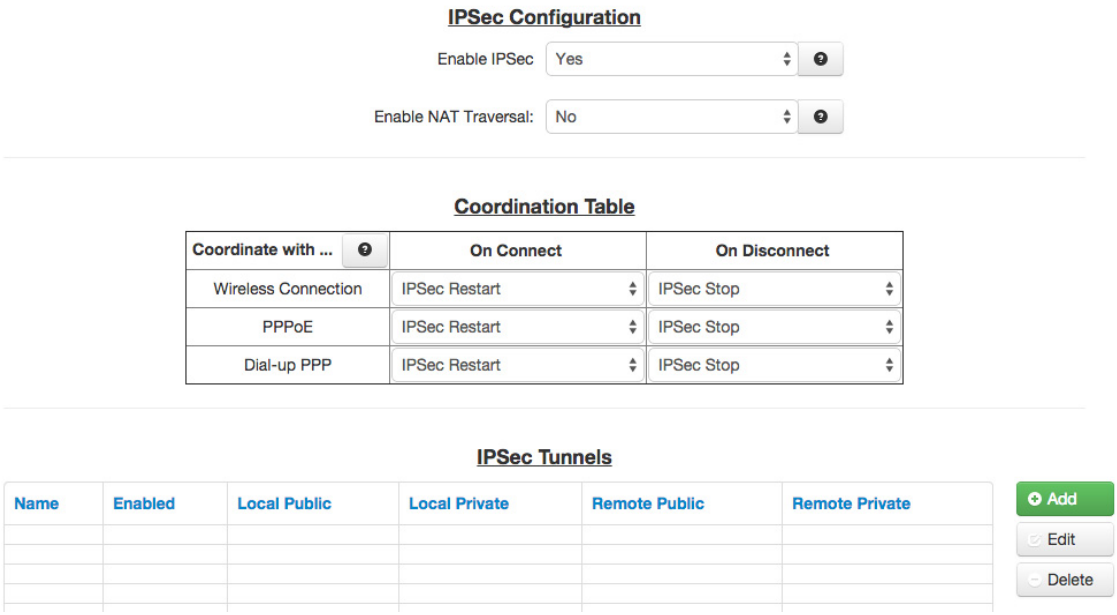
Required Firmware:

3.20/4.20

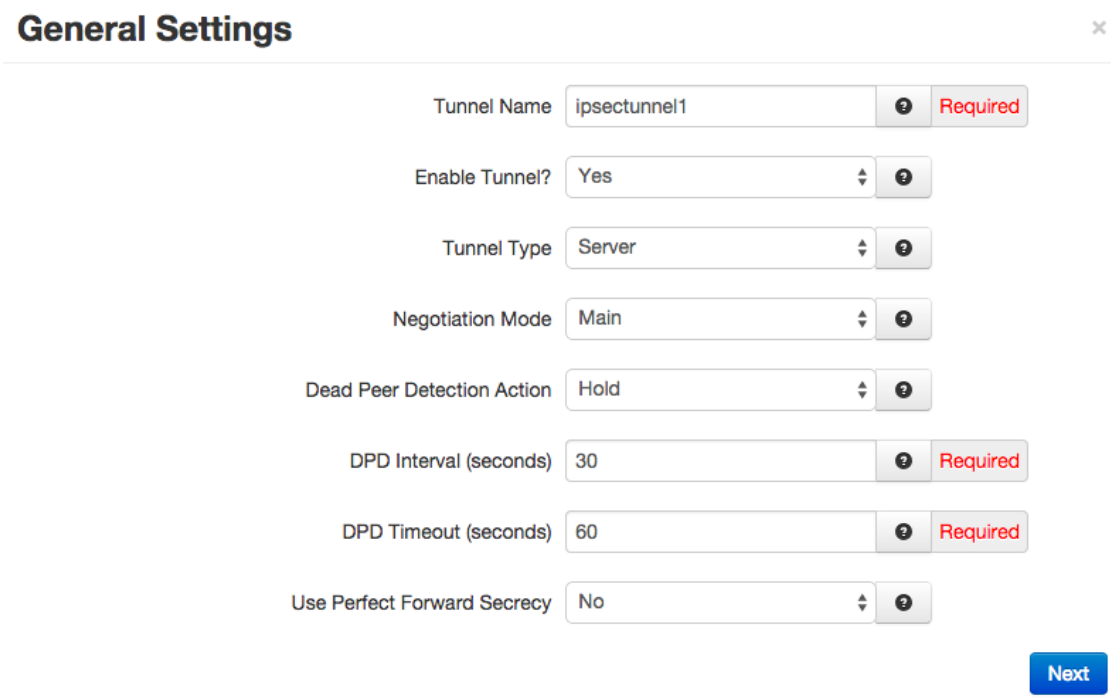
Procedure:

Part 1 – IPSEC Server Setup

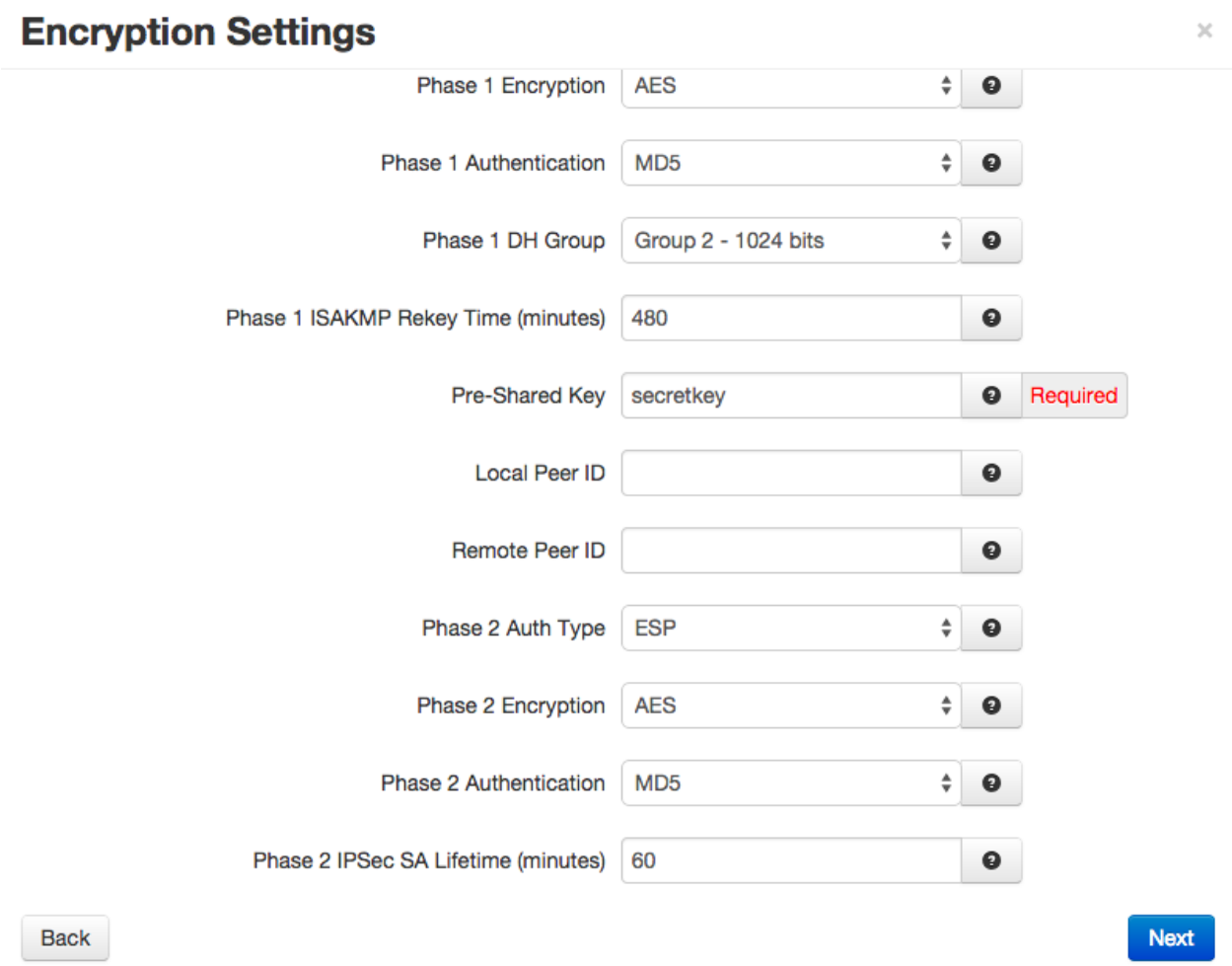
1. Log into the SN/RAM Web Browser
   a. Type the device's LAN/WAN IP, port 10000 into a web browser
   b. **User Name**: *admin*
   c. **Password**: Last six digits of the device's serial number
2. Navigate to **Networking → Tunneling (VPN) Settings → IPSEC → Configuration**
3. Enable IPSEC by selecting **Yes** from the drop-down list



4. Click **Add**



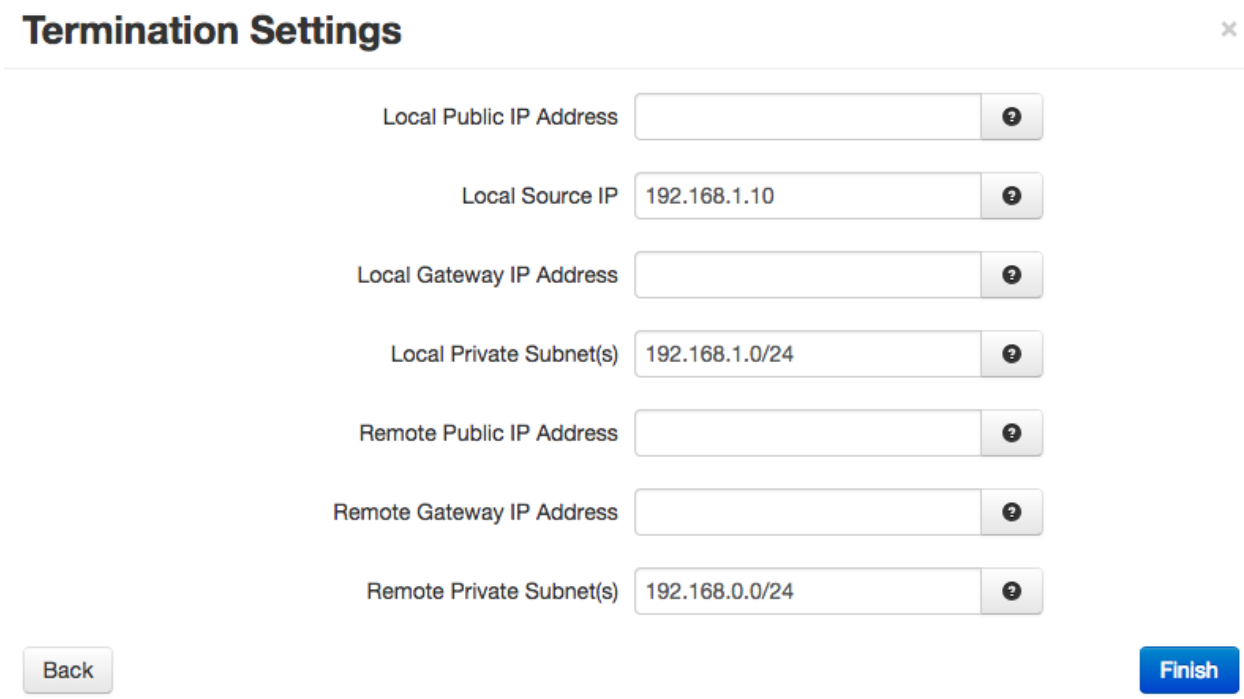
5. Add a name for the **Tunnel** (must be alphanumeric)
6. Select *Server* from the **Tunnel Type** drop-down list
7. Select *Hold* from the **Dead Peer Detection Action** drop-down list
8. Click **Next**



9. Choose desired **Encryption** and **Authentication** settings for **Phase 1** and **Phase 2**

10. Add text into the **Pre-Shared Key** (should be non-dictionary word)

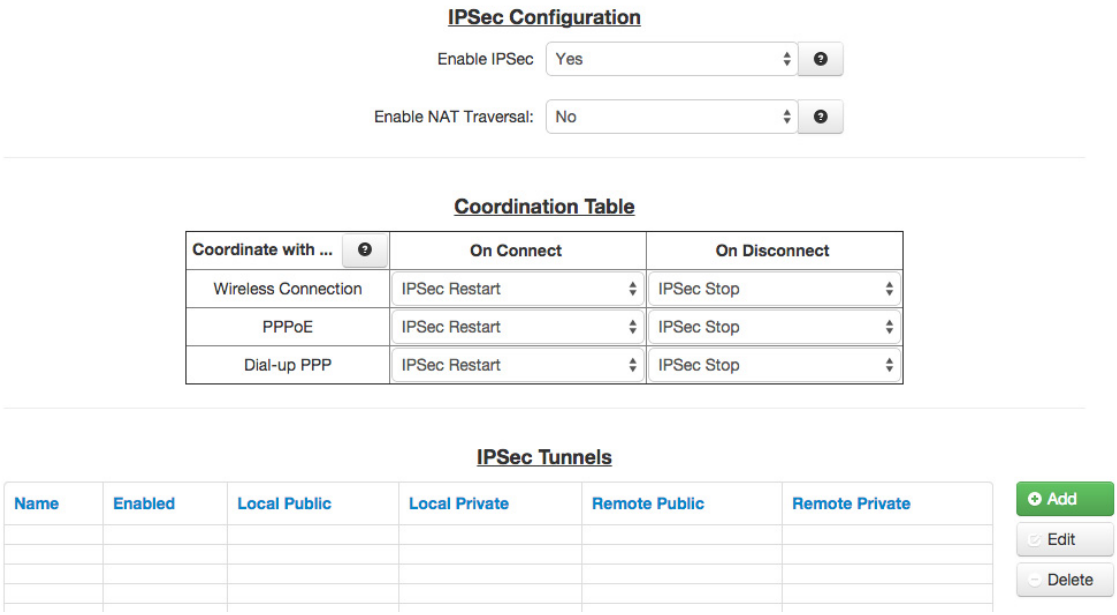
11. Click **Next**



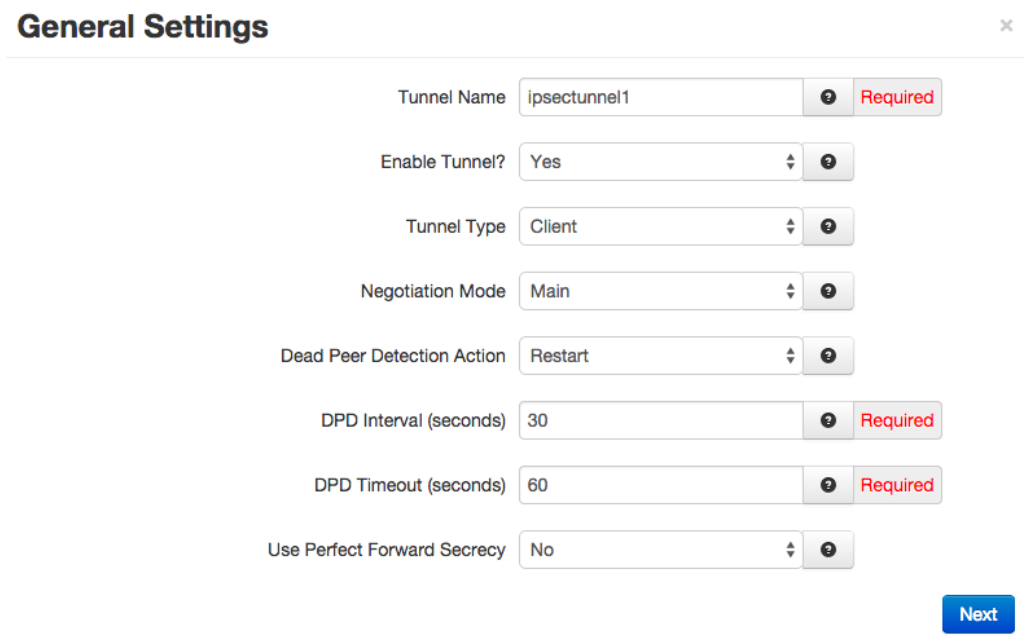
12. Enter IP address of **Eth0** of **IPSec Server** in **Local Source IP**
13. Enter IP address of **subnet** of **Eth0** in **Local Private Subnet**
14. Enter IP address of **subnet** of **Eth0** of **Client** (must be in CIDR Notation)
15. Click **Finish**
16. Click **Apply**

Part 2 – IPSEC Client Setup

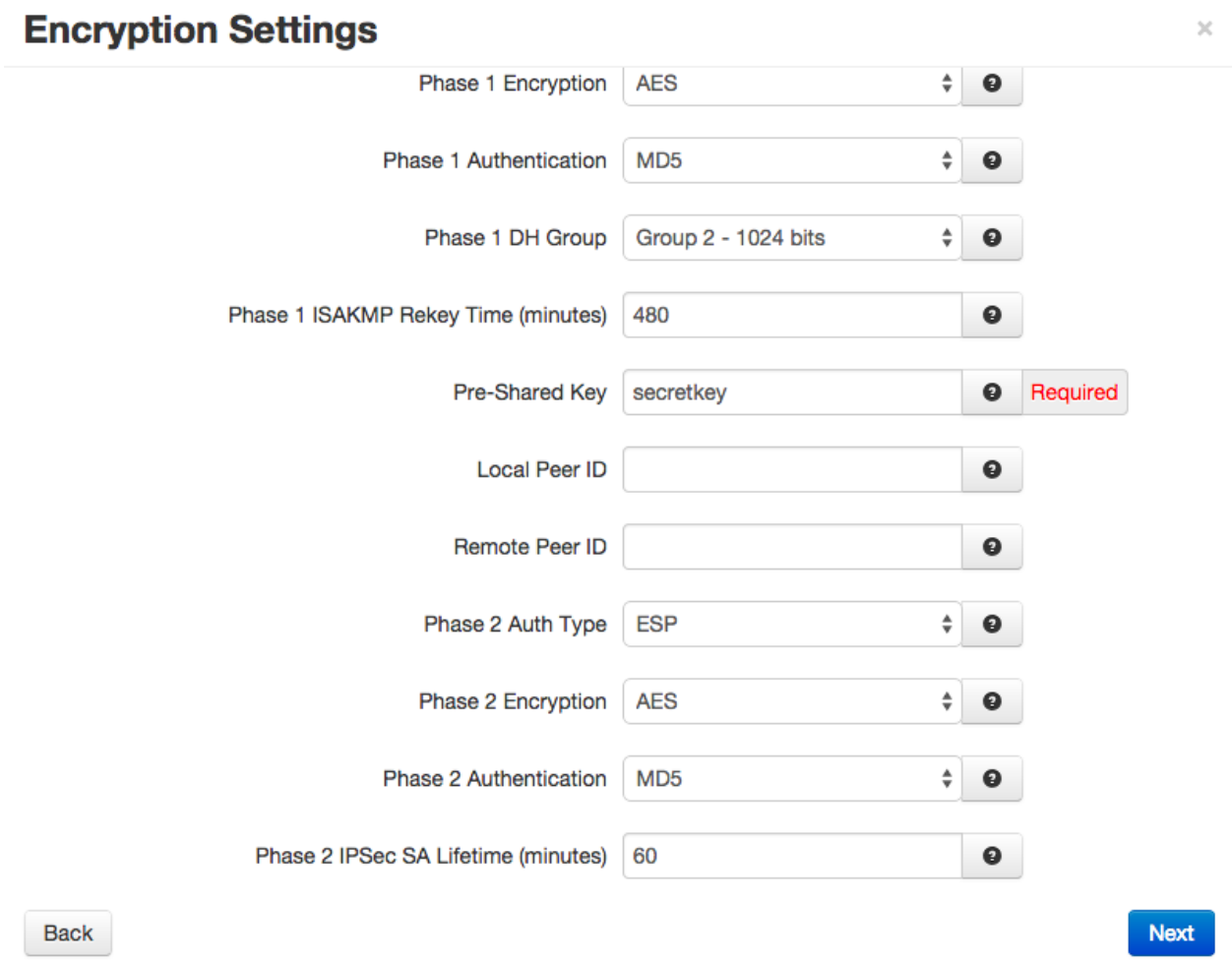
1. Log into the SN/RAM Web Browser
   a. Type the device's LAN/WAN IP, port 10000 into a web browser
   b. **User Name**: *admin*
   c. **Password**: Last six digits of the device's serial number
2. Navigate to **Networking** → **Tunneling (VPN) Settings** → **IPSEC** → **Configuration**
3. **Enable IPSEC** by selecting **Yes** from the drop-down list



4. Click **Add**



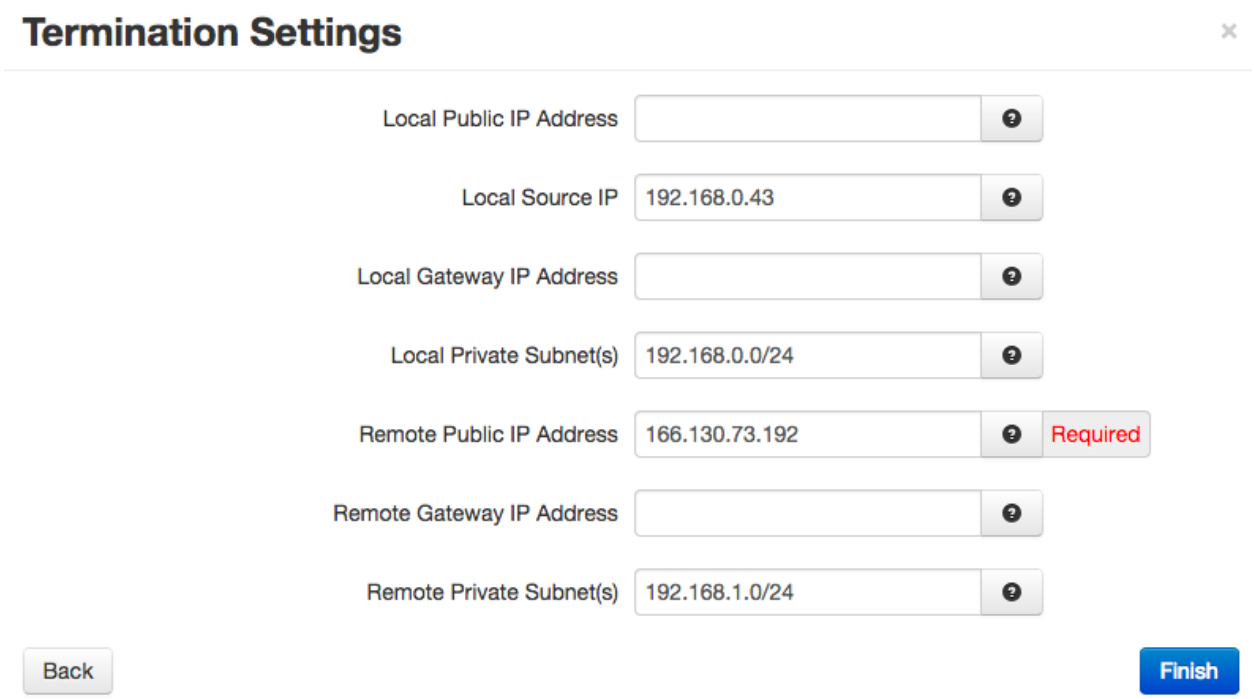
5. Add a name for the **Tunnel** (must be alphanumeric)
6. Select *Client* from the **Tunnel Type** drop-down list
7. Select *Restart* from the **Dead Peer Detection Action** drop-down list
8. Click **Next**



9. Choose desired **Encryption** and **Authentication** settings for **Phase 1** and **Phase 2**

10. Add text into the **Pre-Shared Key** (should be non-dictionary word and must match Server Key)

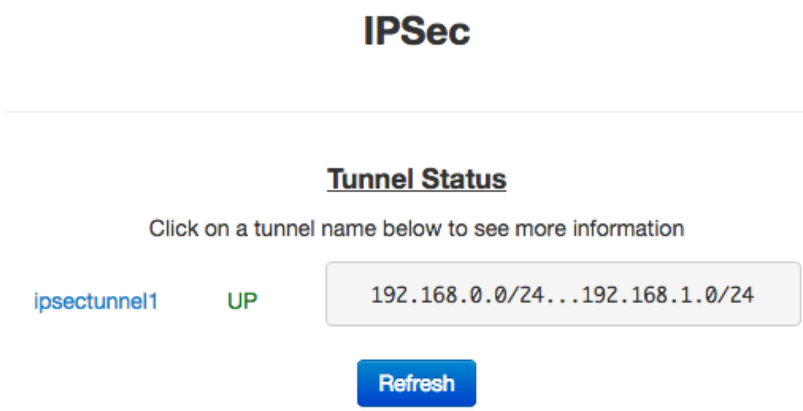
11. Click **Next**



12. Enter IP address of **Eth0** of **IPSec Client** in **Local Source IP**
13. Enter subnet of **Eth0** in **Local Private Subnet** (must be in CIDR Notation)
14. Enter **Public IP** address **of Server**
15. Enter **subnet** of **Eth0** of **Server** (must be in CIDR Notation)
16. Click **Finish**
17. Click **Apply**

IPSEC is now configured

Verify that **IPSec Tunnel Status** displays **UP** (can take up to 60 seconds to connect, may need to click **Refresh**)



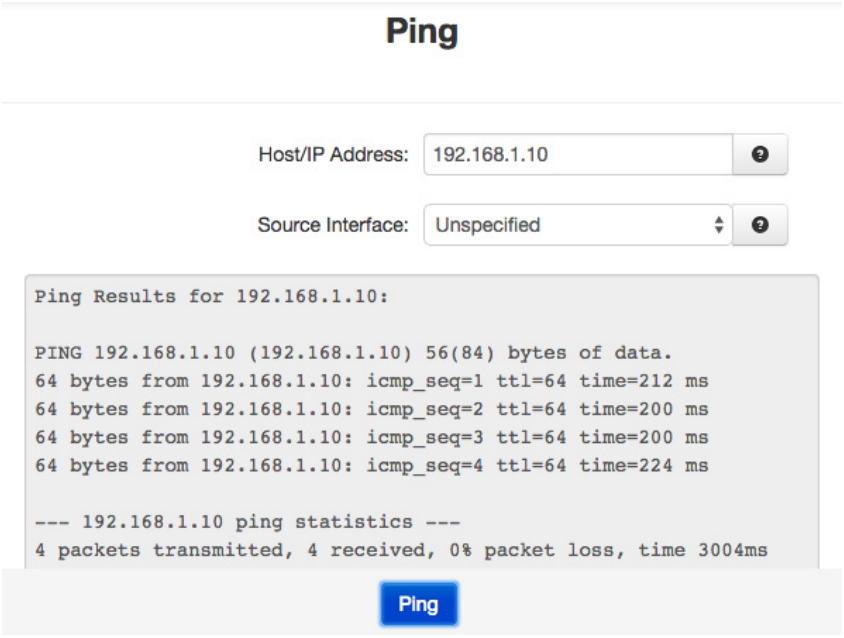
Part 3 – Testing IPSEC tunnel

Verify the IPSec tunnel is “alive”

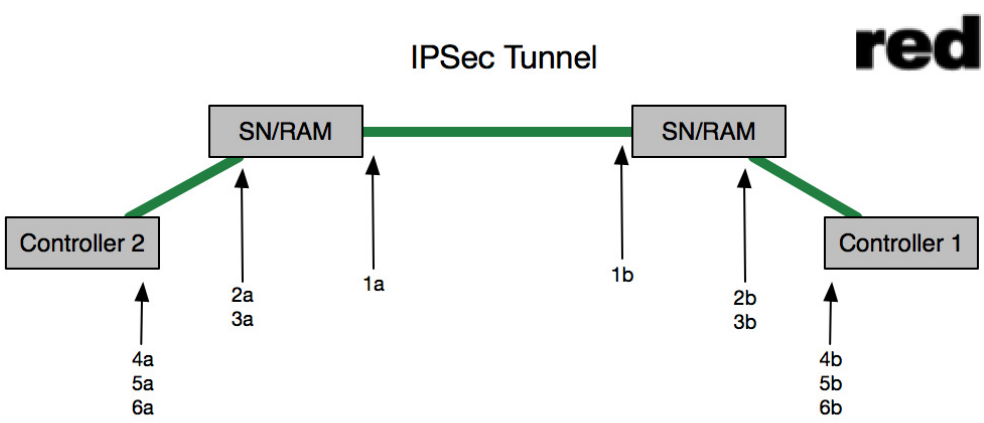
1. Using a browser, connect to the IPSEC Server (192.168.1.10)
2. Navigate to **Status** → **Diagnostic Tools** → **Ping**.

Note: Using this method (IP Addresses selected) will ensure your testing the VPN Tunnel.

Note: Pinging the WAN address will simply verify that the Cellular device is online (and not actually check the VPN tunnel).



Topology:



Server Side

1a. Public IP Address
2a. Eth0 IP Address
3a. Eth0 Subnet Mask
4a. Controller 2 IP
5a. Controller 2 Subnet Mask
6a. Controller 2 Gateway

Client Side

1b. Public IP Address
2b. Eth0 IP Address
3b. Eth0 Subnet Mask
4b. Controller 1 IP
5b. Controller 1 Subnet Mask
6b. Controller 1 Gateway

Disclaimer: