NavigateWorx

# NR500 Series
# Industrial Cellular VPN Router

## Application Note 012

### IPSec_Pre shared key with CISCO router

**Version:** V1.0.0
**Date:** Aug 2018
**Status:** Confidential

# Directory

1. Introduction ..... 3
   1.1 Overview ..... 3
   1.2 Compatibility ..... 3
   1.3 Version ..... 3
   1.4 Corrections ..... 3
2. Topology ..... 4
3. Configuration ..... 5
   3.1 Server Configuration ..... 5
   3.2 Client Configuration ..... 7
4. Testing ..... 8

# 1. Introduction

## 1.1 Overview

This document contains information regarding the configuration and use of IPSec_Pre-shared key with CISCO router.

This guide has been written for use by technically competent personnel with a good understanding of the communications technologies used in the product, and of the requirements for their specific application.

## 1.2 Compatibility

This application note applies to:
**Models Shown:** NR500 series.
**Firmware Version:** V1.0.0(903.0) or newer
**Other Compatible Models:** None

## 1.3 Version

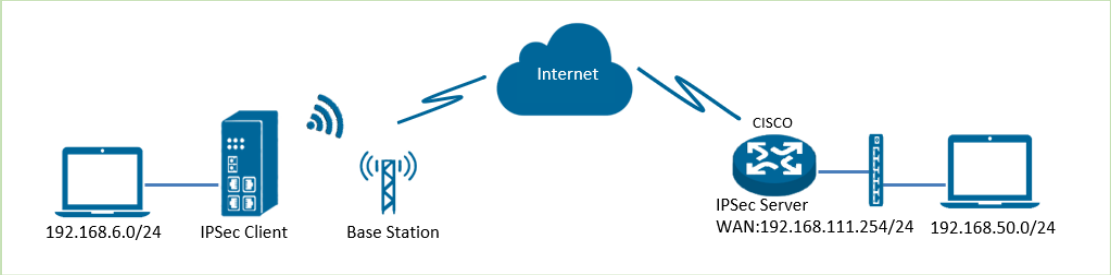
Updates between document versions are cumulative. Therefore, the latest document will include all the content of previous versions.

| Release Date | Doc. Version | Firmware Version | Change Description |
|---|---|---|---|
| 2018/08/03 | V1.0.0 | V1.0.0(903.0) | First released |
| | | | |

## 1.4 Corrections

Appreciate for corrections or rectifications to this application note, and if any request for new application notes please email to: **support@navigateworx.com**

## 2. Topology




1. NR500 Pro runs as IPSec Client with any kind of IP, which can ping IPSec server IP successfully.
2. CISCO router runs as IPSec Server with a static public IP.
3. IPSec tunnel is established between NR500 Pro and cisco router.

# 3. Configuration

## 3.1 Server Configuration

1.Login to CISCO router and setting like below:

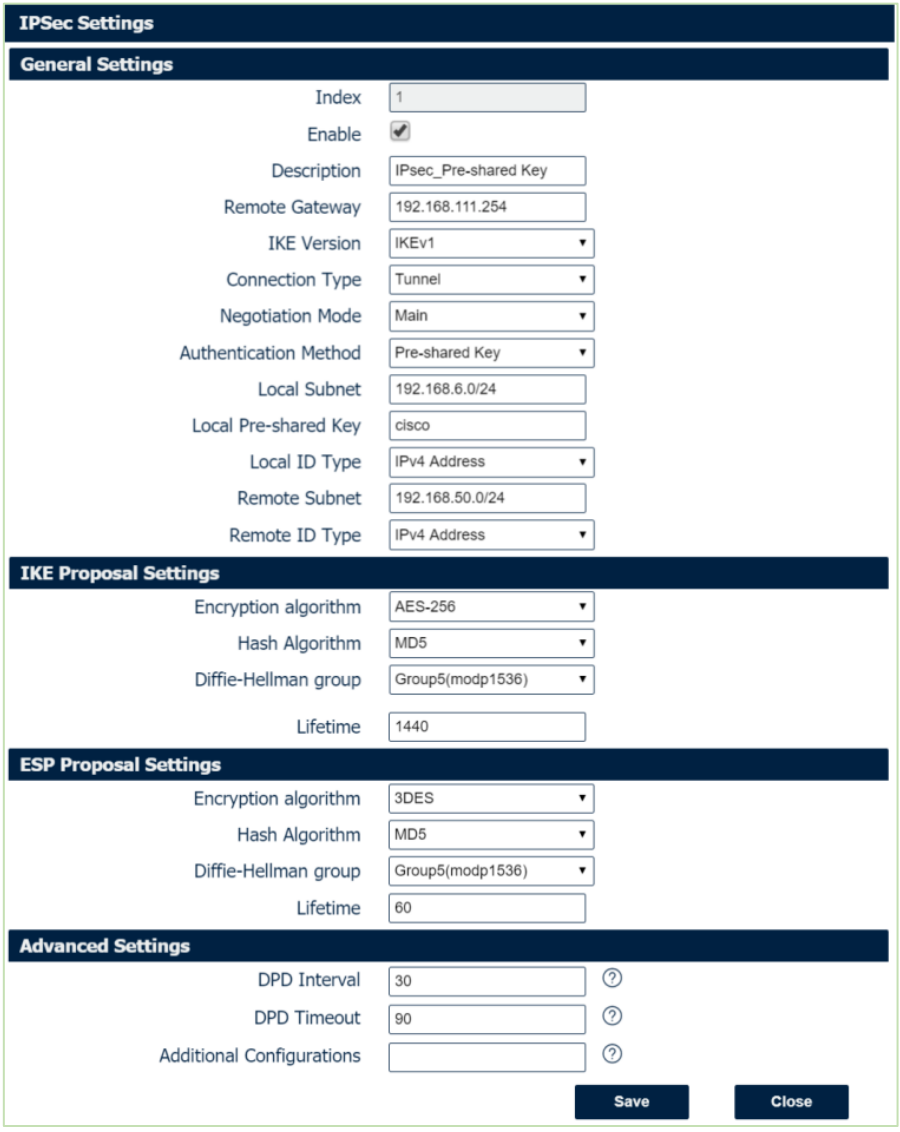
```
==========================================================
cisco2811#show running-config
Building configuration...
Current configuration : 3071 bytes
!
version 12.4
hostname cisco2811
logging message-counter syslog
enable secret 5 $1$tw/d$UQQ3Xh06n.2HHFeAVIgXJ.
!
no aaa new-model
!
ip domain name cisco.com
ip name-server 192.168.111.1
ip address-pool local
no ipv6 cef
!
multilink bundle-name authenticated
!
username cisco password 0 cisco
archive
 log config
  hidekeys
!
crypto isakmp policy 10
 encr aes 256
 hash md5
 authentication pre-share
 group 5
crypto isakmp key 6 cisco address 0.0.0.0 0.0.0.0
!
crypto ipsec transform-set NR500 esp-3des esp-md5-hmac
!
crypto dynamic-map DYN 10
 set transform-set NR500
 set pfs group5
 match address 101
```

```
 reverse-route
!
crypto map SMAP 10 ipsec-isakmp dynamic DYN
!
track 1 interface FastEthernet0/0 line-protocol
!
interface Loopback0
 ip address 192.168.50.1 255.255.255.0
!
interface FastEthernet0/0
 ip address 192.168.111.254 255.255.255.0
 ip nat outside
 ip nat enable
 ip virtual-reassembly
 duplex full
 speed auto
 no mop enabled
 crypto map SMAP
!
interface FastEthernet0/1
 ip address 192.168.5.1 255.255.255.0
 ip nat inside
 ip nat enable
 ip virtual-reassembly
 duplex auto
 speed auto
!
ip forward-protocol nd
ip route 0.0.0.0 0.0.0.0 192.168.111.1
no ip http server
no ip http secure-server
!
ip nat inside source list 10 interface FastEthernet0/0 overload
!
ip access-list extended VPN
 permit ip 192.168.50.0 0.0.0.255 192.168.6.0 0.0.0.255
!
access-list 10 permit 192.168.5.0 0.0.0.255
access-list 101 permit ip 192.168.50.0 0.0.0.255 192.168.6.0 0.0.0.255
snmp-server community public RO

end
cisco2811#
============================================================
```

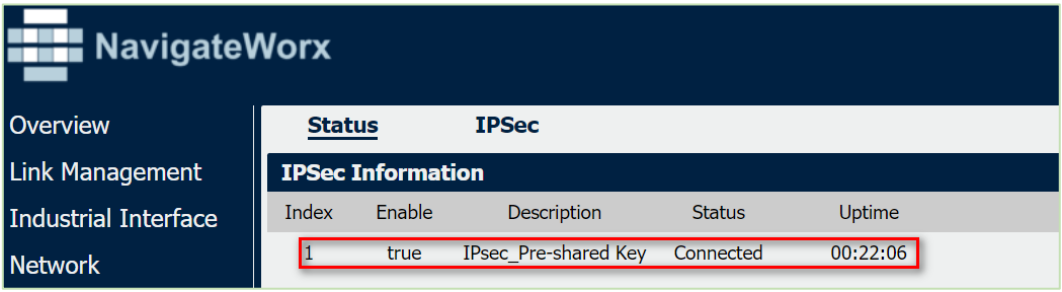
## 3.2 Client Configuration

1. Go to **VPN>IPSec>IPSec>General Settings**, click the Edit Button and configure IPSec VPN as below picture. Click Save.




2. Click Save>Apply.

3.IPSec had been connected successfully. Go to **VPN>IPSec>Status** to check the connection status.



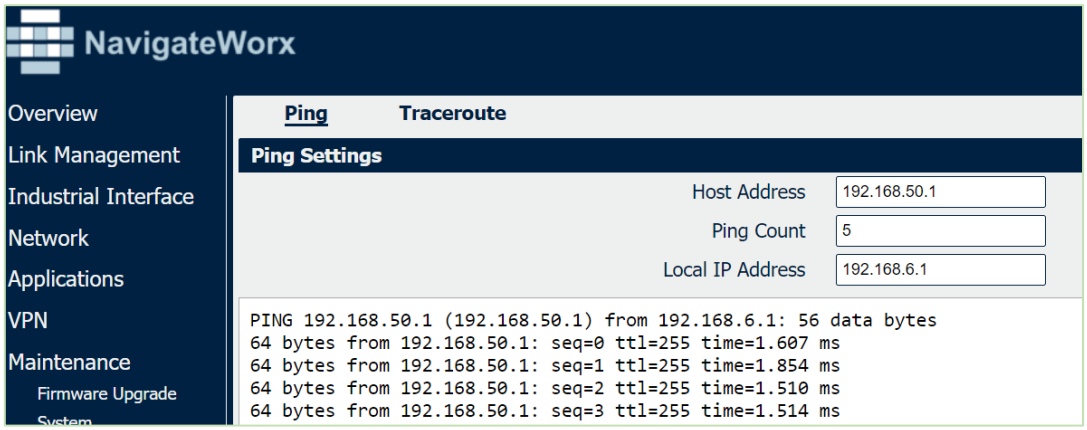

# 4. Testing

1. Ping from CISCO router to NR500, LAN to LAN communication is working correctly.

```
cisco2811#ping 192.168.6.1 source 192.168.50.1 repeat 100

Type escape sequence to abort.
Sending 100, 100-byte ICMP Echos to 192.168.6.1, timeout is 2 seconds:
Packet sent with a source address of 192.168.50.1
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Success rate is 100 percent (100/100), round-trip min/avg/max = 1/3/4 ms
cisco2811#
```

2. Ping from NR500 to CISCO router, LAN to LAN communication is working correctly.




3. Test successfully.