NavigateWorx

NR500 Series
Industrial Cellular VPN Router

Application Note 009

OpenVPN with TAP and Pre-share key under P2P mode

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

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Directory

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1. Introduction

1.1 Overview

This document contains information regarding the configuration and use of OpenVPN with TAP and Pre-shared key under P2P mode.

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	Version Number	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**

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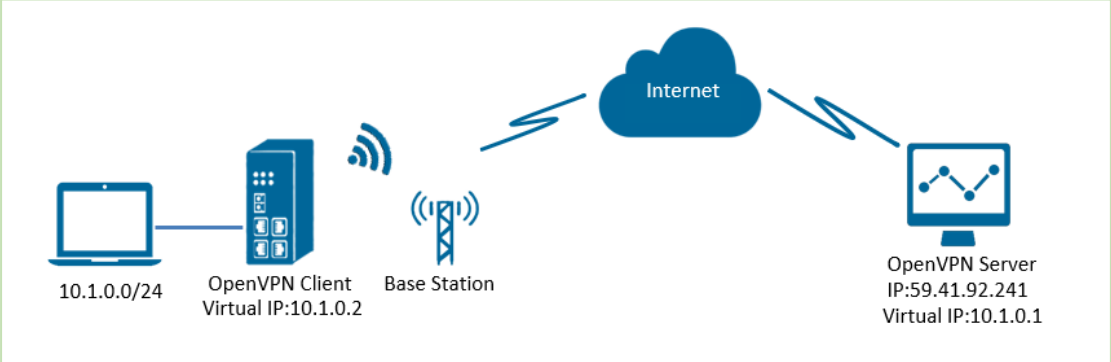
2. Topology



1. NR500 Pro runs as OpenVPN Client with any kind of IP, which can ping OpenVPN server IP successfully.
2. A PC runs as OpenVPN Server with a static public IP and open a specified a listening port for OpenVPN.
3. OpenVPN tunnel is established between Server and Client, the virtual IP can PING each other successfully. Also Server can ping LAN PC device and vice versa.

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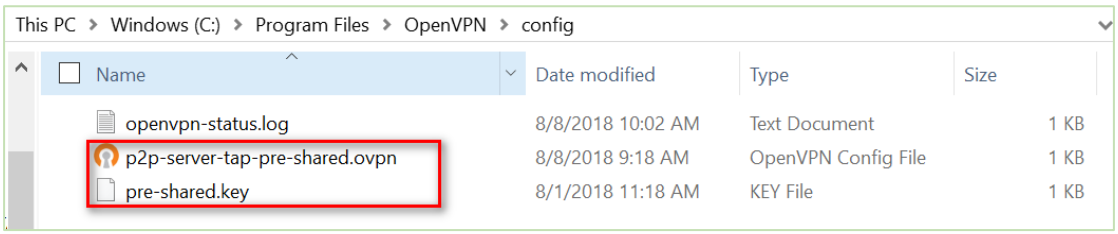
3. Configuration

3.1 Server Configuration

1. Install OpenVPN software on PC and copy the related certifications and configuration to the PC like below:



*Note: Kindly install and run OpenVPN software with **administrator authority**.*

2. The configuration of "p2p-server-tap-pre-shared.ovpn" like below:

```
==========================================================================
mode p2p
port 1194
proto udp
dev tap
# tap
ifconfig 10.1.0.1 255.255.255.0
keepalive 20 120
persist-key
persist-tun
secret pre-shared.key      # None TLS Mode
cipher BF-CBC
comp-lzo
status openvpn-status.log
verb 3
tun-mtu 1500
fragment 1500
==========================================================================
```

3.2 Client Configuration

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

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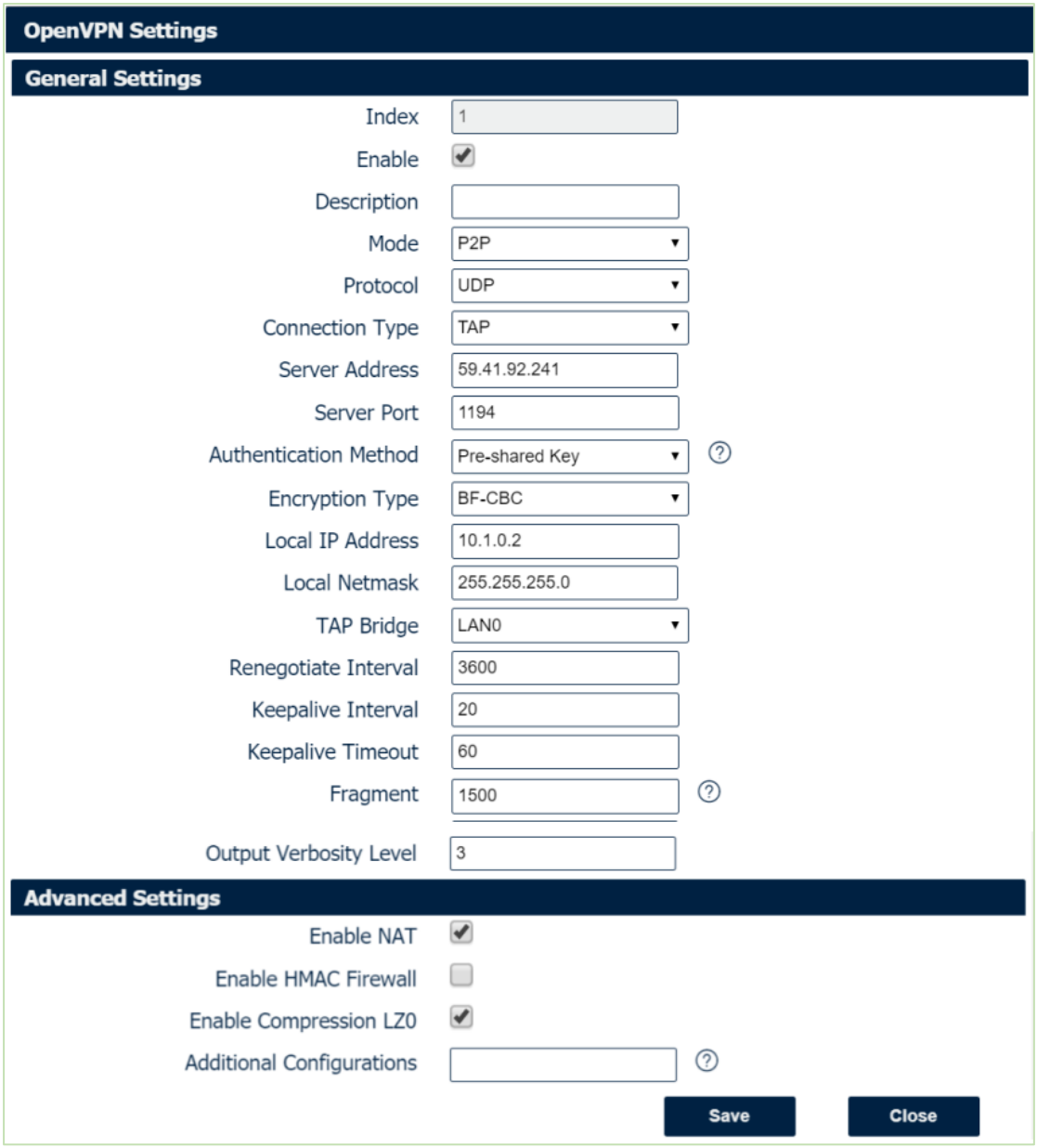

2. Click Save>Apply.

3. Go to **VPN>OpenVPN>X.509 Certificate,** to import the related certification, Click Apply.

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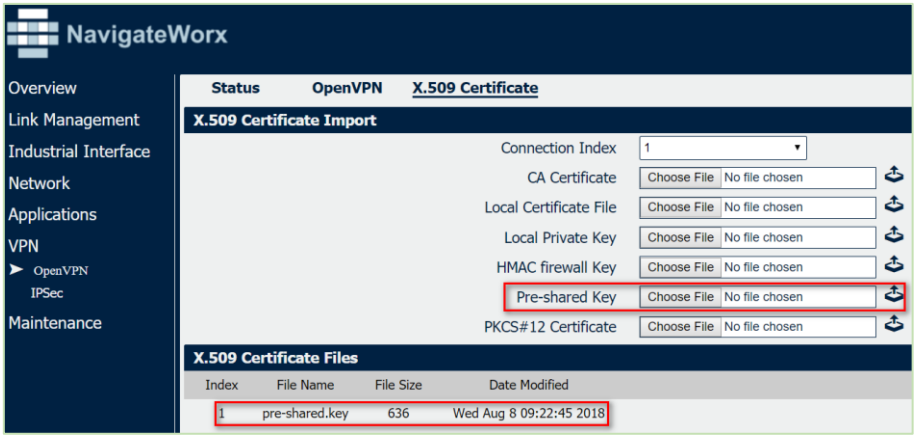
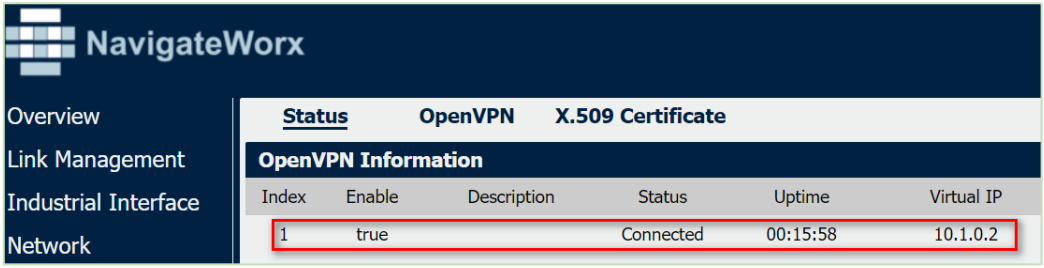
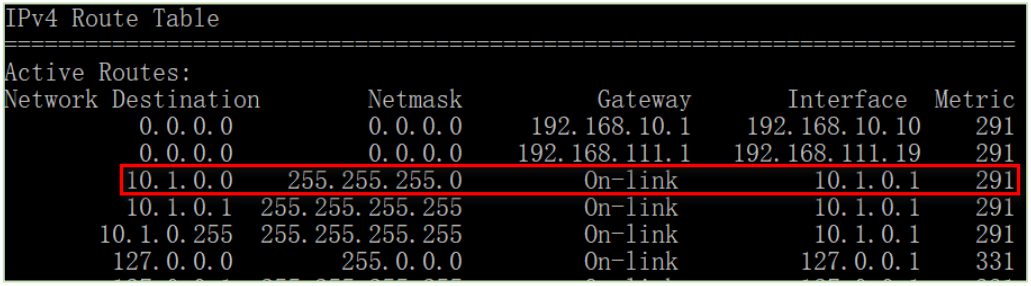


4.Route had connected to OpenVPN server. Go to **VPN>OpenVPN>Status** to check the connection status.



4. Route Table

1. Route Table on PC for reference.



2. Route Table on Router for reference.

Route Table Information

Index	Destination	Netmask	Gateway	Interface
1	0.0.0.0	0.0.0.0	192.168.111.1	wan
2	10.1.0.0	255.255.255.0	0.0.0.0	lan0
3	192.168.5.0	255.255.255.0	0.0.0.0	lan0
4	192.168.111.0	255.255.255.0	0.0.0.0	wan

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5. Testing

1. Enable CMD and Ping from PC to the LAN device of the router.

```
C:\Users\Administrator>ping 10.1.0.10

Pinging 10.1.0.10 with 32 bytes of data:
Reply from 10.1.0.10: bytes=32 time=2ms TTL=64
Reply from 10.1.0.10: bytes=32 time=3ms TTL=64
Reply from 10.1.0.10: bytes=32 time=3ms TTL=64
Reply from 10.1.0.10: bytes=32 time=3ms TTL=64

Ping statistics for 10.1.0.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 2ms, Maximum = 3ms, Average = 2ms
```

2. Ping from LAN device of the router to PC.

```
C:\Users\Administrator>ping 10.1.0.1

Pinging 10.1.0.1 with 32 bytes of data:
Reply from 10.1.0.1: bytes=32 time<1ms TTL=128
Reply from 10.1.0.1: bytes=32 time<1ms TTL=128
Reply from 10.1.0.1: bytes=32 time<1ms TTL=128
Reply from 10.1.0.1: bytes=32 time<1ms TTL=128

Ping statistics for 10.1.0.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

3. Test successfully.

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