

NR500 Series Industrial Cellular VPN Router

Application Note 034

OSPF with CISCO

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



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1. Introduction

1.1 Overview

This document contains information regarding the configuration and use of OSPF with CISCO.

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: devel(f6eb5e7) or newer

Other Compatible Models: None

1.3 Version

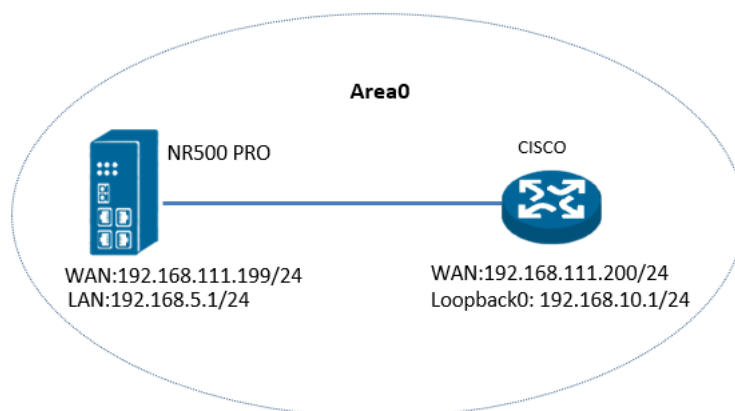
Updates between document versions are cumulative. Therefore, the latest document will include all the content of previous versions.

| Release Date | Doc. Version | Firmware Version | Change Description |
|--------------|--------------|------------------|--------------------|
| 2018/12/12 | V1.0.0 | devel(f6eb5e7) | 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 and CISCO run OSPF and under the same single Area0.
2. NR500 Pro and CISCO declare the IP of LAN and loopback0.

3. Configuration

3.1 CISCO Configuration

1. The configuration of **CISCO** like below:

=====

```
CISCO7200#show running-config
Building configuration...
```

```
Current configuration : 1218 bytes
```

```
!
upgrade fpd auto
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname CISCO7200
!
boot-start-marker
boot-end-marker
no ip domain lookup
ip auth-proxy max-nodata-conns 3
ip admission max-nodata-conns 3
!
multilink bundle-name authenticated
!
archive
 log config
  hidekeys
!
ip tcp synwait-time 5
!
interface Loopback0
  ip address 192.168.10.1 255.255.255.0
!
interface FastEthernet0/0
  ip address 192.168.111.200 255.255.255.0
 duplex auto
 speed auto
!
interface FastEthernet0/1
```

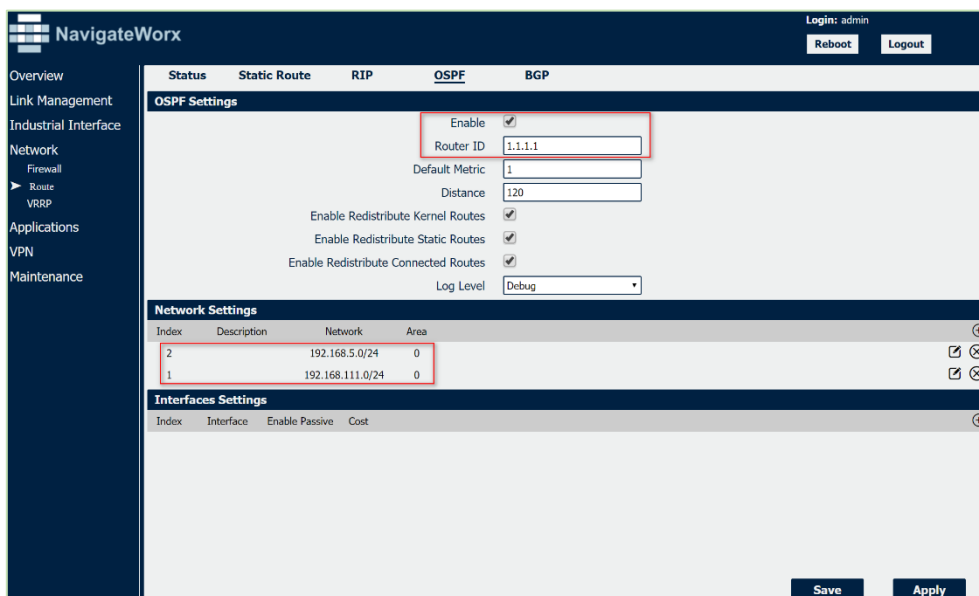
```
no ip address
shutdown
duplex auto
speed auto
!
router ospf 110
  router-id 2.2.2.2
  log-adjacency-changes
  network 192.168.10.0 0.0.0.255 area 0
  network 192.168.111.0 0.0.0.255 area 0
!
ip forward-protocol nd
no ip http server
no ip http secure-server
!
!
line con 0
  exec-timeout 0 0
  privilege level 15
  logging synchronous
  stopbits 1
line aux 0
  exec-timeout 0 0
  privilege level 15
  logging synchronous
  stopbits 1
line vty 0 4
  login
!
!
end
```

CISCO7200#

=====

3.2 NR500 Pro Configuration

1. Go to **Network>Route>OSPF**, enable OSPF and configure OSPF as below picture.



OSPF Settings

Enable

Router ID

Default Metric

Distance

Enable Redistribute Kernel Routes

Enable Redistribute Static Routes

Enable Redistribute Connected Routes

Log Level

Network Settings

| Index | Description | Network | Area |
|-------|-------------|------------------|------|
| 2 | | 192.168.5.0/24 | 0 |
| 1 | | 192.168.111.0/24 | 0 |

Interfaces Settings

| Index | Interface | Enable Passive | Cost |
|-------|-----------|----------------|------|
|-------|-----------|----------------|------|

Save Apply

2. Click Save>Apply.

4. Route Table

1. Route Table on CISCO for reference.

```

CISCO7200#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

C    192.168.111.0/24 is directly connected, FastEthernet0/0
C    192.168.10.0/24 is directly connected, Loopback0
O    192.168.5.0/24 [110/11] via 192.168.111.199, 00:17:32, FastEthernet0/0
CISCO7200#
  
```

2. Route Table on NR500 Pro for reference.



Route Table Information

| Index | Destination | Netmask | Gateway | Metric | Interface |
|-------|---------------|-----------------|-----------------|--------|-----------|
| 1 | 0.0.0.0 | 0.0.0.0 | 192.168.111.11 | 0 | wan |
| 2 | 192.168.5.0 | 255.255.255.0 | 0.0.0.0 | 0 | lan0 |
| 3 | 192.168.10.1 | 255.255.255.255 | 192.168.111.200 | 20 | wan |
| 4 | 192.168.111.0 | 255.255.255.0 | 0.0.0.0 | 0 | wan |

5. Testing

1. Ping from CISCO to NR500 Pro.

```
CISCO7200#ping 192.168.5.1
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 192.168.5.1, timeout is 2 seconds:
!!!!.!
Success rate is 80 percent (4/5), round-trip min/avg/max = 4/344/988 ms
CISCO7200#
```

2. Test successfully.