

Network Interface Device Support

The Network Interface Device (NID) support feature enables support for the NID functionality on a device without including an NID hardware in the network.

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Information About NID Support

Network Interface Device Support on the L3 Interface

The Network Interface Device (NID) support feature enables support for the NID functionality on a device without including an NID hardware in the network. This feature combines the Customer-Premises Equipment (CPE) and the NID functionality into a physical device. The following are the advantages of configuring the NID functionality:

- Eliminates the need for a physical NID device and trunk roll.
- Supports both the managed CPE feature set and the NID requirements.

Supported Platforms

The NID Support feature is supported on the following platforms:

- Cisco ISR 4000 Series Integrated Services Routers

Restrictions for NID Support

- Port-channel and EVC interface are not supported .

How to Configure NID Support

Configuring NID Support

Perform the following task to configure NID support:

```
enable
    configure terminal
        interface gigabitEthernet 0/0/2
            no ip address
            port tagging
            encapsulation dot1q 10
            set cos 6
            end
```

Configuration Examples for NID Support

Example: Configuring NID

This configuration example shows how to configure the NID:

```
Device>enable
Device#configure terminal
Device(config)#interface gigabitethernet 0/2
Device(config-if)#port-tagging
Device(config-if-port-tagging)#encapsulation dot1q 10
Device(config-if-port-tagging)#set cos 6
Device(config-if-port-tagging)#end
```

Example: Verifying NID Configuration

Use the following commands to verify the port tagging sessions:

- **show run int**
- **ping**

Use the **show run int** command to display the port tagging sessions:

```
Device#show run interface GigabitEthernet 0/2
Building configuration...
Current configuration : 10585 bytes
!
interface GigabitEthernet0/2
 no ip address
 duplex auto
 speed auto
 port-tagging
  encapsulation dot1q 10
  set cos 6
  exit
end
!
```

```
interface GigabitEthernet0/2.1101
encapsulation dot1Q 100
ip address 10.0.2.4 255.255.255.0
!
interface GigabitEthernet0/2.1102
encapsulation dot1Q 100
ip address 10.0.3.4 255.255.255.0
!
```

Use the **ping** command to verify the connectivity with port tagging configured:

```
Device#ping
 10.0.2.3
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.2.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms
router#
```

Troubleshooting the NID Configuration

Caution Because debugging output is assigned high priority in the CPU process, it can diminish the performance of the router or even render it unusable. For this reason, use debug commands only to troubleshoot specific problems or during troubleshooting sessions with Cisco technical support staff.

Note Before you run any of the debug commands listed in the following table, ensure that you run the **logging buffered debugging** command, and then turn off console debug logging using the **no logging console** command.

Table 1: debug Commands for NID Configuration

debug Command	Purpose
`debug ethernet nid configuration`	Enables debugging of configuration-related issues.
`debug ethernet nid packet egress`	Enables debugging of packet processing (VLAN tag push) on the egress side.
`debug ethernet nid packet ingress`	Enables debugging of packet processing (VLAN tag pop) on the ingress side.

Feature Information for NID Support

The following table provides release information about the feature or features described in this module. This table lists only the software release that introduced support for a given feature in a given software release train. Unless noted otherwise, subsequent releases of that software release train also support that feature.

Use Cisco Feature Navigator to find information about platform support and Cisco software image support. To access Cisco Feature Navigator, go to www.cisco.com/go/cfn. An account on Cisco.com is not required.

Table 2: Feature Information for NID Support

Feature Name	Releases	Feature Information
NID Support	Cisco IOS XE Everest 16.6.1.	The Network Interface Device Support features enables support for the NID functionality on the router without including a NID hardware in the network. No new commands were introduced or modified.