



Forward. For all.

CANOE ETH环境搭建

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5/26/2025

Content:

- Basic Concept
- Network-based Mode Overview
- Ethernet Hardware Configuration
- Canoe Configuration

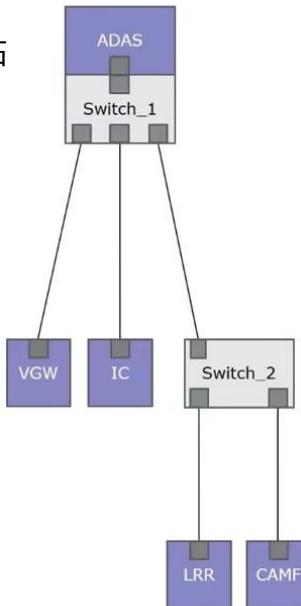
基础概念

Switched Network



Ethernet: Local Area Network (LAN) but no Bus System

以太网结构：
点对点网络拓
扑结构



Network: Nodes, Links, Switches

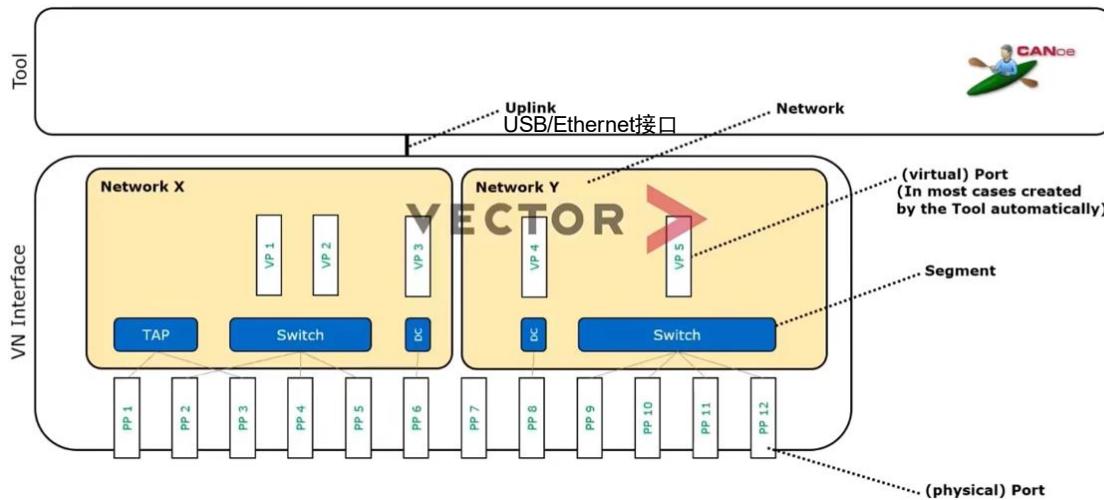
► **Node** 收发报文，真实的/虚拟的

VECTOR Link 连接两个节点的phy

► **Switch** 两个以上的节点，使用
switch进行报文转发

Network-based mode

Basic Concept



Port:

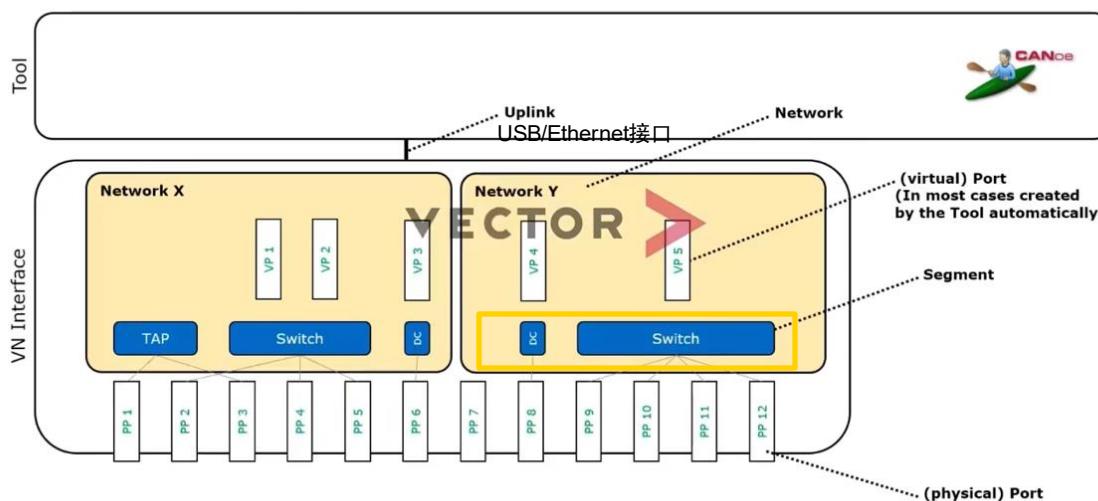
Physical port(PP):

- 连接到真实设备。
- 配置channel mode(Baud rate, master/slave)

Virtual Port(VP):

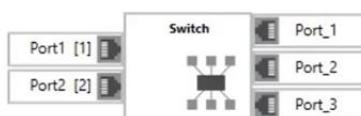
- Canoe仿真端口
- Canoe根据节点自动添加

Basic Concept



▶ Switch Segment

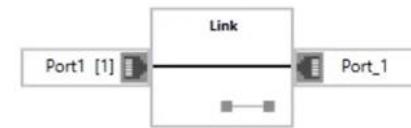
- ▶ Provides the basic functions of a layer-2 switch
 - > Supports VLAN settings



Segment: Link和Switch的统称
负责耦合不同的PP和VP

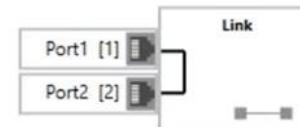
▶ Link Segment

- ▶ Direct Connection
 - > Connect one physical port and one virtual port

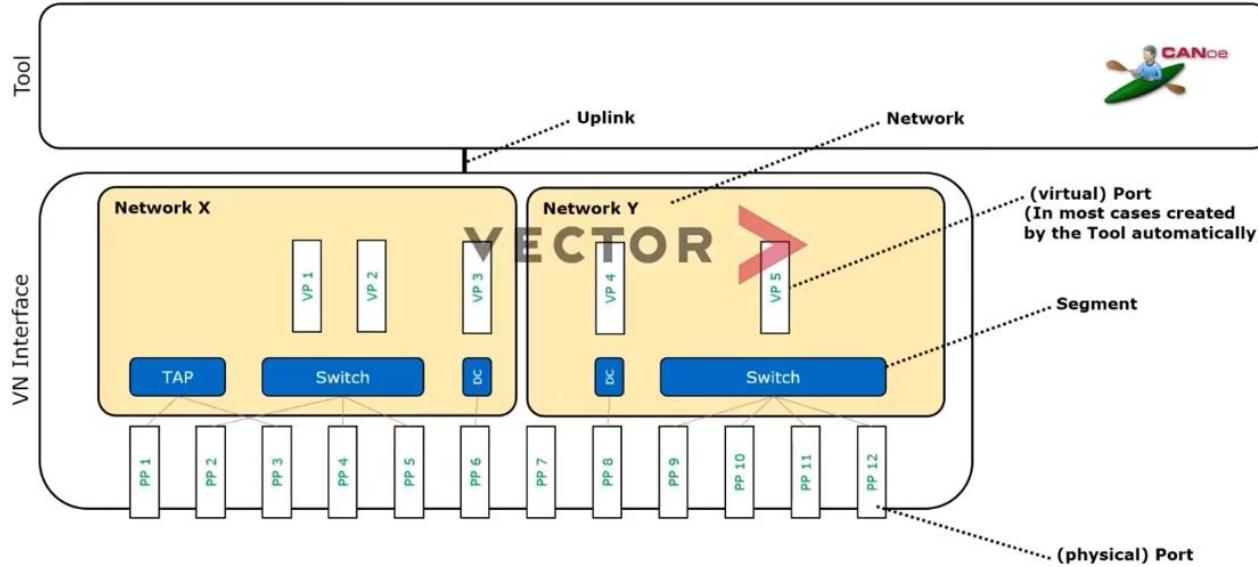


▶ TAP

- ▶ Connection of two physical ports
 - > Very low and constant latency



Basic Concept



- ✓ 一个网络接口设备(VN5XXX)可以包含多个network.
- ✓ 一个network可以包含多个segment.
- ✓ 其中switch Segment又可以包含多个PP(至少一个)/VP

Network-based Mode Overview

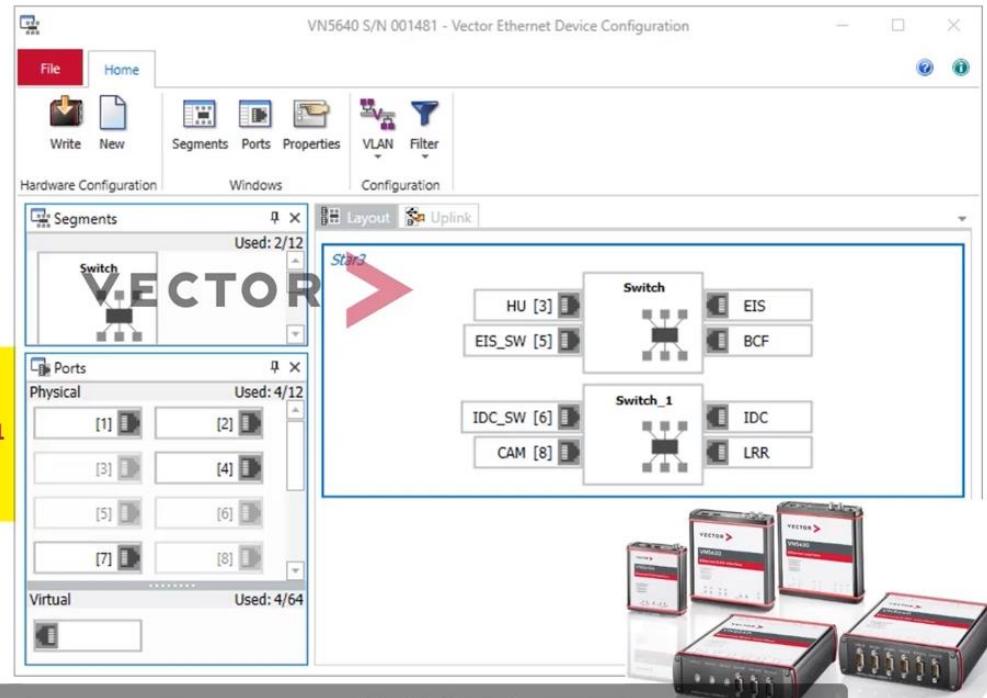
Overview

► Network-based Mode

- New software/firmware concept for the Vector Ethernet Network Interfaces
- Configuration of the hardware is independent of CANoe

► Precondition:

- Network Hardware Driver Version > **11.1**
- CANoe Version >**12.0 sp2**

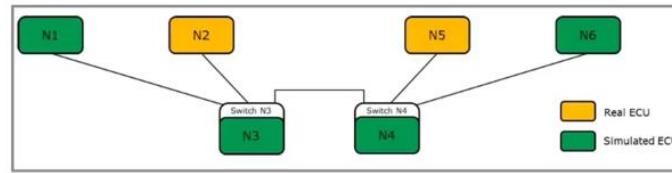


硬件驱动版本需要>11.1且CANoe软件版本需要>12.0 sp2

Network-based VS Channel-based Mode

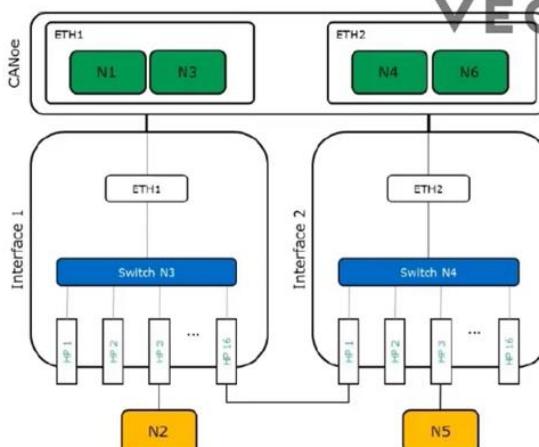


Overview

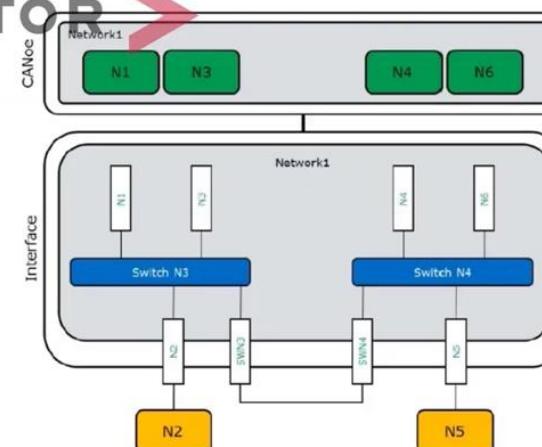


Q: 中间连线是物理还是设置上的?
定义两个不同的PP口连接到不同的switch，物理将两个PP口连接起来。

► Channel-based Mode



► Network-based Mode



在channel-based模式下，每个VN设置
只能支持一个switch segment

Ethernet Hardware Configuration

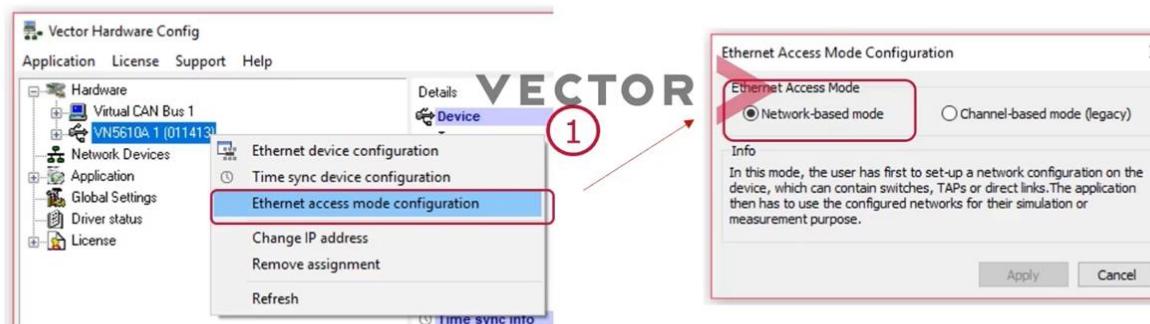
Ethernet Hardware Configuration



Network-based Mode

► Switch to Network-based Mode

- The Network-based Mode can be activated separately for each network interface
(context menu >> Ethernet access mode configuration)

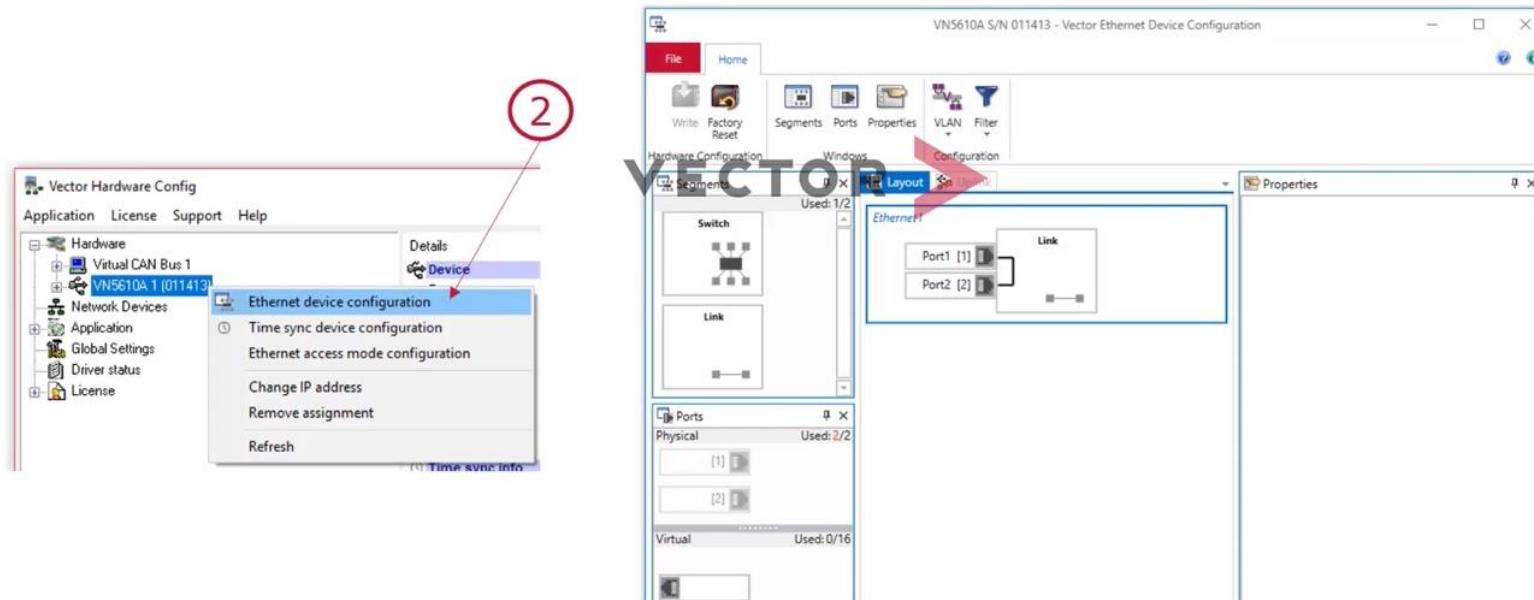


5610A/5640：支持原有的channel-based mode，所以需要切换。

Ethernet Hardware Configuration

Ethernet Device Configuration Window

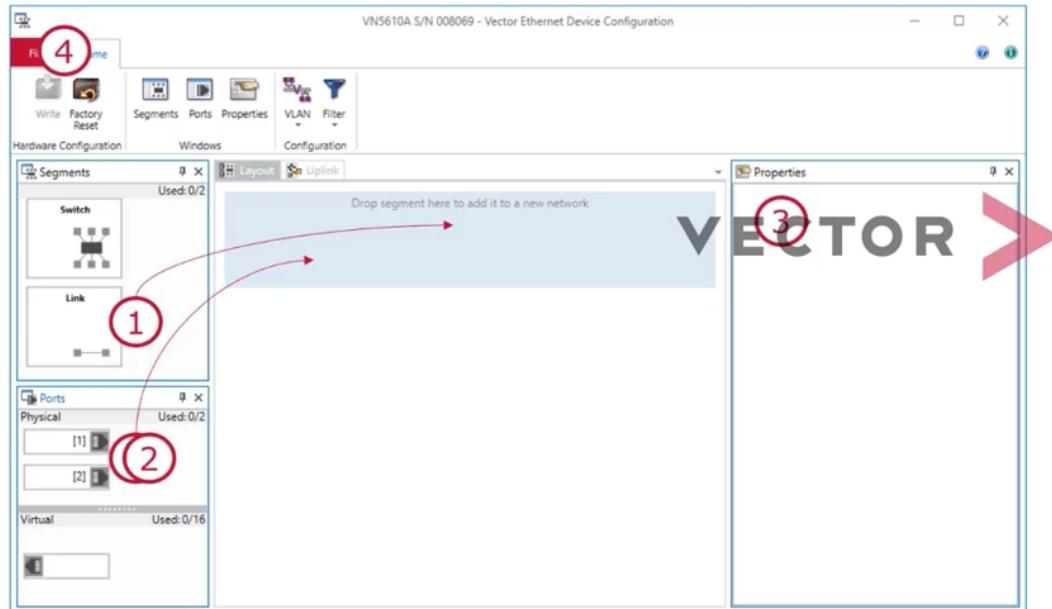
- ▶ Each device is configured separately using the new uniform “Ethernet Device Configuration”
 - ▶ Opened from the Vector Hardware Configuration
(context menu >> Ethernet Device Configuration)



Ethernet Hardware Configuration



Ethernet Device Configuration Sequence



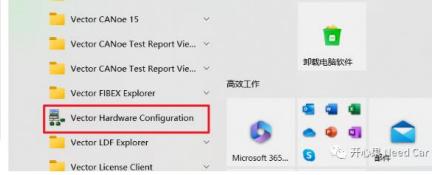
- ① Select Segments and name network
 - ② Assign Physical Port
 - ③ Set port properties
 - ④ Click "Write" to save the configuration
- ...
- ▶ The configuration can be saved to a XML file
 - ▶ The configuration can be loaded from a XML file

2. CANoe配置

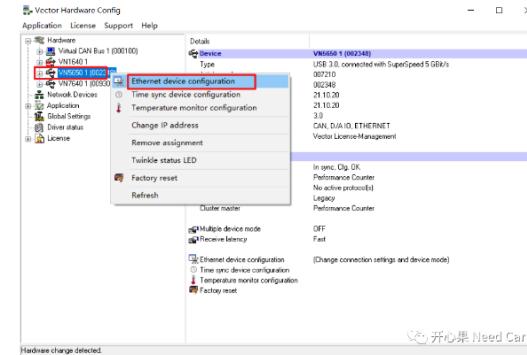
完成物理连接以后，进行CANoe配置，以便于以太网数据的监控和仿真。

(一) VN5650硬件网络 (Network) 配置

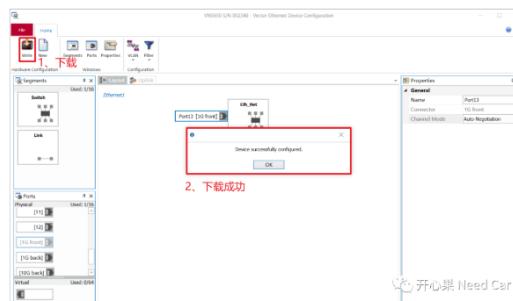
安装CANoe 15.0软件以及VN5650驱动以后，在开始菜单中可以找到"Vector Hardware Configuration"，如下所示：



在Vector Hardware Config的配置界面选择VN5650，右击->选择"Ethernet device Configuration"，如下所示：

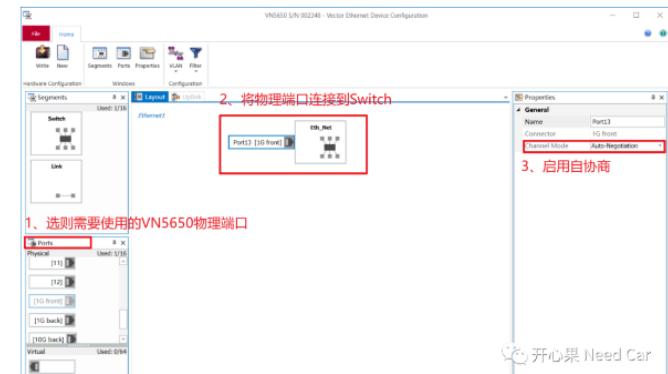


配置好网络以后，将配置好的网络下载到VN5650设备中，成功配置网络到VN5650后，提示如下：

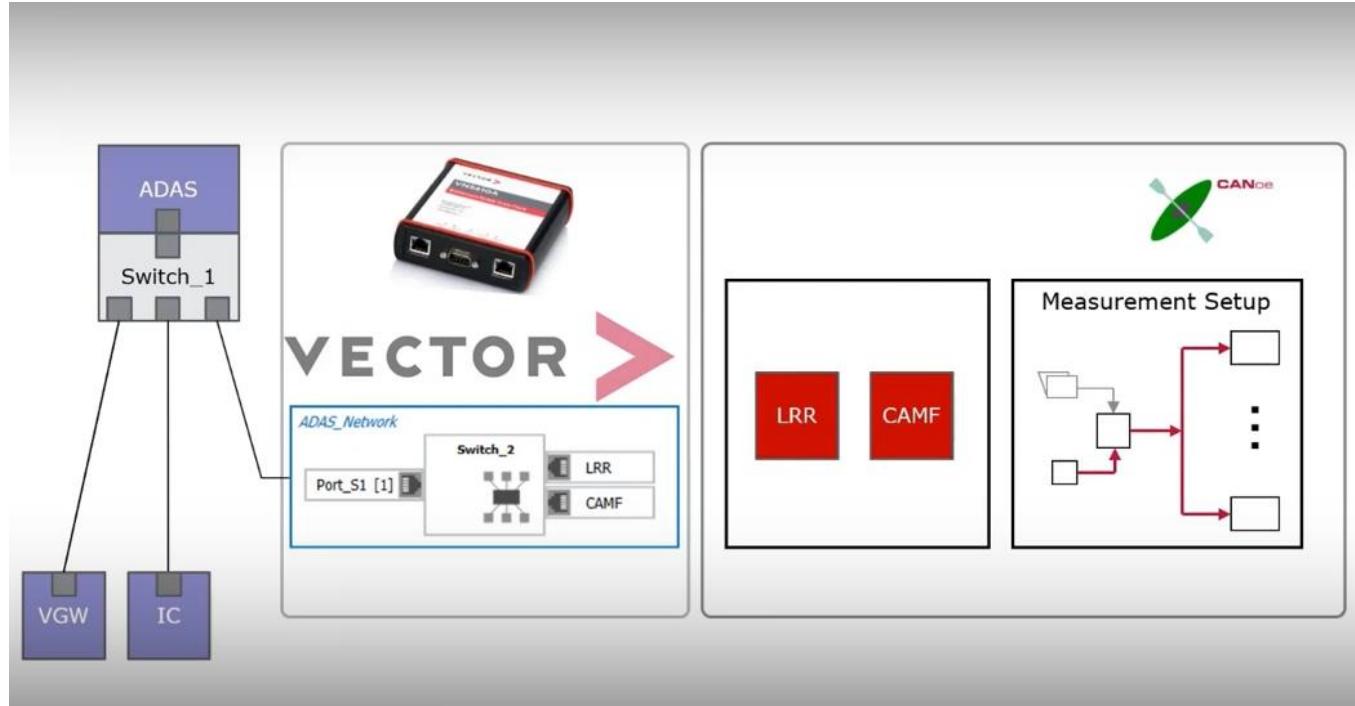
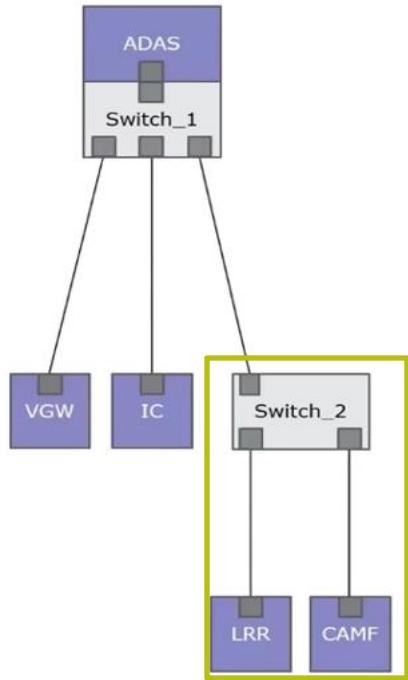


提示：配置好的Network信息可以保存为*.XML文件，方便复用。

选择Port口，此处选择要使用的VN5650物理端口(PP)，本文仅使用Port13[1G front]，即：目标DUT与VN5650通过RJ45连接，至于Ethernet的通信速率，使用默认的自协商 (Auto-Negotiation) 方式即可，配置如下：

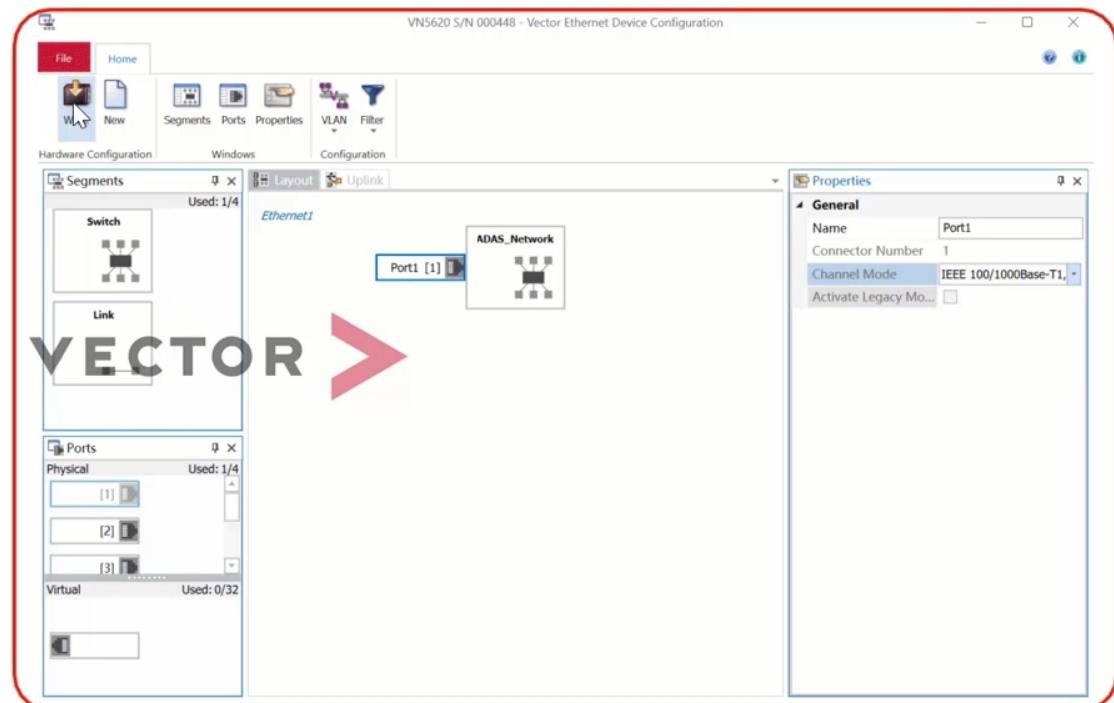
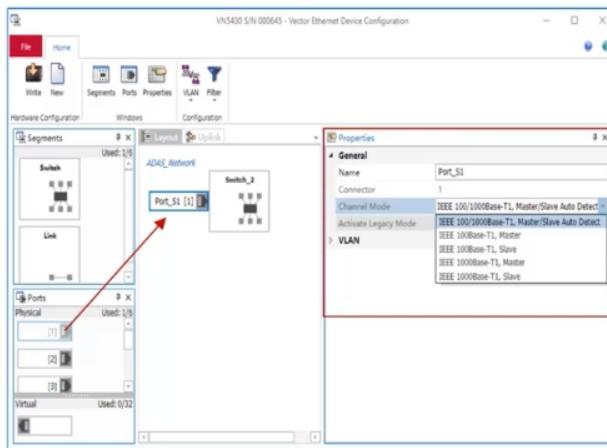


Use Case



Use Case

Switch for Multiple Senders



Canoe Configuration

Application Network Configure



ME_L2H0090_MFK5_AR430_Test.cfg * [Real Bus] - Vector CANoe /pro (View Only)

The screenshot shows the CANoe Options dialog box over a main application window. The dialog has tabs for Measurement, Network Access, and Statistics System Variables Schema. Under Measurement, the Ethernet section is selected, showing various audio, video, and transport options with their bit rates and frame counts. Under Network Access, 'Network-based access' is selected. Under Statistics System Variables Schema, 'Use Structs for Statistics' is checked.

Measurement

Format	Bit Rate	Frame Count
PCM [1 Channels, 44100 Hz, 16 Bit]	11	
PCM [2 Channels, 44100 Hz, 16 Bit]	10	
MPEG-1 / MPEG-2	14	
MPEG-2 Transport	33	
MPEG-1 / MPEG-2	32	
Motion JPEG	26	

Network Access

Channel-based access
 Network-based access

Update signals without port qualification:

Optimize the required resources by connecting Simulation Ports with a simulated switch where possible

Allow the use of Simulation Ports in the Measurement Setup

Check modeling libraries for compatibility with network-based mode

Statistic System Variables Schema

Use Structs for Statistics

OK Cancel Help

Files Used in this Configuration

Name: C:\transfer\DEMO\ME_L2H0090_MFK5_AR430_Test.cfg

Databases:

- HCP1_CANFD04_1 (CAN)
- ETH_Cluster_E3_1_2 (Ethernet)
- ME_CanoeControl_5 (CAN)
- ME_Diagnosis_6 (Network)
- ME_VehicleInterface_Env (Network:)
- Relay (Network:)
- ME_CanoeControl_2 (CAN)
- ME_Diagnosis_3 (Network)
- ME_Relaycard_30 (Network)
- ME_TDKPowerSupply (Network)
- ME_VehicleInterface_Env (Network:)

Operating mode: real-time

Bus statistics cycle time: 100 ms

Configuration Chip Configuration:

- Quartz frequency: 16 MHz
- Bus timing register0=0x00000000
- Bus timing register1=0x00000000
- Output control register=0x00000000
- Baud rate: 500000

FlexRay PDU Type: PDU0

Global Options:

- Number format hex
- Messages symbolic
- Extended Identifiers

Application Network Configuration



Application Network Configure

The screenshot displays the CANoe software interface for application network configuration. The top navigation bar includes File, Home, Analysis, Simulation, Test, Diagnostics & XCP, Environment, Configuration, and Hardware tabs. The Configuration tab is selected. Below the tabs are several icons: Channel Usage, Channel Mapping (highlighted with a red box), Port Configuration, Network Hardware, Configuration, Control, Tools, Configuration (highlighted with a red box), Diagnosis, and Network (highlighted with a red box). A large red arrow points from the 'Channel Mapping' icon in the toolbar to the 'Application Channel Mapping' dialog window.

The main workspace shows the 'CANoe Options' dialog. Under the 'General' tab, the 'Eth' dropdown is set to '2'. A smaller red box highlights the 'Add...' button in the 'Networks' section of the 'Simulation Setup' pane. A callout box points to the 'Add network' dialog, which has 'Name:' set to 'Ethernet2'.

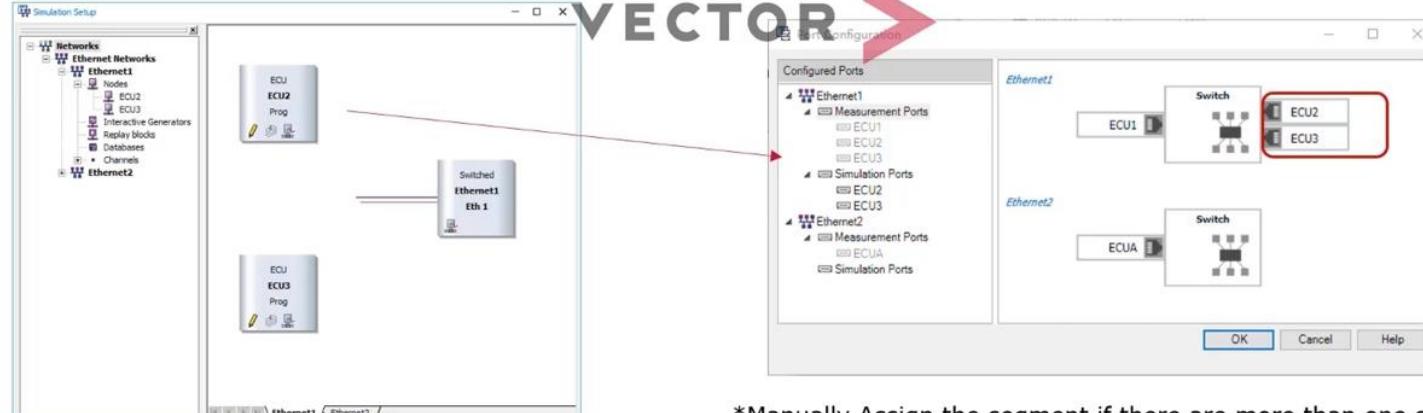
The right side of the screen shows the 'Application Channel Mapping' dialog. It lists two Ethernet interfaces: 'Eth 1' (checked) and 'Eth 2' (unchecked). For each interface, there are checkboxes for 'Active', 'Network', 'Hardware', and 'Transceiver'. A dropdown menu under 'Network' shows 'Network1' and 'Network2' (selected). A second dropdown under 'Transceiver' shows 'None' and 'Network1' (selected).

Port Configuration

Port Configuration

▶ Simulation Ports:

- ▶ Used for simulation access (read and write access)
- ▶ Represents a virtual port defined in the Ethernet Device Configuration in CANoe
- ▶ A simulation port is created **automatically** by adding a node to the network in the simulation setup

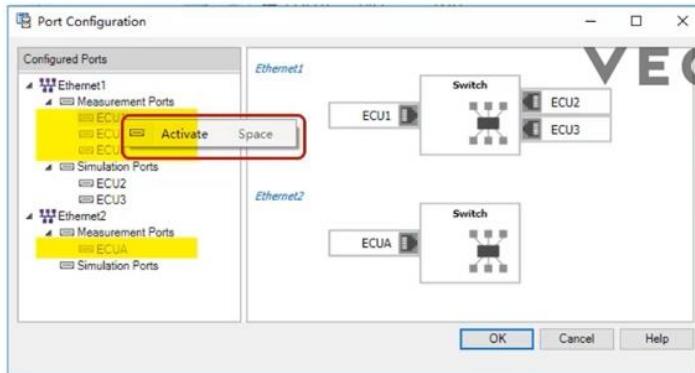


*Manually Assign the segment if there are more than one segments in the network

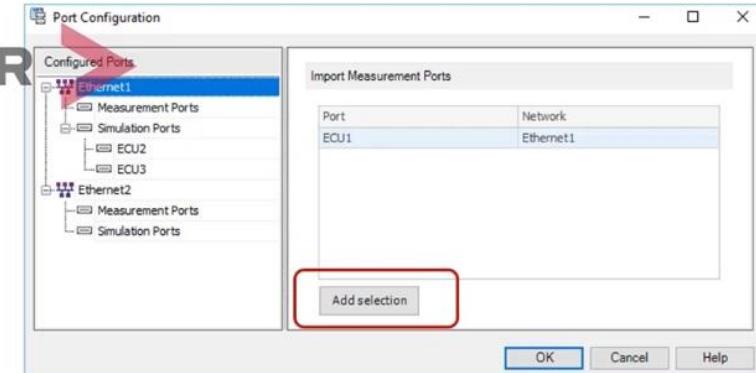
Port Configuration

▶ Measurement Ports:

- ▶ All measurement ports whose data you want to measure are displayed here.
- ▶ Import physical ports as measurement ports
- ▶ Or manually add the measurement port by adding the name of the matching physical port



CANoe14.0

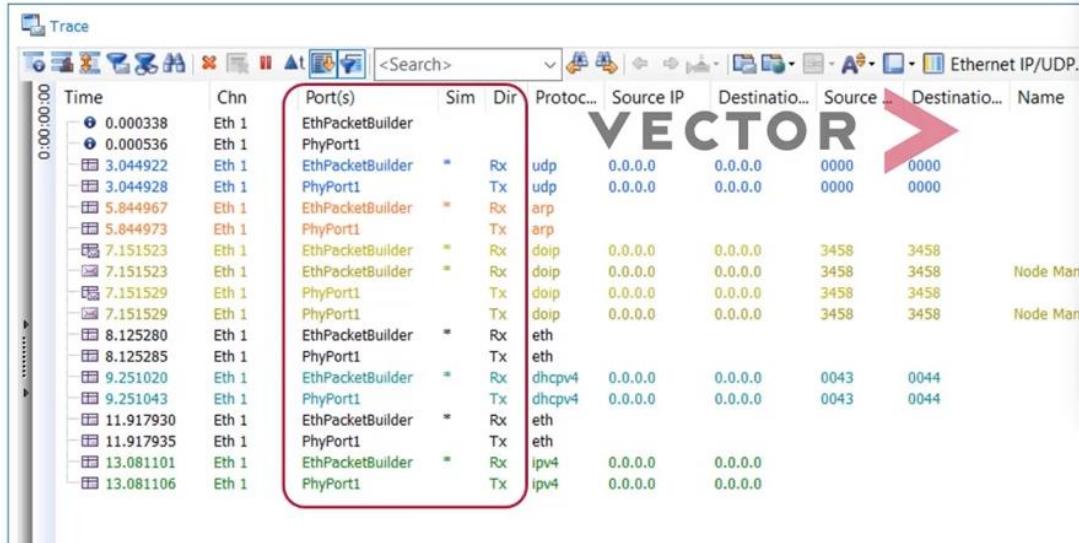


CANoe13.0

CANoe Trace

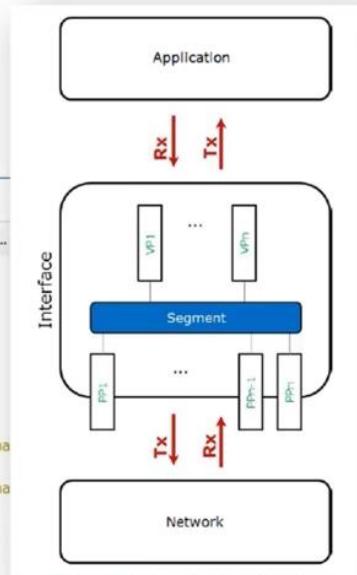
Observe in CANoe Trace

- The TX/RX direction is based on the hardware interface perspective.



The screenshot shows a CANoe Trace window with a table of captured network traffic. The columns are: Time, Chn, Port(s), Sim, Dir, Protocol, Source IP, Destination IP, Source Port, Destination Port, and Name. A red box highlights the 'Dir' column, which indicates the transmission direction for each packet. The table includes entries for various protocols like UDP, ARP, and DOIP, showing their respective source and destination details.

Time	Chn	Port(s)	Sim	Dir	Protocol	Source IP	Destination IP	Source Port	Destination Port	Name
0.000338	Eth 1	EthPacketBuilder			udp	0.0.0.0	0.0.0.0	0000	0000	
0.000536	Eth 1	PhyPort1		Rx	udp	0.0.0.0	0.0.0.0	0000	0000	
3.044922	Eth 1	EthPacketBuilder	*	Tx	arp					
3.044928	Eth 1	PhyPort1	*	Rx	arp					
5.844967	Eth 1	EthPacketBuilder	*	Tx	doip	0.0.0.0	0.0.0.0	3458	3458	Node Mana
5.844973	Eth 1	PhyPort1	*	Rx	doip	0.0.0.0	0.0.0.0	3458	3458	Node Mana
7.151523	Eth 1	EthPacketBuilder	*	Tx	doip	0.0.0.0	0.0.0.0	3458	3458	Node Mana
7.151523	Eth 1	EthPacketBuilder	*	Rx	eth					
7.151529	Eth 1	PhyPort1	*	Tx	dhcpv4	0.0.0.0	0.0.0.0	0043	0044	
7.151529	Eth 1	PhyPort1	*	Rx	dhcpv4	0.0.0.0	0.0.0.0	0043	0044	
8.125280	Eth 1	EthPacketBuilder	*	Rx	eth					
8.125285	Eth 1	PhyPort1	*	Tx						
9.251020	Eth 1	EthPacketBuilder	*	Rx						
9.251043	Eth 1	PhyPort1	*	Tx						
11.917930	Eth 1	EthPacketBuilder	*	Rx						
11.917935	Eth 1	PhyPort1	*	Tx						
13.081101	Eth 1	EthPacketBuilder	*	Rx	ipv4	0.0.0.0	0.0.0.0			
13.081106	Eth 1	PhyPort1	*	Tx	ipv4	0.0.0.0	0.0.0.0			



CANoe 16+



The screenshot shows the Vector | Hardware Manager software interface. The top navigation bar includes the title "Vector | Hardware Manager" and the Bilibili logo. On the right side of the header is a "Deploy" button with a download icon. The main content area is titled "Device Properties Configuration". On the left, there is a vertical sidebar with four icons: "Device Properties Configuration" (selected), "Ethernet Network Configuration", "Time Sync Configuration", and "Application Channels Configuration". The central panel displays a device configuration for a "VN5640" device with serial number "2922". It features a thumbnail image of the device hardware. Below the thumbnail, the device name and serial number are listed. A section titled "Infrastructure Ports" contains four entries: "ETH 13", "ETH 14", "ETH 15", and "ETH 16 Ethernet". The "ETH 16 Ethernet" entry is selected, indicated by a checked checkbox and a small network icon. To the right of this entry are fields for the IP address ("192.168.0.1"), a edit icon, and a delete icon. To the right of each port entry are buttons for "Raw Mirror" and "Advanced Mirror". On the far right, a preview panel shows the device configuration for a "Virtual CAN Bus" with serial number "100".

CANoe 16+

MAGNA

Vector | Hardware Manager

安捷伦可视化编程环境 bilibili

Ethernet Network Configuration

Deploy

Layout Filter

Ethernet1

[ETH 1] Port1 : Link1 VN5640 (2922)

Ethernet2

[ETH 2] Port1 : Switch1 VN5640 (2922)
gPTP Frame Forwarding
Forwarding gPTP frames

VirtualPort1 :

Add segment Edit Remove

Add network Manage devices

Device
VN5640
Serial number
2922

Segments 2/12 Ports 2/12 VLANs 0/32

CANoe 16+



Vector | Hardware Manager

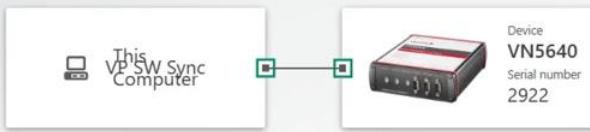
- X

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Time Sync Status

Deploy

PerformanceCounter



Device Properties Status

Ethernet Network Status

Time Sync Status

Application Channels Status

Time Sync Status

System

Time Domain Status

Cannot start CANape measurement with VTSS.

Devices

VN5640 (2922)

Receives: Software Sync Legacy

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Application Channels Status

 Deploy

No active channels.

Application	Application Channel	Device	Device Channel
CANoe	CAN 1	Virtual CAN Bus [1] (100)	Channel 2
CANoe	CAN 2	Virtual CAN Bus [1] (100)	Channel 1

Application Channels Status

Device Properties Status

Ethernet Network Status

Time Sync Status

CANoe 16+



Vector | Hardware Manager

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Ethernet Network Configuration

Deploy

Layout Filter

Add network

Device Properties Configuration

Ethernet Network Configuration

Time Sync Configuration

Application Channels Configuration

 Device
VN5640
Serial number
2922

Segments	Ports	VLANs
0/12	0/12	0/32

CANoe 16+



Vector | Hardware Manager

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Ethernet Network Configuration

Deploy

Layout Filter

Device Properties Configuration

Ethernet Network Configuration

Time Sync Configuration

Application Channels Configuration

Add Network

Name: Ethernet1

VLANs

Name Id Color

ACCEPT CANCEL

Device VN5640
Serial number 2922
Segments 0/12 Ports 0/12 VLANs 0/32

CANoe 16+



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Ethernet Network Configuration

Deploy

Layout ! Filter

Ethernet1

Link1

No device assigned

[ETH 1] Port1

Add network

Device VN5640
Serial number 2922

Segments 0/12 Ports 0/12 VLANs 0/32

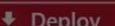
The screenshot shows the CANoe 16+ software interface for Ethernet network configuration. On the left, there's a sidebar with icons for Layout (selected), Device Properties Configuration, Ethernet Network Configuration (with a red exclamation mark), Time Sync Configuration, and Application Channels Configuration. The main area displays a network diagram titled 'Ethernet1' with a single link labeled 'Link1'. A tooltip 'No device assigned' appears over the link. Below the link is a port labeled '[ETH 1] Port1'. At the bottom of the diagram area is a button 'Add network'. To the right, there's a table for a device named 'VN5640' with serial number '2922'. The table includes columns for Segments (0/12), Ports (0/12), and VLANs (0/32). A large red exclamation mark is visible above the 'Layout' icon in the sidebar.

CANoe 16+



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Ethernet Network Configuration



Layout Filter

Ethernet1

Add Port

Name: Port1

Connector:

- [ETH 1] AutoConnector
- [ETH 1] AutoConnector
- [ETH 2] AutoConnector
- [ETH 3] AutoConnector
- [ETH 4] AutoConnector
- [ETH 5] AutoConnector
- [ETH 6] AutoConnector
- [ETH 7] AutoConnector

Device
VN5640
Serial number
2922

Segments 0/12 Ports 0/12 VLANs 0/32

Manage devices

This Computer

2 0 0 0 0 0 0 0

CANoe 16+



Vector | Hardware Manager

安捷伦可视化编程环境 bilibili Ethernet Network Configuration Deploy

Layout ! Filter

Ethernet1

Link1
[ETH 1] Port1 No device assigned

Add network

Device VN5640
Serial number 2922
Segments 0/12 Ports 0/12 VLANs 0/32

Device VN5640
Serial number 2922
Segments 0/12 Ports 0/12 VLANs 0/32

CANoe 16+



Vector | Hardware Manager

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Ethernet Network Configuration

Deploy

Layout Filter

Ethernet1

Link1

No device assigned

[ETH 1] Port1

Ethernet2

Switch1

VN5640 (2922)

gPTP Frame Forwarding
Forwarding gPTP frames

Add port

Device
VN5640
Serial number
2922

Segments 1/12
Ports 0/12
VLANs 0/32

This screenshot shows the CANoe 16+ software interface for Ethernet network configuration. The top navigation bar includes 'Vector | Hardware Manager', the 'bili bili' logo, and a 'Deploy' button. The main window has tabs for 'Layout' (with a red exclamation mark) and 'Filter'. It displays two sections: 'Ethernet1' and 'Ethernet2'. In 'Ethernet1', there is a 'Link1' entry with a red error icon and a message 'No device assigned'. Below it is a port entry '[ETH 1] Port1'. In 'Ethernet2', there is a 'Switch1' entry with a VN5640 device icon and the identifier '(2922)'. Below the device icon, it says 'gPTP Frame Forwarding' and 'Forwarding gPTP frames'. At the bottom of this section is a 'Add port' button. To the right of the main configuration area is a sidebar with a VN5640 device icon and the following details:
Device: VN5640
Serial number: 2922
Segments: 1/12
Ports: 0/12
VLANs: 0/32

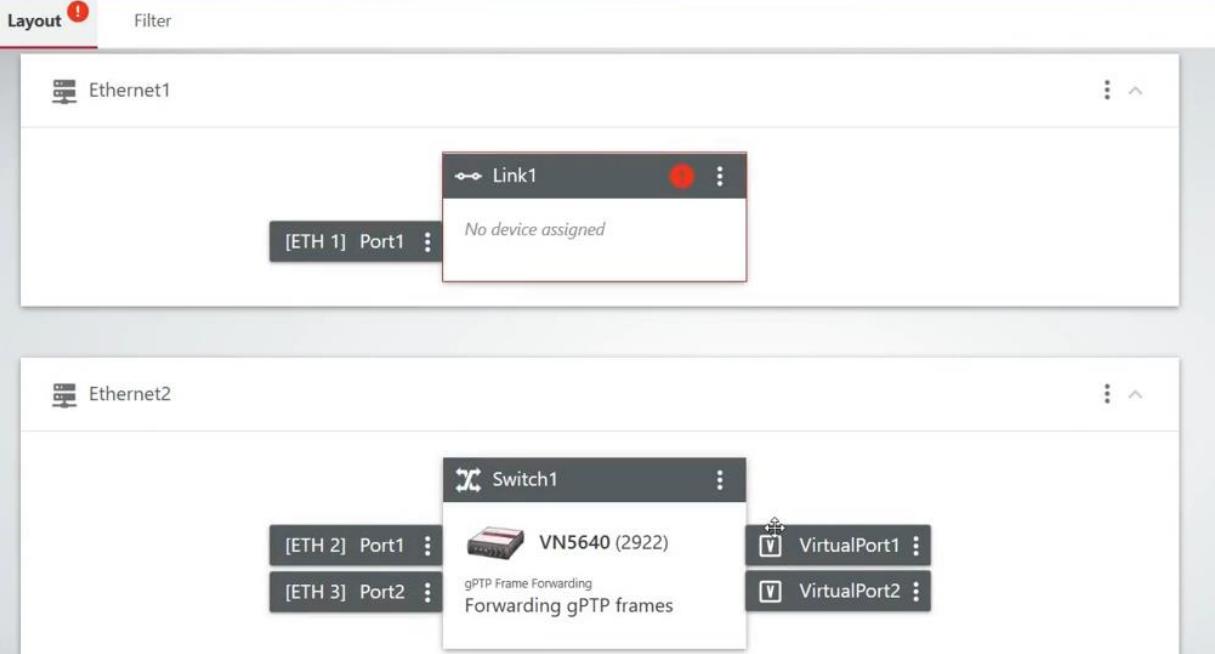
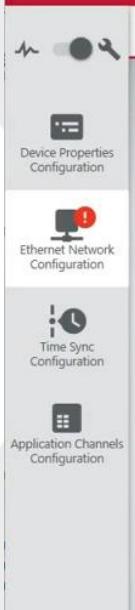
CANoe 16+



安捷伦可视化编程环境

Ethernet Network Configuration

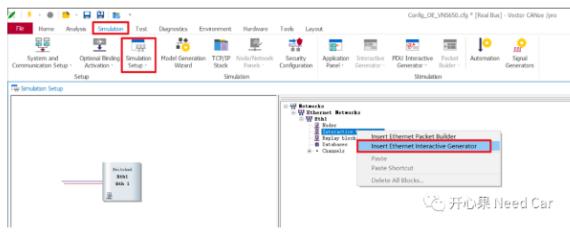
Deploy



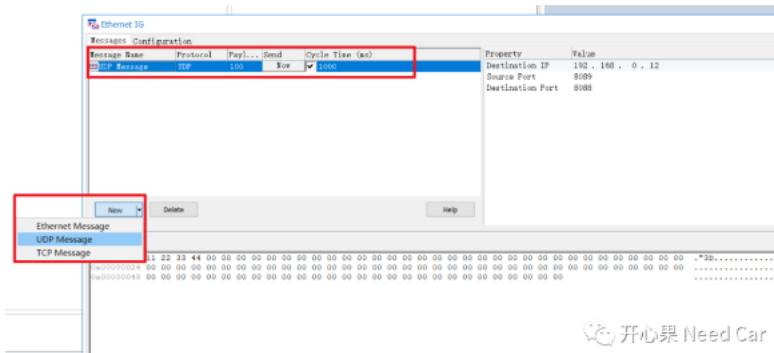
Ethernet IG configuration

3、创建仿真IG (Interactive Generator) 模块

当需要模拟节点UDP/TCP报文发送时，可以通过IG等模块仿真，IG创建如下所示：



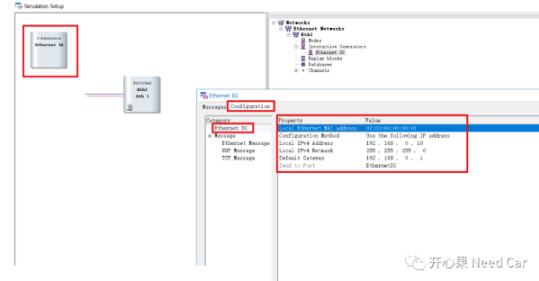
添加仿真UDP报文，周期1000ms，如下所示：



IG属性配置，本文设置虚拟以太网节点（IG）的

IPv4地址：192.168.0.10，网络掩码：

255.255.255.0，默认网关地址：192.168.0.1，如下所示：



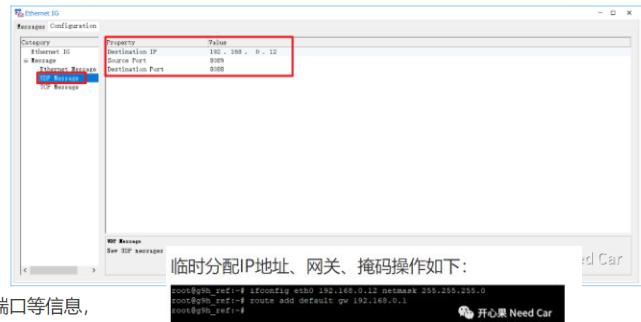
提示：DUT的IP地址、网关、掩码以及端口等信息，开发过程中配置。而本文的DUT型号是芯驰的G9H，基于Linux系统，可以通过命令行设置这些信息，本文只是临时配置，使用临时配置的方式修改DUT的IP地址、网关、掩码信息。没有设置之前，网卡eth0并未分配IP地址、网关、掩码等信息，如下所示：

```
root@gbn_refi:~# ifconfig
eth0      Link encap:Ethernet HWaddr e2:e8:03:c8:40:60
          inet addr: 192.168.0.12 netmask 255.255.255.0
          MTU:1500 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:11 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:1752 (1.7 Kib)
          Interrupt:33
```

```
lo      Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP BROADCAST loopback MTU:16436 Metric:1
          RX packets:11 errors:0 dropped:0 overruns:0 frame:0
          TX packets:11 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:9844 (9.7 Kib)  TX bytes:9844 (9.7 Kib)
          Interrupt:0
```

```
root@gbn_refi:~#
```

本文配置UDP报文发送属性，发送的目标IPv4地址：192.168.0.12，目标端口号：8088，IG端口号设置为：8089，如下所示：



临时分配IP地址、网关、掩码操作如下：

```
root@gbn_refi:~# ifconfig eth0 192.168.0.12 netmask 255.255.255.0
root@gbn_refi:~# route add default gw 192.168.0.1
root@gbn_refi:~#
```

上述命令如下：

//配置网卡eth0的IPv4地址，网络掩码
ifconfig eth0 192.168.0.12 netmask 255.255.255.0

//配置默认路由地址

route add default gw 192.168.0.1

再次通过ifconfig确认DUT的IP地址、网关、掩码等信息，如下所示：

```
root@gbn_refi:~# ifconfig
eth0      Link encap:Ethernet HWaddr e2:e8:03:c8:40:60
          inet addr: 192.168.0.12 netmask 255.255.255.0
          MTU:1500 Metric:1
          RX packets:11 errors:0 dropped:0 overruns:0 frame:0
          TX packets:11 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:9844 (9.7 Kib)  TX bytes:9844 (9.7 Kib)
          Interrupt:33
```

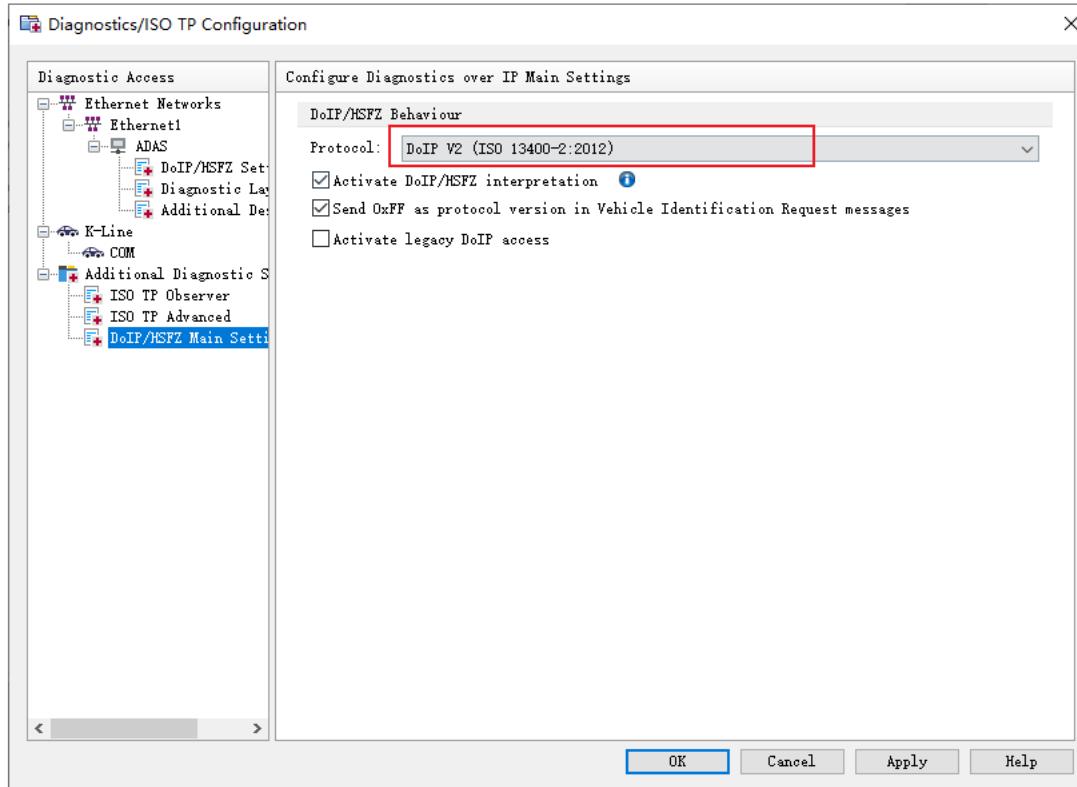
```
lo      Link encap:Local Loopback
          inet addr:127.0.0.1  Mask:255.0.0.0
          inet6 addr: ::1/128 Scope:Host
          UP BROADCAST loopback MTU:16436 Metric:1
          RX packets:11 errors:0 dropped:0 overruns:0 frame:0
          TX packets:11 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:9844 (9.7 Kib)  TX bytes:9844 (9.7 Kib)
          Interrupt:0
```

```
root@gbn_refi:~#
```

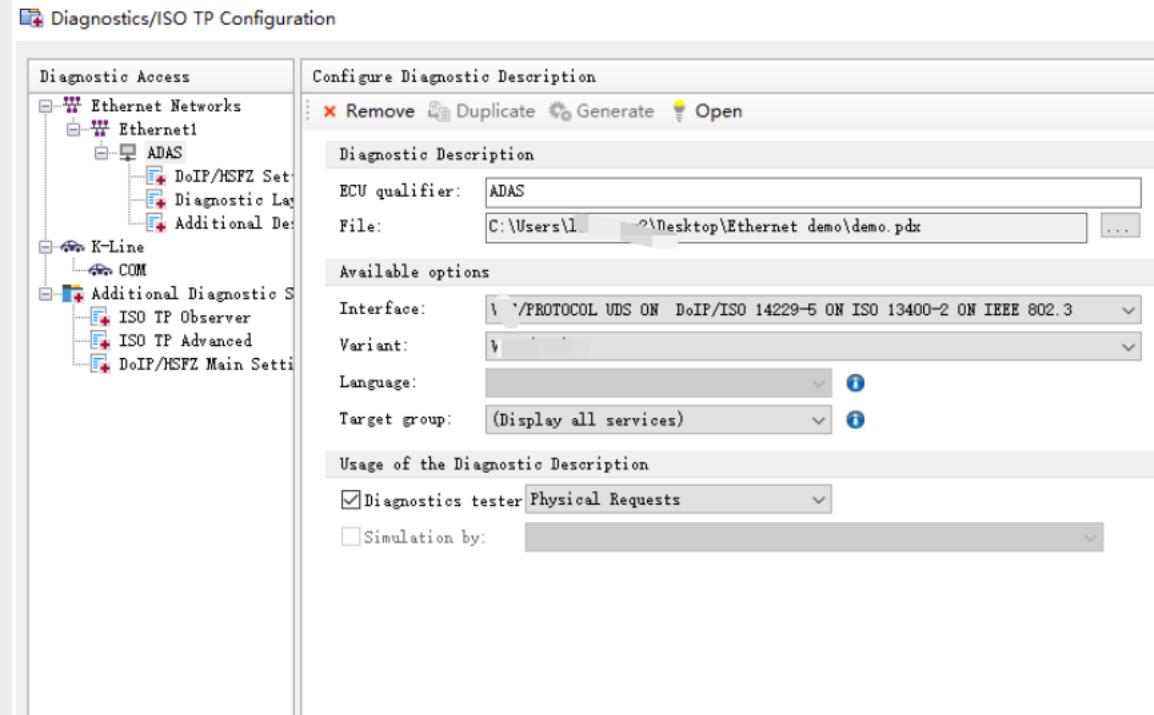
Diagnostic 配置

配置诊断数据库

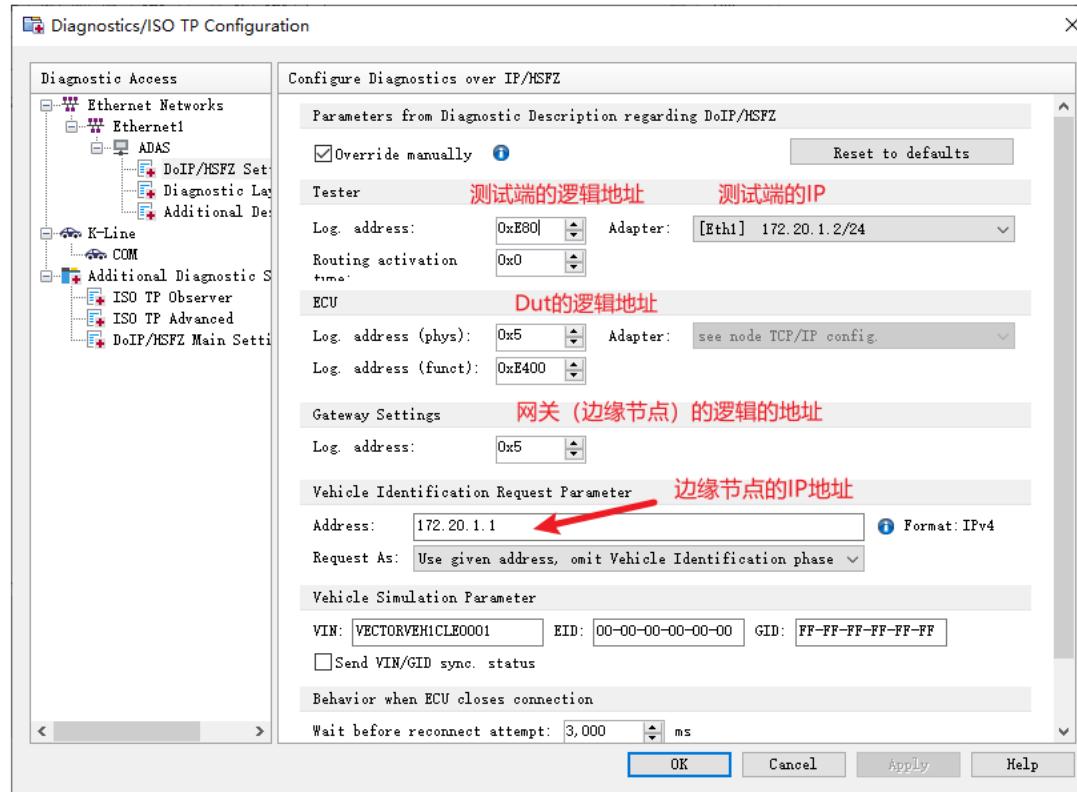
选择DUT支持的DoIP协议版本。



选择CDD/ODX/PDX等诊断数据库文件。



配置 IP地址



ADAS - Diagnostic Console

Symbolic

1: 10 - Sessions_Start

Sessions

- 10 - Sessions_Start
- 10 - Sessions_Start_NoResponse
- Ecu Reset
- Fault Memory
- ECU Identification
- Security Access
- Communication Control
- Upload/Download
- Tester Present
- Control DTC Setting
- Routine Control
- Stored Data
- ETH Diagnostic Services
- [Raw Telegrams]
- [User defined messages]
- [Macros]

Name	Value	Unit
PDU	10 01	
DiagSess...	Default...	

Execute

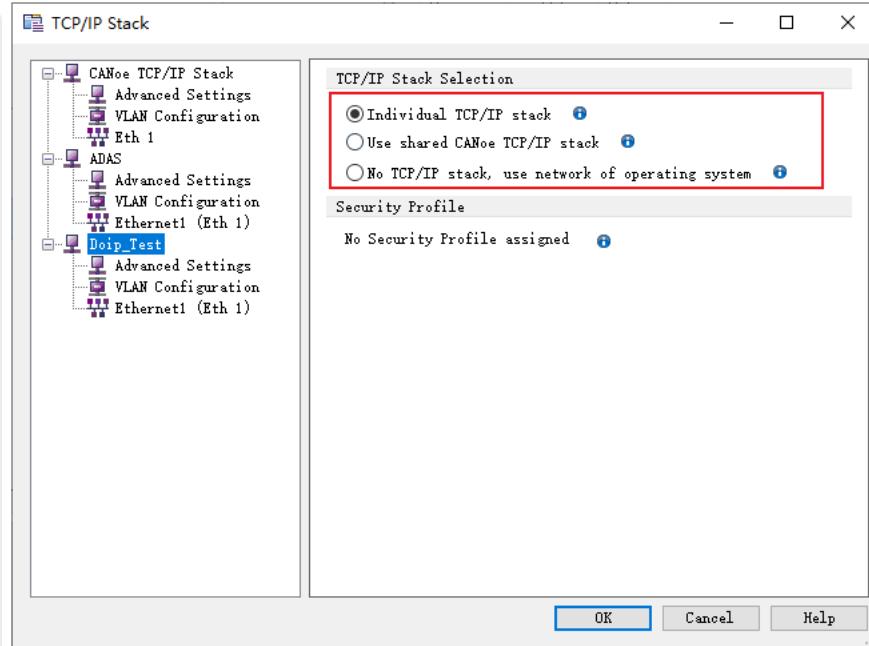
Type/Par... Service/Value

- [12:01:17...] Sessions_Start
- DiagS... Default Session
- [12:01:17] ADAS
- [12:01:17...] Positive response:
- DiagS... Default Session
- Session... 0x00 0x32 0x00 0xC8
- P2 50 [ms]
- P2Ex 2000 [ms]
- [12:01:17] Device 'ADAS' is online.

Ethernet IP/UDP...

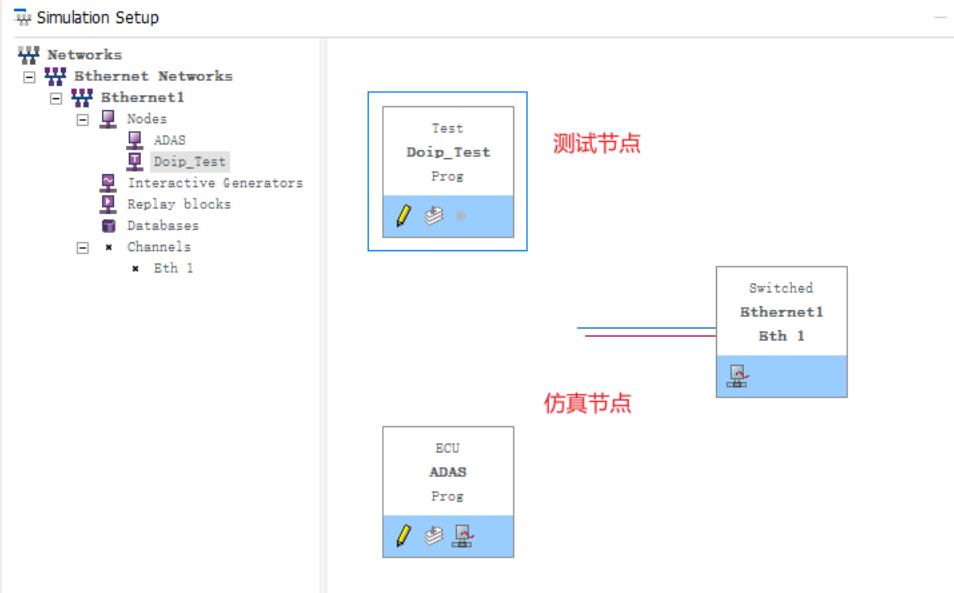
Source IP	Destination IP	Source P...	Destination ...	Name	Protocol Interpretation	Prot
172.20.1.2	172.20.1.1	B73E	3458		3458 <- B73E [SYN] Seq=709A8AC2 Win=FFFF	
172.20.1.2	172.20.1.1	B73E	3458		3458 <- B73E [SYN] Seq=709A8AC2 Win=FFFF	
172.20.1.1	172.20.1.2	3458	B73E		3458 -> B73E [ACK, SYN] Seq=4C625005 Ack=709ABAC3 Win...	
172.20.1.1	172.20.1.2	3458	B73E		3458 -> B73E [ACK, SYN] Seq=4C625005 Ack=709ABAC3 Win...	
172.20.1.2	172.20.1.1	B73E	3458		3458 <- B73E [ACK] Ack=4C625006 Seq=709A8AC3 Win=2086	
172.20.1.2	172.20.1.1	B73E	3458		DoIP (TCP segment: source=B73E, destination=3458)	
172.20.1.2	172.20.1.1	B73E	3458		Node Management DoIP: Routing activation request	
172.20.1.2	172.20.1.1	B73E	3458		3458 <- B73E [ACK] Ack=4C625006 Seq=709A8AC3 Win=2086	
172.20.1.2	172.20.1.1	B73E	3458		DoIP (TCP segment: source=B73E, destination=3458)	
172.20.1.2	172.20.1.1	B73E	3458		Node Management DoIP: Routing activation request	
172.20.1.1	172.20.1.2	3458	B73E		3458 -> B73E [ACK] Seq=4C625006 Ack=709A8AD2 Win=01FD	
172.20.1.1	172.20.1.2	3458	B73E		3458 -> B73E [ACK] Seq=4C625006 Ack=709A8AD2 Win=01FD	
172.20.1.1	172.20.1.2	3458	B73E		DoIP (TCP segment: source=3458, destination=B73E)	

TCP/IP Stack配置的三种选项有什么不同？



Action

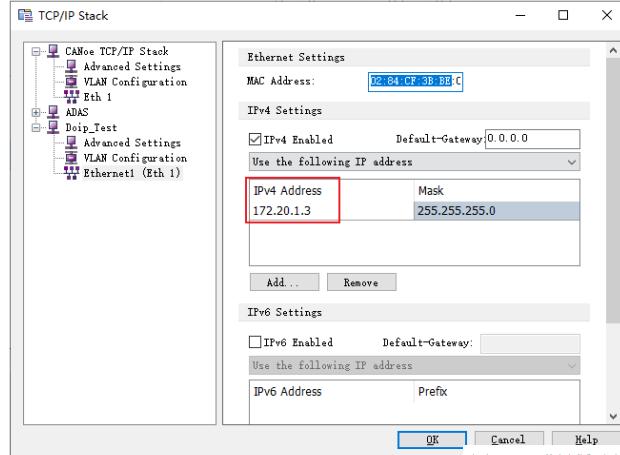
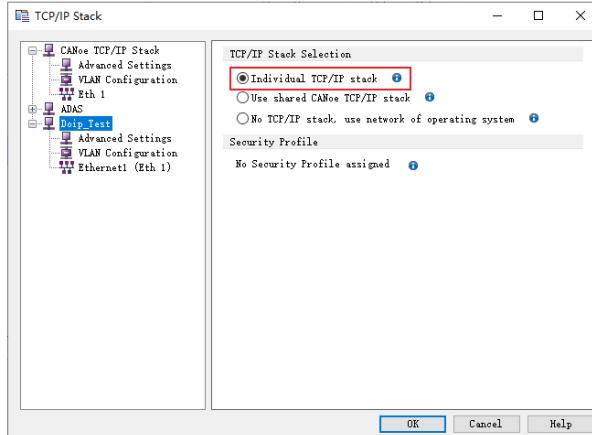
首先在一个空白工程中添加两个节点，一个是测试节点（Doip_Test），一个是网络节点（ADAS）



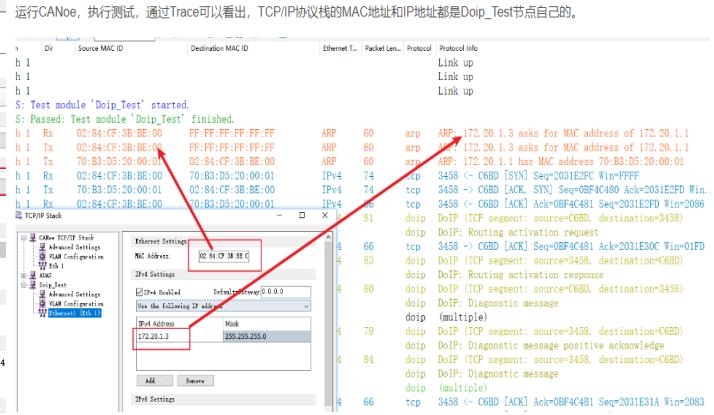
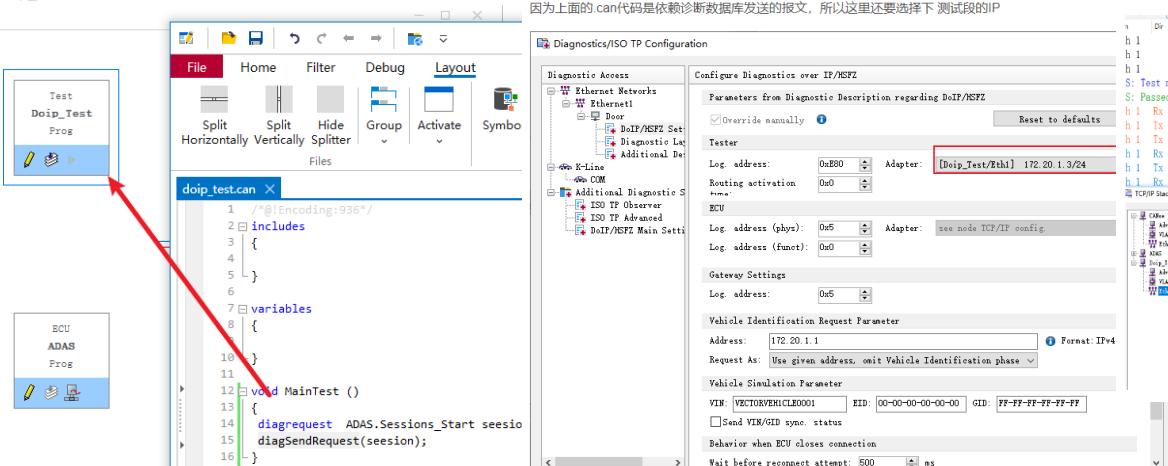
Individual TCP/IP Stack



为网络节点建立专有的TCP/IP栈。

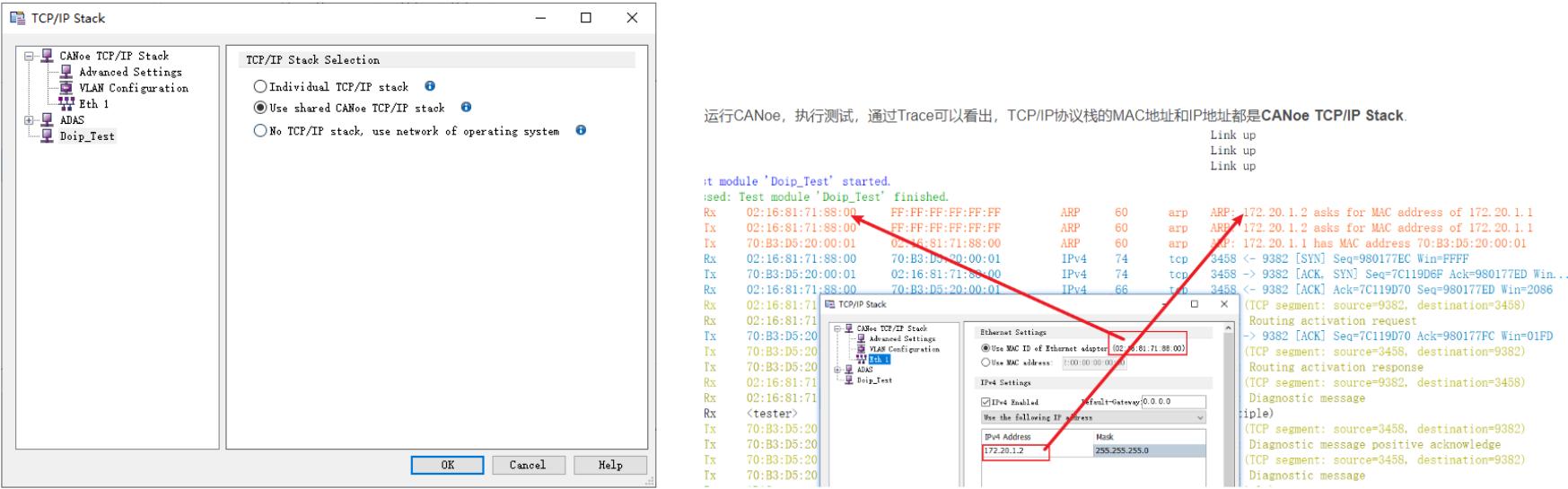


给DoIP_Test 节点加载一个.can文件，就是简单的发送一个诊断请求



Use shared CANoe TCP/IP stack

CANoe有它自己的TCP/IP堆栈实例，它可以被几个共同的网络节点使用。使用此实例的节点在网络中仅作为一个节点可见，CANoe TCP/IP Stack。

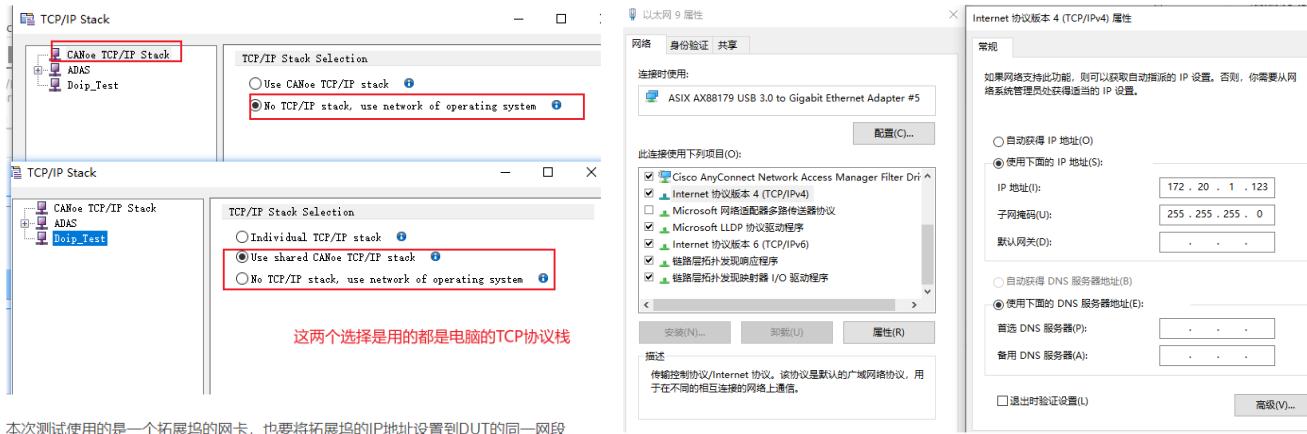


No TCP/IP stack, use network of operating system



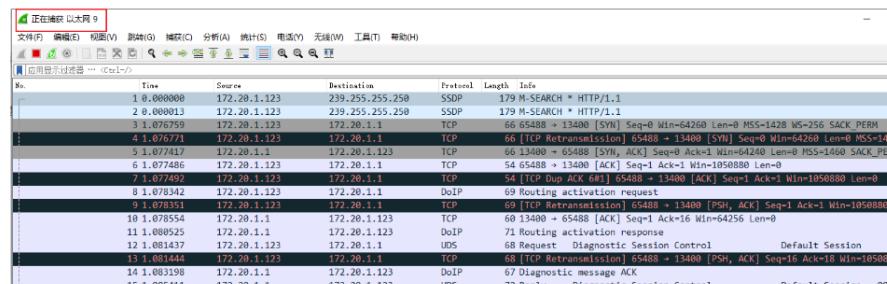
这个选项就是使用电脑的网卡或者拓展坞的网卡，CANoe不用做什么配置，不过CANoe中也检测不到任何的数据了。

必须在CANoe TCP/IP Stack 选项中选择 No TCP/IP stack, use network of operating system，其它节点选择下图的两个选项都行。



本次测试使用的是一个拓展坞的网卡，也要将拓展坞的IP地址设置到DUT的同一网段

运行CANoe，执行测试，通过CANoe中的Trace窗口看不到任何数据，这里是使用了wireShark 抓包工具在拓展坞的网卡上抓到的数据。



比如下图通过诊断数据库，在诊断控制台上发送诊断请求，trace窗口看到报文的发送端口是 GlobalStack

Trace

Time	Chn	Port(s)	VLAN	Sim	Dir	Protocol	Source IP	Destination ...	Source P...	Destination ...	Name	Protocol Interpretation	
00000000												Link up	
0. 000030	Eth 1	ADAS										Link up	
0. 0000406	Eth 1	Doip_Test										Link up	
0. 0000503	Eth 1	GlobalStack										Link up	
3. 961043	Eth 1	GlobalStack		s	Rx	arp						ARP: 172.20.1.2 asks for MAC	
3. 961042	Eth 1	ADAS, GlobalStack			Tx	arp						ARP: 172.20.1.2 asks for MAC	
3. 961636	Eth 1	GlobalStack			Tx	arp						ARP: 172.20.1.1 has MAC addr	
3. 962578	Eth 1	GlobalStack		s	Rx	tcp	172.20.1.2	172.20.1.1	BF95	3458		3458 <- BF95 [SYN] Seq=B3633	
3. 962789	Eth 1	GlobalStack			Tx	tcp	172.20.1.1	172.20.1.2	BF95			3458 > BF95 [ACK, SYN] Seq=	
3. 963686	Eth 1	GlobalStack		s	Rx	tcp	172.20.1.2	172.20.1.1	BF95	3458		3458 <- BF95 [ACK] Ack=B3614	
3. 963705	Eth 1	GlobalStack			s	Rx	doip	172.20.1.2	172.20.1.1	BF95	3458		DoIP (TCP segment: source=34
3. 963705	Eth 1	GlobalStack			Tx	doip	172.20.1.2	172.20.1.1	BF95	3458	Node Man...	DoIP: Routing activation req	
3. 963971	Eth 1	GlobalStack			Tx	tcp	172.20.1.1	172.20.1.2	2458	BF95		3458 > BF95 [ACK] Seq=B3614	
3. 972950	Eth 1	GlobalStack										DoIP (TCP segment: source=34	
3. 972950	Eth 1	GlobalStack										DoIP: Routing activation res	
3. 973605	Eth 1	GlobalStack										DoIP (TCP segment: source=BF	
3. 973605	Eth 1	GlobalStack										DoIP: Diagnostic message	
3. 973605	Eth 1	GlobalStack										DoIP: Diagnostic message	
3. 975761	Eth 1	GlobalStack										DoIP (TCP segment: source=34	
3. 975761	Eth 1	GlobalStack										DoIP: Diagnostic message pos	
3. 978102	Eth 1	GlobalStack										DoIP (TCP segment: source=34	
3. 978102	Eth 1	GlobalStack										DoIP: Diagnostic message	
3. 978102	Eth 1	GlobalStack										DoIP (TCP segment: source=34	
3. 978625	Eth 1	GlobalStack										DoIP: Diagnostic message	
4. 990654	Eth 1	GlobalStack										3458 <- BF95 [ACK] Ack=B3614	
4. 991753	Eth 1	GlobalStack										3458 > BF95 [ACK] Seq=B3614	
6. 014434	Eth 1	GlobalStack										3458 <- BF95 [ACK] Ack=B3614	
												3458 > BF95 [ACK] Seq=B3614	

TCP/IP Stack

CANos TCP/IP Stack

Ethernet Settings

Eth 1

Advanced Settings

VLAN Configuration

ADAS

Doip_Test

IPv4 Settings

IPv4 Enabled Default-Gateway: 0.0.0.0

Use the following IP address:

IPv4 Address Mask

172.20.1.2 255.255.255.0



Forward. For all.