Getting Started with Huawei eNSP

1. Overview

Enterprise Network Simulation Platform (eNSP) is an extensible, and graphic network simulation platform developed by Huawei. By simulating Huawei enterprise routers, switches, WLAN devices, and firewalls, it demonstrates device deployment scenarios. eNSP can simulate large-sized networks. Users can perform trial tests and learn network technologies without using real devices.

🔔 NOTICE:
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2. Installation

2.1. System Requirements and Software Dependencies

Downloading and installing eNSP is just as simple as downloading and installing other Windows software. But when you install eNSP, note the following:

❶ eNSP can only be installed and run on Windows systems.

❷ eNSP has requirements for system configuration, and it can operate normally only when the system configuration meets the minimum configuration requirements. The system requirements are shown in Table 2-1.

❸ Before installing eNSP, you need to install WinPcap, Wireshark and VirtualBox in your system. Wireshark is used as a tool for data packet analysis. Oracle VM VirtualBox is a free, open source, cross-platform application for creating, managing and running virtual machines (VMs). The simulated devices run on VirtualBox. The software dependencies of eNSP are shown in Table 2-2.

Table 2-1 eNSP System Configuration Requirements

Item	Minimum Configuration	Recommended Configuration	Expanded Configuration
CPU	Dual-core 2.0 GHz or faster	Dual-core 2.0 GHz or faster	Dual-core 2.0 GHz or faster
Memory (GB)	2	4	4 + n (n > 0)
Free disk space (GB)	2	4	4
Operating system	Windows XP Windows Server 2003 Windows 7 Windows 10	Windows XP Windows Server 2003 Windows 7 Windows 10	Windows XP Windows Server 2003 Windows 7 Windows 10
VirtualBox	xp/win7: VirtualBox 4.2.3 above win10: VirtualBox 5.0 above	xp/win7: VirtualBox 4.2.3 above win10: VirtualBox 5.0 above	xp/win7: VirtualBox 4.2.3 above win10: VirtualBox 5.0 above
Maximum number of networking devices	10	24	24 + 10*n

📖 NOTE:
Each virtual device on eNSP needs to use some resources. Each computer supports a different number of virtual devices based on the configuration. In the Table 2-1, n is an integer that indicates the increased memory size, and the maximum number of networking devices in the expanded configuration increases according to the increased memory size and cannot exceed 50.

Table 2-2 eNSP Software Dependencies

Software	Recommended Version
Npcap	The Wireshark installer contains the latest Npcap installer. If you don't have Npcap installed, you won't be able to capture live network traffic but you will still be able to open saved capture files. By default, the latest version of Npcap will be installed. If you don't wish to do this or if you wish to reinstall or prefer to install Npcap manually or want to use a different version than the one included in the Wireshark installer, you can download Npcap from the main Npcap site at https://nmap.org/npcap/.
Wireshark	4.0.3
VirtualBox (Recommemded!!!)	For Win 10/11: Versions 5.0.24, 5.0.26, 5.0.28, 5.2.30, 5.2.40, and 5.2.44 are suggested. eNSP does not support VirtualBox 6 and above.

2.2. Installation

Step 1: Download and install VirtualBox. **Run as Administrator.** Do not check “Run after installation Oracle VM VirtualBox …”.
Step 2: Download and install Npcap. **Run as Administrator.**
Step 3: Download and install Wireshark. **Run as Administrator.**
Step 4: Download and install eNSP. **Run as Administrator.**

3. Launch

You may prompt for administrator privilege when starting eNSP program.
After completion of installing progress bar, you can select “function eNSP”, uncheck “Show update log”, then click “complete” to launch eNSP. You can also launch eNSP from Desktop or Start Menu.
After eNSP starts, two firewall dialog boxes will pop up, Windows Security center alert. Select “private network” and “Public network”, click “allow access to”, click “OK”.
After eNSP is installed and started successfully, its main interface looks something as Figure 3-1 below.

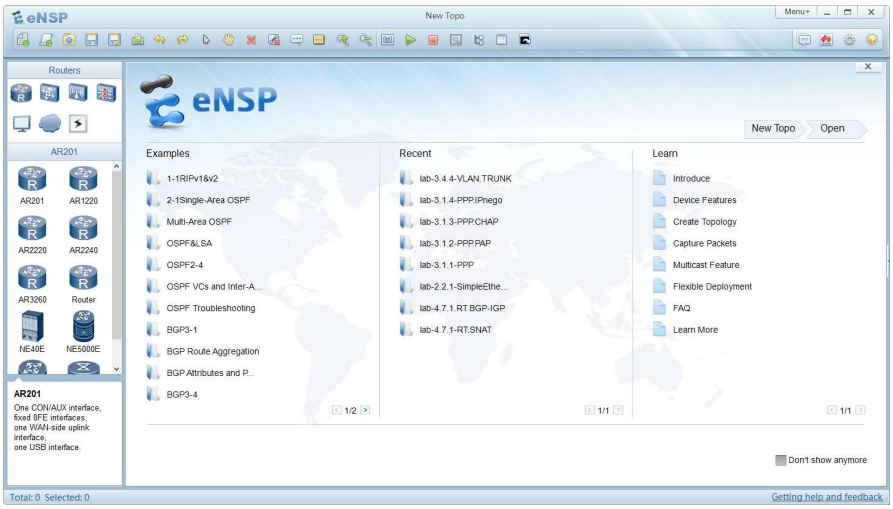


Figure 3-1 eNSP main window

Click on icon in the upper right corner, you can get eNSP help. You can find descriptions about main interface, menu, toolbar, etc. in the section "Main Interface and Menu", find out how to create network topology, capture packets, test, etc. in the section "Quick Start", and How to in the section "FAQ" in the opened help file.

4. Device Registration

In order to simulate real network devices, eNSP needs to register and install the virtual host of the network device in VirtualBox, and load the VRP file of the network device in the virtual host.
To register devices, click on Menu in the upper right corner, select "Tools" ➔ "Register Device", the "Register" device dialog box (as shown in Figure 4-1) will pop up. On the right side of the dialog box, check "AR_Base" (you can uncheck or check "AC_Base", "AP_Base", "AD_Base", and "SAP_Base"), then click the "register" button to complete the registration of the network device. The Register dialog box will display which network devices are successfully registered (as shown in Figure 4-2). If the device registration fails, please re-register the device until the registration is successful. Now, you can deploy those successfully registered network devices in eNSP.

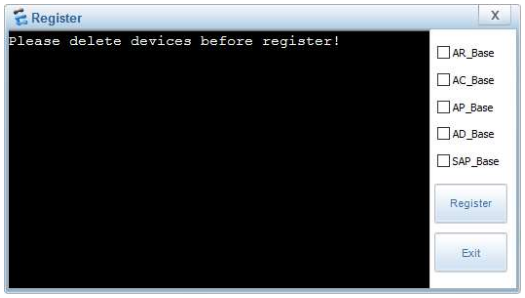


Figure 4-1 "Register" device dialog box

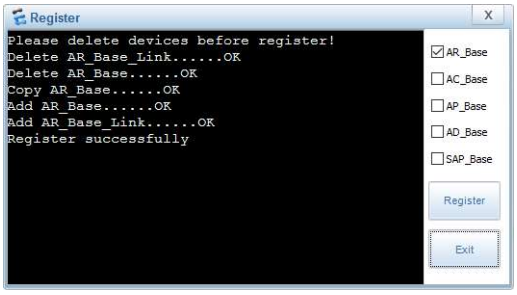
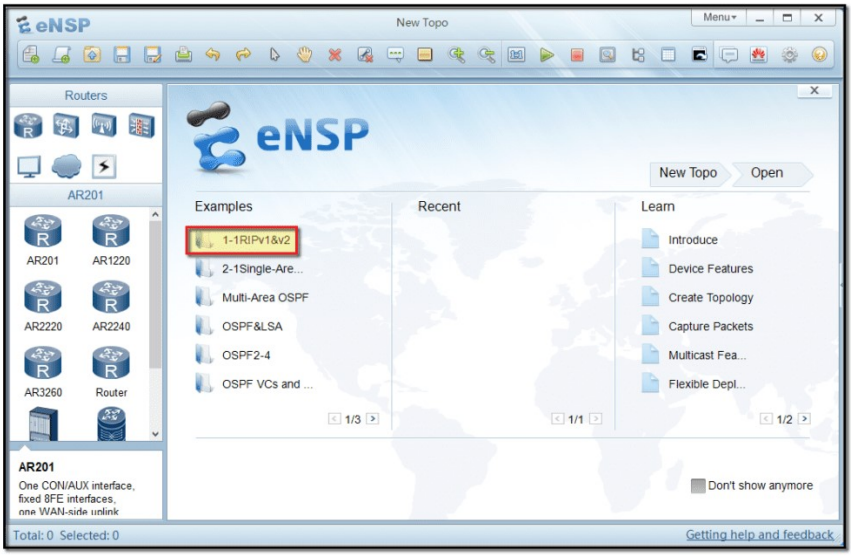


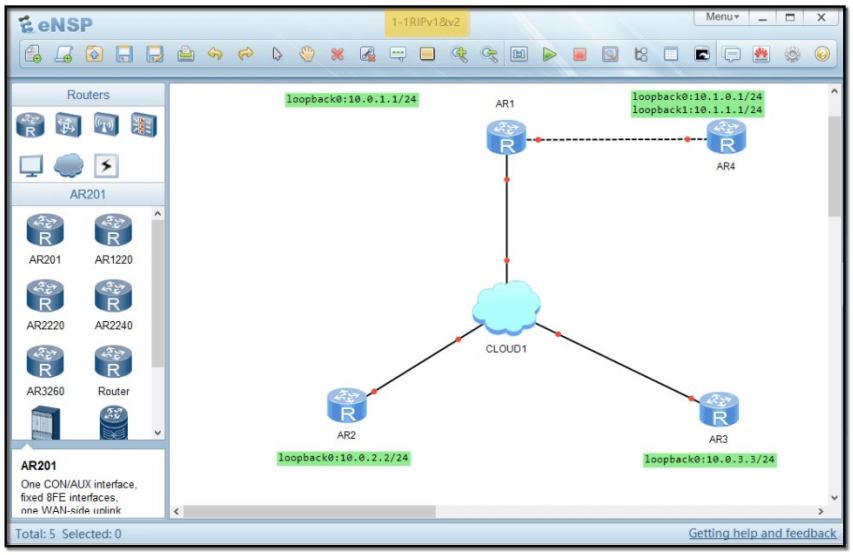
Figure 4-2 device registration information

5. Check if eNSP setup is successful

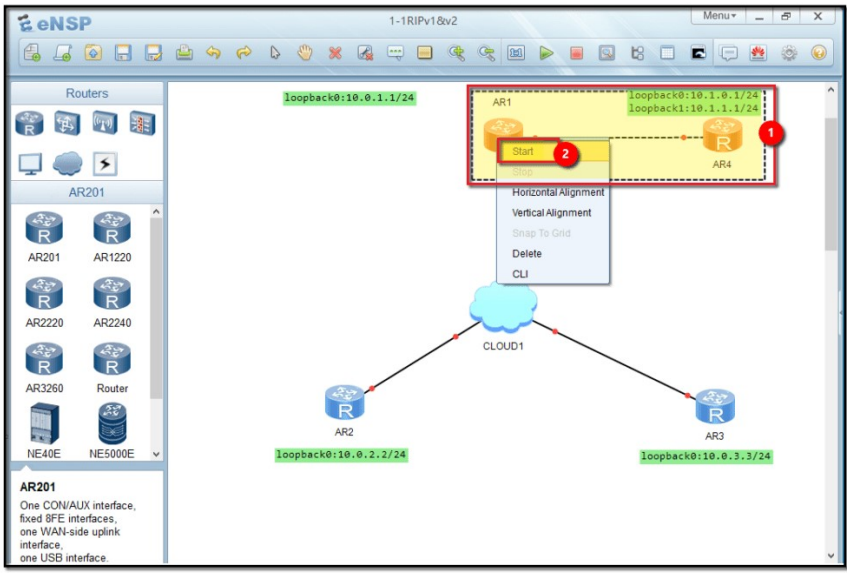
You can pick a ready-made sample as shown in the diagram below:



Click on Example 1-1RIPv1&v2 to open up the topology.

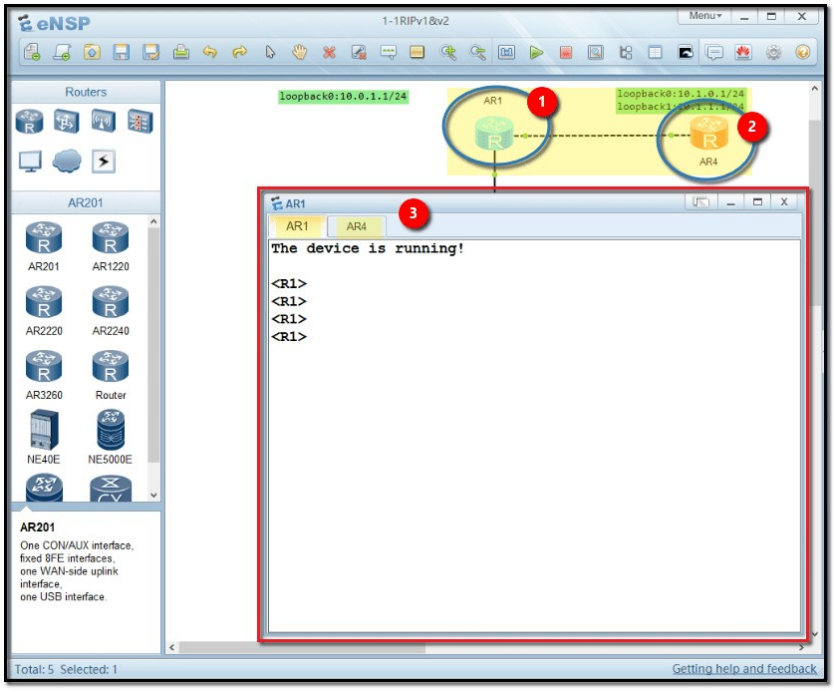


Power up any of the two AR1220 routers to start the testing. The two routers have been randomly selected to power on as shown below:



Select any devices to test the functionality of the simulated images after registration.
Double click the power-up router to start the console access of the router when you see the link status turns green in between router connection as shown below.

Double click both AR1 and AR4 routers to start on the configuration when they open up the console access as shown.



Eventually, your eNSP application setup is now successful and ready for deploying simulated solutions.