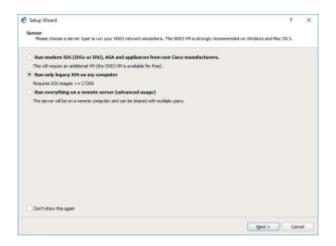
Setting a Networking Lab with GNS3

GNS3 is a software tool for network emulation. With GNS3, you can emulate Cisco devices (routers, switches, firewalls, etc.) with Cisco IOS on your PC. GNS3 enables to test the configurations and functionalities of Cisco devices and deploy complex networking scenarios on a single PC.

During the course on Routing and Switching at ESIB, you will discover different functionalities of GNS3 and get familiar with its various features.

-. Software Download

GNS3 is already downloaded on the Lab PCs. If you need to install it on your PC, you should create an account and download it from https://www.gns3.com/software/download. Make sure to choose the right version for your operating system. Moreover, during the first steps of the installation, choose to Run only legacy IOS as shown below.



Copy the file c3725-adventerprisek9-mz.124-15.T14.image from the folder commun to your local Downloads folder.

-. Basic Configuration

Start the GNS3 software by double-clicking on the Desktop icon. Select the Local server and Don't show this again button.

🔗 Setup Wizard	?	\times
Server Please choose a server type to run your GNS3 network simulations. The GNS3 VM is strongly recommended on Windows and Mac OS X.		
O Local GNS3 VM		
Local server		
✔ Don't show this again		
Next >	Cance	

Now proceed to add an IOS router.

New appliance template	?	×
Import an appliance template file		
OR		
Add an IOS router using a real IOS image (supported by Dynamips)		
Add an 10U (105 on UNDI) device using a L3 or L2 10U image		
Add a Qemu virtual machine		
Add a VirtualBox virtual machine		
🕘 Add a VMware virtual machine		
🕘 ådd a Docker container		
Add a VPCS		
Add a doud		
Add a generic ethernet hub		
Add a generic ethernet switch		
OK Cancel	Hel	p

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at technol 107.661	Sebup Wit	ad	7 3
at technol 107.661	ecal serve flease a	er configuration anfigure the following CMICE local on one antings:	
ar Bodagi (1376.6.1 rz. – 2000 YGP	ese pete	CProgram (Ner/2962)gescherver (515)	govan
e 1000 135	wit binding	127.6.6.1	
	ort	3080 709	-

-. Adding a Cisco Switch

In order to add a Cisco switch to GNS3, browse and select the c3725-adventerprisek9mz.124-15.T14.image in your Downloads folder. Click yes to copy it to the default images library.

😵 New IOS router template	?	\times
IOS image Please choose an IOS image.	2	ζ
IOS image:		_
🚱 Image	Browse	
Would you like to copy c3725-adventerprisek9-mz.124-15.T14.image to t default images directory	he	
<u>Y</u> es <u>I</u>	No	
< <u>B</u> ack Next >	Canc	el

Now check the button This is an EtherSwitch router.

😚 New IOS	6 router - c3725-adventerprisek9-mz.124-15.T14.image	?	\times
	d platform e choose a descriptive name for this new IOS router and verify the platform and chassis.		1
Name:	EtherSwitch router		
Platform:	c3725		•
Chassis:			•
	< <u>B</u> ack <u>N</u> ext >	Canc	el

Click on Idle-PC finder and wait for the process to complete.

😵 New IO	S router - c3725-adventerprisek9-mz.124-15.T14.image	?	\times
Idle-PC An id cores	le-pc value is necessary to prevent IOS to use 100% of your processor or one of its	2	<
Idle-PC:	0x60c086a8	Idle-PC find	ler
	🚱 Idle-PC finder	×	
	Idle-PC value 0x60c086a8 has been found suitable for your IOS image	ge	
	ОК		
	< <u>B</u> ack Einish	Cance	el

Apply to validate the new device parameters. Now you are set to start using Cisco switches with

wikiroute - http://wiki.lahoud.fr/

GNS3.

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-. Adding a Cisco Router

In order to add a Cisco router to GNS3, start by copying the file c7200-advipservicesk9mz.150-1.M.bin from the folder commun to your local Downloads folder. Now, go to Preferences, then IOS Routers and click on New.

🔗 Preferences		?	×
General Server Packet capture VPCS Dynamips IOS routers VOS on UNIX IOU Devices	IOS router templates * General Template name: Default name format: EtherSwitch router Default name format: ESW[0] Server: Iocal Platform: c3725 Image: Idle-PC: 0x60c086a8	5.T14.in	nag
QEMU Qemu VMs VirtualBox VirtualBox VMs VMware VMware VMware VMs Docker Docker Containers	Startup-config: C:\Users\710238\GNS3\configs\ios_etherswitch_startup-config.bxt Wemories and disks RAM: 128 MiB NVRAM: 256 KiB I/O memory: 5% PCMCIA disk0: 1 MiB PCMCIA disk0: 1 MiB Auto delete: False Valapters Slot 0: GT96100-FE Slot 1: NIM-16ESW		
	Image: Second	e App	Þ

Click on New Image, then browse and select the c7200-advipservicesk9-mz.150-1.M.bin in your Downloads folder. Click yes to copy it to the default images library.

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2019/02/12 16:28	networking-lab-setting-with-gns3 http://wiki.lahoud.fr/doku.php?id=networking-lab-setting-with-gns3&rev=1549985294

🔗 New IOS router template		?	Х
IOS image Please choose an IOS image.		No.	<
Existing image New Image			
IOS image:			
		Browse.	
< <u>B</u> ack	<u>N</u> ext >	Cancel	

Make sure to add Fast Ethernet interfaces to your router as in the image below.

slot 0:	C7200-IO-FE	*
slot 1:	PA-2FE-TX	*
slot 2:		-
slot 3:		-
slot 4:		
slot 5:		*
slot 6:		*

Click on Idle-PC finder and wait for the process to complete. Finally, apply to validate the new device

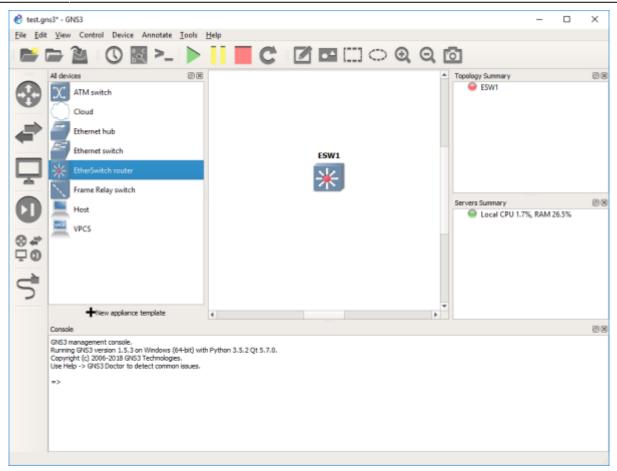
parameters. Now you are set to start using Cisco routers with GNS3.

-. Starting a New Project

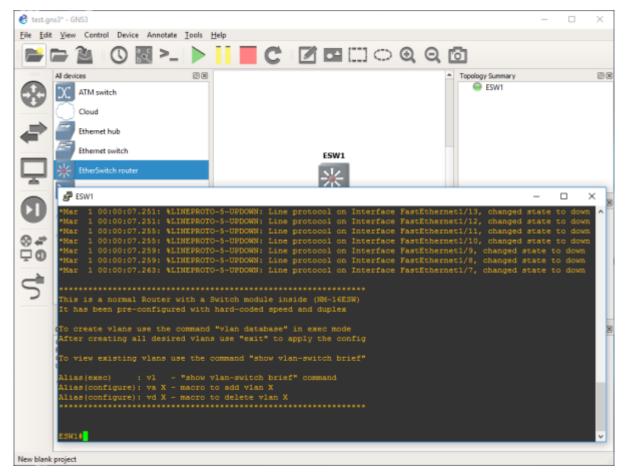
Choose a name for your project.

🕑 Unsav	d project - GNS3	- 0	\times
<u>File</u> Edit	<u>V</u> iew Control Device Annotate <u>I</u> ools <u>H</u> elp		
	≥ 2 0 8 >_ > I I = C I I = II ⊂ Q Q I	ବି	
	-	Topology Summary	08
⊗ ₽			
	Rew project ? X		
	Project	Servers Summary Local CPU 1.6%, RAM 27.1%	ØØ
-	Project		
0.7	Name: test		
70	Location: C:\Lisers\710238\GNS3\projects\test Browse		
~	Qpen a project Becent projects OK Cancel		
5	Spen a project (geoenc projects) Ow Cance		
	4		
	Console		ØØ
	GNS3 management console. Running GNS3 version 1.5.3 on Windows (64-bit) with Python 3.5.2 Qt 5.7.0. Copyright (:) 2006-2018 GNS3 Technologies. Use Help -> GNS3 Doctor to detect common issues. =>		
			.6

Select the devices from the left panel.



Click on the green button to start all devices. Then select Control and Console connect to all nodes.



Now you have access to the CLI (Command Line Interface) of the Cisco devices in your network.

-. Saving your Work

During the Lab, you should frequently save the configuration of each of the Cisco devices. For this, you can use the following command to store the running-config into the startup-config (NVRAM).

#copy run start

Then, using the File drop-down menu, you can export your work into a portable project you can use on another machine.

-. Tips and Hints

- Click on the abc button to show the interface names on the network.
- Right click on any link to start capturing packets using Wireshark.

From: http://wiki.lahoud.fr/ - wikiroute

Permanent link: http://wiki.lahoud.fr/doku.php?id=networking-lab-setting-with-gns3&rev=1549985294



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