

# How to use RouterOS on GNS3

Annuy Pintong (MTCNA,MTCTCE,MTCE) - Otik Network Co.,Ltd.

Please follow step by step.

First Step: Prepare RouterOS iso file and Folder.

1. Download RouterOS image from [www.mikrotik.com/download](http://www.mikrotik.com/download) (Choose x86 architecture) .(see figure 1)

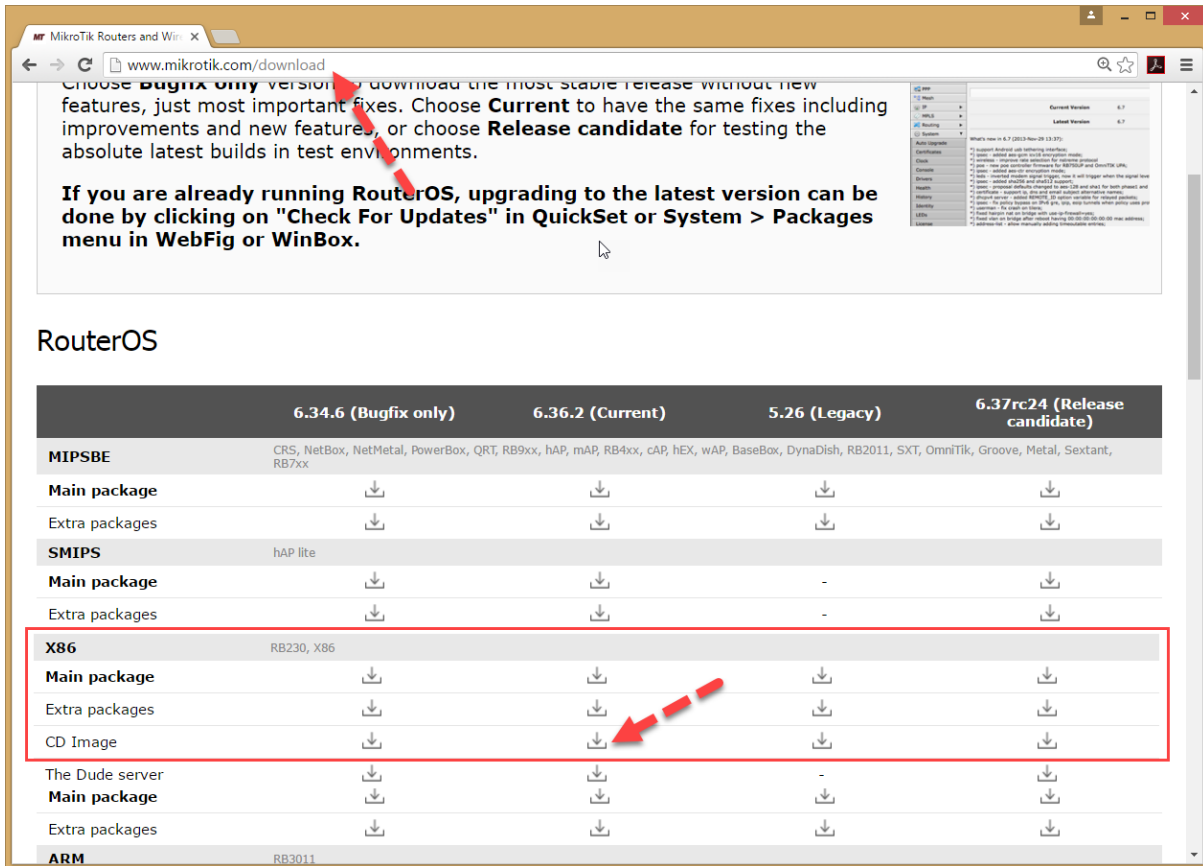


Figure 1 Download RouterOS iso file.

2. Create new folder on D: driver or other drive that you need and save RouterOS (iso) file in here. See figure 1.2

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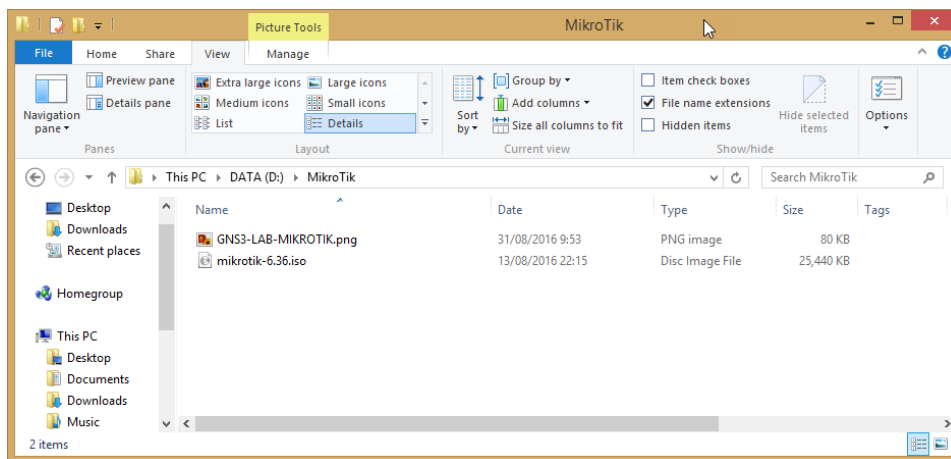


Figure 2 Create new folder and save iso to here.

3. Download GNS3 from [www.gns3.com](http://www.gns3.com) (you can follow download step from this site)

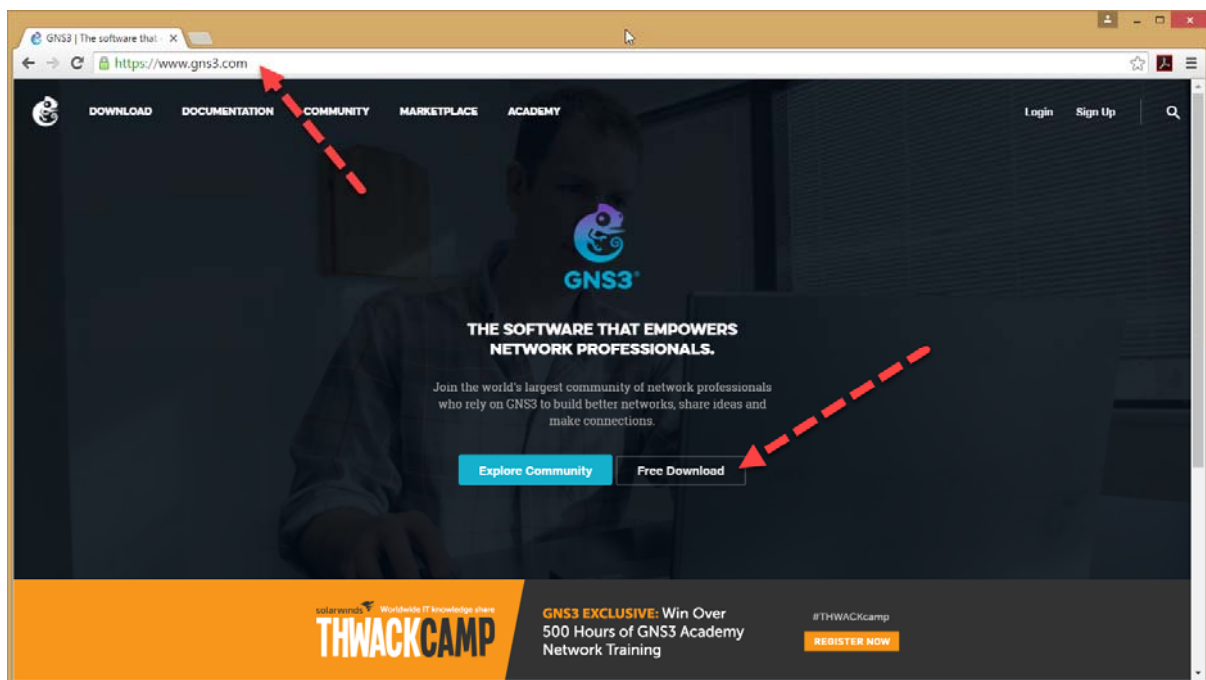


Figure 3 Download GNS3

You can check path location for GNS3 at "C:\Program files\" (see figure 3)

4. Follow this step to create virtual image and install RouterOS on Qemu (Emulator)

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## How to create MikroTik image Router on GNS3

### Qemu Command

- `qemu-img create -f qcow2 "D:\mikrotik\ros.img" 8G` → Creating an image
- `qemu-system-i386w.exe -m 256 -hda "D:\mikrotik\ros.img" -cdrom "D:\mikrotik\mikrotik-6.36.iso" -boot d`

(1) = ค่าสำหรับไฟล์ชื่อ Image ขึ้นกับชื่อ  
(2) = กำหนดรูปแบบของดิสก์ เป็น qcow2 (จึงมีหลายแบบ ดูใน <https://en.wikibooks.org/wiki/QEMU/Images>)  
(3) = ชื่อไฟล์ชื่อไฟล์ image ที่เราสร้างจะวางเอาไว้ที่ D:\mikrotik-lab\ros.img หากไม่กำหนดก็ใช้ชื่อไฟล์ ros.img ได้เลย ไม่ต้องใส่ชื่อ " " นี้  
(4) = ขนาดของดิสก์ ที่ต้องการจะสร้าง (เป็นกิโลไบต์) คือ 8gb กำหนดขนาดได้ตามความเหมาะสม

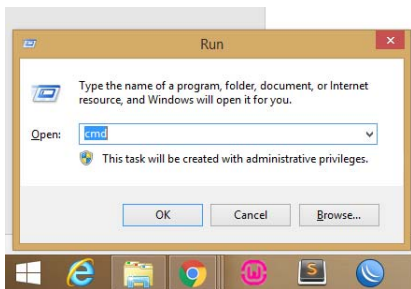
---

(1) = ชื่อไฟล์สำหรับชื่อ Qemu  
(2) = กำหนดขนาดของหน่วยที่จะใช้ +M คือ Mb ขนาด 256 mb เป็นต้น  
(3) = กำหนดชื่อของดิสก์สำหรับ Image ของเรา  
(4) = ชื่อไฟล์ระบบปฏิบัติการที่เราจะเอาไปรันชื่อ iso ของ Mikrotik นั้นเอง

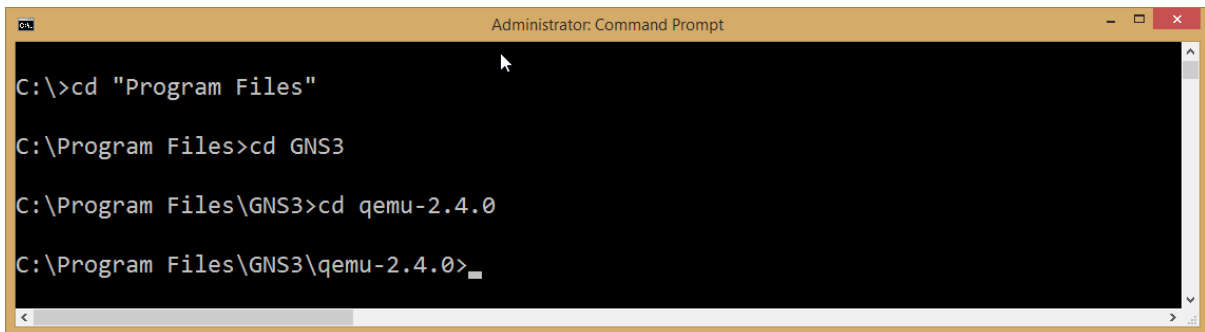
Install a RouterOS from ISO image



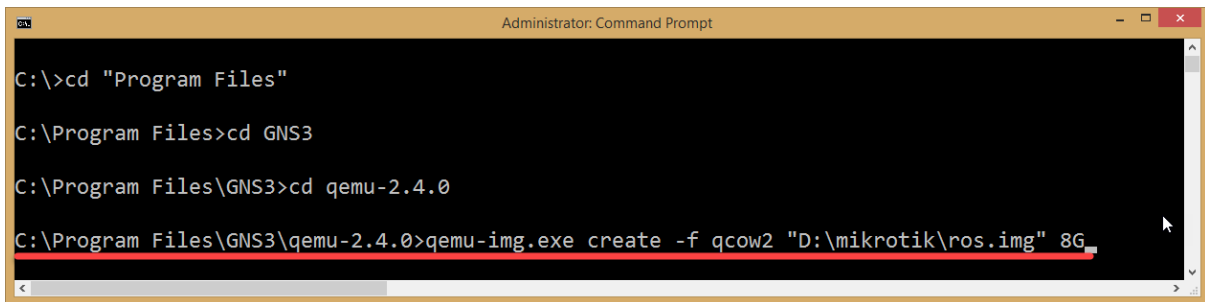
Open command prompt (windows + R and type cmd and enter.)



And type this command.



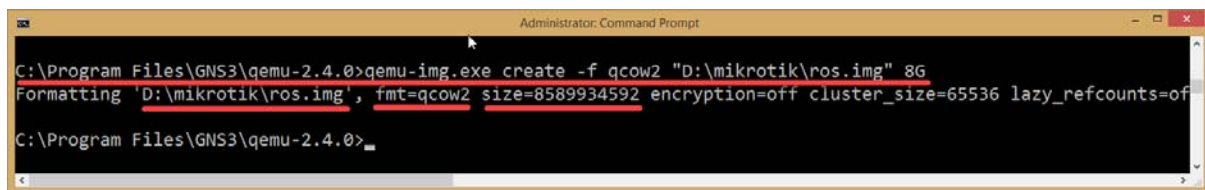
Create RouterOS image (Choose format type is qcow2 and size is 8Gb you can customize disk size that you want)



See the result after run command like this

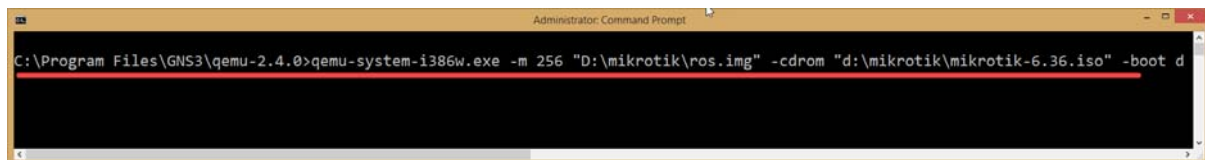
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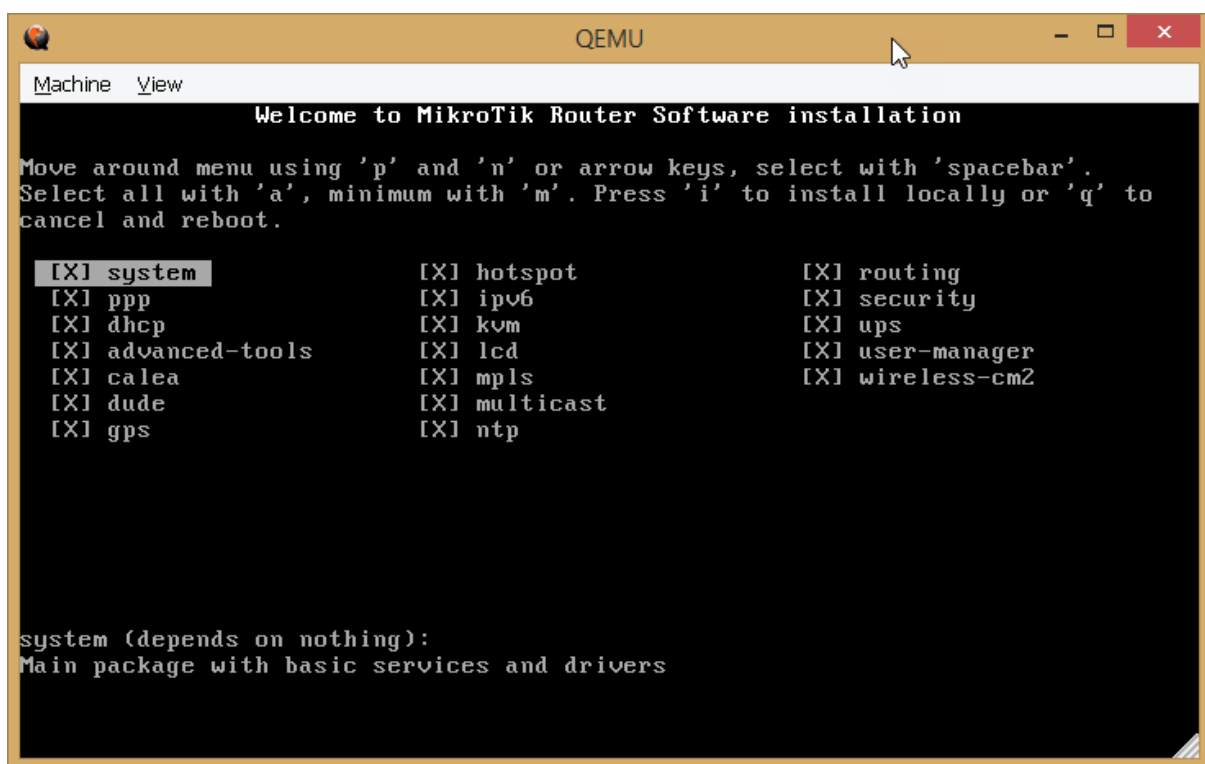
```
Administrator: Command Prompt
C:\Program Files\GNS3\qemu-2.4.0>qemu-img.exe create -f qcow2 "D:\mikrotik\ros.img" 8G
Formatting 'D:\mikrotik\ros.img', fmt=qcow2 size=8589934592 encryption=off cluster_size=65536 lazy_refcounts=of
C:\Program Files\GNS3\qemu-2.4.0>
```

Start emulator for install RouterOS from ISO file.



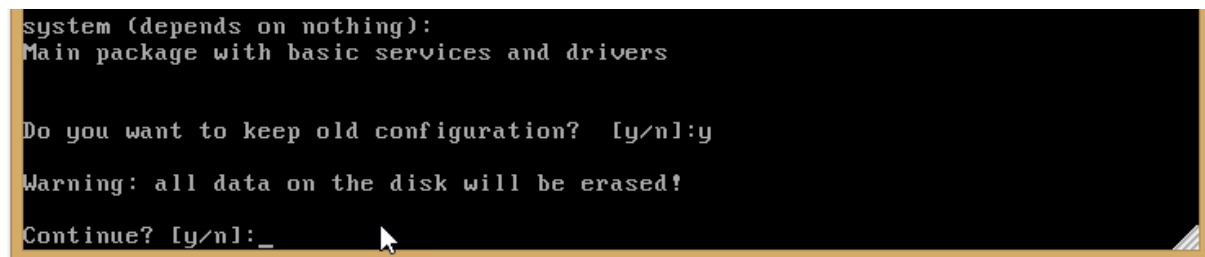
```
Administrator: Command Prompt
C:\Program Files\GNS3\qemu-2.4.0>qemu-system-i386w.exe -m 256 "D:\mikrotik\ros.img" -cdrom "d:\mikrotik\mikrotik-6.36.iso" -boot d
```

Start to install RouterOS



```
QEMU
Machine View
Welcome to MikroTik Router Software installation
Move around menu using 'p' and 'n' or arrow keys, select with 'spacebar'.
Select all with 'a', minimum with 'm'. Press 'i' to install locally or 'q' to
cancel and reboot.
[X] system [X] hotspot [X] routing
[X] ppp [X] ipv6 [X] security
[X] dhcp [X] kvm [X] ups
[X] advanced-tools [X] lcd [X] user-manager
[X] calea [X] mpls [X] wireless-cm2
[X] dude [X] multicast
[X] gps [X] ntp
system (depends on nothing):
Main package with basic services and drivers
```

Press 'a' for select all package (you can choose some items for faster and best performance) and press 'i' to install



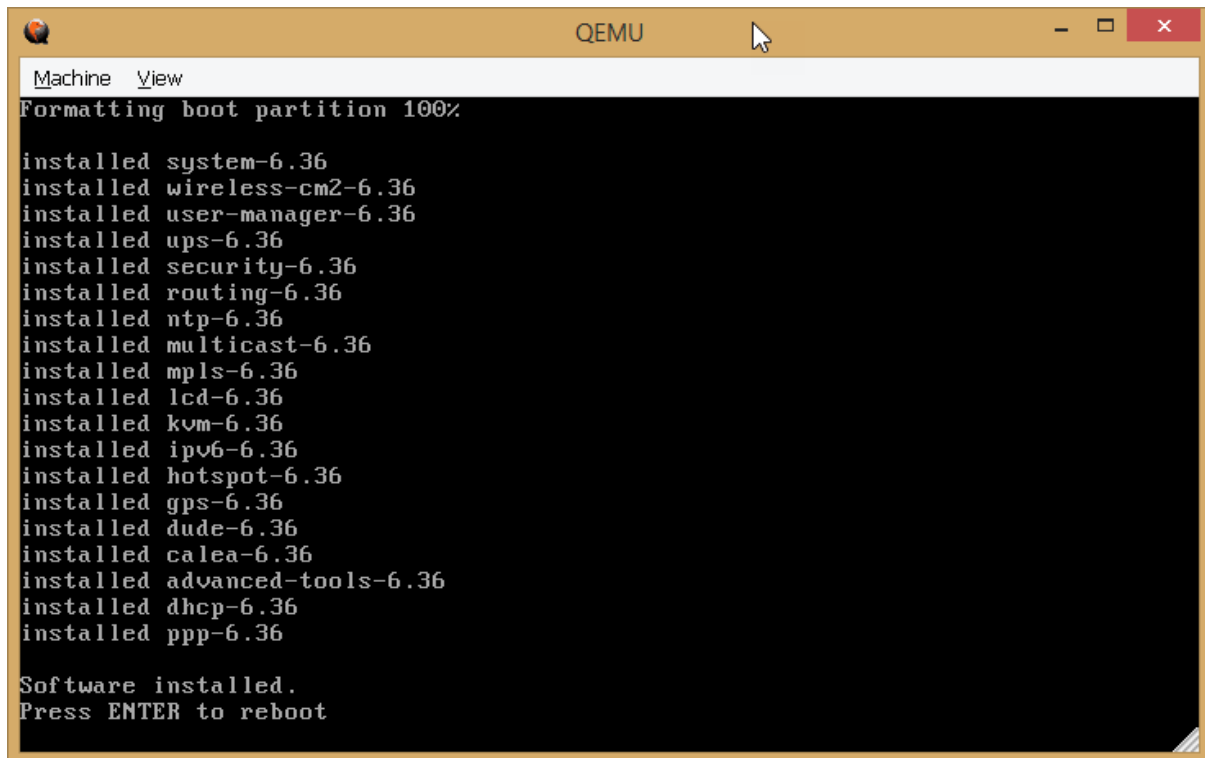
```
system (depends on nothing):
Main package with basic services and drivers
Do you want to keep old configuration? [y/n]:y
Warning: all data on the disk will be erased!
Continue? [y/n]:_
```

Press Y to confirm install RouterOS (it will delete all data on your disk. Don't care because it new installation) wait wait wait and wait....

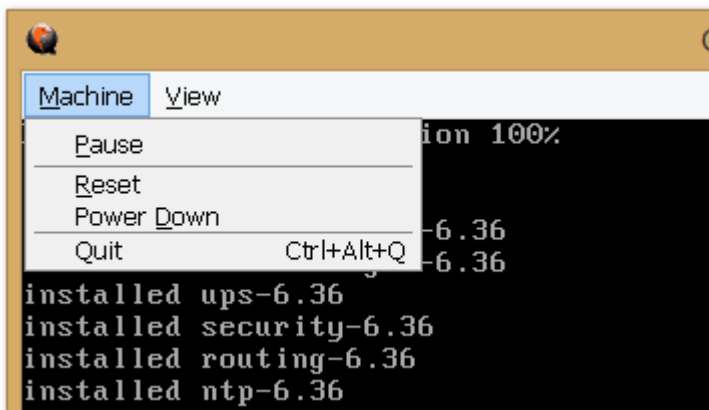
If it show this screen it mean that installation is completed

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you can go to the menu "machine > Quit"

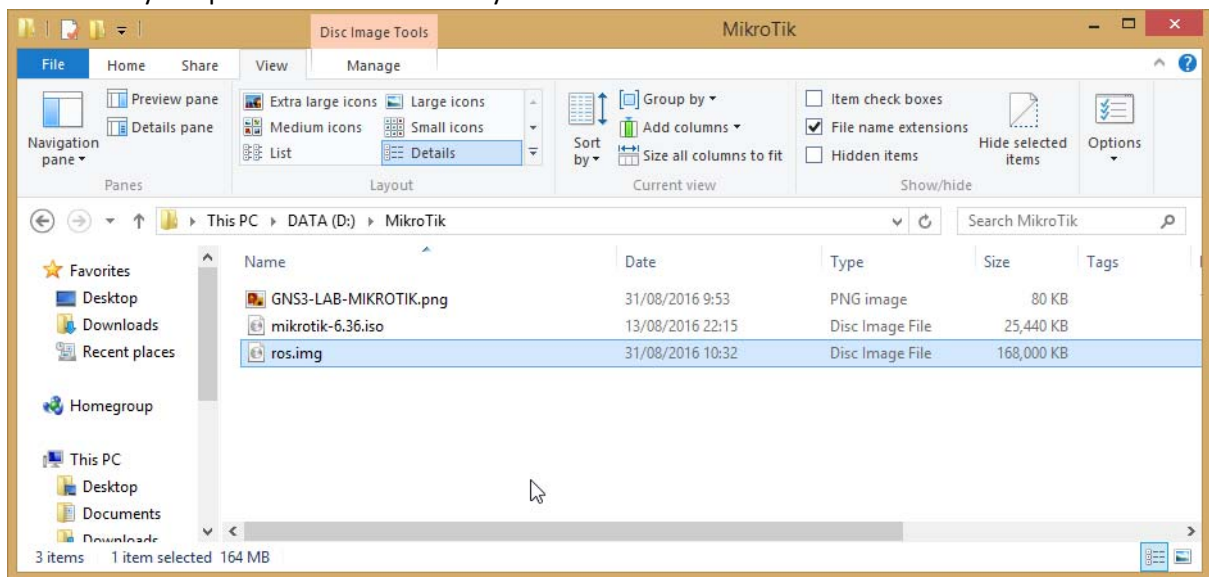


Finished to create RouterOS images. Ready to run on GNS3 Let's go next step.

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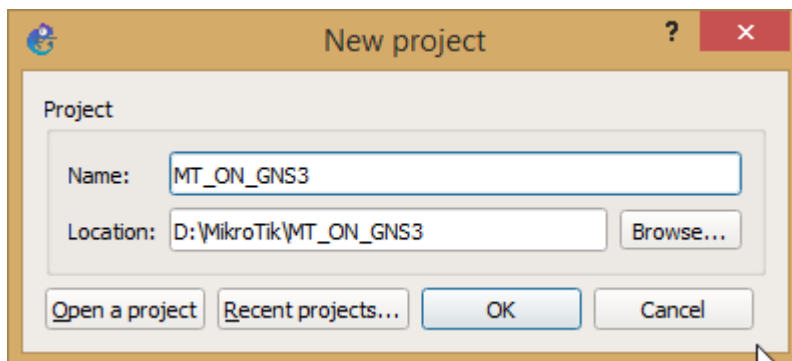
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Now when you open the mikrotik folder you will see some items like this.

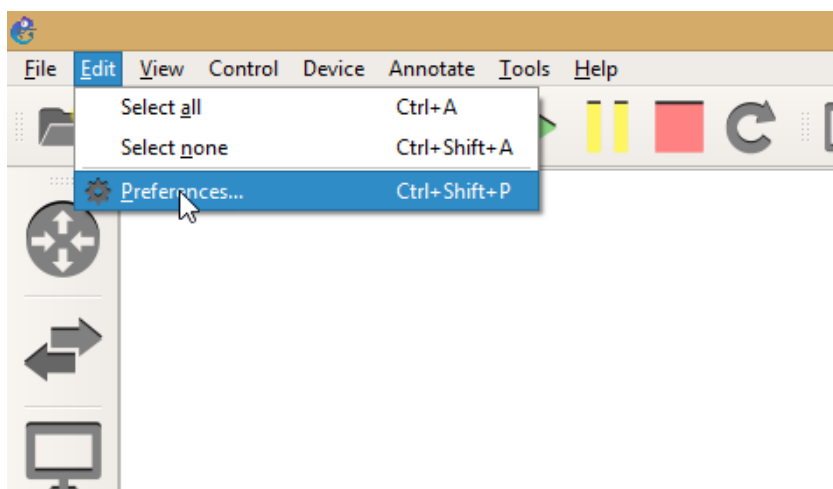


## 5. Add RouterOS image on GNS3

Open GNS3 and put your project name and location that you want to save a project and click OK.



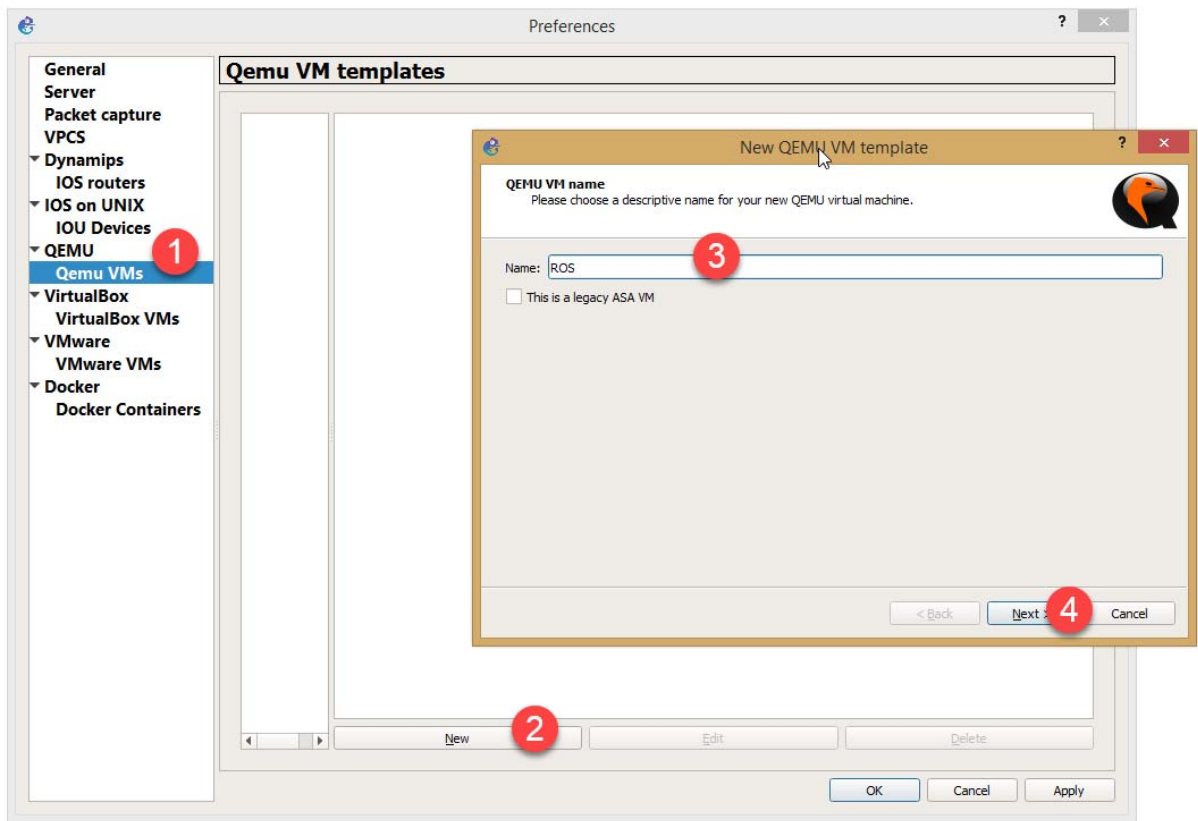
On GNS3 go to Edit > Preferences...



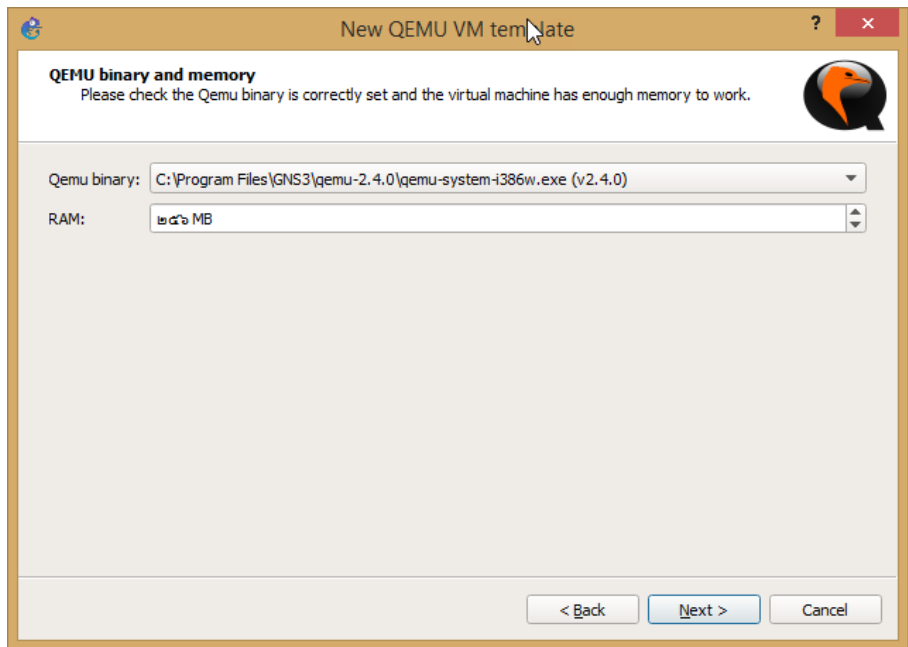
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Choose QEMU > Qemu VMs > New > Name "example ROS" and Next..



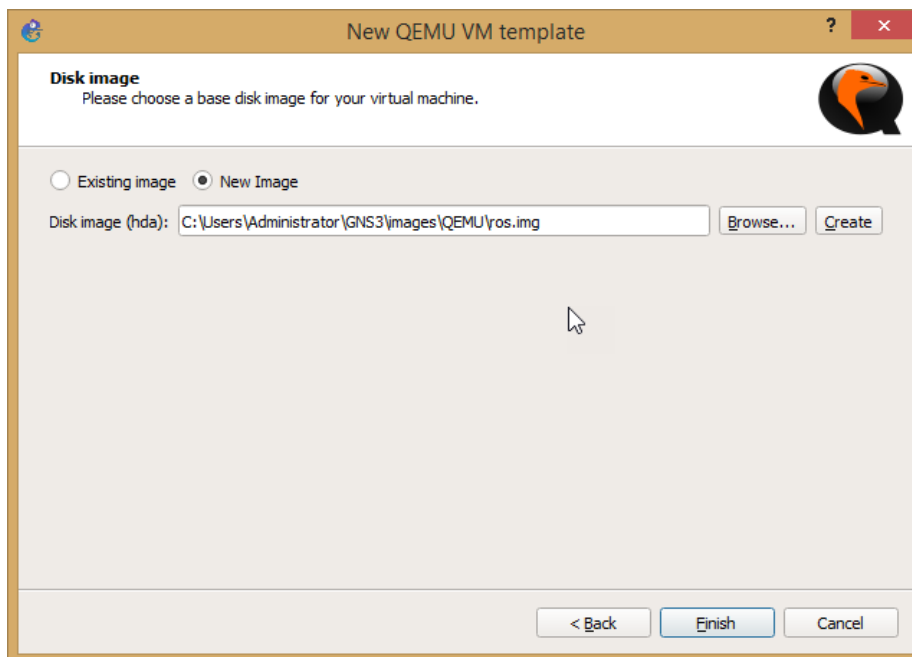
Choose some items like this image and next..



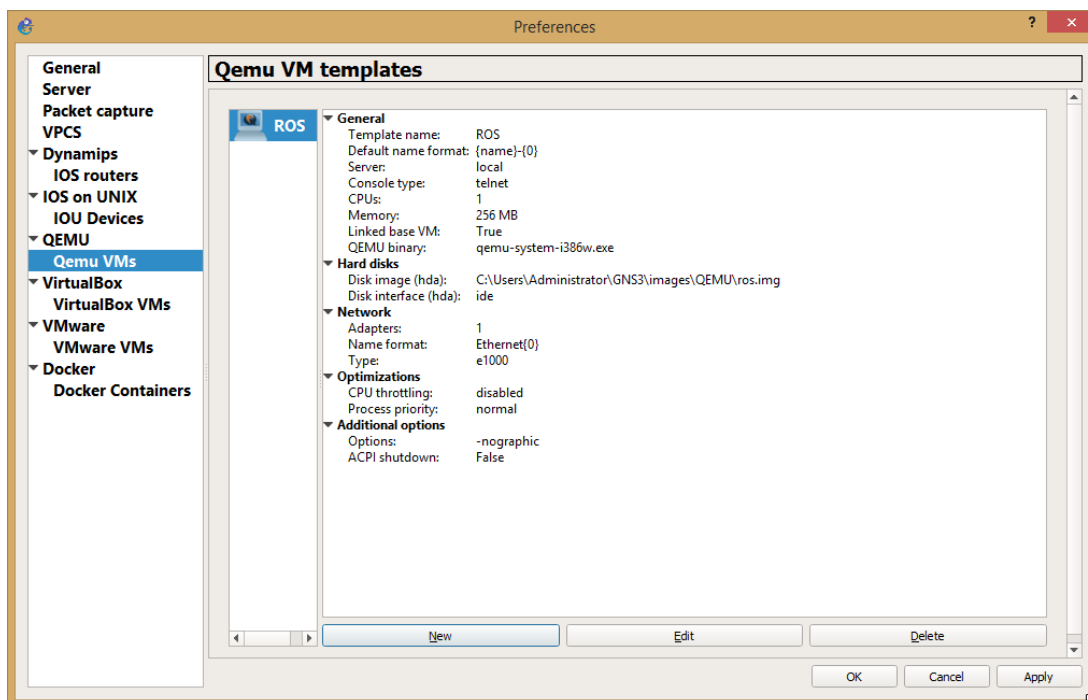
Choose the image (ros.img)

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And click Finish. After that it will show like this.



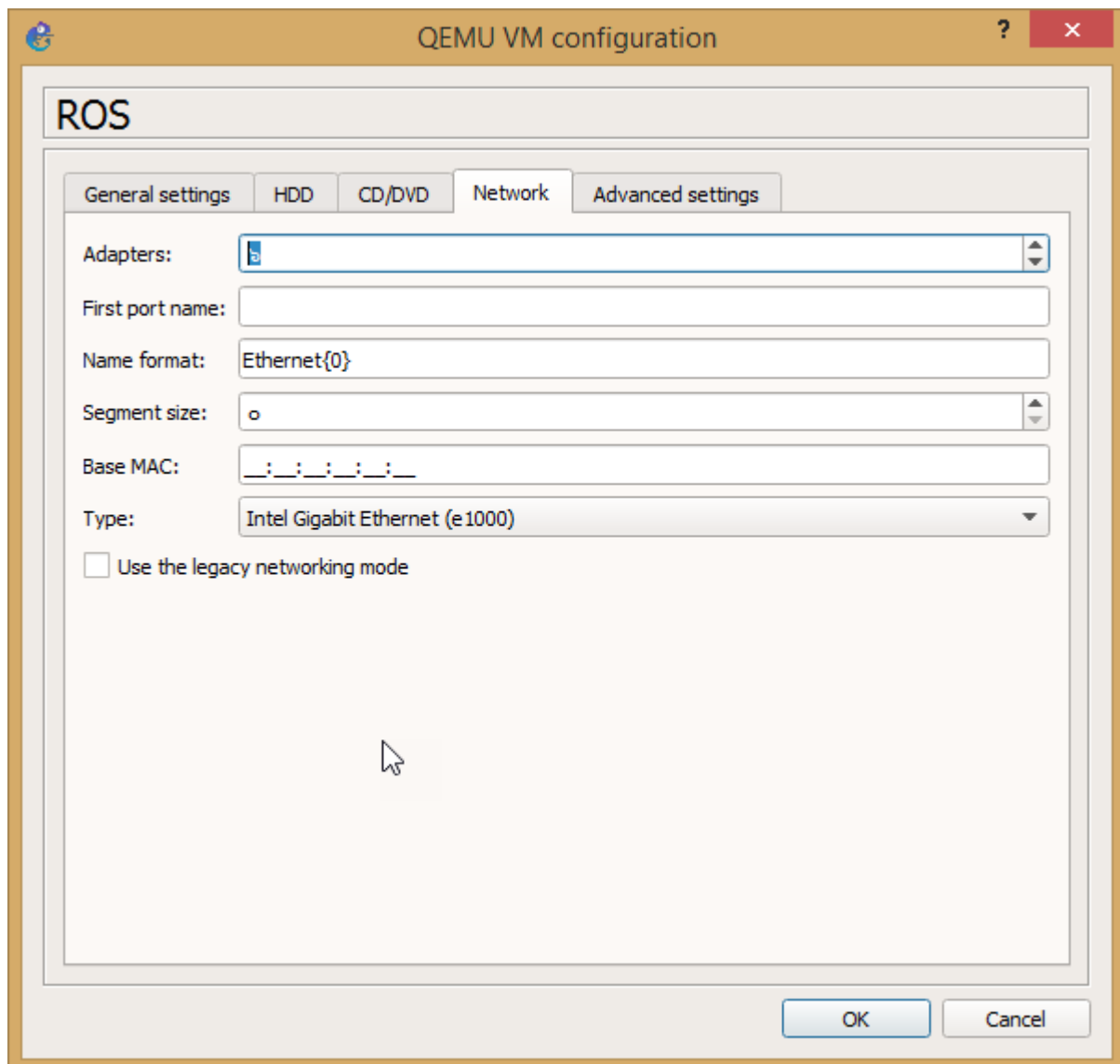
You can click Edit button for customize some item such as add new network card like this.

I recommend to add 5 port for testing. (default)



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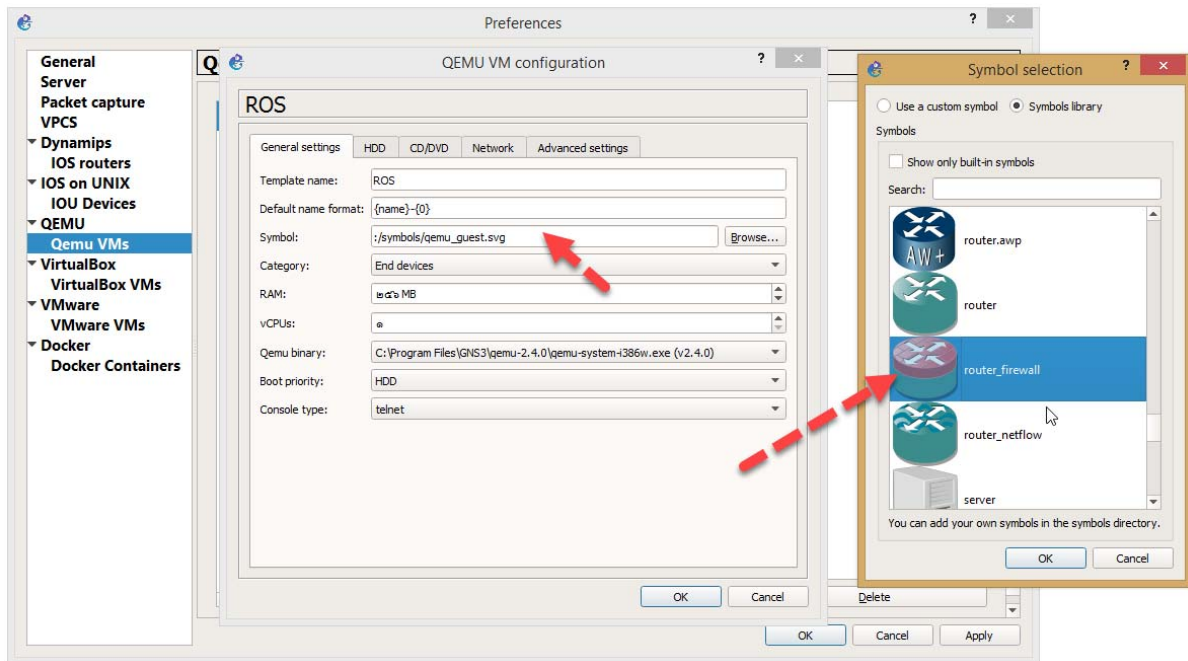
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And choose a Symbol for Firewall router (optional)

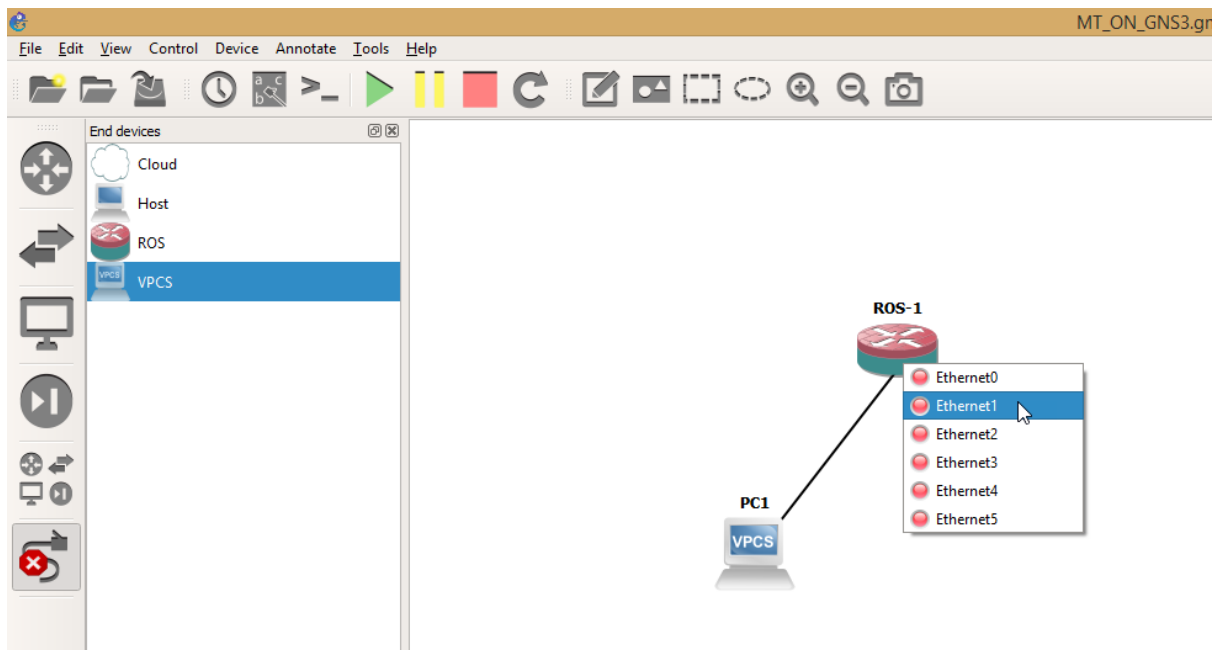
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After you already customized everything. You can close every windows and now ready to run routers on GNS3. Excellent.....

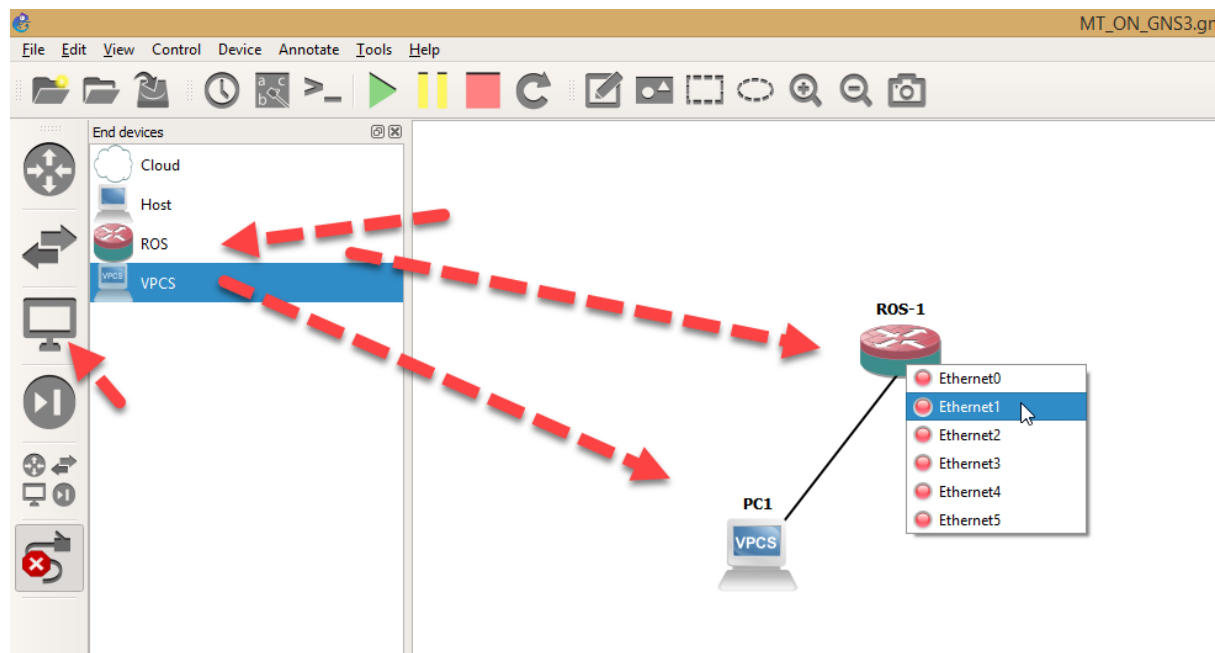
## 6. Ready to run RouterOS



Choose ROS and VPCS (Computer)

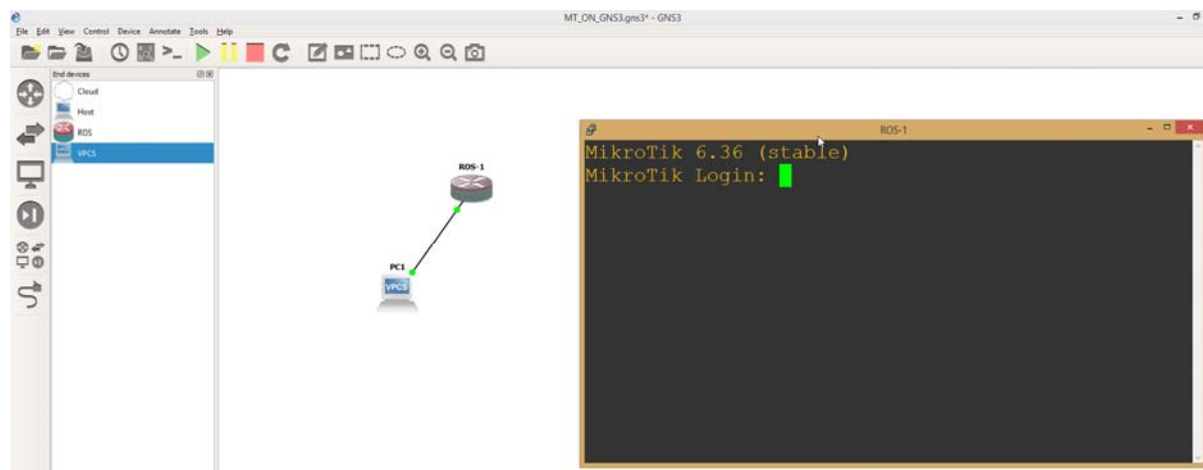
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And click to test running

After you start VMs you can double click and configure it like this.



Now we ready to go with RouterOS...

Good luck.

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