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QEMU configuration to host a Linux with SSH and HTTP on Windows

Asked 11 months ago Modified 11 months ago Viewed 3k times

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I am doing WEB development on Windows 10 operating system. For that purpose, I am running Debian Linux on QEMU. I want to use SSH to connect to the virtual machine, possibly with `putty` and in the same time testing my server by putting an URL like `http://192.168.1.1/index.html` in the Internet Browser.

My virtual machine is configured as follow:

- `nginx` on port 80 and 443: HTTP and HTTPS
- SSH for file transfer between my laptop and the virtual machine

I am not very familiar with QEMU or networking, I read a lot of things on that topic I don't understand the technical details. I just need to do basic WEB development, I tried the following configurations:

```
> *Attempt 1*
qemu-system-x86_64 -m 512 -drive format=qcow2,file=hard-drive-4G.qcow2 -accel
hax -nic tap,ifname=TAP-WIN32
```

Here, I previously installed a TAP device on Windows and created a Network Bridge. With this solution, I believe that QEMU is used as a Bridged Networking. This solution seems to work at the beginning, but it's actually unstable. I shutdown my virtual machine every day when I leave the office and restart it the next morning. In a very weird fashion, after a few days of usage, the networking is not working anymore, SSH broken and HTTP also broken.

I haven't been able to figure out what is going wrong here (the IP address seems correct), but I assume they might be a conflict, maybe the DHCP is messing up with MAC addresses, I have absolutely no clue.

I observed 2 things:

Observation-1: when it's not working, I try from Debian to ping a website, I get a `unable to resolve host` error and the DHCP gives me the same IPv4 address on my virtual machine as as my Windows computer.

Observation-2: when it's working, `ifup` requested DHCP for a new IP, the virtual machine got an IP address which is different from the local IP address of my laptop. I just have no idea how long this working state is going to last.

```
> *Attempt 2*
qemu-system-x86_64 -m 512 -drive format=qcow2,file=hard-drive-4G.qcow2 -accel
hax -device e1000,netdev=net0 -netdev user,id=net0,hostfwd=tcp::5555-:22
```

Here, SSH is available through `putty` (port 5555) but if I type `http://10.0.2.15/index.html` in my Internet browser, I get a connection timeout.

What is the simple way to get SSH and HTTP available from my QEMU virtual machine on

What is the simple way to get ssh and init available from my QEMU virtual machine on Windows?

qemu

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edited Feb 23, 2022 at 2:49

asked Feb 22, 2022 at 7:15

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Robert

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2 Is qemu a requirement? VirtualBox is probably easier – [Virsacer](#) Feb 22, 2022 at 7:21

Yes QEMU is preferred. Actually VirtualBox used to be much easier you are very correct. I just tried the last version, the bridged networking is not working at all on my computer. It used to work flawless, but it suddenly break on a recent VirtualBox update. – [Robert](#) Feb 22, 2022 at 7:25

1 Answer

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1



I found a solution by merging together different pieces of the documentation. On this amazing [Stackoverflow question](#), we learn the differences between several networking devices:

- virtio
- e1000
- rtl8139

In summary, virtio is the fastest but the drivers may not be easily available. rtl8139 is fast and the drivers are easily available to most of operating systems. e1000 is the slowest among the 3, but the drivers are available to most of operating systems, even some weird ones.

So while virtio has the best performance, e1000 has the best compatibility. I am going to choose the `virtio` device.

In the [comments section](#) of another website, we can see how to chain multiple ports redirections:

```
-netdev
user,id=ethernet.0,hostfwd=tcp::5555-:1522,hostfwd=tcp::9999-:9,hostfwd=tcp::17
010-:17010,hostfwd=tcp::17013-:17013
```

When putting all together, we have a configuration which seems quite robust and stable:

```
qemu-system-x86_64 -m 512 -drive format=qcow2,file=hard-drive-4G.qcow2 -accel
hax -netdev user,id=net0,hostfwd=tcp::8022-:22,hostfwd=tcp::8080-:80 -device
virtio-net-pci,netdev=net0
```

The ports *seems* actually shared between the host and the virtual machine. So if one want to use `ssh`, running on port 22 on the virtual machine, it will be required to choose another port, let's say 8022 and redirect it to the port 22 of the virtual machine.

The same is done for port 80.

And finally:

- `SSH` of the virtual machine is available from `user@localhost:8022`
- `HTTP` of the virtual machine is available from `http://localhost:8080`

Note that internet is available from the virtual machine, but `ICMP` thing seems not to work, so `ping` commands are not working properly.

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edited Feb 23, 2022 at 5:37

answered Feb 23, 2022 at 3:20

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 Robert



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