

# KVM/QEMU

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QEMU?Fabrice Bellard????????????????x86?ARM?SPARC?RISC-V?MIPS????????

Home: [QEMU](#)

## Installation

- [Ubuntu??QEMU/KVM?Virt Manager?????? - Ivon???? \(ivonblog.com\)](#)
- [How to Install and Use Qemu on Ubuntu \(itsfoss.com\)](#)
- [EmuGUI ? QEMU?Windows???????? - Ivon???? \(ivonblog.com\)](#)
- [Setting Up Virtual Machines with QEMU, KVM, and Virt-Manager on Debian/Ubuntu - LinuxConfig](#)
- [How to run virtual machines with virt-manager - Fedora Magazine](#)
- [How to Install KVM on Fedora 37/36 Step-by-Step](#)
- [Virtualization Deployment and Administration Guide | Red Hat Product Documentation](#)

## Fedora

### QEMU

```
sudo dnf update
sudo dnf install qemu
```

### From QEMU's source files

```
# Install prerequisite rpms to build the source code
sudo dnf install pixman-devel gcc make git python38

# Download source code
wget https://download.qemu.org/qemu-9.1.0.tar.xz
tar xvjf qemu-9.1.0.tar.xz
```

```
cd qemu-9.1.0
mkdir build
cd build
../configure --target-list='ppc64-softmmu ppc-softmmu' --prefix=/opt/qemu
make
sudo make install
/opt/qemu/bin/qemu-system-ppc64 --version
```

💡 If you don't mention the `--target-list='ppc64-softmmu ppc-softmmu'`, it will build more than 50 machines emulator, and will take a longer time to compile. For more info, type `#./configure -h`

## KVM/QEMU/Virt-Manager

```
sudo dnf install -y qemu-kvm libvirt virt-install bridge-utils qemu virt-manager \
libvirt-devel virt-top libguestfs-tools guestfs-tools libvirt-client libvirt-python

sudo systemctl start libvirtd
sudo systemctl enable libvirtd

sudo usermod -a -G libvirt $(whoami)
sudo usermod -a -G kvm $(whoami)
sudo usermod -a -G input $(whoami)
```

## RedHat

```
# RHEL 7
yum install qemu-kvm libvirt
yum install virt-install libvirt-python virt-manager virt-install libvirt-client

# RHEL 8
yum module install virt
yum install virt-install virt-viewer
systemctl start libvirtd

## Verification
virt-host-validate
```

## Ubuntu 22.04

```
sudo apt-get install git libglib2.0-dev libfdt-dev libpixman-1-dev zlib1g-dev ninja-build
sudo apt-get install libnfs-dev libiscsi-dev python3-tomli

# Download source code
wget https://download.qemu.org/qemu-9.1.0.tar.xz
tar xvjf qemu-9.1.0.tar.xz
cd qemu-9.1.0
mkdir build
cd build
../configure --target-list='ppc64-softmmu ppc-softmmu' --prefix=/opt/qemu
make
sudo make install
/opt/qemu/bin/qemu-system-ppc64 --version
```

## Command Line

- [How To Use QEMU From the Linux Command-Line | Baeldung on Linux](#)
- [A Comprehensive Guide to Using QEMU from the Linux Command-Line — nixFAQ](#)
- [Chapter 20. Managing Guest Virtual Machines with virsh | Red Hat Product Documentation](#)

## virsh

### Guest CPU Models

```
# For x86
virsh cpu-models x86_64

# For PowerPC
virsh cpu-models ppc64
```

### List the VMs

```
sudo virsh list --all
```

# FAQ

## Operation not permitted

```
qemu-system-ppc64: -net nic -net tap,script=no,ifname=tap0: could not
configure /dev/net/tun (tap): Operation not permitted
```

Solution:

```
sudo setcap CAP_NET_ADMIN=ep /usr/bin/qemu-system-ppc64
```

## Install Error

```
Running postconf script '/home/alang/??/worktmp/qemu-
9.1.0/build/pyvenv/bin/python3 /home/alang/??/worktmp/qemu-
9.1.0/scripts/symlink-install-tree.py'
Traceback (most recent call last):
  File "/home/alang/??/worktmp/qemu-9.1.0/scripts/symlink-install-tree.py",
line 17, in <module>
    out = subprocess.run(['introspect.split(' '), '--installed'],
  File "/usr/lib/python3.10/subprocess.py", line 503, in run
    with Popen(*popenargs, **kwargs) as process:
  File "/usr/lib/python3.10/subprocess.py", line 971, in __init__
    self._execute_child(args, executable, preexec_fn, close_fds,
  File "/usr/lib/python3.10/subprocess.py", line 1863, in _execute_child
    raise child_exception_type(errno_num, err_msg, err_filename)
FileNotFoundError: [Errno 2] No such file or directory:
"/home/alang/??/worktmp/qemu-9.1.0/build/pyvenv/bin/meson"
```

Fix bug: edit `symlink-install-tree.py`

```
import shlex
```

```
out = subprocess.run(['shlex.split(introspect), '--installed'],
```

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