

# [How-To] Passthrough Hard Drive to VM

## Purpose

The goal of this how to will be to demonstrate how to passthrough a hard drive, ssd, or nvme drive to a vm directly.

## Prerequisites

List of prerequisites:

- admin pve user
- vm in pve
- unused and unformatted drives in pve

## Instructions

### Step 1: Gather Information About the Drives

First, we need to gather the needed information about the drives so we can structure our command to passthrough the drives to the VM. Start by running the following command on pve shell:

```
apt install lshw
```

This will install the lshw app that will allow you to better see your hard drives. Then, run this command:

```
lshw -class disk -class storage
```

This will list all disks by class and give you detailed information about them. We won't use anything from this results to passthrough the drives as that is possible to change. But we will use it to find the by-id disk in next command. Save the output and parse manually to find the sections where the drives you want to passthrough are at. Now, run the following command:

```
ls -l /dev/disk/by-id/
```

This will list all disks by-id which is how we are going to pass them through as these IDs are specific to each disk and will never change. Now, match information about your disk from the first command to the disks in the second command. Take the by-id name of the disks you want to passthrough from the second command and put them in a list.

## Step 2: Prepare Passthrough Commands

Now that we have our by-id disk names, we are ready to insert them into the command template below. Do this and put them commands in a list for each drive you wish to passthrough:

```
qm set 100 -scsi5 /dev/disk/by-id/ata-xxxxxxxx-xxxxx_xxx
```

The number after scsi can be anything greater than 1, but can not be repeated. So if you passthrough more than one disk, start at 2 and go up for each disk from there. Then, where you see ata-xxx, replace all of that with your by-id disk name.

## Step 3: Execute Commands

Next, we are ready to passthrough the drives. Simply run the commands you built one by one in pve shell. Once completed, browse to the vm's hardware tab in the pve web ui and verify they showed up. Then, boot the vm up and see if it actually worked.

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