

# DSM 6 on libvirt/qemu for package testing

I'm running Manjaro so please be aware these steps will differ on other distros

## 1. Get the required software

```
sudo pacman -S virt-manager qemu libvirt
# make sure libvirt is running
systemctl restart libvirtd
```

## 2. Download a loader (xpenology)

<https://xpenology.com/forum/topic/13333-tutorialreference-6x-loaders-and-platforms/>

<https://xpenology.com/forum/topic/12952-dsm-62-loader/>

I used - v1.04b (for DS918+)


## 3. Download the firmware

<https://www.synology.com/en-global/support/download/DS918+#system>

## 4. Extract and Convert the image

```
$ unzip synoboot-ds918.zip
$ qemu-img convert -f raw -O qcow2 synoboot.img synoboot.qcow2
# copy the image to a libvirt storage pool
$ sudo cp synoboot.qcow2 /var/lib/libvirt/images
```

## 5. Setup a network `$ virt-manager`

Right click on **qemu/kvm** and choose **Details** -> **Virtual Networks** and hit the  to create a new **NAT** network *Do not use "qemu/kvm User session" as network sharing will not work (unless you don't want internet access on your nas)*

For this demo my subnet is **192.168.111.0/24**

**Finish** and **Close** the window so that you are back at the main virtual machine manager window

## 6. Create a new virtual machine

Hit the  button to start:

- Connection: **qemu/kvm** *Do not use "qemu/kvm User session" as network sharing will not work (unless you don't want internet access on your nas)*
- **Manual Install**

Next (Choose the OS you are installing):

- Search for **debian**
- Check **Include EOL OS**
- Select **Debian GNU/Linux 5.0** *Other options will work but this what I used at the time*

Next: (Memory / CPU)

- Memory: **4096**
- CPU: **4** *Other values will work and is dependent on the host OS, this is just what I used at the time*

Next: (Storage)

*GiB: 20 \*Choose what you like here (I recommended least 20, but might work with less)*

Next (Begin Installation)

- Name: **DSM6** or what ever you like
- **Check** Customize before install
- Advanced options:
  - Network selection: your **NAT** network we crated earlier

**Finish**

NIC:

- Device model: e1000

VirtIO Disk 1:

- Change Bus Type to **SATA**

Add Hardware (second disk for DSM 7 I recommend at least 12 GB larger then what intend to use. Minimum possible is 24 GB)

- **30 GiB**
- Bus Type: **SATA**

Add Hardware (add boot loader)

- **Select Custom image**
- **Manage...:** Select **synoboot.qcow2**
  - *If it's not there maybe you need to create a new storage pool and add it there*
- **Choose Volume**
- Bus Type: **SATA**

Boot Options:

- SATA Disk 3
- SATA Disk 2
- SATA Disk 1

**Begin Installation**

To view boot progress an the ip address **View->Consoles->Serial 1**

## 7. Install DSM 6

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Open <http://192.168.111.128:5000> in the browser (Your IP Address might be different)

- **Set Up**
- **Manual Install** and select the pre-downloaded `DSM_DS918+_25426.pat` file
- **Install Now** and follow the prompts

If there are errors you may need a fresh copy of the boot loader:

```
sudo cp synoboot.qcow2 /var/lib/libvirt/images
```

After reboot fill out the setup wizard and you should have a working DSM6 virtual environment

## 8. Storage Pool

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Open the **Storage Manager**

Volume-> Create:

- **Custom->Next->Next**
- Better Performance->Next
- RAID Type: **Basic->Next**
- Only Select Drive 1 (20GB) ->Next->OK
- Perform drive check **No->Next**
- **ext4** (IHMO it's the better option in this scenario)->Next->Next->Apply

## DSM 7 via synology virtual machine manager

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### 1. Setup a Storage Volume

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If you followed from above you should still have a 25GB unallocated drive

Open the **Storage Manager**

Volume-> Create:

- **Custom->Next->Next**
- Better Performance->Next
- RAID Type: **Basic->Next**
- Only Select Drive 2 (30GB) ->Next->OK
- Perform drive check **No->Next**
- **Btrfs** (Needed for virtual machines)->Next->Next->Apply

### 2. Install the Virtual Machine Manager package

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- Destination: **Volume 1**
- Check "Always Install new packages on this volume"
- next->apply

### 3. Setup Virtual Machine Manager

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- open Virtual Machine Manager
- Next->Next->Yes

- Select **Volume 2** -> Next

## 4. Download DSM7 VirtualDSM/firmware/image/pat file

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[https://prerelease.synology.com/en-global/download/dsm70\\_beta](https://prerelease.synology.com/en-global/download/dsm70_beta)

Search for "VirtualDSM"

## 5. Import Image

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In Virtual Machine Manager:

- Image->DSM Image->Add->From Computer
- Select `DSM_VirtualDSM_41222.pat` ->Next
- check the "dsm6 - VM Storage1" -> Apply

## 6. Create Virtual Machine

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- Virtual Machine->Create->**Synology Virtual DSM**->Next->Next
- Name: DSM7
- CPUs: 2
- Memory: 2

Next:

- Virtual Disk 1 **18 GB** (or the maximum it allows you to have) ->Next->Next
- AutoStart: Last State (or what you prefer) -> Next
- Give yourself permission  -> Next
- Power On the virtual machine after creation  -> Apply
- (Licence Popup) Next->Free Licence->Next->Apply

## 7. Optional Settings

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Settings:

- When Shutting down a host
  - virtual machine shutdown behaviour: **Suspend** -> Apply

## 8. Install DSM7

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Open <http://192.168.111.205:5000/> in your browser (Your IP Address might be different)

You can find the IP Address in:

- Virtual Machine->DSM7->General (scroll down)

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**Don't forget to enable ssh!**