




# Virtual Machine Image Installation Instructions (portable)

 Installation via virtual machine image is deprecated as of Avalon 6.5. If you're looking for automated installation, please see our documentation on [installing Avalon with Docker](#).

 This documentation is for Release 6.x.  
For older releases:

- Release 5: see [v.100](#)
- Release 4: see [v.91](#)
- Release 3: see [v.90](#)
- Release 2: see [v.77](#)
- Release 1: see [v.71](#)

 These instructions will walk you through the process of downloading, booting, and configuring a CentOS 7.x virtual machine image containing Docker containers of Avalon, Fedora, Red5 and Opencast Matterhorn, with additional instructions on loaded sample audio and video content.

## 1. Getting a Virtualization Product

The Avalon VM is distributed as an Open Virtualization Appliance which should be compatible with these Virtual machine products:


- [VirtualBox](#) (Free. Avalon VM is developed on VirtualBox)
- [Redhat Enterprise Virtualization](#) (Not free. Part of the RHEV product)
- [VMWare](#) (Some versions are free, others are not)

Other virtualization products may be used but they will require manually converting the OVA file into something useful.

## 2. Getting the Avalon Virtual Machine Image

The Avalon VM file is located at <http://www.avalonmediasystem.org/downloads/avalon-vm.ova> and is roughly 2GB. Due to the size, it may take some time to download.

## 3. Importing the Avalon VM Image

 The OVA file currently contains release 6.4.2

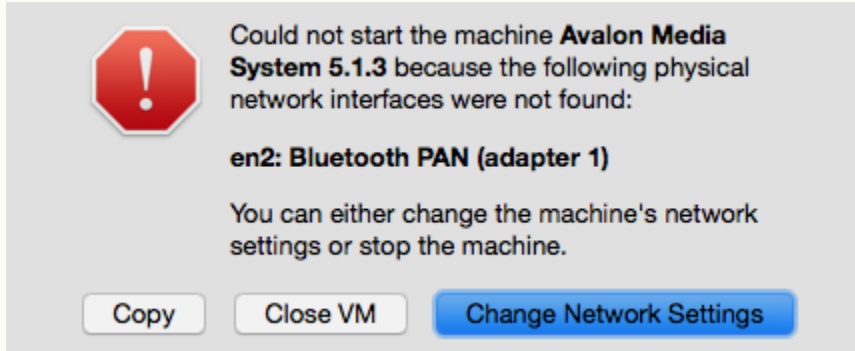
Each virtualization product has different methods for using a VM appliance. The tested methods are below. If you use a product which is not listed, please contact us with usage instructions and we will add them here.

### VirtualBox

- Start the VirtualBox Manager
- Select the "File/Import Appliance..." menu item
  - Press the "Open Appliance..." button and select the Avalon VM image you downloaded
  - Press "Continue"
  - Below the list of VM appliance settings, check the box next to "Reinitialize the MAC address of all network cards"
  - Press "Import"
- The VM should now be visible in the list.
  - Select the Avalon VM
  - Press the "Settings" icon
    - Select the "Network" tab
    - Make sure the "Attached to" field is set to "NAT"
    - Press "OK"
  - Press "Start" icon to boot the VM
- VirtualBox has networking quirks that require special configuration to make Avalon work in NAT mode. Please see [VirtualBox Networking](#) for details.



Users on Apple hardware may get the following error screen when starting the VM:



If you receive this dialog, click the *Change Network Settings* button followed by the *OK* in the following dialog to resolve the issue.

## VMware Player

- Click on "Open a Virtual Machine"
  - Select the .ova file you downloaded
  - Press "Import"
  - Press "Retry" to relax specification (if needed)
- Click on "Edit virtual machine settings"
  - Click on "Network Adapter"
    - Make sure it is set to NAT
    - Press "Advanced..."
      - Press "Generate" to create a new MAC address and press "Close"
    - Press "Save"
- Press "Play virtual machine"

## Libvirt's Virtual Machine Manager

[Virtual Machine Manager](#) is an open source GUI front end to QEMU, KVM and other Linux-based virtualization products. It comes with Fedora Linux and other distributions. It doesn't directly support OVA files so manual conversion is required.

- Unpack the OVA file. \$DIST is where the VM files are going to be; \$DOWNLOAD is where the OVA file was downloaded.

```
mkdir $DIST
cd $DIST
tar xvf $DOWNLOAD/avalon-vm.ova
```

The .vmdk file is the virtual disk image. The other files are settings for the VM (ovf) and checksum files (mf).

- Normally one would use virt-convert to convert .ovf to the right format, but there is a bug in it, so it has to be done by hand.
  - By Hand Method
    - Convert disk image to qcow2

```
qemu-img convert -f vmdk -O qcow2 *.vmdk avalon-vm.qcow2
```

The VMDK file shipped is compressed so the new qcow2 file will be roughly twice as large. After the conversion the vmdk file is no longer needed and can be deleted.

- Create a new VM
  - Click on the "Create a new virtual machine" icon
  - Enter the name for the virtual machine, select "Import existing disk image" and press "Forward"
  - Select the disk image by pressing "Browse"
    - Press "Browse Local"
    - Navigate to \$DIST
    - Select the "avalon-vm.qcow2" file
  - Select the OS type "Linux", Version "Red Hat Enterprise Linux 7" and press "Forward"
  - Set the RAM to 3072 (3G) and press "Forward"
  - Select "Customize configuration before install" and press "Finish"
  - In the Configuration Window make these changes:
    - In "NIC" set the source device to the macvtap enabled interface which represents the ethernet device of the host (usually eth0 or em1)
    - Remove the DISK 1 Device and re-add it:
      - Press "Add Hardware"
      - Select the "Storage" tab
      - Select "Select managed or other existing storage" and Browse

- Press "Browse Local"
    - Navigate to \$DIST and select the "avalon-vm.qcow2" file
  - Set the device type to "Virtio disk"
  - Set the cache mode to "default"
  - Set the storage format to "qcow2"
- Press Finish
- Press "Begin Installation"

## Generic VM Product

A generic VM product may be set up using these settings:

- Unpack the .ova file – it is just a tarball containing a .vmdk file and a configuration file
- Use these settings for the VM:
  - 64-bit guest
  - At least 2G of RAM (the shipped settings use 3G)
  - At least 1 core
  - Graphical Display
  - System disk the the .vmdk from the .ova package
  - The network interface must be bridged and have a unique MAC address
- Start the VM as appropriate for this VM software

## Notes for ALL Virtualization Products

### Disk Usage

The disk image in the OVA package is dynamically-allocated with a maximum size of 500G. While the disk image may only use a few gigabytes when it is first used, it will grow as more data is placed into the VM. Most VMs behave unpredictably when the host system doesn't have enough disk space to satisfy guest OS requests. Monitor the disk usage closely.

## 4. Using the Avalon VM

Once the VM has rebooted and the login screen has appeared, the Avalon system is ready to use.

1. Login using username `avalon`, password `avalon`.
2. Open the built-in Chrome browser and point it to <http://localhost>.
3. Click on Login
4. Click on Register new identity
5. Sign up using the default [archivist1@example.com](mailto:archivist1@example.com) email to get admin access

After you have signed in, Avalon VM can be used like any other Avalon installation. The [Avalon Collections Guide](#) contains information for using Avalon. You can create new collections and add items. Additional features can be configured using [feature specific documentation](#).

## 5. Installing Sample Content (Optional)

The sample content can be ingested through a [batch ingest process](#)

1. Create a new collection, for example, DEMO
2. `wget http://www.avalonmediasystem.org/downloads/DemoFixturesBatch.tar.gz`
3. `tar zxvf DemoFixturesBatch.tar.gz`
4. `mv ExampleBatchIngest/* /home/avalon/avalon-docker/masterfiles/dropbox/DEMO/`

As the samples are ingested, you will see new items being added to the collection. Be patient as the media transcoding may take a while.

## 6. Building your own OVA file

If you want to build your own OVA file follow the instructions on <https://github.com/avalonmediasystem/avalon-packer>

## Troubleshooting the Avalon VM

Because the OVA uses Docker and Docker-Compose, you can find instructions on how to navigate the stack on the [avalon-docker github page](#)

## Reconfiguring the Avalon VM

### Resetting the root password

- When the VM starts there is a 3 second countdown before the boot begins. Press the spacebar during this countdown to get the boot menu.

- Edit the boot entry and boot
  - Press the 'e' key to edit the first boot entry
  - Use the down arrow to highlight the line beginning with 'kernel' and press 'e'.
  - Add " init=/bin/bash" to the line, making sure there is leading space separating it from the the end of the existing command line.
  - Press 'enter' to go back to the root/kernel/initd selection screen
  - press 'b' to boot
- The system will boot to a root shell
- Change the password.

```
mount -o remount,rw /
passwd root
mount -o remount,ro /
```


- A hard reboot of the VM is required to restart the system.






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## Known Issues

[Known Issues](#) - a list of bugs, workarounds, and cautions.

In addition, there are some issues for us to consider in future releases of this VM image:

-  Sometimes when using the dropbox a duplicate processing job appears in matterhorn and the first one will fail during distribute-hls. The second one processes normally.

 information	 oddity, potential todo item	 todo item	 issue w/o workaround	 issue with workaround
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