ESXi-Arm Fling Doc

1. Downloading ESXi-Arm Fling

To access ESXi-Arm Fling, you'll need to register for a MyVMware account. Registration is free - https://my.vmware.com/web/vmware/registration

To download ESXi-Arm Fling and Documentation, please head to https://flings.vmware.com/esxi-arm-edition

2. Supported platforms

The Fling is launched with four platforms across a wide range of foot prints and use cases, spanning from servers and datacenters to single-board computers and far edge use cases.

- Ampere Computing eMAG 8180-based servers
- NXP LayerScape 2160A-based SolidRun HoneyComb LX2K mini-ITX platform.
- NXP LayerScape 1046A-based FRWY (4GB only)
- Raspberry Pi 4B (4GB and 8GB only)

3. I/O options

3.1. Supported storage

iSCSI LUNs, NVMe and SATA drives are supported, as is USB storage. On some platforms, like the Raspberry Pi 4B, USB storage and iSCSI are the only options.

3.1.1. Disk size

The ESXi-Arm Fling is based on ESXi 7.0 and thus has a new partition scheme which consolidates VMware Tools Locker, Core Dump and Scratch partitions into a new ESX-OSData volume (based on VMFS-L). By default, the ESXi installer is expecting a disk that is 128GiB or larger.

If you insist on using a disk that is smaller than or equal to 128GiB, be sure to pass **autoPartitionOSDataSize** when the installer boot screen prompts for options **(Shift-O)**.

E.g. **autoPartitionOSDataSize=8192** for an 8GB VMFS-L partition, and the remainder space will be used to create VMFS datastore.

For more details on changing the default OSData volume, please see this blog post.

3.2. Supported networking

PCIe and USB networking is supported. On the Raspberry Pi 4B, the onboard NIC is also supported.

3.3. USB devices

The list below is not exhaustive, but are some storage/networking options that has been tested to work with the Raspberry Pi 4B.

3.3.1. Storage

VID	PID	Description	Product	Comments
154b	f009	PNY Elite 240GB USB 3.0 Portable Solid State Drive	https://smile.amazon.com/gp/product/B01GQPXBQC	
1f75	0621	Innostor Technology Corporation SATA Bridge /Enclosure	https://www.amazon.com/gp/product/B07CVXS2L8	
152d	0583	JMicron NVMe Bridge/Enclosure	https://www.amazon.com/gp/product/B07HCPCMKN	Must be used with a powered USB hub on the Raspberry Pi 4B
090c	1000	Samsung MUF-256AB	https://www.amazon.com/gp/product/B07D7Q41PM	(So far) Only tested with a powered USB hub
0930	6545	Toshiba TransMemory		(So far) Only tested with a powered USB hub
13fe	5700	Kingston Technology Company Inc	USB Stick from Microcenter	**DO NOT USE, I/O errors formatting**

3.3.2. Networking

Raspberry Pi 4B note: For performance reasons, we recommend using the on-board gigabit ethernet port for ESXi host networking.

VID	PID	Description	Product	Comments
0bda	8153	Realtek RTL8153 Gigabit Ethernet Adapter	https://www.amazon.com/gp/product/B01J6583NK	Not recommended with a stock power supply on the Raspberry Pi 4B
			https://www.amazon.com/gp/product/B00BBD7NFU	
			https://www.amazon.com/gp/product/B01KA0UR3O	
			https://www.amazon.com/gp/product/B01M7PL2WP	

3.3.3. Keyboards

Generally, any USB keyboard should work.

VID	PID	Description	Product	Comments
04d9	0006	Raspberry Pi Keyboard	https://www.raspberrypi.org/products/raspberry-pi-keyboard-and-hub/	

3.4. Supported plug-in PCIe adapters

Every other platform outside of the Raspberry Pi requires a bring-your-own solution for networking. It is recommended that PCIe NICs are used where possible. While most platforms have on-board SATA controllers, plug-in SATA adapters are supported as well. The tested drivers are a subset of the 7.0.

Type	Vendor	Driver	Comments
NIC	Intel	ne1000	https://www.vmware.com/resources/compatibility/search.php?deviceCategory=io&details=1&partner=46&releases=448&keyword=ne1000&deviceTypes=6&driverModel=2&page=1&display_interval=10&sortColumn=Partner&sortOrder=Asc
NIC	Intel	ixgben	https://www.vmware.com/resources/compatibility/search.php?deviceCategory=io&details=1&partner=46&releases=448&keyword=ixgben&deviceTypes=6&driverModel=2&page=1&display_interval=10&sortColumn=Partner&sortOrder=Asc
NIC	Mellanox	various	https://www.vmware.com/resources/compatibility/search.php?deviceCategory=io&details=1&partner=55&releases=448&deviceTypes=6&driverTypes=1&driverModel=2&page=1&display_interval=10&sortColumn=Partner&sortOrder=Asc

NVMe	various	nvme_pcie	https://www.vmware.com/resources/compatibility/search.php?deviceCategory=io&details=1&releases=448&keyword=nvme_pcie&deviceTypes=22&driverTypes=1&driverModel=2&page=1&display_interval=10&sortColumn=Partner&sortOrder=Asc
SATA	various	vmw_ahci	https://www.vmware.com/resources/compatibility/search.php?deviceCategory=io&details=1&releases=448&keyword=vmw_ahci&driverTypes=1&driverModel=2&page=1&display_interval=10&sortColumn=Partner&sortOrder=As

4. Preparation

Follow the hardware-specific guides around configuring the system.

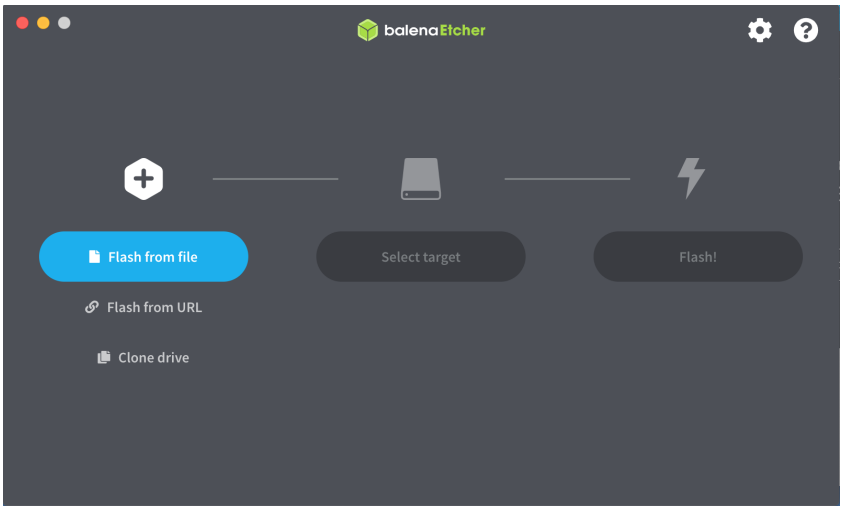
5. Create ESXi Installer USB Key

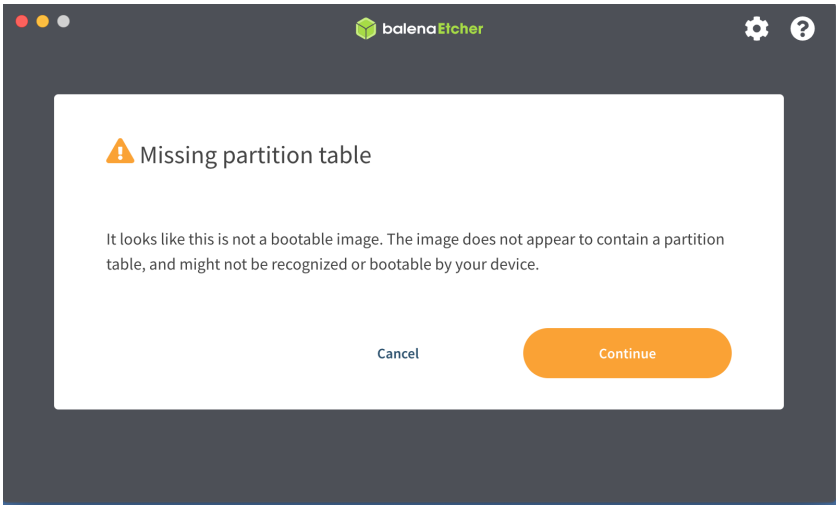
For this you'll need the ESXi-Arm Fling ISO, of course.

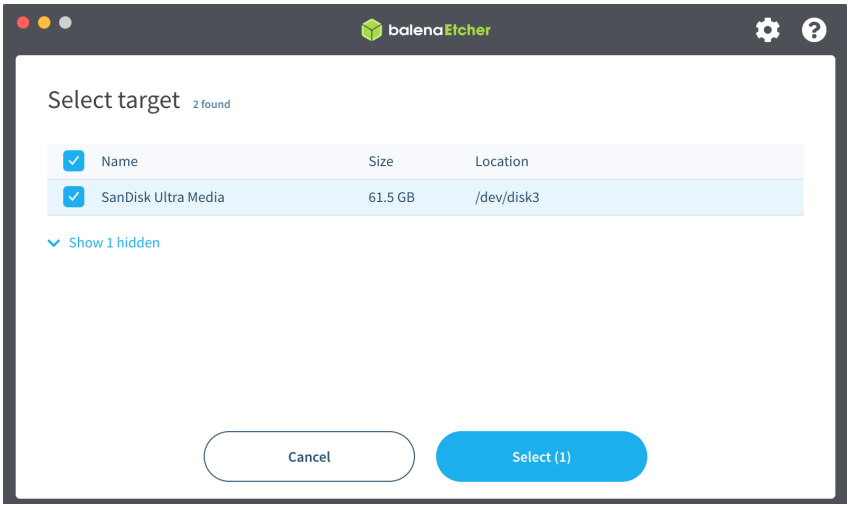
5.1. Using balenaEtcher on Linux, Mac or Windows

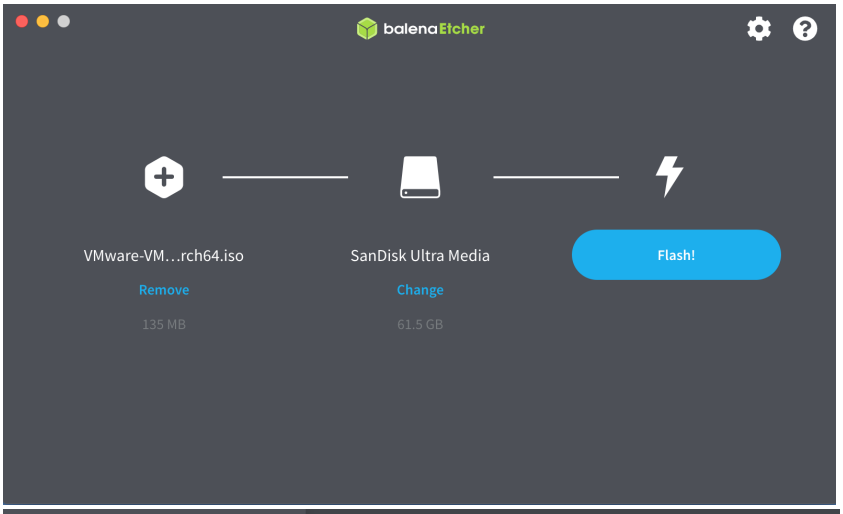
Download **balenaEtcher** from https://www.balena.io/etcher/, and choose the Fling ISO and USB key target. Hit Flash!

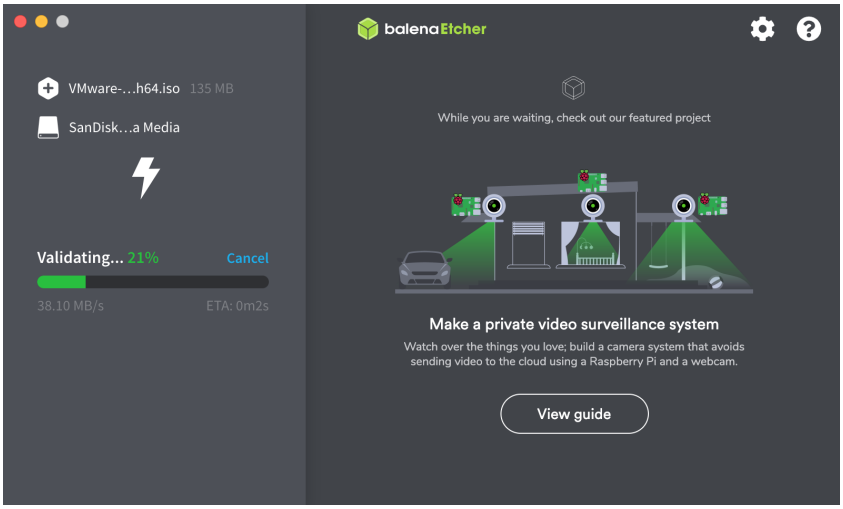
You can ignore the warning about the missing partition table, it's an ISO.

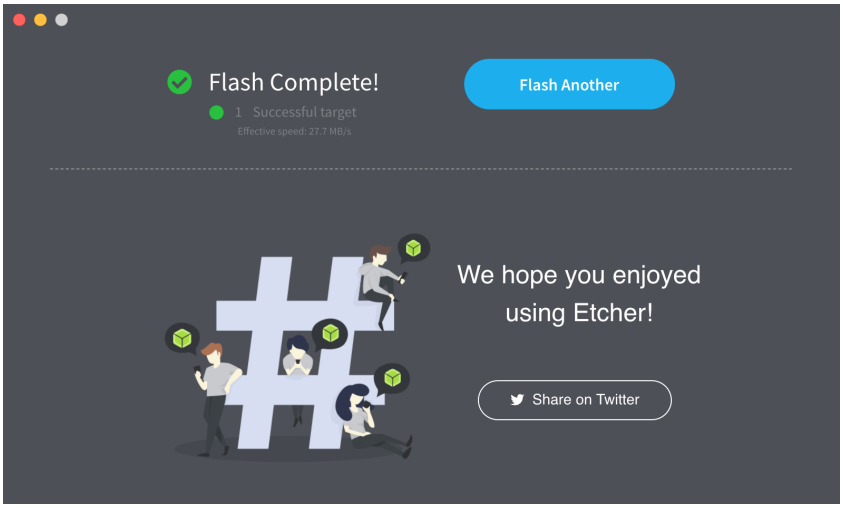





balenaEtcher
Select target
2 found
Name
Size
Location
SanDisk Ultra Media
61.5 GB
/dev/disk3
Show 1 hidden
Cancel
Select (1)


balenaEtcher
VMware-VM…rch64.iso
Remove
135 MB
SanDisk Ultra Media
Change
61.5 GB
Flash!


VMware-…h64.iso 135 MB
SanDisk…a Media
Validating... 21%
Cancel
38.10 MB/s
ETA: 0m2s
balenaEtcher
While you are waiting, check out our featured project
Make a private video surveillance system
Watch over the things you love; build a camera system that avoids sending video to the cloud using a Raspberry Pi and a webcam.
View guide



5.2. On macOS

Identify the disk using the following command and make note of the disk path (e.g. /dev/diskX), and make sure any existing partitions are unmounted.

```
$ diskutil list

/dev/disk4 (external, physical):
   #:                       TYPE NAME                    SIZE       IDENTIFIER
   0:      GUID_partition_scheme                        *256.6 GB   disk4
   1:                        EFI EFI                     209.7 MB   disk4s1
   2:                  Apple_HFS Untitled                256.3 GB   disk4s2

$ diskutil unmount /dev/disk4s2
Volume Untitled on disk4s2 unmounted
$ diskutil unmount /dev/disk4s1
disk4s1 was already unmounted
```

Raw-write the ISO file to the drive, using the disk identified above. Note the use of the raw device (**/dev/rdisk4**, not **/dev/disk4**)

```
$ sudo dd if=~/VMware-VMvisor-Installer-7.0.0-16966451.aarch64.iso of=/dev/rdisk4 bs=$((16 * 1024 * 1024))
```

Eject the drive:

```
$ hdiutil eject /dev/disk4
```

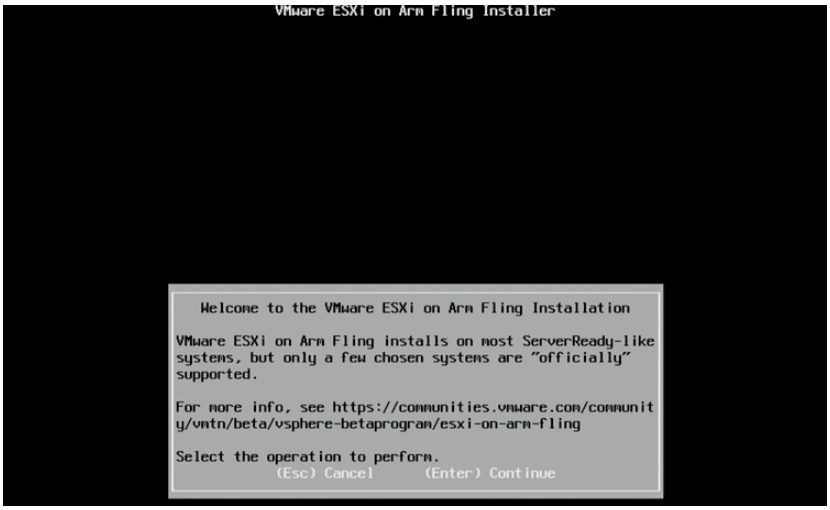
6. Installing ESXi-Arm

Make sure to also follow the notes in the the hardware-specific guides for installation and post-installation steps.

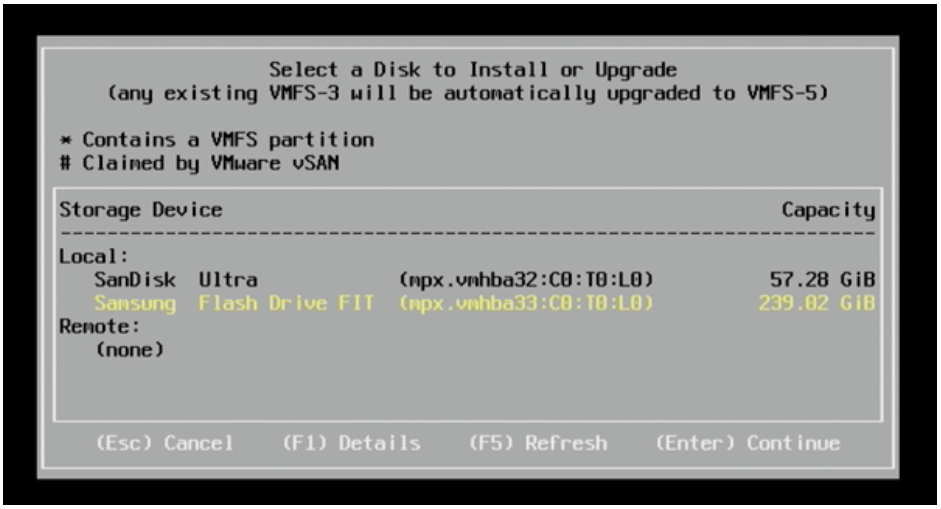
- Fling on Raspberry Pi
- Fling on Ampere eMAG 8180-based Servers
- Fling on SolidRun HoneyComb LX2K
- Fling on NXP LS1046A FRWY

6.1. Basic installation

After booting the installer ISO, you will see the installer:

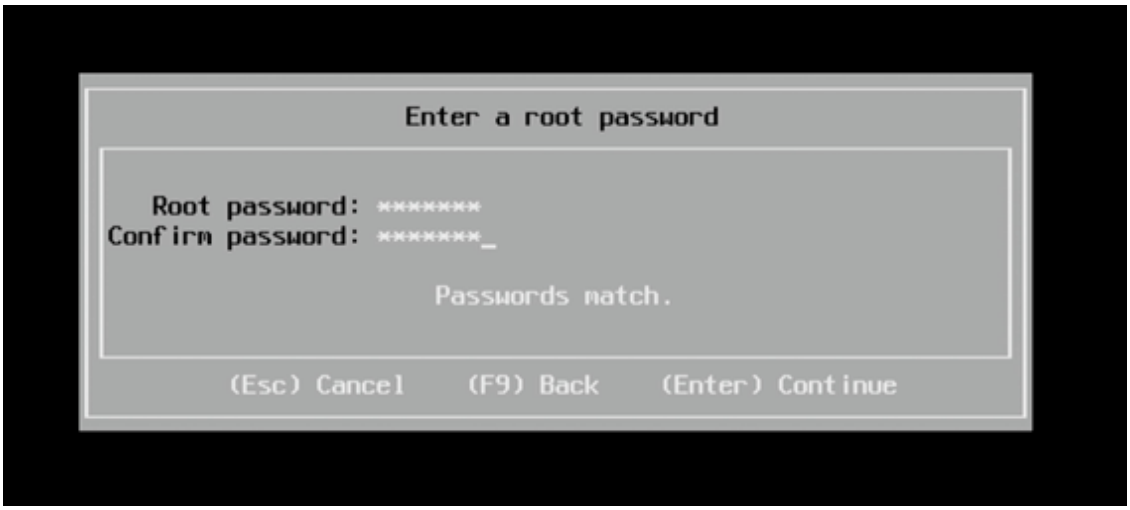


After accepting the EULA, the installer will list available storage media for installation. Use the arrow keys to select the drive to install it.



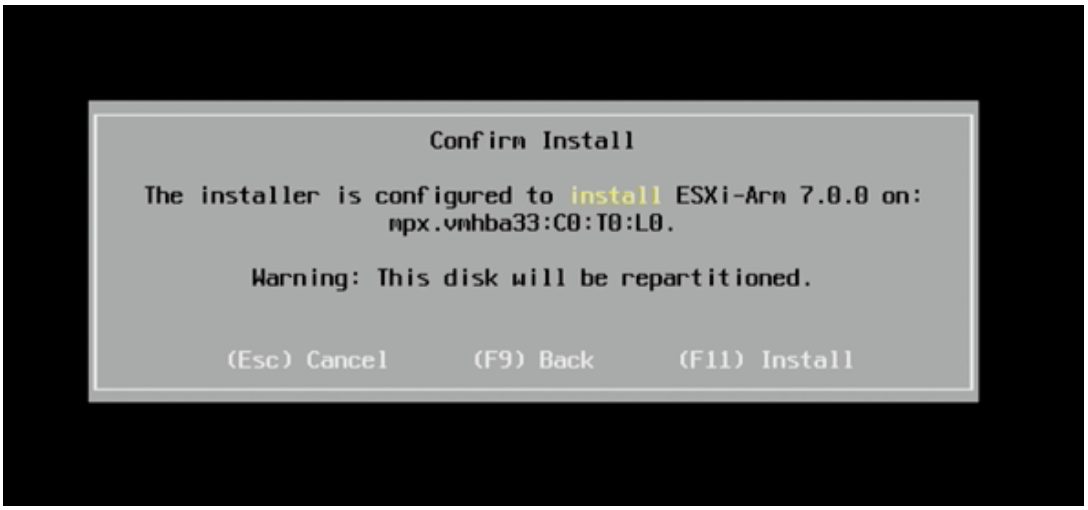
Select your keyboard layout:

Choose a password:



Press **F11** to confirm the install.

Note: If you're using the Raspberry Pi USB keyboard, **F11** is the combination of **Fn** and **F1**.

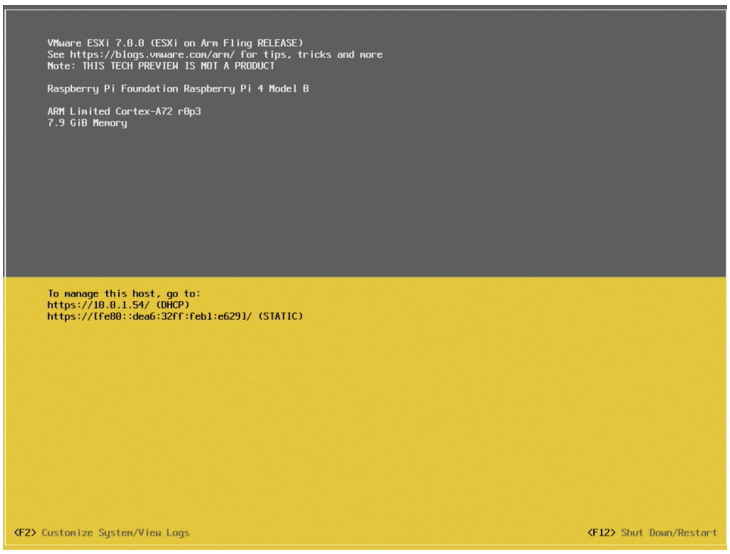


Installation should be complete. Press **ENTER** to reboot.

6.2. Operation with a video console

If you're installing ESXi-Arm on a system with a video adapter (or you're plugging a screen into a Raspberry Pi), ESXi will default to using the video and USB keyboard for its console.

This how DCUI (console UI) looks on boot-up:



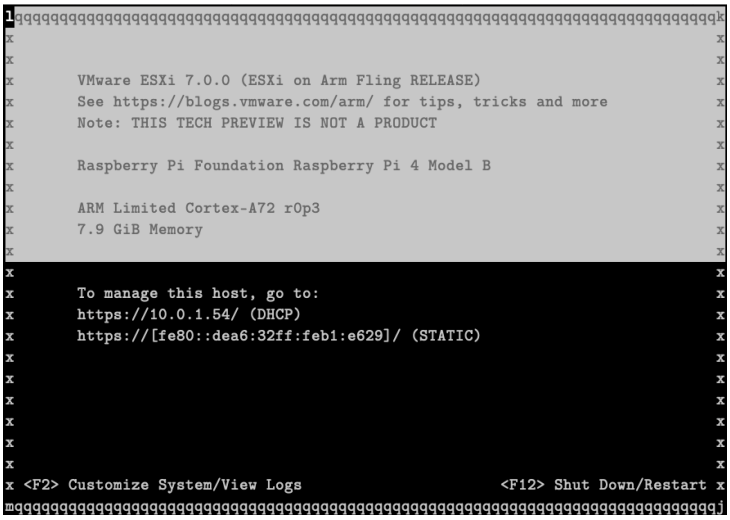
The video console has a notion of virtual terminals, which can be switched between using key combos:

Key combo	Description	Comments
ALT-F2	DCUI	Or installer when installing
ALT-F1	ESXi Shell	If ESXi Shell access is enabled
ALT-F11	Kernel status	
ALT-F12	Kernel log messages	dmesg

6.3. Headless operation

If you're installing ESXi-Arm on a system without a video adapter (or you're not plugging a screen into a Raspberry Pi), ESXi-Arm will use a serial port for its console. Usually, systems will have only one such port. In case there are several, system UEFI may have additional **Serial Port Console Redirection** configuration.

Like a system with a video console, ESXi will boot up to a DCUI (console UI) screen, although this will look a bit different:



ESXi actually supports several different "roles" for the serial port. These roles are like virtual terminals and can be switched between using key combos:

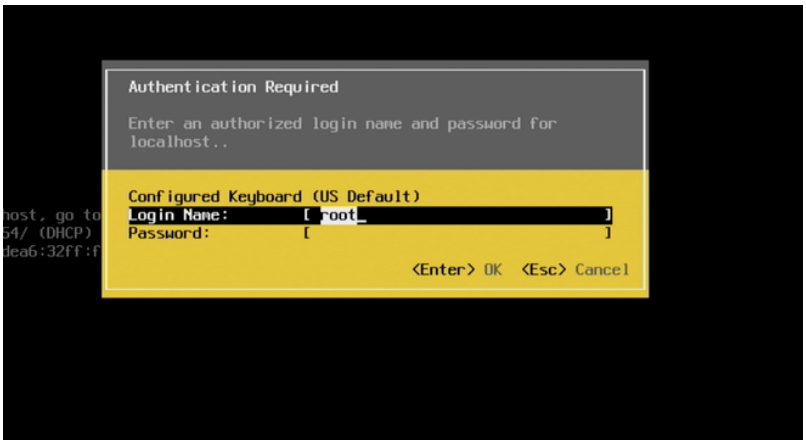
Key combo	Description	Comments
CTRL-G CTRL-B 3	DCUI	Or installer when installing
CTRL-G CTRL-B 2 ENTER	ESXi Shell	If ESXi Shell access is enabled
CTRL-G CTRL-B 1	Kernel message log	dmesg

6.4. After installation

Now you're ready to check out the VMware ESXi Host Client.

There are a few settings you can change directly from DCUI (console UI).

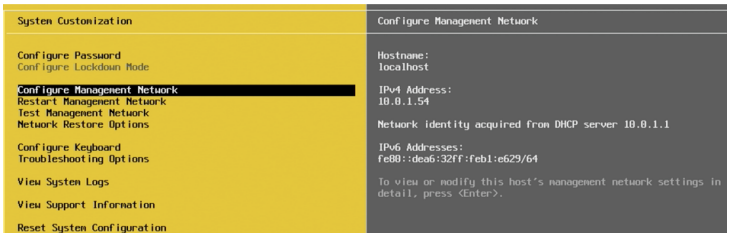
To customize configuration press **F2**. You will be asked to authenticate.



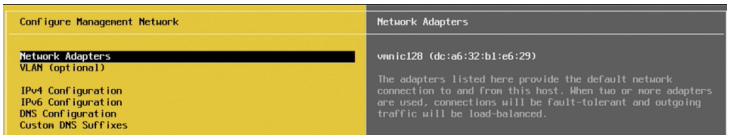
6.4.1. Changing NIC and TCP/IP configuration

Note: The system will default to DHCP on the first NIC detected during install that had a link up.

Use arrow keys to navigate to **Configure Management Network**:



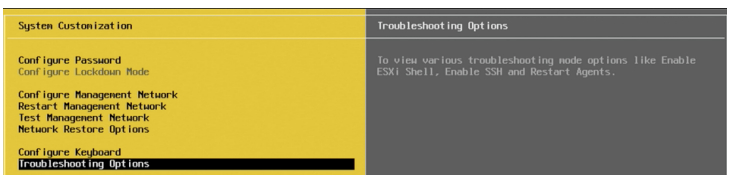
Press **ENTER.** The rest of this should be fairly self-explanatory.



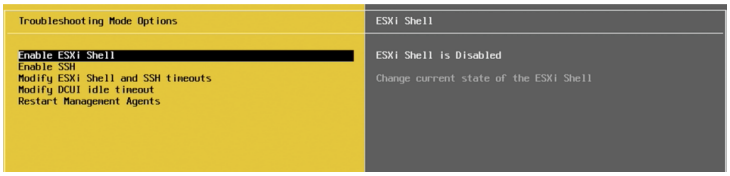
6.4.2. Enabling SSH or console shell

Note: ESXi Shell (from console) and SSH access are disabled by default.

Use arrow keys to navigate to **Troubleshooting Options**:



Press **ENTER**.



You can toggle ESXi Shell or SSH support by selecting the entry and pressing **ENTER**.

7. VMware ESXi Host Client

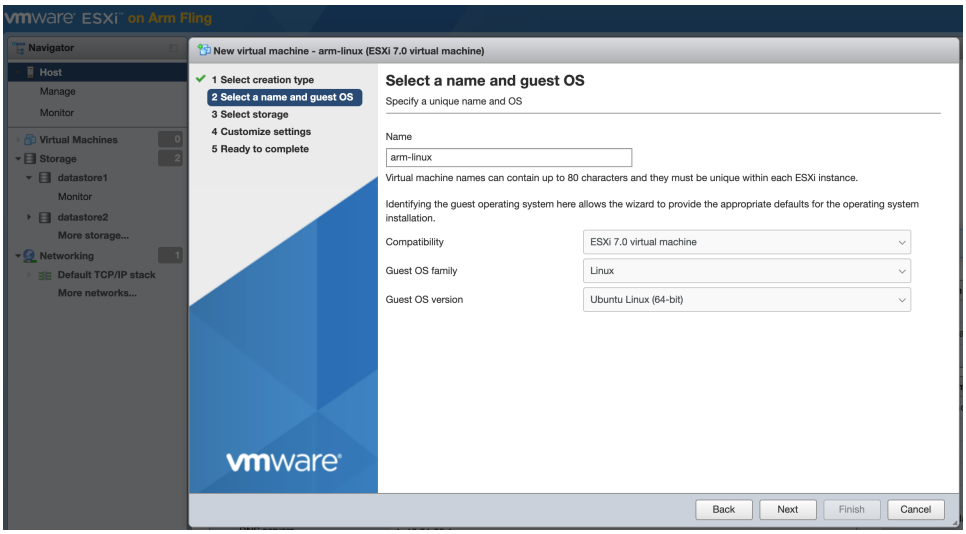
This is a web UI to your installed ESXi-Arm system. This is where you can configure ESXi-Arm and create and access VMs.

7.1. Login and host configuration

1. Access ESXUI from a browser with *https://<esx-host-ip >/ui* and login with root privileges.
2. Setting up NTP: It is especially important to make sure that the host has clock synchronized, if you plan to connect to vCenter later.
    a. Under Host Manage System, select Time & date and click Edit NTP Settings.
    b. Select Use Network Time Protocol (Enable NTP client).
    c. Enter the IP address or fully qualified domain name of one or more NTP servers to synchronize with. (You can use *pool.ntp.org*)
    d. Save
    e. Under Host Manage Services, select the ntpd line and click on Start.

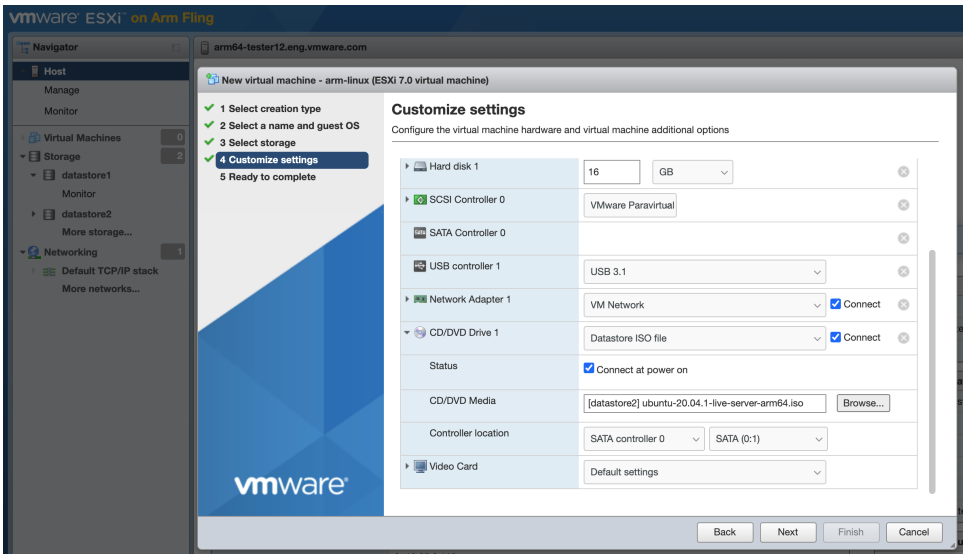
7.2. Virtual Machine Creation

1. Right click Host Select Create/Register VM
2. Select creation type Create a new virtual machine
3. Enter Name and Guest OS details
    a. Compatibility: ESXi 7.0 virtual machine
    b. Guest OS family: Linux
    c. Guest OS version: <any from the below supported guest list>



4. Select storage Standard: <choose from the available datastores> (Note: If you're using the Pi and installing the ESXi-Arm bits on a usb stick, and the usb stick is <128GB, and you do not see an available datastore at this step, it's possible that you may have neglected the **autoPartitionOSDataSize** during the initial boot-install. Unfortunately the only way to correct this is to redo the installation. This time make sure to append the field along with the size. See the Pi installation guide Section 4 for details)
5. Customize settings
    a. CPU: <choose from available list>
    b. Memory: <within available limit>
    c. Hard disk: <within available limit>
    d. USB controller: <default> (USB 3.1)
    e. Network Adapter: <default> (E1000e)
    f. CD/DVD Drive: Choose "Datastore ISO file" Browse datastore to upload/find the required ISO
    g. Video Card: <default>

Additional hardware can be added with "Add hard disk", "Add network adapter" and "Add other device" options.



6. Review settings Finish
7. Powering on the VM should take you to the OS installer.

7.3. Guest OS support

These operating systems have been tested to properly install with the following basic configuration:

Virtual Hardware	
CPU	4
Memory	4 GB
Hard disk	16 GB
SATA Controller	
USB controller	USB 3.1
Network adapter	E1000e
CD/DVD Drive	Datastore ISO file
Video Card	Default settings

These operating systems support both the UEFI firmware in the virtual machine and the DT (device tree) method of describing virtual machine hardware.

Distribution	URL
Ubuntu 20.04 LTS	https://ubuntu.com/download/server/arm
CentOS Linux 8	http://isoredirect.centos.org/centos/8/isos/aarch64/
openSUSE Leap 15.2	http://download.opensuse.org/ports/aarch64/distribution/leap/15.2/iso/
Photon OS 3.0	https://github.com/vmware/photon/wiki/Downloading-Photon-OS
Debian 10.x	https://cdimage.debian.org/debian-cd/current/arm64/iso-cd/
Fedora 32 Server	https://getfedora.org/en/server/download

7.4. See also

- Add a CD or DVD Drive to a Virtual Machine in the VMware Host Client https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.hostclient.doc/GUID-132901CE-AE24-4A61-B8CB-55CF6489A8A7.html
- General guide to managing a VM from VMware Host Client: https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.hostclient.doc/GUID-4ECD8CE7-6362-4FC3-A2DA-CD3D68882306.html

8. VMware vCenter Server Basics

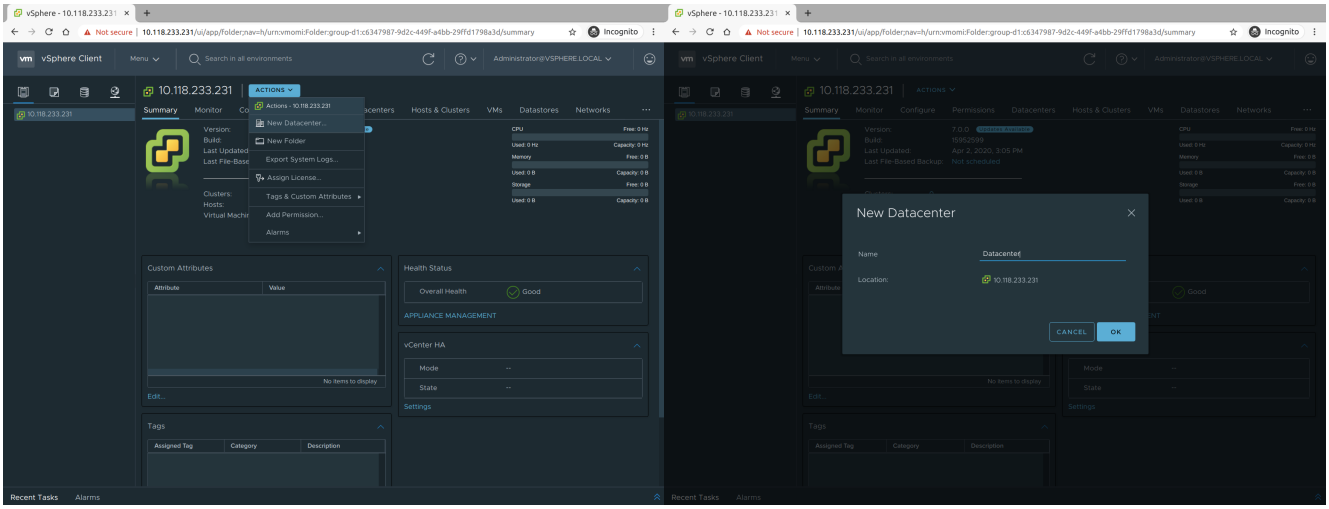
The **vCenter Server and Host Management** full documentation is available at https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.vcenterhost.doc/GUID-3B5AF2B1-C534-4426-B97A-D14019A8010F.html

8.1. 1. Add a Datacenter and a Cluster

When vCenter Server is just installed you need to create a Datacenter object, and eventually a Cluster to add your ESXi hosts to.

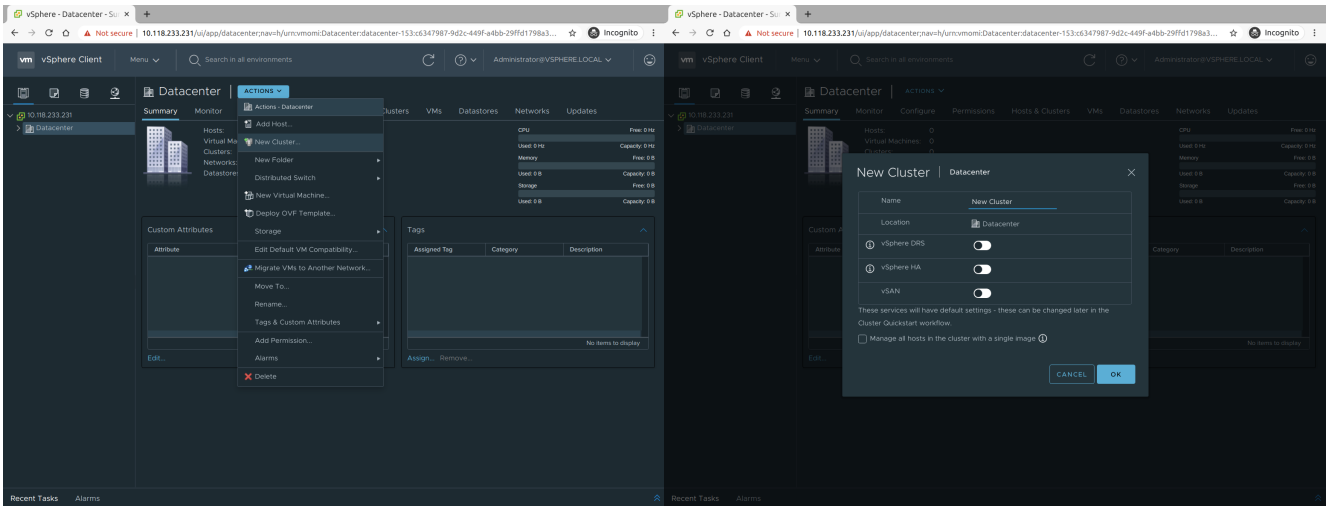
8.1.1. 1.1. Adding a Datacenter

On the **Host and Clusters** page, select the VC address and click on **New Datacenter...** in the **ACTIONS** drop down menu. Choose a name and validate the popup.



8.1.2. 1.2. Adding a Cluster

Still on the **Host and clusters** page, select the Datacenter and click on **New cluster...** in the **ACTIONS** drop down menu. Choose a name and validate the popup.



For more information on clusters, please see the **Creating and Configuring Clusters** documentation: https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.vcenterhost.doc/GUID-F7818000-26E3-4E2A-93D2-FCDCE7114508.html

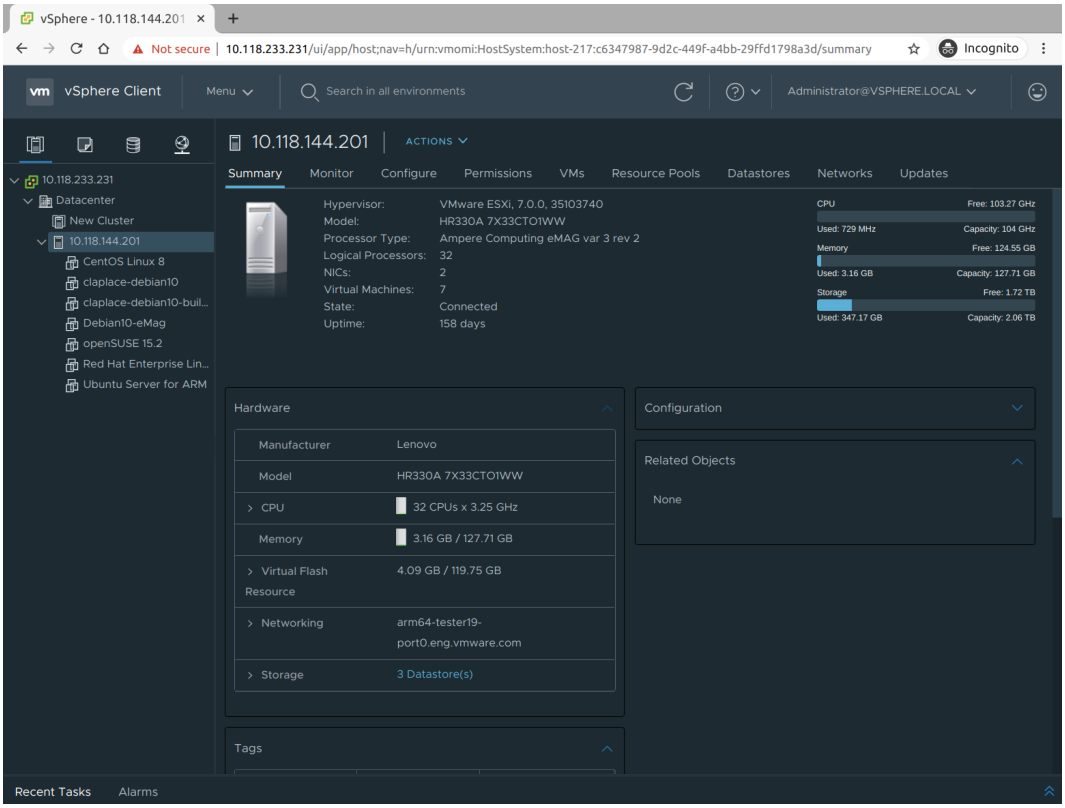
8.2. 2. Add an ESXi-Arm Fling host to vCenter Server

On the **Hosts and clusters** page, select the Datacenter and click on **Add Hosts...** in the **ACTIONS** drop down menu.

1. Name and location: enter the IP address of the host
2. Connection settings: enter the host credentials

3. Host summary: review the information
4. Assign license: choose a license to use for the host
5. Lockdown mode: let on Disabled (default)
6. VM location: choose the Datacenter
7. Ready to complete: Click Finish to add the host

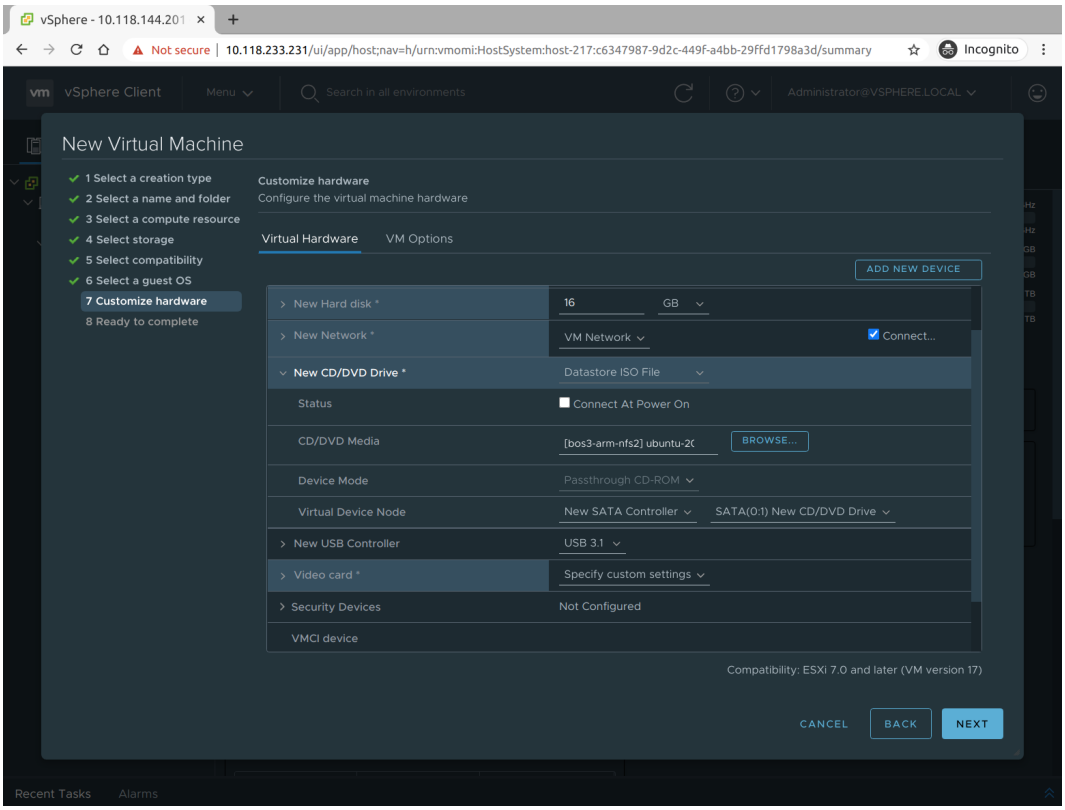
Here is a Ampere Computing eMAG added to the Datacenter:



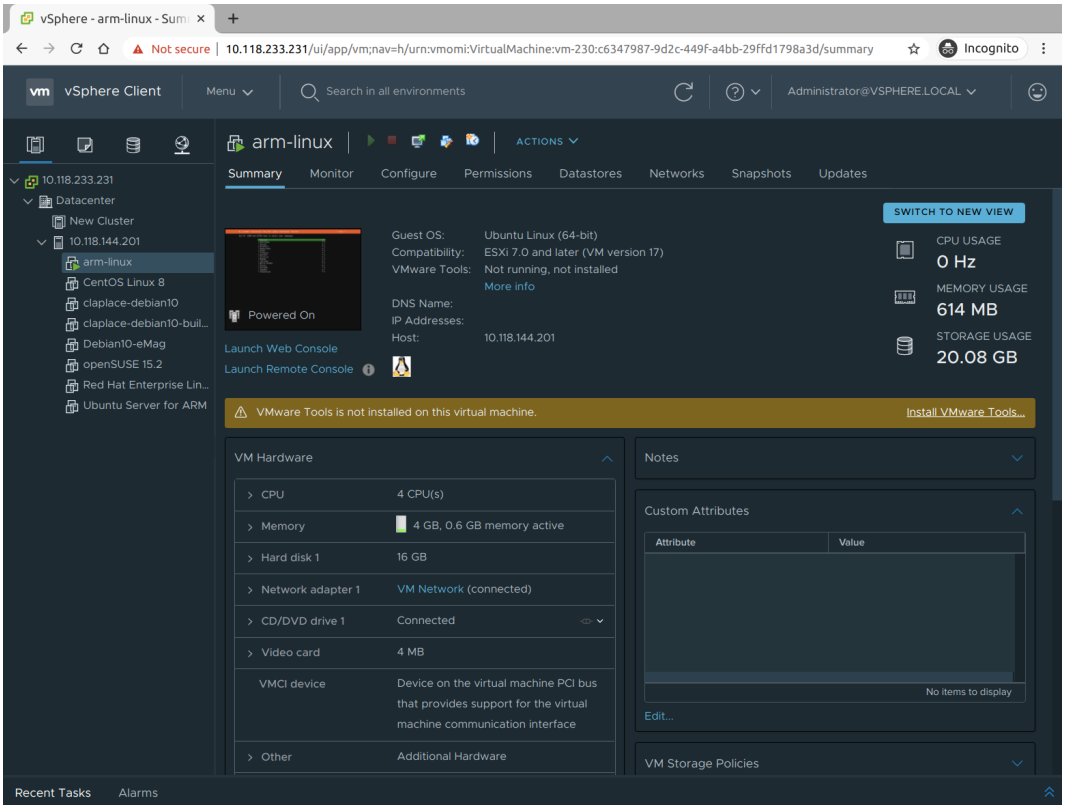
8.3. 3. Create a Virtual Machine

On a Datacenter, a Cluster or a Host, choose **New Virtual Machine...** from the **ACTIONS** drop down menu.

1. Select creation type: Create a new virtual machine
2. Enter Name and a location for the virtual machine
3. Select a compute resource: the host
4. Select storage: datastore1
5. Select compatibility: ESXi 7.0 and later
6. Select a guest OS:
    a. Guest OS Family: Linux
    b. Guest OS Version: <any from the below supported guest list>
7. Customize hardware:
    a. CPU: <choose from available list>
    b. Memory: <within available limit>
    c. Hard disk: <within available limit>
    d. Network Adapter: <default> (E1000e)
    e. USB controller: <default> (USB 3.1)
    f. CD/DVD Drive: Choose "Datastore ISO file" Browse datastore to upload/find the required ISO **and** click on Connect At Power On.
    g. Video Card: <default>
8. Ready to complete Finish

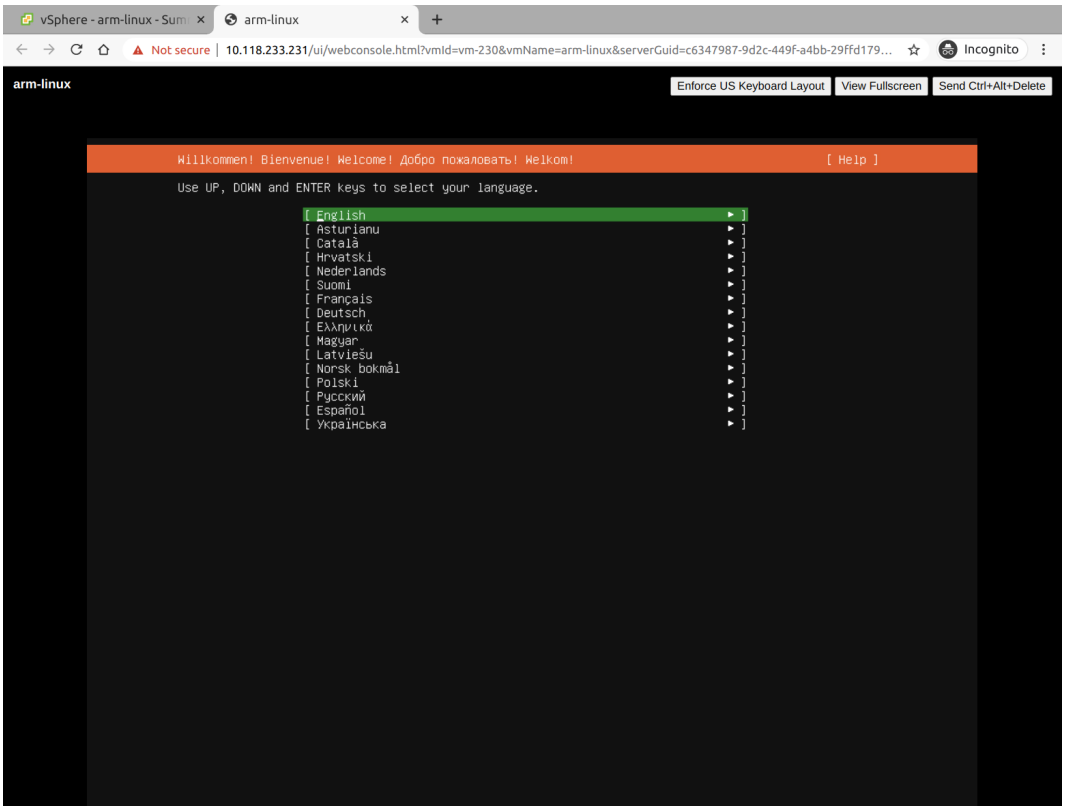


Powering on the VM should take you to the OS installer:



8.4. 4. Access VM Remote Console

Clicking on **Launch Web Console** opens a new browser window with the Web Console. Use the keyboard and mouse to interact with the VM.



9. Enabling vMotion

9.1. Tested Platforms

Platform	Supported
Ampere eMAG	Yes
HoneyComb LX2K	Yes
NXP FRWY	Yes
Raspberry Pi	Yes

General guide to vMotion on virtual machines:

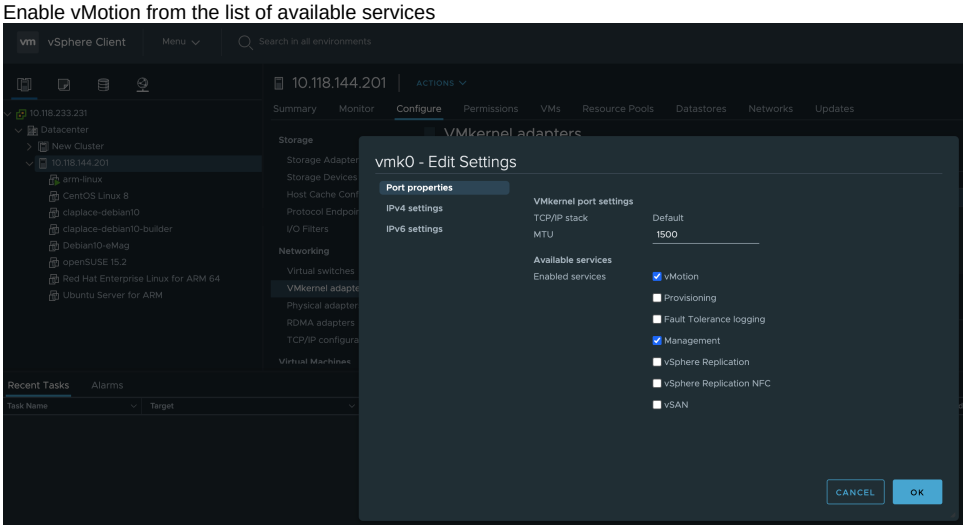
https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.vcenterhost.doc/GUID-D19EA1CB-5222-49F9-A002-4F8692B92D63.html

Note: Do not mix systems in the same cluster. E.g. do not mix eMAGs and Pies in the same cluster. Also, do not mix x86 and Arm systems in the same cluster.

9.2. Pre-requisites

1. It is recommended that a separate NIC be configured for vMotion and FT logging to ensure that sufficient bandwidth is available.
    a. From the vSphere Web Client navigate to the host **Configure Networking Vmkernel adapters**
    b. Choose the vmkernel port group to be configured for vMotion and select Edit

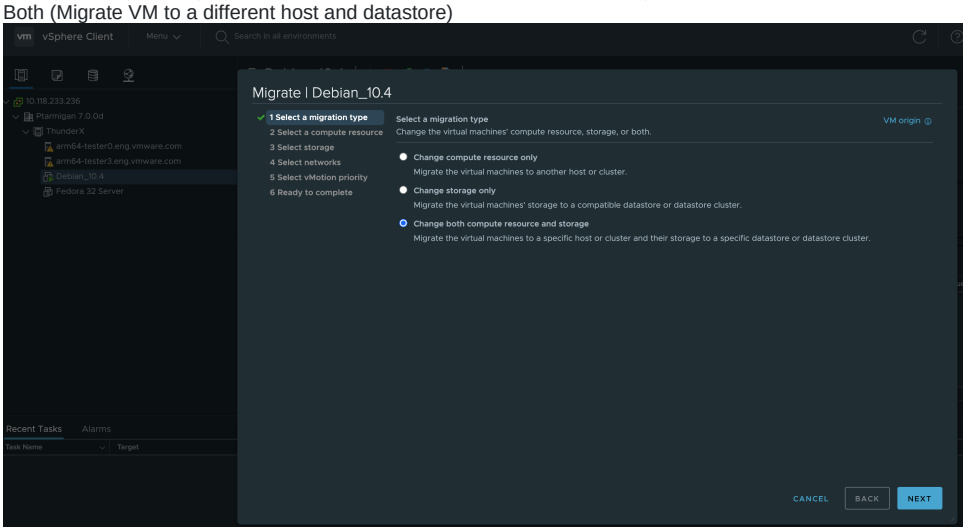
c. Enable vMotion from the list of available services



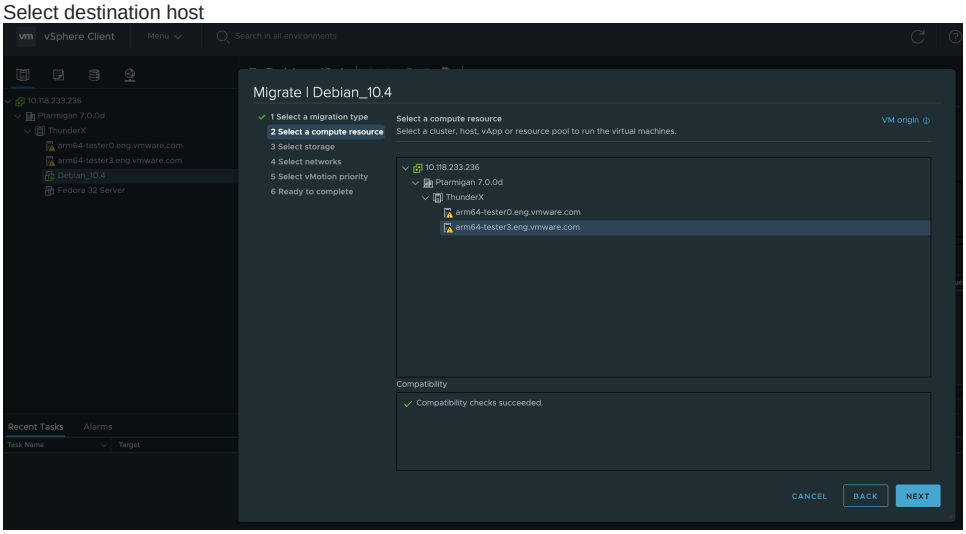
2. When you migrate virtual machines with vMotion and choose to change only the compute host, the VM needs to be on shared storage to ensure that it is accessible to both source and target hosts. Shared storage can be configured with a SAN, or implemented using iSCSI and NAS.

9.3. VM migration with vMotion

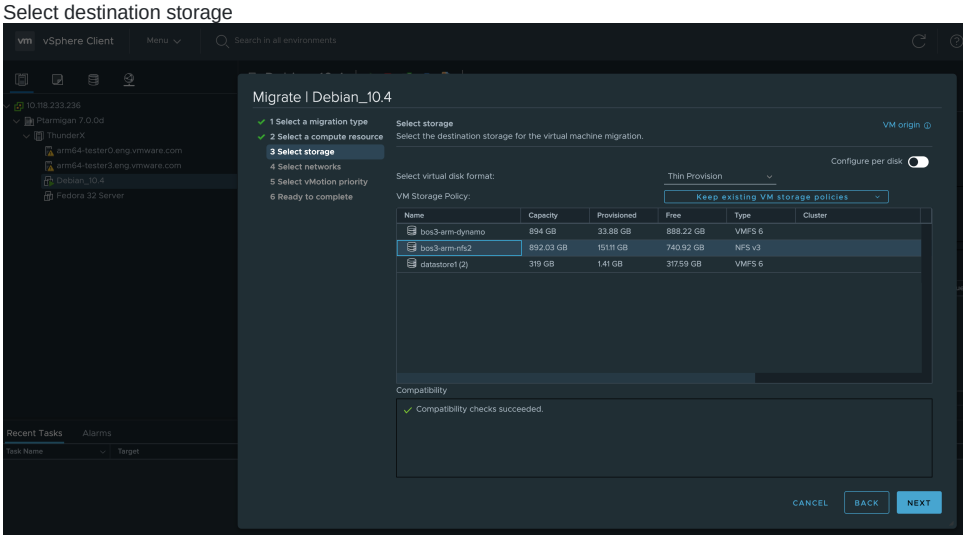
1. Navigate to the VM you want to migrate, right-click and select Migrate...
2. Select a migration type
    a. Change compute resource only (VM needs to be on shared storage)
    b. Change storage only (Migrate VM to a different datastore, but same host)
    c. Both (Migrate VM to a different host and datastore)



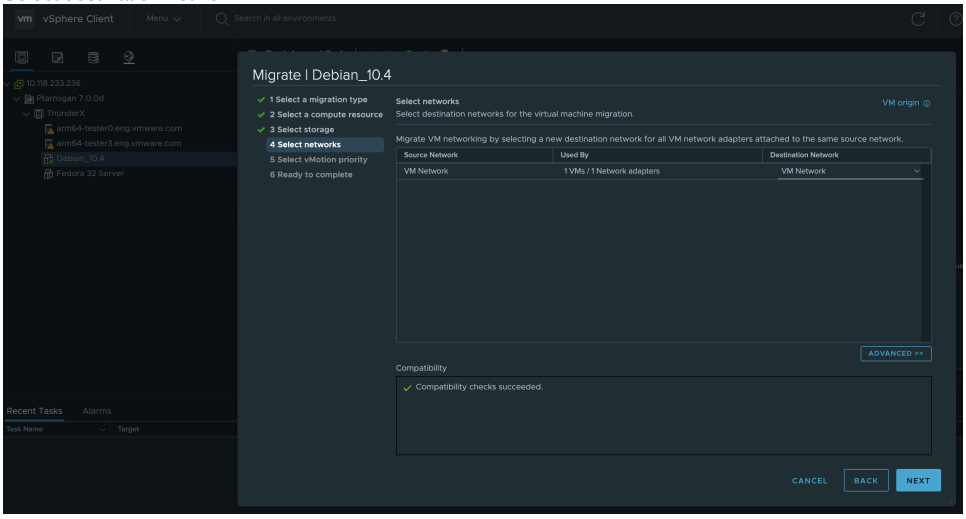
3. Select destination host



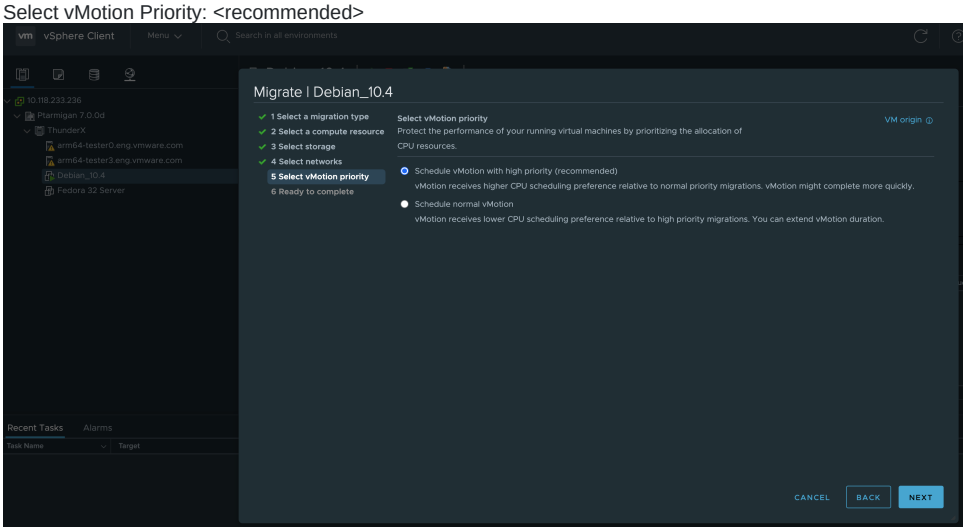
4. Select destination storage



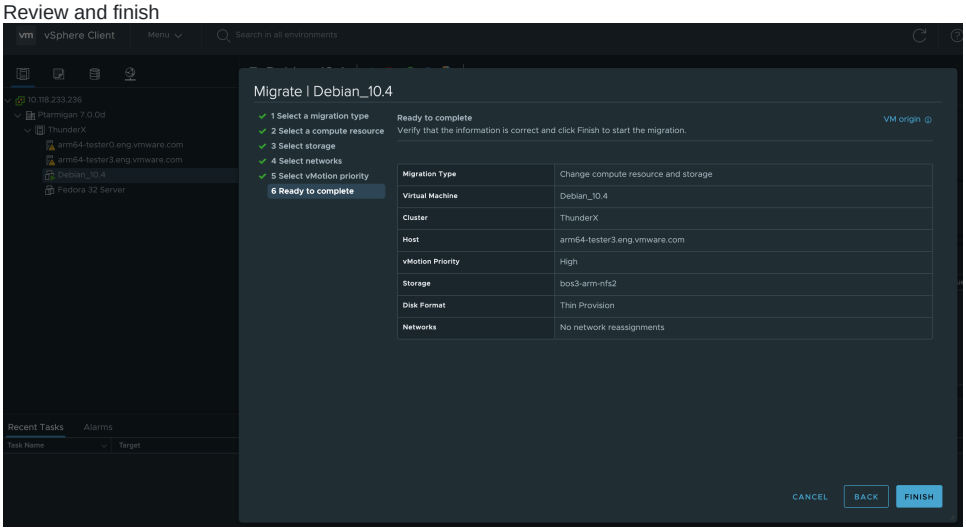
5. Select destination network



6. Select vMotion Priority: <recommended>



7. Review and finish



10. Enabling vSphere HA

10.1. Tested Platforms

Platform	Supported
Ampere eMAG	Yes
HoneyComb LX2K	Yes
NXP FRWY	Yes
Raspberry Pi 4B	Yes

10.2. Pre-requisites

1. Download the specific FDM VIB from the ESXi-Arm Fling site for your version of your vCenter Server. At launch of the fling, vCenter Server 7.0d (Build 16749653) and vCenter Server 7.0c (Build 16620007) are supported.

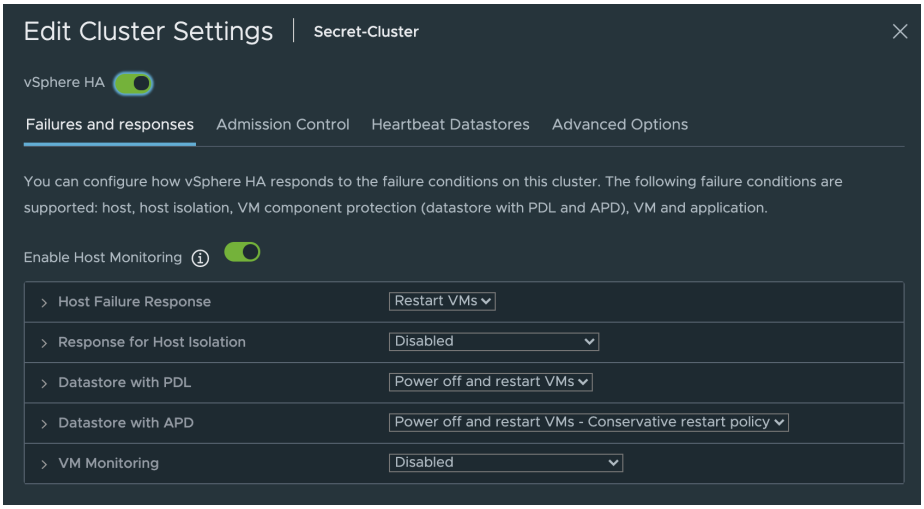
Step 1 - Upload the FDM VIB to ESXi host via SCP or vSphere Datastore Browser

Step 2 - Install the FDM VIB

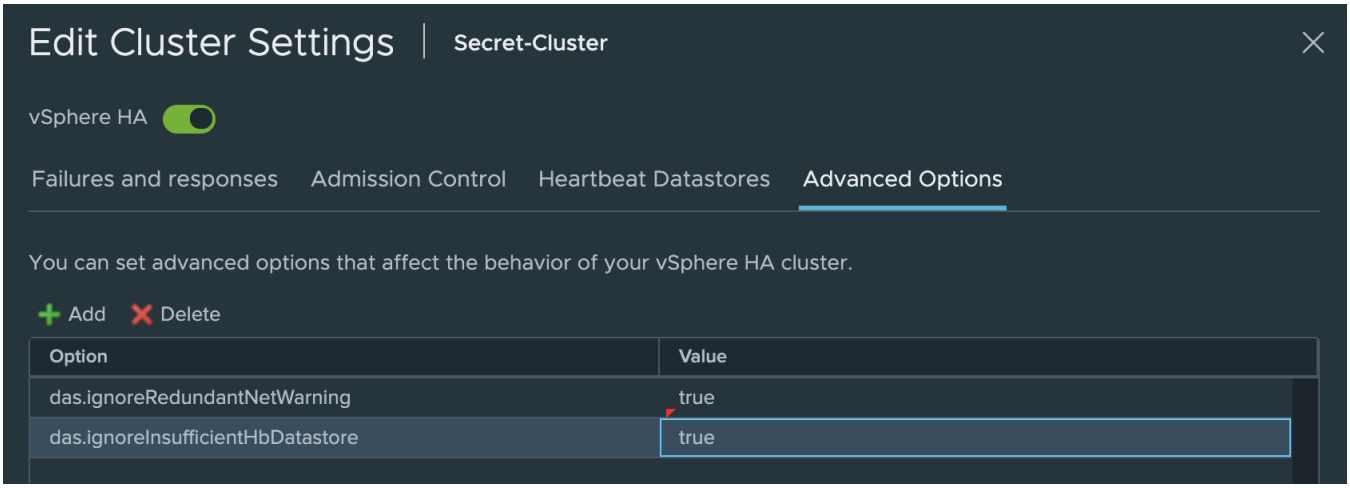
```
[root@rpi-2.primp-industries.com:~] esxcli software vib install -v /vmware-fdm-7.0c-16620014.arm64.vib --no-sig-check
```

```
Installation Result
   Message: Operation finished successfully.
   Reboot Required: false
   VIBs Installed: VMware_bootbank_vmware-fdm_7.0.0-1620014
   VIBs Removed:
   VIBs Skipped:
```

Step 3 - Enable vSphere HA on the vSphere Cluster



Step 4 - If you wish to get rid of "*The number of vSphere HA heartbeat datastores for this host is 1, which is less than required: 2*" message, you can add the following Advanced Setting **das.ignoreInsufficientHbDatastore** = **true** and then right click on one of the ESXi hosts and select "**Reconfigure for vSphere HA**" operation the message to go away



11. Enabling vSphere Fault Tolerance

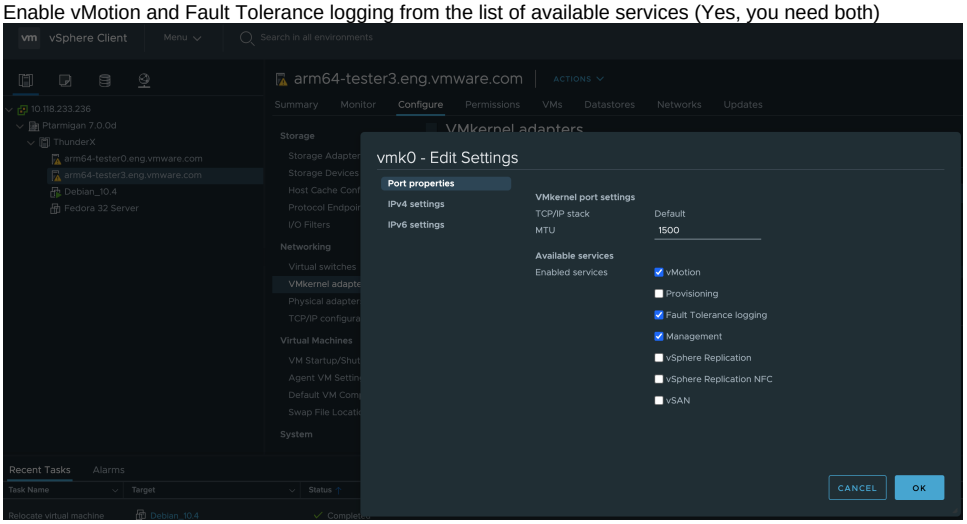
11.1. Tested platforms

Platform	Supported
Ampere eMAG	Yes
HoneyComb LX2K	Untested, should work
NXP FRWY	No
Raspberry Pi 4B 8GB	Yes
Raspberry Pi 4B 4GB	No

11.2. Pre-requisites

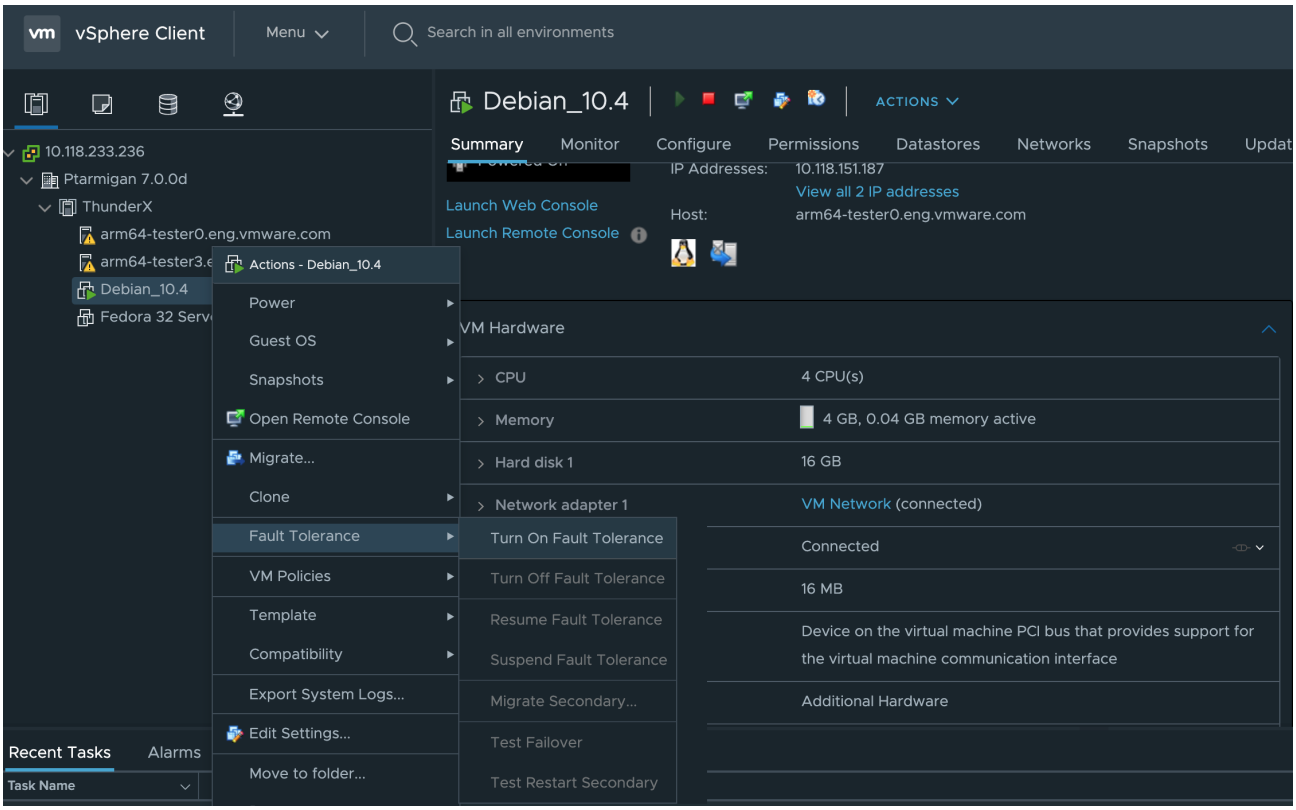
0. Suggested reading - General guide to FT on virtual machines: https://docs.vmware.com/en/VMware-vSphere/7.0/com.vmware.vsphere.avail.doc/GUID-7525F8DD-9B8F-4089-B020-BAA4AC6509D2.html

1. It is recommended that a separate NIC be configured for vMotion and FT logging to ensure that sufficient bandwidth is available.
    a. From the vSphere Web Client navigate to the host **Configure Networking Vmkernel adapters**
    b. Choose the vmkernel port group to be configured for FT and select Edit
    c. Enable vMotion and Fault Tolerance logging from the list of available services (Yes, you need both)



2. vSphere HA should be enabled for the cluster. See **Enabling vSphere HA** section for detailed instructions

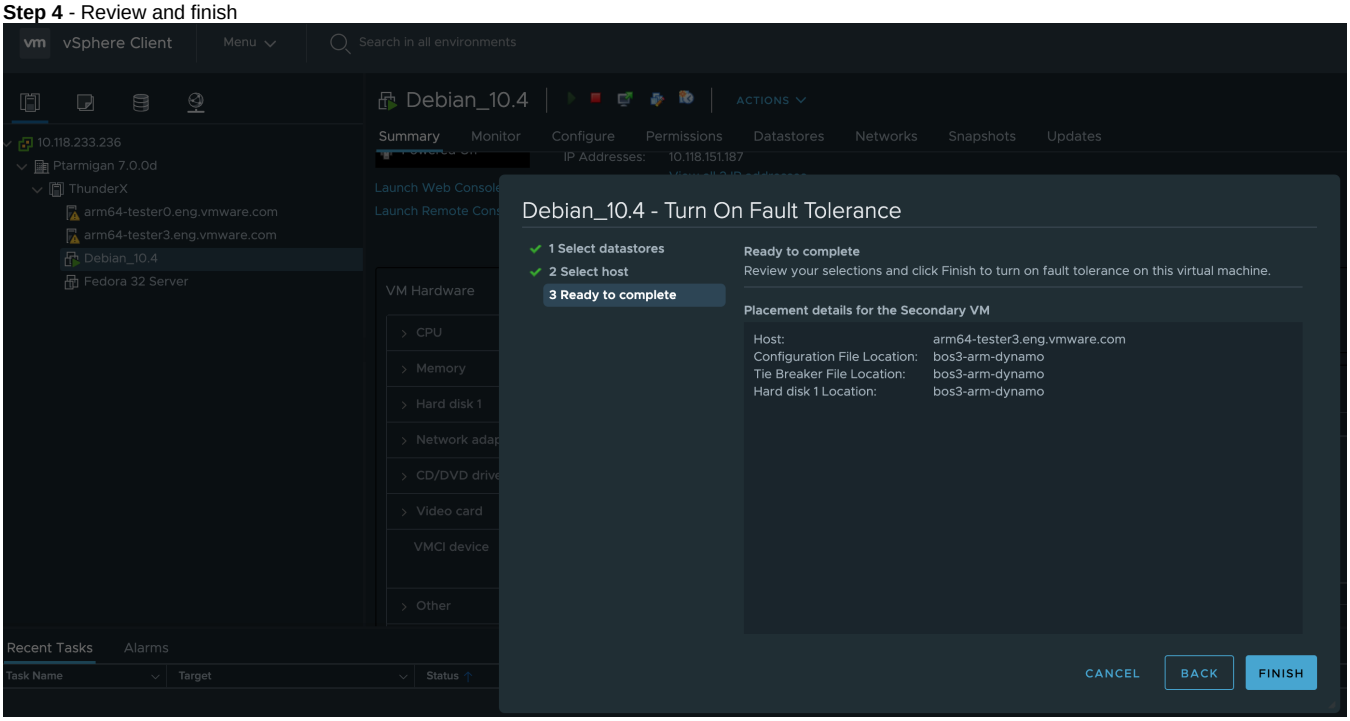
Step 1 - Browse to the VM in vSphere web client Right-click and select **Fault Tolerance Turn On Fault Tolerance**



Step 2 - Select a datastore where the Secondary VM is to be placed

Step 3 - Select a host where the Secondary VM is to be placed

Step 4 - Review and finish



Step 5 - Testing FT with failover

1. Make sure the VM configured for FT is turned on
2. Browse to the VM in vSphere web client Right-click and select **Fault Tolerance Test Failover**
   (The secondary VM in the second host should now be the primary VM)

12. VMware Tools

ESXi-Arm does not include an installable version of VMware Tools for Arm Guest Operating Systems. To install VMware Tools, you will need to manually compile Open VM Tools for your specific Guest Operating System.

Here is an example of compiling latest Open VM Tools 11.1.5 for Ubuntu 20.04 AARCH64

Step 1 - Update and Install the following package dependencies:

```
apt update
apt install -y automake-1.15 pkg-config libtool libmspack-dev libglib2.0-dev libpam0g-dev libssl-dev libxml2-
dev libxmlsec1-dev libx11-dev libxext-dev libxinerama-dev libxi-dev libxrender-dev libxrandr-dev libgtk2.0-dev
libgtk-3-dev libgtkmm-3.0-dev
```

Step 2 - Clone Open VM Tools git repo:

```
git clone https://github.com/vmware/open-vm-tools.git
cd open-vm-tools/open-vm-tools/
```

Step 3 - Run the following commands to build and install Open VM Tools:

```
autoreconf -i
./configure
sudo make
sudo make install
sudo ldconfig
```

Step 4 - We need to create a systemd unit file so we can enable and start Open VM Tools Daemon upon startup. Run the following command to create **vm toolsd.service** file

```
```

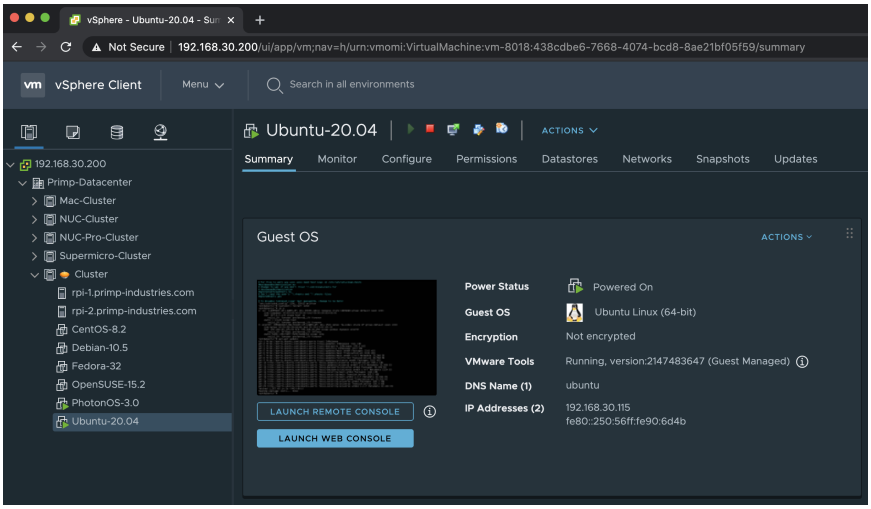
```
cat > /etc/systemd/system/vmtoolsd.service << EOF
[Unit]
Description=
Description=Open VM Tools
After=
After=network-online.target

[Service]
ExecStart=
ExecStart=/usr/local/bin/vmtoolsd
Restart=always
RestartSec=1sec

[Install]
WantedBy=multi-user.target
EOF
```

Step 5 - Enable and Start Open VM Tools Daemon and verify using either the ESXi Host Client UI or vSphere UI that Open VM Tools is now running

```
systemctl enable vmtoolsd.service
systemctl start vmtoolsd.service
```



13. Applications and Functionality to Test on ESXi-Arm

13.1. Datacenter and Near Edge

For larger capacity servers such as those based on the Ampere Computing eMAG 8180, a number of system benchmarking tools including https://github.com/ARM-software/meabo exist to help you understand the capabilities and performance you can obtain on your system. VMware also offers Weathervane that can be used to stress test K8 clusters.

13.2. Mid-Edge (HoneyComb LX2K)

For smaller mid-range hardware, you can test one of several Edge computing Cloud framework such as Amazon's AWS Greengrass platform which is an IoT Edge processing offering integrated with AWS Cloud services and capable of running offline or when networking is intermittent. Greengrass allows execution of Lambdas, ML models, event processing and more. You can find out more about the supported Arm platforms here. Similarly, Azure IoT Edge is the Microsoft Azure Edge processing platform for IoT offering a range of services such as Azure functions, streaming analytics, ML models and more. Azure IoT Edge supports multiple Arm platforms including Arm64. You can find out more details on the supported Arm platforms here.

13.3. Far Edge (Raspberry Pi 4, NXP FRWY)

For the RPi4, check out the various Arm compatible OS options available including Photon OS and we suggest testing various VM lifecycle operations such as power events, snapshots, maintenance mode, vMotion, creation of clusters. Exercise the use of resource reservations to ensure the limited CPU & memory resources go to the highest priority VMs. Test VMware HA by simulating a node failure if you have a cluster, and even test out Fault Tolerance

for a zero-downtime far Edge solution. We hope these suggestions are helpful but we know you'll have many of your own ideas about how to use this technology and we look forward to hearing about your use-cases and experience.

14. Troubleshooting

14.1. Support

If you are running into installation or setup issues with the ESXi-Arm Fling, please use the Comments and/or Bug section of the ESXi-Arm Fling website.

In addition, you can also engage with the ESXi-Arm team and community on Slack at #esxi-arm-fling on VMware {code}

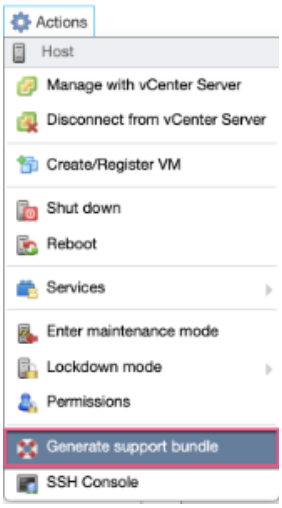
14.2. Generating Support Bundle

If you are able to install ESXi-Arm Fling and still having issues, it is recommended that you provide a support bundle which can be accessed by Engineering. You can either share a public download URL in the Comments/Bugs section of the ESXi-Arm Fling website or you can directly share that with someone from ESXi-Arm team via private Slack direct message.

There are two methods to generate support bundle, using either the ESXi Host Client UI or ESXi Shell.

14.2.1. ESXi Host Client UI

Open browser and login to the ESXi-Arm IP Address/Hostname. Under Actions, select "**Generate support bundle**" and once the support bundle has completed, you will be provided a download link.



14.2.2. ESXi Shell

SSH to ESXi-Arm IP Address/Hostname and then type vm-support. Once the support bundle has completed, you will need to SCP it off the ESXi-Arm host to your local desktop.

15. Known issues

15.1. ESXi

15.1.1. Network and disk monitoring may not be accurate

This is largely dependent on I/O drivers, some of which are in-development.

15.1.2. Virtualization

15.1.2.1. Performance Monitoring Counter support in VM

PMUv3 is not implemented, and is not advertised to the guest. Linux does not attempt to use it, however if another Guest OS tries to access it, the Virtual Machine will stop immediately.

15.1.2.2. vMotion is not supported between hardware with different SoCs

Do not attempt to migrate a running Virtual Machine between different systems (e.g. Ampere eMAG and a Raspberry Pi).

15.1.2.3. ACPI operating systems are not supported

The virtual machine only models DT (device tree) today.

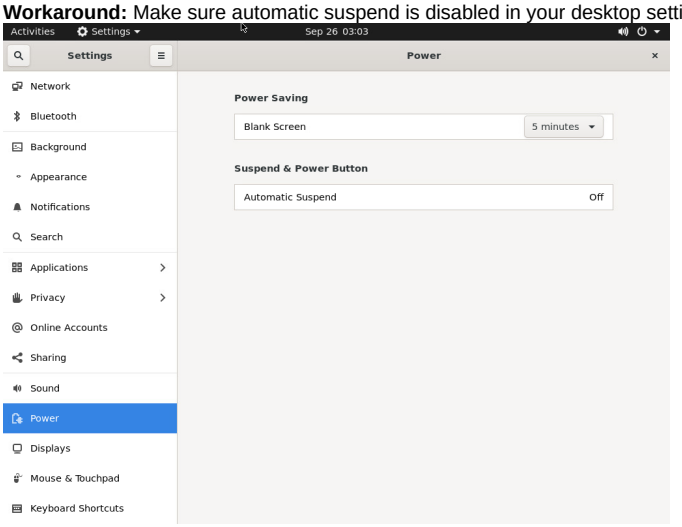
15.1.2.4. Fixed-size frame buffer graphics

The UEFI GOP frame buffer defaults to 1024x768. It is also not accelerated.

15.1.2.5. Guest VM hangs with black screen after a while

A Linux VM may be configured to enter a low power mode (aka "suspend to idle", nothing to do with suspending VMs).

Workaround: Make sure automatic suspend is disabled in your desktop settings.



15.1.2.6. Paravirtualized drivers are not built in Linux

VMXNET3, VMCI, PVSCSI, SVGA3 and balloon drivers are generally not available in standard Linux distributions. With the exception of Ubuntu having VMXNET3 support.

15.1.2.7. USB1.1 is not supported in Debian

Debian does not come with the ohci-hcd driver, and will not detect the keyboard and pointing devices if virtual USB1.1/USB2 controllers are enabled.

Workaround: Only use virtual USB3 controller (which is the default when creating a Virtual Machine).

15.2. vCenter

15.2.1. *A general system error occurred: Unable to push signed certificate to host*

The warning message is shown in vSphere UI when adding ESXi-Arm host to vCenter Server. This occurs as there is a time skew between the ESXi-Arm host and vCenter Server, and is exacerbated due to some systems (e.g. Raspberry Pi) not having a battery backed RTC.

Workaround: Ensure all systems sync their time from the same source. For detailed instructions on configuring NTP for ESXi-Arm host, please refer to the "**VMware ESXi Host Client**" section.

15.2.2. vSphere Auto Deploy is not supported for arm64 hosts

The vSphere Auto Deploy can not be used with arm64 hosts.