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RCC-VE ESXi 6.0 Guide

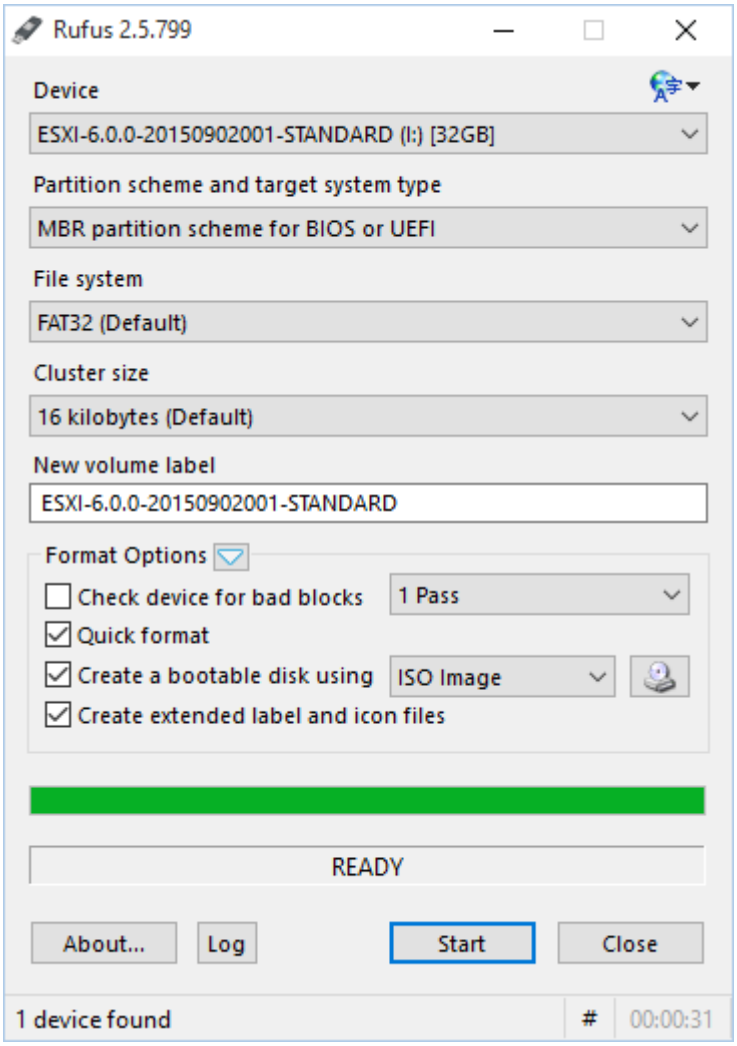
This guide will cover two ways to install and use ESXi on RCC-VE devices. This guide was written for the RCC-VE 4860, but applies to any RCC-VE device.

Prerequisites:

- Update the BIOS on the RCC Series unit to version 06 or later
- ESXi 6.0.0 Update 1 installer .ISO image downloaded from VMware.
- USB memstick with a capacity of 4 to 8 GB.
- Windows or OS X system from which to write the image and connect to the console.
- Connect a network cable that is attached to the local LAN to the RCC Series unit. On 6-port models, use port labeled **eth2**, 4-port models use **eth0**.
- Connect to the console port of the RCC-VE using a mini-USB cable attached to another system.

Preparing the installation

Write the ESXi installer .iso file to a USB memstick. Rufus on Windows is the recommended utility, and it is shown below.



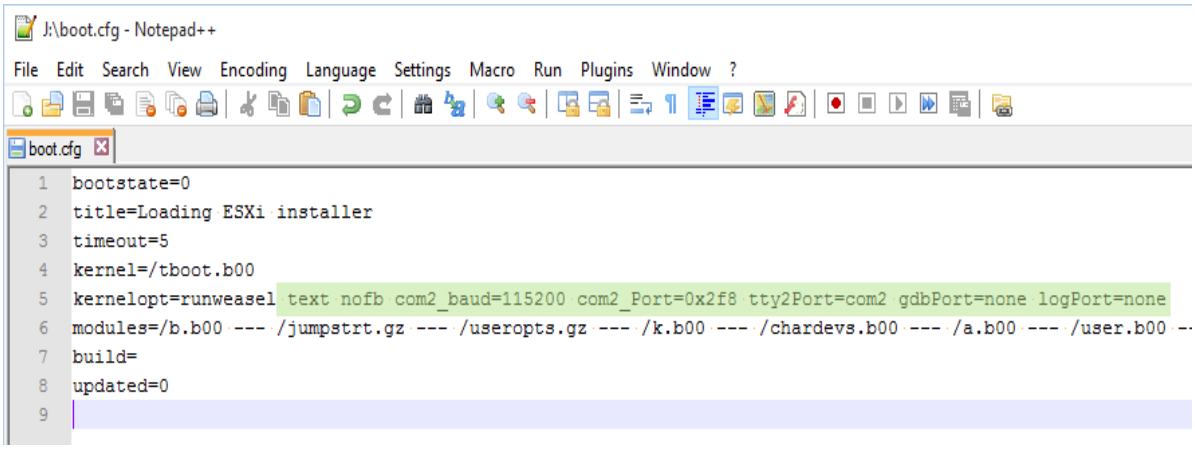
If Rufus displays a dialog stating that it wants to update `menu.c32`, allow it to do so.

After the flashing process is complete, edit the file `boot.cfg` file in the root directory of the ESXI installer with appropriate settings to boot USB on RCC-VE. Notepad++ on Windows is shown below, however the same is possible with any equivalent editor on Windows or other platforms such as such as Kate, CotEditor, TextMate, UltraEdit, and so on.

Windows Notepad cannot be used. It does not properly handle UNIX line termination in the file, making it unreadable.
At the end of the line starting with `kernelopt=runweasel`, add the following:

```
text nofb com2_baud=115200 com2_Port=0x2f8 tty2Port=com2 gdbPort=none logPort=none
```

It will look like the following image:



Save the file and unplug the USB memstick.

Insert the USB memstick containing the ESX installer into the RCC Series unit.

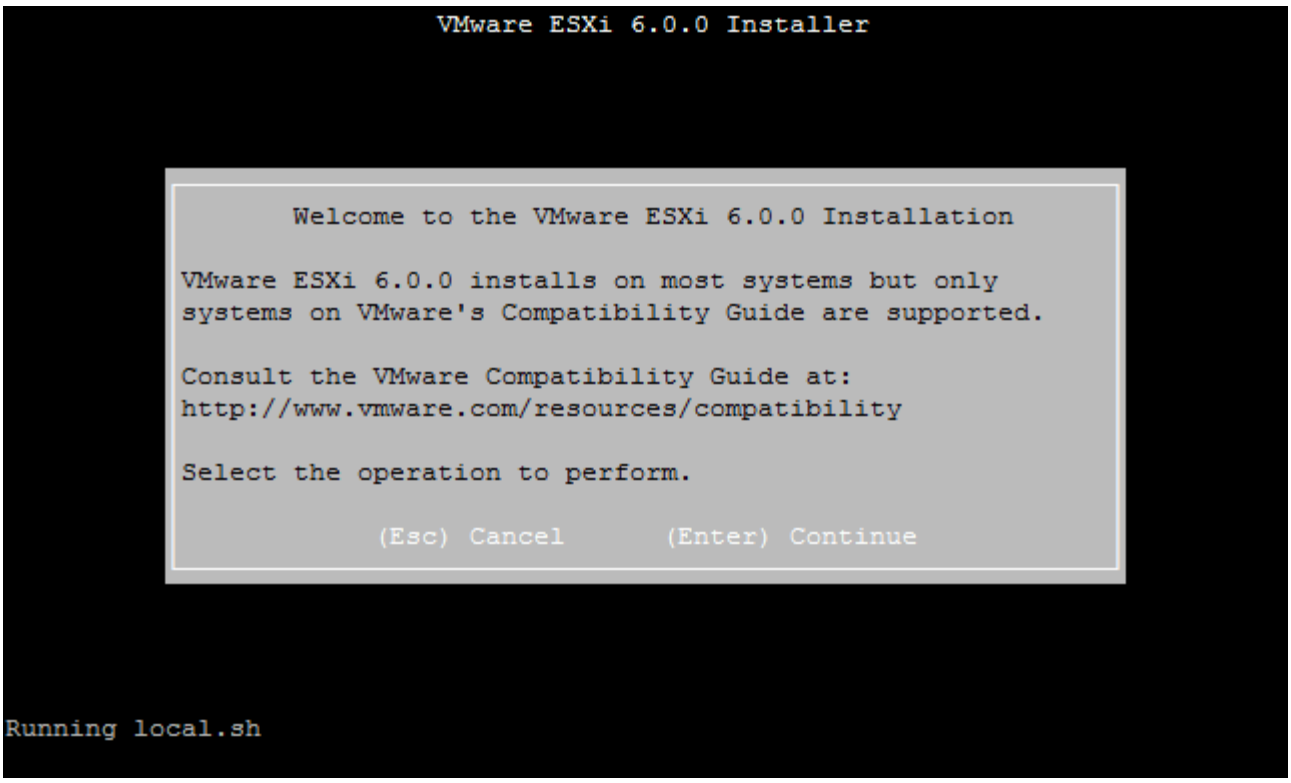
If the installation target will be another USB memstick, insert it now.

Installing ESXi on RCC-VE

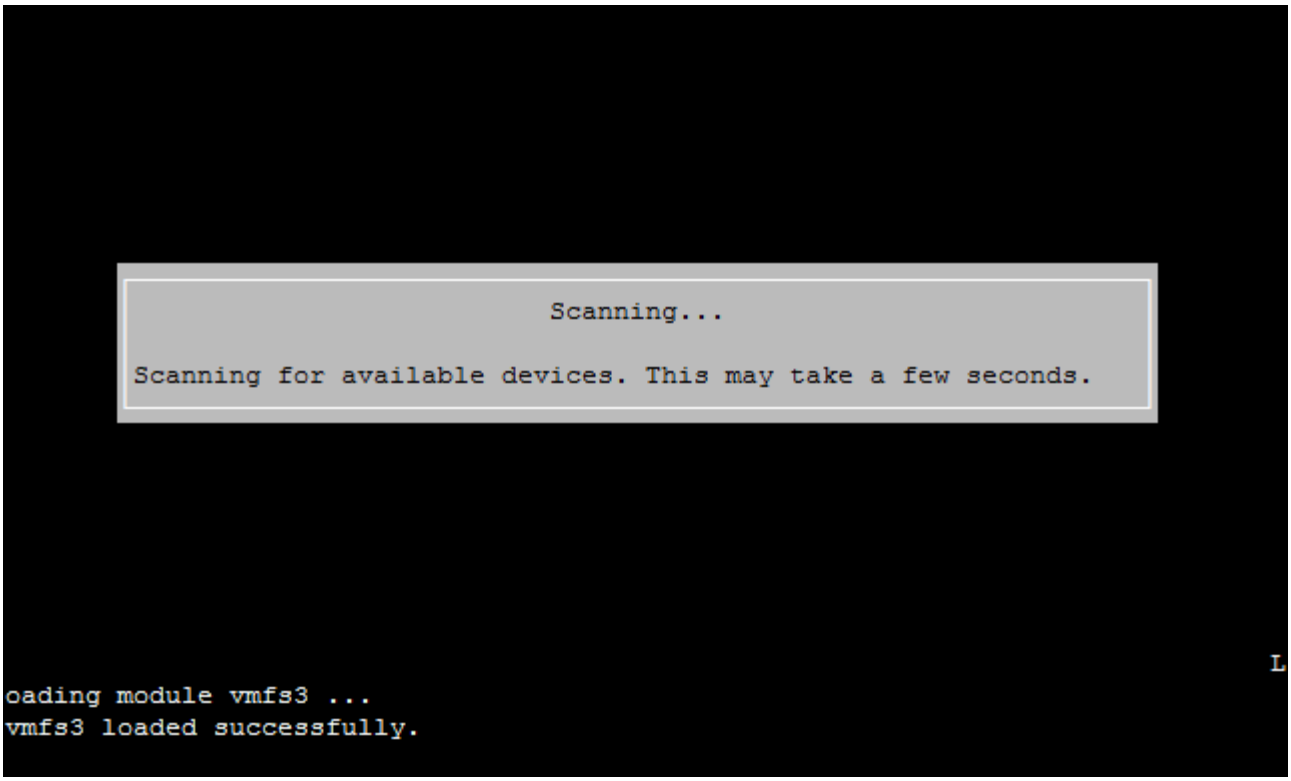
The screenshots in this part of guide were made using PuTTY on Windows. Read the First Steps Guide.

With the USB memstick(s) in place and the serial console connected, apply power to the RCC Series unit.

By default, The RCC Series unit boots from USB first, so if `boot.cfg` was edited correctly, the ESXi installer welcome screen will appear.



From here on it is a standard ESXi installation which is straightforward. Press `Enter` to continue and start the installation process.

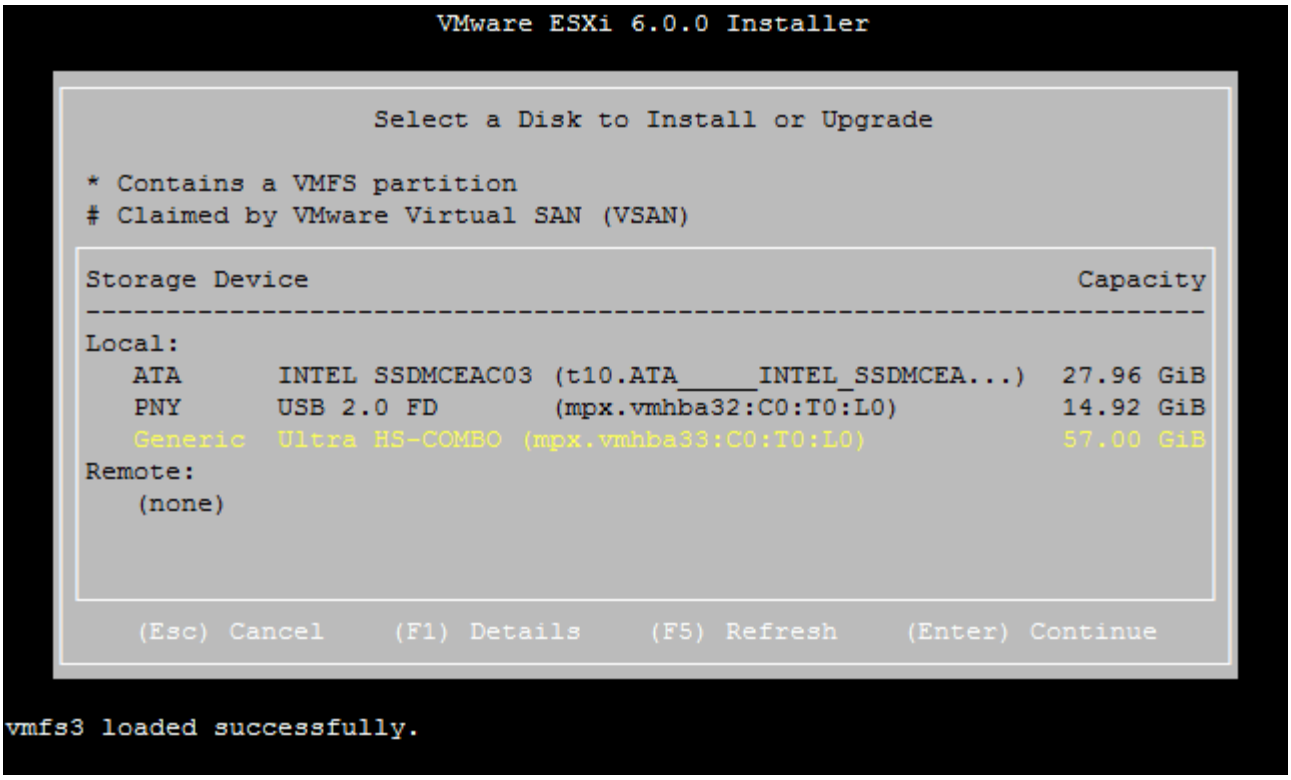


After the RCC-VE disks are scanned a list of available disks is presented.

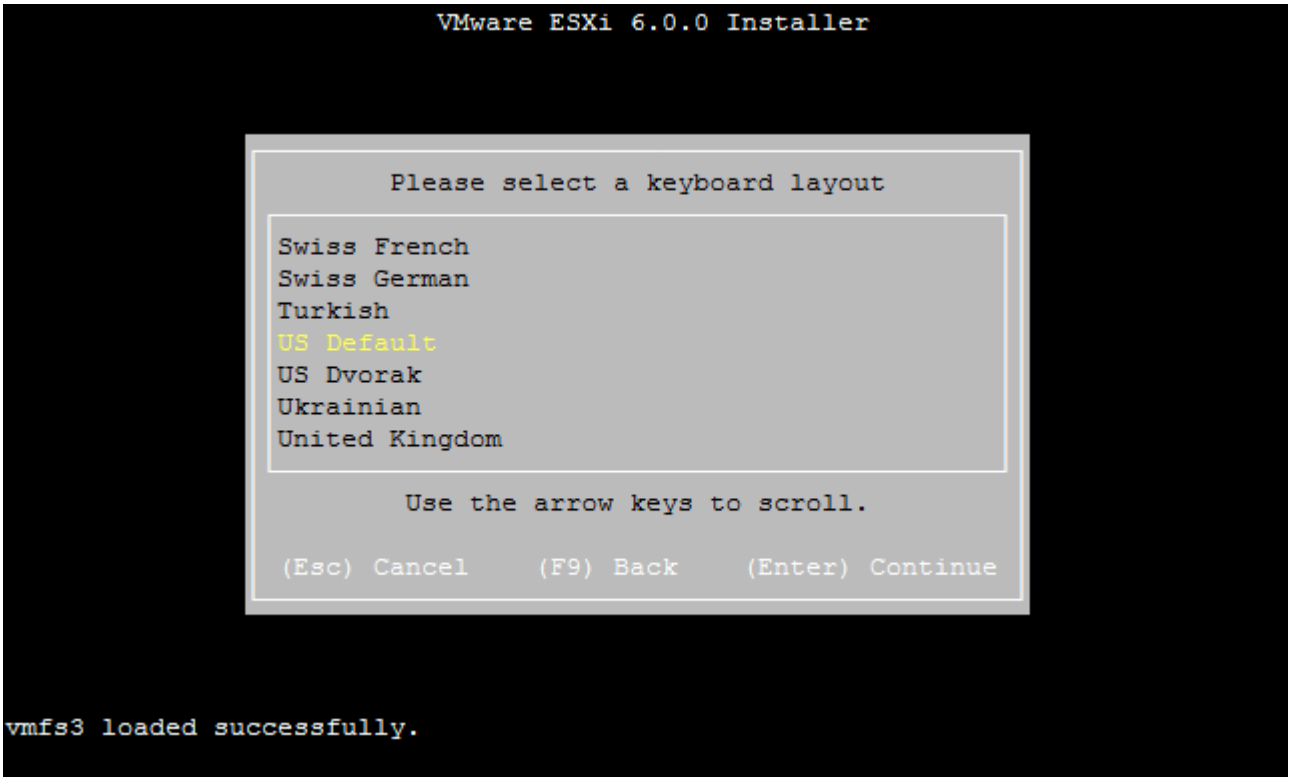
On the screen **Select a Disk to Install or Upgrade** choose the installation target disk.

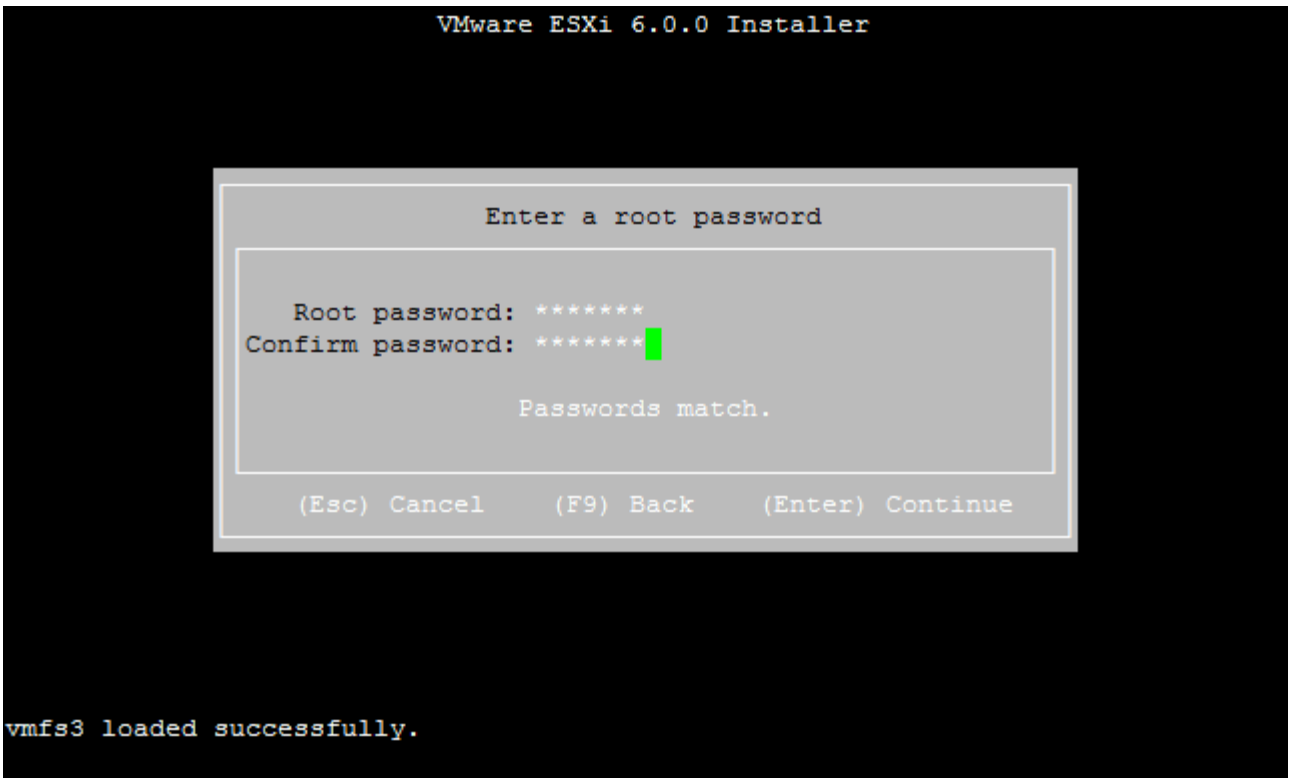
- If installing to the eMMC, choose **Generic Ultra HS-COMBO** which represents the built-in eMMC drive.

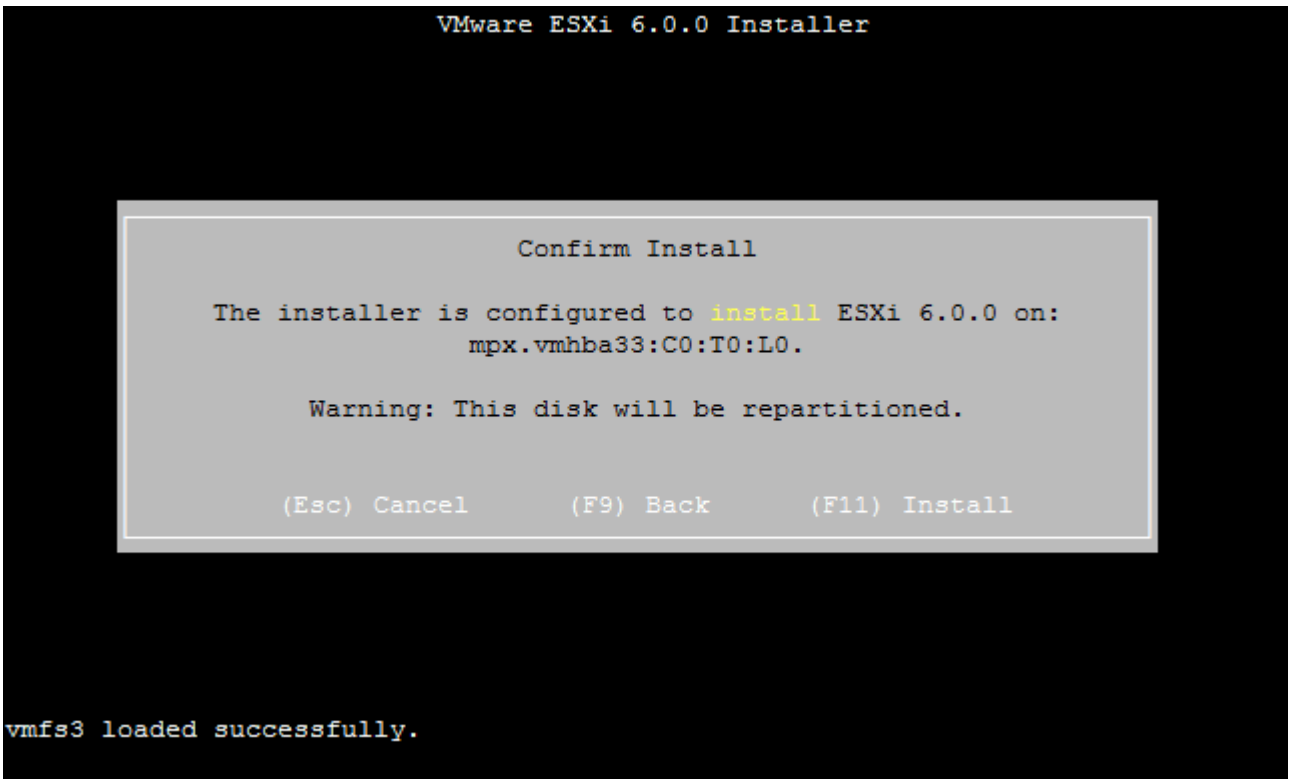
- If installing to another USB memstick, choose it from the list.

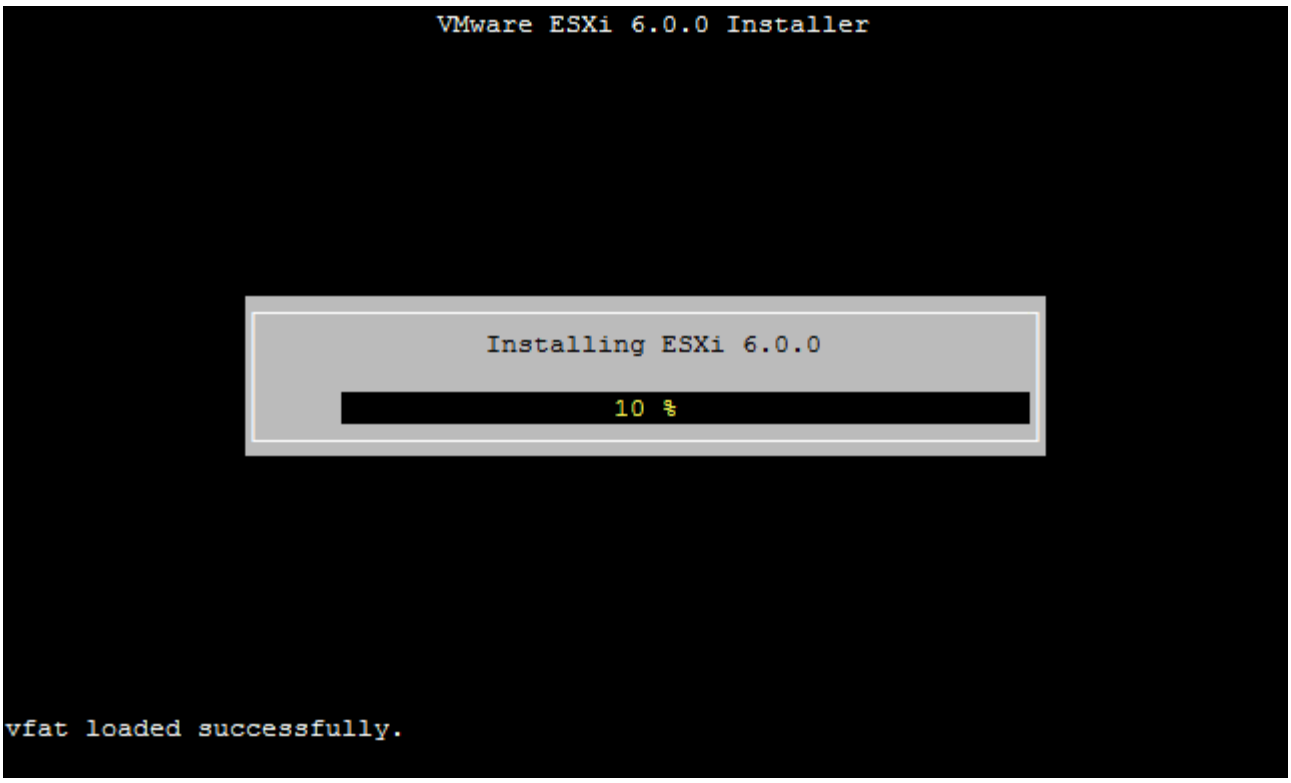


Next, select a keyboard layout, enter a new ESXi root password and finish the installation.




VMware ESXi 6.0.0 Installer
Enter a root password
Root password: *******
Confirm password: *******
Passwords match.
(Esc) Cancel
(F9) Back
(Enter) Continue
vmfs3 loaded successfully.


VMware ESXi 6.0.0 Installer
Confirm Install
The installer is configured to install ESXi 6.0.0 on:
mpx.vmhba33:C0:T0:L0.
Warning: This disk will be repartitioned.
(Esc) Cancel
(F9) Back
(F11) Install
vmfs3 loaded successfully.



When the **Installation Complete** screen is reached, remove the USB memstick containing the installer and press `Enter`.

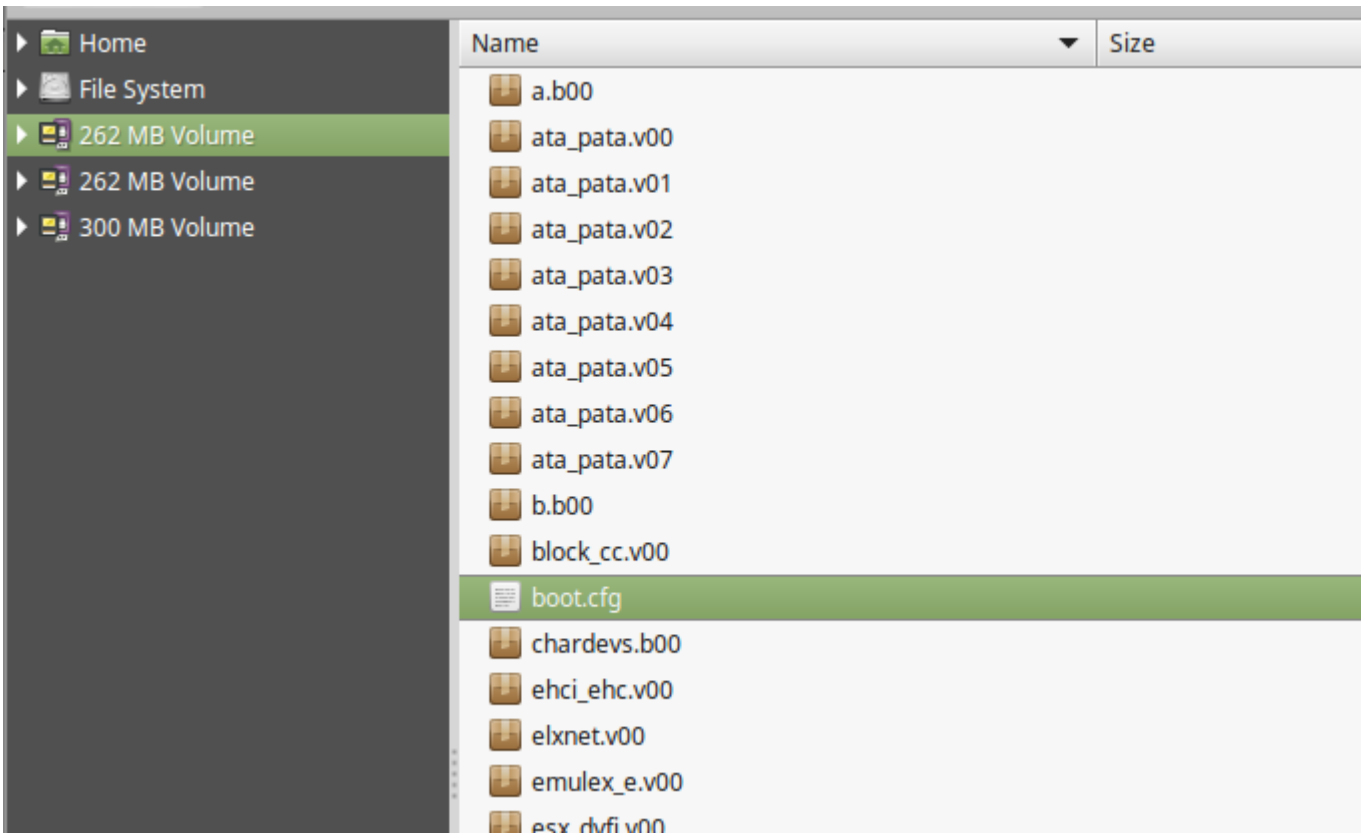
At this point the ESX installation is complete, but the console will not function properly. To fully activate the console, continue on to the next document that best fits the installation type being performed.

By default ESXi **does not** initialize the two i211 network interfaces on the left side even though ESXi does support these interfaces. The issue will be fixed in a future BIOS update.

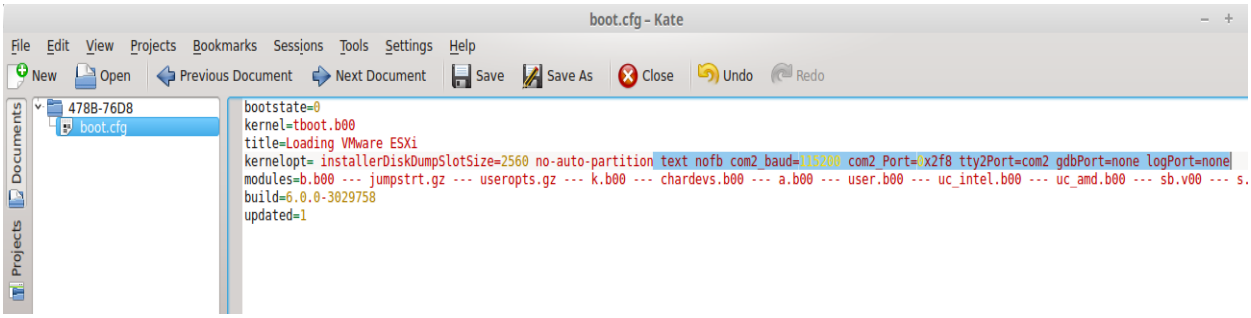
Activating the Service Console for a USB Install

- Remove power from the RCC Series unit after the installation has finished.
- Remove the USB memstick that was used as the installation target and connect it to a Linux or Mac OS X host. Three partitions are on the USB memstick, but not all of them may be shown.
- Open the second partition contains `boot.cfg` among many other files.

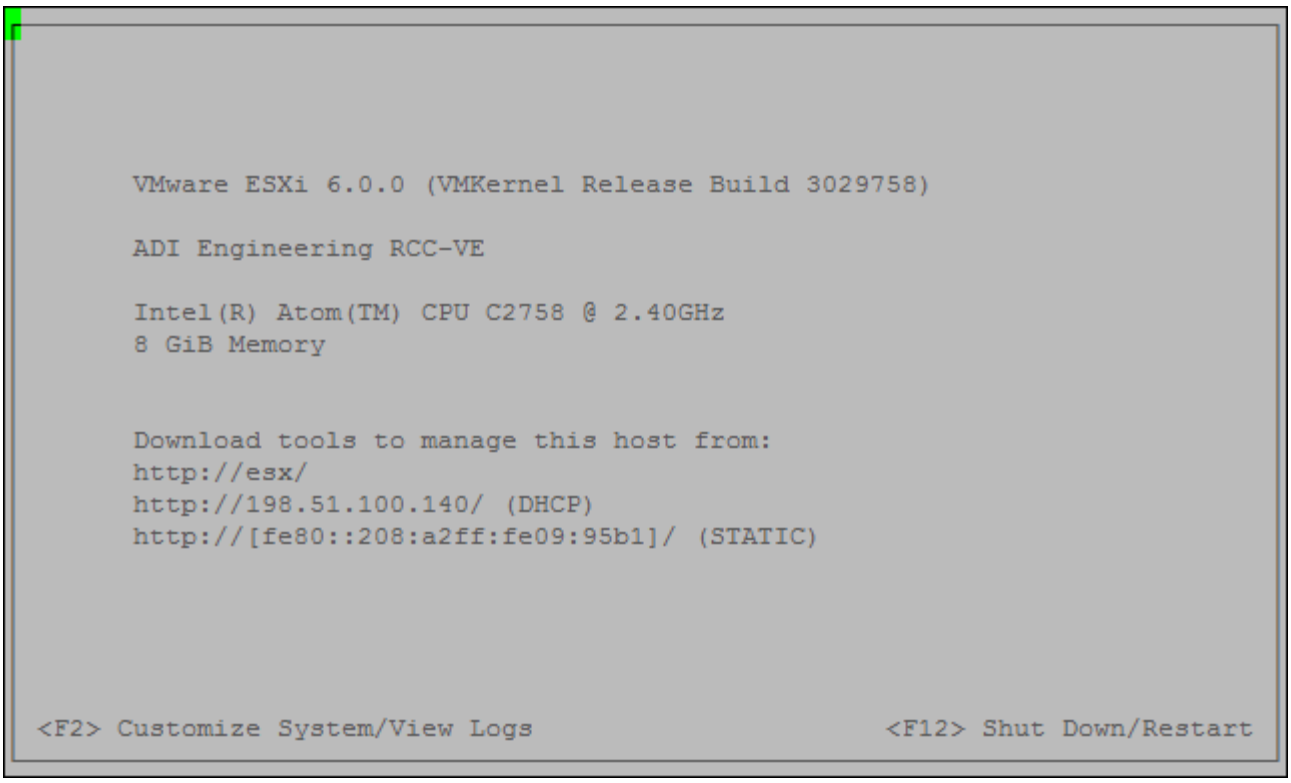
  It may not be appear as a second partition, make sure to edit the boot.cfg on the partition with files pictured in screenshot below.



- Open `boot.cfg` in a text editor such as CotEditor, Kate, or similar and add the following to the`kernelopt` line:
- `text nofb com2_baud=115200 com2_Port=0x2f8 tty2Port=com2 gdbPort=none logPort=none`

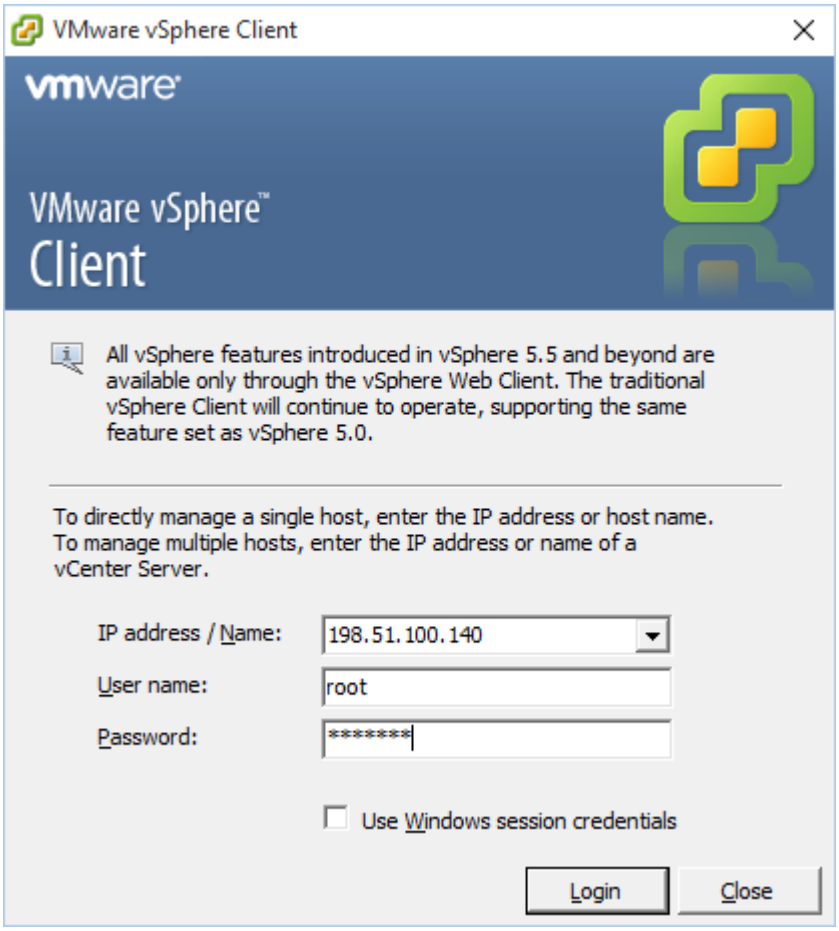


- Save the file and eject the USB memstick.
- Connect the USB memstick to the RCC Series unit and plug in the power
- Wait for ESXi to boot and the console is ready for use.
- ESXi is now fully installed. Login with the vSphere client to connect to ESXi.

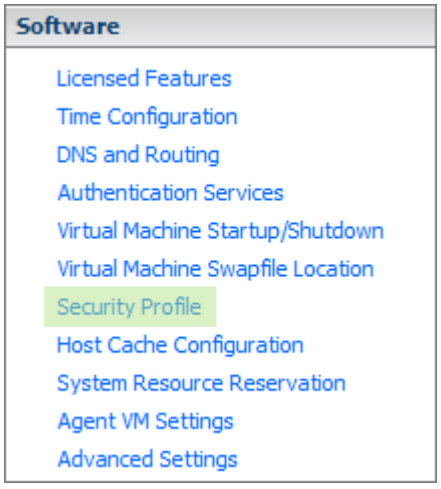


Activating the Service Console using SSH

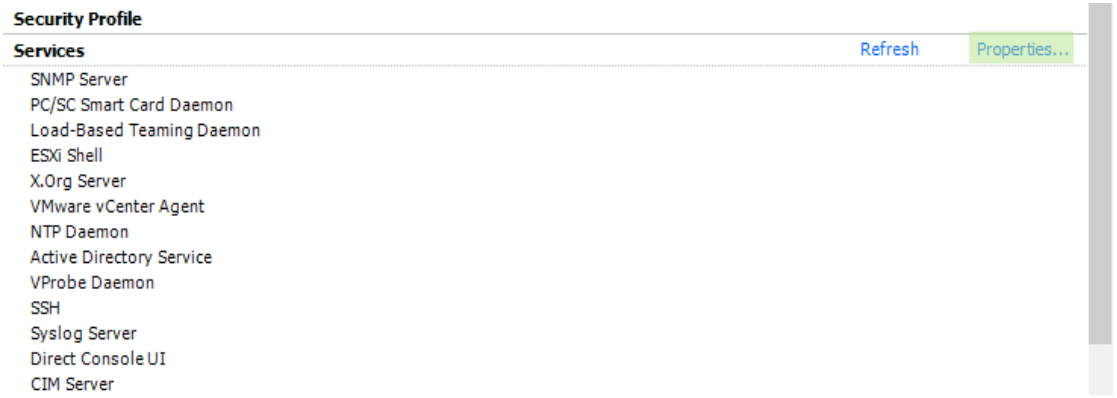
- Remove the USB memstick once the install has completed
- Allow the RCC Series unit reboot post-install
- ESX will have obtained an IP address via DHCP. Locate the IP address it obtained from the DHCP server.
- Launch the vSphere client and connect to the IP address found in the previous step, using the username `root` and the password configured during the installation.



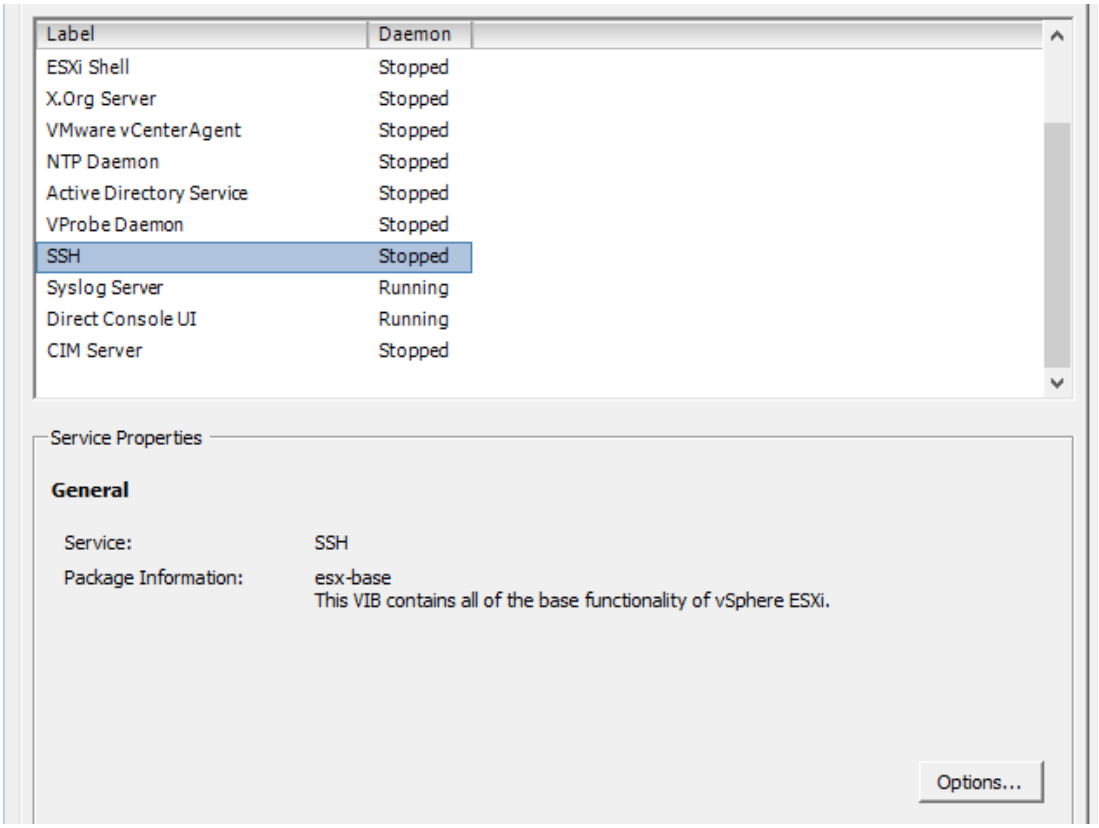
- Inside vSphere, enable SSH as follows:
  - Click on the server name in the left pane, typically the ESX units IP address
  - Click on the **Configuration** tab
  - Click **Security Profile** in the **Software** section



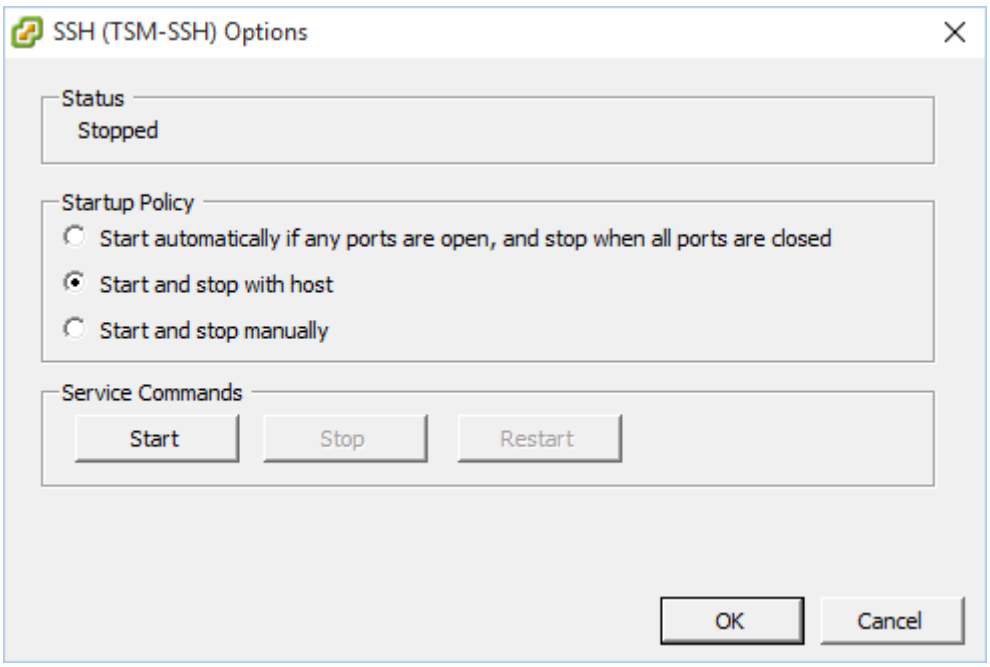
  - Click **Properties** in the **Services** section



- Locate SSH in the list, click it and then click **Options**



- Select **Start and stop with host**, then click **OK**
- Open the SSH service again and click **Start**



- Click OK

  Use another system on the same LAN and connect to the ESX server using SSH

  From the shell, locate the boot configuration:

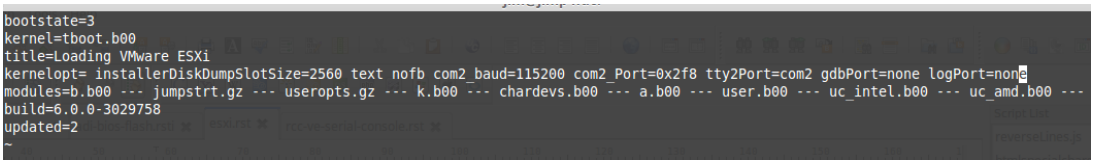
  ```
  find / -name boot.cfg
  ```

  Edit each instance found using the `vi` editor, for example:

  ```
  vi /vmfs/volumes/1c6872e4-a3ca960f-86ae-fdb7de376913/boot.cfg
  ```

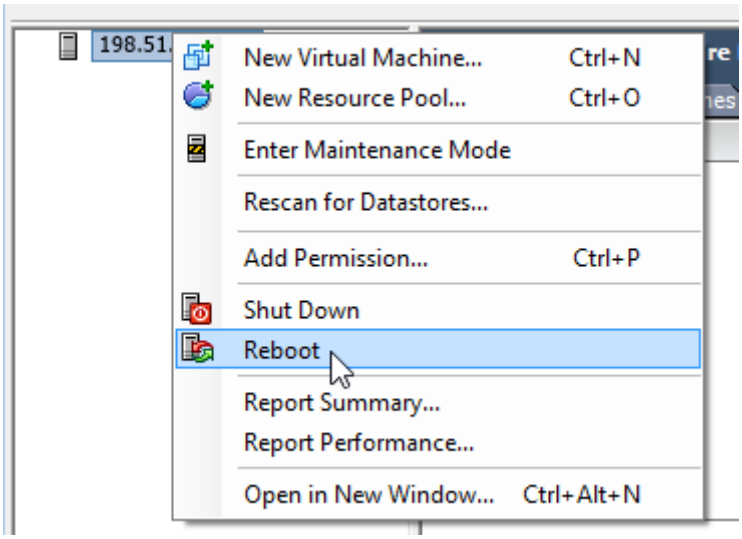
- In each file, add the following text at the end of the `kernelopt` line, leading with a `Space`(move the cursor to the end of the line and press `a`, then `Space`):

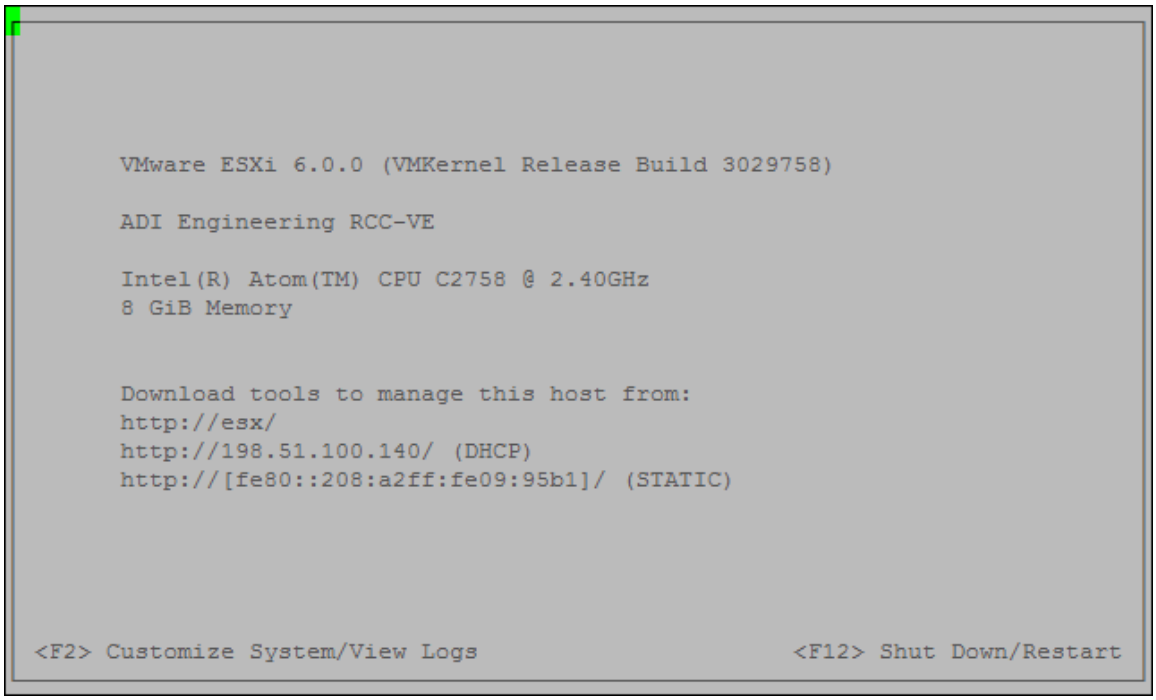
- `text nofb com2_baud=115200 com2_Port=0x2f8 tty2Port=com2 gdbPort=none logPort=none`



- Save the file (Press `Esc`, then type `:wq` and press `Enter`)

  Reboot the ESX server and check the console, it will now be operational.





If the system will not boot from the eMMC, ensure that the BIOS has been updated to version 06 or later. With BIOS version 06, during the boot process the boot order can be changed to prefer the eMMC by pressing `F12`, the option for Payload (e.g. `7`), then enter the letter for the eMMC (e.g. `i`), followed by `E` to save and exit.

Activating the Service Console using a Bootable Rescue Disk

The section covers editing VMware boot configuration installed on the eMMC drive with a CentOS 6.7 rescue disk.

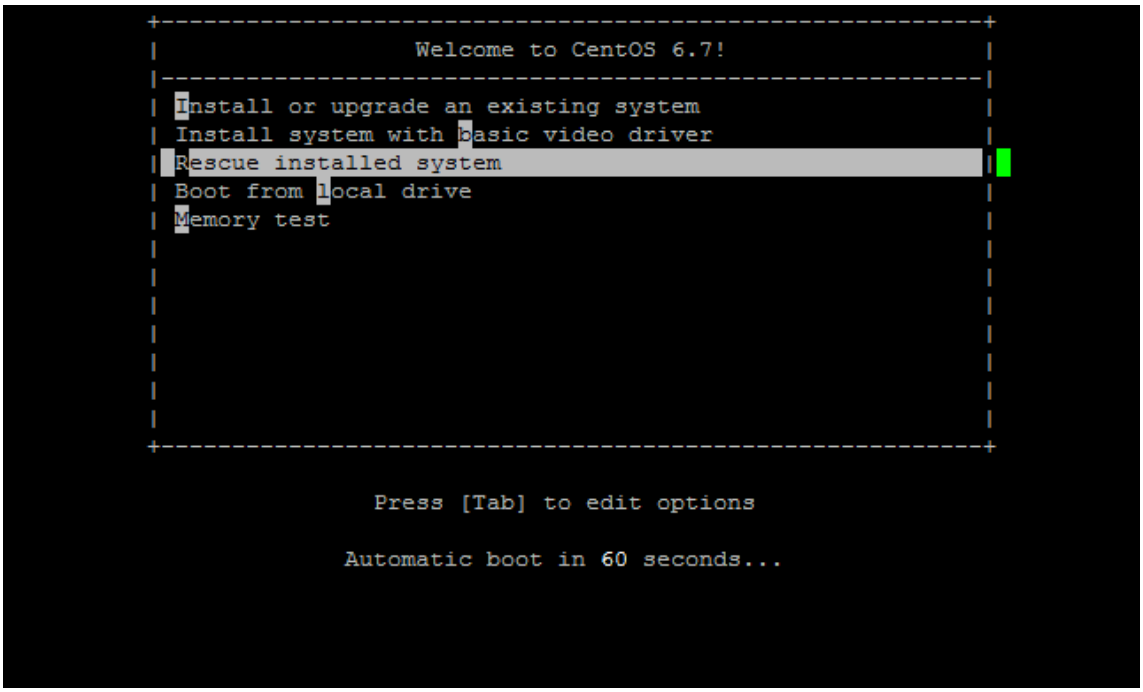
After installing ESXi to eMMC, download CentOS 6.7 in order to boot the recovery environment which allows editing of the `boot.cfg` as was done on the USB memstick for installation. This will allow ESXi to boot correctly on the RCC-VE.

Download CentOS 6.7, make sure it is **not** CentOS 7 because the boot procedure is different. The image file `CentOS-6.7-x86_64-minimal.iso` was used in this example.

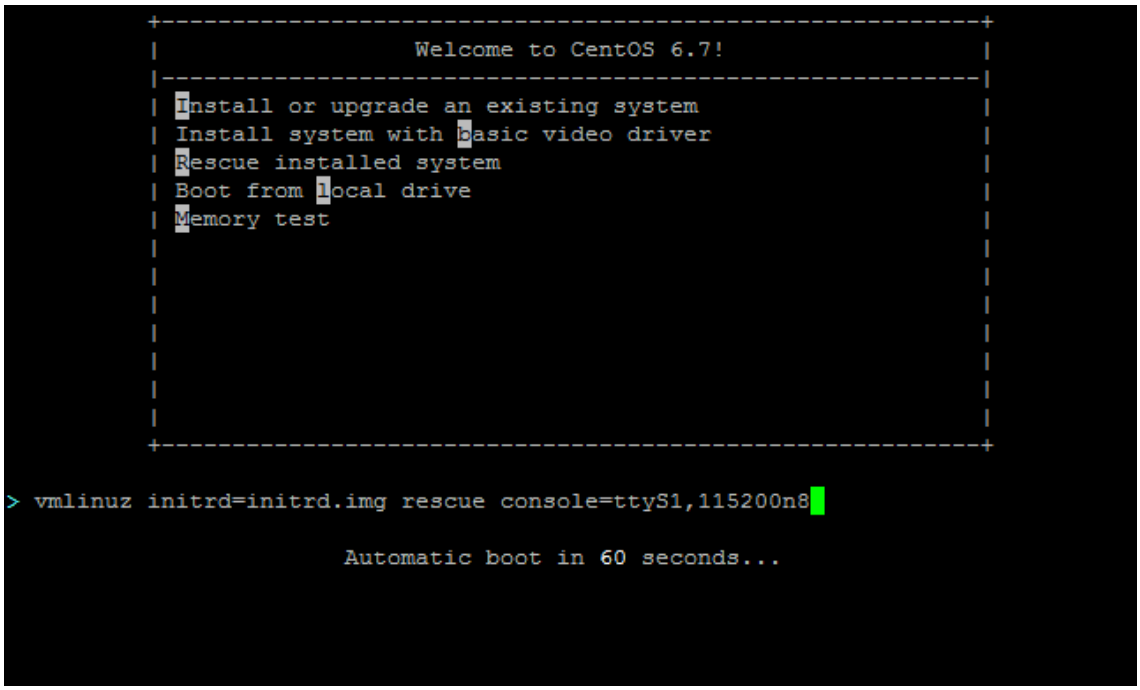
Write CentOS 6.7 to a USB memstick with Rufus, dd, or another similar utility.

After flashing CentOS to the USB memstick, plug it in the top USB port of the RCC-VE unit and power-cycle or turn it on.

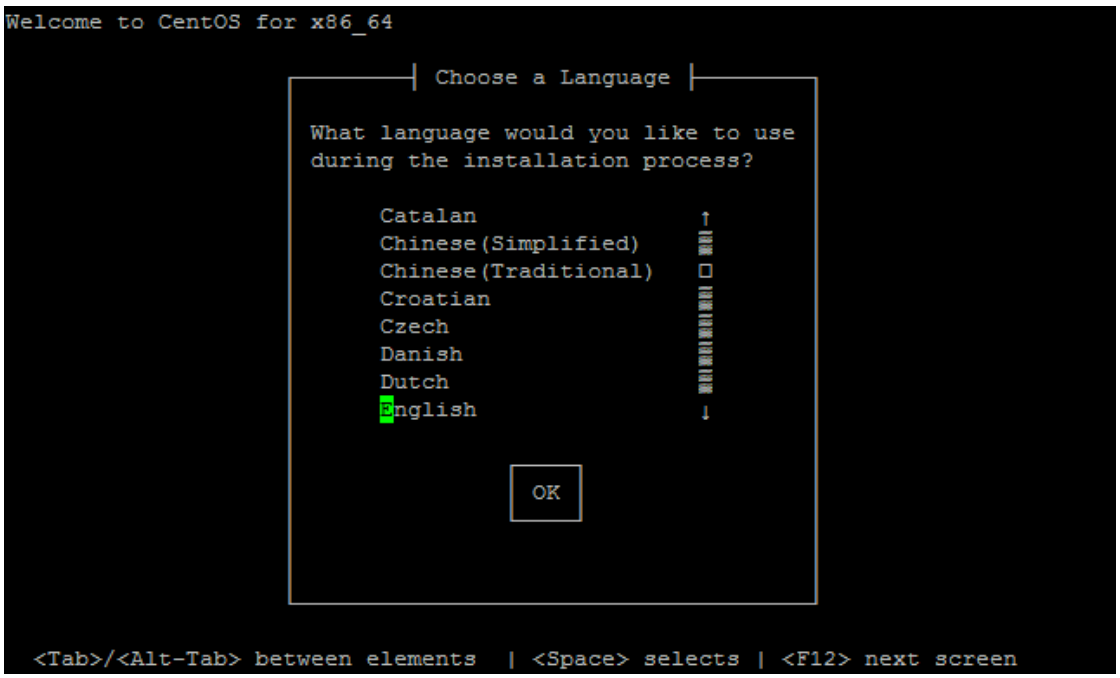
At the screen with countdown, highlight **Rescue installed system** and press `Tab`.



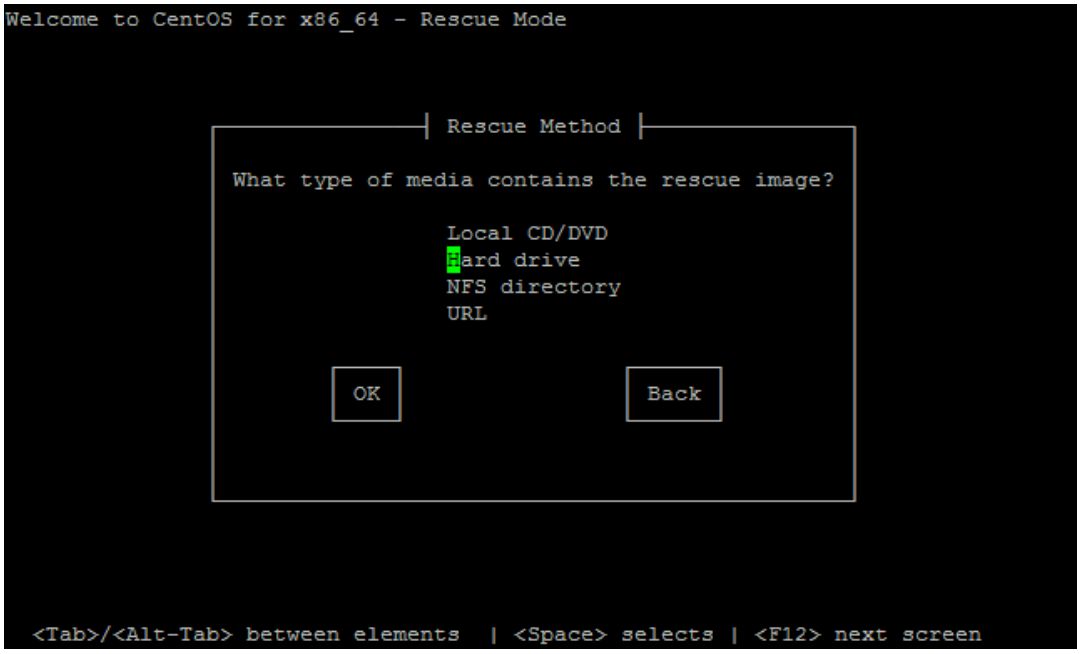
After pressing `Tab`, press `Space` and add `console=ttyS1,115200n8` to the line so it looks like the following screenshot. Then press `Enter`:



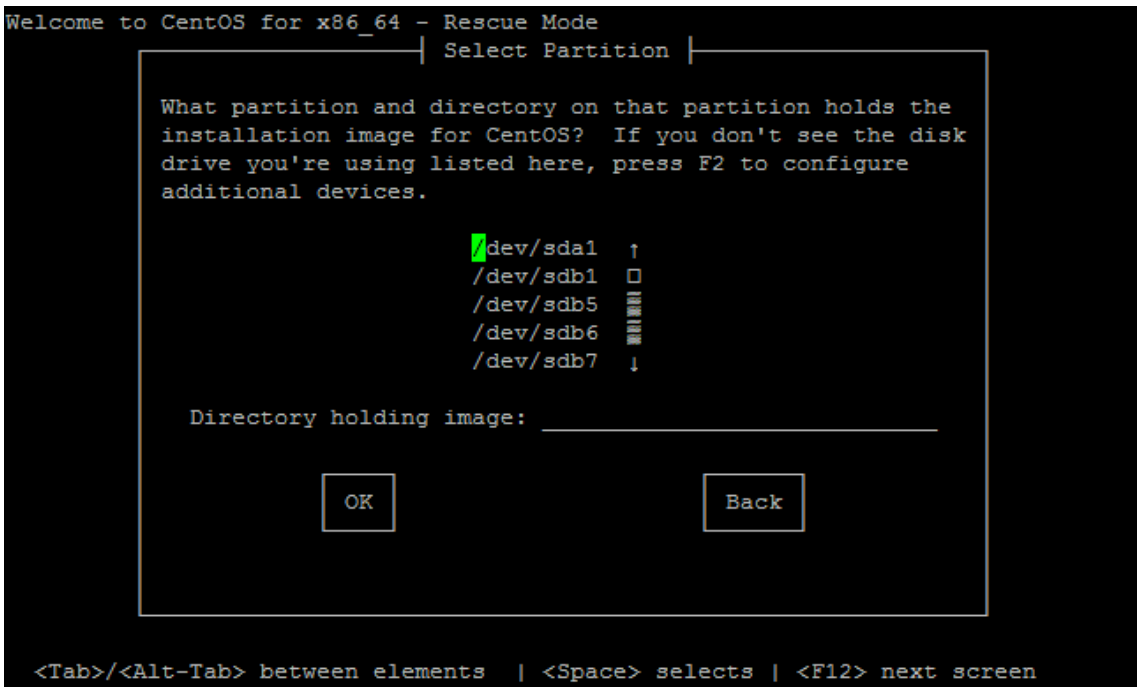
Wait for the CentOS recovery disk to boot and select an appropriate **Language**.



On the **Rescue Method** media selection screen select **Hard Drive**.

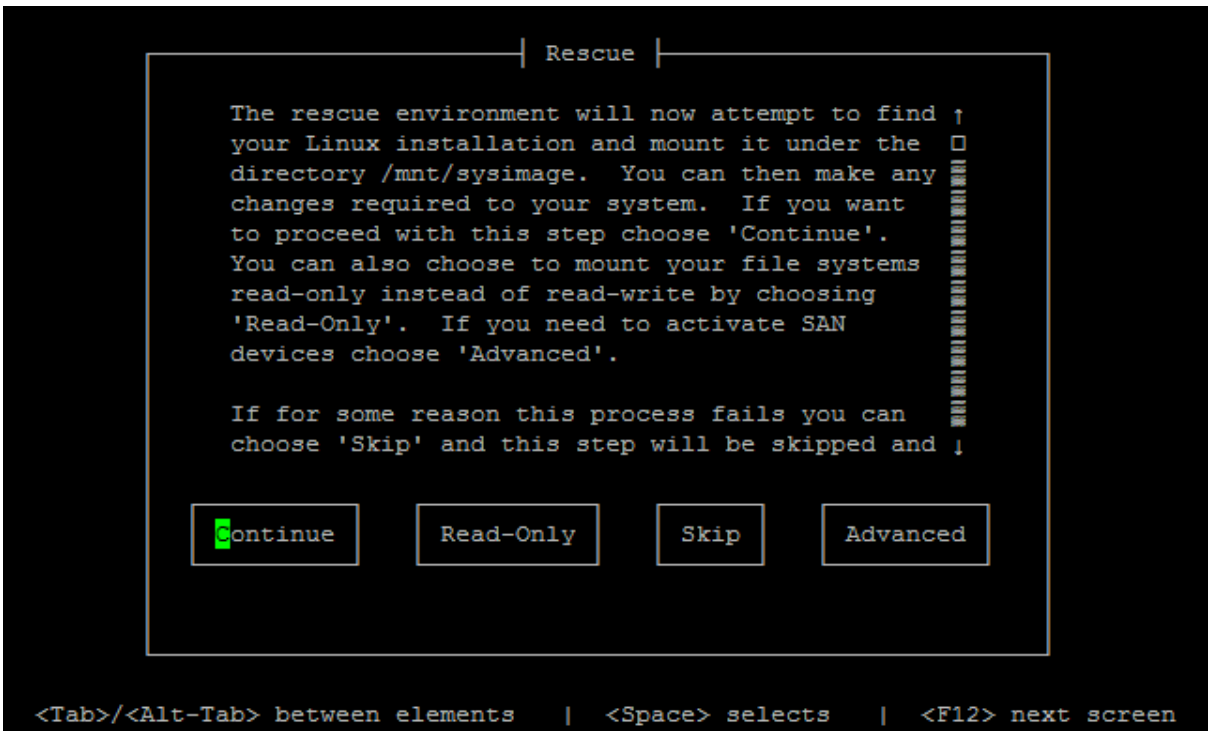


On the **Select Partition** screen, choose `/dev/sda1`



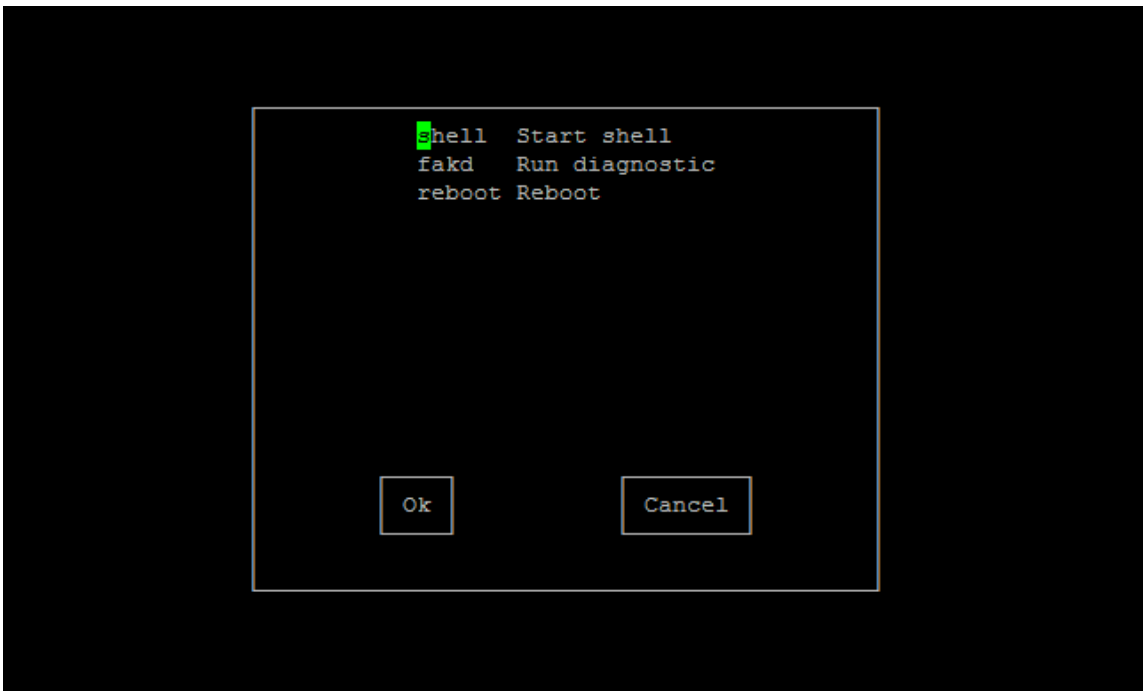
After a short wait, under **Setup Networking** select **NO**.

Select **Continue** on the **Rescue** screen.



Select **OK** on the warning screen.

Select **shell** and press `Enter`.



Once the shell has started, create a temporary mount point for `sdb5` where `boot.cfg` is located. Type the following commands:

```
mkdir /tmp/mnt2
mount /dev/sdb5 /tmp/mnt2
```

Continue with the next commands:

```
cd /tmp/mnt2
ls
```

The last command will list the contents of `mnt2`

Now open `boot.cfg` file with command: `vi boot.cfg`

```
bash-4.1#
bash-4.1#
bash-4.1# cd /tmp/mnt2
bash-4.1# ls
a.b00          ipmi_ipm.v00  net_cnic.v00  rste.v00      scsi_meg.v01
ata_pata.v00   ipmi_ipm.v01  net_e100.v00  s.v00         scsi_meg.v02
ata_pata.v01   ipmi_ipm.v02  net_e100.v01  sata_ahc.v00  scsi_mpt.v00
ata_pata.v02   jumpstrt.gz   net_enic.v00  sata_ata.v00  scsi_mpt.v01
ata_pata.v03   k.b00         net_forc.v00  sata_sat.v00  scsi_mpt.v02
ata_pata.v04   lpfc.v00      net_igb.v00   sata_sat.v01  scsi_qla.v00
ata_pata.v05   lsi_mr3.v00   net_ixgb.v00  sata_sat.v02  tboot.b00
ata_pata.v06   lsi_msgp.v00  net_mlx4.v00  sata_sat.v03  uc_amd.b00
ata_pata.v07   lsu_hp_h.v00  net_mlx4.v01  sata_sat.v04  uc_intel.b00
b.b00          lsu_lsi_.v00  net_nx_n.v00  sb.v00        uhci_usb.v00
block_cc.v00   lsu_lsi_.v01  net_tg3.v00   scsi_aac.v00  user.b00
boot.cfg       lsu_lsi_.v02  net_vmxn.v00  scsi_adp.v00  useropts.gz
chardevs.b00   lsu_lsi_.v03  nmlx4_co.v00  scsi_aic.v00  vsanheal.v00
ehci_ehc.v00   lsu_lsi_.v04  nmlx4_en.v00  scsi_bnx.v00  weaselin.t00
elxnet.v00     misc_cni.v00  nmlx4_rd.v00  scsi_bnx.v01  xhci_xhc.v00
emulex_e.v00   misc_dri.v00  nvme.v00      scsi_fni.v00  xorg.v00
esx_dvfi.v00   mtip32xx.v00  ohci_usb.v00  scsi_hps.v00
ima_qla4.v00   net_bnx2.v00  onetime.tgz   scsi_ips.v00
imgdb.tgz      net_bnx2.v01  qlnative.v00  scsi_meg.v00
bash-4.1# vi boot.cfg
```

Next, add the following text at the end of the `kernelopt` line, leading with a `Space` (move the cursor to the end of the line and press `a`, then `Space`):

```
text nofb com2_baud=115200 com2_Port=0x2f8 tty2Port=com2 gdbPort=none logPort=none
```

```
bootstate=0
kernel=tboot.b00
title=Loading VMware ESXi
kernelopt= installerDiskDumpSlotSize=2560 no-auto-partition text nofb com2_baud=
115200 com2_Port=0x2f8 tty2Port=com2 gdbPort=none logPort=none
@
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```
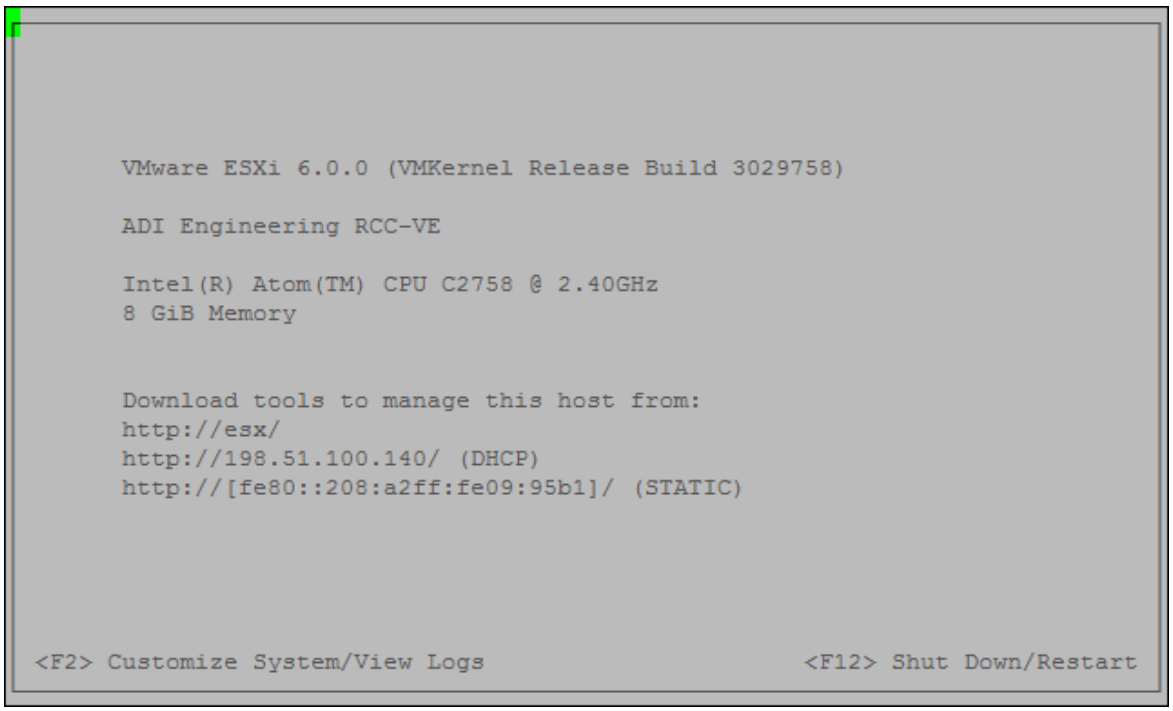

Save the file (Press `Esc`, then type `:wq` and press `Enter`).

Reboot the CentOS recovery disk and remove the USB memstick.

ESXi is now installed and ready to use. Login with the vSphere client to connect to ESXi.



If the system will not boot from the eMMC, ensure that the BIOS has been updated to version 06 or later. With BIOS version 06, during the boot process the boot order can be changed to prefer the eMMC by pressing `F12`, the option for Payload (e.g. `7`), then enter the letter for the eMMC (e.g. `i`), followed by `E` to save and exit.