

How to set the default kernel version for Ubuntu 18.04

1. To know the current kernel used, run the following command

```
root@w4-vcqe-r0402:~# uname -r
4.15.0-188-generic
root@w4-vcqe-r0402:~# uname -mrs
Linux 4.15.0-188-generic x86_64
root@w4-vcqe-r0402:~#
```

2. To know the list of all the kernels installed, run the following commands

```
root@w4-vcqe-r0402:~# dpkg --get-architecture | grep linux-image
ii linux-image-4.15.0-156-generic          4.15.0-156.163      amd64      Signed
kernel image generic
ii linux-image-4.15.0-188-generic          4.15.0-188.199      amd64      Signed
kernel image generic
ii linux-image-generic                    4.15.0.188.173      amd64      Generic
Linux kernel image
root@w4-vcqe-r0402:~# ls -lrt /boot/ | grep vm
-rw-r--r-- 1 root root 8453792 Aug 19 2021 vmlinuz-4.15.0-156-generic
-rw-r--r-- 1 root root 8474272 Jun 15 20:30 vmlinuz-4.15.0-188-generic
root@w4-vcqe-r0402:~#
```

3. In this example, the Ubuntu 18.04 server has linux-image-4.15.0-156-generic and linux-image-4.15.0-188-generic kernels installed and is using linux-image-4.15.0-188-generic kernel.

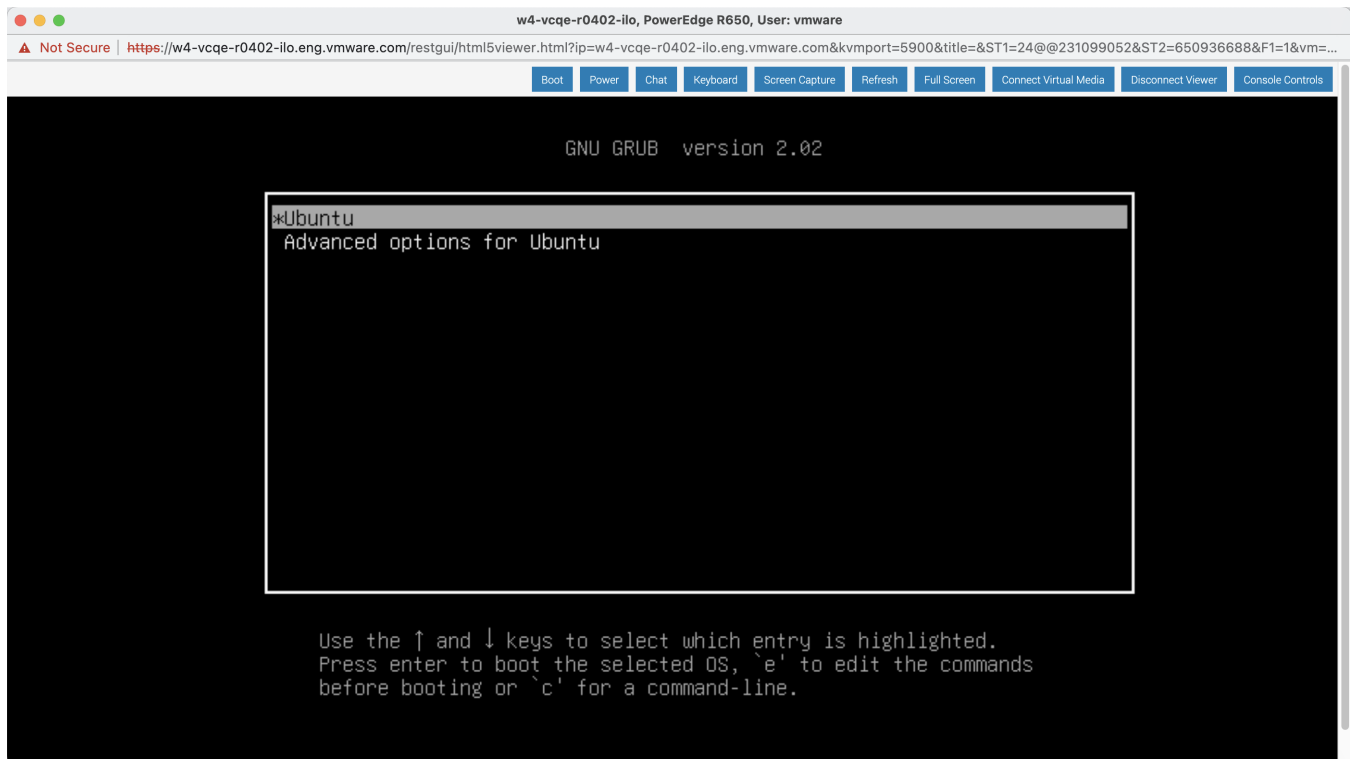
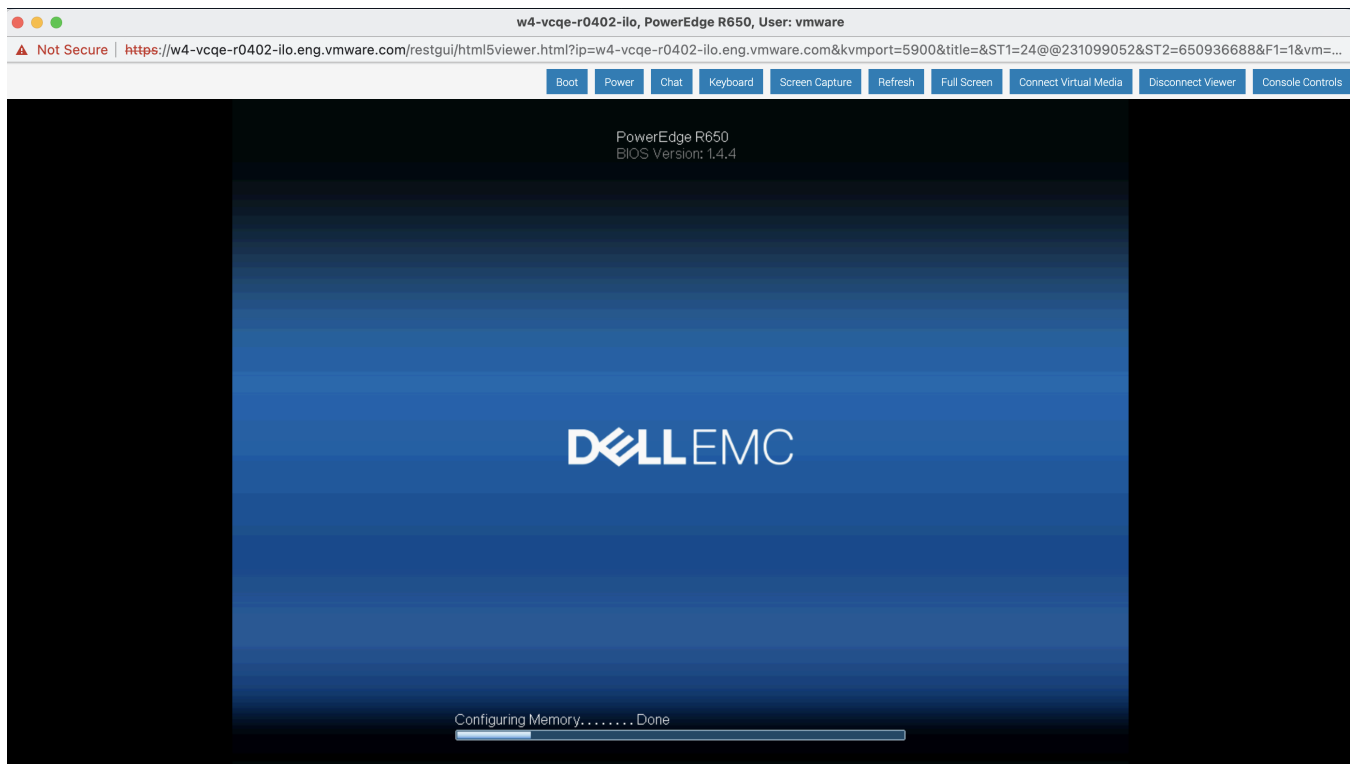
4. Selection of the kernel that the machine should boot up with is done during the boot sequence on the machine's console. To make the selection possible and easier, edit the /etc/default/grub file and change the GRUB_TIMEOUT_STYLE from default value to "menu" and also the GRUB_TIMEOUT to 30. This will help the kernel selection menu to be displayed for 30 seconds during the boot process. For now, leave the GRUB_DEFAULT as "0" which is pointing to the first kernel (zero index) listed in that list of kernels to be used as the default.

```
GRUB_DEFAULT="0"
GRUB_TIMEOUT_STYLE=menu
GRUB_TIMEOUT=30
```

5. Update the grub and reboot the host.

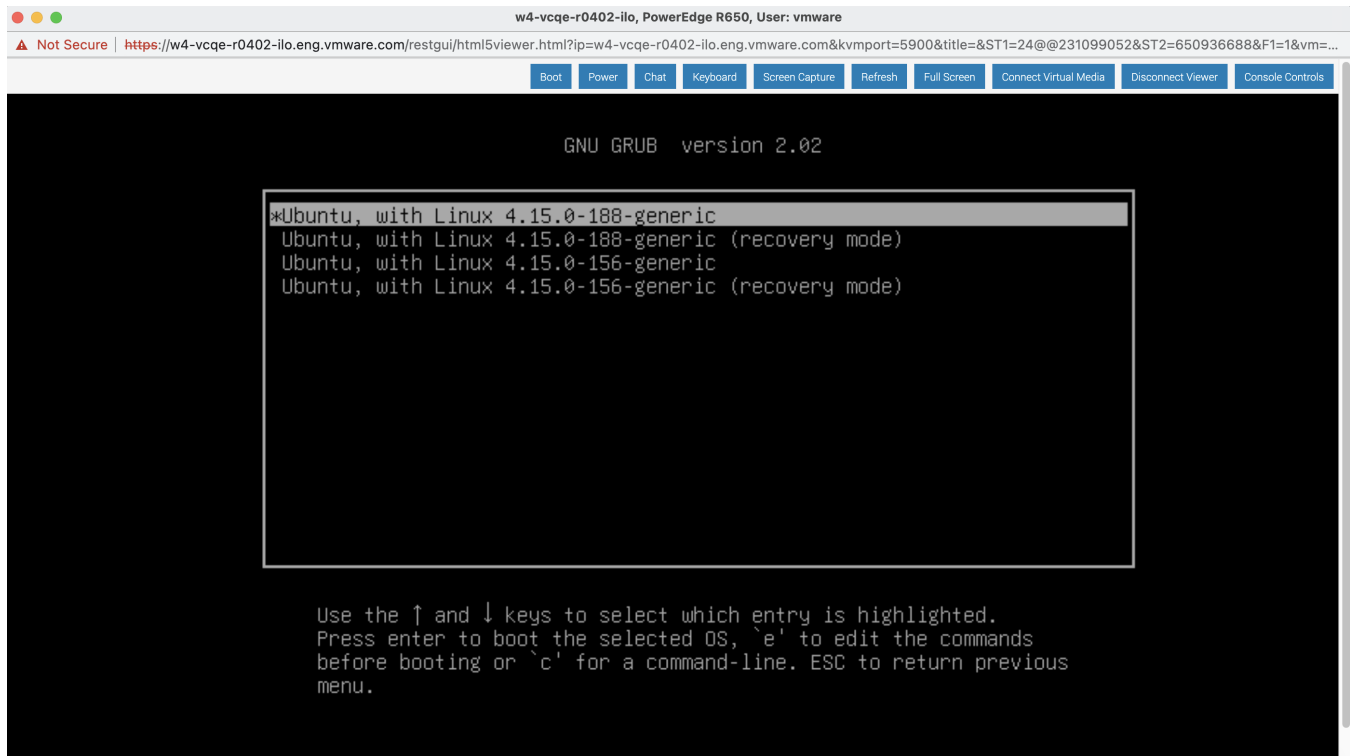
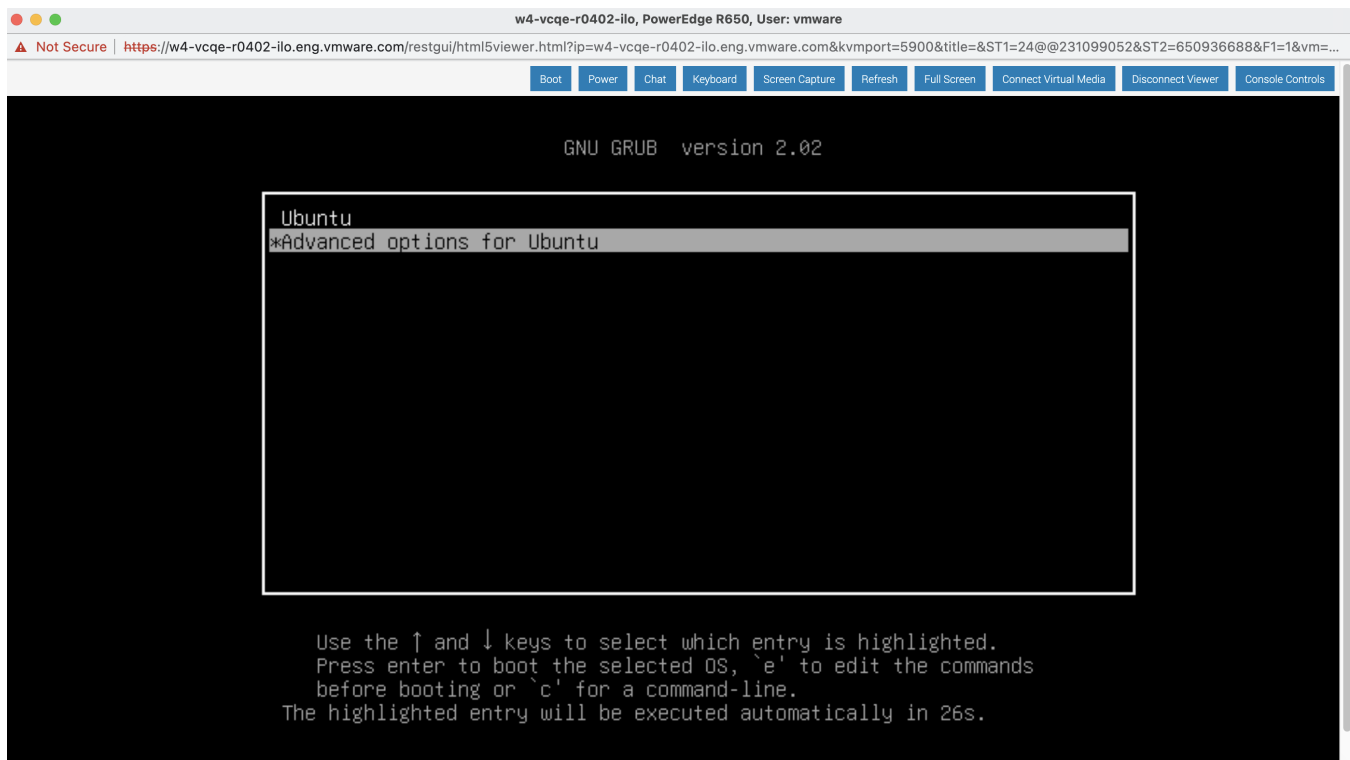
```
root@w4-vcqe-r0402:~# update-grub
Sourcing file `/etc/default/grub'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-4.15.0-188-generic
Found initrd image: /boot/initrd.img-4.15.0-188-generic
Found linux image: /boot/vmlinuz-4.15.0-156-generic
Found initrd image: /boot/initrd.img-4.15.0-156-generic
done
root@w4-vcqe-r0402:~# reboot
Connection to w4-vcqe-r0402 closed by remote host.
Connection to w4-vcqe-r0402 closed.
vnareshkuma-a01:~ vnareshkumar$
```

6. Because the GRUB_TIMEOUT_STYLE was set to "menu" and GRUB_TIMEOUT was set to "30" in the /etc/default/grub, the following menu will be displayed during the system boot up on the iDRAC console (For Dell R650 machines)

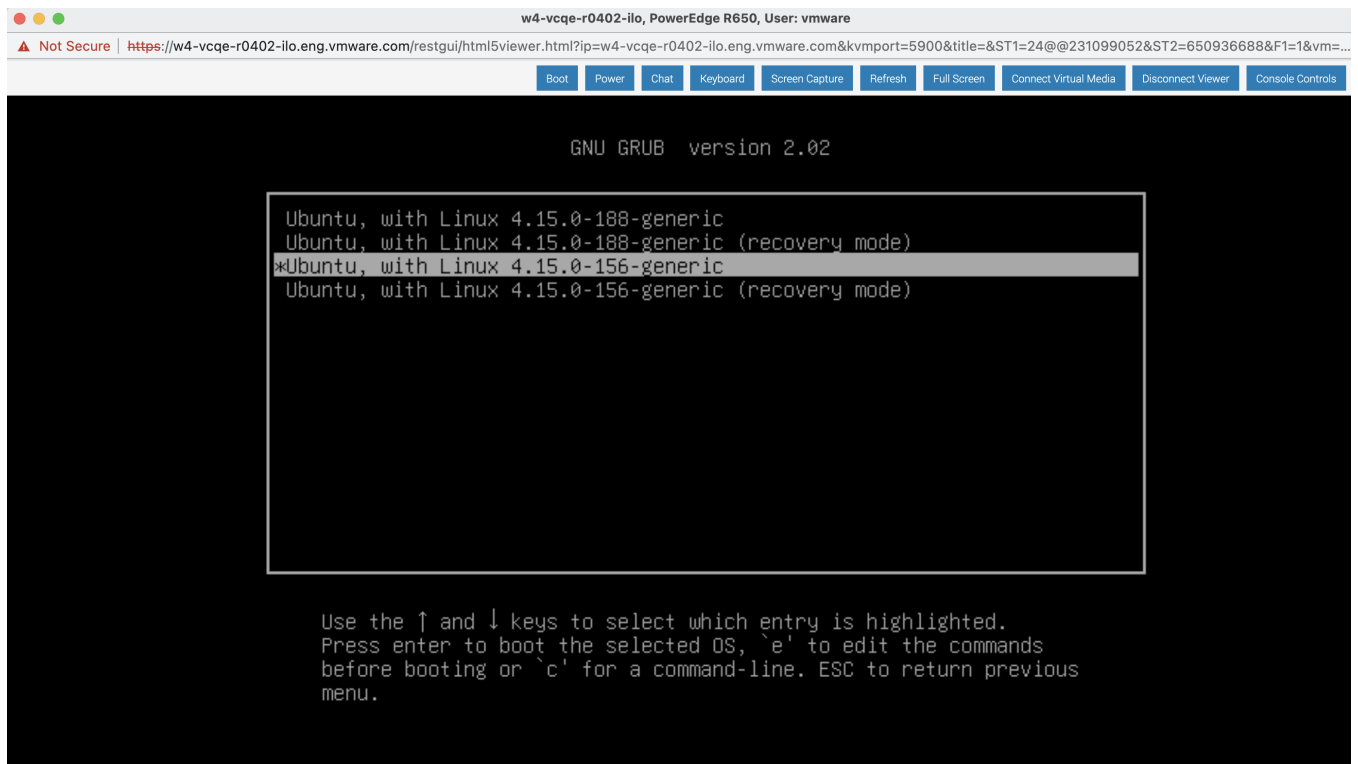


7. Please make a note of these Options and their sequence in the boot Menu to make the kernel selections persistent after we login to the host. In this case, the "Ubuntu" line corresponds to index 0 and "Advanced options for Ubuntu" line corresponds to index 1 on the first page of kernel selection.

8. If you press enter on Option "Ubuntu", it will load with the default kernel already installed. If you move the option highlighter to "Advanced options for Ubuntu" and press enter, it will list the available kernels that you can boot the machine from in the second page.



9. Select the kernel you want the host to boot with and press enter. This will only ensure the host will boot with the selected kernel this time. To make a particular kernel from this list the default from next boot, please note down the index (starts from 0) of line corresponding to the required kernel. For eg, in this case, Linux 4.15.0-156-generic kernel's index would be 2. This would be required when editing the grub files after login.



10. Once you login to the host after the host has booted, check the kernel version to confirm if the host has booted with the kernel version you selected during boot.

```
root@w4-vcqe-r0402:~#  
root@w4-vcqe-r0402:~# uname -r  
4.15.0-156-generic  
root@w4-vcqe-r0402:~# uname -mrs  
Linux 4.15.0-156-generic x86_64  
root@w4-vcqe-r0402:~#
```

11. For example, to make this kernel 4.15.0-156-generic as the default kernel every time, edit the `/etc/default/grub` and modify the `GRUB_DEFAULT` to "1>2". 1 indicates the index of the line number of the option "Advanced options for Ubuntu" selected in the first page of the boot menu where the kernel selection happened. > indicates that there was a sub menu or second page that was navigated to. And 2 indicates the index of the line "Ubuntu, with Linux 4.15.0-156-generic" selected in the second page. If we want to make "Ubuntu" which was the first line of the first page in the kernel selection menu as the default, the `GRUB_DEFAULT` should be set to "0". There is no need for > sign and a number following that in that case as there is no second page with that option. Also change the `GRUB_TIMEOUT_STYLE` to "hidden" and `GRUB_TIMEOUT` to "2" or some smaller value to make sure that the menu is not displayed every time during boot for 30 seconds.

```
GRUB_DEFAULT="1>2"  
GRUB_TIMEOUT_STYLE=hidden  
GRUB_TIMEOUT=2
```

12. Update the grub. Whenever the machine is rebooted next time, the kernel to be used will be picked up in the order specified in the `/etc/default/grub` config.

```
root@w4-vcqe-r0402:~# update-grub
Sourcing file `/etc/default/grub'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-4.15.0-188-generic
Found initrd image: /boot/initrd.img-4.15.0-188-generic
Found linux image: /boot/vmlinuz-4.15.0-156-generic
Found initrd image: /boot/initrd.img-4.15.0-156-generic
done
root@w4-vcqe-r0402:~#
```