Dual Boot Ubuntu on HP Laptop

- Order of OS Installs
- Resizing Windows Partition
- Setting the Boot Order in BIOS
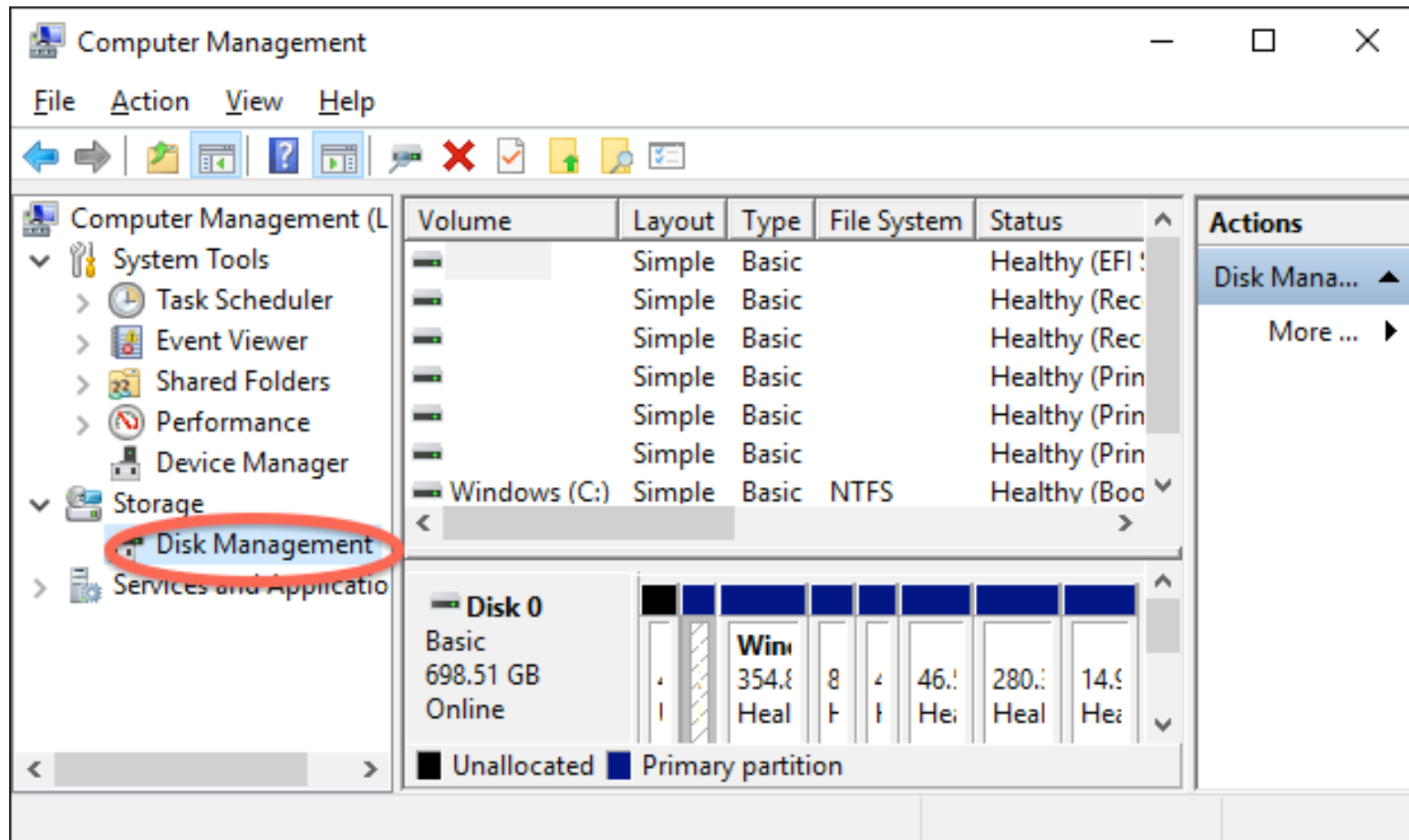- Making Grub the OS Loader

Order of OS Installs

- Microsoft Windows overwrites the OS loader when installed

- Always install Windows first when bringing up a clean (blank) harddrive

- Allow Windows to use the entire disk space

- Windows XP Pro and beyond allows subsequent volume shrinking

Resizing Windows Partition

- Use Administrative Tools to resize the Windows Partition

- Administrative Tools can be found in the Windows Control Panel

- Under Computer Management select Disk Management
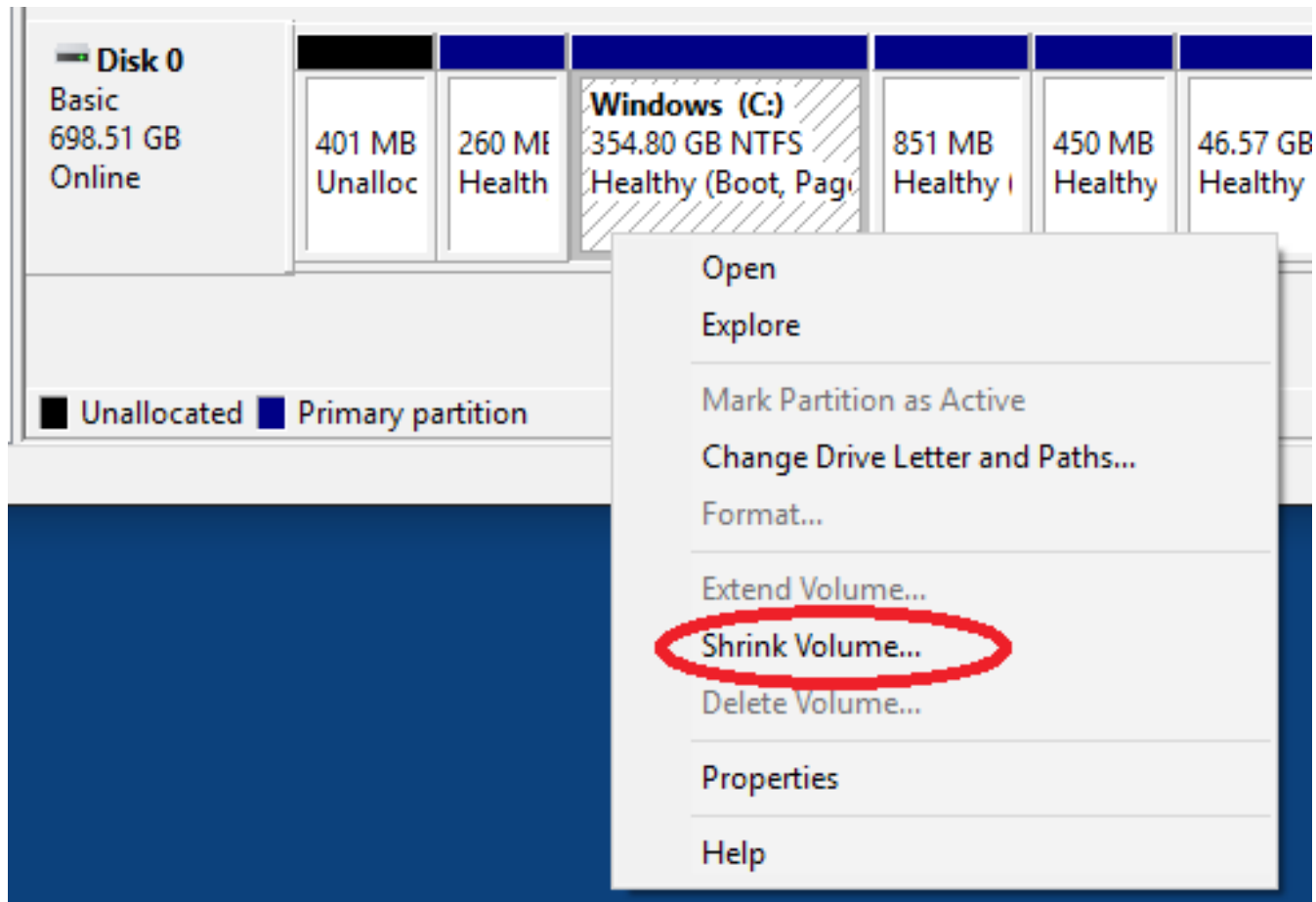
- Resize the NTFS Windows Partition

Select Disk Management

Select Windows Partion

- Right click the Windows partition

- Select "Shrink Volume..."

- Enter the amount (in MB) to shrink the Windows partition

- Most HP Notebooks have 600+ GB disk space

- Recommend at least 100+ GB for Linux

Shrink Windows Partition

Setting the Boot Order

- Reboot Laptop

- Press F10 to enter BIOS Setup

- Navigate to System Configuration

- Select "Boot Options"

- Under "UEFI Boot Order" move "USB Diskkette on Key/USB Hard Disk" to the top

- May also need to disable "Secure Boot" (?)

- Exit saving changes

Install Ubuntu

- Insert USB drive and reboot

- Follow prompts

- Selecting custom install option

- Create following partitions

  – 50GB ext4 mount on /

  – 16GB swap

  – Remaining free space ext4 mount on /

Create Ubuntu USB Installer

- Download appropriate Ubuntu distro from web
- Follow Ubuntu instructions for creating install image on USB
- From another Linux machine this can be done using the "dd" (disk to disk copy) command
- dd if={source} of={target}
    - *target* of form "/dev/sdb1" (use ls and grep)
    - *source* is path to download distro

The Big Trick – Making Grub the OS Loader On Older HPs

- Older HP BIOS does not allow prioritizing OS loaders

- HP defaults to using Windows OS loader

- Must "spoof" Windows OS loader with Grub

- Use a simple bash script

Spoofing Windows OS Loader

```
# copy grubx64 bootloader to default HP UEFI boot loader
# file

cd /boot/efi/EFI/Microsoft/Boot/
sudo mv bootmgfw.efi bootWin8.efi
sudo cp /boot/efi/EFI/ubuntu/grubx64.efi bootmgfw.efi

echo boot repair complete
echo
echo In the /boot/grub/grub.cfg file, be sure
echo to change \'bootmgfw.efi\' to \'bootWin8.efi\'
```

Resources

- Slide deck available on Github at

github.com/fractalxaos/barcamp/

DualBootHpLaptop.pdf