

# Dual Boot Linux on HP Laptops

Do friends let friends create dual boot machines?

# Topic Outline

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

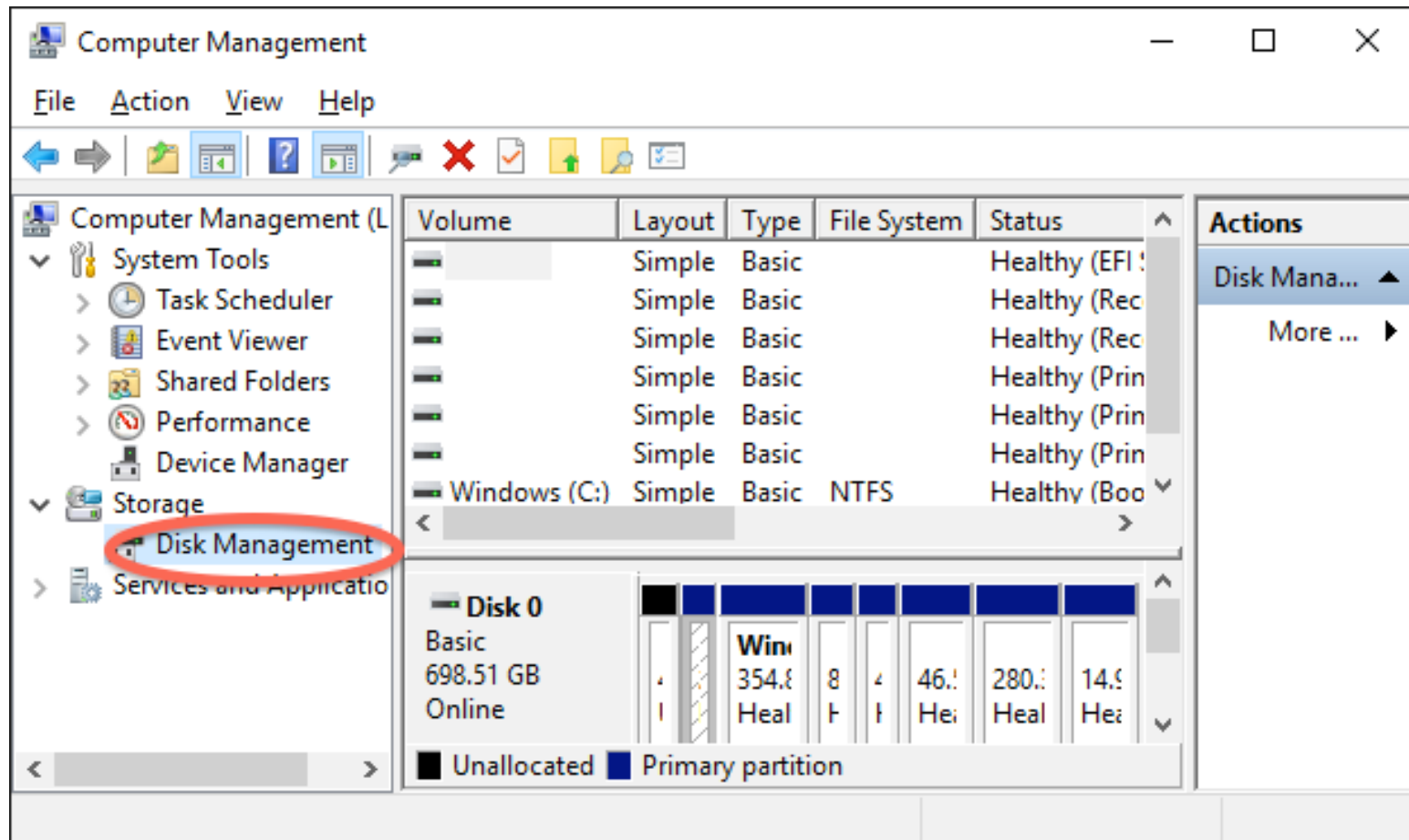
# Order of OS Installs

- 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

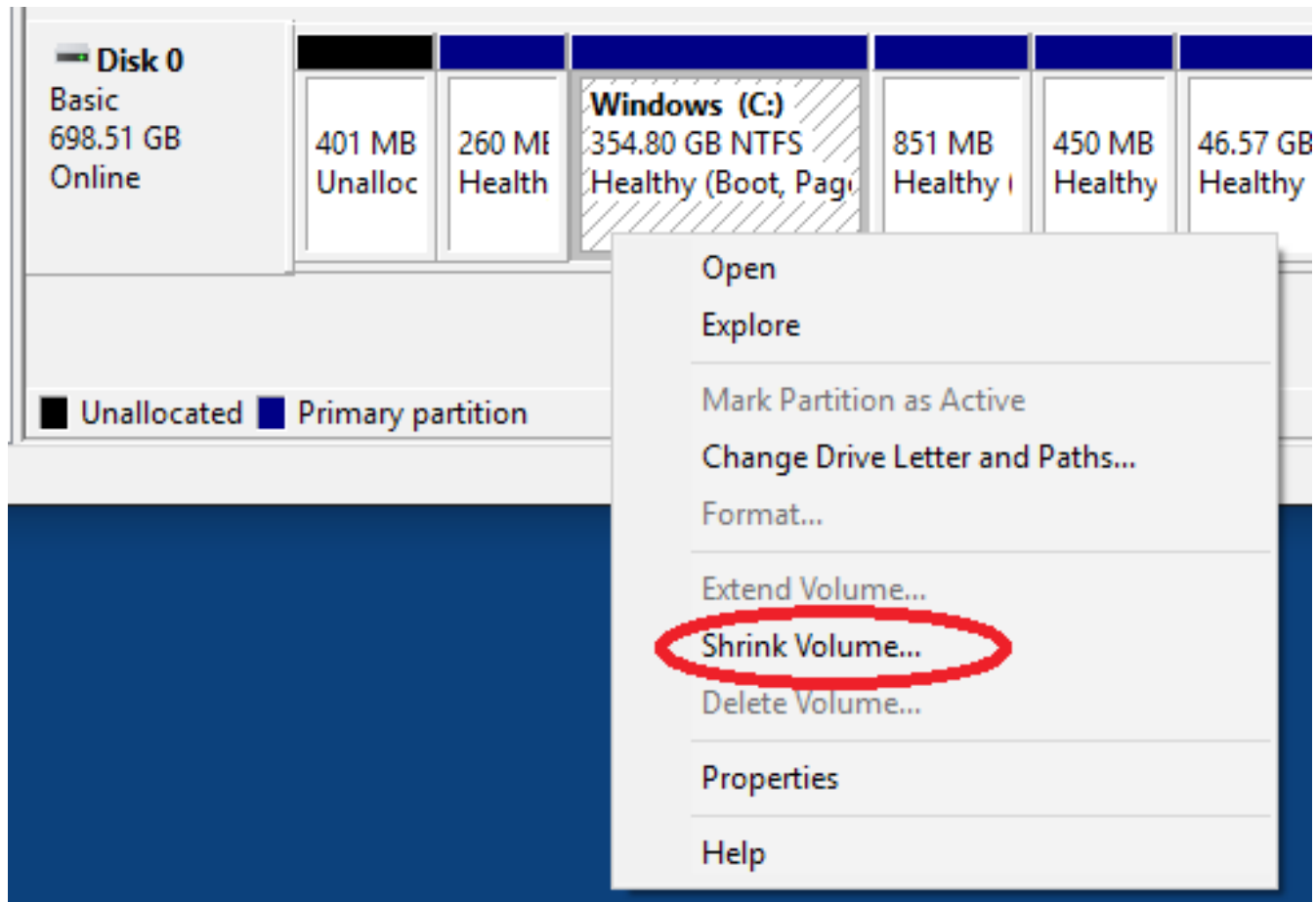
# Select Disk Management



# 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 Diskette on Key/USB Hard Disk” to the top
- May also need to disable “Secure Boot” (?)
- Exit saving changes



# Create Linux USB Installer

- Download the appropriate Linux distribution
- Follow distributor 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 downloaded distro

# Install Linux

- 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 /

# 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

# OS Loader Script

```
# copies grubx64 bootloader to default HP UEFI boot loader file
if sudo test -f "/boot/efi/EFI/Microsoft/Boot/bootWin8.efi";
then
    echo bootWin8.efi exists
else
    sudo cp /boot/efi/EFI/Microsoft/Boot/bootmgfw.efi \
        /boot/efi/EFI/Microsoft/Boot/bootWin8.efi
    echo copying Windows boot manager to 'bootWin8.efi'
fi
echo copying Grub boot manager to 'bootmgfw.efi'
sudo cp /boot/efi/EFI/ubuntu/grubx64.efi \
    /boot/efi/EFI/Microsoft/Boot/bootmgfw.efi
echo boot repair complete
echo
```

# Resources

- Slide deck available on Github at

[github.com/fractalxaos/barcamp/  
DualBootHpLaptop.pdf](https://github.com/fractalxaos/barcamp-DualBootHpLaptop.pdf)