

# Run Multiple MacOS

Partition your hard drive

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May 12, 2018

# Why have Multiple MacOS?

- Education
- Legacy applications
  - ! Will not function in latest MacOS
- New applications
  - ! Will only function in latest MacOS

# Parallel MacOS Operation

- Run two OS at the same time
  - Two MacOS or one MacOS + other

Examples for running Windows

Parallels, Virtual Box, Boot Camp, Crossover, VMware Fusion

- Advantage

Both OS available

Disadvantage

Shared RAM

# Separate MacOS Operation

- Run one MacOS
  - ! Other MacOS available via restart
- Examples
  - ! Multiple hard drives
  - ! Partitioned hard drive
- Advantage
  - ! Stand-alone MacOS
- Disadvantage
  - ! Additional hard drives; shared storage

# Separate Hard Drives

- Cost
  - ! Need a drive for each MacOS
- Speed
  - ! USB vs bus data speeds
- Footprint
  - ! Desk/counter space for external drive(s)

# Partitioned Internal Drive

- Cost
  - ! None, use existing internal hard drive
- Speed
  - ! Bus data speed
- Footprint
  - ! No change
- Enhancement for speed
  - ! Replace platter drive with SSD drive

# My Partitioned Drive

- I have three MacOS on a partitioned internal SSD
  - ! MacBook Pro 17" (vintage 2010)
  - ! 10.6 Snow Leopard
  - ! 10.11 El Capitan
  - ! 10.13 High Sierra
- Snow Leopard to run PPC apps via Rosetta
- El Capitan to run apps not yet updated for High Sierra
  - ! M3D 3-D printer control app
- High Sierra to have the latest version

# Partitioning a Drive

See [macworld.co.uk/how-to/mac/how-partition-mac-hard-drive-or-ssd-3619175/](http://macworld.co.uk/how-to/mac/how-partition-mac-hard-drive-or-ssd-3619175/)

- Always backup before messing with your internal drive
  - ! I use Carbon Copy Cloner
- Partitions behave like separate drives
  - ! But physically are on one drive
- Create and edit partitions with Disk Utility
  - ! It comes with your system
  - ! In Applications..Utilities folder
- Disk Utility lets you resize, move and create partitions

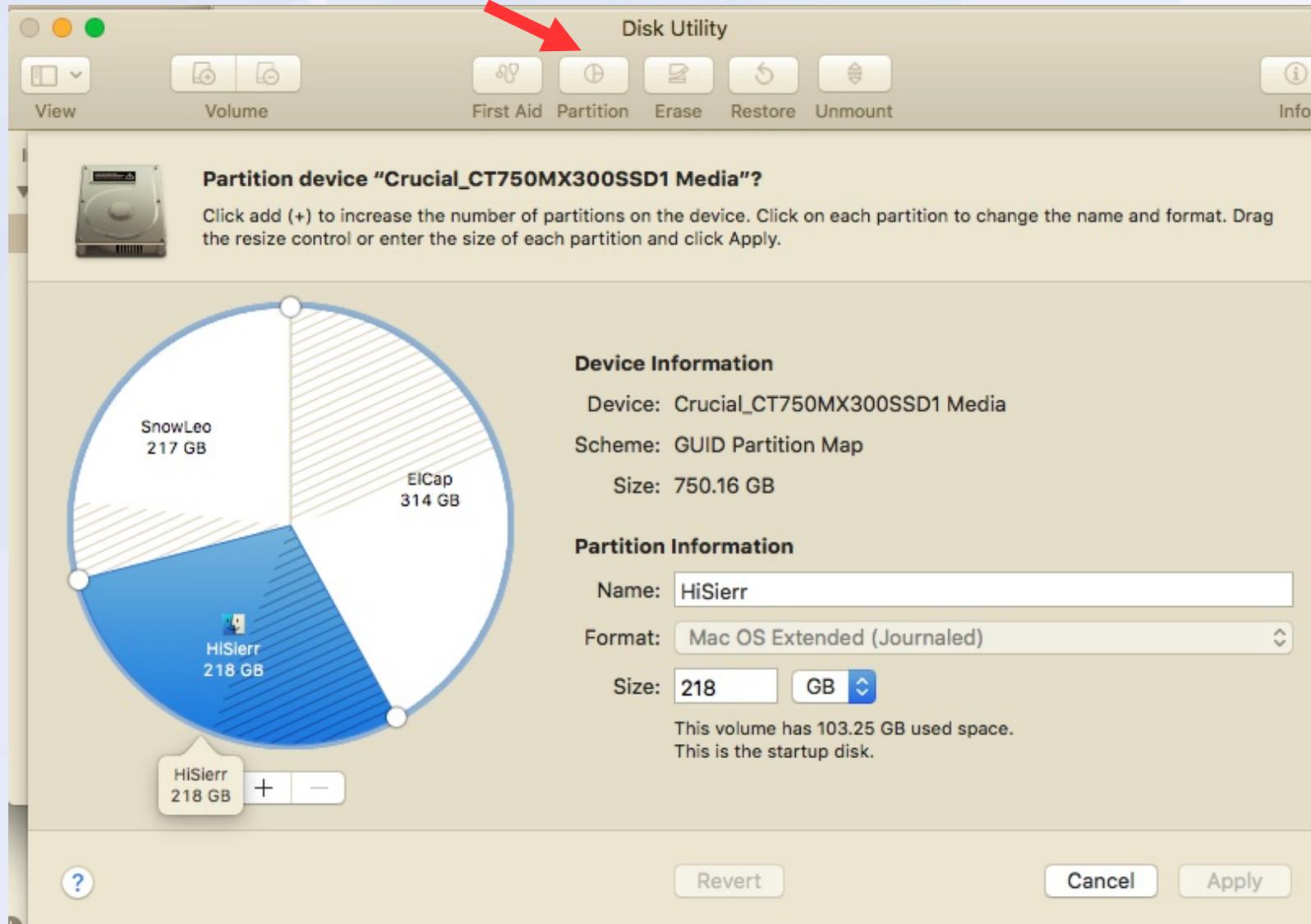
# Partitioning a Drive

- Clone your current hard drive to an external drive
  - ! Should be doing regularly for backup
- Boot from the external drive
  - ! Hold Option key on Restart and select
- Estimate how much storage to use for each partition
  - ! Easy approach is to make them equal size
- Launch Disk Utility and select your internal drive
- Select the Partition tab

# Disk Utility Steps

- Shrink existing partition to  $\frac{1}{2}$  or  $\frac{1}{3}$  of drive storage
  - Create 1 or 2 new partitions
- ! Or
- Erase (Reformat) internal drive
  - Reformat as 2 or 3 partitions

# Disk Utility Steps



# Populate Partitions

- Clone from backup drive to each partition on internal
- Update one partition to newer or older MacOS
- Update another partition to another MacOS as needed
  - AND
- Boot from internal drive with newest MacOS
- Partition the backup drive the same as the internal drive
- Clone each partition on internal drive to backup drive
  - ! Two or more cloning operations
- Can also create Windows or Linux partitions

# Summary

- Backup (clone recommended) your internal drive
- Boot from backup drive
- Partition your internal hard (or SSD) drive
  - Using Disk Utility
- Populate partitions
  - From clone(s) and/or MacOS installers
- Backup new configuration
- Enjoy