

# Run Linux from a USB Flash Drive

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# Benefits and Limitations

- Live USB's share many of the benefits and limitations of live CD's
- Faster than a Live CD
  - The absence of moving parts in USB flash devices allows for faster seek time than is possible with hard drives or optical media
    - 64-bit example
- USB Flash Drives are ***CHEAP!***

# Benefits and Limitations *continued*

- Just how cheap...?



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# Benefits and Limitations *continued*

- Easily carry the device with you
  - You can easily change and save your personal DATA files
  - Persistent file - allows the user to ***save and restore*** changes on subsequent boots
- Booting from a computer lacking USB 2.0 support can be very slow - **NEGATIVE**
- Some computers, particularly older ones, may not have a BIOS that supports USB booting – Pre 2005 - **NEGATIVE**

# Benefits and Limitations *continued*

- Due to the additional read/write cycles that occur when you install Linux on the USB drive, the life of the flash drive may be slightly reduced - **NEGATIVE**
  - We will only be using a Live Linux Image

# Partitioning a Flash Drive

- Most partitioning software will work
  - Acronis Disk Director run from a Live CD
- Recommend two partitions
  - 1<sup>st</sup> containing the Live Linux files
  - 2<sup>nd</sup> DATA files
  - Format FAT 32
    - Be careful using VISTA and exFAT

Format U:



Volume label:

UBUNTU

File system:

FAT32

Allocation unit size:

NTFS

FAT

FAT32

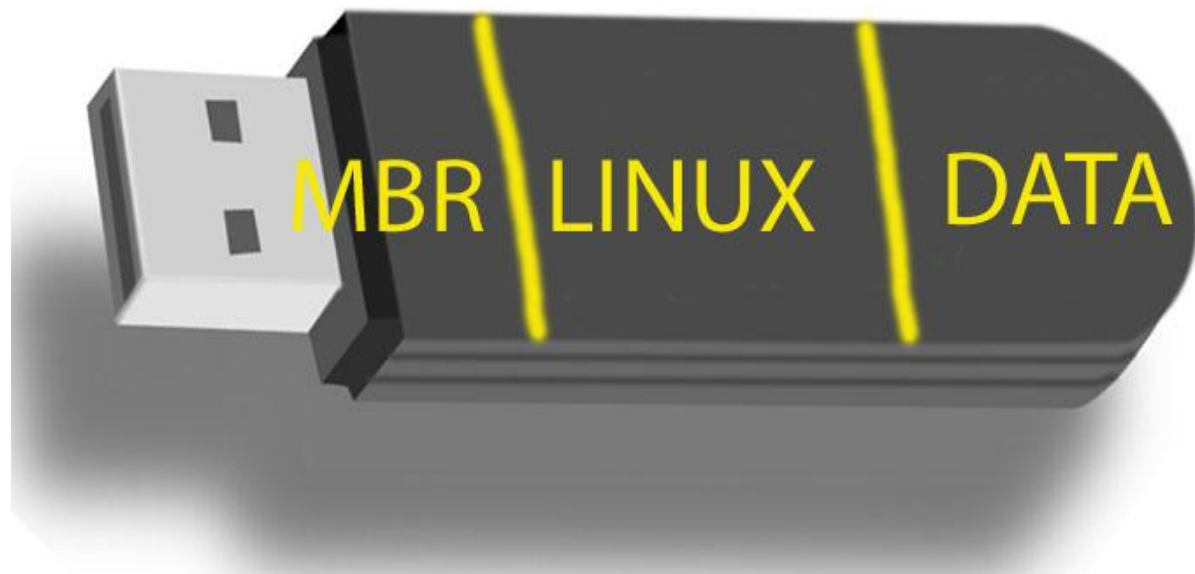
exFAT

Perform a quick format

Enable file and folder compression

OK

Cancel



# Partitioning a Flash Drive

*continued*

- Microsoft Windows will **only** see the first partition of a multiple partitioned USB flash drive
  - Windows sees the USB flash drive as a removable device and **not** a fixed drive
  - Linux and MAC OS's have no problem viewing multiple partitions
- Flip the Removable Media Bit (RMB)
  - Lexar has a FREE formatting and flip the RMB program that works on **some** USB flash drives



BootIt v1.07



Devices

- F:

Device Inquiry Information

Capacity 967 MB  
Vendor Flash  
Product Drive SM\_USB20

Format

Options

System Volume Label  11 Char's Max

Flip Removable Bit

Do not load system files

Partition  Active  Non-Active

Ext



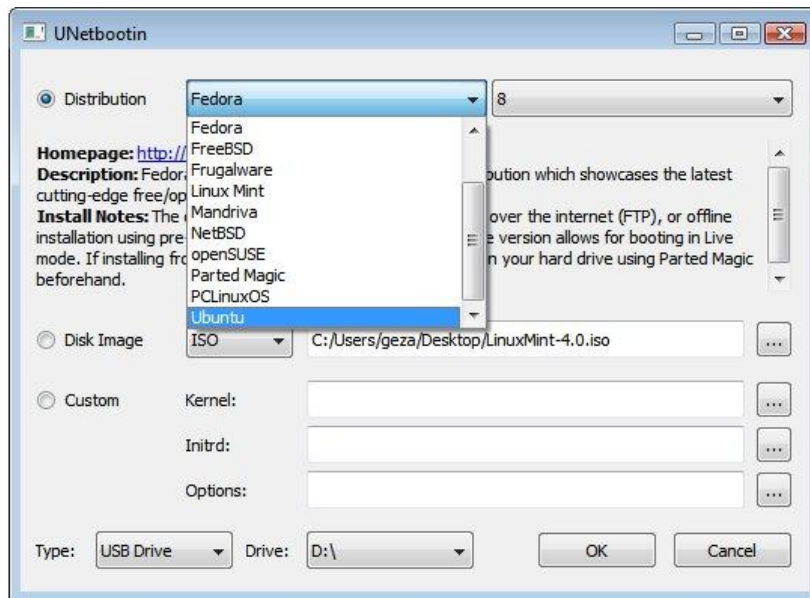
# Partitioning a Flash Drive

*continued*

- Other more advanced techniques
  - Changing drivers and device ID's
  - See reference page for web links

# Unetbootin

- We will be using **Unetbootin** in Windows and loading Puppy Linux 4.1



# DEMO

- With your USB flash drive plugged into the Dell computer, power up the computer while continuously pressing F-12
- A menu will come up which will allow you to select the USB flash device – press ENTER

The Dell logo, consisting of the word "DELL" in a bold, blue, sans-serif font. The letter "E" is stylized with a diagonal line through it. A small trademark symbol (TM) is located to the right of the "L".

# Reference Web Links

- Live USB
  - [http://en.wikipedia.org/wiki/Live\\_USB](http://en.wikipedia.org/wiki/Live_USB)
- Acronis Disk Director
  - <http://www.acronis.com/homecomputing/products/diskdirector/>
- exFAT
  - <http://en.wikipedia.org/wiki/ExFAT>
- UNetbootin - Universal Netboot Installer
  - <http://unetbootin.sourceforge.net/>

# Reference Web Links *continued*

- BootIt - Lexar USB Flip the Removable Media Bit Tool
  - <http://www.pendriveapps.com/2008/05/01/bootit-lexar-usb-flip-the-removable-media-bit-tool/>
- Make Windows see any USB flash drive as local disk
  - <http://www.lancelhoff.com/2008/06/19/make-windows-see-any-usb-flash-drive-as-local-disk/>
- On flash drive only the first partition works
  - [http://www.uwe-sieber.de/usbtrouble\\_e.html#partitions](http://www.uwe-sieber.de/usbtrouble_e.html#partitions)