Linux:

- Ubuntu Linux is the base OS for all Datto units (Ubuntu 10.04 LTS or 12.04)

- All Datto Devices' OS single or RAIDed HDDs, SSDs or gumstick SSDs

- Most regular (non-ShadowSnap) functionality can be accessed with Ubuntu Linux commands

Modifiers/Switches:

What is a modifier? A modifier is a flag that is appended to a certain part of a command to allow it to search, print or manage the command in a format that one would need.

Tips:

- There are many different types of modifiers for nearly all Linux and ZFS commands.
- You can use man and --help in conjunction with commands to see what they can do. For example: man df or df –help

grep and less:

What is 'grep'? The command 'grep' can be appended to a command to filter for or out certain parameters. Example: **ps ax | grep php-cgi**

What is 'less'? The command 'less' can be appended to a command to print a large amount of information to allow one to scroll through. Use Page Up and Page Down to scroll through the print out. Example: **dmesg | less**

Linux Basic Commands and Functions:
commands are typed lowercase unless specified

Command	Description
cd [directory]	changes directory
ls	List directory command
df –h	Displays the Filesystem mountpoints and sizes in a Human readable format
du –sh *	Directory usage in a human readable format viewed as a summary

Linux Basic Commands and Functions continued:

Command	Description
locate [file or directory]	Locates a file or a directory specified
top or htop	Displays the top processes running
nano	Text Editor
dmesg cat /var/log/syslog	Shows the system log from the device boot time
checkin	Manually triggers the Datto Device to communicate with Datto's monitoring servers
reboot	Sends the Datto a soft reboot
free –m	Displays the current amount of free RAM on a Datto in megs
mkdir [directory name]	Creates a directory
lsscsi	Lists hard drives in a Datto Device
apt-get install package-name	Downloads and installs Linux packages
iostat –x 1	Displays hard drive I/O utilization
lsof	grep [query]	Shows what process is utilizing a specified query
ps ax	grep [query]	Searches for a process name listed in the display of all running processes
smartctl –a /dev/sd[driveLetter]	Does a SMART check of whatever drive is selected
cat /[directory]/**/[file name] cat /var/log/syslog	Outputs the process that a roundtrip has attempted
cat /proc/mdstat	Outputs the MD Array status of a Linux machine
mount /dev/[logical disk/file system][partition number] /directory	sets the file system to be mounted to a specified directory i.e. mount /dev/loop1p1 /datto/mounts/….
umount [directory]	command to unmount the directory

Linux Basic Commands and Functions continued:
Loop devices are virtual HDDs. They have disk and partition representations
- What do loop devices look like? **/dev/loop1p1**
  This means that there is a virtual disk (loop1) and a partition on that virtual disk (p1)
- How are loop devices used on a Datto unit?
  -Loop devices are used to create a virtual disk to mount in Linux for a file restore
  -Loop devices are used to merge the COW images into the Datto images to create a bootable sparse image for virtualization

Note: These should get destroyed after the HIR process is complete before the virtualization

Command	Description
losetup –f [files]	Associates a loop device to a .datto sparse image
losetup –a	Displays any running loop devices and what files are being used with them
losetup –d /dev/loop[loopNumber]	Disassociates a loop device from a .datto sparse image

Ifconfig:

Command	Description
ifconfig	Displays all the networking information for all active NICs
ifconfig eth1 up	Turns on the second NIC of the Datto
ifconfig eth1 down	Turns off the second NIC of the Datto

Changing Network Settings:

Command	Description
nano /etc/resolv.conf	ONLY ON 1st Gen Devices Set DNS resolution. Have public DNS resolution [/etc/init.d/restart networking]
traceroute [IP Address]	Displays route used by IP packets on their way to a specified IP
nmap [IP Address] –p [port]	Checks if specified port is open to a specified destination
iftop	Monitors all traffic flowing through the NIC(s)
iftop –i eth0	Monitors all traffic in/outbound from specified NIC This is the command to also see if a diff merge is running

Screen:

Command	Description
screen –ls	Displays all running screens
screen –S [name of screen]	Creates a new screen with a specified name **screen –r [PID or Name of screen]** Resumes a screen
CTRL + A + D	Simultaneously press the CTRL A D to exit a screen without killing the screen

SAMBA:
An open source implementation of the SMB file sharing protocol that provides file and print services to SMB/CIFS clients. Samba allows a non-Windows server to communicate with the same networking protocol as the Windows products.

Command	Description
service smbd [status, start, stop, restart]	Get a status, start, stop or restart SAMBA
nano /etc/samba/smb.conf	Where to edit SAMBA configurations
smbstatus	Notifies what SAMBA is using at a point in time