Content 2021

Resources

- CIT VM Farm
 - Create VM and connect from osx/Linux
 - Gpt partition example (Not needed for first lab)
 - MBR partition example
 - o Manage VMs with CLI instead of Web
 - o Connect to vm from Linux host
- AWS
 - o Create AWS Educate Account
 - Create EC2 instance
 - Connect EC2 instance
- Software
 - o If you are using windows to connect to your vm, you might need the following:
 - o Putty
 - o TightVNC
 - If you have a newer version of windows 10 and have installed the linux subsystem, you can just ssh from the command line like you do in OSX and Linux.

Module 1 - Partitioning

- Slides
 - o Intro Slides
- Reading
 - o Tracks and Sectors
 - o Overview of hard drivevs
 - o SSDs
 - Nand memory
 - MBR Overview
- Lectures
 - o Finish remainder of intro slides
 - o <u>Dos Partitioning Video</u>
 - Partitioning Explained (Only the first 5 minutes)
- Screenshots
 - More partitioning help
 - Bionic partitioning video
- Lab
 - o System Install

Module 2 - Filesystems and Inodes

- Slides
 - Slides 2(These are referenced in some of the videos)
- Reading
 - <u>Filesystem</u> Sign in first. Read the following pages: Filesystem-high level view, metadata, inode, data block map, Directories, Superblock, Mount and Unmount operations, File creation and Deletion operations. To sign in, go to [library.dixie.edu] and click on [ebook collections].
 - Superblock definition
- Lectures
 - o Inode linking Video
 - o More about Inodes Video
 - o <u>Directories and Inodes Video</u>
 - o Mebibyte vs Megabyte Video
 - o Partition and block discussion
- Screenshots
 - o Creating a filesystem

- Creating a filesystem 2
- Resize FS with parted
- Lab More partitions and EXT

Module 3 - EXT

- Slides
 - o Slides 3
- Reading
 - Ext(somewhat of a review)
- Lectures
- Screenshots
 - Resizing
 - o Break Superblock
 - o Orphan Inode
 - o Corrupt Inode
 - Break Permissions
- Lab Resize EXT
- Lab Fix EXT

Module 4 - Raid

- Slides
 - o Raid Slides
- Reading
 - Raid
 - o Software raid cheatsheet
- Lectures
 - AWS Review
 - Aws attach disks
 - o AWS mdadm ec2 sample
- Screenshots
 - My Software raid howto
- Lab Raid Report
- Lab Software Raid
- EXAM 1 review

Module 5 - LVM

- Slides
 - o LVM Slides
- Reading
 - Logical volumes
 - LVM Intro
 - o LVM cheatsheet
- Lectures
- Screenshots
 - LVM During Install How To
 - Bionic basic lvm install
 - LVM Configure
 - o Bionic extension
- Labs
 - <u>LVM 1</u>
 - <u>LVM 2</u>

Module 6 - Remote Filesystems

ISCSI & NFS

- Slides
 - o NFS Slides
- Reading
- Lectures
 - <u>ISCSI overview</u>
- Screenshots
 - NFS Install How To
 - o ISCSI AWS 2021
- Labs
 - NFS
 - ISCI

Module 7 - GPT/UEFI

- Slides
 - <u>UEFI and GPT Slides</u>
- Reading
 - <u>UEFI Boot</u>
 - o GPT Overview
 - o Good Overview of Parted
 - GPT Partitioning
- Lectures
- Screenshots
 - <u>UEFI Install Screens</u>
 - <u>UEFI comands</u>
- Labs
- EXAM 2 review

Module 8 - Windows

- Slides
 - FAT
 - o <u>NTFS</u>
- Reading
 - \circ FAT (follow all the links on that page)
 - NTFS
 - MORE NTFS
- Lectures
- Screenshots
- Labs
 - <u>FAT</u>

Module 9 - BTRFS?

- Slides
 - <u>btrfs</u>
- Reading
 - Snapshots with snapper
- Lectures

- Screenshots
- Labs
 - o <u>btrfs</u>

Module 10 - Forensics

- Slides
 - o <u>forensic</u>
- Labs
 - Forensic

Module 11 - Cloud Storage

- Slides
 - <u>S3</u>
 - o <u>EFS</u>
 - EBS
- Reading
 - <u>S3</u>
 - EFS
 - o EFS when
- Lectures
- Screenshots
- Labs
 - o AWS S3
 - AWS EFS
 - AWS EBS

Module 12 - Misc

- Slides
 - o <u>SMB</u>
 - Windows encryption
 - Encryption
 - \circ chroot & resurrecting from a broken fstab
- Reading
 - Linux quotas
 - EFS on windows
- Lectures
 - o Windows and Linux filesharing
- Screenshots
- Labs
 - Linux quotas
 - Windows fileshares to linux
- EXAM 3 review

Student presentations

<u>Description</u>

Last project

<u>Description</u>