IT 3110: Systems Automation

Spring 2022 Schedule

Resources

- CIT VM Farm
  - Create VM and connect from osx/Linux
  - Manage VMs with CLI instead of Web
  - Connect to vm from Linux host
- AWS
  - Create EC2 instance
  - Connect EC2 instance
- Software
  - If you are using windows to connect to your vm, you might need the following:
    - Putty
    - 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.

Week 1 (Jan 10,12)

- Slides
  - DHCP Slides
- Readings
- Lectures
  - DHCP Lecture
  - Bionic Networking
  - Wireshark DHCP Capture
- Screenshots/Helps
  - DHCP Dynamic
  - DHCP Fixed
  - DHCP Dynamic Client
- Assignment
  - Hosts

Week 2 (Jan 19)

- Slides
  - NFS Slides
  - PXE Boot
  - Kickstart
- Reading
- Lectures
- Screenshots/Helps
  - NFS How To
  - kickstart
  - tftp and Netboot
- Assignment
  - DHCP

Week 3 (Jan 24, 26)

- Slides
  - Diskless
- Reading
Lectures

• Screenshots/Helps
  • Dual netboot
  • Create an Initial ramdisk
  • Use debootstrap to create a disk image
  • FOG

Assignment

• NFS 1
• DHCP 2 - netboot/kickstart

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**Week 4 (Jan 31, Feb 2)**

**EXAM 1**

• Slides
• Reading
• Lectures
• Screenshots/Helps
  • Review
  • Capture image fog video old video
  • Deploy image fog video
• Assignment
  • Diskless Boot
  • FOG

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**Week 5 (Feb 7,9)**

• Slides
  • Shell 1
  • StdOut
  • StdIn
  • Command Execution
  • Variables
• Reading
  • Shell review - Cookbook ch1
  • The bash cookbook version 2 is located on Oreilly. Navigate to library.dixie.edu -> ebook collections -> O'Reilly. Search for “bash cookbook”.
  • stdout review - Cookbook 2
  • stdin review - Cookbook 3
  • Executing commands - Cookbook 4
• Lectures
  • Sample files
• Screenshots/Helps
• Assignment
  • Bash on Windows

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**Week 6 (Feb 14,16)**

• Slides
  • Logic
  • Sed/Awk

• Reading
  • Variables - cookbook 5
  • Shell logic and arithmetic - cookbook 6
  • A better one on logic
  • Recommended on brackets
  • AWK , SED - Read 7.10- 7.11
Week 7 (Feb 23)

- NO CLASS FEB 21
- Slides
  - Regex
  - Shell Features
- Reading
  - Additional Scripting - Cookbook 10
  - Shell Speed
  - Shell troubleshooting
- Lectures
- Screenshots/Helps
- Assignment
  - Shell Script 3
  - Regex

Week 8 (Feb 28, Mar 2)

- Slides
- Reading
  - Quick Shell - cookbook 18
  - Troubleshooting - cookbook 19
- Lectures
- Screenshots/Helps
  - Sample scripting exam
  - Sample solution other
- Assignment
  - Shell Script 4
  - Shell Script 5

TEST 2

Week 9 (Mar 7,9)

- Slides
  - Terraform
  - Terraform2
  - Terraform3
- Reading
  - Read chapter 2 in “Terraform up and running 2nd edition” found on Oreilly (safarionline) from library.dixie.edu website.
- Lectures
Review AWS
Infrastructure as Code
Terraform

Screenshots/Helps
Assignment
Terraform
Terraform 2

Week Mar 13-19

SPRING BREAK

Week 10 (Mar 21,23)

Slides

Automation with Ansible
Ansible Playbooks
Ansible Playbooks 2

Reading

Ansible variables

Lectures

Configuration management with Ansible

Screenshots/Helps

Assignment

Ansible 1
Ansible 2

Week 11 (Mar 28,30)

Slides

Ansible Roles
Ansible Advanced stuff

Reading

Lectures

Ansible Roles
Example of Roles

Screenshots/Helps

Assignment

Ansible 3

Terraform and Ansible Exam

Week 12 ( Apr 4,6)

Slides

Python

Reading
- Lectures
  - Python video slide lecture
- Screenshots/Helps
  - Python example
- Assignment
  - Python

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**Week 13 (Apr 11,13)**

- Slides
  - Salt
- Reading
  - Salt states
  - Basic usage
  - More complex states
- Lectures
  - Installing saltstack
- Screenshots/Helps
- Assignment
  - Salt 1

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**Week 14 (Apr 18,20)**

- Reading
- Lectures
  - Salt 1
  - Salt 2
- Screenshots/Helps
  - Salt example file
- Assignment
  - Salt 2
  - Salt 3

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**Week 15 (Apr 25,27)**

- SALT
- REVIEW
- EXAM