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

---

**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

---

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

- Slides
  - Shell 1
  - StdOut
  - StdIn
  - Command Execution
  - Variables
- Reading
  - Shell review
  - stdout review
  - stdin review
  - executing commands
- Lectures
  - Sample files
- Screenshots/Helps
- Assignment
  - Bash on Windows

---

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

- Slides
  - Logic
  - Sed/Awk
- Reading
  - Variables
  - Shell logic and arithmetic
  - A better one on logic
  - Recommended on brackets
  - AWK, SED - Read 7.10- 7.11
- Lectures
• Screenshots/Helps
  • SSH As root

• Assignment
  • Shell Script 1
  • Shell Script 2

---

**Week 7 (Feb 23)**

• NO CLASS FEB 21

• Slides
  • Regex
  • Shell Features

• Reading
  • Additional Scripting
  • Shell Speed
  • Shell troubleshooting

• Lectures

• Screenshots/Helps

• Assignment
  • Shell Script 3
  • Regex

---

**Week 8 (Feb 28, Mar 2)**

• Slides

• Reading
  • Quick Shell
  • Troubleshooting

• 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
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

---

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

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

---

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

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

---

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

• SALT
• REVIEW
• EXAM