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
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 1
  - Shell Script 2

Week 8 (Feb 28, Mar 2)

- Slides
- Reading
  - Quick Shell
  - Troubleshooting
- Lectures
- Screenshots/Helps
  - Sample scripting exam
  - Sample solution other
- Assignment
  - Shell Script 3
  - Regex

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
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