IT 3110: Systems Automation

Spring 2021 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 AWS Educate Account
  - 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 11,13)

- **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 20)

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

Week 3 (Jan 25, 27)

- **Slides**
  - Diskless
• Reading
• Lectures
• Screenshots/Helps
  • Dual netboot
  • Create an Initial ramdisk
  • Use debootstrap to create a disk image
  • FOG
• Assignment
  • NFS 1

---

**Week 4 (Feb 1, 3)**

**EXAM 1**

• Slides
• Reading
• Lectures
• Screenshots/Helps
  • Review
  • Capture image fog video old video
  • Deploy image fog video
• Assignment
  • DHCP 2 - netboot/kickstart
  • Diskless Boot
  • FOG

---

**Week 5 (Feb 8, 10)**

• 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 17)**

• NO CLASS FEB 15

• 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 22,24)

• Slides
  • Regex
  • Shell Features

• Reading
  • Additional Scripting
  • Shell Speed
  • Shell troubleshooting

• Lectures
• Screenshots/Helps
• Assignment
  • Shell Script 3
  • Regex

Week 8 (Mar 1, 3)

• Slides
• Reading
  • Quick Shell
  • Troubleshooting

• Lectures
• Screenshots/Helps
  • Sample scripting exam
  • Sample solution other

• Assignment
  • Shell Script 4
  • Shell Script 5

TEST 2

Week Mar 7-13

SPRING BREAK

Week 9 (Mar 15,17)

• 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 10 (Mar 22,24)

• Slides
  • Automation with Ansible
  • Ansible Playbooks
  • Ansible Playbooks 2

• Reading

• Lectures
  • Configuration management with Ansible

• Screenshots/Helps

• Assignment
  • Ansible 1
  • Ansible 2

Week 11 (Mar 29,31)

• Slides
  • Ansible Roles

• Reading

• Lectures
  • Ansible Roles
  • Example of Roles

• Screenshots/Helps

• Assignment
  • Ansible 3

Ansible Exam

Week 12 (Apr 5,7)

• Slides
  • Python
• Reading
• Lectures
  • Python video slide lecture

• Screenshots/Helps
  • Python example

• Assignment
  • Python

Week 13 (Apr 12,14)

• Slides
Reading
  - Salt states
  - Basic usage
  - More complex states

Lectures
  - Installing saltstack

Screenshots/Helps

Assignment
  - Salt 1

---

**Week 14 (Apr 19,21)**

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

---

**Week 15 (Apr 26,28)**

- SALT
- REVIEW
- EXAM