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
• Reading
  • Shell review
  • stdout review
  • stdin review
  • executing commands
• Lectures
• Screenshots/Helps
• Assignment
  • Bash on Windows

---

Week 6 (Feb 17)

• NO CLASS FEB 15

• Slides
  • Variables
  • Logic
  • Sed/Awk
• Reading
  • Variables
  • Shell logic and arithmetic
  • 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

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

---

**Week 8 (Mar 1, 3)**

• Slides
  • Shell Speed
  • Shell Speed

• Reading
  • Quick Shell
  • Troubleshooting

• Lectures
• Screenshots/Helps
  • Sample scripting exam
• Assignment
  • Shell Script 4
  • Shell Script 5

---

**Week Mar 7-13**

SPRING BREAK

---

**Week 9 (Mar 15, 17)**

TEST 2

• Slides
• Reading
• Lectures
  • Review AWS
  • Infrastructure as Code
  • Terraform
• Screenshots/Helps
• Assignment

---

**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**
  - Salt
- **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