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**
- **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

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**Week 11 (Mar 29,31)**

- Slides
  - Ansible Roles

- Reading

- Lectures
  - Ansible Roles
  - Example of Roles

- Screenshots/Helps

- Assignment
  - Ansible 3

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**Ansible Exam**

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**Week 12 (Apr 5,7)**

- Slides
  - Python

- Reading

- Lectures
  - Python video slide lecture

- Screenshots/Helps
  - Python example

- Assignment
  - Python

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**Week 13 (Apr 12,14)**

- Slides
  - Salt

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

- Lectures
  - Installing saltstack

- Screenshots/Helps
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