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

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### 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

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### Week 5 (Feb 7,9)

• Slides
  • Shell 1
  • StdOut
  • StdIn
  • Command Execution
  • Variables
• Reading
  • Shell review - Cookbook ch1
  • The bash cookbook version 2 is located on Oreilly. Navigate to library.dixie.edu -> ebook collections -> O’Reilly. Search for “bash cookbook”.
  • stdout review - Cookbook 2
  • stdin review - Cookbook 3
  • Executing commands - Cookbook 4
• Lectures
  • Sample files
• Screenshots/Helps
• Assignment
  • Bash on Windows

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### Week 6 (Feb 14,16)

• Slides
  • Logic
  • Sed/Awk
• Reading
  • Variables - cookbook 5
  • Shell logic and arithmetic - cookbook 6
  • A better one on logic
  • Recommended on brackets
  • AWK , SED - Read 7.10- 7.11
Week 7 (Feb 23)

- NO CLASS FEB 21
- Slides
  - Regex
  - Shell Features
- Reading
  - Additional Scripting - Cookbook 10
  - Shell Speed
  - Shell troubleshooting
- Lectures
- Screenshots/Helps
- Assignment
  - Shell Script 3
  - Regex

Week 8 (Feb 28, Mar 2)

- Slides
- Reading
  - Quick Shell - cookbook 18
  - Troubleshooting - cookbook 19
- 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
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
Week 13 (Apr 11,13)

- Slides
  - Salt
- Reading
  - Salt states
  - Basic usage
  - More complex states
- Screenshots/Helps
- Assignment
  - Salt 1

Week 14 (Apr 18,20)

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

Week 15 (Apr 25,27)

- SALT
- REVIEW
- EXAM