CMPS 261 Server Management - Module 7: Shell Scripting

Mark Voortman, Ph.D.

Course Modules

- *Module 0: Course Design*
- Module 1: Introduction to Servers and Server Operating Systems
- Module 2: Getting Started with FreeBSD Server
- Module 3: Software Maintenance
- Module 4: Tuning and Configuration
- Module 5: Storage Management
- Module 6: Networking
- **Module 7: Shell Scripting**
- Module 8: Building a WordPress Server

Module 7

- **Shell Scripting**
- Part A
  - Shell script basics
- Part B
  - Creating shell scripts

Objectives

- Upon successful completion of this module, you should be able to:
  - Understand the role and purpose of shell scripting
  - Write and execute basic shell scripts
  - Understand and use pipes and redirection
  - Use variables and quoting in scripts
  - Use common filter commands

PART A

Overview

- Topics
  - Shell scripting

References

- [Bourne shell tutorial](#)

Purpose of Scripting

- Automate activities
- Scripts can execute any command
- Command output can be piped
- Full complement of programming constructs available
  - Variables
  - Selection statements
  - Loops

Scripting Basics

- Scripts are stored in text files
- First line in file should be `#!/bin/sh`
- Script files must have execute permission set

Scripting Basics - Steps in Process

- Use editor to create script file
  - Can copy from another file
- Enter `#!/bin/sh` as first line
- Add additional lines as needed
- Save file
- Change permission to allow execution (only needed once)
- Execute to test
- Enter edit/test cycle until done

Scripting Details

- Interactive review of https://www.shellscript.sh/index.html
- Interactive demos

PART B

Class Exercise

- Random number guessing game
- Automate backups
- Create ZFS snapshots
- Automate any previous task

THANK YOU!