

# DAWS-81S

## Content Index

### Linux

#### Session-0:

**DATE: 11-AUG-2024**

- DevOps Q&A

#### Session-1:

**DATE: 12-AUG-2024**

- What is DevOps?
- Waterfall vs Agile vs DevOps
- SDLC
- What is computer
- Client Server Architecture
- Linux Advantages

#### Session-2:

**DATE: 13-AUG-2024**

- SSH command
- Public and Private keys
- Key import to AWS
- SG creation
- EC2 creation
- Ls, cat commands
- Mkdir rmdir commands

#### Session-3:

**DATE: 14-AUG-2024**

- Copy command
- Grep command
- Curl vs wget
- Head and tail
- VIM editor

## Session-4:

**DATE: 15-AUG-2024**

- Recap VIM editor
- User management
- Change ownership

## Session-5:

**DATE: 16-AUG-2024**

- Recap user management
- Package management
- Service management
- Network management

# Expense Project

## Session-6:

**DATE: 19-AUG-2024**

- Desktop vs Web applications
- 3 tier architecture
- MySQL configuration

## Session-7:

**DATE: 20-AUG-2024**

- MySQL Recap
- Backend

- Projects Structure
  - NodeJS
  - Java
  - Python
- Backend configuration
- Frontend configuration

## Session-8:

**DATE: 21-AUG-2024**

- How does DNS work?
- Domain booking
- Nameservers transfer

## Session-9:

**DATE: 22-AUG-2024**

- Forward proxy
- Reverse proxy
- Linux folder structure
- Shell Scripting Intro

# Shell Scripting

## Session-10:

**DATE: 23-AUG-2024**

- Centralised vs Distributed
- GitHub Setup
- Git add, Git commit and Git push
- Variables
- Data types

# Session-11:

**DATE: 26-AUG-2024**

- Special variables
- Conditions
- Functions
- Colours
- Exit status

# Session-12:

**DATE: 27-AUG-2024**

- Loops
- Logs and redirectors
- Expense MySQL setup
- Idempotency

# Session-13:

**DATE: 28-AUG-2024**

- Expense Backend
- Expense Frontend
- HTTP Methods and Status codes
- Find command
- Deleting old logs

# Session-14:

**DATE: 29-AUG-2024**

- Crontab
- Backup script
- Disk usage

# Ansible

## Session-15:

**DATE: 30-AUG-2024**

- Shell disadvantages
- Push vs Pull
- Ansible installation
- Adhoc commands
- XML vs JSON vs YAML

## Session-16:

**DATE: 02-SEP-2024**

- Ansible inventory
- Ansible variables
- Variable preferences

## Session-17:

**DATE: 03-SEP-2024**

- Data types
- Conditions
- Inventory
- Ansible facts
- Loops

## Session-18:

**DATE: 04-SEP-2024**

- Functions or Filters
- Shell vs Command
- EC2 and R53 creation

- MySQL using Ansible

## Session-19:

**DATE: 05-SEP-2024**

- Expense Project completed using Ansible
  - MySQL
  - Backend
  - Frontend

## Session-20:

**DATE: 06-SEP-2024**

- Ansible cfg
- Ansible Roles
- Ansible Handlers
- Expense Project using Roles

## Session-21:

**DATE: 09-SEP-2024**

- Ansible Tags
- Ansible Vault
- Ansible Dynamic Inventory
- Forks and Serial

# Terraform

## Session-22:

**DATE: 10-SEP-2024**

- IaaS advantages

- Terraform installation
- EC2 and SG creation

## Session-23:

**DATE: 11-SEP-2024**

- Variables
- Data types
- Conditions
- Count based loop
- Functions
- Outputs

## Session-24:

**DATE: 12-SEP-2024**

- Recap
- Data sources

## Session-25:

**DATE: 13-SEP-2024**

- Recap
- Locals
- State
- Remote state
- Locking

## Session-26:

**DATE: 16-SEP-2024**

- Recap
- For each loop

- Dynamic Loop
- Provisioners
- Quiz

## Session-27:

**DATE: 18-SEP-2024**

- Terraform multi environments
  - Tfvars
  - Workspaces
  - Separate repos
- Modules intro

## Session-28:

**DATE: 19-SEP-2024**

- Module development
- VPC
  - VPC
  - Internet Gateway
  - Subnets
  - Route table and Routes
  - Associations
  - Elastic IP
  - NAT gateway

## Session-29:

**DATE: 23-SEP-2024**

- Terraform recap
- Terraform commands
  - Upgrade
  - Fmt
  - Show state
  - Import
  - Taint



# Session-30:

**DATE: 24-SEP-2024**

- VPC Module
  - Naming convention
  - VPC
  - IGW
  - Subnets
  - EIP
  - NAT

# Session-31:

**DATE: 25-SEP-2024**

- VPC Module Completed
  - VPC
  - IGW
  - Subnets
  - EIP
  - NAT
  - Route tables
  - Routes
  - Associations
  - VPC Peering

# Session-32:

**DATE: 26-SEP-2024**

- SG Module
- SSM Parameter store

# Session-33:

**DATE: 27-SEP-2024**

- Bastion Host
- Applications using EC2
- Terraform and Ansible integration
- Expense project completed

## Session-34:

**DATE: 30-SEP-2024**

- RDS Module
- Stateful vs Stateless
- Load Balancer
  - Target groups
  - Listener
  - Rules
  - Health check
  - Autoscaling

## Session-35:

**DATE: 01-OCT-2024**

- SG Rules Discussion
- RDS Route53
- Load Balancer using Terraform
  - Backend ALB
  - Listener
  - Rule
  - R53 record

## Session-36:

**DATE: 03-OCT-2024**

- VPN

## Session-37:

**DATE: 07-OCT-2024**

- Backend Using Terraform
  - EC2
  - Configuration using provisioners
  - Stop EC2
  - Take AMI
  - Delete instance

## Session-38:

**DATE: 08-OCT-2024**

- Backend Using Terraform
  - Target group
  - Launch template
  - Autoscaling group
  - Autoscaling policy

## Session-39:

**DATE: 09-OCT-2024**

- Listener Rule
- ACM
- Web ALB
- HTTPS Listener

## Session-40:

**DATE: 10-OCT-2024**

- Frontend
- CDN

## Session-41:

**DATE: 11-OCT-2024**

- CDN using terraform
- Terraform completed

# Docker

## Session-42:

**DATE: 14-OCT-2024**

- Old vs Monolithic vs Microservices
- Bare metal vs VM vs Containers
- Containers advantages
- Docker installation
- Docker commands

## Session-43:

**DATE: 15-OCT-2024**

- Dockerfile
- Dockerfile instructions
  - FROM
  - RUN
  - CMD
  - CMD vs ENV
  - LABEL
  - EXPOSE
  - ADD
  - COPY
  - ADD vs COPY

## Session-44:

**DATE: 16-OCT-2024**

- Dockerfile instructions
  - ENTRYPOINT
  - CMD vs ENTRYPOINT
  - USER

- WORKDIR
  - ARG
  - ARG vs ENV
  - ONBUILD
- Expense Project
  - MySQL container

## Session-45:

**DATE: 17-OCT-2024**

- Docker bridge network
- Expense Project
  - Backend
  - Frontend

## Session-46:

**DATE: 18-OCT-2024**

- Docker Networking
- Docker volumes
- Docker compose
- Expense project

## Session-47:

**DATE: 21-OCT-2024**

- Docker Best practices
  - Minimal images
  - Non root containers
  - Multi stage builds
- Docker layers
- Docker architecture

# Kubernetes

## Session-48:

**DATE: 22-OCT-2024**

- Need for Kubernetes
- Installation using eksctl
- Namespaces
- Pods

## Session-49:

**DATE: 24-OCT-2024**

- Pods
  - Labels
  - Annotations
  - Env
  - Resource limits and requests
- Service
  - Cluster IP
  - Node port
  - Load balancer

## Session-50:

**DATE: 25-OCT-2024**

- Sets
  - Replica set
  - Deployment
- Expense Project using K8
  - MySQL
  - Backend
  - Debug
  - Frontend

# Session-51:

**DATE: 29-OCT-2024**

- Volumes
- EBS Static Provisioning
- EBS Dynamic Provisioning

# Session-52:

**DATE: 30-OCT-2024**

- EFS provisioning
  - Static
  - Dynamic
- Statefulset
- Headless Service
- MySQL using Statefulset

# Session-53:

**DATE: 04-NOV-2024**

- Vertical vs Horizontal scaling
- HPA
- Helm Charts

# Session-54:

**DATE: 05-NOV-2024**

- Technical Problem
- No session happened

# Session-55:

**DATE: 06-NOV-2024**

- RBAC

## Session-56:

**DATE: 07-NOV-2024**

- Taints and Tolerations
- Affinity and Anti affinity
- Ingress controller

## Session-57:

**DATE: 11-NOV-2024**

- Ingress controller
- Init containers
- Liveness and readiness
- Mounting configmap as volume

## Session-58:

**DATE: 13-NOV-2024**

- EKS cluster creating using terraform

## Session-59:

**DATE: 14-NOV-2024**

- EKS cluster creating using terraform
- EKS cluster upgrade
- ALB as ingress controller
- Target group binding



# Session-60:

**DATE: 15-NOV-2024**

- Push images to ECR
- DaemonSet
- Service account
- K8 architecture
- Quiz

## Git

# Session-61:

**DATE: 18-NOV-2024**

- Branching
- Merge
- Rebase
- Merge vs Rebase
- How to resolve conflicts

# Session-62:

**DATE: 19-NOV-2024**

- Branching strategy
- Git flow
- Feature branching
- Reset
- Revert

## Jenkins

# Session-63:

**DATE: 20-NOV-2024**

- Git cherry pick
- Git restore
- CI
- Jenkins Installation
- Freestyle job
- Pipeline job

# Session-64:

**DATE: 21-NOV-2024**

- Master Agent architecture
- Pipeline Syntax
  - Options
  - Triggers
  - Parameters
- GitHub and Jenkins Webhook
- Backend Jenkinsfile

# Session-65:

**DATE: 22-NOV-2024**

- Expense Infrastructure
- Input and When conditions

# Session-66:

**DATE: 25-NOV-2024**

- Expense Infrastructure completed

# Session-67:

**DATE: 26-NOV-2024**

- Backend Pipeline
- Frontend Pipeline

# Session-68:

**DATE: 27-NOV-2024**

- SonarQube Server
- SonarQube Scanner
- Jenkins Sonar Integration
- Sonar Quality gates
- Veracode DAST
- GitHub Dependabot

# Session-69:

**DATE: 28-NOV-2024**

- CI pipeline
- CD pipeline
- Multi branch pipeline
- Jenkins shared libraries
- PROD pipeline

# Session-70:

**DATE: 29-NOV-2024**

- Self intro
- Daily tasks
- Challenges faced