

Agenda and Training Details

1 July 2025


Course Content – Day 1 & 2

Terraform Fundamentals & AWS Provisioning Basics

-  **Concepts**
- Introduction to DevOps & IaC
- What is Terraform and how it works?
- Declarative vs Imperative IaC tools
- Terraform CLI, workflow, providers, and state


Course Content – Day 1 & 2

Terraform Fundamentals & AWS Provisioning Basics

-  Hands-On
- Install Terraform CLI
- Setup AWS CLI & credentials
- Create first Terraform project (S3 Bucket or EC2 instance)
- Use AWS provider
- Write and apply basic .tf files
- Understand Terraform plan/apply/destroy
- Understand resource blocks and meta arguments (count, depends_on)
- Cleanup with destroy


Course Content – Day 3 & 4

Variables, Outputs, Modules, and State Management

-  **Concepts**
- Input variables, local variables, outputs
- Data sources (e.g., AMI lookup, EC2 tags)
- Remote state overview and state file best practices
- Terraform backends (S3 + DynamoDB for locking)
- Reusability with modules


Course Content – Day 3 & 4

Variables, Outputs, Modules, and State Management

-  Hands-On
- Use variables with tfvars
- Output key resource values (e.g., public IP of EC2)
- Use terraform_remote_state
- Configure S3 as a remote backend (with DynamoDB locking)
- Break project into modules (VPC, EC2, security group)
- Reference output from modules
- Simple module registry usage


Course Content – Day 5 & 6

AWS Resource Management, Monitoring & Update Automation

-  **Concepts**
- Infrastructure updates (patches, package upgrades)
- Basic monitoring with CloudWatch via Terraform
- AWS EC2 lifecycle (stop, update, reboot, terminate)
- Terraform provisioners (basic usage)
- Templating with templatefile function
- Managing dependencies

Course Content – Day 5 & 6

AWS Resource Management, Monitoring & Update Automation

-  Hands-On
- Create a complete 3-tier architecture (VPC + EC2 + RDS)
- Install and update packages via remote-exec provisioner
- Use user_data to automate package updates (Amazon Linux)
- Enable CloudWatch monitoring using aws_cloudwatch_log_group, metric_alarm
- Write alert for high CPU on EC2
- Use depends_on and ignore_changes effectively


Course Content – Day 7 & 8

Best Practices, Collaboration, Testing & Final Project

-  **Concepts**
- Best practices for production-like Terraform code
- Using Terraform with Git (version control, remote modules)
- Secure variables using environment variables
- Team collaboration tips: workspaces, state isolation
- Testing basics: validate, terraform fmt, plan check
- Overview of CI/CD integration

Course Content – Day 7 & 8

Best Practices, Collaboration, Testing & Final Project

-  Hands-On
- Use terraform fmt, validate, and plan in Git workflow
- Create separate workspaces (dev, stage, prod)
- Final project:
 - Provision a VPC + public/private subnets
 - Launch EC2 instance with updates enabled
 - Configure monitoring & alarms
 - Reuse modules
 - Use terraform.tfvars and output key values

Attendance



During the training

- At any time during the training, please interrupt if:
 - My speed is slow or fast
 - Any topic is to be repeated again
 - You feel a need of a break

Tea Break Time

- ?

Lab Environment

- AWS Cloud Access
 - Refer in Chat
- In Browser Console
 - <http://ec2-35-159-175-24.eu-central-1.compute.amazonaws.com:8787/>



Lab Environment

The screenshot displays the RStudio Lab Environment interface. The top menu bar includes File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, and Help. The top right shows the user 'u1' and the project '(None)'. The main workspace is divided into three panes: Console, Terminal, and Jobs. The Console pane shows the prompt 'u1@vmTerraform:~\$'. The Terminal pane shows the prompt 'u1@vmTerraform:~\$'. The Jobs pane is empty. The Environment pane on the right shows 'Global Environment' and 'Environment is empty'. The Files pane at the bottom right shows a file browser with columns for Name, Size, and Modified, containing a folder named 'R'.

File Edit Code View Plots Session Build Debug Profile Tools Help

u1 Project: (None)

Go to file/function Addins

Console Terminal x Jobs x

Terminal 1 u1@vmTerraform: ~

u1@vmTerraform:~\$

Environment History Connections Tutorial

Import Dataset 122 MiB

R Global Environment

Environment is empty

Files Plots Packages Help Viewer

New Folder Upload Delete Rename More

Home

	Name	Size	Modified
	R		

Thank You