**Extracted Code and Scripts from Chapter 18**

**1. Installing and Running Docker on Rocky Linux**

**Install Docker**

sudo dnf install docker-ce

sudo systemctl enable --now docker

**Run a Test Container**

docker run hello-world

**Create a Docker Container for a Web Application**

**Dockerfile:**

FROM rockylinux:8

RUN dnf install -y httpd

COPY index.html /var/www/html/

CMD ["httpd", "-D", "FOREGROUND"]

**Build and Run the Container**

docker build -t web-app .

docker run -d -p 8080:80 web-app

**2. Deploy Kubernetes on Rocky Linux**

**Install Kubernetes Components**

sudo dnf install -y kubeadm kubelet kubectl

sudo systemctl enable --now kubelet

**Initialize a Kubernetes Cluster**

sudo kubeadm init

**3. Launching an EC2 Instance with Rocky Linux**

1. Choose Rocky Linux from the EC2 instance marketplace.
2. Select instance type, configure network settings, and launch.
3. Deploy a containerized application or manage cloud services.

**4. Installing Jenkins on Rocky Linux**

**Install Required Dependencies**

sudo dnf install java-1.8.0-openjdk

sudo dnf install wget

**Download and Install Jenkins**

wget -q -O - https://pkg.jenkins.io/jenkins.io.key | sudo tee /etc/yum.repos.d/jenkins.repo

sudo dnf install jenkins

sudo systemctl enable --now jenkins

**5. Automating Configuration with Ansible**

**Install Ansible**

sudo dnf install -y ansible

**Create an Ansible Playbook**

**playbook.yml:**

- name: Install and Start Apache

hosts: all

become: yes

tasks:

- name: Install Apache

dnf:

name: httpd

state: present

- name: Start Apache

service:

name: httpd

state: started

enabled: yes

**Run the Playbook**

ansible-playbook -i inventory.ini playbook.yml

**6. Using Terraform to Deploy Infrastructure**

**Create a Terraform Configuration File**

**main.tf:**

provider "aws" {

region = "us-east-1"

}

resource "aws\_instance" "rocky\_linux" {

ami = "ami-xxxxxxxxxxxx"

instance\_type = "t2.micro"

}

**Initialize and Apply Terraform Configuration**

terraform init

terraform apply -auto-approve

This document consolidates the scripts and code snippets from Chapter 18 to facilitate quick reference and practical implementation.