EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | maven-userdata.sh | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_security_group" "docker_sg" > ingress > to_port

```
100  resource "aws_instance" "maven_host" {
102    instance_type          = "t2.medium"
103    vpc_security_group_ids = [aws_security_group.maven_sg.id]
104    subnet_id              = aws_subnet.default_subnet.id
105    key_name               = aws_key_pair.keypair.key_name
106    associate_public_ip_address = true
107    user_data              = file("./maven-userdata.sh")
108
109    tags = {
110      Name = "maven-host"
111    }
112  }
113
114  // Outputs
115  output "docker-ip" {
116    value = aws_instance.docker_host.public_ip
117  }
118
119  output "maven-ip" {
120    value = aws_instance.maven_host.public_ip
121  }
```

PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
mac@SirNicks-MBP docker % terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/local from the dependency lock file
- Reusing previous version of hashicorp/aws from the dependency lock file
- Reusing previous version of hashicorp/tls from the dependency lock file
- Using previously-installed hashicorp/aws v5.76.0
- Using previously-installed hashicorp/tls v4.0.6
- Using previously-installed hashicorp/local v2.5.2

Terraform has been successfully initialized!

You may now begin working with Terraform. Try running "terraform plan" to see
any changes that are required for your infrastructure. All Terraform commands
should now work.

If you ever set or change modules or backend configuration for Terraform,
rerun this command to reinitialize your working directory. If you forget, other
commands will detect it and remind you to do so if necessary.
mac@SirNicks-MBP docker %
```

zsh docker | zsh kubern... | zsh kubern... | zsh grafan... | zsh docker

EXPLORER

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docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
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113 output "docker-ip" {
114   value = aws_instance.docker_host.public_ip
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```

PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
mac@SirNicks-MBP docker % ssh -i docker-key.pem ec2-user@18.170.27.221
The authenticity of host '18.170.27.221 (18.170.27.221)' can't be established.
ED25519 key fingerprint is SHA256:SrEWAhH4JHvWNUD00jlbBo1wKIGAk1dc2XsvaaJTFC8.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '18.170.27.221' (ED25519) to the list of known hosts.
Register this system with Red Hat Insights: rhc connect

Example:
# rhc connect --activation-key <key> --organization <org>

The rhc client and Red Hat Insights will enable analytics and additional
management capabilities on your system.
View your connected systems at https://console.redhat.com/insights

You can learn more about how to register your system
using rhc at https://red.ht/registration
[ec2-user@ip-172-31-20-111 ~]$
```

zsh docker

ssh docker

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PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

```
      + private_key_pem_pkcs8         = (sensitive value)
      + public_key_fingerprint_md5    = (known after apply)
      + public_key_fingerprint_sha256 = (known after apply)
      + public_key_openssh            = (known after apply)
      + public_key_pem                = (known after apply)
      + rsa_bits                      = 4096
    }

Plan: 7 to add, 0 to change, 0 to destroy.

Changes to Outputs:
  + docker-ip = (known after apply)
  + maven-ip  = (known after apply)
tls_private_key.keypair: Creating...
aws_security_group.maven_sg: Creating...
aws_security_group.docker_sg: Creating...
tls_private_key.keypair: Creation complete after 6s [id=3efda5c97fa0f99d123df4f9946f51d10d5263a0]
aws_key_pair.keypair: Creating...
local_file.private_key: Creating...
local_file.private_key: Creation complete after 0s [id=59d49d790c48c13c14f3c7e48e1b45cfd45f4af6]
aws_security_group.docker_sg: Creation complete after 6s [id=sg-0cb681fb37a335b35]
aws_security_group.maven_sg: Creation complete after 6s [id=sg-038ed763e1eb29a34]
aws_key_pair.keypair: Creation complete after 1s [id=docker-key]
aws_instance.maven_host: Creating...
aws_instance.docker_host: Creating...
aws_instance.docker_host: Still creating... [10s elapsed]
aws_instance.maven_host: Still creating... [10s elapsed]
aws_instance.maven_host: Creation complete after 16s [id=i-0ed4b2a8b63d61fa9]
aws_instance.docker_host: Creation complete after 16s [id=i-0a37bf589cdb476e7]

Apply complete! Resources: 7 added, 0 changed, 0 destroyed.

Outputs:

docker-ip = "35.179.142.62"
maven-ip = "18.170.27.221"
mac@SirNicks-MBP docker %
```

zsh... | ssh docker

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103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
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107   tags = {
108     Name = "maven-host"
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using rhc at https://red.ht/registration
[ec2-user@ip-172-31-20-111 ~]$ tail -f /var/log/cloud-init-output.log
  Running scriptlet: kernel-modules-5.14.0-503.15.1.el9_5.x86_64        377/377
  Running scriptlet: rpm-4.16.1.3-34.el9.x86_64                         377/377
  Running scriptlet: crypto-policies-scripts-20240828-2.git626aa59.el   377/377
  Running scriptlet: nss-3.101.0-7.el9_2.x86_64                         377/377
  Running scriptlet: subscription-manager-1.29.42-1.el9.x86_64          377/377
  Running scriptlet: sssd-common-2.9.5-4.el9_5.1.x86_64                 377/377
  Running scriptlet: tuned-2.24.0-2.el9_5.noarch                        377/377
  Running scriptlet: kexec-tools-2.0.27-16.el9_5.1.x86_64               377/377
  Running scriptlet: microcode_ctl-4:20240910-1.el9_5.noarch            377/377
  Running scriptlet: libgcc-11.4.1-3.el9.x86_64                         377/377
```

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119 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

```
pipewire-pulseaudio-1.0.1-1.el9.x86_64
pixman-0.40.0-6.el9_3.x86_64
plexus-cipher-1.7-27.el9.noarch
plexus-classworlds-2.6.0-11.el9.noarch
plexus-containers-component-annotations-2.1.0-10.el9.noarch
plexus-interpolation-1.26-11.el9.noarch
plexus-sec-dispatcher-1.4-37.el9.noarch
plexus-utils-3.3.0-10.el9.noarch
poppler-21.01.0-21.el9.x86_64
poppler-data-0.4.9-9.el9.noarch
poppler-glib-21.01.0-21.el9.x86_64
publicsuffix-list-20210518-3.el9.noarch
pulseaudio-libs-15.0-2.el9.x86_64
rtkit-0.11-29.el9.x86_64
sisu-1:0.3.4-10.el9.noarch
slf4j-1.7.30-13.el9.noarch
sound-theme-freedesktop-0.8-17.el9.noarch
totem-pl-parser-3.26.6-2.el9.x86_64
tracker-3.1.2-3.el9_1.x86_64
tracker-miners-3.1.2-4.el9_3.x86_64
ttmkfdir-3.0.9-65.el9.x86_64
tzdata-java-2024b-2.el9.noarch
upower-0.99.13-2.el9.x86_64
webkit2gtk3-jsc-2.46.3-1.el9_5.x86_64
webrtc-audio-processing-0.3.1-8.el9.x86_64
wireplumber-0.4.14-1.el9.x86_64
wireplumber-libs-0.4.14-1.el9.x86_64
xdg-dbus-proxy-0.1.3-1.el9.x86_64
xdg-desktop-portal-1.12.6-1.el9.x86_64
xdg-desktop-portal-gtk-1.12.0-3.el9.x86_64
xkeyboard-config-2.33-2.el9.noarch
xml-common-0.6.3-58.el9.noarch
xorg-x11-fonts-Type1-7.5-33.el9.noarch

Complete!
Cloud-init v. 23.4-7.el9_4.3 finished at Wed, 27 Nov 2024 08:53:45 +0000. Datasource DataSourceEc2Local.  Up 333.49 seconds
```

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```
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100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
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107   tags = {
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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

```
  plexus-utils-3.3.0-10.el9.noarch
  poppler-21.01.0-21.el9.x86_64
  poppler-data-0.4.9-9.el9.noarch
  poppler-glib-21.01.0-21.el9.x86_64
  publicsuffix-list-20210518-3.el9.noarch
  pulseaudio-libs-15.0-2.el9.x86_64
  rtkit-0.11-29.el9.x86_64
  sisu-1:0.3.4-10.el9.noarch
  slf4j-1.7.30-13.el9.noarch
  sound-theme-freedesktop-0.8-17.el9.noarch
  totem-pl-parser-3.26.6-2.el9.x86_64
  tracker-3.1.2-3.el9_1.x86_64
  tracker-miners-3.1.2-4.el9_3.x86_64
  ttmkfdir-3.0.9-65.el9.x86_64
  tzdata-java-2024b-2.el9.noarch
  upower-0.99.13-2.el9.x86_64
  webkit2gtk3-jsc-2.46.3-1.el9_5.x86_64
  webrtc-audio-processing-0.3.1-8.el9.x86_64
  wireplumber-0.4.14-1.el9.x86_64
  wireplumber-libs-0.4.14-1.el9.x86_64
  xdg-dbus-proxy-0.1.3-1.el9.x86_64
  xdg-desktop-portal-1.12.6-1.el9.x86_64
  xdg-desktop-portal-gtk-1.12.0-3.el9.x86_64
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  xml-common-0.6.3-58.el9.noarch
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Complete!
Cloud-init v. 23.4-7.el9_4.3 finished at Wed, 27 Nov 2024 08:53:45 +0000. Datasource DataSourceEc2Local.  Up 333.49 seconds
^C
[ec2-user@ip-172-31-20-111 ~]$ mvn --version
Apache Maven 3.6.3 (Red Hat 3.6.3-15)
Maven home: /usr/share/maven
Java version: 11.0.25, vendor: Red Hat, Inc., runtime: /usr/lib/jvm/java-11-openjdk-11.0.25.0.9-3.el9.x86_64
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "5.14.0-427.20.1.el9_4.x86_64", arch: "amd64", family: "unix"
[ec2-user@ip-172-31-20-111 ~]$
```

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PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

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  xml-common-0.6.3-58.el9.noarch
  xorg-x11-fonts-Type1-7.5-33.el9.noarch

Complete!
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^C
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Apache Maven 3.6.3 (Red Hat 3.6.3-15)
Maven home: /usr/share/maven
Java version: 11.0.25, vendor: Red Hat, Inc., runtime: /usr/lib/jvm/java-11-openjdk-11.0.25.0.9-3.el9.x86_64
Default locale: en_US, platform encoding: UTF-8
OS name: "linux", version: "5.14.0-427.20.1.el9_4.x86_64", arch: "amd64", family: "unix"
[ec2-user@ip-172-31-20-111 ~]$ git clone https://github.com/CloudHight?usteam.git
Cloning into 'CloudHight?usteam'...
fatal: https://github.com/CloudHight?usteam.git/info/refs not valid: is this a git repository?
[ec2-user@ip-172-31-20-111 ~]$ git clone https://github.com/CloudHight/usteam.git
Cloning into 'usteam'...
remote: Enumerating objects: 1162, done.
remote: Counting objects: 100% (491/491), done.
remote: Compressing objects: 100% (244/244), done.
remote: Total 1162 (delta 332), reused 349 (delta 247), pack-reused 671 (from 1)
Receiving objects: 100% (1162/1162), 861.99 KiB | 19.16 MiB/s, done.
Resolving deltas: 100% (555/555), done.
[ec2-user@ip-172-31-20-111 ~]$ ls -al
total 16
drwx------. 4 ec2-user ec2-user   88 Nov 27 08:59 .
drwxr-xr-x. 3 root     root       22 Jun 25 14:28 ..
-rw-r--r--. 1 ec2-user ec2-user   18 Feb 15  2024 .bash_logout
-rw-r--r--. 1 ec2-user ec2-user  141 Feb 15  2024 .bash_profile
-rw-r--r--. 1 ec2-user ec2-user  492 Feb 15  2024 .bashrc
drwx------. 2 ec2-user ec2-user   29 Nov 27 08:48 .ssh
drwxr-xr-x. 6 ec2-user ec2-user 4096 Nov 27 08:59 usteam
[ec2-user@ip-172-31-20-111 ~]$ cd usteam/
[ec2-user@ip-172-31-20-111 usteam]$
```

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  instance_type          = "t2.medium"
  vpc_security_group_ids = [aws_security_group.maven_sg.id]
  key_name               = aws_key_pair.keypair.key_name
  associate_public_ip_address = true
  user_data              = file("./maven-userdata.sh")

  tags = {
    Name = "maven-host"
  }
}

// Outputs
output "docker-ip" {
  value = aws_instance.docker_host.public_ip
}

output "maven-ip" {
  value = aws_instance.maven_host.public_ip
}
```

PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

zsh docker

```
[ec2-user@ip-172-31-20-111 ~]$ git clone https://github.com/CloudHight/usteam.git
Cloning into 'usteam'...
remote: Enumerating objects: 1162, done.
remote: Counting objects: 100% (491/491), done.
remote: Compressing objects: 100% (244/244), done.
remote: Total 1162 (delta 332), reused 349 (delta 247), pack-reused 671 (from 1)
Receiving objects: 100% (1162/1162), 861.99 KiB | 19.16 MiB/s, done.
Resolving deltas: 100% (555/555), done.
[ec2-user@ip-172-31-20-111 ~]$ ls -al
total 16
drwx------. 4 ec2-user ec2-user   88 Nov 27 08:59 .
drwxr-xr-x. 3 root     root       22 Jun 25 14:28 ..
-rw-r--r--. 1 ec2-user ec2-user   18 Feb 15  2024 .bash_logout
-rw-r--r--. 1 ec2-user ec2-user  141 Feb 15  2024 .bash_profile
-rw-r--r--. 1 ec2-user ec2-user  492 Feb 15  2024 .bashrc
drwx------. 2 ec2-user ec2-user   29 Nov 27 08:48 .ssh
drwxr-xr-x. 6 ec2-user ec2-user 4096 Nov 27 08:59 usteam
[ec2-user@ip-172-31-20-111 ~]$ cd usteam/
[ec2-user@ip-172-31-20-111 usteam]$ ls -al
total 76
drwxr-xr-x. 6 ec2-user ec2-user  4096 Nov 27 08:59 .
drwx------. 4 ec2-user ec2-user    88 Nov 27 08:59 ..
-rw-r--r--. 1 ec2-user ec2-user  1676 Nov 27 08:59 Dockerfile
drwxr-xr-x. 8 ec2-user ec2-user   163 Nov 27 08:59 .git
-rw-r--r--. 1 ec2-user ec2-user  5093 Nov 27 08:59 Jenkinsfile
-rw-r--r--. 1 ec2-user ec2-user  4913 Nov 27 08:59 Jenkinsfile2
drwxr-xr-x. 3 ec2-user ec2-user    21 Nov 27 08:59 .mvn
-rw-r--r--. 1 ec2-user ec2-user 10071 Nov 27 08:59 mvnw
-rw-r--r--. 1 ec2-user ec2-user  6609 Nov 27 08:59 mvnw.cmd
-rw-r--r--. 1 ec2-user ec2-user  2318 Nov 27 08:59 newrelic2.yml
-rw-r--r--. 1 ec2-user ec2-user  2317 Nov 27 08:59 newrelic.yml
-rw-r--r--. 1 ec2-user ec2-user 12695 Nov 27 08:59 pom.xml
-rw-r--r--. 1 ec2-user ec2-user     9 Nov 27 08:59 README.md
drwxr-xr-x. 5 ec2-user ec2-user    48 Nov 27 08:59 src
drwxr-xr-x. 4 ec2-user ec2-user    41 Nov 27 08:59 target
-rw-r--r--. 1 ec2-user ec2-user   444 Nov 27 08:59 testJenkinsfile
[ec2-user@ip-172-31-20-111 usteam]$
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

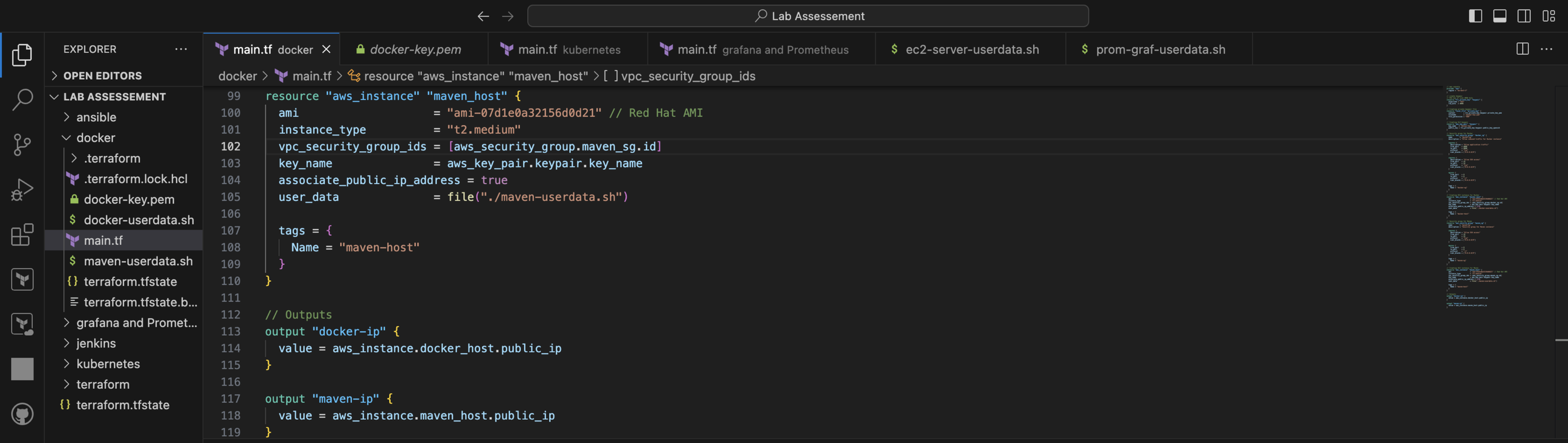
```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
113 output "docker-ip" {
114   value = aws_instance.docker_host.public_ip
115 }
116
117 output "maven-ip" {
118   value = aws_instance.maven_host.public_ip
119 }
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

```
Downloading from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.report/0.8.5/org.jacoco.report-0.8.5.pom
Downloaded from central: https://repo.maven.apache.org/maven2/org/jacoco/org.jacoco.report/0.8.5/org.jacoco.report-0.8.5.pom (1.9 kB at 314 kB/s)
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/codehaus/plexus/plexus-interpolation/1.14/plexus-interpolation-1.14.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/codehaus/plexus/plexus-utils/3.0.22/plexus-utils-3.0.22.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/shared/file-management/1.2.1/file-management-1.2.1.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/shared/maven-shared-io/1.1/maven-shared-io-1.1.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/maven-artifact-manager/2.0.2/maven-artifact-manager-2.0.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/wagon/wagon-provider-api/1.0-alpha-6/wagon-provider-api-1.0-alpha-6.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/junit/junit/4.8.2/junit-4.8.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-sink-api/1.0/doxia-sink-api-1.0.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/reporting/maven-reporting-impl/2.1/maven-reporting-impl-2.1.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/maven-project/2.0.10/maven-project-2.0.10.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/maven-profile/2.0.10/maven-profile-2.0.10.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/maven-plugin-registry/2.0.10/maven-plugin-registry-2.0.10.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-core/1.1.2/doxia-core-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-logging-api/1.1.2/doxia-logging-api-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/xerces/xercesImpl/2.8.1/xercesImpl-2.8.1.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/commons-httpclient/commons-httpclient/3.1/commons-httpclient-3.1.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/commons-codec/commons-codec/1.2/commons-codec-1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-site-renderer/1.1.2/doxia-site-renderer-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-decoration-model/1.1.2/doxia-decoration-model-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-module-xhtml/1.1.2/doxia-module-xhtml-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/doxia/doxia-module-fml/1.1.2/doxia-module-fml-1.1.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/codehaus/plexus/plexus-velocity/1.1.7/plexus-velocity-1.1.7.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/velocity/velocity/1.5/velocity-1.5.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/commons-validator/commons-validator/1.2.0/commons-validator-1.2.0.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/commons-beanutils/commons-beanutils/1.7.0/commons-beanutils-1.7.0.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/commons-logging/commons-logging/1.0.4/commons-logging-1.0.4.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/xml-apis/xml-apis/1.0.b2/xml-apis-1.0.b2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/jacoco/org.jacoco.agent/0.8.5/org.jacoco.agent-0.8.5-runtime.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/jacoco/org.jacoco.core/0.8.5/org.jacoco.core-0.8.5.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/ow2/asm/asm/7.2/asm-7.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/ow2/asm/asm-commons/7.2/asm-commons-7.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/ow2/asm/asm-analysis/7.2/asm-analysis-7.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/ow2/asm/asm-tree/7.2/asm-tree-7.2.jar
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/jacoco/org.jacoco.report/0.8.5/org.jacoco.report-0.8.5.jar
```




```
nb.JsonbAutoConfiguration, org.springframework.boot.autoconfigure.mustache.MustacheAutoConfiguration, org.springframework.boot.autoconfigure.task.TaskExecutionAutoConfiguration, org.spri
ngframework.boot.autoconfigure.thymeleaf.ThymeleafAutoConfiguration, org.springframework.boot.autoconfigure.validation.ValidationAutoConfiguration, org.springframework.boot.autoconfigure
.web.servlet.error.ErrorMvcAutoConfiguration, org.springframework.boot.autoconfigure.web.servlet.HttpEncodingAutoConfiguration, org.springframework.boot.autoconfigure.web.servlet.WebMvcA
utoConfiguration, org.springframework.boot.test.autoconfigure.web.servlet.MockMvcAutoConfiguration, org.springframework.boot.test.autoconfigure.web.servlet.MockMvcWebClientAutoConfigurat
ion, org.springframework.boot.test.autoconfigure.web.servlet.MockMvcWebDriverAutoConfiguration, org.springframework.boot.autoconfigure.security.oauth2.client.servlet.OAuth2ClientAutoConf
iguration, org.springframework.boot.autoconfigure.security.oauth2.resource.servlet.OAuth2ResourceServerAutoConfiguration, org.springframework.boot.autoconfigure.security.servlet.Security
AutoConfiguration, org.springframework.boot.autoconfigure.security.servlet.SecurityFilterAutoConfiguration, org.springframework.boot.autoconfigure.security.servlet.UserDetailsServiceAuto
Configuration, org.springframework.boot.test.autoconfigure.web.servlet.MockMvcSecurityConfiguration]], org.springframework.boot.test.context.filter.ExcludeFilterContextCustomizer@6b4125e
d, org.springframework.boot.test.json.DuplicateJsonObjectContextCustomizerFactory$DuplicateJsonObjectContextCustomizer@322e49ee, org.springframework.boot.test.mock.mockito.MockitoContext
Customizer@12fdb128, org.springframework.boot.test.autoconfigure.OverrideAutoConfigurationContextCustomizerFactory$DisableAutoConfigurationContextCustomizer@50b46e24, org.springframework
.boot.test.autoconfigure.actuate.metrics.MetricsExportContextCustomizerFactory$DisableMetricExportContextCustomizer@4fba8eec, org.springframework.boot.test.autoconfigure.filter.TypeExclu
deFiltersContextCustomizer@629eff7a, org.springframework.boot.test.autoconfigure.properties.PropertyMappingContextCustomizer@f589fd5, org.springframework.boot.test.autoconfigure.web.serv
let.WebDriverContextCustomizerFactory$Customizer@1ab14636, org.springframework.boot.test.context.SpringBootTestArgs@1, org.springframework.boot.test.context.SpringBootTestWebEnvironment@
0], resourceBasePath = 'src/main/webapp', contextLoader = 'org.springframework.boot.test.context.SpringBootContextLoader', parent = [null]], attributes = map[[empty]]], class annotated w
ith @DirtiesContext [false] with mode [null].
09:06:57.243 [main] DEBUG org.springframework.test.context.support.TestPropertySourceUtils - Adding inlined properties to environment: {spring.jmx.enabled=false, org.springframework.boot
.test.autoconfigure.web.servlet.WebMvcTestContextBootstrapper=true}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 |   |_| |   |___  |   | |       |   |   |   |       |   |       | \ \ \ \
 |    ___|    ___| |   | |      _|   |___|   |  _    |   |      _|  \ \ \ \
 |   |   |   |___  |   | |     |_|           |   | |   |   |     |_    ) ) ) )
 |___|   |_______| |___| |_______|_______|___|_|  |__|___|_____|  / / / /
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:: Built with Spring Boot :: 2.4.2


2024-11-27 09:06:58.076  INFO 56213 --- [           main] o.s.s.p.owner.OwnerControllerTests       : Starting OwnerControllerTests using Java 11.0.25 on ip-172-31-20-111.eu-west-2.comput
e.internal with PID 56213 (started by ec2-user in /home/ec2-user/usteam)
2024-11-27 09:06:58.087  INFO 56213 --- [           main] o.s.s.p.owner.OwnerControllerTests       : No active profile set, falling back to default profiles: default
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT
- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
113 output "docker-ip" {
114   value = aws_instance.docker_host.public_ip
115 }
116
117 output "maven-ip" {
118   value = aws_instance.maven_host.public_ip
119 }
```

PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

zsh docker

ssh docker

```
Downloading from spring-snapshots: https://repo.spring.io/snapshot/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/apache/maven/maven-archiver/3.5.0/maven-archiver-3.5.0.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/codehaus/plexus/plexus-archiver/4.2.2/plexus-archiver-4.2.2.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/iq80/snappy/snappy/0.4/snappy-0.4.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/tukaani/xz/1.8/xz-1.8.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/codehaus/plexus/plexus-io/3.2.0/plexus-io-3.2.0.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/apache/maven/shared/maven-filtering/3.1.1/maven-filtering-3.1.1.jar
Downloading from spring-milestones: https://repo.spring.io/milestone/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.5.0/maven-archiver-3.5.0.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/4.2.2/plexus-archiver-4.2.2.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/3.2.0/plexus-io-3.2.0.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/iq80/snappy/snappy/0.4/snappy-0.4.jar
Downloading from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.8/xz-1.8.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/maven-archiver/3.5.0/maven-archiver-3.5.0.jar (26 kB at 2.1 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-filtering/3.1.1/maven-filtering-3.1.1.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-io/3.2.0/plexus-io-3.2.0.jar (76 kB at 6.9 MB/s)
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-filtering/3.1.1/maven-filtering-3.1.1.jar (51 kB at 3.4 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar (11 kB at 708 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/4.2.2/plexus-archiver-4.2.2.jar (194 kB at 11 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/iq80/snappy/snappy/0.4/snappy-0.4.jar (58 kB at 3.4 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.8/xz-1.8.jar (109 kB at 6.0 MB/s)
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-petclinic] in [/home/ec2-user/usteam/target/spring-petclinic-2.4.2]
[INFO] Processing war project
[INFO] Building war: /home/ec2-user/usteam/target/spring-petclinic-2.4.2.war
[INFO]
[INFO] --- spring-boot-maven-plugin:2.4.2:repackage (repackage) @ spring-petclinic ---
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  03:23 min
[INFO] Finished at: 2024-11-27T09:07:19Z
[INFO] ------------------------------------------------------------------------
[ec2-user@ip-172-31-20-111 usteam]$
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT
- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
113 output "docker-ip" {
114   value = aws_instance.docker_host.public_ip
115 }
116
117 output "maven-ip" {
118   value = aws_instance.maven_host.public_ip
119 }
```

PROBLEMS | OUTPUT | DEBUG CONSOLE | TERMINAL | PORTS

zsh docker | ssh docker

```
Downloaded from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.8/xz-1.8.jar (109 kB at 6.0 MB/s)
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-petclinic] in [/home/ec2-user/usteam/target/spring-petclinic-2.4.2]
[INFO] Processing war project
[INFO] Building war: /home/ec2-user/usteam/target/spring-petclinic-2.4.2.war
[INFO]
[INFO] --- spring-boot-maven-plugin:2.4.2:repackage (repackage) @ spring-petclinic ---
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  03:23 min
[INFO] Finished at: 2024-11-27T09:07:19Z
[INFO] ------------------------------------------------------------------------
[ec2-user@ip-172-31-20-111 usteam]$ cd target/
[ec2-user@ip-172-31-20-111 target]$ ls -al
total 92964
drwxr-xr-x. 12 ec2-user ec2-user     4096 Nov 27 09:07 .
drwxr-xr-x.  6 ec2-user ec2-user     4096 Nov 27 09:05 ..
-rw-r--r--.  1 ec2-user ec2-user     9472 Nov 27 09:05 checkstyle-cachefile
-rw-r--r--.  1 ec2-user ec2-user      283 Nov 27 09:05 checkstyle-checker.xml
-rw-r--r--.  1 ec2-user ec2-user    10290 Nov 27 09:05 checkstyle-result.xml
-rw-r--r--.  1 ec2-user ec2-user      327 Nov 27 09:05 checkstyle-suppressions.xml
drwxr-xr-x.  8 ec2-user ec2-user     4096 Nov 27 09:06 classes
drwxr-xr-x.  3 ec2-user ec2-user       25 Nov 27 09:06 generated-sources
drwxr-xr-x.  3 ec2-user ec2-user       30 Nov 27 09:06 generated-test-sources
-rw-r--r--.  1 ec2-user ec2-user   545324 Nov 27 09:07 jacoco.exec
drwxr-xr-x.  2 ec2-user ec2-user       28 Nov 27 09:07 maven-archiver
drwxr-xr-x.  3 ec2-user ec2-user       35 Nov 27 09:06 maven-status
drwxr-xr-x.  3 ec2-user ec2-user       20 Nov 27 09:07 site
drwxr-xr-x.  4 ec2-user ec2-user       37 Nov 27 09:07 spring-petclinic-2.4.2
-rw-r--r--.  1 ec2-user ec2-user 49934137 Nov 27 09:07 spring-petclinic-2.4.2.war
-rw-r--r--.  1 ec2-user ec2-user 44661967 Nov 27 09:07 spring-petclinic-2.4.2.war.original
drwxr-xr-x.  2 ec2-user ec2-user     4096 Nov 27 09:07 surefire-reports
drwxr-xr-x.  3 ec2-user ec2-user       17 Nov 27 09:06 test-classes
drwxr-xr-x.  2 ec2-user ec2-user       37 Nov 27 09:06 .wro4j
[ec2-user@ip-172-31-20-111 target]$
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT
- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker
ssh docker

```
Downloading from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-filtering/3.1.1/maven-filtering-3.1.1.jar (51 kB at 3.4 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/apache/maven/shared/maven-mapping/3.0.0/maven-mapping-3.0.0.jar (11 kB at 708 kB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/codehaus/plexus/plexus-archiver/4.2.2/plexus-archiver-4.2.2.jar (194 kB at 11 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/iq80/snappy/snappy/0.4/snappy-0.4.jar (58 kB at 3.4 MB/s)
Downloaded from central: https://repo.maven.apache.org/maven2/org/tukaani/xz/1.8/xz-1.8.jar (109 kB at 6.0 MB/s)
[INFO] Packaging webapp
[INFO] Assembling webapp [spring-petclinic] in [/home/ec2-user/usteam/target/spring-petclinic-2.4.2]
[INFO] Processing war project
[INFO] Building war: /home/ec2-user/usteam/target/spring-petclinic-2.4.2.war
[INFO]
[INFO] --- spring-boot-maven-plugin:2.4.2:repackage (repackage) @ spring-petclinic ---
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  03:23 min
[INFO] Finished at: 2024-11-27T09:07:19Z
[INFO] ------------------------------------------------------------------------
[ec2-user@ip-172-31-20-111 usteam]$ cd target/
[ec2-user@ip-172-31-20-111 target]$ ls -al
total 92964
drwxr-xr-x. 12 ec2-user ec2-user     4096 Nov 27 09:07 .
drwxr-xr-x.  6 ec2-user ec2-user     4096 Nov 27 09:05 ..
-rw-r--r--.  1 ec2-user ec2-user     9472 Nov 27 09:05 checkstyle-cachefile
-rw-r--r--.  1 ec2-user ec2-user      283 Nov 27 09:05 checkstyle-checker.xml
-rw-r--r--.  1 ec2-user ec2-user    10290 Nov 27 09:05 checkstyle-result.xml
-rw-r--r--.  1 ec2-user ec2-user      327 Nov 27 09:05 checkstyle-suppressions.xml
drwxr-xr-x.  8 ec2-user ec2-user     4096 Nov 27 09:06 classes
drwxr-xr-x.  3 ec2-user ec2-user       25 Nov 27 09:06 generated-sources
drwxr-xr-x.  3 ec2-user ec2-user       30 Nov 27 09:06 generated-test-sources
-rw-r--r--.  1 ec2-user ec2-user   545324 Nov 27 09:07 jacoco.exec
drwxr-xr-x.  2 ec2-user ec2-user       28 Nov 27 09:07 maven-archiver
drwxr-xr-x.  3 ec2-user ec2-user       35 Nov 27 09:06 maven-status
drwxr-xr-x.  3 ec2-user ec2-user       20 Nov 27 09:07 site
drwxr-xr-x.  4 ec2-user ec2-user       37 Nov 27 09:07 spring-petclinic-2.4.2
-rw-r--r--.  1 ec2-user ec2-user 49934137 Nov 27 09:07 spring-petclinic-2.4.2.war
-rw-r--r--.  1 ec2-user ec2-user 44661967 Nov 27 09:07 spring-petclinic-2.4.2.war.original
drwxr-xr-x.  2 ec2-user ec2-user     4096 Nov 27 09:07 surefire-reports
drwxr-xr-x.  3 ec2-user ec2-user       17 Nov 27 09:06 test-classes
drwxr-xr-x.  2 ec2-user ec2-user       37 Nov 27 09:06 .wro4j
[ec2-user@ip-172-31-20-111 target]$ cd
[ec2-user@ip-172-31-20-111 ~]$ vi key
[ec2-user@ip-172-31-20-111 ~]$ sudo chmod 400 key
[ec2-user@ip-172-31-20-111 ~]$ scp -i key usteam/target/spring-petclinic-2.4.2.war ec2-user@35.179.142.62:
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT
- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[INFO] Assembling webapp [spring-petclinic] in [/home/ec2-user/usteam/target/spring-petclinic-2.4.2]
[INFO] Processing war project
[INFO] Building war: /home/ec2-user/usteam/target/spring-petclinic-2.4.2.war
[INFO]
[INFO] --- spring-boot-maven-plugin:2.4.2:repackage (repackage) @ spring-petclinic ---
[INFO] Replacing main artifact with repackaged archive
[INFO] ------------------------------------------------------------------------
[INFO] BUILD SUCCESS
[INFO] ------------------------------------------------------------------------
[INFO] Total time:  03:23 min
[INFO] Finished at: 2024-11-27T09:07:19Z
[INFO] ------------------------------------------------------------------------
[ec2-user@ip-172-31-20-111 usteam]$ cd target/
[ec2-user@ip-172-31-20-111 target]$ ls -al
total 92964
drwxr-xr-x. 12 ec2-user ec2-user     4096 Nov 27 09:07 .
drwxr-xr-x.  6 ec2-user ec2-user     4096 Nov 27 09:05 ..
-rw-r--r--.  1 ec2-user ec2-user     9472 Nov 27 09:05 checkstyle-cachefile
-rw-r--r--.  1 ec2-user ec2-user      283 Nov 27 09:05 checkstyle-checker.xml
-rw-r--r--.  1 ec2-user ec2-user    10290 Nov 27 09:05 checkstyle-result.xml
-rw-r--r--.  1 ec2-user ec2-user      327 Nov 27 09:05 checkstyle-suppressions.xml
drwxr-xr-x.  8 ec2-user ec2-user     4096 Nov 27 09:06 classes
drwxr-xr-x.  3 ec2-user ec2-user       25 Nov 27 09:06 generated-sources
drwxr-xr-x.  3 ec2-user ec2-user       30 Nov 27 09:06 generated-test-sources
-rw-r--r--.  1 ec2-user ec2-user   545324 Nov 27 09:07 jacoco.exec
drwxr-xr-x.  2 ec2-user ec2-user       28 Nov 27 09:07 maven-archiver
drwxr-xr-x.  3 ec2-user ec2-user       35 Nov 27 09:06 maven-status
drwxr-xr-x.  3 ec2-user ec2-user       20 Nov 27 09:07 site
drwxr-xr-x.  4 ec2-user ec2-user       37 Nov 27 09:07 spring-petclinic-2.4.2
-rw-r--r--.  1 ec2-user ec2-user 49934137 Nov 27 09:07 spring-petclinic-2.4.2.war
-rw-r--r--.  1 ec2-user ec2-user 44661967 Nov 27 09:07 spring-petclinic-2.4.2.war.original
drwxr-xr-x.  2 ec2-user ec2-user     4096 Nov 27 09:07 surefire-reports
drwxr-xr-x.  3 ec2-user ec2-user       17 Nov 27 09:06 test-classes
drwxr-xr-x.  2 ec2-user ec2-user       37 Nov 27 09:06 .wro4j
[ec2-user@ip-172-31-20-111 target]$ cd
[ec2-user@ip-172-31-20-111 ~]$ vi key
[ec2-user@ip-172-31-20-111 ~]$ sudo chmod 400 key
[ec2-user@ip-172-31-20-111 ~]$ scp -i key usteam/target/spring-petclinic-2.4.2.war ec2-user@35.179.142.62:
The authenticity of host '35.179.142.62 (35.179.142.62)' can't be established.
ED25519 key fingerprint is SHA256:u2N6qxXMnoP4O0OYnaB17CAbQiLe20svt5NiK7qT6A8.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '35.179.142.62' (ED25519) to the list of known hosts.
spring-petclinic-2.4.2.war                                    100%   48MB 114.7MB/s   00:00
[ec2-user@ip-172-31-20-111 ~]$
```

zsh docker
ssh docker

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[ec2-user@ip-172-31-28-185 ~]$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
[ec2-user@ip-172-31-28-185 ~]$
```

zsh docker

ssh docker

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

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105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[ec2-user@ip-172-31-28-185 ~]$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
[ec2-user@ip-172-31-28-185 ~]$ ls -al
total 48776
drwx------. 3 ec2-user ec2-user      108 Nov 27 09:15 .
drwxr-xr-x. 3 root     root           22 Jun 25 14:28 ..
-rw-r--r--. 1 ec2-user ec2-user       18 Feb 15  2024 .bash_logout
-rw-r--r--. 1 ec2-user ec2-user      141 Feb 15  2024 .bash_profile
-rw-r--r--. 1 ec2-user ec2-user      492 Feb 15  2024 .bashrc
-rw-r--r--. 1 ec2-user ec2-user 49934137 Nov 27 09:15 spring-petclinic-2.4.2.war
drwx------. 2 ec2-user ec2-user       29 Nov 27 08:48 .ssh
[ec2-user@ip-172-31-28-185 ~]$
```

zsh docker

ssh docker

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host" > [ ] vpc_security_group_ids

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
[ec2-user@ip-172-31-28-185 ~]$ docker ps
CONTAINER ID   IMAGE     COMMAND   CREATED   STATUS    PORTS     NAMES
[ec2-user@ip-172-31-28-185 ~]$ ls -al
total 48776
drwx------. 3 ec2-user ec2-user      108 Nov 27 09:15 .
drwxr-xr-x. 3 root     root           22 Jun 25 14:28 ..
-rw-r--r--. 1 ec2-user ec2-user       18 Feb 15  2024 .bash_logout
-rw-r--r--. 1 ec2-user ec2-user      141 Feb 15  2024 .bash_profile
-rw-r--r--. 1 ec2-user ec2-user      492 Feb 15  2024 .bashrc
-rw-r--r--. 1 ec2-user ec2-user 49934137 Nov 27 09:15 spring-petclinic-2.4.2.war
drwx------. 2 ec2-user ec2-user       29 Nov 27 08:48 .ssh
[ec2-user@ip-172-31-28-185 ~]$ vi Docker vi
```

zsh docker

ssh docker

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host"

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

```
FROM openjdk:8-jre-slim

# Set the working directory inside the container
WORKDIR /app

# Copy only the required WAR file into the container
COPY spring-petclinic-2.4.2.war /app/spring-petclinic-2.4.2.war

# Expose the port the application will run on
EXPOSE 8080

# Set the command to run the application
ENTRYPOINT ["java", "-jar", "spring-petclinic-2.4.2.war", "--server.port=8080"]

~
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~
:wq!
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host"

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

zsh docker

ssh docker

```
[ec2-user@ip-172-31-28-185 ~]$ ls -al
total 48780
drwx------. 4 ec2-user ec2-user      141 Nov 27 09:58 .
drwxr-xr-x. 3 root     root           22 Jun 25 14:28 ..
-rw-r--r--. 1 ec2-user ec2-user       18 Feb 15  2024 .bash_logout
-rw-r--r--. 1 ec2-user ec2-user      141 Feb 15  2024 .bash_profile
-rw-r--r--. 1 ec2-user ec2-user      492 Feb 15  2024 .bashrc
drwx------. 3 ec2-user ec2-user       63 Nov 27 09:58 .docker
-rw-r--r--. 1 ec2-user ec2-user      129 Nov 27 09:54 Dockerfile
-rw-r--r--. 1 ec2-user ec2-user 49934137 Nov 27 09:15 spring-petclinic-2.4.2.war
drwx------. 2 ec2-user ec2-user       29 Nov 27 08:48 .ssh
[ec2-user@ip-172-31-28-185 ~]$ cd Dockerfile
-bash: cd: Dockerfile: Not a directory
[ec2-user@ip-172-31-28-185 ~]$ cd Dockerfile/
-bash: cd: Dockerfile/: Not a directory
[ec2-user@ip-172-31-28-185 ~]$ vi Dockerfile
[ec2-user@ip-172-31-28-185 ~]$ ls
Dockerfile  spring-petclinic-2.4.2.war
[ec2-user@ip-172-31-28-185 ~]$ cat Dockerfile
FROM openjdk:8-jre-slim

# Set the working directory inside the container
WORKDIR /app

# Copy only the required WAR file into the container
COPY spring-petclinic-2.4.2.war /app/spring-petclinic-2.4.2.war

# Expose the port the application will run on
EXPOSE 8080

# Set the command to run the application
ENTRYPOINT ["java", "-jar", "spring-petclinic-2.4.2.war", "--server.port=8080"]

[ec2-user@ip-172-31-28-185 ~]$
```

EXPLORER

OPEN EDITORS

LAB ASSESSEMENT

- ansible
- docker
  - .terraform
  - .terraform.lock.hcl
  - docker-key.pem
  - docker-userdata.sh
  - main.tf
  - maven-userdata.sh
  - terraform.tfstate
  - terraform.tfstate.b...
- grafana and Promet...
- jenkins
- kubernetes
- terraform
- terraform.tfstate

OUTLINE

TIMELINE

main.tf docker | docker-userdata.sh | docker-key.pem | main.tf kubernetes | main.tf grafana and Prometheus | ec2-server-userdata.sh | prom-graf-userdata.sh

docker > main.tf > resource "aws_instance" "maven_host"

```
99  resource "aws_instance" "maven_host" {
100   ami                    = "ami-07d1e0a32156d0d21" // Red Hat AMI
101   instance_type          = "t2.medium"
102   vpc_security_group_ids = [aws_security_group.maven_sg.id]
103   key_name               = aws_key_pair.keypair.key_name
104   associate_public_ip_address = true
105   user_data              = file("./maven-userdata.sh")
106
107   tags = {
108     Name = "maven-host"
109   }
110 }
111
112 // Outputs
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Dockerfile  spring-petclinic-2.4.2.war
[ec2-user@ip-172-31-28-185 ~]$ cat Dockerfile
FROM openjdk:8-jre-slim

# Set the working directory inside the container
WORKDIR /app

# Copy only the required WAR file into the container
COPY spring-petclinic-2.4.2.war /app/spring-petclinic-2.4.2.war

# Expose the port the application will run on
EXPOSE 8080

# Set the command to run the application
ENTRYPOINT ["java", "-jar", "spring-petclinic-2.4.2.war", "--server.port=8080"]

[ec2-user@ip-172-31-28-185 ~]$ docker image ls
REPOSITORY   TAG       IMAGE ID       CREATED          SIZE
my-image     latest    d3e3b15b9928   8 minutes ago    244MB
<none>       <none>    7e2a152fabec   14 minutes ago   244MB
<none>       <none>    b619e304a857   30 minutes ago   244MB
[ec2-user@ip-172-31-28-185 ~]$ docker build -t my-image
ERROR: "docker buildx build" requires exactly 1 argument.
See 'docker buildx build --help'.

Usage:  docker buildx build [OPTIONS] PATH | URL | -

Start a build
[ec2-user@ip-172-31-28-185 ~]$ docker build -t my-image .
[+] Building 1.1s (8/8) FINISHED                                                                                    docker:default
 => [internal] load build definition from Dockerfile                                                                          0.0s
 => => transferring dockerfile: 485B                                                                                          0.0s
 => [internal] load metadata for docker.io/library/openjdk:8-jre-slim                                                         0.6s
 => [internal] load .dockerignore                                                                                             0.0s
 => => transferring context: 2B                                                                                               0.0s
 => CACHED [1/3] FROM docker.io/library/openjdk:8-jre-slim@sha256:53186129237fbb8bc0a12dd36da6761f4c7a2a20233c20d4eb0d497e4045a4f5  0.0s
 => [internal] load build context                                                                                             0.0s
 => => transferring context: 109B                                                                                             0.0s
 => [2/3] WORKDIR /app                                                                                                        0.0s
 => [3/3] COPY spring-petclinic-2.4.2.war /app/spring-petclinic-2.4.2.war                                                      0.1s
 => exporting to image                                                                                                        0.3s
 => => exporting layers                                                                                                       0.3s
 => => writing image sha256:9e9f32663e4c96e889d15f5131b5b16eae132bf639b5f296c6a7f88d8f7e1cc6                                  0.0s
 => => naming to docker.io/library/my-image                                                                                   0.0s
[ec2-user@ip-172-31-28-185 ~]$ docker run -d --name my-contain -p 8080:8080 my-image
```

zsh docker

ssh docker

Not Secure 35.179.142.62:8080

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spring

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spring by Pivotal.