TASK 26

1. Java - tomcat server automation:

- The [Apache Tomcat® server](#) is an open-source **Java servlet container** that implements various Jakarta EE (formerly Java EE) specifications to host and run Java-based web applications.
- It is not a full application server but is widely used because it is lightweight, fast, and provides the core functionalities needed by most web applications.

🧊 File structure for ec2 creation and host appache tomcat

Name	Last commit	Last update
📁 infra	Edit userdata.sh	15 minutes ago
🦊 .gitlab-ci.yml	Edit .gitlab-ci.yml	2 days ago
M↓ README.md	Initial commit	2 days ago

📄 **README.md**

Name	Last commit	Last update
..		
◈ .gitkeep	Add new directory	2 days ago
🐚 main.tf	Add new file	2 days ago
🐚 provider.tf	Edit provider.tf	2 days ago
▣ userdata.sh	Edit userdata.sh	15 minutes ago

Userdata.sh

```bash
1  #!/bin/bash
2  set -euxo pipefail
3
4  exec > >(tee /var/log/userdata.log | logger -t userdata ) 2>&1
5
6  echo "===== Starting Tomcat Installation ====="
7
8  apt update -y
9  apt install -y openjdk-11-jdk wget tar
10
11 # Verify Java
12 java -version
13
14 # Create tomcat user
15 id tomcat || useradd -r -m -U -d /opt/tomcat -s /bin/false tomcat
16
17 # Download Tomcat (stable)
18 cd /tmp
19 TOMCAT_VERSION=9.0.87
20
21 wget https://archive.apache.org/dist/tomcat/tomcat-9/v${TOMCAT_VERSION}/bin/apache-tomcat-${TOMCAT_VERSION}.tar.gz
22
23 mkdir -p /opt/tomcat
24 tar xzf apache-tomcat-${TOMCAT_VERSION}.tar.gz -C /opt/tomcat --strip-components=1
25
26 # Permissions
27 chown -R tomcat:tomcat /opt/tomcat
28 chmod +x /opt/tomcat/bin/*.sh
29
30 # Get Java Home dynamically (IMPORTANT)
31 JAVA_HOME=$(readlink -f /usr/bin/java | sed "s:/bin/java::")
32
33 # Create systemd service
34 cat <<EOF >/etc/systemd/system/tomcat.service
35 [Unit]
36 Description=Apache Tomcat Web Application Container
37 After=network.target
38
39 [Service]
40 Type=forking
41 User=tomcat
42 Group=tomcat
43 Environment="JAVA_HOME=${JAVA_HOME}"
44 Environment="CATALINA_PID=/opt/tomcat/temp/tomcat.pid"
45 Environment="CATALINA_HOME=/opt/tomcat"
46 Environment="CATALINA_BASE=/opt/tomcat"
47 ExecStart=/opt/tomcat/bin/startup.sh
48 ExecStop=/opt/tomcat/bin/shutdown.sh
49 Restart=always
50 RestartSec=10
51
52 [Install]
53 WantedBy=multi-user.target
54 EOF
55
56 systemctl daemon-reexec
57 systemctl daemon-reload
58 systemctl enable tomcat
59 systemctl start tomcat
60
61 sleep 20
62 systemctl status tomcat --no-pager
63
64 # Custom page
65 echo "<h1>Apache Tomcat deployed using GitLab CI + Terraform 🚀</h1>" \
66 > /opt/tomcat/webapps/ROOT/index.jsp
67
68 chown tomcat:tomcat /opt/tomcat/webapps/ROOT/index.jsp
69
70 echo "===== Tomcat Installation Completed ====="
```

🎚️ Run the pipeline : jobs are passed
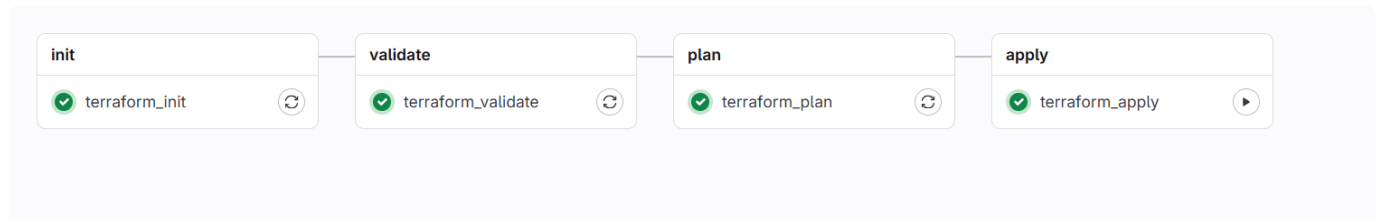
Edit userdata.sh

Delete

✅ Passed Created in 1 minute by **saravana G**, finished in 1 minute

For commit `3346ee54` ⧉

In `main`

`latest` `branch` ⮌ 4 jobs ⏱ 2 minutes 0 seconds, queued for 2 seconds

Pipeline Jobs 4 Tests 0

init	validate	plan	apply
✅ terraform_init 🔄	✅ terraform_validate 🔄	✅ terraform_plan 🔄	✅ terraform_apply ▶

Terraform plan :

```
156  16:19:31  Plan: 2 to add, 0 to change, 0 to destroy.
157  16:19:31  ─────────────────────────────────────────
158  16:19:31  Saved the plan to: tfplan
159  16:19:31  To perform exactly these actions, run the following command to apply:
160  16:19:31      terraform apply "tfplan"
161  16:19:36  Uploading artifacts for successful job                    00:01
162  16:19:36  Uploading artifacts...
163  16:19:37  infra/tfplan: found 1 matching artifact files and directories
164  16:19:37  Uploading artifacts as "archive" to coordinator... 201 Created  correlation_id=2d464d8b931e425
             48677c61ae6a5ebe4 id=12519573523 responseStatus=201 Created token=eyJraWQiO
165  16:19:37  Cleaning up project directory and file based variables    00:01
166  16:19:38  Job succeeded
```

These artifacts are the latest. They will not be deleted (even if expired) until newer artifacts are available.

Keep   Download   Browse

Commit `3346ee54` ⧉
Edit userdata.sh

Pipeline #2228484708 ✅ Passed
for main ⧉

Terraform apply

```
49  16:20:14  aws_security_group.web_sg: Creating...
50  16:20:17  aws_security_group.web_sg: Creation complete after 3s [id=sg-041175d51ccf5f3db]
51  16:20:17  aws_instance.web: Creating...
52  16:20:27  aws_instance.web: Still creating... [10s elapsed]
53  16:20:30  aws_instance.web: Creation complete after 13s [id=i-09000c254b5cb8f02]
54  16:20:30  Apply complete! Resources: 2 added, 0 changed, 0 destroyed.
55  16:20:31  Cleaning up project directory and file based variables    00:00
56  16:20:31  Job succeeded
```

apply ⌄

Related jobs

→ ✅ terraform_apply

Gitlab created the Ec2 instance

Instance summary for i-09000c25~~4b5cb8f02~~ (~~Ap~~~~he~~~~Web-Server) Info

Updated less than a minute ago

Connect | **Instance state ▼** | **Actions ▼**

Instance ID
i-09000c254b5cb8f02

~~Public IPv4 address~~
52.53.240.252 | open address ↗

Private IPv4 addresses
172.31.18.27

IPv6 address
–

Instance state
⊘ Running

Public DNS
ec2-52-53-240-252.us-west-1.compute.amazonaws.com | open address ↗

Hostname type
IP name: ip-172-31-18-27.us-west-1.compute.internal

Private IP DNS name (IPv4 only)
ip-172-31-18-27.us-west-1.compute.internal

Answer private resource DNS name
–

Instance type
t3.micro

Elastic IP addresses
–

Auto-assigned IP address
52.53.240.252 [Public IP]

VPC ID
vpc-0d543e24e2575d85b ↗

AWS Compute Optimizer finding
ⓘ Opt-in to AWS Compute Optimizer for recommendations.
| Learn more ↗

Copy to past public ip to add :8080 hosting the appache tomcat server

52.53.240.252:8080

← C ⚠ Not secure 52.53.240.252:8080

Apache Tomcat deployed using GitLab CI + Terraform ðŸš€