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Project : terraform command cli

# Github: https://github.com/shadymh10/terraform-

AWS Infrastructure Description — Created with Terraform

This architecture represents a highly available web application environment deployed on AWS using Terraform for Infrastructure as Code (IaC).
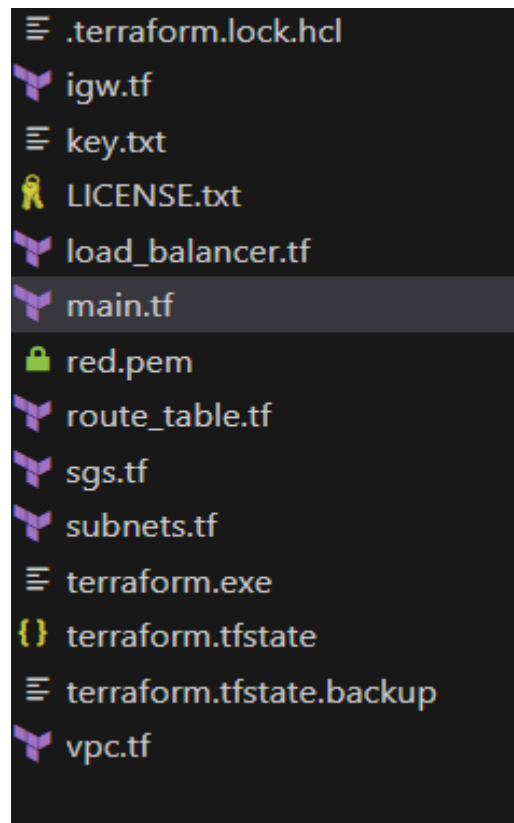
Key Benefits:

✅ High availability across multiple AZs

✅ Secure public/private network separation

✅ Scalable web tier using Load Balancer

✅ Infrastructure fully automated via Terraform

My project diagram:
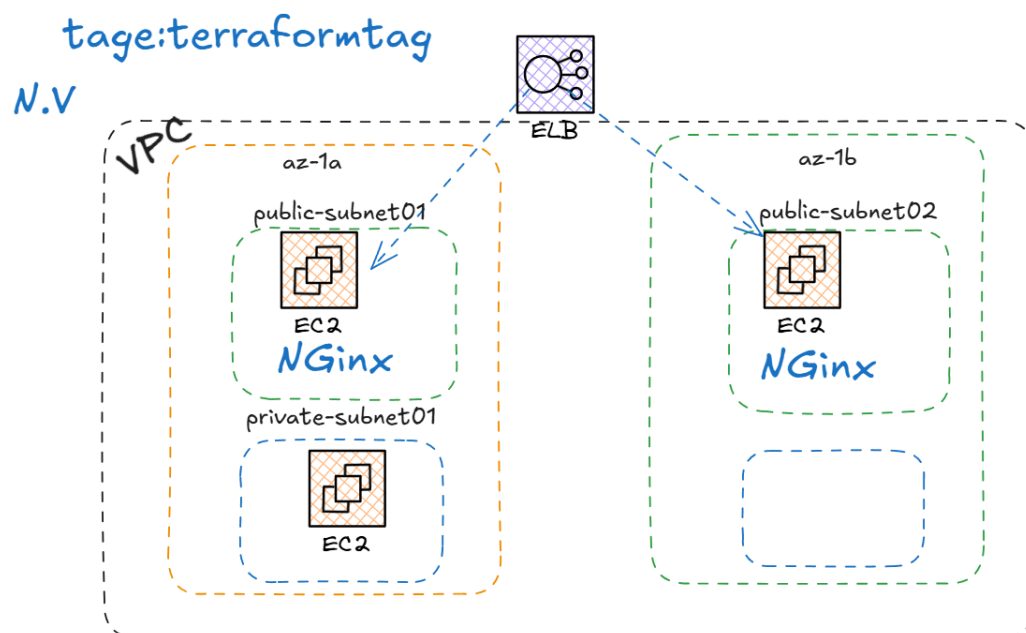
```
PS E:\terraform> terraform init
Initializing the backend...
Initializing provider plugins...
- Reusing previous version of hashicorp/aws from the dependency lock file
- Using previously-installed hashicorp/aws v6.17.0

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.
```

```
PS E:\terraform> terraform apply
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 00m20s elapsed]
aws_instance.app02: Still destroying... [id=i-0f90a10fa5ce4f0dc, 00m30s elapsed]
aws_instance.app01: Still destroying... [id=i-04ef1f9a6dd5a0d45, 00m30s elapsed]
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 00m30s elapsed]
aws_instance.app02: Still destroying... [id=i-0f90a10fa5ce4f0dc, 00m40s elapsed]
aws_instance.app01: Still destroying... [id=i-04ef1f9a6dd5a0d45, 00m40s elapsed]
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 00m40s elapsed]
aws_instance.app01: Still destroying... [id=i-04ef1f9a6dd5a0d45, 00m50s elapsed]
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 00m50s elapsed]
aws_instance.app02: Still destroying... [id=i-0f90a10fa5ce4f0dc, 00m50s elapsed]
aws_instance.app01: Destruction complete after 53s
aws_instance.app01: Creating...
aws_instance.app02: Still destroying... [id=i-0f90a10fa5ce4f0dc, 01m00s elapsed]
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 01m00s elapsed]
aws_instance.app01: Still creating... [00m10s elapsed]
aws_instance.app01: Creation complete after 16s [id=i-002ee4df19272acd4]
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 01m10s elapsed]
aws_instance.app02: Still destroying... [id=i-0f90a10fa5ce4f0dc, 01m10s elapsed]
aws_instance.app02: Destruction complete after 1m13s
aws_instance.app02: Creating...
aws_instance.data: Still destroying... [id=i-0b03aa5b465c584d2, 01m20s elapsed]
aws_instance.app02: Still creating... [00m10s elapsed]
aws_instance.data: Destruction complete after 1m24s
aws_instance.data: Creating...
aws_instance.app02: Creation complete after 16s [id=i-02f7c4e0c34892b8b]
aws_instance.data: Still creating... [00m10s elapsed]
aws_instance.data: Creation complete after 15s [id=i-08fea7fae453f9062]

Apply complete! Resources: 3 added, 0 changed, 3 destroyed.
PS E:\terraform>
```

	Name 🖉	▼	Instance ID	Instance state	▼	Instance type	▼	Status check	Alarm status	Availability Zone	▼	Public IPv4 DNS	▼
☐	my-app01		i-05c19987db43378a3	✓ Running ⊕ ⊖		t3.micro		✓ 3/3 checks passec	View alarms +	us-east-1a		ec2-44-202-252-10.co...	
☐	my-private-app		i-0eff0c084193fa312	✓ Running ⊕ ⊖		t3.micro		✓ 3/3 checks passec	View alarms +	us-east-1a		–	
☐	my-app02		i-0784fd5014d8b4e43	✓ Running ⊕ ⊖		t3.micro		✓ 3/3 checks passec	View alarms +	us-east-1b		ec2-52-201-233-89.co...	

Connected to my-app02 in az-1b and ping to my-app01 in az-1a


```
[root@ip-10-0-1-115 ec2-user]# client_loop: send disconnect: Connection reset
PS C:\Users\SHADY\Documents> ssh -i "red.pem" ec2-user@ec2-52-201-233-89.compute-1.amazonaws.com
The authenticity of host 'ec2-52-201-233-89.compute-1.amazonaws.com (52.201.233.89)' can't be established.
ED25519 key fingerprint is SHA256:szU9bJajlEByZ5g/C32AHBiYGfWyNM05nMXDg69ns8I.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-52-201-233-89.compute-1.amazonaws.com' (ED25519) to the list of known hosts.
      #_
   ~\_  ####_          Amazon Linux 2023
  ~~   \_#####\
  ~~       \###|
  ~~       \#/ ___      https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
     ~~._.   _/
        _/ _/
       _/m/'
[ec2-user@ip-10-0-3-90 ~]$ sudo -s
[root@ip-10-0-3-90 ec2-user]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: disabled)
     Active: active (running) since Wed 2025-10-22 22:24:54 UTC; 3min 2s ago
   Main PID: 2864 (nginx)
      Tasks: 3 (limit: 1053)
     Memory: 3.2M
        CPU: 54ms
     CGroup: /system.slice/nginx.service
             ├─2864 "nginx: master process /usr/sbin/nginx"
             ├─2866 "nginx: worker process"
             └─2867 "nginx: worker process"

Oct 22 22:24:54 ip-10-0-3-90.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Oct 22 22:24:54 ip-10-0-3-90.ec2.internal nginx[2791]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Oct 22 22:24:54 ip-10-0-3-90.ec2.internal nginx[2791]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Oct 22 22:24:54 ip-10-0-3-90.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[root@ip-10-0-3-90 ec2-user]# ping 44.202.252.10
PING 44.202.252.10 (44.202.252.10) 56(84) bytes of data.
64 bytes from 44.202.252.10: icmp_seq=1 ttl=126 time=0.526 ms
64 bytes from 44.202.252.10: icmp_seq=2 ttl=126 time=0.568 ms
64 bytes from 44.202.252.10: icmp_seq=3 ttl=126 time=0.583 ms
64 bytes from 44.202.252.10: icmp_seq=4 ttl=126 time=0.561 ms
```

connected to my-app01 and connected to my private-app from ssh

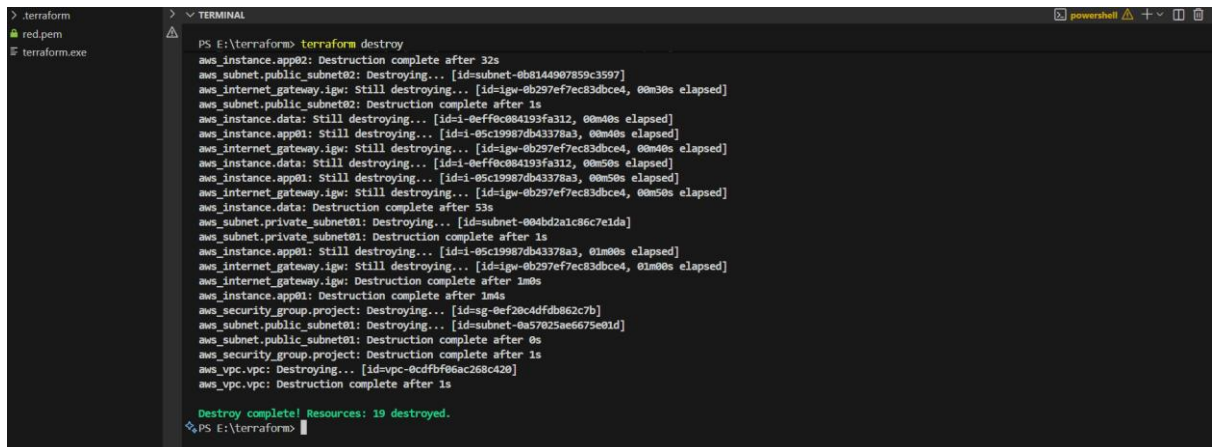**change permission of my key because make success connection from inner public subnet**


```
[ec2-user@ip-10-0-1-14 ~]$ sudo -s
[root@ip-10-0-1-14 ec2-user]# systemctl status ngin
Unit ngin.service could not be found.
[root@ip-10-0-1-14 ec2-user]# systemctl status nginx
● nginx.service - The nginx HTTP and reverse proxy server
     Loaded: loaded (/usr/lib/systemd/system/nginx.service; enabled; preset: disabled)
     Active: active (running) since Wed 2025-10-22 22:25:56 UTC; 52s ago
   Main PID: 3083 (nginx)
      Tasks: 3 (limit: 1053)
     Memory: 3.2M
        CPU: 67ms
     CGroup: /system.slice/nginx.service
             ├─3083 "nginx: master process /usr/sbin/nginx"
             ├─3090 "nginx: worker process"
             └─3091 "nginx: worker process"

Oct 22 22:25:55 ip-10-0-1-14.ec2.internal systemd[1]: Starting nginx.service - The nginx HTTP and reverse proxy server...
Oct 22 22:25:55 ip-10-0-1-14.ec2.internal nginx[2948]: nginx: the configuration file /etc/nginx/nginx.conf syntax is ok
Oct 22 22:25:55 ip-10-0-1-14.ec2.internal nginx[2948]: nginx: configuration file /etc/nginx/nginx.conf test is successful
Oct 22 22:25:56 ip-10-0-1-14.ec2.internal systemd[1]: Started nginx.service - The nginx HTTP and reverse proxy server.
[root@ip-10-0-1-14 ec2-user]# ssh -i "red.pem" ec2-user@10.0.2.194
Warning: Identity file red.pem not accessible: No such file or directory.
The authenticity of host '10.0.2.194 (10.0.2.194)' can't be established.
ED25519 key fingerprint is SHA256:UVbsLi36xWbiUwJGVV00qJ7NNGZWcWp+VTaoofTCQgw.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.0.2.194' (ED25519) to the list of known hosts.
ec2-user@10.0.2.194: Permission denied (publickey,gssapi-keyex,gssapi-with-mic).
[root@ip-10-0-1-14 ec2-user]# vim red.pem
[root@ip-10-0-1-14 ec2-user]# chmod 400 "red.pem"
[root@ip-10-0-1-14 ec2-user]# ssh -i "red.pem" ec2-user@10.0.2.194
      #_
   ~\_  ####_          Amazon Linux 2023
  ~~   \_#####\
  ~~       \###|
  ~~       \#/ ___      https://aws.amazon.com/linux/amazon-linux-2023
   ~~       V~' '->
    ~~~         /
     ~~._.   _/
```

finally destroy of project files :