



Project: Terraform-aws-webserver

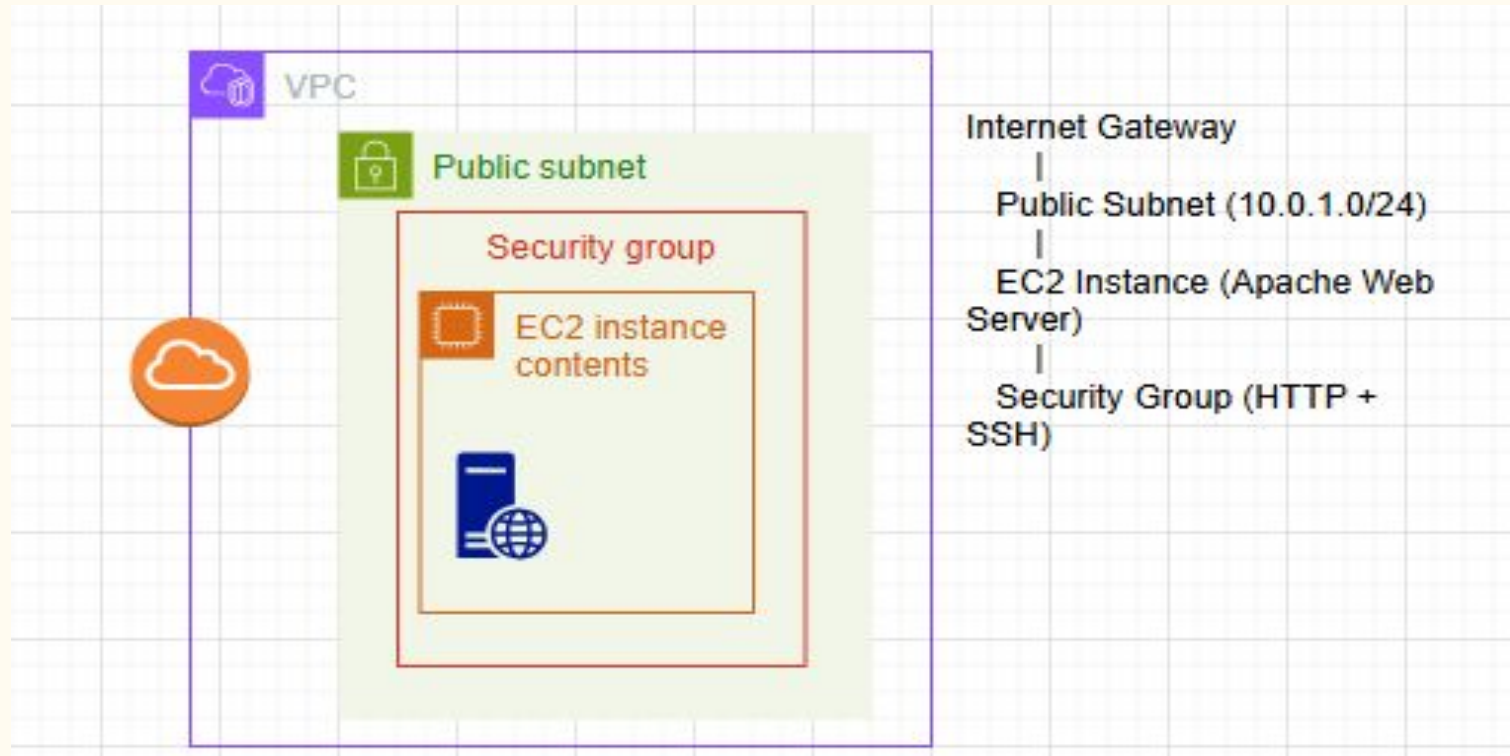
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Objective

To create a complete AWS infrastructure for hosting a web server using Terraform.

It provisions a VPC with a public subnet and deploys an EC2 instance configured with Apache web server.

Architecture Diagram



Architecture Overview

- **VPC:** Custom Virtual Private Cloud (10.0.0.0/16)
- **Public Subnet:** Internet-accessible subnet (10.0.1.0/24)
- **Internet Gateway:** Enables internet connectivity
- **Route Table:** Routes traffic between subnet and internet
- **Security Group:** Firewall rules (HTTP port 80, SSH port 22)
- **EC2 Instance:** Amazon Linux 2023 with Apache web server

Provisioning via terraform

([View terraform
files in github](#))

```
aws_internet_gateway.main: Creating...
aws_subnet.public: Creating...
aws_security_group.web: Creating...
aws_internet_gateway.main: Creation complete after 2s [id=igw-0f45f0e3a7c5a8f9f]
aws_route_table.public: Creating...
aws_route_table.public: Creation complete after 2s [id=rtb-065e0fd785ee4228d]
aws_security_group.web: Creation complete after 6s [id=sg-0834d7d4823ae02e6]
aws_subnet.public: Still creating... [00m10s elapsed]
aws_subnet.public: Creation complete after 13s [id=subnet-0d320a92613970735]
aws_route_table_association.public: Creating...
aws_instance.web: Creating...
aws_route_table_association.public: Creation complete after 1s [id=rtbassoc-0fbb374dd1b73ef96]
aws_instance.web: Still creating... [00m10s elapsed]
aws_instance.web: Creation complete after 15s [id=i-034cf28c84e20c72b]
```


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

Outputs:

```
instance_public_ip = "18.212.106.213"
public_subnet_id = "subnet-0d320a92613970735"
vpc_id = "vpc-02a668e6e73de3b98"
```

VPC and subnet provisioned


Your VPCs (2) [Info](#)

Last updated less than a minute ago  [Actions](#) [Create VPC](#)

☐

Name	VPC ID	State	Block Public...	IPv4 CIDR	IF
-	vpc-08a157d8f3dd30117	✓ Available	⊖ Off	172.31.0.0/16	-
main-vpc	vpc-02a668e6e73de3b98	✓ Available	⊖ Off	10.0.0.0/16	-

Subnets (3) [Info](#)

Last updated 1 minute ago  [Actions](#) [Create subnet](#)

☐

Name	Subnet ID	State	VPC	Block Public
-	subnet-07070f77fbd7d6714	✓ Available	vpc-08a157d8f3dd30117	⊖ Off
-	subnet-0cc61ad4294f4e133	✓ Available	vpc-08a157d8f3dd30117	⊖ Off
public-subnet	subnet-0d320a92613970735	✓ Available	vpc-02a668e6e73de3b98 mai...	⊖ Off

Select a subnet

Internet gateway and Route table provisioned

Internet gateways (2) [Info](#)

Find internet gateways by attribute or tag

< 1 > ⚙️

<input type="checkbox"/>	Name	Internet gateway ID	State	VPC ID
<input type="checkbox"/>	main-igw	igw-0f45f0e3a7c5a8f9f	✓ Attached	vpc-02a668e6e73de3b98 main-vpc
<input type="checkbox"/>	-	igw-0f4a8c8ad8bba545c	⊖ Detached	-

◀ ▶

Route tables (3) [Info](#)

Last updated 2 minutes ago ⌂

Find route tables by attribute or tag

< 1 > ⚙️

<input type="checkbox"/>	Name	Route table ID	Explicit subnet associ...	Edge associations	Main	VPC
<input type="checkbox"/>	-	rtb-03cb9800724596537	-	-	Yes	vpc-
<input type="checkbox"/>	public-rt	rtb-065e0fd785ee4228d	subnet-0d320a92613970...	-	No	vpc-
<input type="checkbox"/>	-	rtb-033e513f897016247	-	-	Yes	vpc-

◀ ▶

EC2 instance (Apache web server) and security group provisioned

Instances (1) [Info](#)

Find Instance by attribute or tag (case-sensitive)

All states

Connect Instance state Actions Launch instances

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS
<input type="checkbox"/>	web-server	i-034cf28c84e20c72b	Running	t2.micro	Initializing	View alarms +	us-east-1a	ec2-18-212-106-213.

Security Groups (3) [Info](#)


Find security groups by attribute or tag

Actions Export security groups to CSV Create security group


<input type="checkbox"/>	Name	Security group ID	Security group name	VPC ID
<input type="checkbox"/>	-	sg-00ba7fc48d5948810	default	vpc-08a157d8f3dd30117
<input type="checkbox"/>	-	sg-0f12aaba0a051d5fe	default	vpc-02a668e6e73de3b98
<input type="checkbox"/>	web-security-group	sg-0834d7d4823ae02e6	web-sg20250909101402138800000001	vpc-02a668e6e73de3b98


Route table associations created

Details [Info](#)

Route table ID
 rtb-065e0fd785ee4228d

VPC
vpc-02a668e6e73de3b98 | main-vpc

Main
 No

Owner ID
 277820847673

Explicit subnet associations
[subnet-0d320a92613970735](#) / [public-subnet](#)

Edge associations
–

Routes


Subnet associations

Edge associations

Route propagation

Tags

Explicit subnet associations (1)

 Find subnet association

[Edit subnet associations](#)

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
public-subnet	subnet-0d320a92613970735	10.0.1.0/24	–

Subnets without explicit associations (0)

[Edit subnet associations](#)

Common Challenges

- **Provider download fails:** Network connectivity to Terraform registry
- **Permission denied:** Check AWS credentials and IAM permissions
- **Resource conflicts:** Ensure unique resource names
- **Web server not accessible:** Verify security group rules

Where could this project be applied?

- Quick setup for testing web applications
- Demonstrate web application to stakeholders
- Rapid prototyping and iteration
- Easy teardown after presentation
- Educational projects for cloud computing
- Simple company website or blog
- Low-traffic applications
- Cost-effective hosting solution

Thanks!

Contact us:

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