Interacts

User

Browser

https://Utification.com

User Public IP: Ephemeral Port

AWS Cloud

Get Server Certificate

AWS Certificate Manager

Application Load Balancer

Route 53

Region: us-west-2

HTTPS

Internet Gateway

HTTPS

VPC: TeamBigData-Utification-VPC
IP: 10.30.0.0/16

AWS Network Firewall

①

HTTPS

Availability Zone: us-west-2a

TeamBigData-Utification-subnet-public1-us-west-2a
IP: 10.30.1.0/24

Security group: WebServer-SG
③
⑥

EC2 Instance

TCP/IP, HTTPS

WebServer-ACL

②

TeamBigData-Utification-subnet-private1-us-west-2a
IP: 10.30.2.0/24

Security group: DataStore-SG
⑤
⑦

RDS Instance

TCP/IP

TCP/IP

DataStore-ACL

④

(1) Network Firewall Stateful Rule Group

Protocol	Source IP	Source Port	Dest. IP	Dest. Port	Action
HTTPS	California IP	Ephemeral Port	10.30.1.2	443	Allow

(2) WebServer-ACL Inbound Rules

Rule	Type	Protocol	Port Range	Source IP	Allow/Deny
100	HTTPS	TCP (6)	443	California IPs	Allow
200	MYSQL	TCP (6)	3306	10.30.2.2	Allow

WebServer-ACL Outbound Rules

Rule	Type	Protocol	Port Range	Dest. IP	Allow/Deny
100	HTTPS	TCP (6)	443	California IPs	Allow
200	Custom TCP	TCP (6)	5000-5017	10.30.2.2	Allow

(3) WebServer-SG Inbound Rules

Type	Protocol	Port Range	Source
HTTPS	TCP	443	California IPs
MYSQL	TCP	3306	10.30.2.2

(4) DataStore-ACL Inbound Rules

Rule	Type	Protocol	Port Range	Source IP	Allow/Deny
100	Custom TCP	TCP (6)	5000-5017	10.30.1.2	Allow

DataStore-ACL Outbound Rules

Rule	Type	Protocol	Port Range	Dest. IP	Allow/Deny
100	MYSQL	TCP (6)	3306	10.30.1.2	Allow

(5) DataStore-SG Inbound Rules

Type	Protocol	Port Range	Source
Custom TCP	TCP	5000-5017	10.30.1.2

(6)

EC2 Configuration:

Windows Server 2022
t2.micro
1 vCPU
1Gb Memory
50Gb Storage
IP: 10.30.1.2

WebSever Microservices Ports

Users: 5000
Map: 5001
Pins: 5002
Alerts: 5003
Reputation: 5004
Events: 5005
UserServices: 5006
UploadPicture: 5007
Authentication: 5008
Authorization: 5009
Logout: 5010
Registration: 5011
AccountRecovery: 5012
AccountDeletion: 5013
UserManagement: 5014
Analytics: 5015
Logging: 5016
SQLDataAccess: 5017

(7)

RDS Configuration:

Microsoft SQL Server
db.m6i.xlarge
4 vCPUs
16 Gb RAM
40 Gb Storage
Not publicly accessible
IP: 10.30.2.2