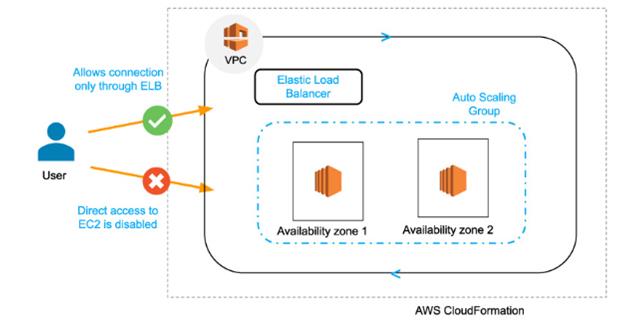
ASSIGNMENT ON CLOUD FORMATION

Ques-Create a VPC with 2 public subnets, 2 private subnets in two different availability zones. Create an autoscaling group (with 2 ec2 instances running from two private subnets). The EC2 instances in the autoscaling group should have apache webserver installed and run on port 80. Create an Application load balancer and add the instances as target group. After successfully created the stack, you should get an URL of application load balancer which can be browsed from a browse to access the contents of EC2 instances.

Sol:-



Code for the cloud formation:

{

"AWSTemplateFormatVersion": "2010-09-09",

"Description": "My simple EC2 instance",

"Parameters": {

"KeyName": {

"Description": "Name of an existing EC2 KeyPair",

"Type": "AWS::EC2::KeyPair::KeyName",

"Default": "puttykey",

"ConstraintDescription": "must be the name of an existing EC2 KeyPair."

},

"InstanceType": {

"Description": "WebServer EC2 instance type",

"Type": "String",

"Default": "t2.micro",

"AllowedValues": [

"t1.micro",

"t2.nano",

"t2.micro",

"t2.small",

"t2.medium",

"t2.large",

"m1.small",

"m1.medium",

"m1.large",

"m1.xlarge",

"m2.xlarge",

"m2.2xlarge",

"m2.4xlarge",

"m3.medium",

"m3.large",

"m3.xlarge",

"m3.2xlarge",

"m4.large",

"m4.xlarge",

"m4.2xlarge",

"m4.4xlarge",

"m4.10xlarge",

"c1.medium",

"c1.xlarge",

"c3.large",

"c3.xlarge",

"c3.2xlarge",

"c3.4xlarge",

"c3.8xlarge",

"c4.large",

"c4.xlarge",

"c4.2xlarge",

"c4.4xlarge",

"c4.8xlarge",

"g2.2xlarge",

"g2.8xlarge",

"r3.large",

"r3.xlarge",

"r3.2xlarge",

"r3.4xlarge",

"r3.8xlarge",

"i2.xlarge",

"i2.2xlarge",

"i2.4xlarge",

"i2.8xlarge",

"d2.xlarge",

"d2.2xlarge",

"d2.4xlarge",

"d2.8xlarge",

"hi1.4xlarge",

"hs1.8xlarge",

"cr1.8xlarge",

"cc2.8xlarge",

"cg1.4xlarge"

],

"ConstraintDescription": "must be a valid EC2 instance type."

},

"SSHLocation" : {

"Description" : " The IP address range that can be used to SSH to the EC2 instances",

"Type": "String",

"MinLength": "9",

"MaxLength": "18",

"Default": "0.0.0.0/0",

"AllowedPattern": "(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})/(\\d{1,2})"

},

"CIDRVpc" : {

"Description" : " The IP address range that can be used to SSH to the EC2 instances",

"Type": "String",

"Default" : "10.0.0.0/16"

}

},

"Mappings": {

"AWSInstanceType2Arch": {

"t1.micro": {

"Arch": "HVM64"

},

"t2.nano": {

"Arch": "HVM64"

},

"t2.micro": {

"Arch": "HVM64"

},

"t2.small": {

"Arch": "HVM64"

},

"t2.medium": {

"Arch": "HVM64"

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"t2.large": {

"Arch": "HVM64"

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"m1.small": {

"Arch": "HVM64"

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"m1.medium": {

"Arch": "HVM64"

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"m1.large": {

"Arch": "HVM64"

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"m1.xlarge": {

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"Arch": "HVM64"

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"m2.4xlarge": {

"Arch": "HVM64"

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"m3.medium": {

"Arch": "HVM64"

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"Arch": "HVM64"

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"m3.xlarge": {

"Arch": "HVM64"

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"Arch": "HVM64"

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"m4.large": {

"Arch": "HVM64"

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"m4.xlarge": {

"Arch": "HVM64"

},

"m4.2xlarge": {

"Arch": "HVM64"

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"m4.4xlarge": {

"Arch": "HVM64"

},

"m4.10xlarge": {

"Arch": "HVM64"

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"c1.medium": {

"Arch": "HVM64"

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"c1.xlarge": {

"Arch": "HVM64"

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"c3.large": {

"Arch": "HVM64"

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"c3.xlarge": {

"Arch": "HVM64"

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"Arch": "HVM64"

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"c4.large": {

"Arch": "HVM64"

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"c4.xlarge": {

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"c4.4xlarge": {

"Arch": "HVM64"

},

"c4.8xlarge": {

"Arch": "HVM64"

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"g2.2xlarge": {

"Arch": "HVMG2"

},

"g2.8xlarge": {

"Arch": "HVMG2"

},

"r3.large": {

"Arch": "HVM64"

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"r3.xlarge": {

"Arch": "HVM64"

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"r3.2xlarge": {

"Arch": "HVM64"

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"r3.4xlarge": {

"Arch": "HVM64"

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"r3.8xlarge": {

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"i2.xlarge": {

"Arch": "HVM64"

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"Arch": "HVM64"

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"i2.4xlarge": {

"Arch": "HVM64"

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"i2.8xlarge": {

"Arch": "HVM64"

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"d2.xlarge": {

"Arch": "HVM64"

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"d2.2xlarge": {

"Arch": "HVM64"

},

"d2.4xlarge": {

"Arch": "HVM64"

},

"d2.8xlarge": {

"Arch": "HVM64"

},

"hi1.4xlarge": {

"Arch": "HVM64"

},

"hs1.8xlarge": {

"Arch": "HVM64"

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"cr1.8xlarge": {

"Arch": "HVM64"

},

"cc2.8xlarge": {

"Arch": "HVM64"

}

},

"AWSInstanceType2NATArch": {

"t1.micro": {

"Arch": "NATHVM64"

},

"t2.nano": {

"Arch": "NATHVM64"

},

"t2.micro": {

"Arch": "NATHVM64"

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"t2.small": {

"Arch": "NATHVM64"

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"Arch": "NATHVM64"

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"t2.large": {

"Arch": "NATHVM64"

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"m4.10xlarge": {

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"c1.medium": {

"Arch": "NATHVM64"

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"c1.xlarge": {

"Arch": "NATHVM64"

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"Arch": "NATHVM64"

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"g2.2xlarge": {

"Arch": "NATHVMG2"

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"g2.8xlarge": {

"Arch": "NATHVMG2"

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"r3.large": {

"Arch": "NATHVM64"

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"r3.xlarge": {

"Arch": "NATHVM64"

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"Arch": "NATHVM64"

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"hs1.8xlarge": {

"Arch": "NATHVM64"

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"cr1.8xlarge": {

"Arch": "NATHVM64"

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"cc2.8xlarge": {

"Arch": "NATHVM64"

}

},

"AWSRegionArch2AMI": {

"us-east-1": {

"HVM64": "ami-0080e4c5bc078760e",

"HVMG2": "ami-0aeb704d503081ea6"

},

"us-west-2": {

"HVM64": "ami-01e24be29428c15b2",

"HVMG2": "ami-0fe84a5b4563d8f27"

},

"us-west-1": {

"HVM64": "ami-0ec6517f6edbf8044",

"HVMG2": "ami-0a7fc72dc0e51aa77"

},

"eu-west-1": {

"HVM64": "ami-08935252a36e25f85",

"HVMG2": "ami-0d5299b1c6112c3c7"

},

"eu-west-2": {

"HVM64": "ami-01419b804382064e4",

"HVMG2": "NOT\_SUPPORTED"

},

"eu-west-3": {

"HVM64": "ami-0dd7e7ed60da8fb83",

"HVMG2": "NOT\_SUPPORTED"

},

"eu-central-1": {

"HVM64": "ami-0cfbf4f6db41068ac",

"HVMG2": "ami-0aa1822e3eb913a11"

},

"eu-north-1": {

"HVM64": "ami-86fe70f8",

"HVMG2": "ami-32d55b4c"

},

"ap-northeast-1": {

"HVM64": "ami-00a5245b4816c38e6",

"HVMG2": "ami-09d0e0e099ecabba2"

},

"ap-northeast-2": {

"HVM64": "ami-00dc207f8ba6dc919",

"HVMG2": "NOT\_SUPPORTED"

},

"ap-northeast-3": {

"HVM64": "ami-0b65f69a5c11f3522",

"HVMG2": "NOT\_SUPPORTED"

},

"ap-southeast-1": {

"HVM64": "ami-05b3bcf7f311194b3",

"HVMG2": "ami-0e46ce0d6a87dc979"

},

"ap-southeast-2": {

"HVM64": "ami-02fd0b06f06d93dfc",

"HVMG2": "ami-0c0ab057a101d8ff2"

},

"ap-south-1": {

"HVM64": "ami-0ad42f4f66f6c1cc9",

"HVMG2": "ami-0244c1d42815af84a"

},

"us-east-2": {

"HVM64": "ami-0cd3dfa4e37921605",

"HVMG2": "NOT\_SUPPORTED"

},

"ca-central-1": {

"HVM64": "ami-07423fb63ea0a0930",

"HVMG2": "NOT\_SUPPORTED"

},

"sa-east-1": {

"HVM64": "ami-05145e0b28ad8e0b2",

"HVMG2": "NOT\_SUPPORTED"

},

"cn-north-1": {

"HVM64": "ami-053617c9d818c1189",

"HVMG2": "NOT\_SUPPORTED"

},

"cn-northwest-1": {

"HVM64": "ami-0f7937761741dc640",

"HVMG2": "NOT\_SUPPORTED"

}

}

},

"Resources" : {

"VPC": {

"Type": "AWS::EC2::VPC",

"Properties": {

"CidrBlock": { "Ref" : "CIDRVpc" },

"EnableDnsSupport": "true",

"EnableDnsHostnames": "false",

"InstanceTenancy": "default"

}

},

"InternetGateway" : {

"Type" : "AWS::EC2::InternetGateway"

},

"AttachGateway" : {

"Type" : "AWS::EC2::VPCGatewayAttachment",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"InternetGatewayId" : { "Ref" : "InternetGateway" }

}

},

"PublicRouteTable" : {

"Type" : "AWS::EC2::RouteTable",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

},

"PublicRoute" : {

"Type" : "AWS::EC2::Route",

"DependsOn" : "AttachGateway",

"Properties" : {

"RouteTableId" : { "Ref" : "PublicRouteTable" },

"DestinationCidrBlock" : "0.0.0.0/0",

"GatewayId" : { "Ref" : "InternetGateway" }

}

},

"PublicSubnet1": {

"Type": "AWS::EC2::Subnet",

"Properties": {

"AvailabilityZone": {

"Fn::Select" : [ "0", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.0.0/24",

"MapPublicIpOnLaunch": "true",

"VpcId": {

"Ref": "VPC"

}

}

},

"PublicSubnet1RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet1" },

"RouteTableId" : { "Ref" : "PublicRouteTable" }

}

},

"PublicSubnet2": {

"Type": "AWS::EC2::Subnet",

"Properties": {

"AvailabilityZone": {

"Fn::Select" : [ "1", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.1.0/24",

"MapPublicIpOnLaunch": "true",

"VpcId": {

"Ref": "VPC"

}

}

},

"PublicSubnet2RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet2" },

"RouteTableId" : { "Ref" : "PublicRouteTable" }

}

},

"PublicNetworkAcl" : {

"Type" : "AWS::EC2::NetworkAcl",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

},

"InboundHTTPPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "80", "To" : "80"}

}

},

"InboundDynamicPortsPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "101",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "1024", "To" : "65535"}

}

},

"OutboundHTTPPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "80", "To" : "80"}

}

},

"OutBoundDynamicPortPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

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"RuleNumber" : "101",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "1024", "To" : "65535"}

}

},

"PublicSubnetNetworkAclAssociation" : {

"Type" : "AWS::EC2::SubnetNetworkAclAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet1" },

"NetworkAclId" : { "Ref" : "PublicNetworkAcl" }

}

},

"PrivateSubnet1" : {

"Type" : "AWS::EC2::Subnet",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"AvailabilityZone": {

"Fn::Select" : [ "0", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.2.0/24"

}

},

"PrivateRouteTable" : {

"Type" : "AWS::EC2::RouteTable",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

},

"PrivateSubnet1RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet1" },

"RouteTableId" : { "Ref" : "PrivateRouteTable" }

}

},

"PrivateSubnet2" : {

"Type" : "AWS::EC2::Subnet",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"AvailabilityZone": {

"Fn::Select" : [ "1", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.3.0/24"

}

},

"PrivateSubnet2RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet2" },

"RouteTableId" : { "Ref" : "PrivateRouteTable" }

}

},

"PrivateNetworkAcl" : {

"Type" : "AWS::EC2::NetworkAcl",

"Properties" : {

"VpcId" : {"Ref" : "VPC"},

"Tags" : [

{"Key" : "Application", "Value" : { "Ref" : "AWS::StackId"} },

{"Key" : "Network", "Value" : "Private" }

]

}

},

"InboundPrivateNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PrivateNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "0", "To" : "65535"}

}

},

"OutBoundPrivateNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

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"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "0", "To" : "65535"}

}

},

"PrivateSubnet1NetworkAclAssociation" : {

"Type" : "AWS::EC2::SubnetNetworkAclAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet1" },

"NetworkAclId" : { "Ref" : "PrivateNetworkAcl" }

}

},

"WebServerGroup" : {

"Type" : "AWS::AutoScaling::AutoScalingGroup",

"Properties" : {

"VPCZoneIdentifier" : [ { "Ref" : "PrivateSubnet1" }, { "Ref" : "PrivateSubnet2" } ],

"LaunchConfigurationName" : { "Ref" : "LaunchConfig" },

"MinSize" : "2",

"MaxSize" : "4",

"TargetGroupARNs" : [ { "Ref" : "ALBTargetGroup" } ]

}

},

"LaunchConfig" : {

"Type" : "AWS::AutoScaling::LaunchConfiguration",

"Metadata" : {

"Comment" : "Install a simple application",

"AWS::CloudFormation::Init" : {

"config" : {

"packages" : {

"yum" : {

"httpd" : []

}

},

"services" : {

"sysvinit" : {

"httpd" : { "enabled" : "true", "ensureRunning" : "true" }

}

}

}

}

},

"Properties" : {

"KeyName" : { "Ref" : "KeyName" },

"ImageId" : { "Fn::FindInMap" : [ "AWSRegionArch2AMI", { "Ref" : "AWS::Region" },

{ "Fn::FindInMap" : [ "AWSInstanceType2Arch", { "Ref" : "InstanceType" }, "Arch" ] } ] },

"InstanceType" : { "Ref" : "InstanceType" },

"UserData" : { "Fn::Base64" : { "Fn::Join" : ["", [

"#!/bin/bash -xe\n",

"yum update -y aws-cfn-bootstrap\n",

"/opt/aws/bin/cfn-init -v ",

" --stack ", { "Ref" : "AWS::StackName" },

" --resource LaunchConfig ",

" --region ", { "Ref" : "AWS::Region" }, "\n"

]]}}

}

},

"ApplicationLoadBalancer" : {

"Type" : "AWS::ElasticLoadBalancingV2::LoadBalancer",

"Properties" : {

"Subnets" : [ { "Ref" : "PublicSubnet1" } , { "Ref" : "PublicSubnet2"} ]

}

},

"ALBListener" : {

"Type" : "AWS::ElasticLoadBalancingV2::Listener",

"Properties" : {

"DefaultActions" : [{

"Type" : "forward",

"TargetGroupArn" : { "Ref" : "ALBTargetGroup" }

}],

"LoadBalancerArn" : { "Ref" : "ApplicationLoadBalancer" },

"Port" : "80",

"Protocol" : "HTTP"

}

},

"ALBTargetGroup" : {

"Type" : "AWS::ElasticLoadBalancingV2::TargetGroup",

"Properties" : {

"HealthCheckIntervalSeconds" : 30,

"HealthCheckTimeoutSeconds" : 5,

"HealthyThresholdCount" : 3,

"Port" : 80,

"Protocol" : "HTTP",

"UnhealthyThresholdCount" : 5,

"VpcId" : {"Ref" : "VPC"},

"TargetType" : "instance"

}

},

"LoadBalancerSecurityGroup" : {

"Type" : "AWS::EC2::SecurityGroup",

"Properties" : {

"GroupDescription" : "Enable HTTP access on port 80",

"VpcId" : { "Ref" : "VPC" },

"SecurityGroupIngress" : [ {

"IpProtocol" : "tcp",

"FromPort" : "80",

"ToPort" : "80",

"CidrIp" : "0.0.0.0/0"

} ],

"SecurityGroupEgress" : [ {

"IpProtocol" : "tcp",

"FromPort" : "80",

"ToPort" : "80",

"CidrIp" : "0.0.0.0/0"

} ]

}

}

},

"Outputs" : {

"URL" : {

"Description" : "URL of the website",

"Value" : { "Fn::Join" : [ "", [ "http://", { "Fn::GetAtt" : [ "ApplicationLoadBalancer", "DNSName" ]}]]}

}

}

}{

"AWSTemplateFormatVersion": "2010-09-09",

"Description": "My simple EC2 instance",

"Parameters": {

"KeyName": {

"Description": "Name of an existing EC2 KeyPair",

"Type": "AWS::EC2::KeyPair::KeyName",

"Default": "puttykey",

"ConstraintDescription": "must be the name of an existing EC2 KeyPair."

},

"InstanceType": {

"Description": "WebServer EC2 instance type",

"Type": "String",

"Default": "t2.micro",

"AllowedValues": [

"t1.micro",

"t2.nano",

"t2.micro",

"t2.small",

"t2.medium",

"t2.large",

"m1.small",

"m1.medium",

"m1.large",

"m1.xlarge",

"m2.xlarge",

"m2.2xlarge",

"m2.4xlarge",

"m3.medium",

"m3.large",

"m3.xlarge",

"m3.2xlarge",

"m4.large",

"m4.xlarge",

"m4.2xlarge",

"m4.4xlarge",

"m4.10xlarge",

"c1.medium",

"c1.xlarge",

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"c3.4xlarge",

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"c4.large",

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"c4.4xlarge",

"c4.8xlarge",

"g2.2xlarge",

"g2.8xlarge",

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"r3.xlarge",

"r3.2xlarge",

"r3.4xlarge",

"r3.8xlarge",

"i2.xlarge",

"i2.2xlarge",

"i2.4xlarge",

"i2.8xlarge",

"d2.xlarge",

"d2.2xlarge",

"d2.4xlarge",

"d2.8xlarge",

"hi1.4xlarge",

"hs1.8xlarge",

"cr1.8xlarge",

"cc2.8xlarge",

"cg1.4xlarge"

],

"ConstraintDescription": "must be a valid EC2 instance type."

},

"SSHLocation" : {

"Description" : " The IP address range that can be used to SSH to the EC2 instances",

"Type": "String",

"MinLength": "9",

"MaxLength": "18",

"Default": "0.0.0.0/0",

"AllowedPattern": "(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})\\.(\\d{1,3})/(\\d{1,2})"

},

"CIDRVpc" : {

"Description" : " The IP address range that can be used to SSH to the EC2 instances",

"Type": "String",

"Default" : "10.0.0.0/16"

}

},

"Mappings": {

"AWSInstanceType2Arch": {

"t1.micro": {

"Arch": "HVM64"

},

"t2.nano": {

"Arch": "HVM64"

},

"t2.micro": {

"Arch": "HVM64"

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"t2.small": {

"Arch": "HVM64"

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"t2.medium": {

"Arch": "HVM64"

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"t2.large": {

"Arch": "HVM64"

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"m1.small": {

"Arch": "HVM64"

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"m1.medium": {

"Arch": "HVM64"

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"Arch": "HVM64"

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"Arch": "HVM64"

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"g2.2xlarge": {

"Arch": "HVMG2"

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"Arch": "HVMG2"

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"r3.large": {

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"d2.8xlarge": {

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"hi1.4xlarge": {

"Arch": "HVM64"

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"hs1.8xlarge": {

"Arch": "HVM64"

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"cr1.8xlarge": {

"Arch": "HVM64"

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"cc2.8xlarge": {

"Arch": "HVM64"

}

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"AWSInstanceType2NATArch": {

"t1.micro": {

"Arch": "NATHVM64"

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"t2.nano": {

"Arch": "NATHVM64"

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"t2.micro": {

"Arch": "NATHVM64"

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"m4.10xlarge": {

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"Arch": "NATHVMG2"

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"g2.8xlarge": {

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"Arch": "NATHVM64"

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"r3.xlarge": {

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"Arch": "NATHVM64"

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"hs1.8xlarge": {

"Arch": "NATHVM64"

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"cr1.8xlarge": {

"Arch": "NATHVM64"

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"cc2.8xlarge": {

"Arch": "NATHVM64"

}

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"AWSRegionArch2AMI": {

"us-east-1": {

"HVM64": "ami-0080e4c5bc078760e",

"HVMG2": "ami-0aeb704d503081ea6"

},

"us-west-2": {

"HVM64": "ami-01e24be29428c15b2",

"HVMG2": "ami-0fe84a5b4563d8f27"

},

"us-west-1": {

"HVM64": "ami-0ec6517f6edbf8044",

"HVMG2": "ami-0a7fc72dc0e51aa77"

},

"eu-west-1": {

"HVM64": "ami-08935252a36e25f85",

"HVMG2": "ami-0d5299b1c6112c3c7"

},

"eu-west-2": {

"HVM64": "ami-01419b804382064e4",

"HVMG2": "NOT\_SUPPORTED"

},

"eu-west-3": {

"HVM64": "ami-0dd7e7ed60da8fb83",

"HVMG2": "NOT\_SUPPORTED"

},

"eu-central-1": {

"HVM64": "ami-0cfbf4f6db41068ac",

"HVMG2": "ami-0aa1822e3eb913a11"

},

"eu-north-1": {

"HVM64": "ami-86fe70f8",

"HVMG2": "ami-32d55b4c"

},

"ap-northeast-1": {

"HVM64": "ami-00a5245b4816c38e6",

"HVMG2": "ami-09d0e0e099ecabba2"

},

"ap-northeast-2": {

"HVM64": "ami-00dc207f8ba6dc919",

"HVMG2": "NOT\_SUPPORTED"

},

"ap-northeast-3": {

"HVM64": "ami-0b65f69a5c11f3522",

"HVMG2": "NOT\_SUPPORTED"

},

"ap-southeast-1": {

"HVM64": "ami-05b3bcf7f311194b3",

"HVMG2": "ami-0e46ce0d6a87dc979"

},

"ap-southeast-2": {

"HVM64": "ami-02fd0b06f06d93dfc",

"HVMG2": "ami-0c0ab057a101d8ff2"

},

"ap-south-1": {

"HVM64": "ami-0ad42f4f66f6c1cc9",

"HVMG2": "ami-0244c1d42815af84a"

},

"us-east-2": {

"HVM64": "ami-0cd3dfa4e37921605",

"HVMG2": "NOT\_SUPPORTED"

},

"ca-central-1": {

"HVM64": "ami-07423fb63ea0a0930",

"HVMG2": "NOT\_SUPPORTED"

},

"sa-east-1": {

"HVM64": "ami-05145e0b28ad8e0b2",

"HVMG2": "NOT\_SUPPORTED"

},

"cn-north-1": {

"HVM64": "ami-053617c9d818c1189",

"HVMG2": "NOT\_SUPPORTED"

},

"cn-northwest-1": {

"HVM64": "ami-0f7937761741dc640",

"HVMG2": "NOT\_SUPPORTED"

}

}

},

"Resources" : {

"VPC": {

"Type": "AWS::EC2::VPC",

"Properties": {

"CidrBlock": { "Ref" : "CIDRVpc" },

"EnableDnsSupport": "true",

"EnableDnsHostnames": "false",

"InstanceTenancy": "default"

}

},

"InternetGateway" : {

"Type" : "AWS::EC2::InternetGateway"

},

"AttachGateway" : {

"Type" : "AWS::EC2::VPCGatewayAttachment",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"InternetGatewayId" : { "Ref" : "InternetGateway" }

}

},

"PublicRouteTable" : {

"Type" : "AWS::EC2::RouteTable",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

},

"PublicRoute" : {

"Type" : "AWS::EC2::Route",

"DependsOn" : "AttachGateway",

"Properties" : {

"RouteTableId" : { "Ref" : "PublicRouteTable" },

"DestinationCidrBlock" : "0.0.0.0/0",

"GatewayId" : { "Ref" : "InternetGateway" }

}

},

"PublicSubnet1": {

"Type": "AWS::EC2::Subnet",

"Properties": {

"AvailabilityZone": {

"Fn::Select" : [ "0", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.0.0/24",

"MapPublicIpOnLaunch": "true",

"VpcId": {

"Ref": "VPC"

}

}

},

"PublicSubnet1RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet1" },

"RouteTableId" : { "Ref" : "PublicRouteTable" }

}

},

"PublicSubnet2": {

"Type": "AWS::EC2::Subnet",

"Properties": {

"AvailabilityZone": {

"Fn::Select" : [ "1", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.1.0/24",

"MapPublicIpOnLaunch": "true",

"VpcId": {

"Ref": "VPC"

}

}

},

"PublicSubnet2RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet2" },

"RouteTableId" : { "Ref" : "PublicRouteTable" }

}

},

"PublicNetworkAcl" : {

"Type" : "AWS::EC2::NetworkAcl",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

},

"InboundHTTPPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "80", "To" : "80"}

}

},

"InboundDynamicPortsPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "101",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "1024", "To" : "65535"}

}

},

"OutboundHTTPPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PublicNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "80", "To" : "80"}

}

},

"OutBoundDynamicPortPublicNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

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"RuleNumber" : "101",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "1024", "To" : "65535"}

}

},

"PublicSubnetNetworkAclAssociation" : {

"Type" : "AWS::EC2::SubnetNetworkAclAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PublicSubnet1" },

"NetworkAclId" : { "Ref" : "PublicNetworkAcl" }

}

},

"PrivateSubnet1" : {

"Type" : "AWS::EC2::Subnet",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"AvailabilityZone": {

"Fn::Select" : [ "0", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.2.0/24"

}

},

"PrivateRouteTable" : {

"Type" : "AWS::EC2::RouteTable",

"Properties" : {

"VpcId" : {"Ref" : "VPC"}

}

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"PrivateSubnet1RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet1" },

"RouteTableId" : { "Ref" : "PrivateRouteTable" }

}

},

"PrivateSubnet2" : {

"Type" : "AWS::EC2::Subnet",

"Properties" : {

"VpcId" : { "Ref" : "VPC" },

"AvailabilityZone": {

"Fn::Select" : [ "1", { "Fn::GetAZs" : { "Ref" : "AWS::Region" } } ]

},

"CidrBlock": "10.0.3.0/24"

}

},

"PrivateSubnet2RouteTableAssociation" : {

"Type" : "AWS::EC2::SubnetRouteTableAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet2" },

"RouteTableId" : { "Ref" : "PrivateRouteTable" }

}

},

"PrivateNetworkAcl" : {

"Type" : "AWS::EC2::NetworkAcl",

"Properties" : {

"VpcId" : {"Ref" : "VPC"},

"Tags" : [

{"Key" : "Application", "Value" : { "Ref" : "AWS::StackId"} },

{"Key" : "Network", "Value" : "Private" }

]

}

},

"InboundPrivateNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PrivateNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "false",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "0", "To" : "65535"}

}

},

"OutBoundPrivateNetworkAclEntry" : {

"Type" : "AWS::EC2::NetworkAclEntry",

"Properties" : {

"NetworkAclId" : {"Ref" : "PrivateNetworkAcl"},

"RuleNumber" : "100",

"Protocol" : "6",

"RuleAction" : "allow",

"Egress" : "true",

"CidrBlock" : "0.0.0.0/0",

"PortRange" : {"From" : "0", "To" : "65535"}

}

},

"PrivateSubnet1NetworkAclAssociation" : {

"Type" : "AWS::EC2::SubnetNetworkAclAssociation",

"Properties" : {

"SubnetId" : { "Ref" : "PrivateSubnet1" },

"NetworkAclId" : { "Ref" : "PrivateNetworkAcl" }

}

},

"WebServerGroup" : {

"Type" : "AWS::AutoScaling::AutoScalingGroup",

"Properties" : {

"VPCZoneIdentifier" : [ { "Ref" : "PrivateSubnet1" }, { "Ref" : "PrivateSubnet2" } ],

"LaunchConfigurationName" : { "Ref" : "LaunchConfig" },

"MinSize" : "2",

"MaxSize" : "4",

"TargetGroupARNs" : [ { "Ref" : "ALBTargetGroup" } ]

}

},

"LaunchConfig" : {

"Type" : "AWS::AutoScaling::LaunchConfiguration",

"Metadata" : {

"Comment" : "Install a simple application",

"AWS::CloudFormation::Init" : {

"config" : {

"packages" : {

"yum" : {

"httpd" : []

}

},

"services" : {

"sysvinit" : {

"httpd" : { "enabled" : "true", "ensureRunning" : "true" }

}

}

}

}

},

"Properties" : {

"KeyName" : { "Ref" : "KeyName" },

"ImageId" : { "Fn::FindInMap" : [ "AWSRegionArch2AMI", { "Ref" : "AWS::Region" },

{ "Fn::FindInMap" : [ "AWSInstanceType2Arch", { "Ref" : "InstanceType" }, "Arch" ] } ] },

"InstanceType" : { "Ref" : "InstanceType" },

"UserData" : { "Fn::Base64" : { "Fn::Join" : ["", [

"#!/bin/bash -xe\n",

"yum update -y aws-cfn-bootstrap\n",

"/opt/aws/bin/cfn-init -v ",

" --stack ", { "Ref" : "AWS::StackName" },

" --resource LaunchConfig ",

" --region ", { "Ref" : "AWS::Region" }, "\n"

]]}}

}

},

"ApplicationLoadBalancer" : {

"Type" : "AWS::ElasticLoadBalancingV2::LoadBalancer",

"Properties" : {

"Subnets" : [ { "Ref" : "PublicSubnet1" } , { "Ref" : "PublicSubnet2"} ]

}

},

"ALBListener" : {

"Type" : "AWS::ElasticLoadBalancingV2::Listener",

"Properties" : {

"DefaultActions" : [{

"Type" : "forward",

"TargetGroupArn" : { "Ref" : "ALBTargetGroup" }

}],

"LoadBalancerArn" : { "Ref" : "ApplicationLoadBalancer" },

"Port" : "80",

"Protocol" : "HTTP"

}

},

"ALBTargetGroup" : {

"Type" : "AWS::ElasticLoadBalancingV2::TargetGroup",

"Properties" : {

"HealthCheckIntervalSeconds" : 30,

"HealthCheckTimeoutSeconds" : 5,

"HealthyThresholdCount" : 3,

"Port" : 80,

"Protocol" : "HTTP",

"UnhealthyThresholdCount" : 5,

"VpcId" : {"Ref" : "VPC"},

"TargetType" : "instance"

}

},

"LoadBalancerSecurityGroup" : {

"Type" : "AWS::EC2::SecurityGroup",

"Properties" : {

"GroupDescription" : "Enable HTTP access on port 80",

"VpcId" : { "Ref" : "VPC" },

"SecurityGroupIngress" : [ {

"IpProtocol" : "tcp",

"FromPort" : "80",

"ToPort" : "80",

"CidrIp" : "0.0.0.0/0"

} ],

"SecurityGroupEgress" : [ {

"IpProtocol" : "tcp",

"FromPort" : "80",

"ToPort" : "80",

"CidrIp" : "0.0.0.0/0"

} ]

}

}

},

"Outputs" : {

"URL" : {

"Description" : "URL of the website",

"Value" : { "Fn::Join" : [ "", [ "http://", { "Fn::GetAtt" : [ "ApplicationLoadBalancer", "DNSName" ]}]]}

}

}

}