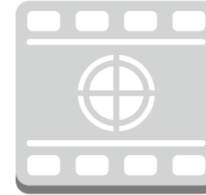


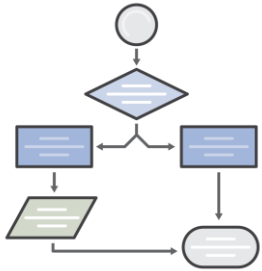
Area Code Finder



Requirement



Deliverable Screenshot



Solution Architect.



Installation Guide
CloudFormation
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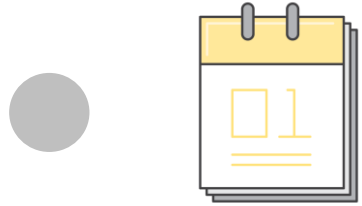
- **User Scenario** “Area Code Finder” do?

How many times you're curious about where is the strange phone number called from? You may want to know. Area code finder will help you search location of a provided area code. I collected nearly 400 area codes and locations in North America, and loaded them into my backend Aurora database.

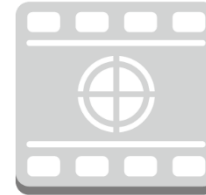
Please try it now <https://tri-alb-clb-https-1496351026.us-west-2.elb.amazonaws.com:3001>

Using AWS CloudFormation implements automate full stack, self contained, automatically deployment on AWS

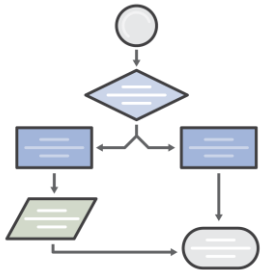
Response to Trinimbus Assignment



Requirement



Deliverable Screenshot



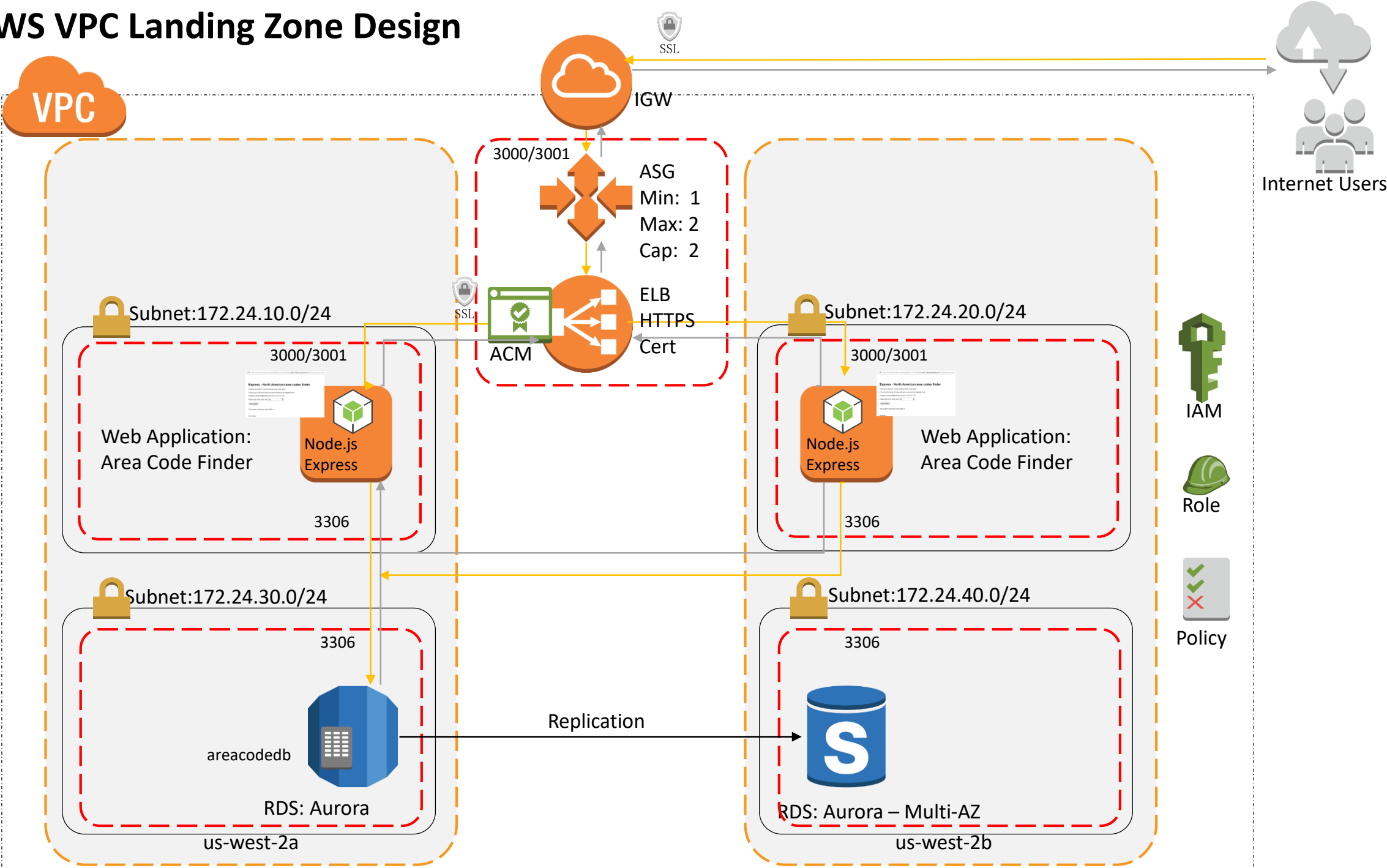
Solution Architect.



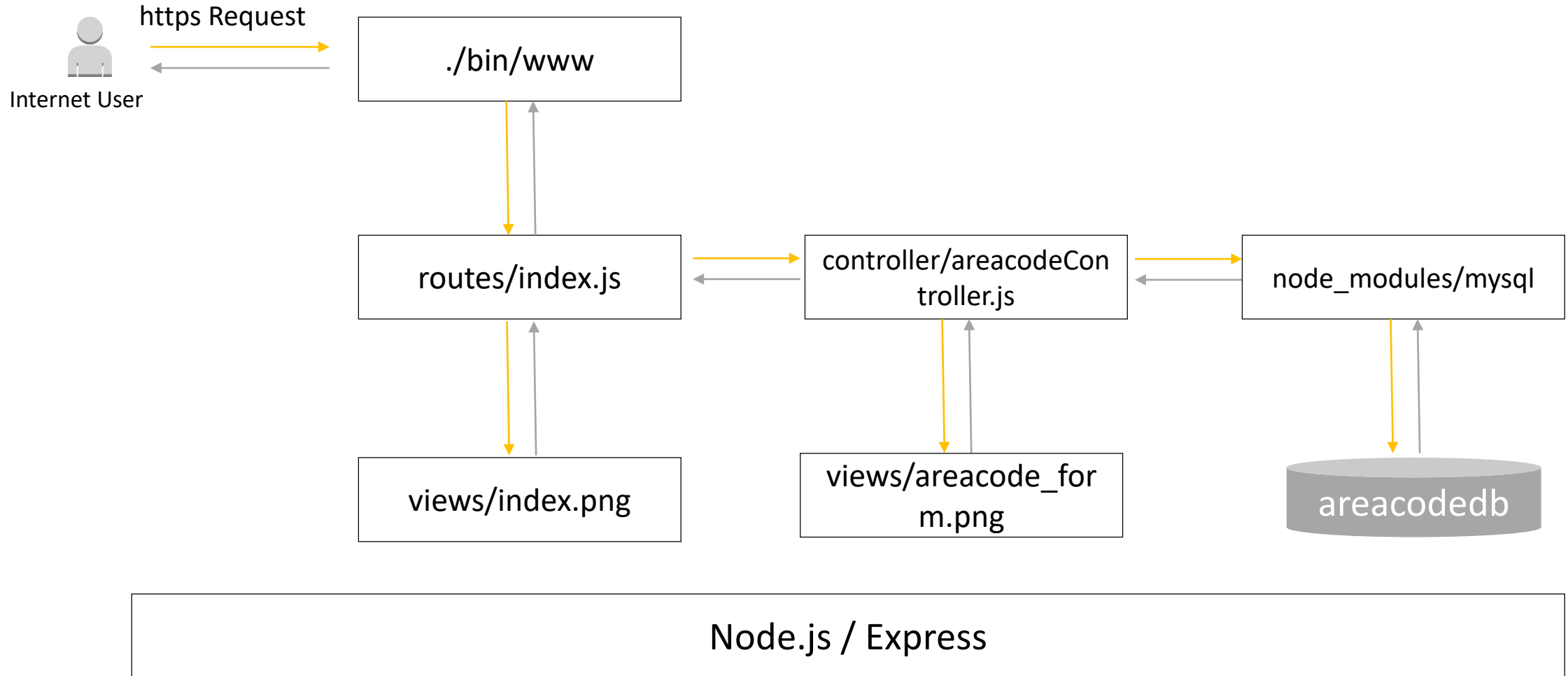
**Installation Guide
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Automation**

AWS VPC Landing Zone Design

VPC
172.24.0.0/16
at us-west-2

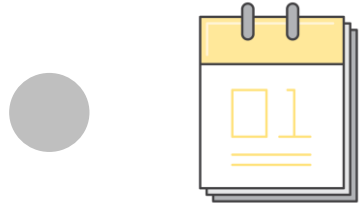


Web Application Architecture

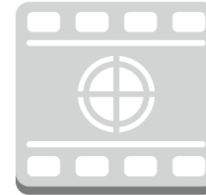


- The Web Application is created from scratch based on Node.js and Express

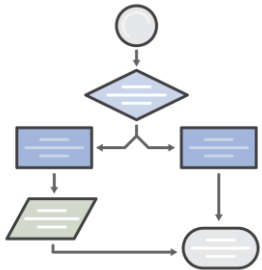
Response to Trinimbus Assignment



Requirement



Deliverable Screenshot



Solution Architect.

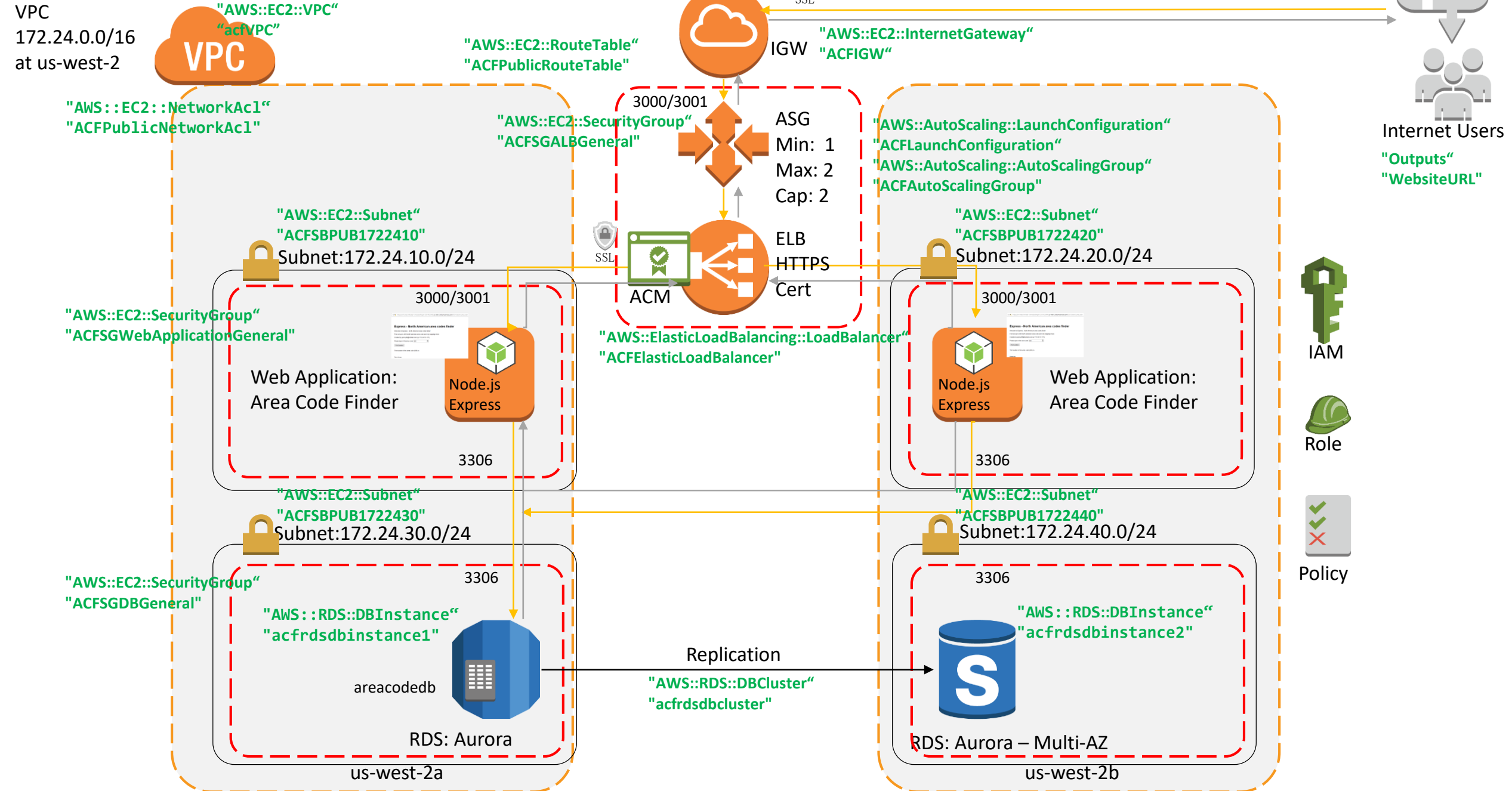


Installation Guide
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CloudFormation Deployment

- Full web application stack is auto-deployed via CloudFormation, by providing only 8 parameters and 1 click to implement CloudFormation
- Leverage intrinsic functions to avoid hard coding
- ELB and ASG are automatically configured in CloudFormation
- RDS Aurora multi-AZs cluster/instance are automatically created by CloudFormation. Table and data are created and loaded automatically by User Data + Python scripts.

CloudFormation resources mapping



Leverage cfn-init, cfn-signal and user data

```
"Metadata" : {
  "Comment" : "Install packages, create files and exec commands",
  "AWS::CloudFormation::Init" : {
    "config" : {
      "packages" : {
        "yum" : {
          "httpd" : []
        }
      },
      "services" : {
        "sysvinit" : {
          "httpd" : { "enabled" : "true", "ensureRunning" : "true" }
        }
      }
    }
  }
},
```

- Automatically install packages like httpd
- Automatically start service

```
"/opt/aws/bin/cfn-init -v ",
"  --stack ", { "Ref" : "AWS::StackName" },
"  --resource ACFLaunchConfiguration ",
"  --region ", { "Ref" : "AWS::Region" }, "\n",

"/opt/aws/bin/cfn-signal -e $? ",
"  --stack ", { "Ref" : "AWS::StackName" },
"  --resource ACFAutoScalingGroup ",
"  --region ", { "Ref" : "AWS::Region" }, "\n",
```

ELB and ASG are automatically configured via CloudFormation

```

"Properties": {
  "SecurityGroups": [{ "Ref" : "ACFSGALBGeneral" }],
  "Scheme": "internet-facing",
  "Subnets": [{ "Ref" : "ACFSBPUB1722410" }, { "Ref" : "ACFSBPUB1722420" }],
  "CrossZone": "true",
  "Listeners": [
    {
      "InstancePort": { "Ref" : "ACFHTTPSPORT" },
      "InstanceProtocol": "HTTPS",
      "LoadBalancerPort": { "Ref" : "ACFHTTPSPORT" },
      "Protocol": "HTTPS",
      "SSLCertificateId": { "Ref" : "ACFSSLCertificationID" }
    }
  ],
  "HealthCheck": {
    "Target": {
      "Fn::Join": [ "", [ "HTTPS:", { "Ref" : "ACFHTTPSPORT" }, "/" ] ]
    },
    "HealthyThreshold": "10",
    "UnhealthyThreshold": "5",
    "Interval": "30",
    "Timeout": "5"
  }
}

```

```

"Properties": {
  "AutoScalingGroupName": "ACF_AutoScalingGroup",
  "AvailabilityZones": [ {"Fn::Join": ["", [{"Ref": "AWS::Region"}, "a"]]}, {"Fn::Join": ["", [{"Ref": "AWS::Region"}, "b"]} ]},
  "DesiredCapacity": "2",
  "HealthCheckGracePeriod": "180",
  "HealthCheckType": "EC2",
  "LaunchConfigurationName": {"Ref": "ACFLaunchConfiguration"},
  "MaxSize": "2",
  "MinSize": "1",
  "LoadBalancerNames": [{"Ref": "ACFElasticLoadBalancer"}],
  "Tags": [
    { "Key": "Name", "Value": "ACF_AutoScalingGroup", "PropagateAtLaunch": "true" },
    { "Key": "Application", "Value": "Area Code Finder (ACF) - Autoscaling Group", "PropagateAtLaunch": "true" },
    { "Key": "E-mail", "Value": "jackcy99@hotmail.com", "PropagateAtLaunch": "true" }
  ],
  "VPCZoneIdentifier": [{"Ref": "ACFSBPUB1722410"}, {"Ref": "ACFSBPUB1722420"}]
}

```

Load Balancer Protocol	Load Balancer Port	Instance Protocol	Instance Port
HTTPS	3001	HTTPS	3001

Auto Scaling Group: TRI_HA_AutoScalingGroup

Details
Activity History
Scaling Policies
Instances
Monitoring
Notifications
Tags
Scheduled Actions
Lifecycle Hooks

Launch Configuration

Launch Template

Launch Template Version

Service-Linked Role

Load Balancers

Target Groups

Health Check Type

cnf-areacodefinder-02-TRIHALaunchConfiguration-MBXZVJQ8CNDQ

arn:aws:iam::272462672480:role/aws-service-role/autoscaling.amazonaws.com/AWSServiceRoleForAutoScaling

cnf-areac-TRIHAEl-1SMWCD0C9WGO6

Desired

Min

Max

EC2

Availability Zone(s)

Subnet(s)

Default Cooldown



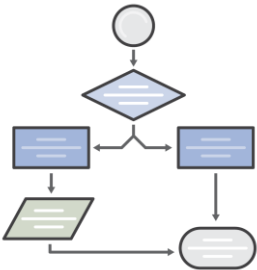

Placement Group

us-west-2a, us-west-2b

subnet-b000bcfb,subnet-4f60f236

300

Response to Trinimbus Assignment

-  **Requirement**
-  **Deliverable Screenshot**
-  **Solution Architect.**
-  **Installation Guide
CloudFormation
Automation**

Deliverable Screenshot (Web Application)

https://cnf-areac-trihaela-1smwcdoc9wgo6-2061926940.us-west-2.elb.amazonaws.com:3001

Express - North American area codes finder

Welcome to Express - North American area codes finder

Find out up to 400 North American area code and city mappings here

Created by jackcy99@hotmail.com (ip-172-24-10-175)

Please type in the area code:

ELB accesses via

app node 10-175

Initial page

https://cnf-areac-trihaela-1smwcdoc9wgo6-2061926940.us-west-2.elb.amazonaws.com:3001/search_area_code

Express - North American area codes finder

Welcome to Express - North American area codes finder

Find out up to 400 North American area code and city mappings here

Created by jackcy99@hotmail.com (ip-172-24-10-175)

Please type in the area code:

The location of this area code (011) is :

Unfortunately this area code (011) is not found in North America

Not a valid area code

https://cnf-areac-trihaela-1smwcdoc9wgo6-2061926940.us-west-2.elb.amazonaws.com:3001/search_area_code

Express - North American area codes finder

Welcome to Express - North American area codes finder

Find out up to 400 North American area code and city mappings here

Created by jackcy99@hotmail.com (ip-172-24-20-107)

Please type in the area code:

The location of this area code (604) is :

Canada - British Columbia

ELB accesses via

app node 20-107

https://cnf-areac-trihaela-1smwcdoc9wgo6-2061926940.us-west-2.elb.amazonaws.com:3001/search_area_code

Express - North American area codes finder

Welcome to Express - North American area codes finder

Find out up to 400 North American area code and city mappings here

Created by jackcy99@hotmail.com (ip-172-24-10-175)

Please type in the area code:

The location of this area code (604) is :

Canada - British Columbia

Find a result from Aurora DB