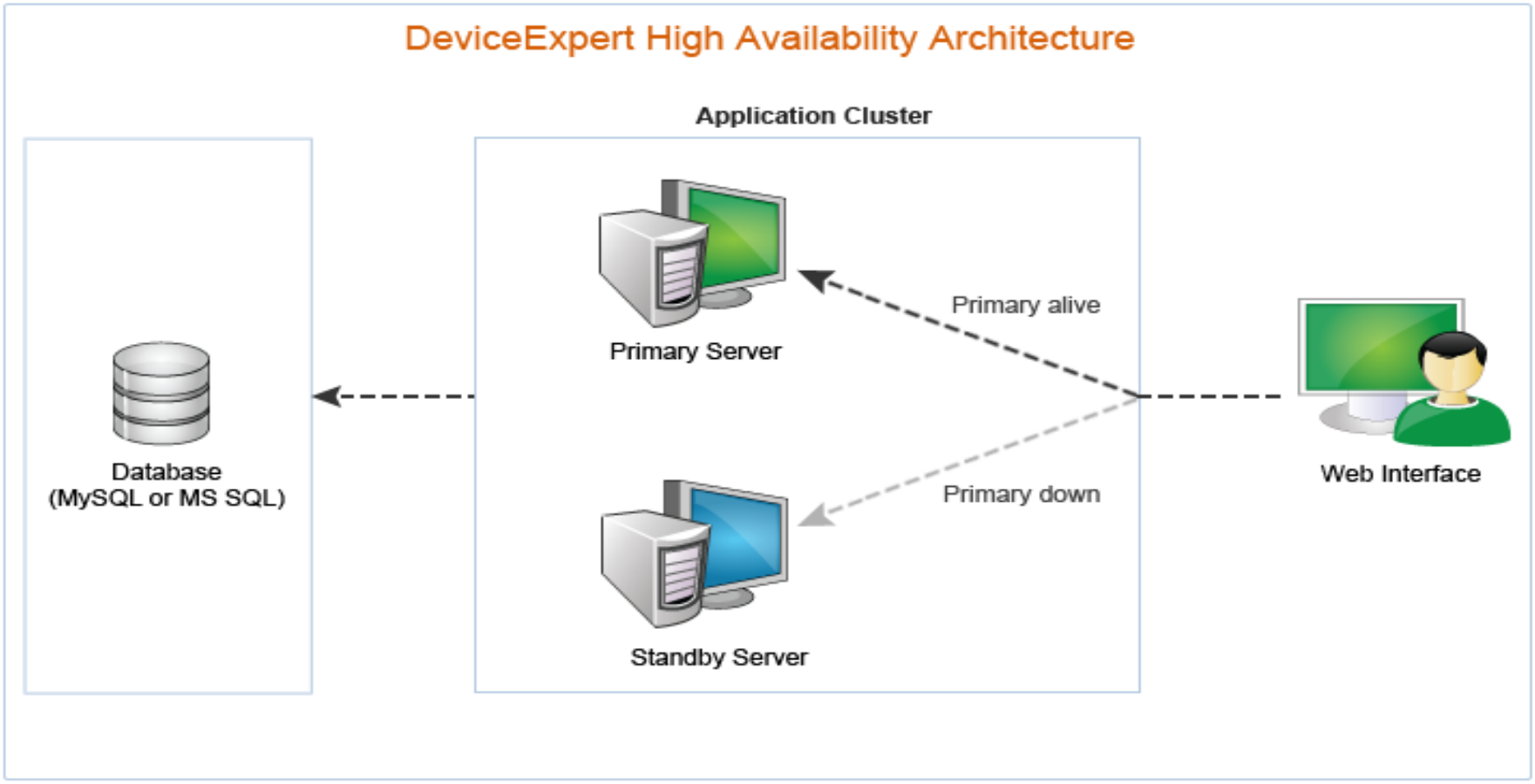
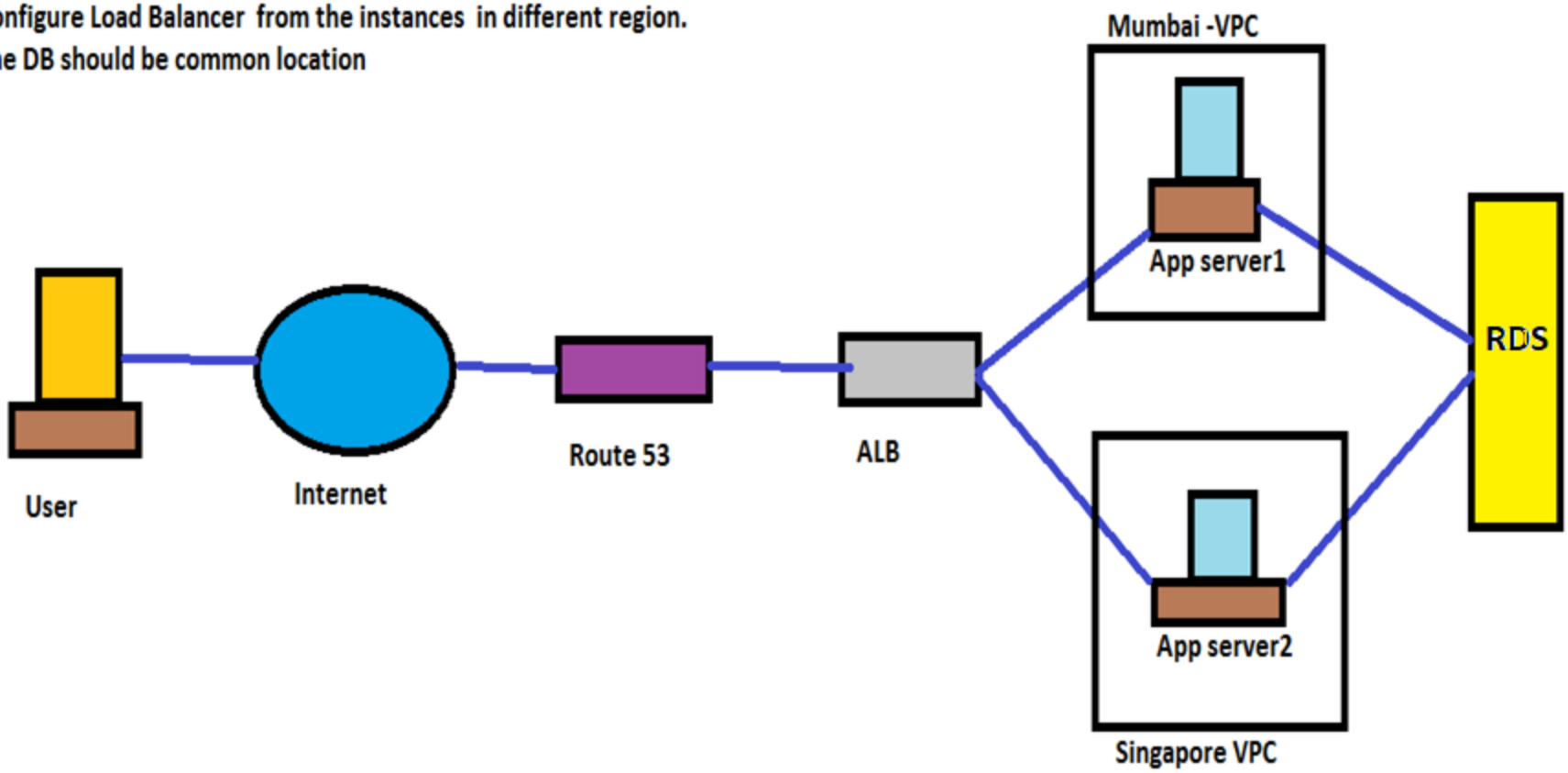

UPTIME
BALANCIN
UNSCHEDULED
SCHEDULED
MAINTENANCE
HIGH
SLA
REDUNDANCY
SYSTEM
LOAD
AVAILABILITY
IINES
FAILOVER
RELIABILITY
ACCESS
DOWNTIME
SERVICES
FAILURE


DeviceExpert High Availability Architecture
Application Cluster
Primary Server
Primary alive
Database
(MySQL or MS SQL)
Web Interface
Primary down
Standby Server

HA – Storing Different Web server content in common DB

Configure Load Balancer from the instances in different region.
The DB should be common location



AWS Resource involved

1) VPC

2) VPC peering

3) Instance

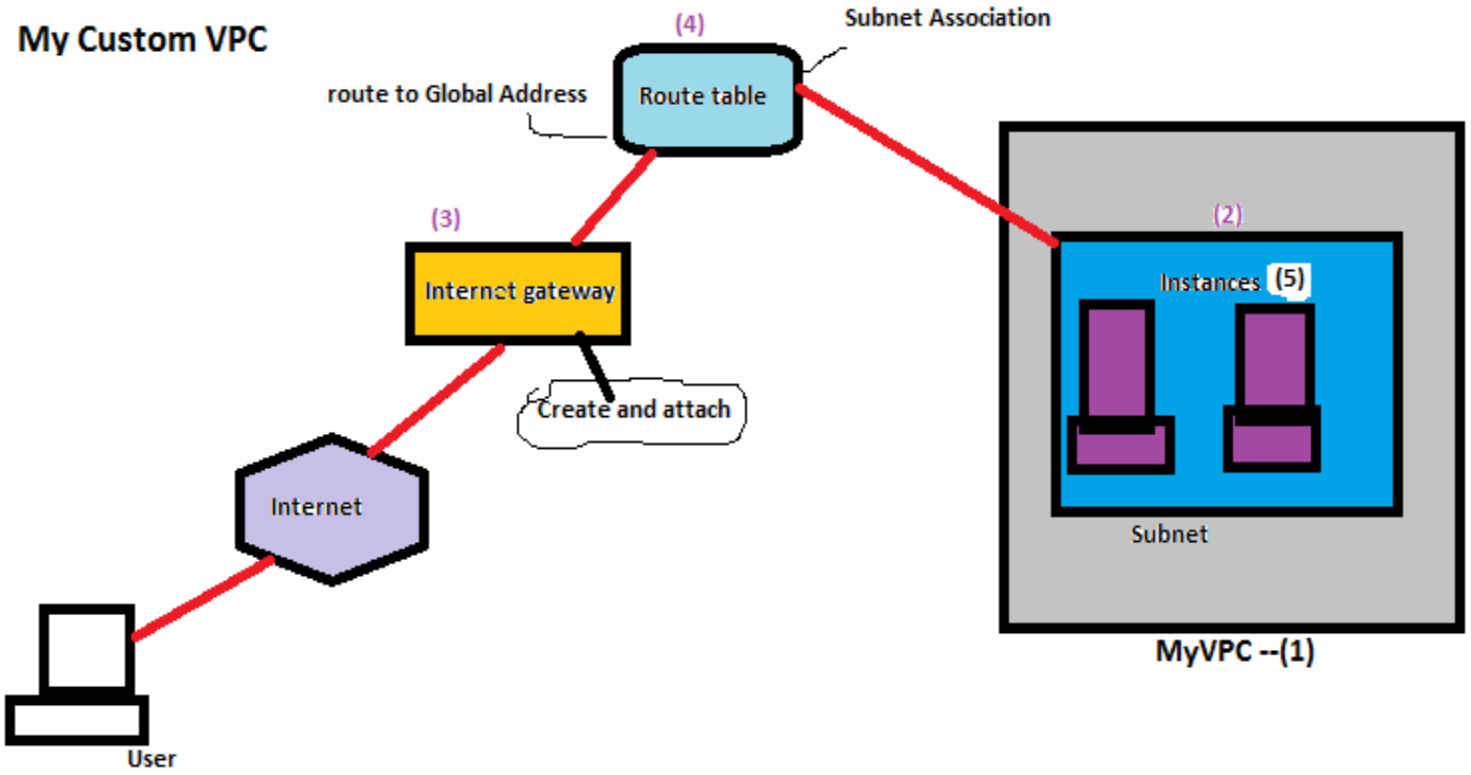
2) RDS

4) ALB

6) Route53

VPC Configuration

Need to create and configure VPC, Subnet, Internet gateway and Route Table



VPC Configuration Steps

Region	Mumbai	Singapore
VPC ID	10.100.0.0/16	10.200.0.0/16
Subnet 1 ID	10.100.1.0/24	10.200.1.0/24
Subnet 2 ID	10.100.2.0/24	10.200.2.0/24

In Mumbai

1) Open AWS Console –Services – VPC – Your VPC – Create VPC- Type name : project1-vpc – IP CIDR block -10.100.0.0/16 – Create VPC

2) Subnets – Create Subnets –Select VPC ID – subnet name: project1-subnet1 – Availiblity zone : ap-south-1a – IPV4 CIDR block:10.100.1.0/24 – Create Subnet

VPC Configuration Steps

3) Internet gateway – Create Internet gateway –Tag – project1-int-gtw -- Create Internet gateway

Then go to action –Attach to VPC – Available VPCs –select project1-vpc – Attach Internet gateway

4) Route table –Create Route table – Name tag: Project1-RT1 – VPC - project1-vpc – Create

After creating select it – subnet association –edit –select project1-subnet1 ---save

Go to Routes –Edit –Add route – 0.0.0.0/0 --- Target – Internet gateway - project1-int-gtw – save routes

5) Do the same VPC Setup in Singapore Region with different VPC ID

VPC peering Steps

1) Create 2 VPC with all detail –RT, IG, Subnet etc. in Mumbai and Singapore

2) Peering Connection –New Peering –Fill the detail—name—vpc1-vpc2 –vpc , Requester –vpc1, Accepter –vpc2 --same account –different region—ok

3) Go to another region --Select created VPC peering –Action –Accept –ok

4) In mumbai -Route Table –select vpc1 route table—routes—edit routes—add route– vpc2 IP –target—peering connection---select: vpc1-vpc2 –ok

5) In Singapore -Route Table –select vpc2 route table—routes—edit routes—add route– vpc1 IP –target—peering connection---select: vpc1-vpc2 –ok

Creating instance

1) Open AWS Console –Services –EC2 – Instance – Launch Instance –select windows server 2019 base– select t2.micro – Network: project1-vpc –Subnet: project1-subnet1 – Auto Assign Public IP – Enabled –Enable termination protection –Enable –next –next – Add Tag – Key: Name , Value: project1-webserver1 -- next –security group name: project1-webserver-sg - Allow RDP and HTTP with Source-Anywhere ---next –launch –select keypair – launch instance -- view instance

2) After launching use Remote Desktop connection and connect it

Open Server manger –Local dashboard – IE Enhanced security –OFF – Windows Defender –OFF (public network)

3) Open Internet Explorer – Google –Download XAMPP server – open Apachefriends link –download the latest version

4) After downloading install it with default options

Creating RDS

1) Services –RDS –Create databases – select mysql –version –SQL 8.0 – Templates – free tier – Database name –project1-db1 – Master username – Admin – Master password –Confirm password -- ---- next –create

3) After creating it wait for 5 mins to get it endpoint address

4) Open created DB – open security group- Default –edit inbound ports – add MYSQL/Aurora –3306 –Anywhere –save

5) Note down Endpoint Address – Username and password

Connection Check between RDS SQL and Instance

1) Open Launched Windows Instance

2) Open Internet Explorer -- Open google—download –Web platform installer(5.1) –install this extension

5)After installation –open start –open Web platform installer(5.1 –in search box type “mysql” – add my sql 5.5 –install- put RDS user and password –next—close

6) Open cmd---and type ----

mysql -h <myDBI> -P 3306 -u <myusername> -p

Now RDS connectivity check confirmed

Configure XAMPP in Instance with RDS DB connectivity

1) In instance download and install xampp server

2) From notification area open xampp and start apache service

3) Open C:\xampp\htdocs directory – And keep your web page files(userform.html and connector.php)

4) Open userform.html and modify based on your requirements.

5) Open connector.php and assign rds db endpoint address with username and password

check dbname –test and table name user here – you can assign any other if need to change

Userform.html file

```
<html>
<body>

<form action="connector.php" method="post">
Name: <input type="text" name="name"><br>
Password: <input type="password" name="pwd"><br>
<input type="submit">
</form>

</body>
</html>
```

Connector.php file

```
<?php
$servername = "RDS-ENDPOINT";
$username = "root";
$password = “india12345";
$dbname = "test";
// Create connection
$conn = new mysqli($servername, $username, $password, $dbname);
// Check connection
if ($conn->connect_error) {
  die("Connection failed: " . $conn->connect_error);
}
$sql = "INSERT INTO user (name, password) VALUES ('".$_POST['name']."', '".$_POST['pwd']."')";

if ($conn->query($sql) === TRUE)
{
  echo "record created successfully";
}
else
{
  echo "Error: " . $sql . "<br>" . $conn->error;
}

$conn->close();
?>
```

DB and table creation in RDS SQL

1) Connect RDS SQL through CMD

mysql -h <myDBI> -P 3306 -u <myusername> -p

2) Use following command

Show databases;

Create databses test;

Show databases;

Use test;

```
create table user (
name  varchar(50),
password  varchar(40)
 );
```

select * from user;

Webserver to RDS data Flow check

1) Open Internet Explorer in Windows Server
2) Type – localhost/userform.html

Now fill the detail and click on submit

3) Open CMD – connect SQL DB and check

Use databse test;
Select * from user;

We will get the stored data in database