**Lab Steps**

Task 1: Sign in to AWS Management Console

1. Click on the **** button, and you will get redirected to AWS Console in a new browser tab.
2. On the AWS sign-in page,

* Leave the Account ID as default. Never edit/remove the 12 digit Account ID present in the AWS Console. otherwise, you cannot proceed with the lab.
* Now copy your **User Name** and **Password** in the Lab Console to the **IAM Username and Password** in AWS Console and click on the **Sign in** button

     3. Once Signed In to the AWS Management Console, Make the default AWS Region as **US East (N. Virginia) us-east-1.**

Task 2 : Create a security group

1. Make sure you are in**US East (N. Virginia) us-east-1**Region.
2. Navigate to EC2 by clicking on the  menu in the top, then click on **EC2** in the **Compute** section.
3. Navigate to  on the left panel and click on 
4. Fill in the below details under **Basic details**
   * Name: Enter ***ElastiCache-SG***
   * Description: Enter ***Security group for ElastiCache***
   * VPC: Select **Default VPC**  
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5. In the Inbound rules, We will add the incoming traffic details:
   * To add **SSH**,
     + Click on 
     + Choose Type: **SSH**
     + Source: Select **,** enter **0.0.0.0/0**
   * For **HTTP,**
     + Click on 
     + Choose Type: **HTTP**
     + Source: Select , enter **0.0.0.0/0**
   * For **Redis**,
     + Click on 
     + Choose Type: **Custom TCP**
     + Port range: Enter ***6379***
     + Source: Select , enter **0.0.0.0/0  
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     + After that, click on **Create security group**
6. Security group is now created. We will use that for EC2 and Redis cluster.  
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Task 3 : Create a Redis Cluster

1. Navigate to **ElastiCache** by clicking on the **Services** menu in the top, then click on **ElasticCache** in the **Database** section
2. Click on the **Get Started** button to proceed.  
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3. Click on  and select **Create redis cluster**
4. We will now create a Redis Cluster
   * Choose a cluster creation method : Select **Configure and create a new cluster**
   * Cluster Mode : Select **Enabled**

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* Cluster info:
  + Name: Enter ***MyRedisCluster***
  + Description: Enter ***Redis Cluster for WhizProject***
* Location:
  + Location : Choose **AWS Cloud**
  + **Check** the Multi AZ Enabled checkbox

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     5. In Cluster settings section, fill the details as follows:

* Engine version: **6.x (default)**
* Port: **6379 (default)**
* Parameter group: **default.redis6.x.cluster.on (default)**
* Node type: **cache**.**t2.micro (0.5 GiB)**
* Number of Shards: **1**
* Replicas per Shard: **1**

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* Subnet group settings:Choose **Create new subnet group**
  + Name: Enter ***elasticache-subnet-group***
  + Description: Enter ***Subnet group for ElastiCache***
  + VPC ID: **Default VPC**
  + Subnet: **Select All**
  + Click on **Next**button.  
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     6. For Advanced Settings

* In Selected security groups , click on **Manage**button.
* **Select ElastiCache-SG,**and click on the **Choose** button.  
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* In the Backup section:
  + Enable automatic backups: **Uncheck**
  + Leave other options as default
  + Click on **Next**button.

     7. Finally, Click on the **Create**button.

     8. It will take up to 10 minutes for this cluster to go from **creating**state to **available** state.  
     9. Meanwhile, let's create an EC2 instance, which will be used for accessing the Redis cluster.

Task 4 : Launching an EC2 Instance

1. Navigate to EC2 by clicking on the **Services** menu in the top, then click on **EC2** in the **Compute** section.
2. Navigate to**Instances**on the left panel and click on 
3. Enter Name as ***MyEC2Server***
4. Choose an Amazon Machine Image (AMI): Select **Amazon Linux 2 AMI** in the drop-down.

* Choose **architecture** as **64-bit(x86)**

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    5. Choose an**Instance Type**: Select ***t2.micro*.**

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6. Key Pair: Select **Create a new key pair**

* Key Pair name : Enter **MyWhizkey**
* Key pair type: Choose **RSA**
* Private key file format: Choose **.pem**
* Click on **Create Key Pair**button.

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7. Under Network Setting s, choose **Select existing security group.**

* Select ElastiCache-SG security group created in the Task 2

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7. On the right side under the **Summary**section ,

* Number of Instances:**1**

    8. Leave the rest of the things as default.

   9. **Launch Status:** Your instance is now launching, Click on the instance ID and wait for complete initialization of instance till status change to running.

**Note: Copy the IPv4 Public IP Address of the EC2 instance.**

Task 5 : Copy the ElastiCache Endpoint

1. To work with the ElastiCache cluster, we need the endpoint.
2. Navigate to **ElastiCache** by clicking on the  menu in the top, then click on **Elasticache** in the **Database** section
3. On the home page, click on **Redis Clusters**in the left navigation panel.
4. If the status of the ElastiCache cluster is **available.  
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5. Click on the cluster name and Copy the Configuration Endpoint, **and save it in the notepad,** **we'll use it in the later steps.**  
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6. Make sure to **remove the port number from the end**. After removing the port number it will be:  
   **Example: myrediscluster.n62wo6.clustercfg.use1.cache.amazonaws.com**

Task 6 : SSH into EC2 Instance

* Please follow the steps in [SSH into EC2 Instance](https://www.whizlabs.com/labs/support-document/ssh-into-ec-instance).

Task 7: Install the required package and connect to the ElastiCache cluster

1. Install gcc by entering following command in terminal:
   * sudo yum install gcc -y
2. Now Install the Redis cluster by entering the following commands one-by-one :
   * wget http://download.redis.io/redis-stable.tar.gz
   * tar xvzf redis-stable.tar.gz
   * cd redis-stable
   * make
3. Once completed, connect your Redis cluster.
   * src/redis-cli -c -h ENDPOINT -p 6379
   * Replace the ENDPOINT with copied one.
   * Make sure to **paste the endpoint without colon(:)** and **port number**
   * example: **src/redis-cli -c -h myrediscluster.pxvwqt.clustercfg.use1.cache.amazonaws.com -p 6379**

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Task 8 : Test the ElastiCache cluster by running sample commands

1. Enter the first command as.
   * set a "hello"

This command will set the value of **a as "hello"**, a string value, with **no expiry**

* + get a

Print the value of **a**

**Text

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* + set b "Whiz" EX 10

This command will set the value of **b as "Whiz"**, a string value, with **10-second expiry**

* + get b

If you execute this command with-in **10 seconds**, you will be able to see the **value of b**

* + get b

Re-enter this command after **10 seconds**, to see the **value of b** is visible or not.Text

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1. Once completed, enter the below command to close the connection with the Redis cluster.
   * quit

Task 9 : Validation of the lab

1. Once the lab steps are completed, please click on the A picture containing text

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2. This will validate the resources in the AWS account and displays whether you have completed this lab successfully or not.
3. Sample output :

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Task 10: Delete AWS Resource

Deleting Redis cluster

* Navigate to **ElastiCache** by clicking on the  menu in the top, then click on **Elasticache** in the **Database** section
  + On the home page, click on Redis Cluster in the left navigation panel.
* To delete the redis cluster,
  + **Select** the Redis cluster
  + Click on the **Action** button in the menu
    - Choose the **Delete** option.
* On the confirmation window, **click on the Delete button.**
* The cluster will be deletion state, it will take around 5 minutes to delete completely.

Terminating EC2 Instance

* Navigate to EC2 by clicking on the **Services** menu in the top, then click on **EC2** in the **Compute** section.
  + On the home page, click on **Instances (running)**.  
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  + EC2 Instance will be listed here  
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* To terminate the EC2 Instance,
  + **Select** the EC2 Instance
  + Click on the **Instance state** button in the menu
  + Choose the **Terminate instance** option.  
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  + On the confirmation window, **click on the Terminate button.**  
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* EC2 instance will be terminated immediately.

**Completion and Conclusion**

1. You have successfully created a Redis cluster with ElastiCache.
2. You have successfully logged into the EC2 instance by SSH.
3. You have successfully tested the Redis cluster.

**End Lab**