POC for Virtual Machine Migration from AZ to AWS via Application Migration Service

This is a documentation for migrating windows virtual machines from azure to aws.

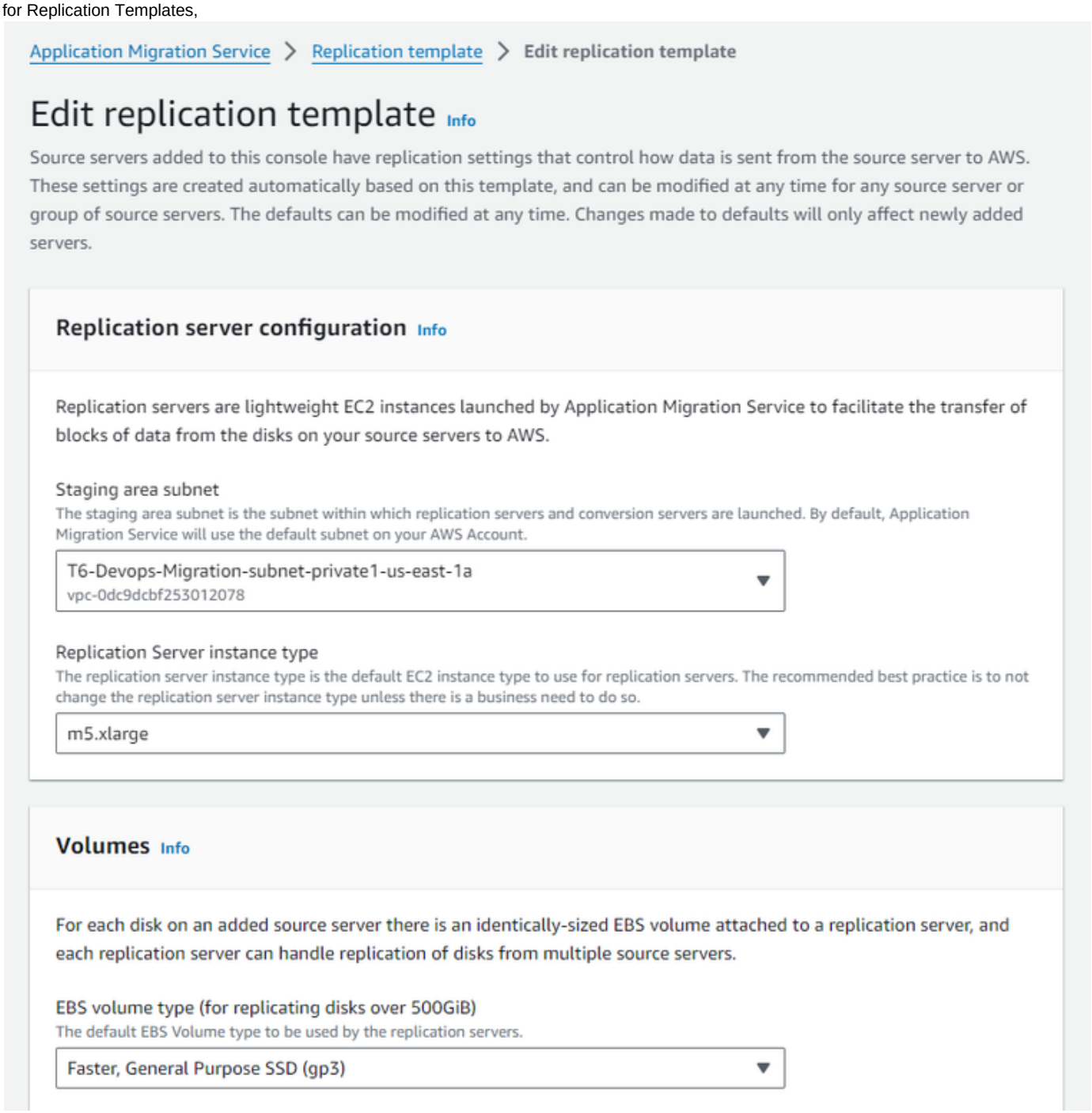
Here we are using AWS service named Application Migration Service which is used for migrating virtual machines to AWS.

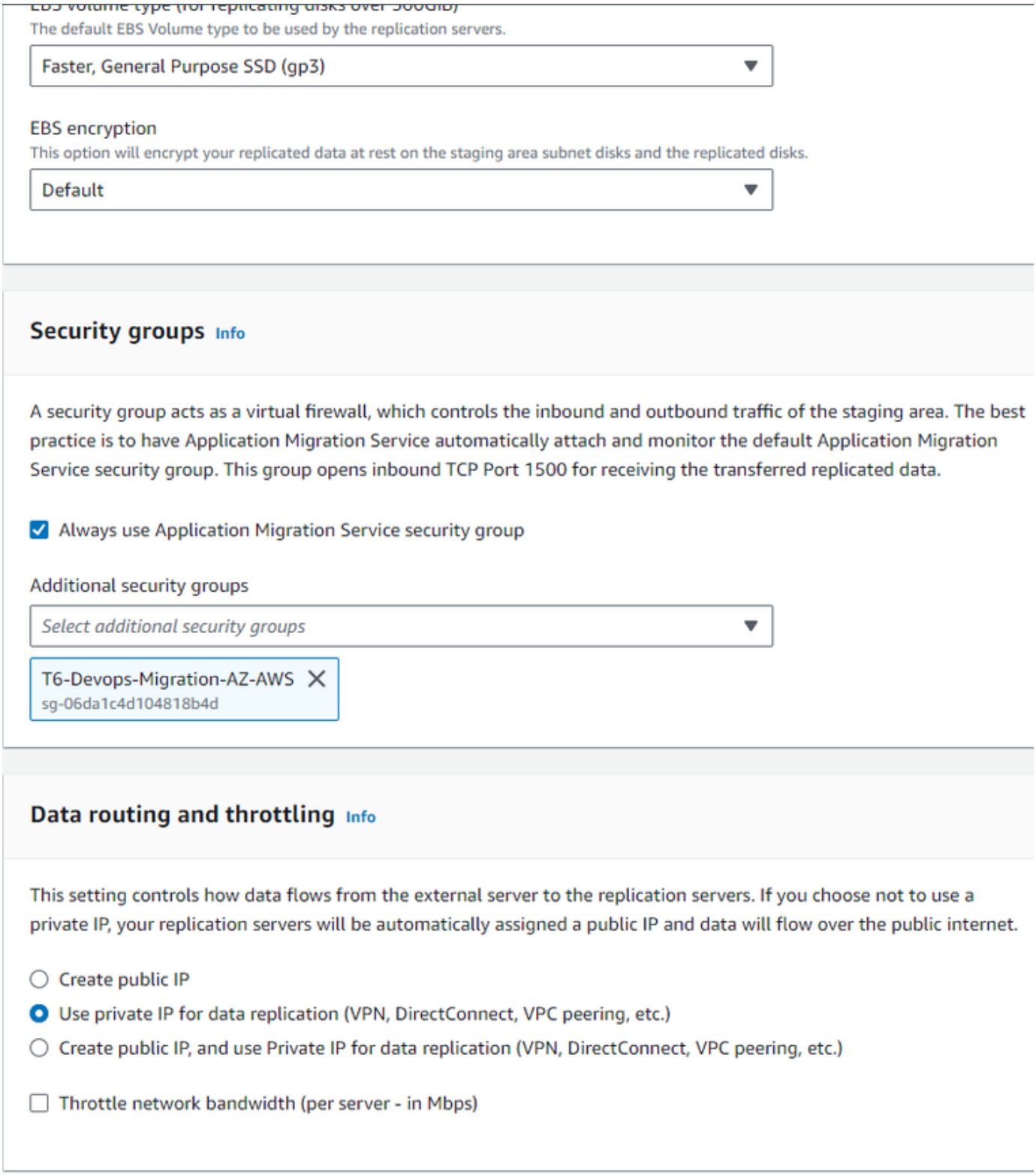
Initially we want setup the settings of Application Migration Service

Mainly there are three settings Replication Templates, Launch template and Post-launch template

Replication Templates :

The replication template determines how your servers will be replicated to AWS through a variety of settings, including Replication Server instance type, Amazon EBS volume type, Amazon EBS encryption, security groups, data routing, and tags. Please verify the attached screenshot for Replication Templates,



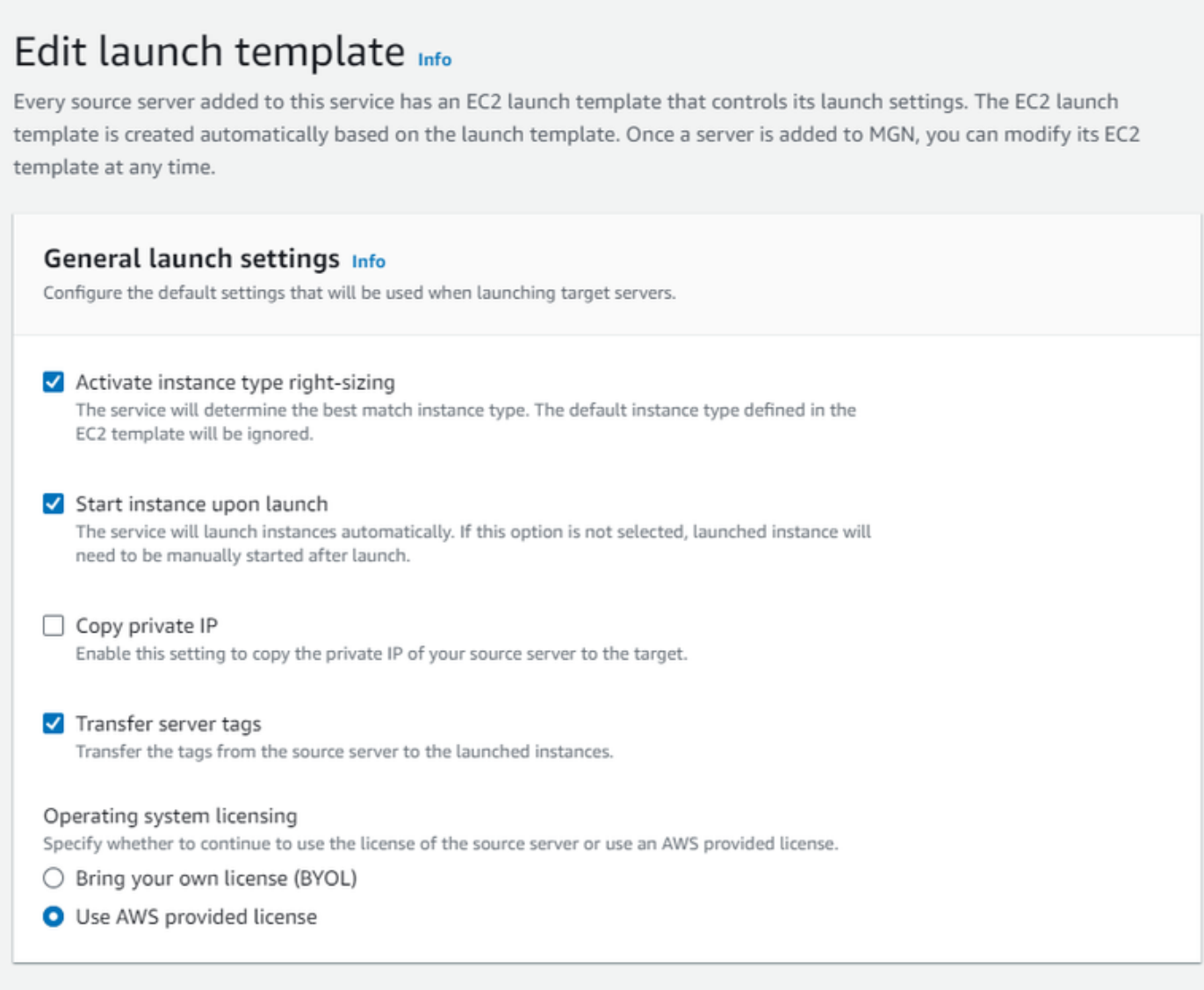


Please make sure that the security group mentioned above have 1500 port is open

Launch Templates:

Allows you to control the way AWS Application Migration Service launches instances in AWS.

Please go through the below screenshot for the configurations of Launch Template



Its always best practice to keep activate the instance type right sizing

Default EC2 Launch Template Info

Configure the default settings that will be applied to the EC2 launch template of every target server.

Default target subnet

This is the target subnet to be associated with any instance launched by this service.

T6-Devops-Migration-subnet-private1-us-east-1a
vpc-0dc9dcbf253012078

Additional security groups

These are the security groups to associate with all instances launched by this service.

Select additional security groups

T6-Devops-Migration-AZ-AWS ×
sg-06da1c4d104818b4d

Default instance type

This is the default instance type to be used for all instances launched by this service. This value is ignored if instance type right-sizing is active.

Choose an instance type

EBS volume type

This is the default volume type used for EBS volumes. You can overwrite this value for small volumes, using API.

General Purpose SSD (gp3)

IOPS

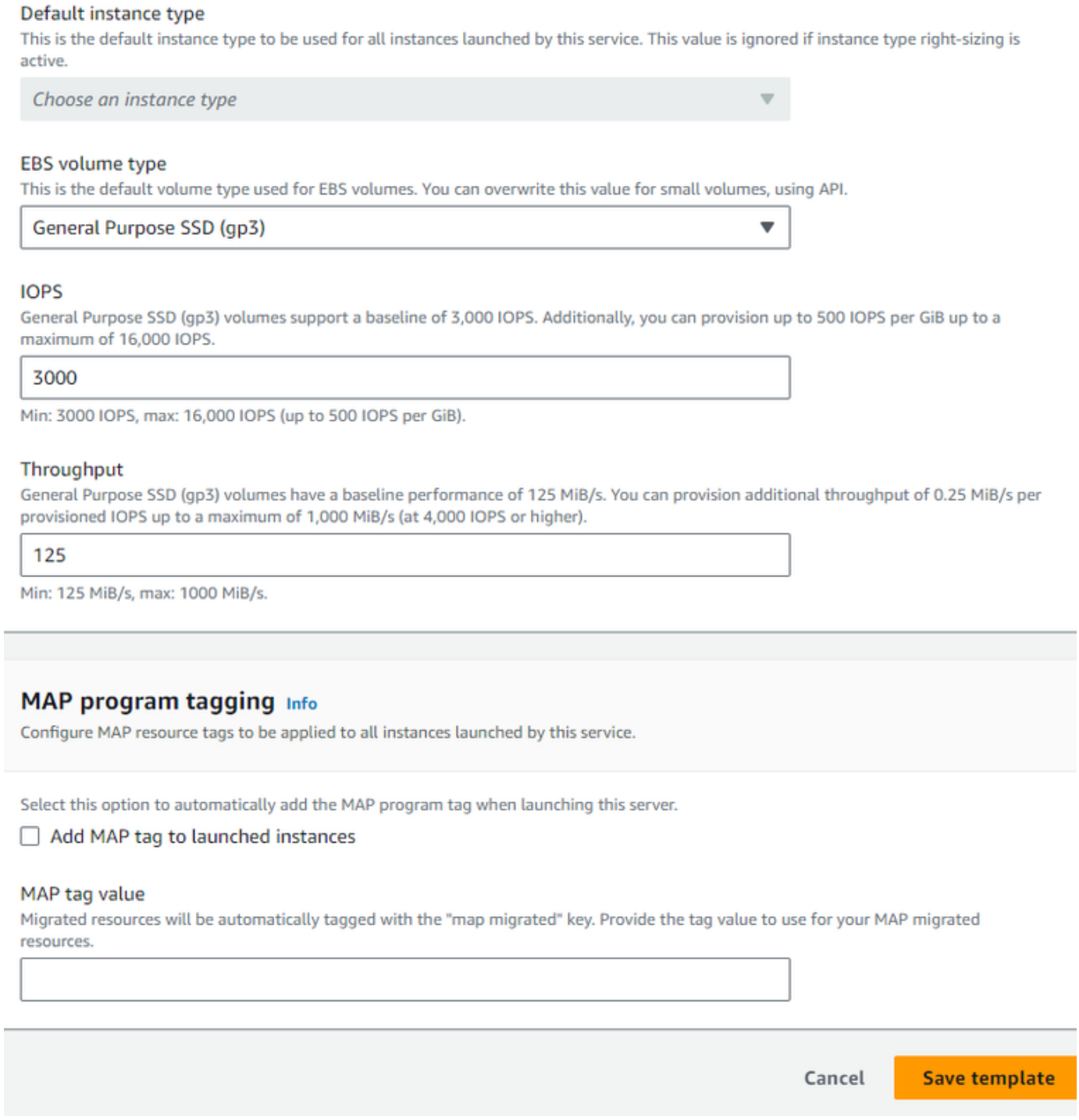
General Purpose SSD (gp3) volumes support a baseline of 3,000 IOPS. Additionally, you can provision up to 500 IOPS per GiB up to a maximum of 16,000 IOPS.

3000

Min: 3000 IOPS, max: 16,000 IOPS (up to 500 IOPS per GiB).

Throughput

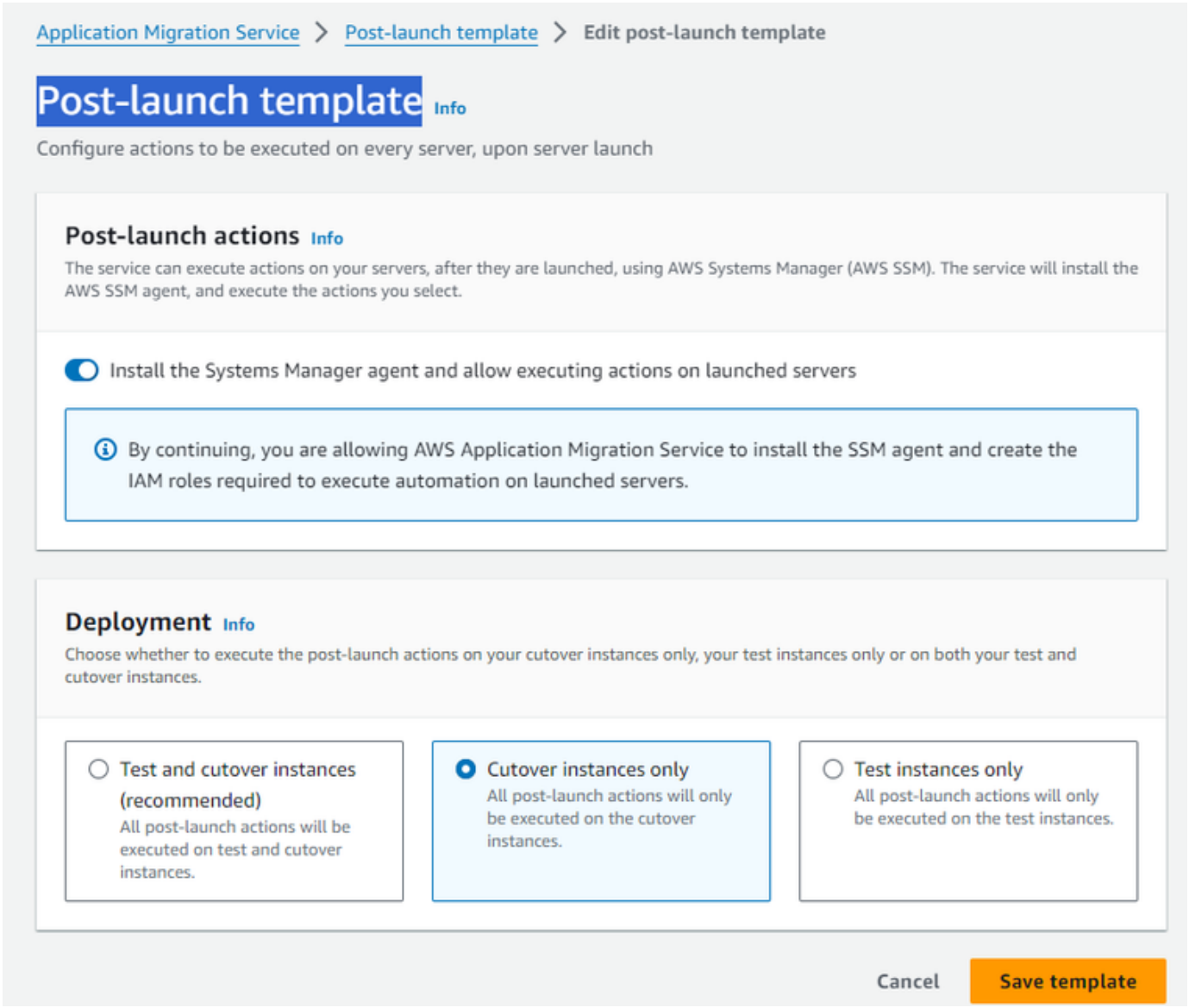
General Purpose SSD (gp3) volumes have a baseline performance of 125 MiB/s. You can provision additional throughput of 0.25 MiB/s per provisioned IOPS up to a maximum of 1,000 MiB/s (at 4,000 IOPS or higher).



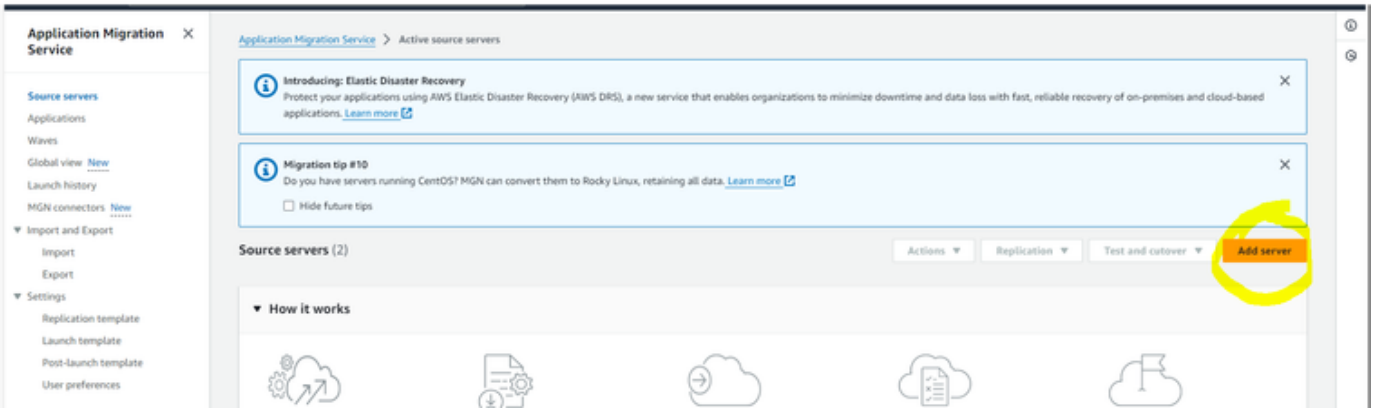
Post Launch Template :

Post-launch settings allow you to control and automate actions performed after the server has been launched in AWS. These settings are created automatically based on the **Post-launch template**.

Please go through the below screenshot for post-launch-template



After setting up all the above settings configuration we can add the server from azure like below screenshot

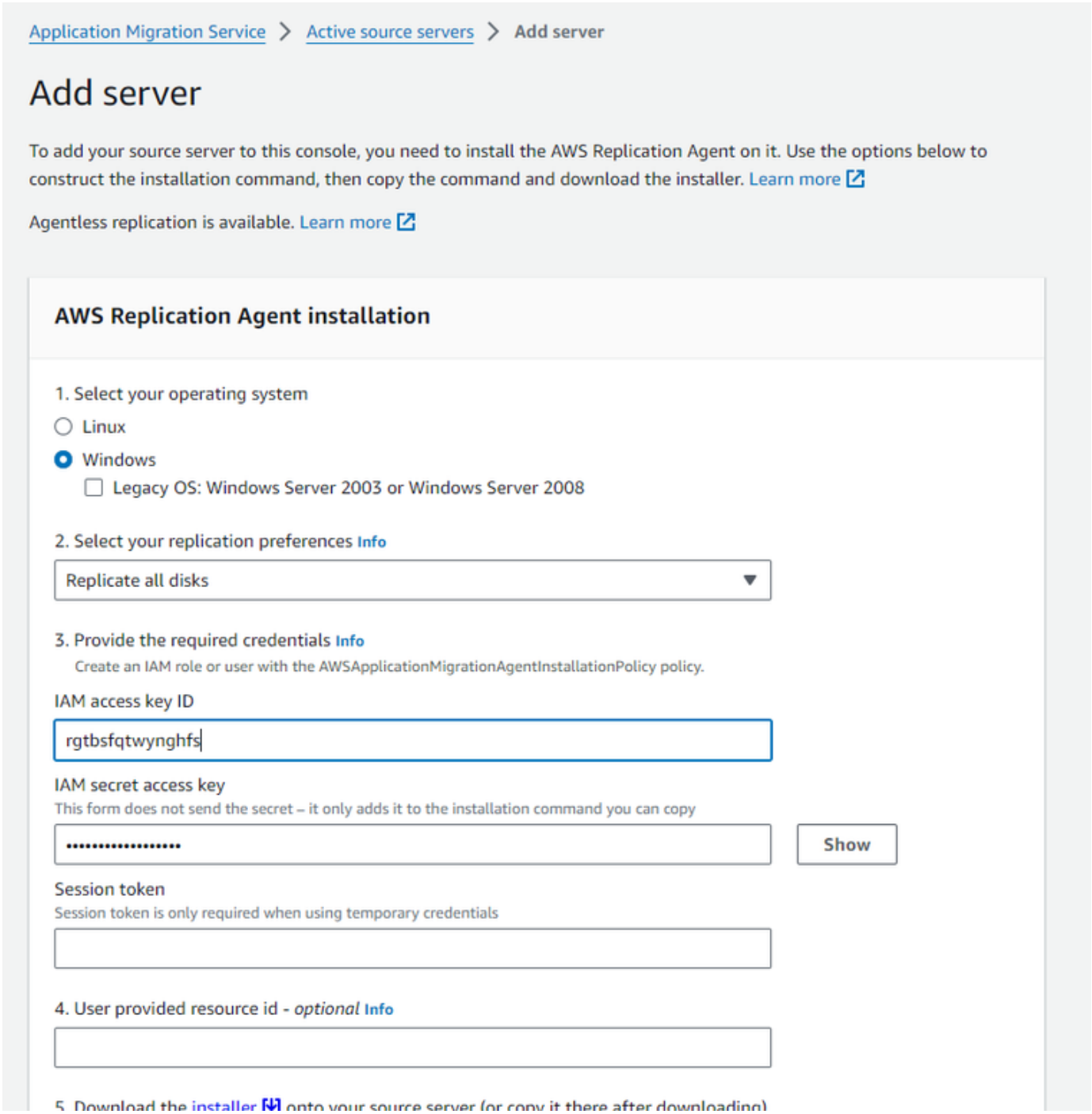


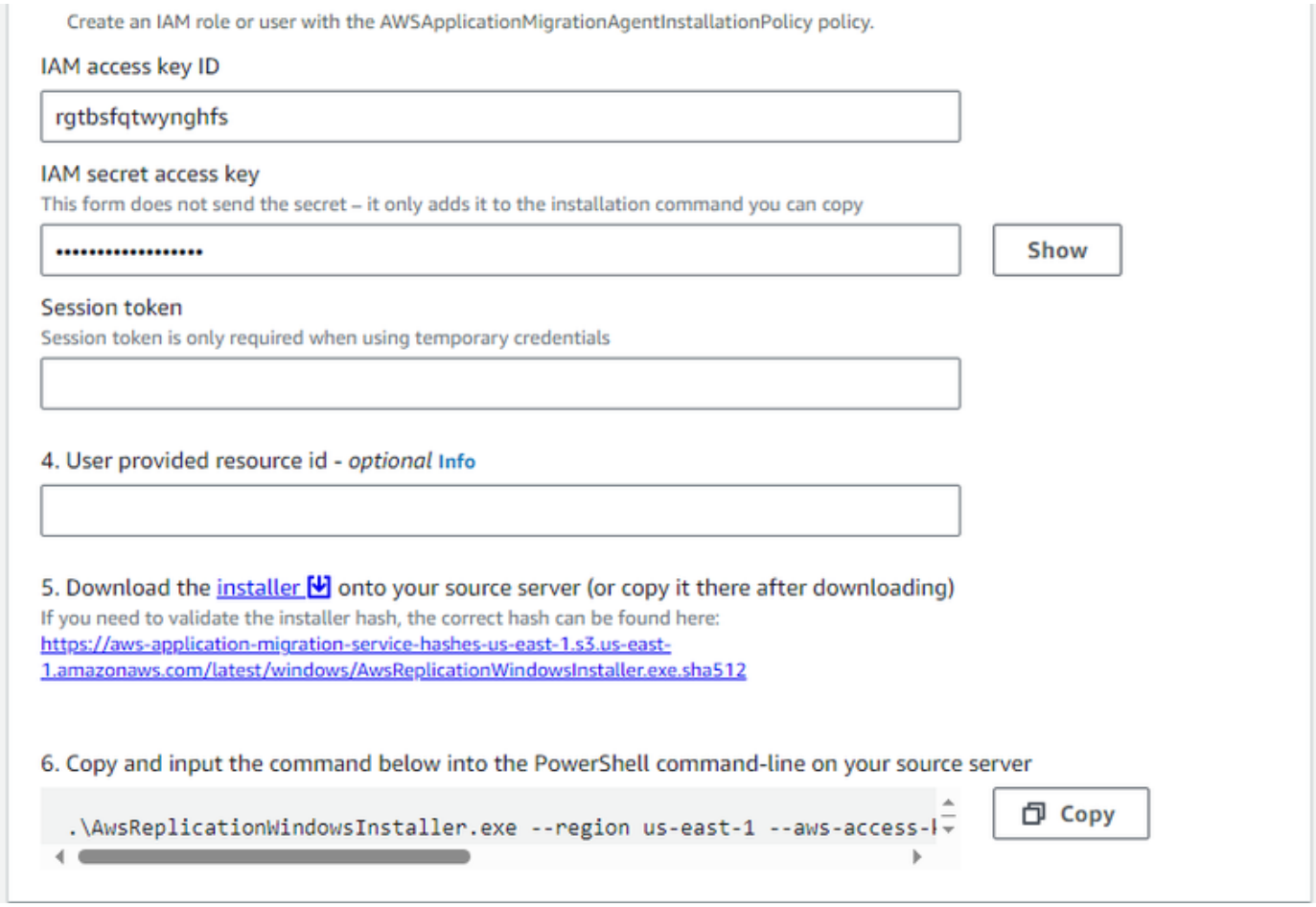
While adding the server please make sure the credentials of IAM user that we are using have the enough permission (AWSApplicationMigrationAgentPolicy)

Also please make sure it also have endpoints for the VPC .

Needed endpoints :
com.amazonaws.us-east-1.mgn
com.amazonaws.us-east-1.ec2

Also make sure these endpoints are attached to the security group which is used by the migrated virtual machine(ec2)





Copy the input command and run the this command on the server we want to migrate.

Requirements for the Server that we want to migrate

1. Please make sure the system is upto date.
2. Install AWS CLI
3. Please make sure the date and time is updated. (Check the below commands)

```
Set-TimeZone -Id "Eastern Standard Time"

Get-TimeZone

w32tm /resync
```

If you face below error :

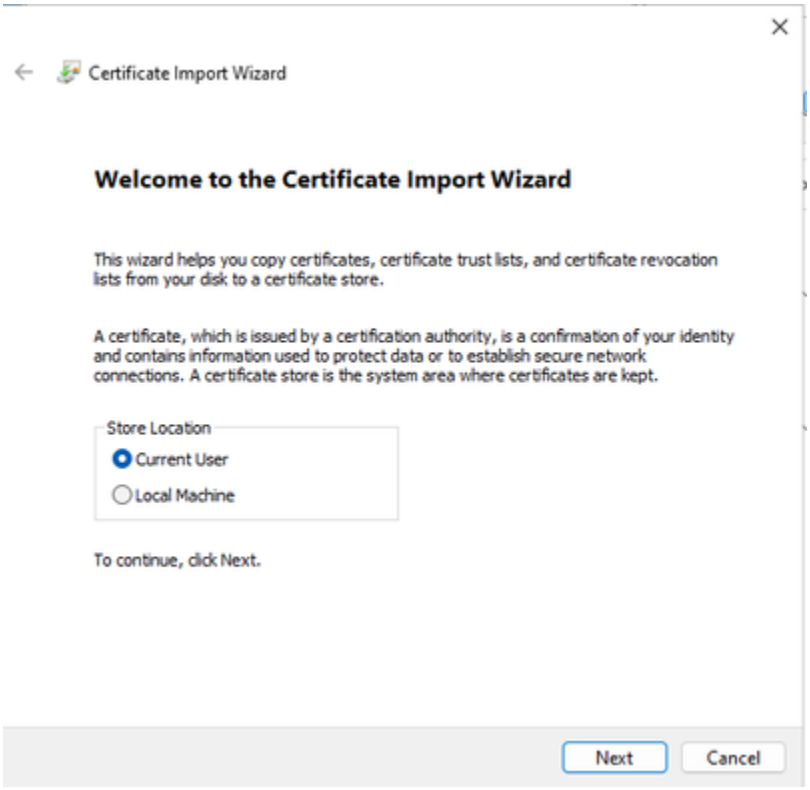
```
The installation of the AWS Replication Agent has started.
Downloading of https://aws-application-migration-service-us-east-1.s3.
us-east-1.amazonaws.com/latest/windows/AwsReplicationInstaller.exe
failed.
    This is usually caused by lack of routing to AWS, firewall
configuration that block the connection (local or in a firewall
appliance) or an incorrect web proxy configuration on this server.
    Resolve the connectivity issue and run the installer again.
    Learn more about connectivity issues in our documentation at
https://docs.aws.amazon.com/mgn/latest/ug/Troubleshooting-Agent-Issues.
html#Error-Installation-Failed/nError details: <urlopen error [SSL:
CERTIFICATE_VERIFY_FAILED] certificate verify failed: unable to get
local issuer certificate (_ssl.c:1131)>
```

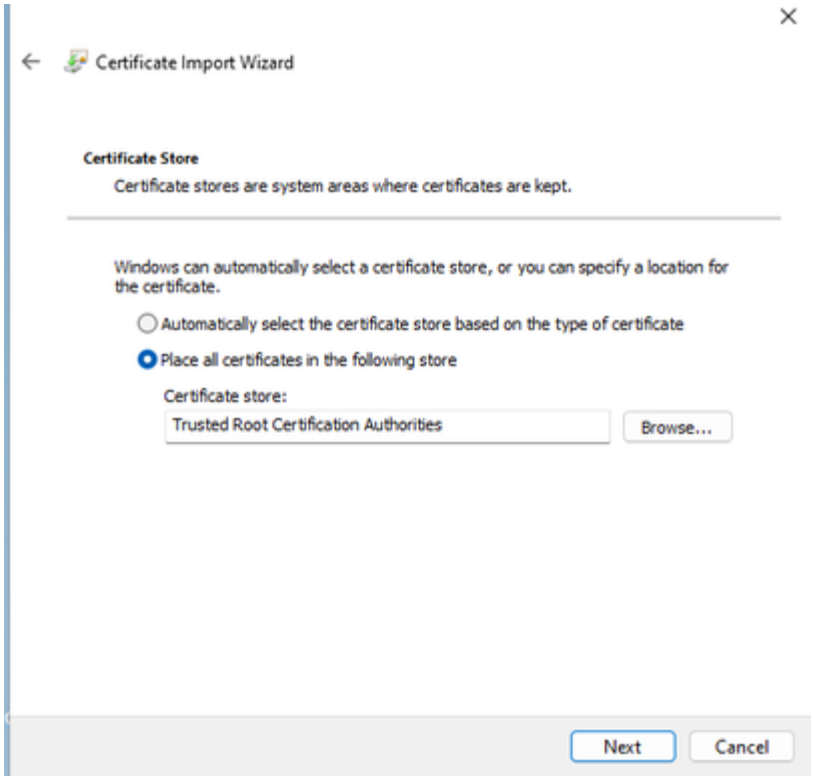
Download the certificate using below link

https://www.amazontrust.com/repository/

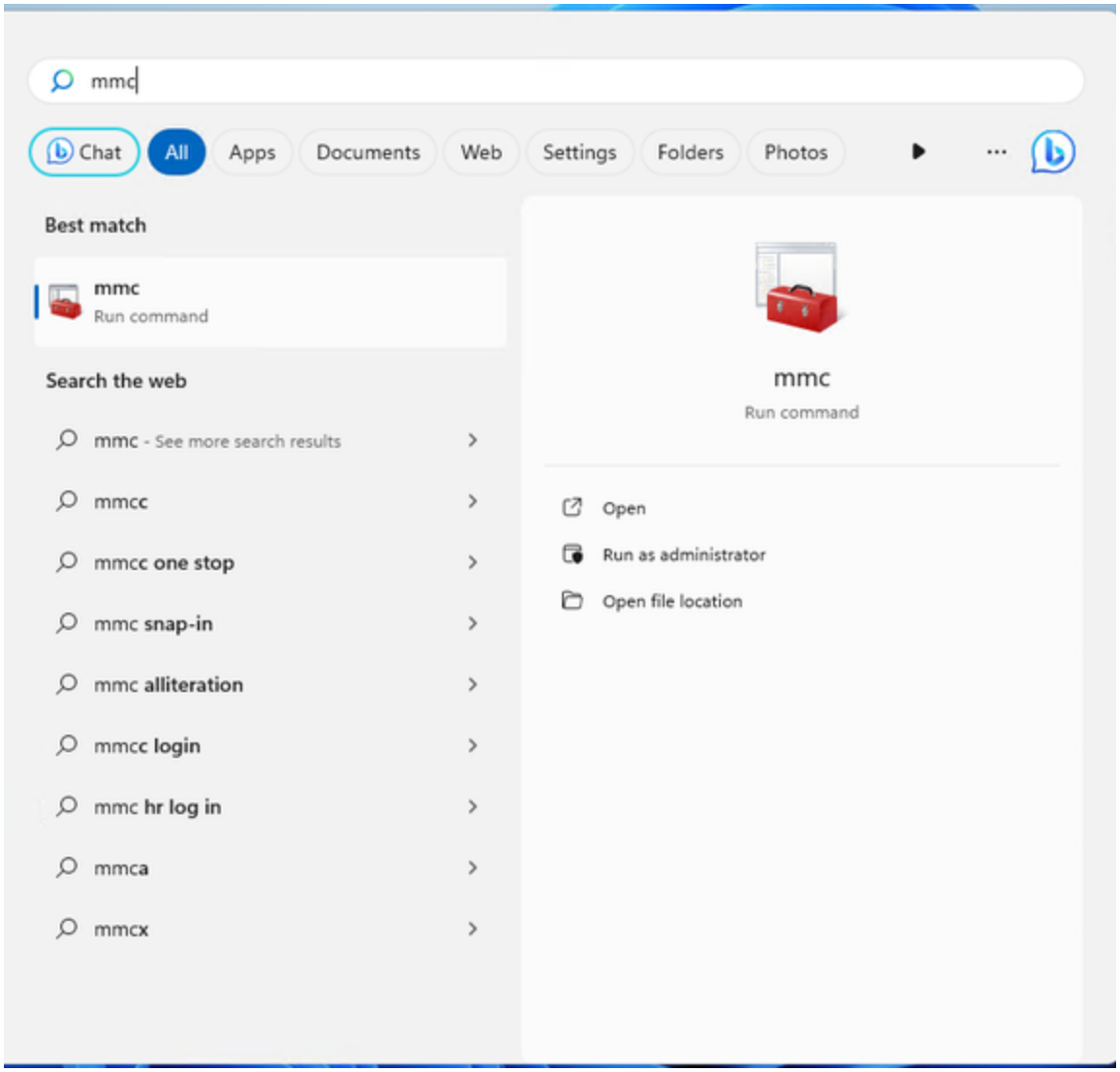
Before downloading the certificate please make sure it is valid.

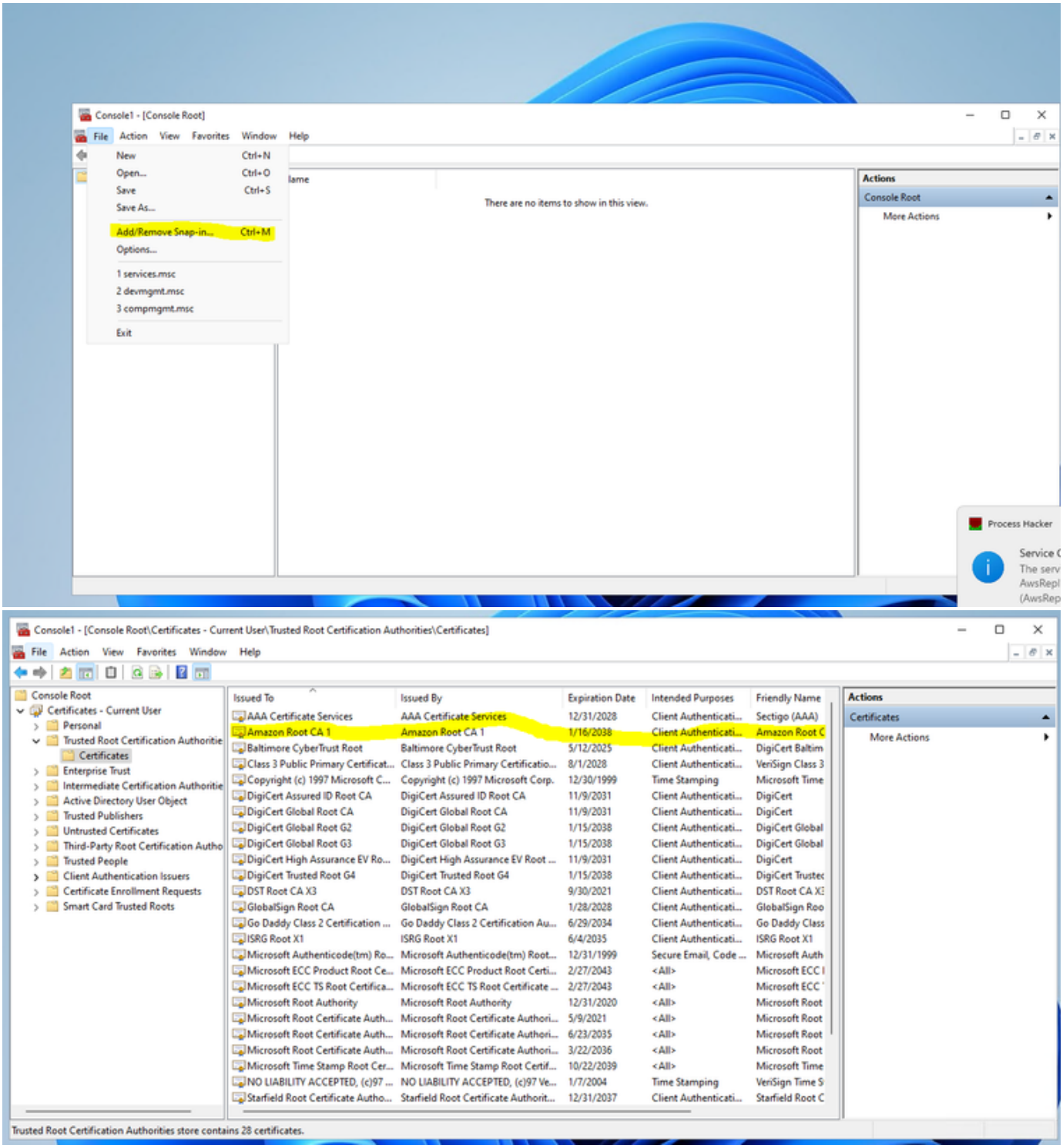
Please follow the below screenshot for adding certificate to your machine if it is windows





To verify the certificate is added please got through below screenshots


mmc
Chat
All
Apps
Documents
Web
Settings
Folders
Photos
Best match
mmc
Run command
Search the web
mmc - See more search results
mmcc
mmcc one stop
mmc snap-in
mmc alliteration
mmcc login
mmc hr log in
mmca
mmcx
mmc
Run command
Open
Run as administrator
Open file location



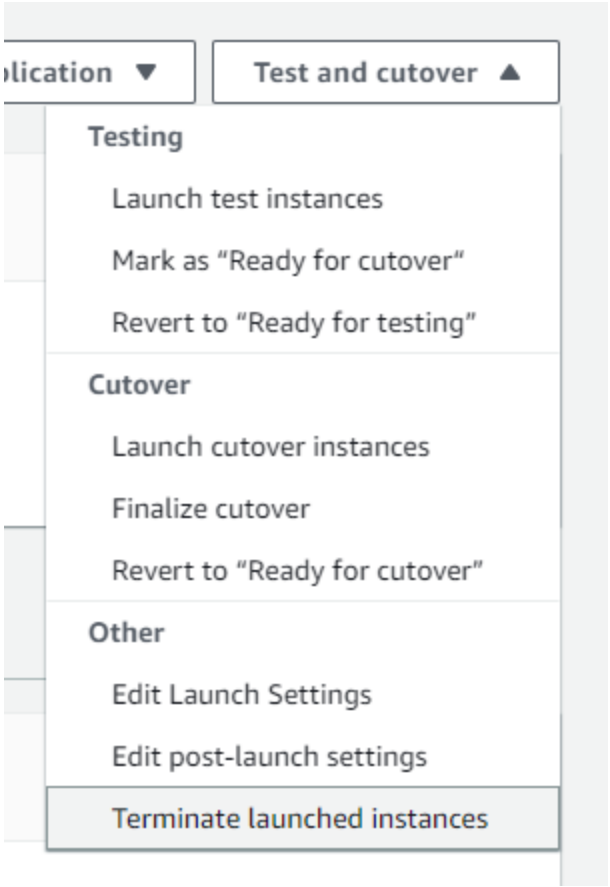
Steps to follow in the Migration Server is

1. Download the installer onto your source server (or copy it there after downloading)
2. Run the command that is 6th step mentioned in the above screenshot

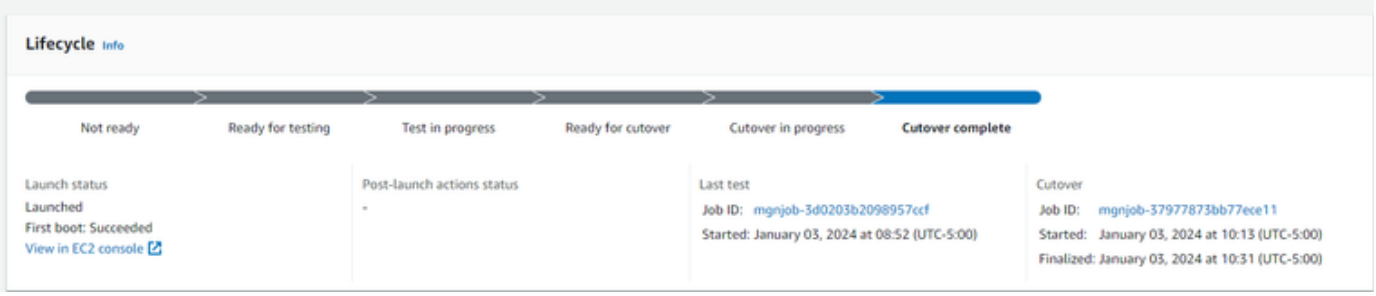
```
Administrator: Windows PowerShell
PS C:\Users\jenkins-user\Downloads>
PS C:\Users\jenkins-user\Downloads>
PS C:\Users\jenkins-user\Downloads> ls


    Directory: C:\Users\jenkins-user\Downloads


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----         1/2/2024  12:00 PM       40353792 AWSCLIV2.msi
-a----         1/2/2024   1:41 PM        7085240 AwsReplicationWindowsInstaller.exe
-a----         1/2/2024   4:13 PM         211810 aws_replication_agent_installer.log


PS C:\Users\jenkins-user\Downloads> .\AwsReplicationWindowsInstaller.exe --region us-east-1 --aws-access-key-id AKIAV4OF
2HBMUKXDQTON --aws-secret-access-key PWiejS1vDJo9PmLU923c+T955QBVuHQXmxYBVAWF --no-prompt
The installation of the AWS Replication Agent has started.
Verifying that the source server has enough free disk space to install the AWS Replication Agent (a minimum of 2 GB of f
ree disk space is required).
Identifying volumes for replication.
Disk to replicate identified: c:0 of size 128 GiB
Disk to replicate identified: d:0 of size 56 GiB
All volumes for replication were successfully identified.
Downloading the AWS Replication Agent onto the source server...
Finished.
Installing the AWS Replication Agent onto the source server...
```

After running above commands successfully we will see the servers in the source servers

After that run each command by selecting the server



The below screenshot is the lifecycle of migrations



Here in the life cycle upto ready for cutover will take lot of time according to the size of the Migrated VM.

Once you finish the lifecycle you can see the virtual machines in the EC2 console.