

# **SERVER MIGRATION USING AWS APPLICATION MIGRATION SERVICE**

## **STEP 1:**

- Create an IAM user Tower-MGN-User
  - o User = Tower-MGN-User
  - o Attach Policy Directly = [AWSApplicationMigrationAgentInstallationPolicy](#)
  - o Security Credential
    - Create access key
    - Select Application running outside AWS
    - Download .csv file

## **STEP 2:**

- Launch an EC2 instance using the below details
  - o AMI = ami-090e0fc566929d98b
  - o Subnet = Public
  - o User Data
    - ```
#!/bin/bash
sudo yum update -y
sudo amazon-linux-extras install nginx1 -y
sudo systemctl enable nginx
sudo systemctl start nginx
```
  - o Tag your instance
  - o Security Group: Port 80 and 22
  - o Launch with key pair.
  - o Once instance is launched, put the public IP on a web browser and confirm if you can see the nginx welcome page.
- SSH into the server and create a test file and test directory

## **STEP 3:**

- Create Replication settings template
  - o Go to MGN and Create a Replication Settings template
  - o Subnet = Public subnet ( Preferably in the same VPC as source instance to avoid trouble shooting networking or creating peering connections)
  - o Instance type = t2.micro
  - o Security Group = Always use Application Migration Service security group

## Edit replication template [Info](#)

Source servers added to this console have replication settings that control how data is sent from the source server to AWS. These settings are created automatically based on this template, and can be modified at any time for any source server or group of source servers. The defaults can be modified at any time. Changes made to defaults will only affect newly added servers.

### Replication server configuration [Info](#)

Replication servers are lightweight EC2 instances launched by Application Migration Service to facilitate the transfer of blocks of data from the disks on your source servers to AWS.

#### Staging area subnet

The staging area subnet is the subnet within which replication servers and conversion servers are launched. By default, Application Migration Service will use the default subnet on your AWS Account.

subnet-0a23401f71e215615  
vpc-0c0c74bcf5eacb01b

#### Replication Server instance type

The replication server instance type is the default EC2 instance type to use for replication servers. The recommended best practice is to not change the replication server instance type unless there is a business need to do so.

t2.micro

### Volumes [Info](#)

For each disk on an added source server there is an identically-sized EBS volume attached to a replication server, and each replication server can handle replication of disks from multiple source servers.

#### EBS volume type (for replicating disks over 500GiB)

The default EBS Volume type to be used by the replication servers.

Faster, General Purpose SSD (gp2)

#### EBS encryption

This option will encrypt your replicated data at rest on the staging area subnet disks and the replicated disks.

Default

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## Security groups [Info](#)

A security group acts as a virtual firewall, which controls the inbound and outbound traffic of the staging area. The best practice is to have Application Migration Service automatically attach and monitor the default Application Migration Service security group. This group opens inbound TCP Port 1500 for receiving the transferred replicated data.

☒ Always use Application Migration Service security group

### Additional security groups

Select additional security groups ▼

## Data routing and throttling [Info](#)

This setting controls how data flows from the external server to the replication servers. If you choose not to use a private IP, your replication servers will be automatically assigned a public IP and data will flow over the public internet.

☒ Create public IP

☐ Use private IP for data replication (VPN, DirectConnect, VPC peering, etc.)

☐ Create public IP, and use Private IP for data replication (VPN, DirectConnect, VPC peering, etc.)

☐ Throttle network bandwidth (per server - in Mbps)

## Replication resources tags [Info](#)

Add new tag

You can add up to 50 more tags.

Cancel

Save template

- If your replication settings template is already created, you can make changes by going into settings.
- Add a Source Server
  - Select Operating system
  - Pass Secret access key and Access Key ID of a user with the right permissions.
  - Copy the commands on step 4 and 5 and run in the source server.

Application Migration Service

Source servers

Launch history

Settings

AWS Migration Hub

Documentation

Release Notes

Replication Settings template created

Every time you add a server to this service, its Replication Settings will be based on this template. You can edit the template in Settings.

Application Migration Service > Source servers > Add servers

Add servers

To add your source servers to this console, you need to install the AWS Replication Agent on them. Use the options below to construct the installation command, then copy the command and download the installer. [Learn more](#)

Agentless replication is available. [Learn more](#)

AWS Replication Agent installation

1. Select your operating system

☒ Linux
 ☐ Windows
 

Legacy OS: Windows Server 2003 or Windows Server 2008

2. Select your replication preferences

Replicate all disks

3. IAM access key ID

AKIASW2CP2UC63HZ

Create IAM user

IAM secret access key

This form does not send the secret – it only adds it to the installation command you can copy

pFNXL5jUyJzfkA3HJqdcpsJyu3VVwefwq

Hide

4. Download the installer using this command:

wget -O ./aws-replication-installer-init.py https://aws-applicati

Copy

If you need to validate the installer hash, the correct hash can be found here:  
<https://aws-application-migration-service-hashes-us-west-1.s3.us-west-1.amazonaws.com/latest/linux/aws-replication-installer-init.py.sha512>

5. Copy and input the command below into the command line on your source server

sudo python3 aws-replication-installer-init.py --region us-west-1

Copy

Back

- Copy the last two link and Run into the server.

```
[root@ip-172-31-30-224 html]# wget -O ./aws-replication-installer-init.py https://aws-application-migration-service-us-east-1.amazonaws.com/latest/linux/aws-replication-installer-init.py
--2022-04-10 10:57:04-- https://aws-application-migration-service-us-east-1.s3.us-east-1.amazonaws.com/latest/linux/aws-replication-installer-init.py
Resolving aws-application-migration-service-us-east-1.s3.us-east-1.amazonaws.com (aws-application-migration-service-us-east-1.amazonaws.com)... 52.216.170.254
Connecting to aws-application-migration-service-us-east-1.s3.us-east-1.amazonaws.com (aws-application-migration-service-us-east-1.amazonaws.com)|52.216.170.254|:443... connected.
HTTP request sent, awaiting response... 200 OK
Length: 13740 (13K) [binary/octet-stream]
Saving to: './aws-replication-installer-init.py'

100%[=====>] 13,740

2022-04-10 10:57:05 (41.1 MB/s) - './aws-replication-installer-init.py' saved [13740/13740]

[root@ip-172-31-30-224 html]# sudo python3 aws-replication-installer-init.py --region us-east-1 --aws-access-key-id AKIASW2CP2cret-access-key 2XArWoc/hgivMNU21Zlhr7t4HcdSVdwq3nH8lps --no-prompt
The installation of the AWS Replication Agent has started.
Identifying volumes for replication.
Identified volume for replication: /dev/xvda of size 8 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... Finished.
Syncing the source server with the Application Migration Service Console... Finished.
The following is the source server ID: s-34c3c0d2ala9050da.
You now have 1 active source server out of a total quota of 20.
Learn more about increasing source servers limit at https://docs.aws.amazon.com/mgn/latest/ug/MGN-service-limits.html
The AWS Replication Agent was successfully installed.
```

- After Running the commands, we will find the source server will appear on the console like below.
- Back
- Give it some time for replication to complete and the Migration life cycle shows Ready for testing.

| <input type="checkbox"/> | Source server name ▲          | Alerts ▼ | Replication type ▼ | Migration lifecycle ▼ | Data replication status | Last snapshot |
|--------------------------|-------------------------------|----------|--------------------|-----------------------|-------------------------|---------------|
| <input type="checkbox"/> | ip-172-31-30-224.ec2.internal | -        | Agent based        | Ready for testing     | Healthy                 | 13 minute ago |

#### STEP 4: Edit Launch settings

- Go to MGN, select the server, click on Test and cutover and click on edit launch settings.
- Make all changes in the launch template on Networking and Security groups
- Create a new version of the template
- Select Launch template and set the default version to the latest version

#### STEP 5: Launch test instance

- Select the server and click on Test and cut over and select launch test instances.

Application Migration Service > Source servers

**Source servers (1)**

Active source servers

| Source server name                                                | Alerts                                       | Replication type | Migration lifecycle |
|-------------------------------------------------------------------|----------------------------------------------|------------------|---------------------|
| <input checked="" type="checkbox"/> ip-172-31-30-224.ec2.internal | <input checked="" type="checkbox"/> Launched | Agent based      | Test in progress    |

**Actions** **Replication** **Test and cutover**

- Testing
  - Launch test instances
  - Mark as "Ready for cutover"
  - Revert to "Ready for testing"
- Cutover
  - Launch cutover instances
  - Finalize cutover
  - Revert to "Ready for cutover"
- Other
  - Edit Launch Settings
  - Terminate launched instances

- It will create a test instance and marked it as Ready for cutover. To see this, click on Launch history.

Application Migration Service

Source servers

**Launch history**

Settings

AWS Migration Hub [AWS Migration Hub](#)

Documentation [Documentation](#)

Release Notes [Release Notes](#)

Application Migration Service > Launch history

**Launch history (1)**

| Job ID                   | Job type | Initiated by          | Status    | Servers | Start time     | Completed time |
|--------------------------|----------|-----------------------|-----------|---------|----------------|----------------|
| mgnjob-36577b7a0a1b9721d | Launch   | Launch test instances | Completed | 1       | 13 minutes ago | 6 minutes ago  |

- Under the launch history we will be able to see a job, click on the job and see the logs.

**Job log** [Info](#)

| Time                             | Event                                            | Additional data                                                                                                     |
|----------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| April 10, 2022, 17:19 (UTC+5:30) | Job started                                      |                                                                                                                     |
| April 10, 2022, 17:19 (UTC+5:30) | Started taking snapshot                          | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a>                                                       |
| April 10, 2022, 17:20 (UTC+5:30) | Finished taking snapshot                         | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a>                                                       |
| April 10, 2022, 17:20 (UTC+5:30) | Conversion started                               | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a>                                                       |
| April 10, 2022, 17:23 (UTC+5:30) | Conversion ended                                 | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a><br>Conversion Server instance ID: i-0e4087d7d90027119 |
| April 10, 2022, 17:23 (UTC+5:30) | Started launching test/ cutover EC2 instance     | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a>                                                       |
| April 10, 2022, 17:26 (UTC+5:30) | Successfully launched test/ cutover EC2 instance | Source server : <a href="#">ip-172-31-30-224.ec2.internal</a><br>Test/ cutover instance ID: i-                      |

| Source servers (1)                                                      |          |
|-------------------------------------------------------------------------|----------|
| <input type="text" value="Filter source servers by property or value"/> |          |
| Source server name                                                      | Status   |
| ip-172-31-30-224.ec2.internal                                           | Launched |

## STEP 6: TEST

- To verify, go to ec2 console, and see the launched server.

ip-172-31-30-224.ec2.internal i-0c842890f0b5a1df8 Running c4.large 2/2 checks

Instance: i-0c842890f0b5a1df8 (ip-172-31-30-224.ec2.internal)

Select an instance above

Details **Security** Networking Storage Status checks Monitoring Tags

▼ Security details

|                                            |                          |                                                          |
|--------------------------------------------|--------------------------|----------------------------------------------------------|
| IAM Role<br>SSMDefaultRoleForPVREReporting | Owner ID<br>186433656069 | Launch time<br>Sun Apr 10 2022 17:26:56 GMT+0530 (India) |
|--------------------------------------------|--------------------------|----------------------------------------------------------|

Copy the public IP and place in a web browser to see your Ngnix test page.

54.151.21.114

Welcome to **nginx** on Amazon Linux!

This page is used to test the proper operation of the **nginx** HTTP server after it has been installed. If you can read this page, it means that the web server installed at this site is working properly.

Website Administrator

This is the default `index.html` page that is distributed with **nginx** on Amazon Linux. It is located in `/usr/share/nginx/html`.  
You should now put your content in a location of your choice and edit the `root` configuration directive in the **nginx** configuration file `/etc/nginx/nginx.conf`.

**NGINX**

- To verify the data login inside the server, SSH and check the file you created in the source server.

Once testing is done you can launch cut over instances.

