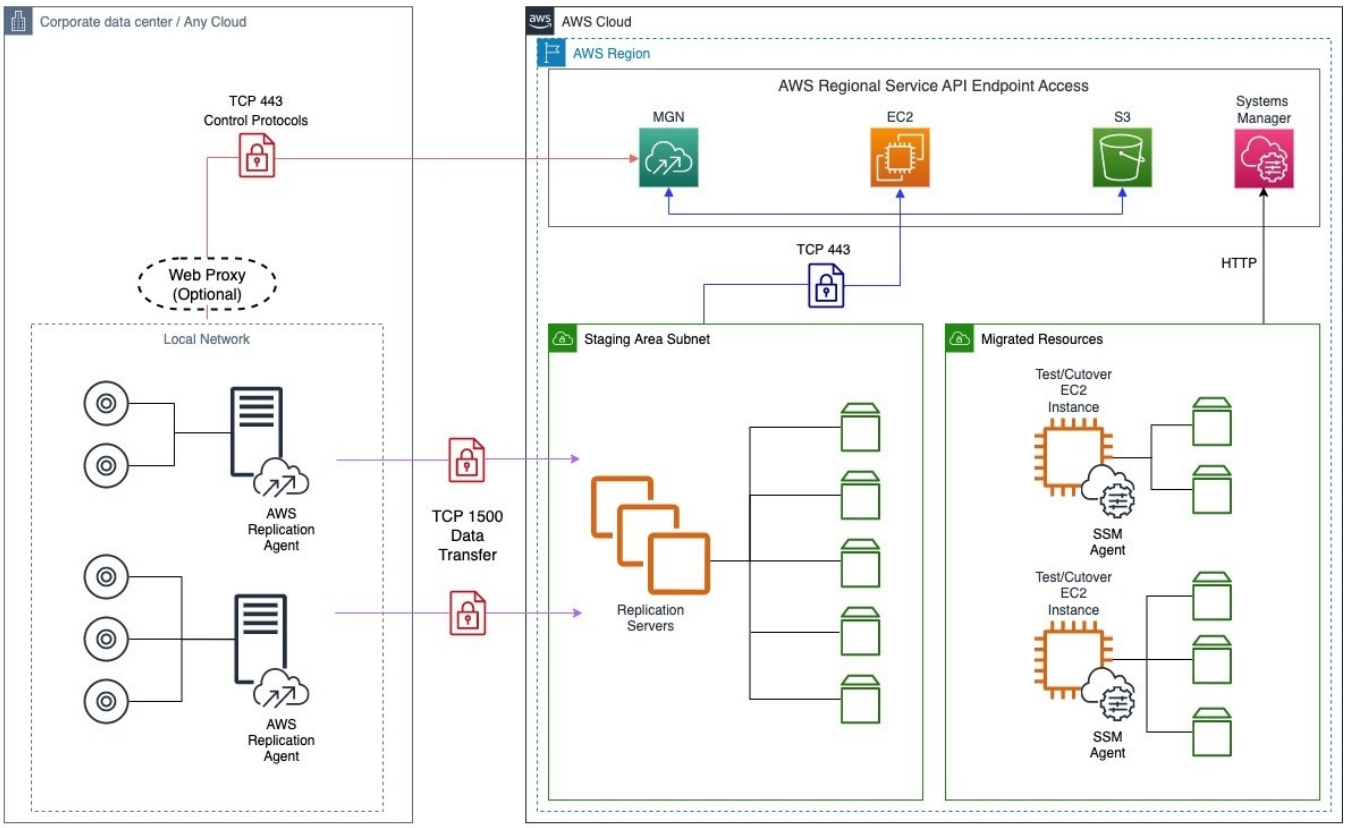
GCP (Compute Engine) 遷移 AWS (EC2)

首先這篇議題上, 我們會需要用到 AWS Application Migration Service (MGN) 來實現雲對雲的轉移

遷移架構如下：



最佳做法 (官方推薦)

- 計畫
    1. 將預計要遷移的機器上安裝 AWS複製Agent
    2. 在遷移機器切換過程請勿重啟
    3. 請勿按封存或切斷連線到AWS在EC2上運行遷移機器並且確認完畢為止
- 測試
    1. 遷移機器在測試步完成後驟官方建議至少等待兩周來確認是有潛在問題或連線問題
    2. 請確保在切換遷移機器前做完整的測試
- 成功導入遷移機器
    1. 部署AWS複製Agent 到要遷移的機器上
    2. 確保複製狀態為healthy
    3. 至少在正式切換前一個禮拜測試複製好的資料
    4. 紀錄任何發現的錯誤，EC2部屬設定錯誤以及確認AWS官方的相關限制

前置作業

- 初步建置以及IAM權限設定
- VPC建置以及支援地區

- EC2 模板安全規則設定
- MGN 設定

部署流程

1. 安裝 Agent (GCP Compute Engine)
2. 等待初步同步
3. 啟動測試EC2
4. 標記測試完畢
5. 啟動正式遷移機器至EC2
6. 停止遷移機器相關服務(請勿關機)
7. 最終確認遷移完畢後的機器狀態
8. 將MGN上的已經遷移機器封存

初步建置以及IAM權限設定

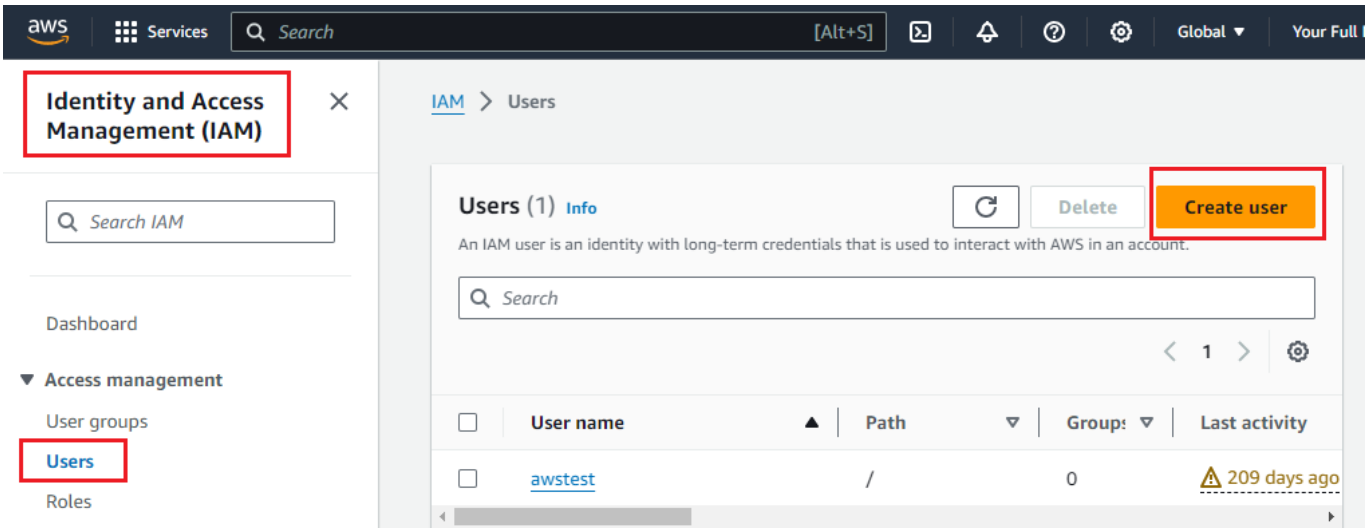
在第一次啟用這個服務時 AWS 會創建以下幾個預設 ***IAM*** 角色

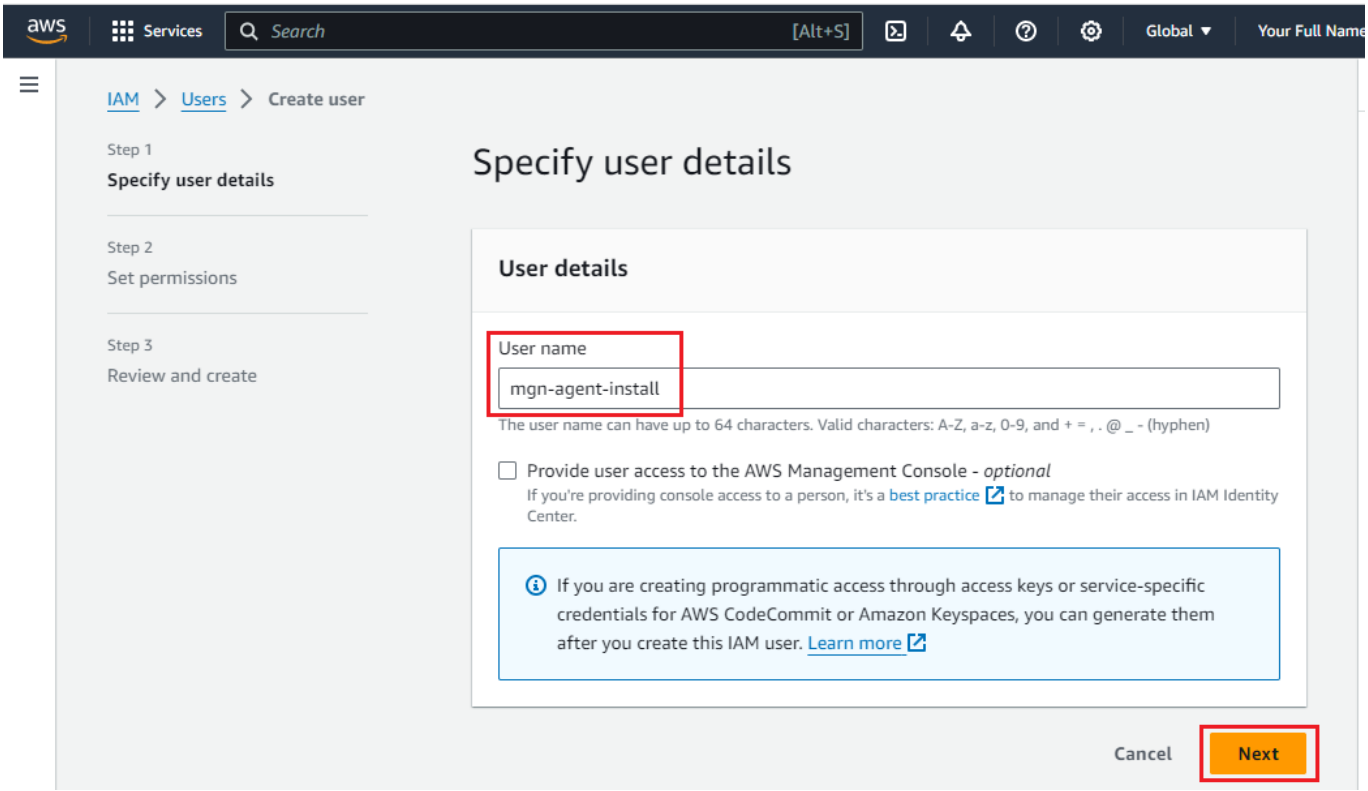
- AWSServiceRoleForApplicationMigrationService
- AWSApplicationMigrationReplicationServerRole
- AWSApplicationMigrationConversionServerRole
- AWSApplicationMigrationMGHRole
- AWSApplicationMigrationLaunchInstanceWithDrsRole
- AWSApplicationMigrationLaunchInstanceWithSsmRole
- AWSApplicationMigrationAgentRole

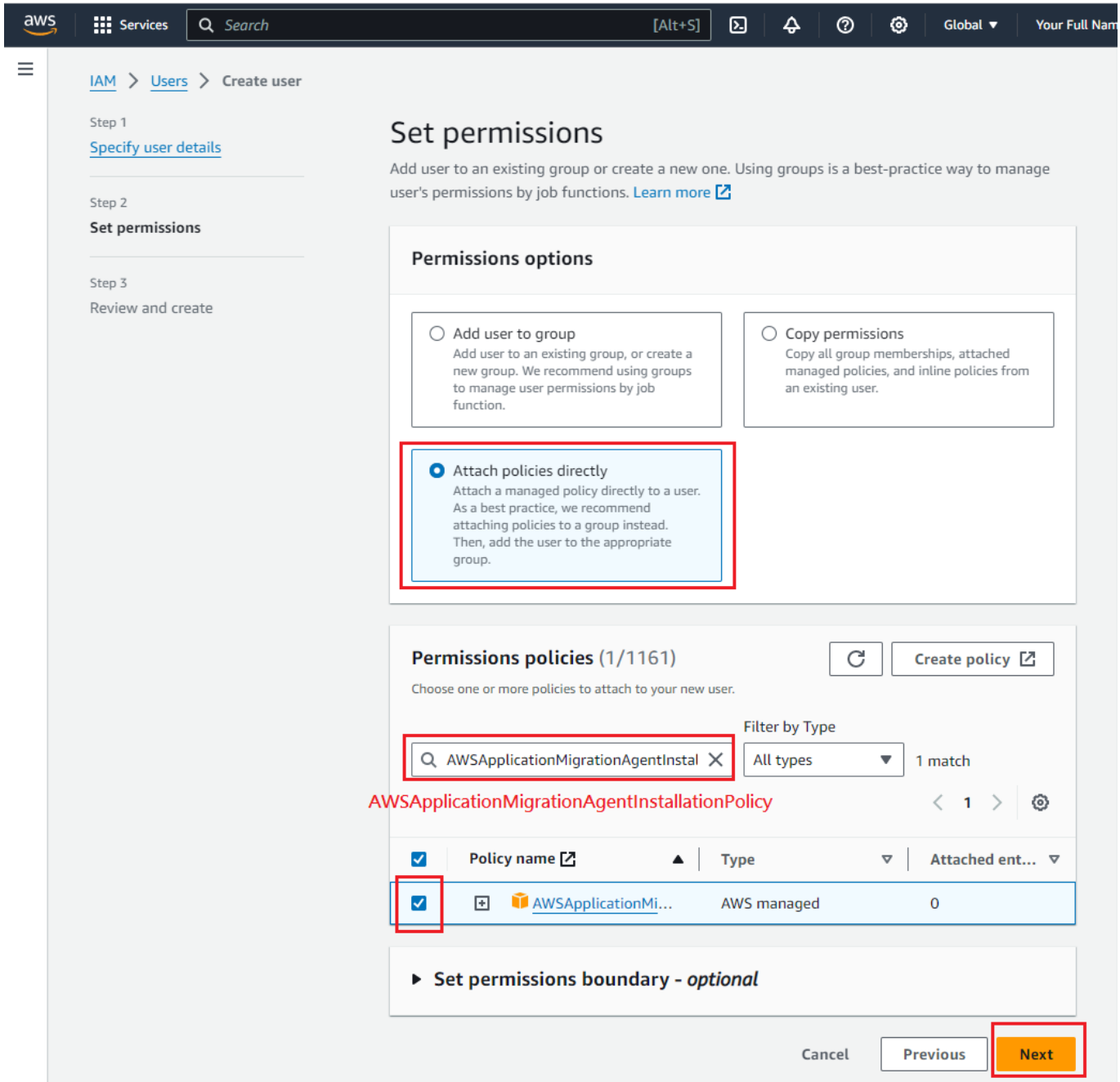
以及幾個預設的權限規則

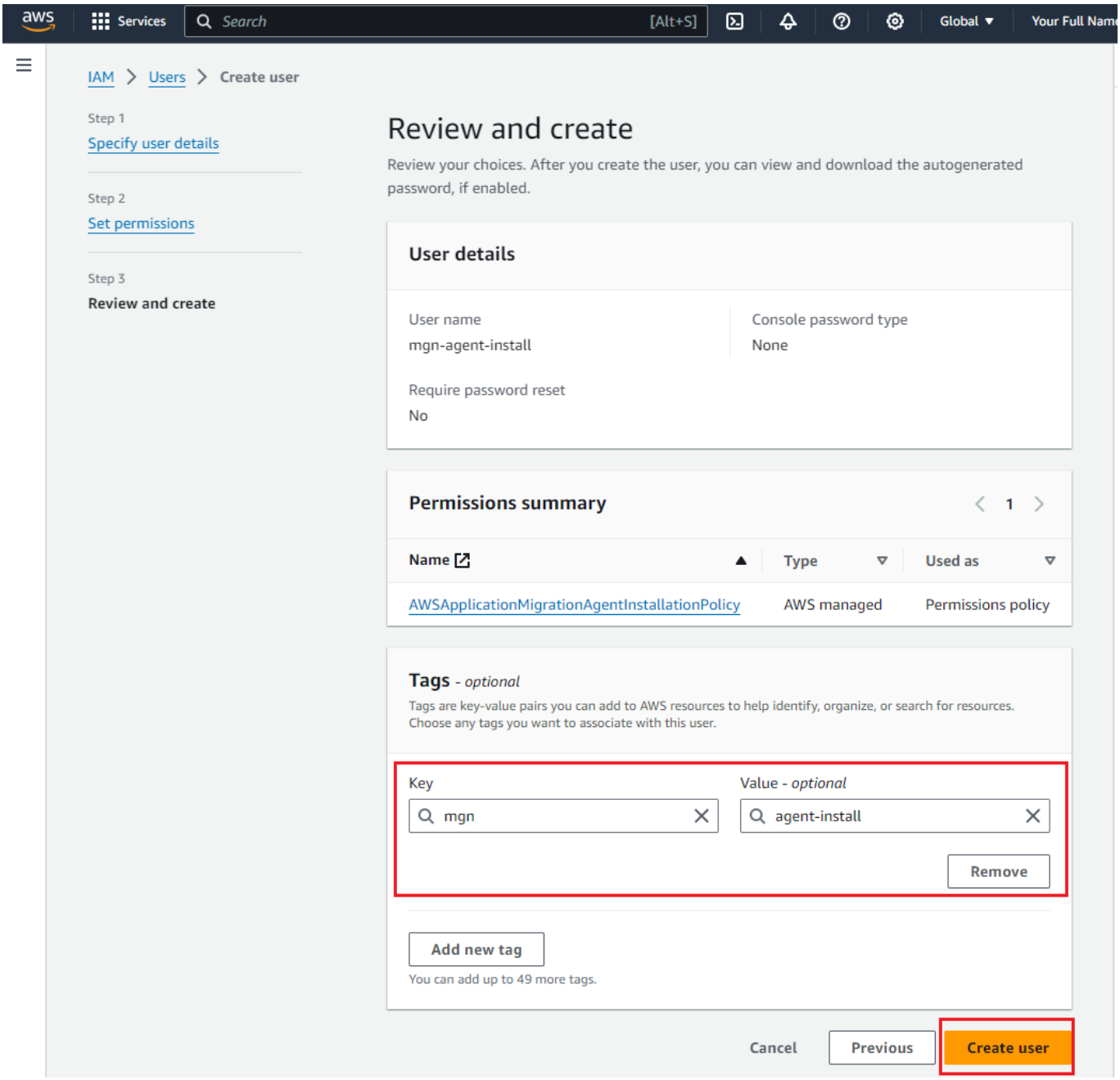
- AWSApplicationMigrationFullAccess (MGN 相關的所有權限)
- AWSApplicationMigrationEC2Access (MGN 用來創建/啟動 EC2測試機以及遷移機器權限)
- AWSApplicationMigrationSSMAccess (詳細介紹/設定參考這裡)
- AWSApplicationMigrationReadOnlyAccess (用來檢視MGN 的設定)
- AWSApplicationMigrationAgentInstallationPolicy (用來安裝MGN Replication Agent的權限)
- AWSApplicationMigrationServiceEc2InstancePolicy (在AWS不同資源區EC2的遷移以及安裝MGN Replication Agent)

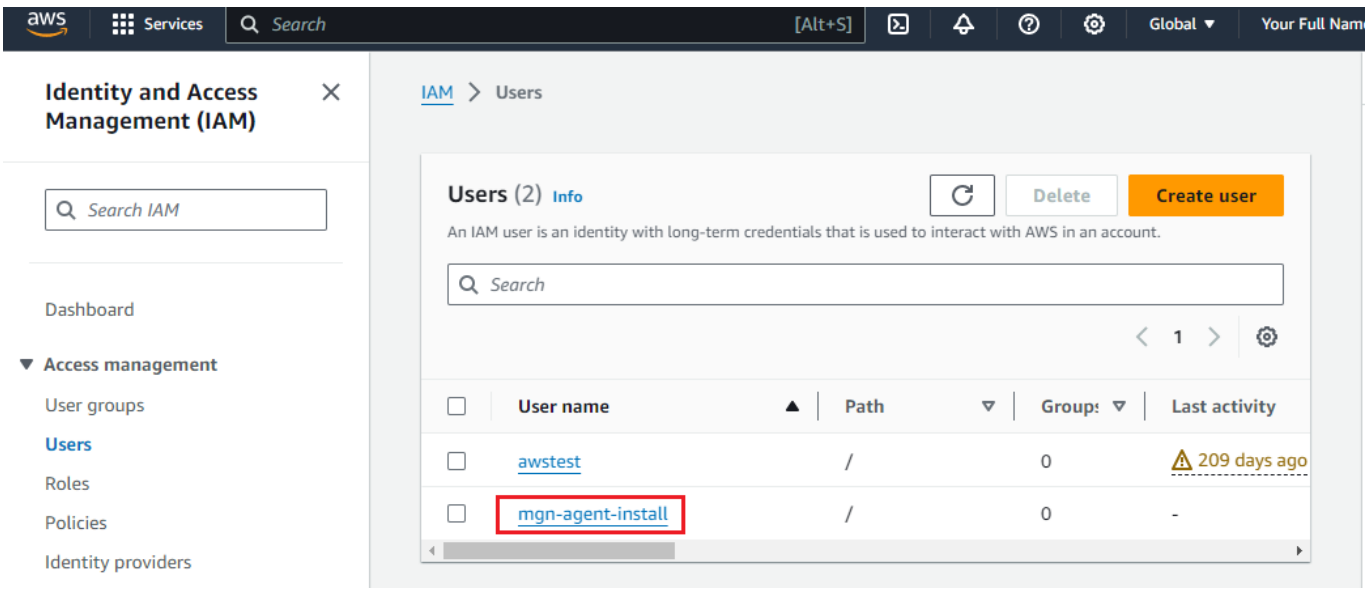
但這次我們這邊將套用 ***AWSApplicationMigrationAgentInstallationPolicy*** 用來安裝 Agent


aws
Services
Search
[Alt+S]
Global
Identity and Access Management (IAM)
Search IAM
Dashboard
Access management
User groups
Users
Roles
IAM > Users
Users (1) Info
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.
Delete
Create user
Search
1
User name
Path
Groups
Last activity
awstest
/
0
209 days ago


aws
Services
Search
[Alt+S]
Global
IAM > Users > Create user
Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Specify user details
User details
User name
mgn-agent-install
The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , . @ _ - (hyphen)
Provide user access to the AWS Management Console - optional
If you're providing console access to a person, it's a best practice to manage their access in IAM Identity Center.
If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can generate them after you create this IAM user. Learn more
Cancel
Next


aws
Services
Search
[Alt+S]
Global
Your Full Nam
IAM > Users > Create user
Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Set permissions
Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. Learn more
Permissions options
Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.
Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.
Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.
Permissions policies (1/1161)
Choose one or more policies to attach to your new user.
Create policy
Filter by Type
AWSApplicationMigrationAgentInstal
All types
1 match
AWSApplicationMigrationAgentInstallationPolicy
1
Policy name
Type
Attached ent...
AWSApplicationMi...
AWS managed
0
Set permissions boundary - optional
Cancel
Previous
Next


aws
Services
Search
[Alt+S]
Global
Your Full Name
IAM > Users > Create user
Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Review and create
Review your choices. After you create the user, you can view and download the autogenerated password, if enabled.
User details
User name
mgn-agent-install
Console password type
None
Require password reset
No
Permissions summary
1
Name
Type
Used as
AWSApplicationMigrationAgentInstallationPolicy
AWS managed
Permissions policy
Tags - optional
Tags are key-value pairs you can add to AWS resources to help identify, organize, or search for resources. Choose any tags you want to associate with this user.
Key
Value - optional
mgn
agent-install
Remove
Add new tag
You can add up to 49 more tags.
Cancel
Previous
Create user


aws
Services
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[Alt+S]
Global
Your Full Name
Identity and Access Management (IAM)
Search IAM
Dashboard
Access management
User groups
Users
Roles
Policies
Identity providers
IAM > Users
Users (2) Info
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Create user
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.
Search
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User name
Path
Groups
Last activity
awstest
/
0
209 days ago
mgn-agent-install
/
0
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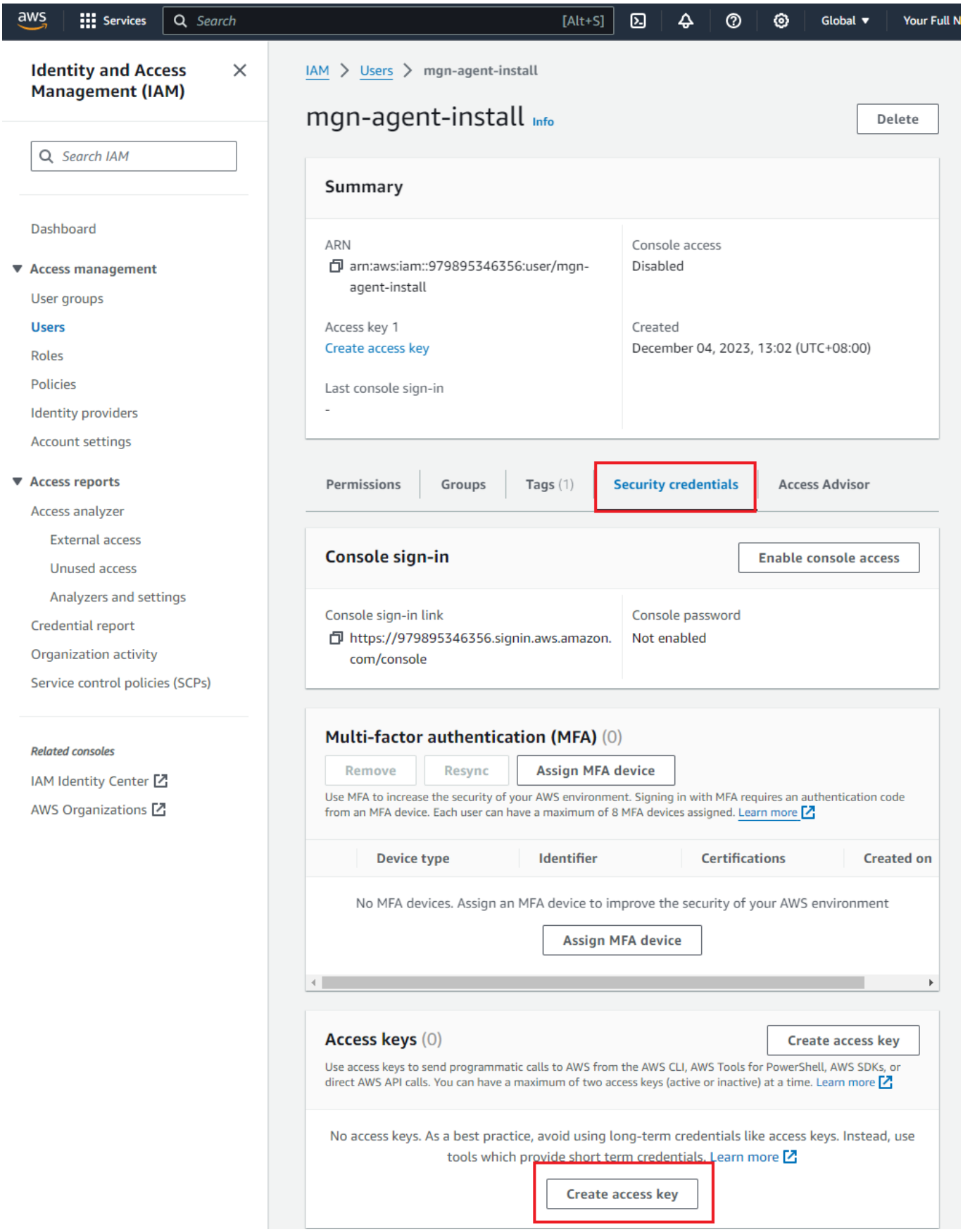
aws
Services
Search
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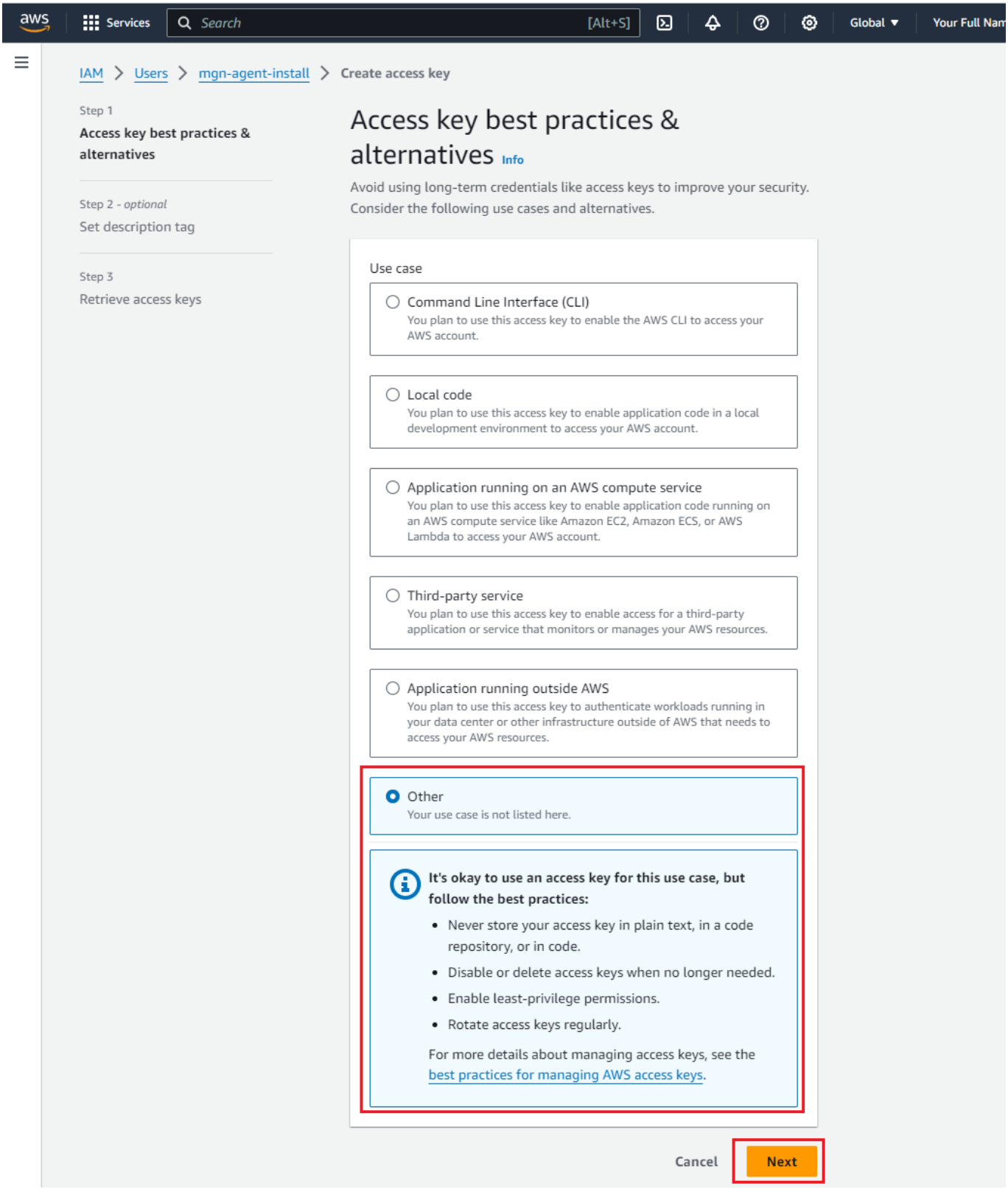
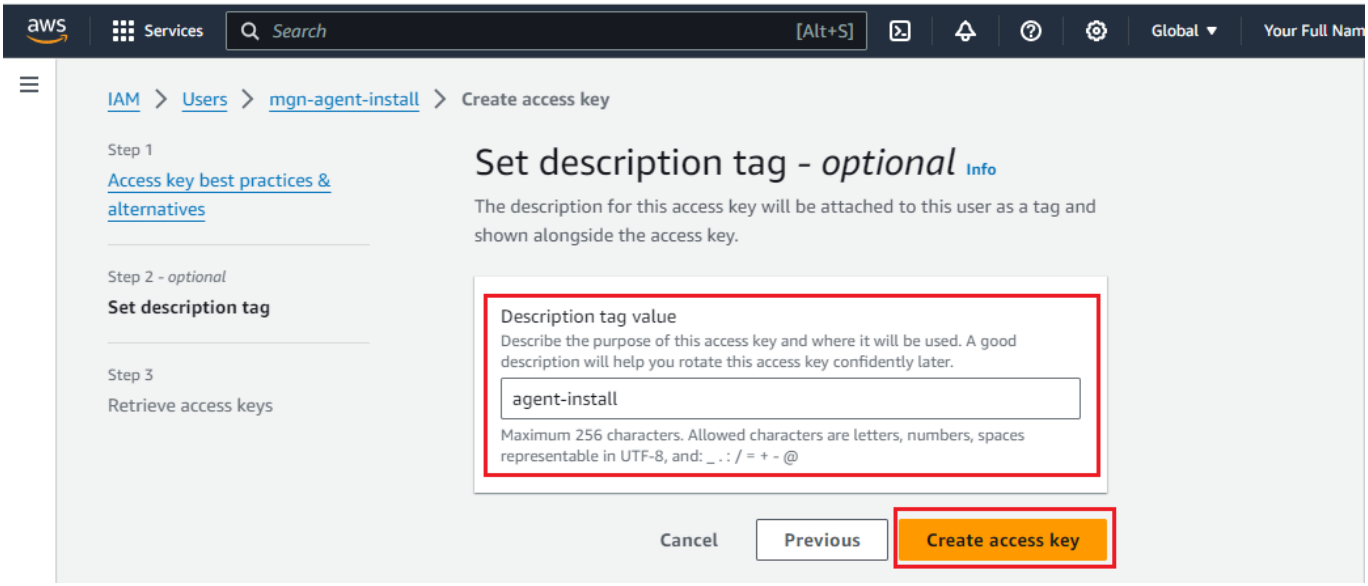
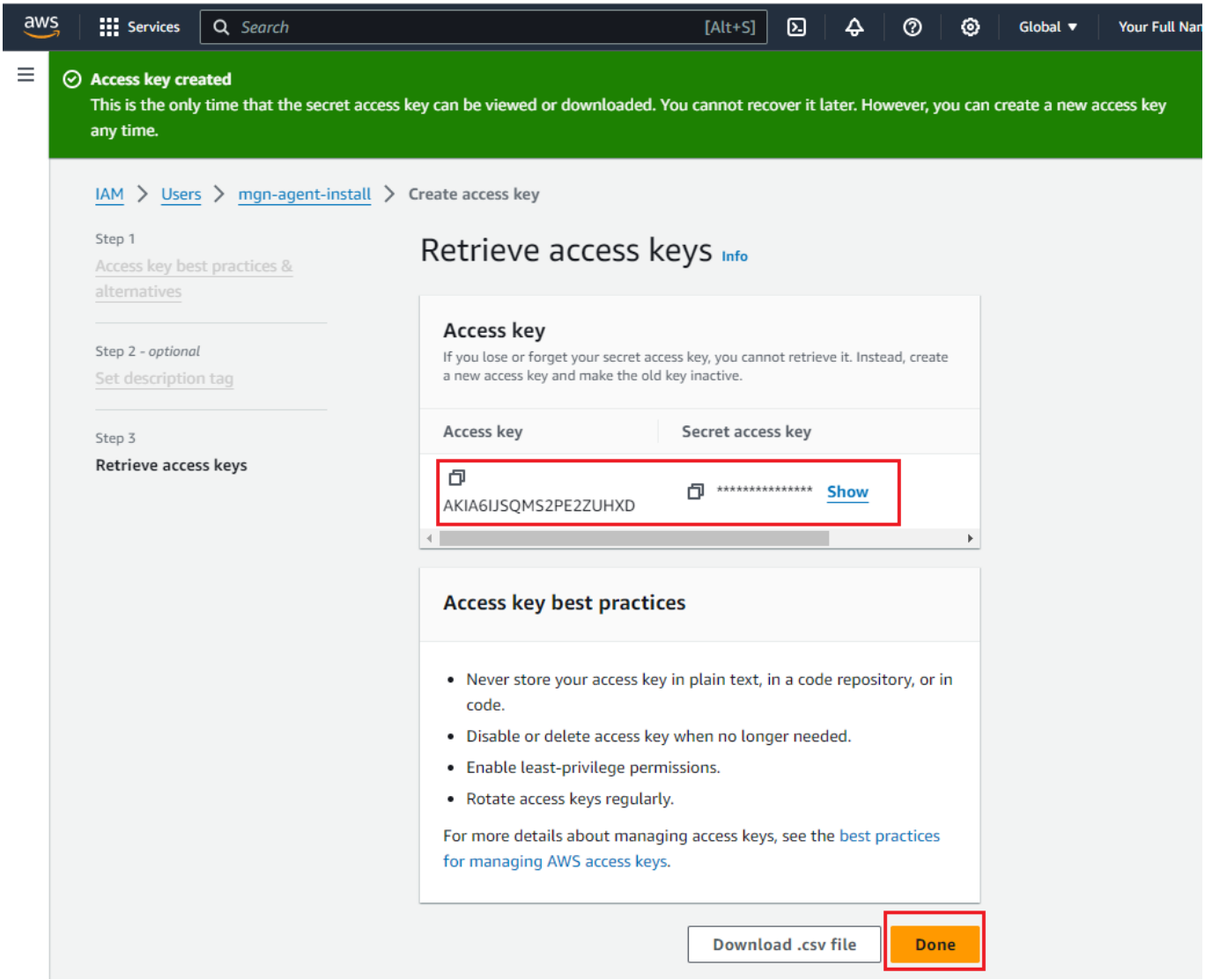
Global
Your Full N
Identity and Access Management (IAM)
Search IAM
Dashboard
Access management
User groups
Users
Roles
Policies
Identity providers
Account settings
Access reports
Access analyzer
External access
Unused access
Analyzers and settings
Credential report
Organization activity
Service control policies (SCPs)
Related consoles
IAM Identity Center
AWS Organizations
IAM > Users > mgn-agent-install
mgn-agent-install Info
Delete
Summary
ARN
arn:aws:iam::979895346356:user/mgn-agent-install
Console access
Disabled
Access key 1
Create access key
Created
December 04, 2023, 13:02 (UTC+08:00)
Last console sign-in
-
Permissions
Groups
Tags (1)
Security credentials
Access Advisor
Console sign-in
Enable console access
Console sign-in link
https://979895346356.signin.aws.amazon.com/console
Console password
Not enabled
Multi-factor authentication (MFA) (0)
Remove
Resync
Assign MFA device
Use MFA to increase the security of your AWS environment. Signing in with MFA requires an authentication code from an MFA device. Each user can have a maximum of 8 MFA devices assigned. Learn more
Device type
Identifier
Certifications
Created on
No MFA devices. Assign an MFA device to improve the security of your AWS environment
Assign MFA device
Access keys (0)
Create access key
Use access keys to send programmatic calls to AWS from the AWS CLI, AWS Tools for PowerShell, AWS SDKs, or direct AWS API calls. You can have a maximum of two access keys (active or inactive) at a time. Learn more
No access keys. As a best practice, avoid using long-term credentials like access keys. Instead, use tools which provide short term credentials. Learn more
Create access key


aws
Services
Search
[Alt+S]
Global
Your Full Nam
IAM > Users > mgn-agent-install > Create access key
Step 1
Access key best practices & alternatives
Step 2 - optional
Set description tag
Step 3
Retrieve access keys
Access key best practices & alternatives Info
Avoid using long-term credentials like access keys to improve your security. Consider the following use cases and alternatives.
Use case
Command Line Interface (CLI)
You plan to use this access key to enable the AWS CLI to access your AWS account.
Local code
You plan to use this access key to enable application code in a local development environment to access your AWS account.
Application running on an AWS compute service
You plan to use this access key to enable application code running on an AWS compute service like Amazon EC2, Amazon ECS, or AWS Lambda to access your AWS account.
Third-party service
You plan to use this access key to enable access for a third-party application or service that monitors or manages your AWS resources.
Application running outside AWS
You plan to use this access key to authenticate workloads running in your data center or other infrastructure outside of AWS that needs to access your AWS resources.
Other
Your use case is not listed here.
It's okay to use an access key for this use case, but follow the best practices:
Never store your access key in plain text, in a code repository, or in code.
Disable or delete access keys when no longer needed.
Enable least-privilege permissions.
Rotate access keys regularly.
For more details about managing access keys, see the best practices for managing AWS access keys.
Cancel
Next

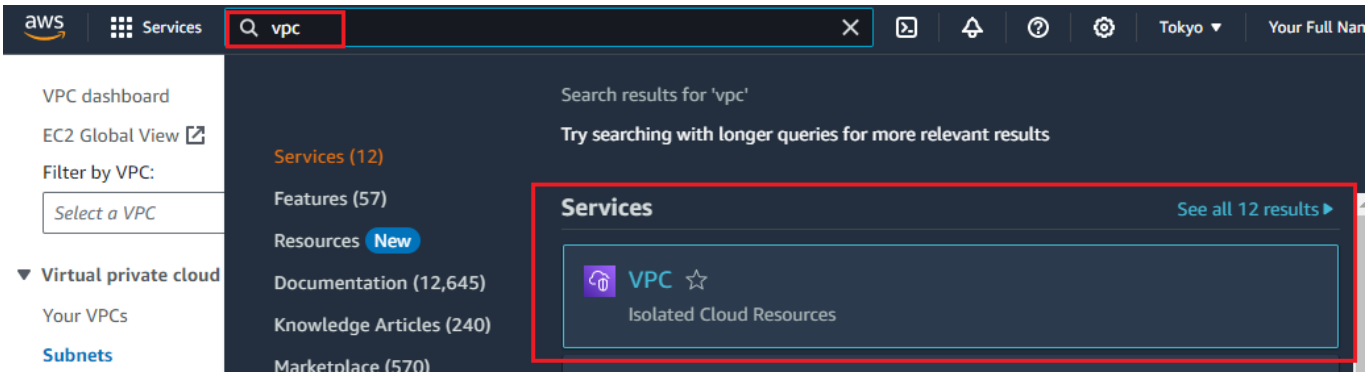


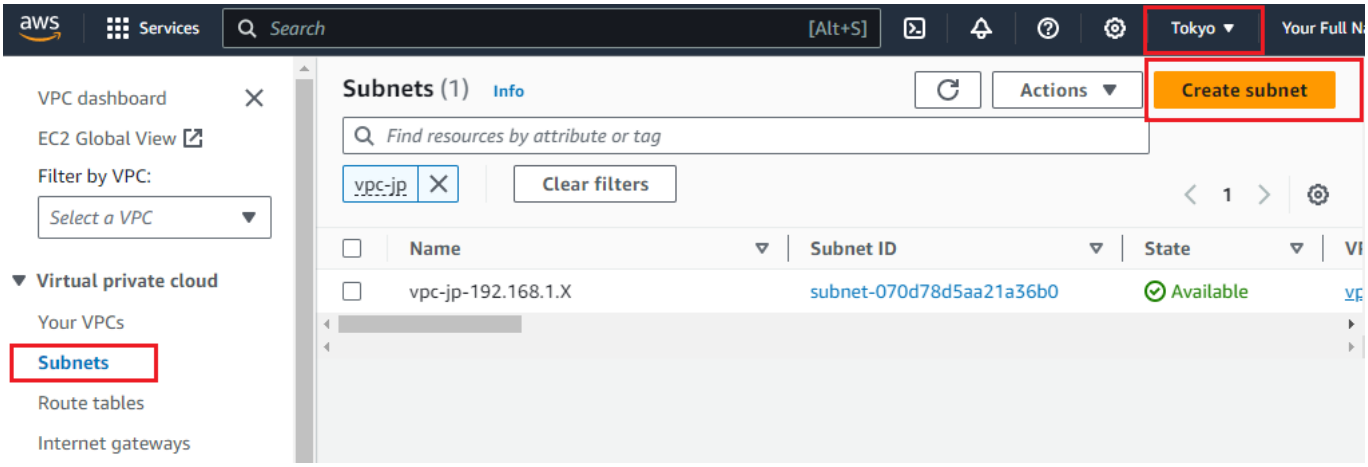


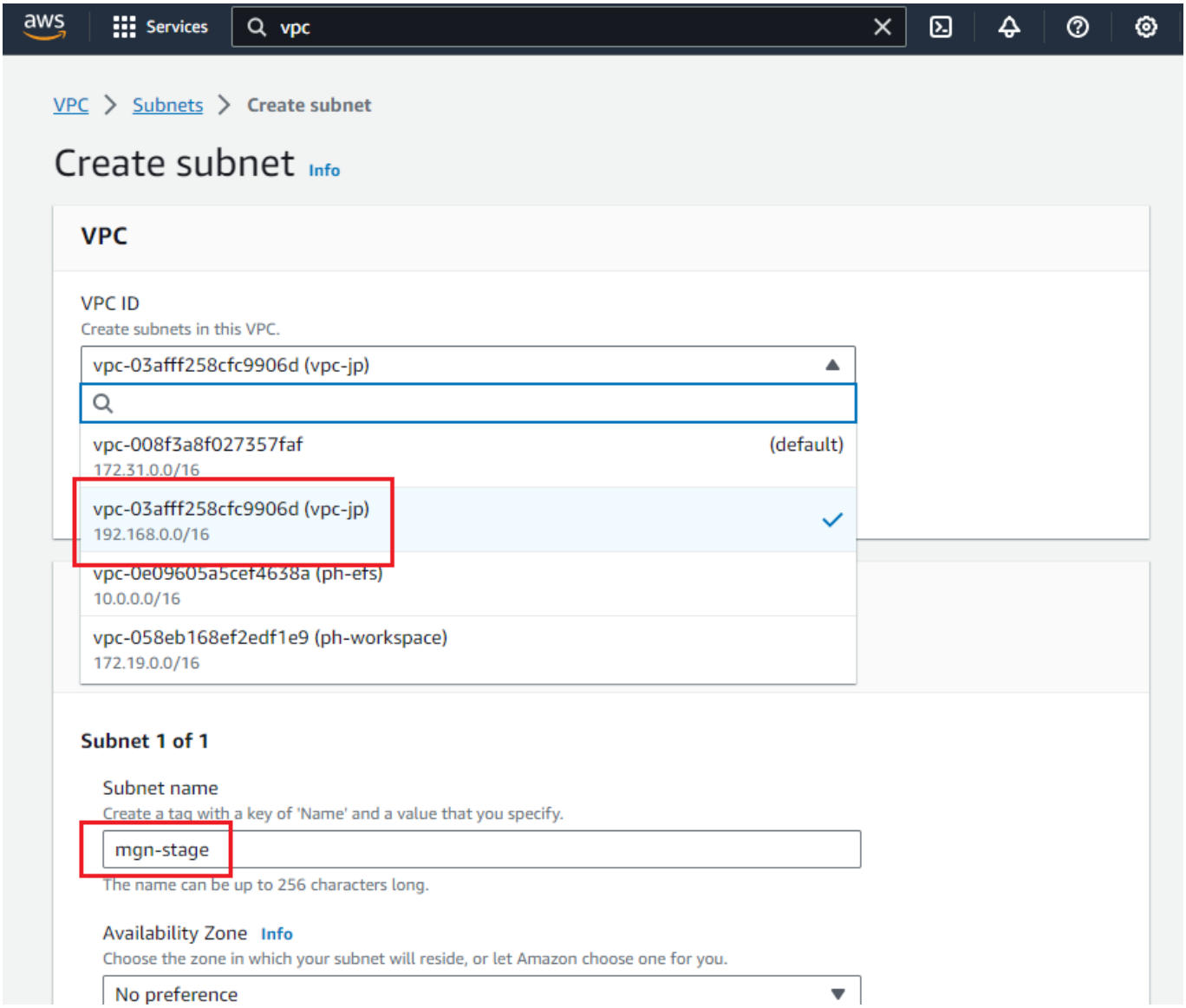
VPC建置以及支援地區

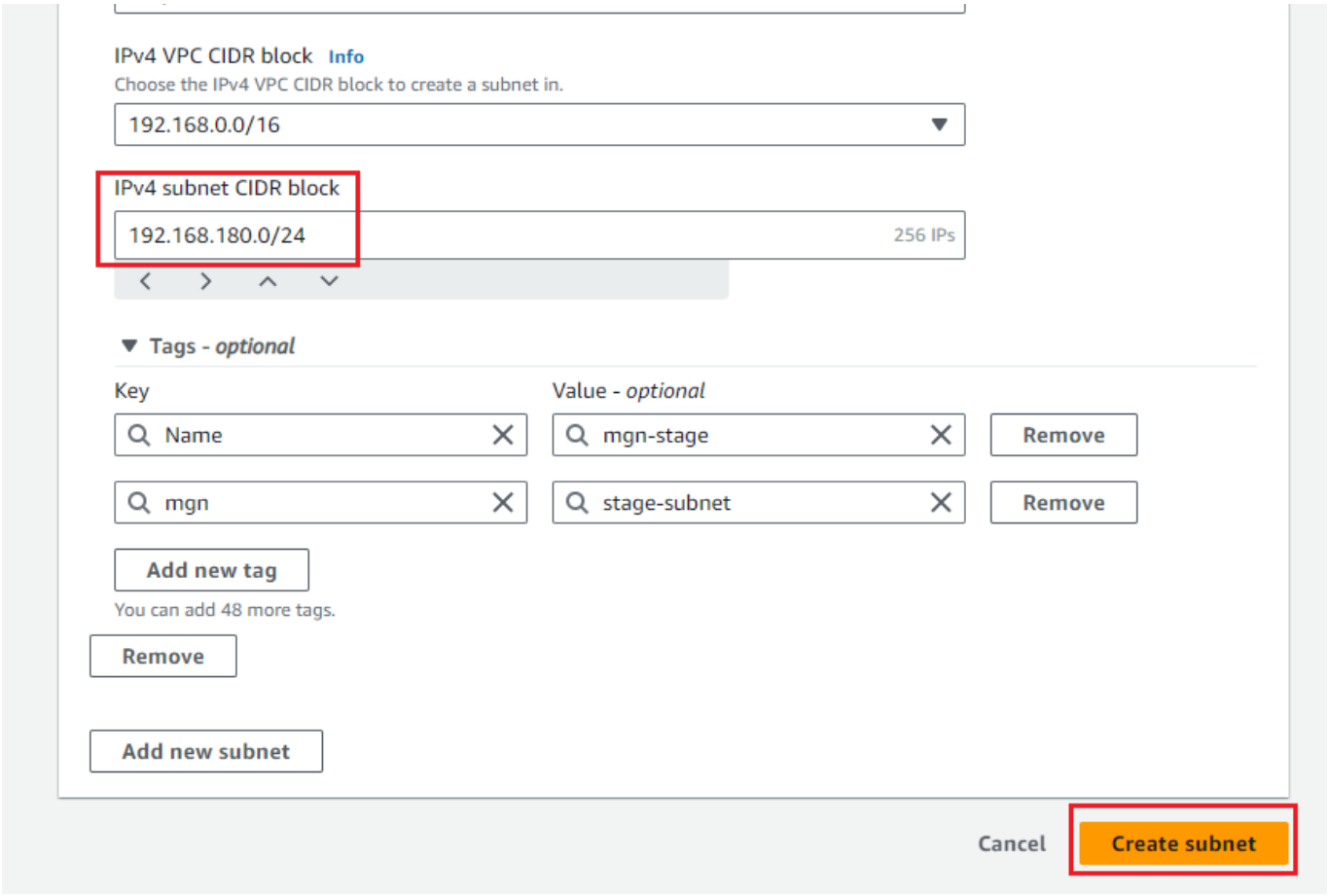
支援地區請參考這邊https://docs.aws.amazon.com/mgn/latest/ug/supported-regions.html

這次我們這邊用日本東京地區 (ap-southeast-1) 來做示範

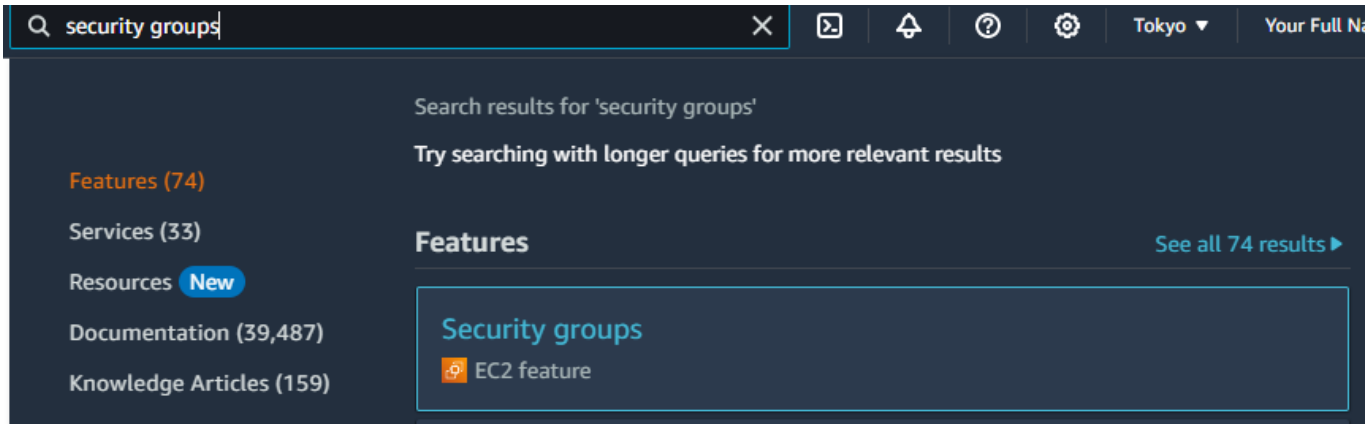

aws
Services
vpc
Tokyo
VPC dashboard
EC2 Global View
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Search results for 'vpc'
Try searching with longer queries for more relevant results
Services (12)
Features (57)
Resources New
Documentation (12,645)
Knowledge Articles (240)
Marketplace (570)
Services
See all 12 results
VPC
Isolated Cloud Resources

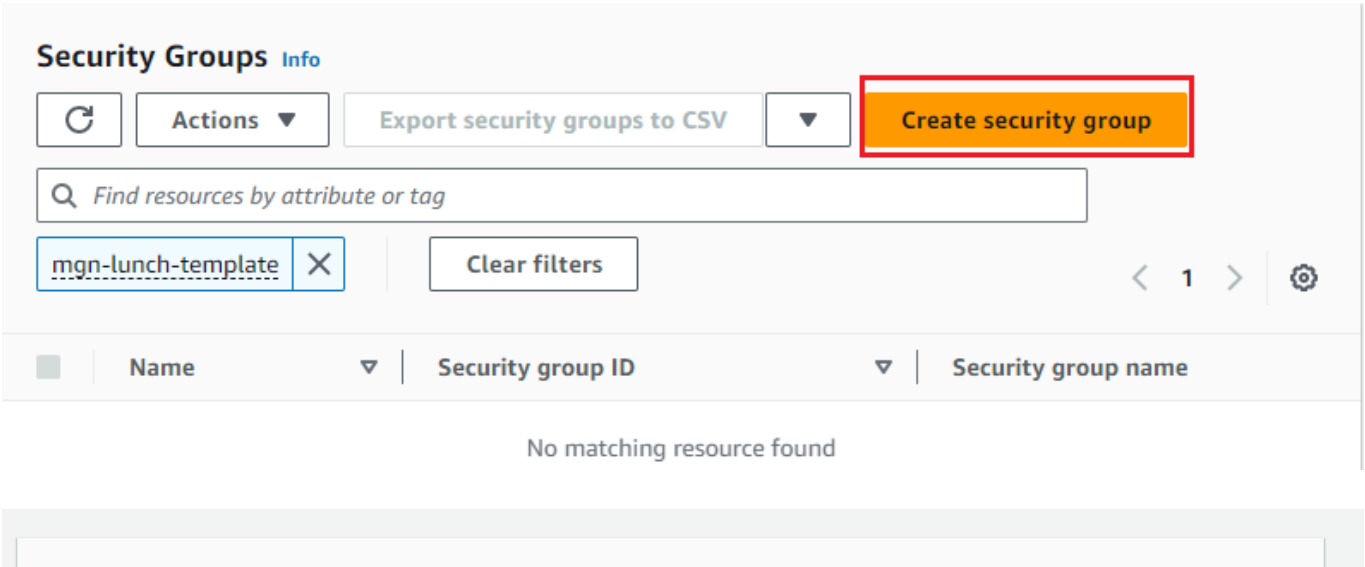

aws
Services
Search
[Alt+S]
Tokyo
VPC dashboard
EC2 Global View
Filter by VPC:
Select a VPC
Virtual private cloud
Your VPCs
Subnets
Route tables
Internet gateways
Subnets (1) Info
Actions
Create subnet
Find resources by attribute or tag
vpc-jp
Clear filters
1
Name
Subnet ID
State
vpc-jp-192.168.1.X
subnet-070d78d5aa21a36b0
Available


aws
Services
vpc
VPC > Subnets > Create subnet
Create subnet Info
VPC
VPC ID
Create subnets in this VPC.
vpc-03afff258cfc9906d (vpc-jp)
vpc-008f3a8f027357faf (default)
172.31.0.0/16
vpc-03afff258cfc9906d (vpc-jp)
192.168.0.0/16
vpc-0e09605a5cef4638a (ph-efs)
10.0.0.0/16
vpc-058eb168ef2edf1e9 (ph-workspace)
172.19.0.0/16
Subnet 1 of 1
Subnet name
Create a tag with a key of 'Name' and a value that you specify.
mgn-stage
The name can be up to 256 characters long.
Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
No preference



EC2 模板安全規則設定





Basic details

Security group name Info
MGN-lunch-template
Name cannot be edited after creation.

Description Info
RDP allow Office

VPC Info
vpc-03afff258cfc9906d (vpc-jp)

Inbound rules Info

Inbound rule 1 Delete

Type Info	Protocol Info	Port range Info
RDP	TCP	3389

Source type Info	Source Info	Description - optional Info
Custom	61.220.213.91/32	

Add rule

Outbound rules Info

Outbound rule 1 Delete

Type Info	Protocol Info	Port range Info
All traffic	All	All

Destination type Info	Destination Info	Description - optional Info
Custom	0.0.0.0/0	

Add rule

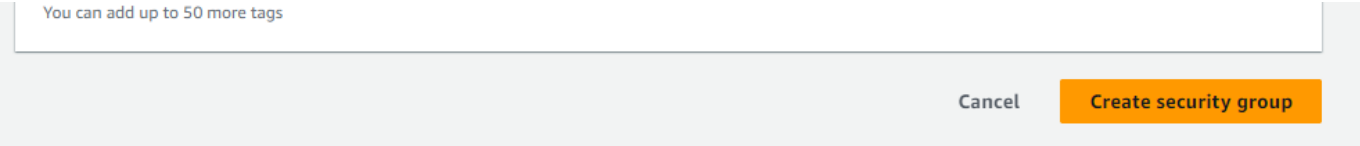
⚠ Rules with source of 0.0.0.0/0 or ::/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Tags - *optional*

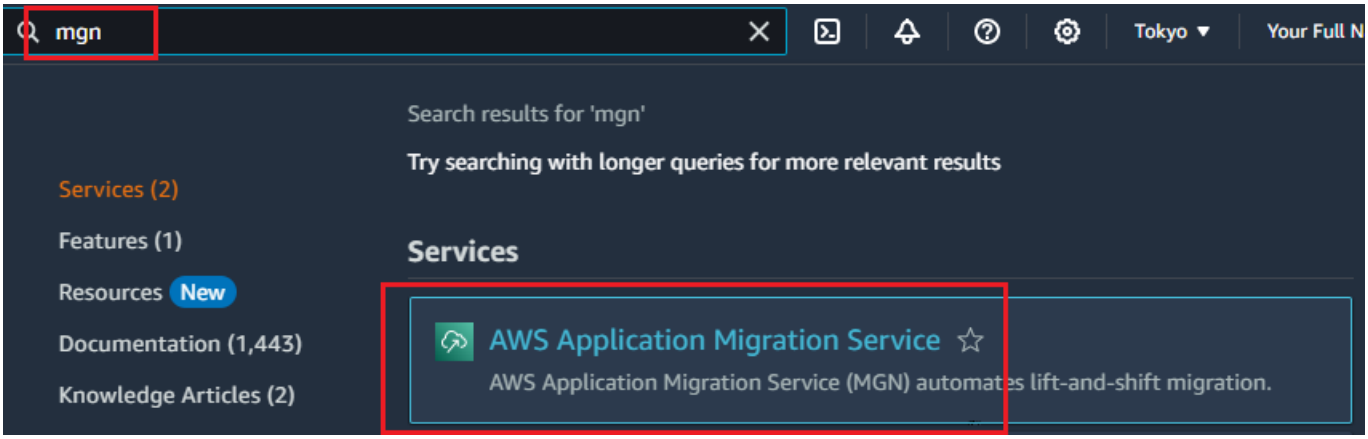
A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add new tag

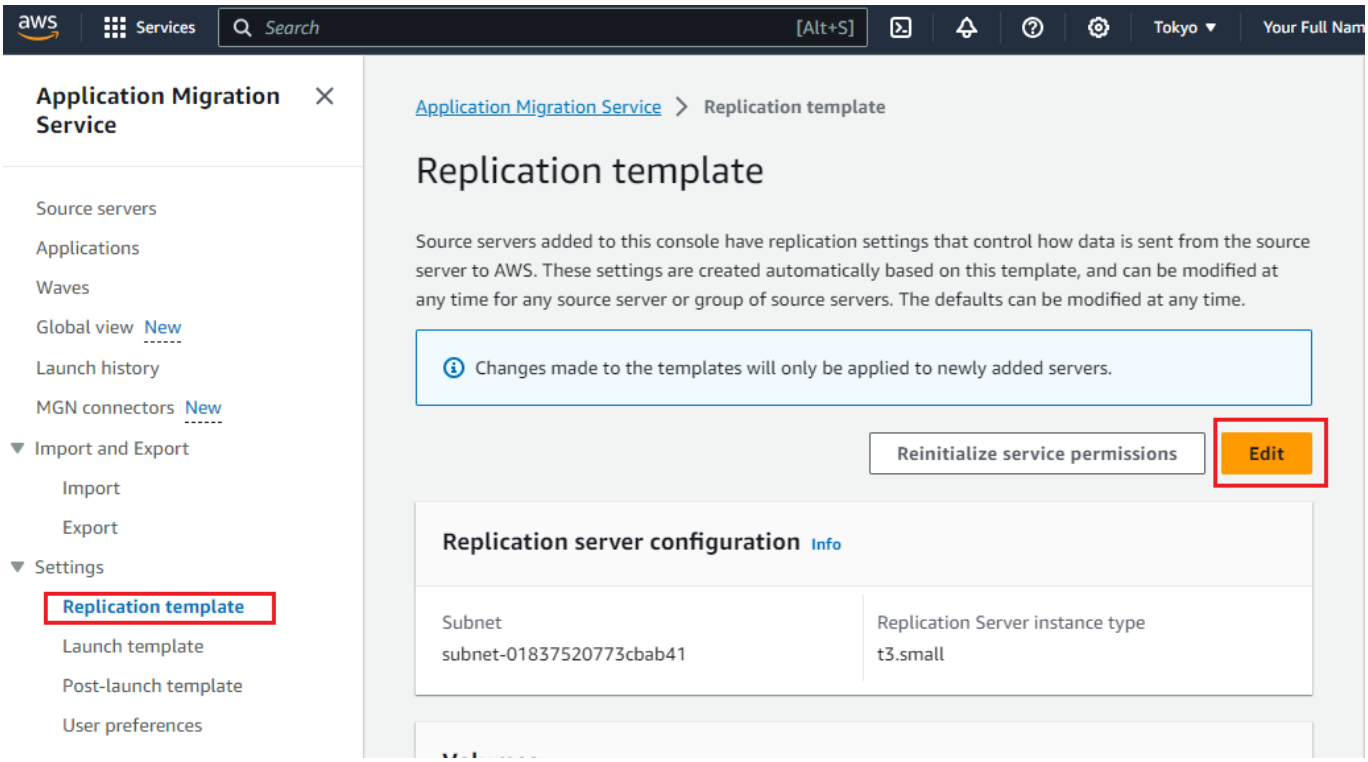


MGN Application Migration Service 設定

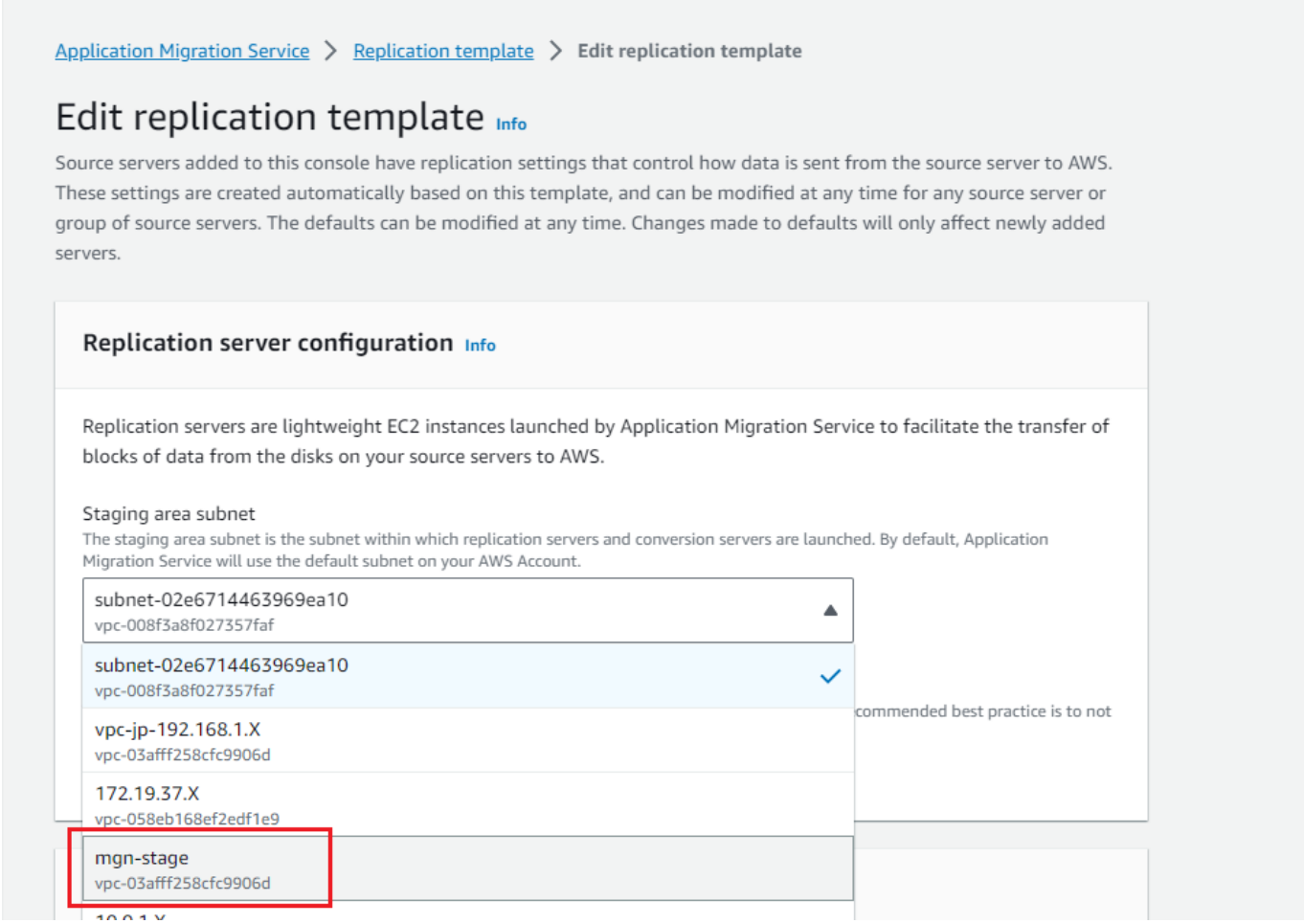


複製服務的 EC2 模板

> [Note]只要對象Agent 還在運行 模板服務的EC2 會一直在運轉

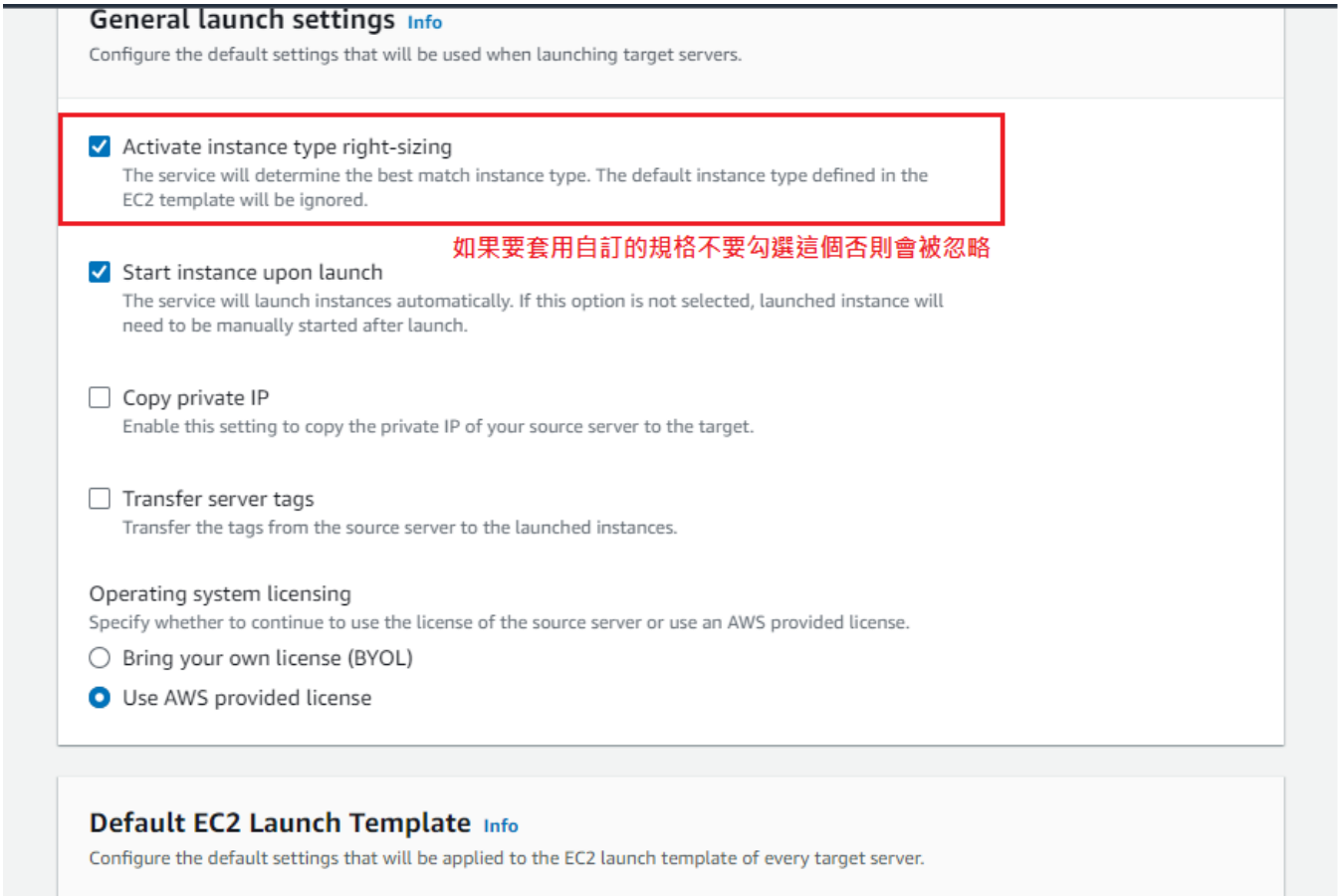


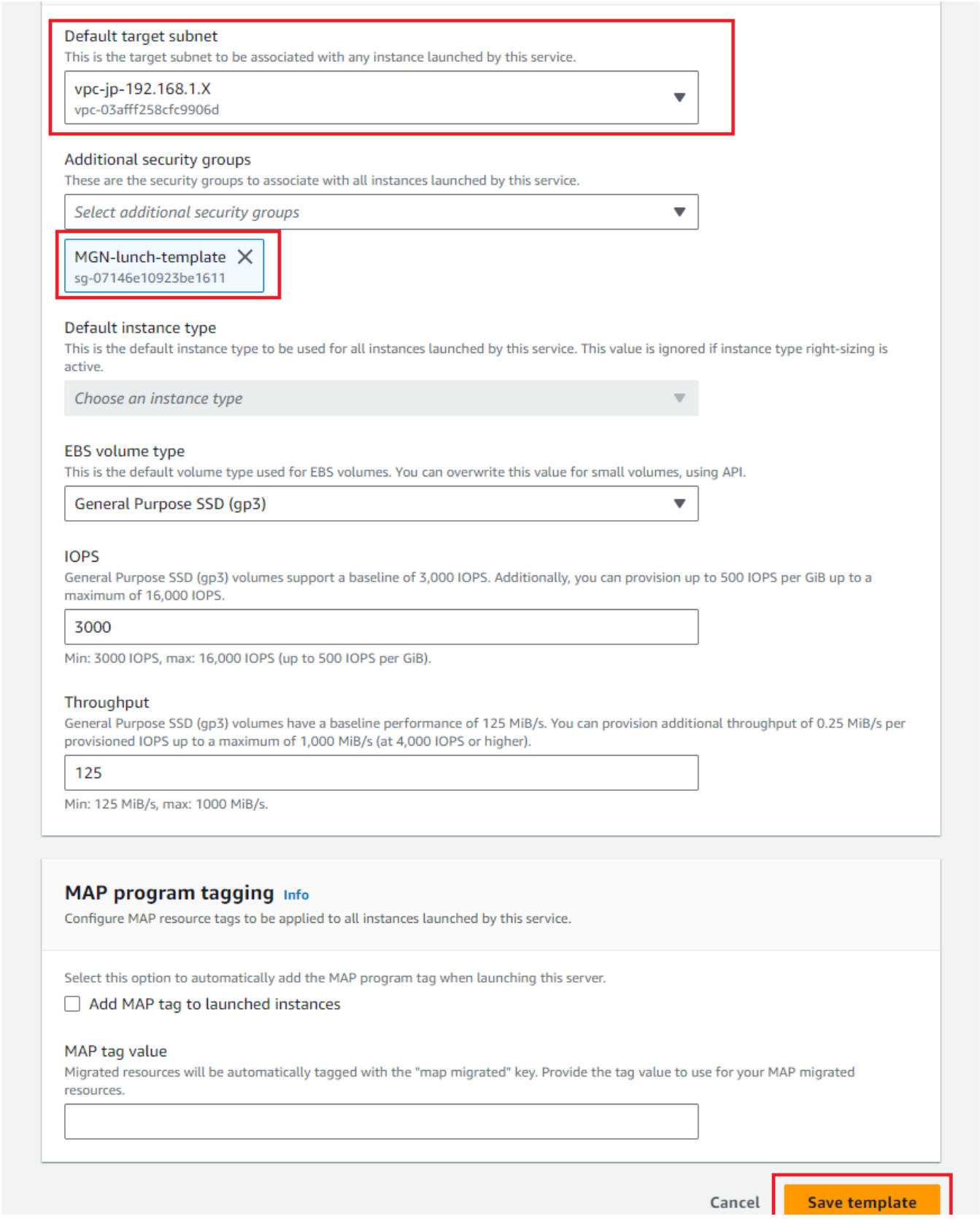
將網口改為先前建立好的VPC 子網段



EC2建置模板 (Test/Cutover)

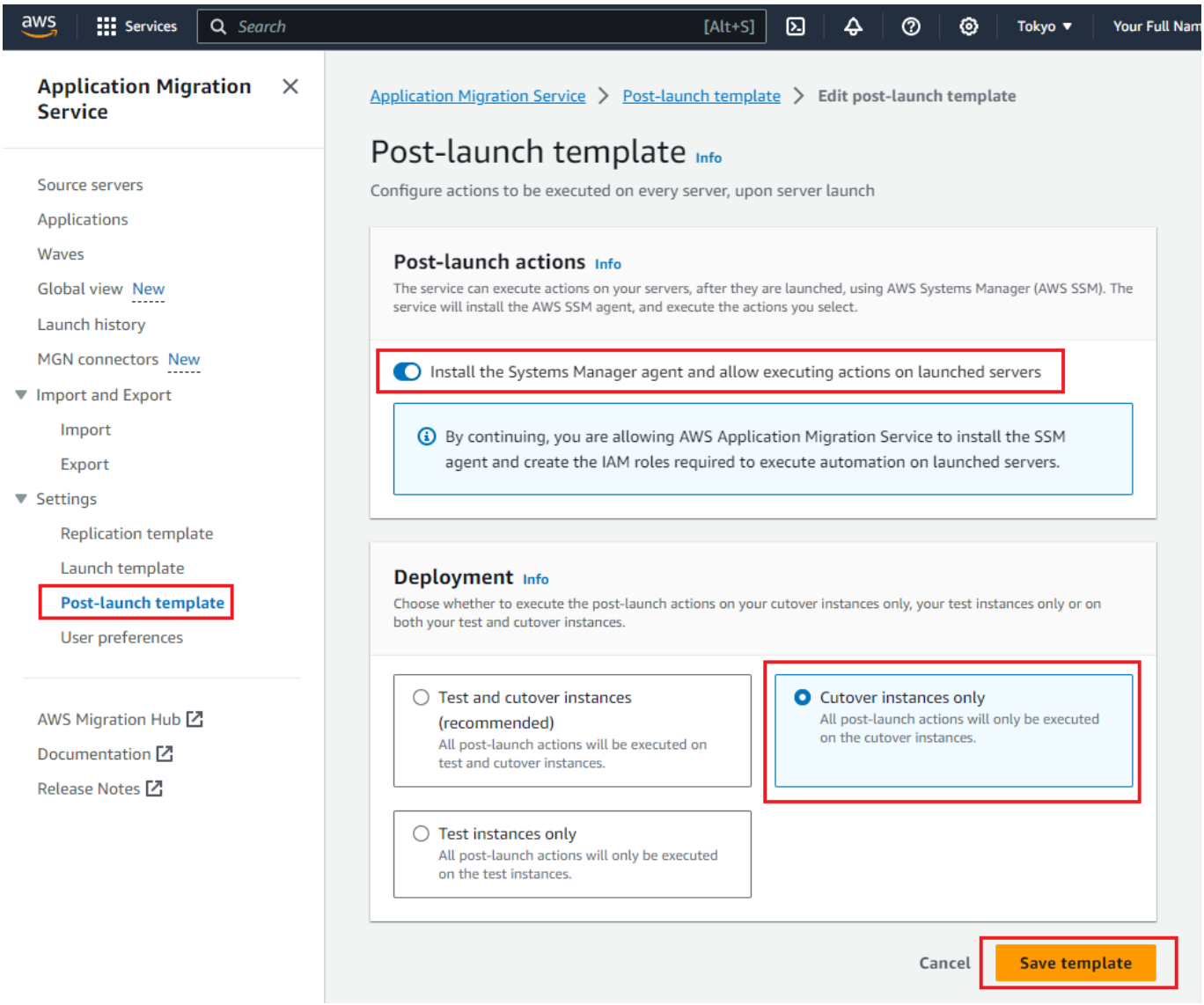
這模板是用來套用複製好的instance





EC2建置後續模板 (如果不需要可以忽略)

用來安裝AWS SSM agent至EC2 機器上主要用來監控



部署流程

安裝 Agent (GCP Compute Engine)

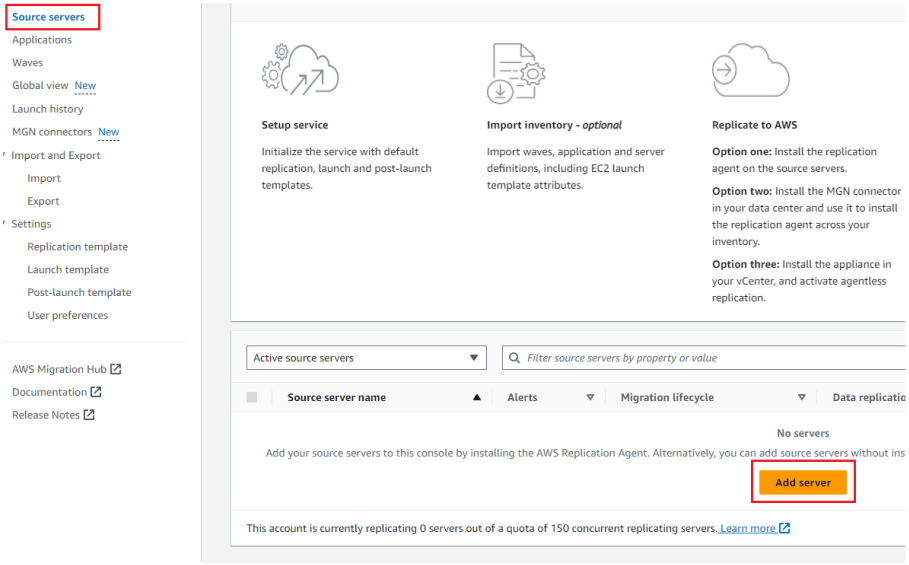
Windows 下載連結https://docs.aws.amazon.com/zh_tw/mgn/latest/ug/windows-agent.html

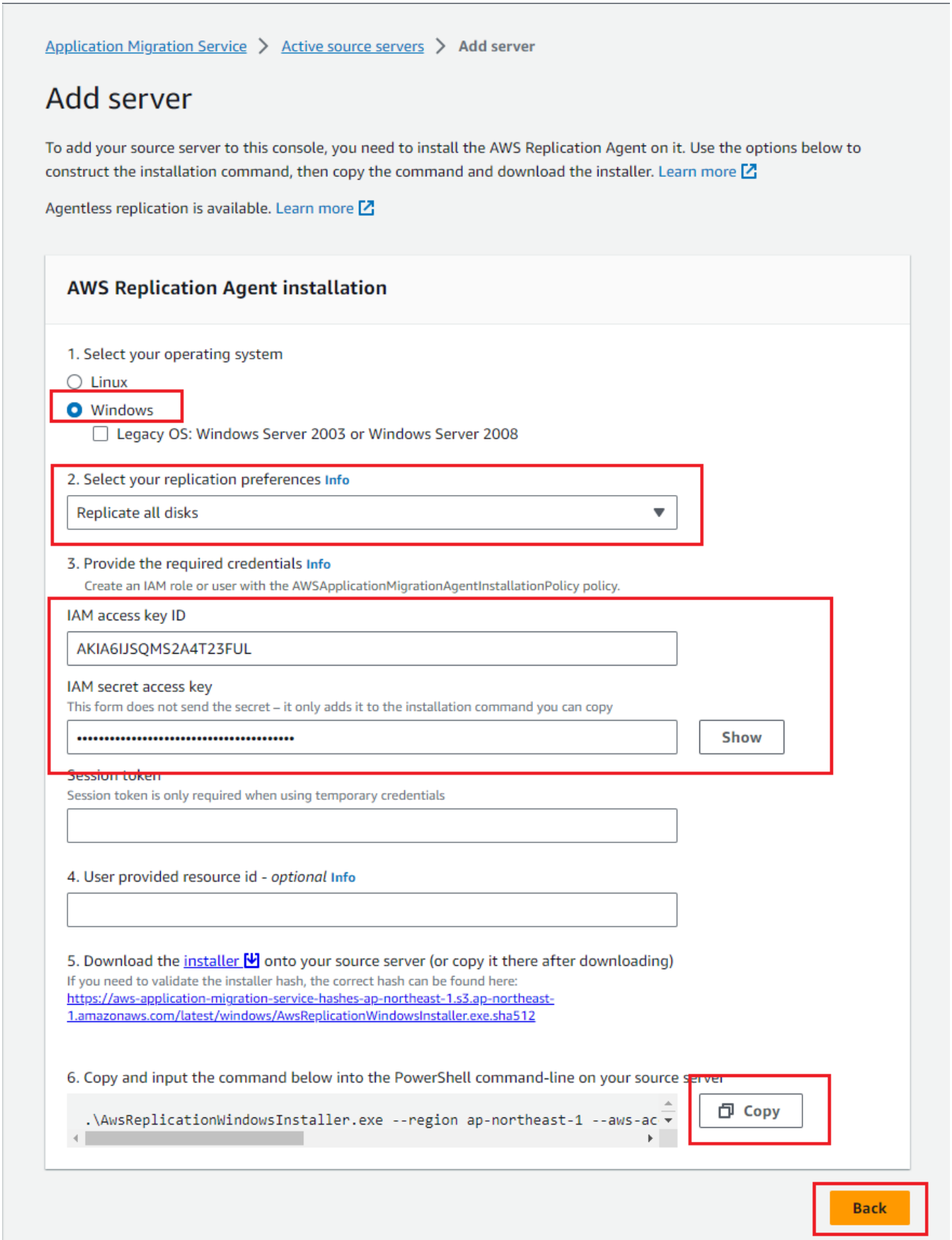
Region name	Region identity	Download Link
US East (Ohio)	us-east-2	https://aws-application-migration-service-us-east-2.s3.us-east-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
US East (N. Virginia)	us-east-1	https://aws-application-migration-service-us-east-1.s3.us-east-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
US West (N. California)	us-west-1	https://aws-application-migration-service-us-west-1.s3.us-west-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
US West (Oregon)	us-west-2	https://aws-application-migration-service-us-west-2.s3.us-west-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe

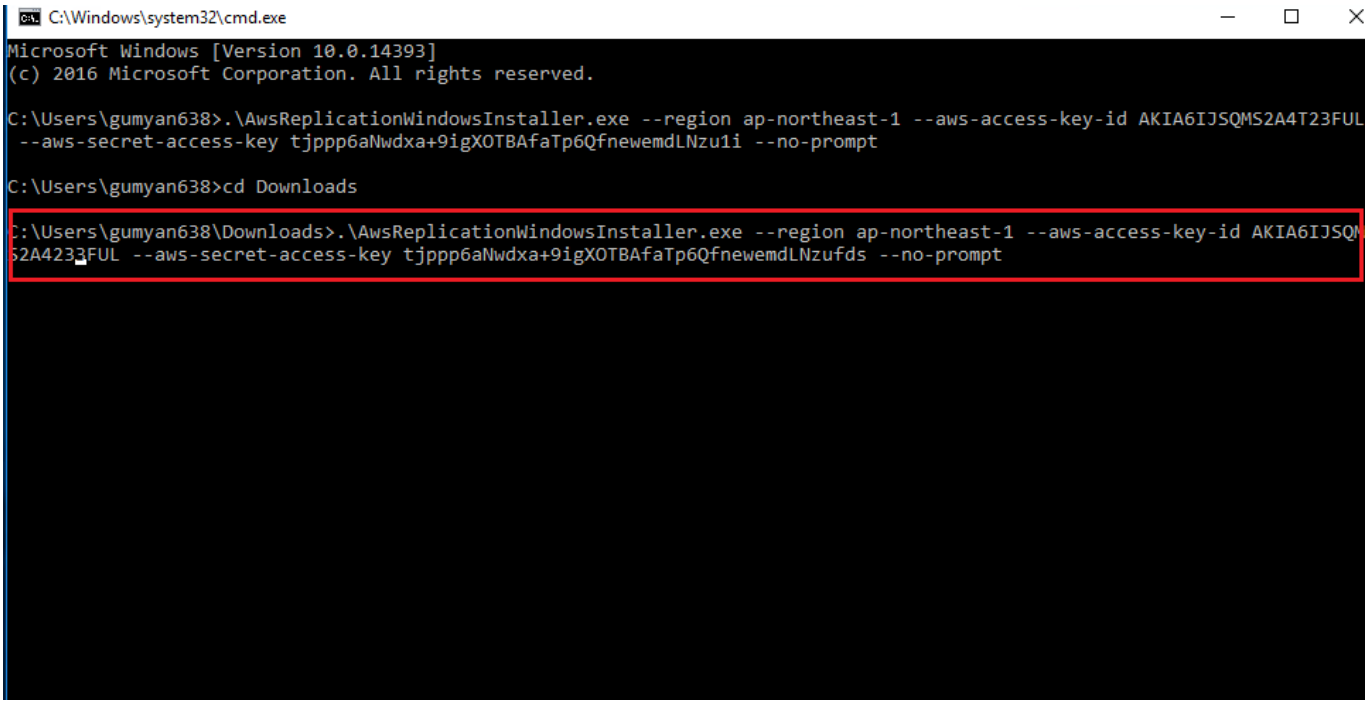
Region name	Region identity	Download Link
Africa (Cape Town)	af-south-1	https://aws-application-migration-service-af-south-1.s3.af-south-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Hong Kong)	ap-east-1	https://aws-application-migration-service-ap-east-1.s3.ap-east-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Jakarta)	ap-southeast-3	https://aws-application-migration-service-ap-southeast-3.s3.ap-southeast-3.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Mumbai)	ap-south-1	https://aws-application-migration-service-ap-south-1.s3.ap-south-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Osaka)	ap-northeast-3	https://aws-application-migration-service-ap-northeast-3.s3.ap-northeast-3.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Seoul)	ap-northeast-2	https://aws-application-migration-service-ap-northeast-2.s3.ap-northeast-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Singapore)	ap-southeast-1	https://aws-application-migration-service-ap-southeast-1.s3.ap-southeast-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Sydney)	ap-southeast-2	https://aws-application-migration-service-ap-southeast-2.s3.ap-southeast-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Tokyo)	ap-northeast-1	https://aws-application-migration-service-ap-northeast-1.s3.ap-northeast-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Canada (Central)	ca-central-1	https://aws-application-migration-service-ca-central-1.s3.ca-central-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Frankfurt)	eu-central-1	https://aws-application-migration-service-eu-central-1.s3.eu-central-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Ireland)	eu-west-1	https://aws-application-migration-service-eu-west-1.s3.eu-west-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (London)	eu-west-2	https://aws-application-migration-service-eu-west-2.s3.eu-west-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Milan)	eu-south-1	https://aws-application-migration-service-eu-south-1.s3.eu-south-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Paris)	eu-west-3	https://aws-application-migration-service-eu-west-3.s3.eu-west-3.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe

Region name	Region identity	Download Link
Europe (Stockholm)	eu-north-1	https://aws-application-migration-service-eu-north-1.s3.eu-north-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Middle East (Bahrain)	me-south-1	https://aws-application-migration-service-me-south-1.s3.me-south-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
South America (São Paulo)	sa-east-1	https://aws-application-migration-service-sa-east-1.s3.sa-east-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Middle East (UAE)	me-central-1	https://aws-application-migration-service-me-central-1.s3.me-central-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Melbourne)	ap-southeast-4	https://aws-application-migration-service-ap-southeast-4.s3.ap-southeast-4.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Asia Pacific (Hyderabad)	ap-south-2	https://aws-application-migration-service-ap-south-2.s3.ap-south-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Zurich)	eu-central-2	https://aws-application-migration-service-eu-central-2.s3.eu-central-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Europe (Spain)	eu-south-2	https://aws-application-migration-service-eu-south-2.s3.eu-south-2.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
Tel Aviv	il-central-1	https://aws-application-migration-service-il-central-1.s3.il-central-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
AWS GovCloud (US-East)	us-gov-east-1	https://aws-application-migration-service-us-gov-east-1.s3.us-gov-east-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe
AWS GovCloud (US-West)	us-gov-west-1	https://aws-application-migration-service-us-gov-west-1.s3.us-gov-west-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe

我們這次用日本的東京地區 https://aws-application-migration-service-ap-northeast-1.s3.ap-northeast-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe


Source servers
Applications
Waves
Global view New
Launch history
MGN connectors New
Import and Export
Import
Export
Settings
Replication template
Launch template
Post-launch template
User preferences
AWS Migration Hub
Documentation
Release Notes
Setup service
Initialize the service with default replication, launch and post-launch templates.
Import inventory - optional
Import waves, application and server definitions, including EC2 launch template attributes.
Replicate to AWS
Option one: Install the replication agent on the source servers.
Option two: Install the MGN connector in your data center and use it to install the replication agent across your inventory.
Option three: Install the appliance in your vCenter, and activate agentless replication.
Active source servers
Filter source servers by property or value
Source server name
Alerts
Migration lifecycle
Data replicatio
No servers
Add your source servers to this console by installing the AWS Replication Agent. Alternatively, you can add source servers without ins
Add server
This account is currently replicating 0 servers out of a quota of 150 concurrent replicating servers. Learn more


Application Migration Service > Active source servers > Add server
Add server
To add your source server to this console, you need to install the AWS Replication Agent on it. 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 Info
Replicate all disks
3. Provide the required credentials Info
Create an IAM role or user with the AWSApplicationMigrationAgentInstallationPolicy policy.
IAM access key ID
AKIA6IJSQMS2A4T23FUL
IAM secret access key
This form does not send the secret – it only adds it to the installation command you can copy
Show
Session token
Session token is only required when using temporary credentials
4. User provided resource id - optional Info
5. Download the installer onto your source server (or copy it there after downloading)
If you need to validate the installer hash, the correct hash can be found here:
https://aws-application-migration-service-hashes-ap-northeast-1.s3.ap-northeast-1.amazonaws.com/latest/windows/AwsReplicationWindowsInstaller.exe.sha512
6. Copy and input the command below into the PowerShell command-line on your source server
.\AwsReplicationWindowsInstaller.exe --region ap-northeast-1 --aws-ac
Copy
Back



如果有錯誤請看troubleshoot

等待初步同步

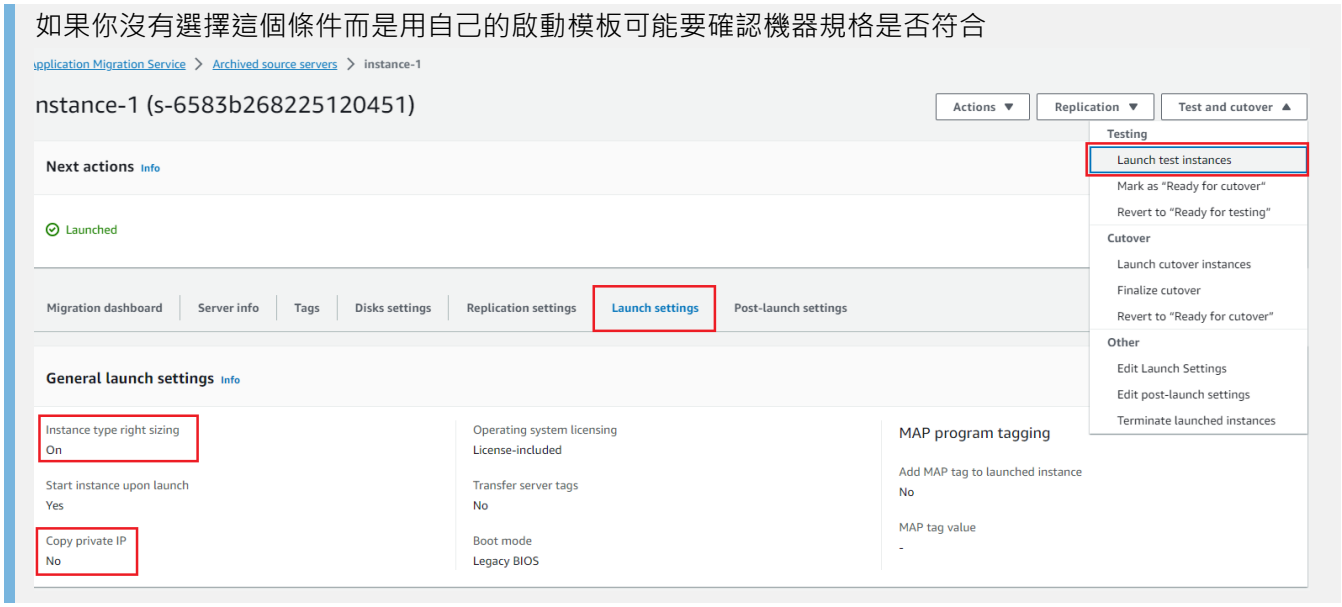
遷移週期所顯示的狀態如下:

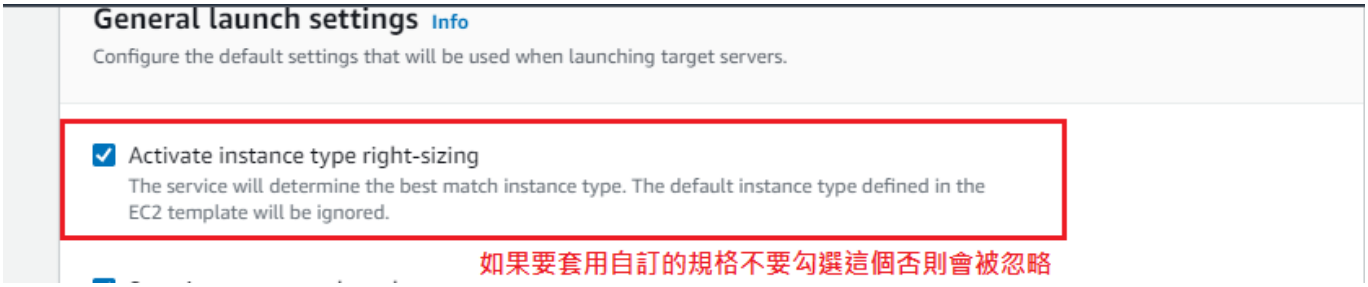
- ***Not ready*** : MGN服務正在複製遷移機器資料至AWS
- ***Ready for testing*** : 複製完畢可以開始測試
- ***Test in progress*** : 正在部署相關服務以及機器
- ***Ready for cutover*** : 測試完畢可以部署正式要遷移的機器
- ***Cutover in progress*** : 正在部署正式遷移機器
- ***Cutover complete*** : 正式遷移完畢 (finalize Cutover Process)
- ***Disconnected*** : AWS複製Agent 已斷線會有兩種情形網路不穩定或者部署完畢

測試複製資料

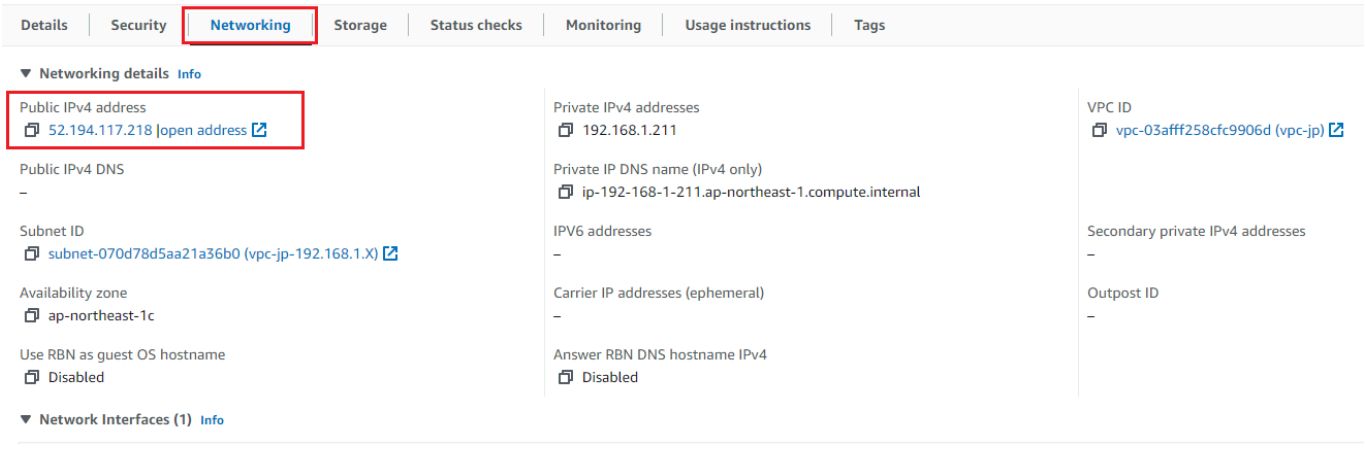
在啟動複製的資料前你會需要確認EC2 啟動規格以及相關設定

如果你沒有選擇這個條件而是用自己的啟動模板可能要確認機器規格是否符合

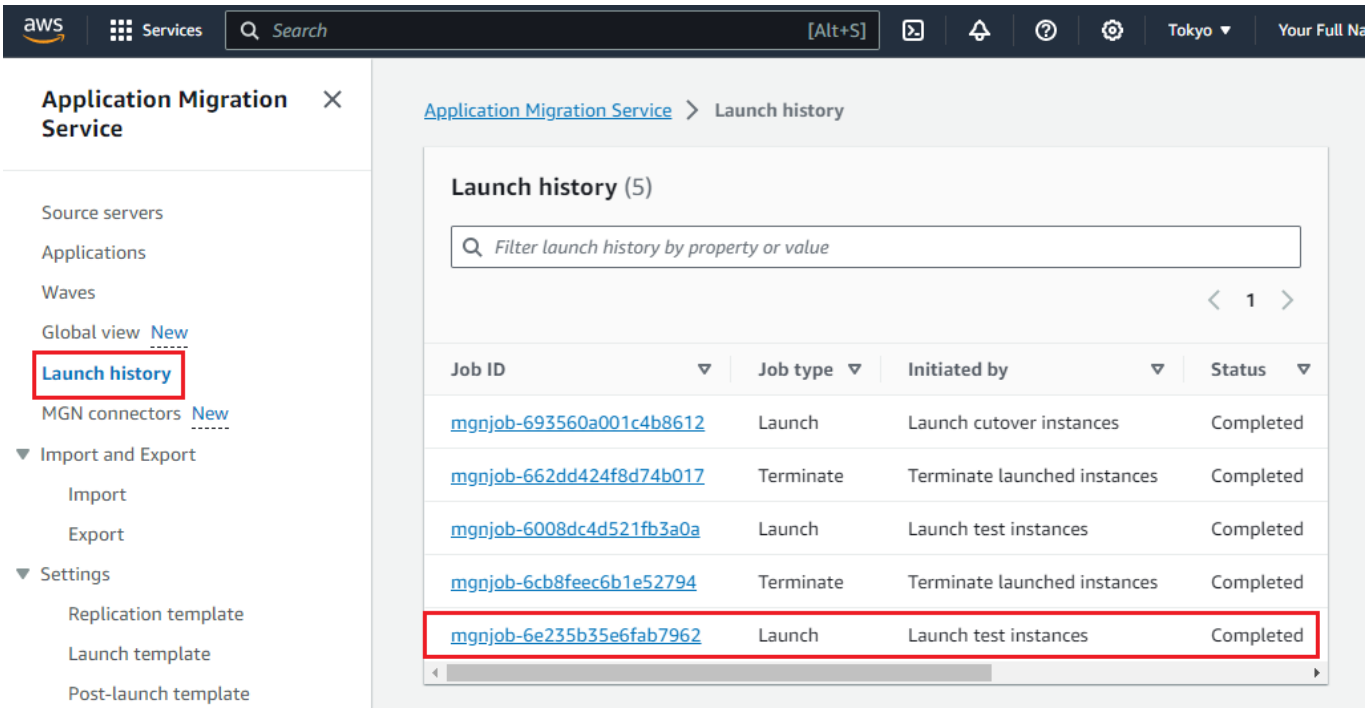


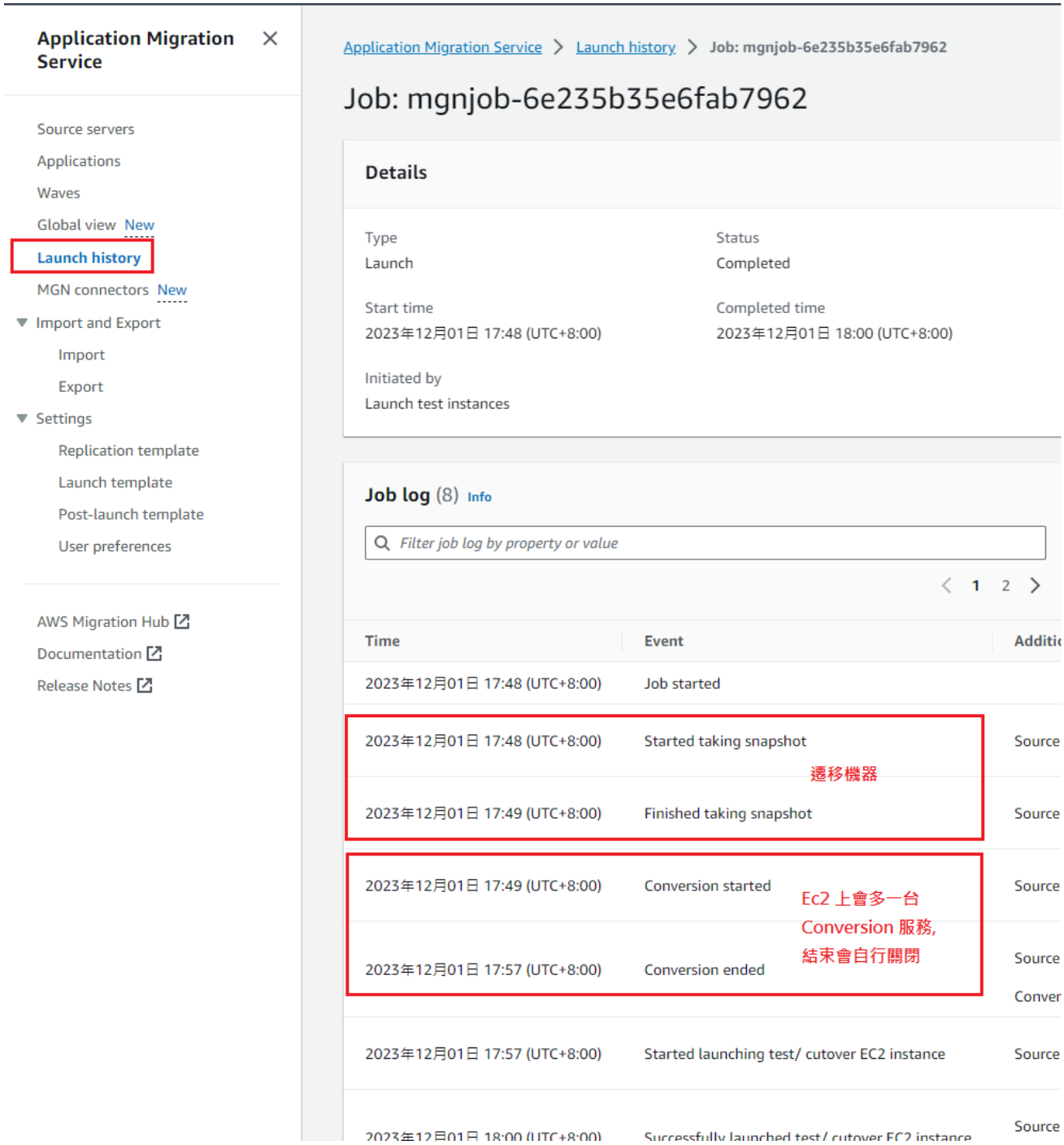


啟動完畢後要確認是否需要外部IP來確認RDP 連線



如果需要確認最後更新資料的時間


aws
Services
Search
[Alt+S]
Tokyo
Your Full Na
Application Migration Service
Source servers
Applications
Waves
Global view New
Launch history
MGN connectors New
Import and Export
Import
Export
Settings
Replication template
Launch template
Post-launch template
Application Migration Service
Launch history
Launch history (5)
Filter launch history by property or value
1
Job ID
Job type
Initiated by
Status
mgnjob-693560a001c4b8612
Launch
Launch cutover instances
Completed
mgnjob-662dd424f8d74b017
Terminate
Terminate launched instances
Completed
mgnjob-6008dc4d521fb3a0a
Launch
Launch test instances
Completed
mgnjob-6cb8feec6b1e52794
Terminate
Terminate launched instances
Completed
mgnjob-6e235b35e6fab7962
Launch
Launch test instances
Completed


Application Migration Service
Source servers
Applications
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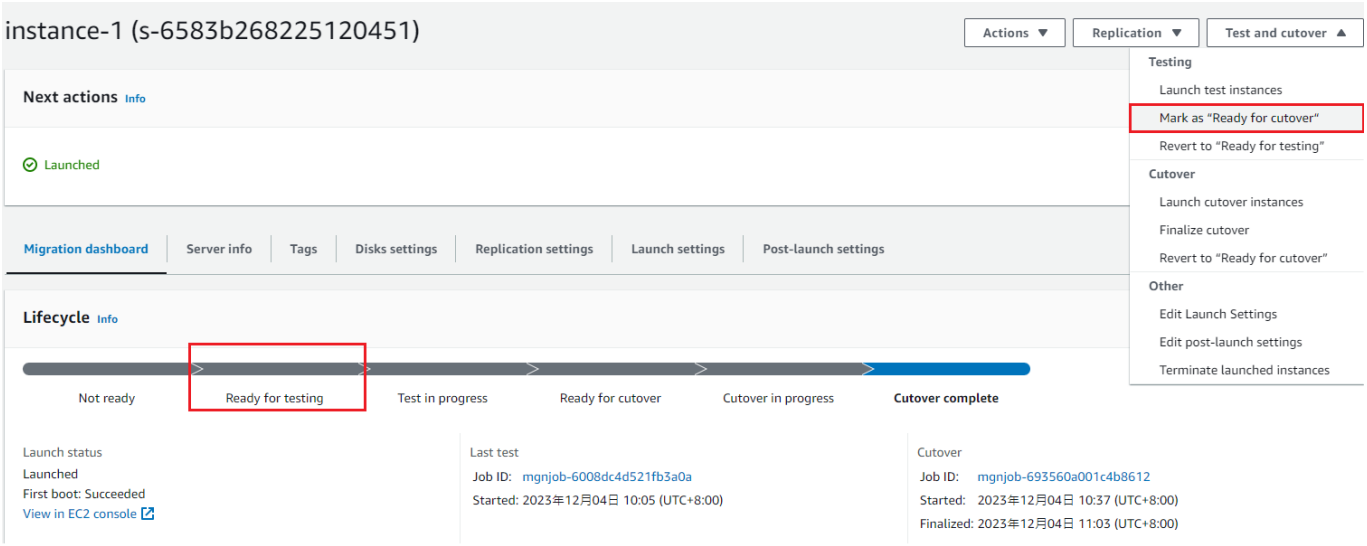
Global view New
Launch history
MGN connectors New
Import and Export
Import
Export
Settings
Replication template
Launch template
Post-launch template
User preferences
AWS Migration Hub
Documentation
Release Notes
Application Migration Service > Launch history > Job: mgnjob-6e235b35e6fab7962
Job: mgnjob-6e235b35e6fab7962
Details
Type
Launch
Status
Completed
Start time
2023年12月01日 17:48 (UTC+8:00)
Completed time
2023年12月01日 18:00 (UTC+8:00)
Initiated by
Launch test instances
Job log (8) Info
Filter job log by property or value
1 2
Time
Event
Additi
2023年12月01日 17:48 (UTC+8:00)
Job started
2023年12月01日 17:48 (UTC+8:00)
Started taking snapshot
Source
遷移機器
2023年12月01日 17:49 (UTC+8:00)
Finished taking snapshot
Source
2023年12月01日 17:49 (UTC+8:00)
Conversion started
Source
Ec2 上會多一台
Conversion 服務,
結束會自行關閉
2023年12月01日 17:57 (UTC+8:00)
Conversion ended
Source
Conver
2023年12月01日 17:57 (UTC+8:00)
Started launching test/ cutover EC2 instance
Source
Source

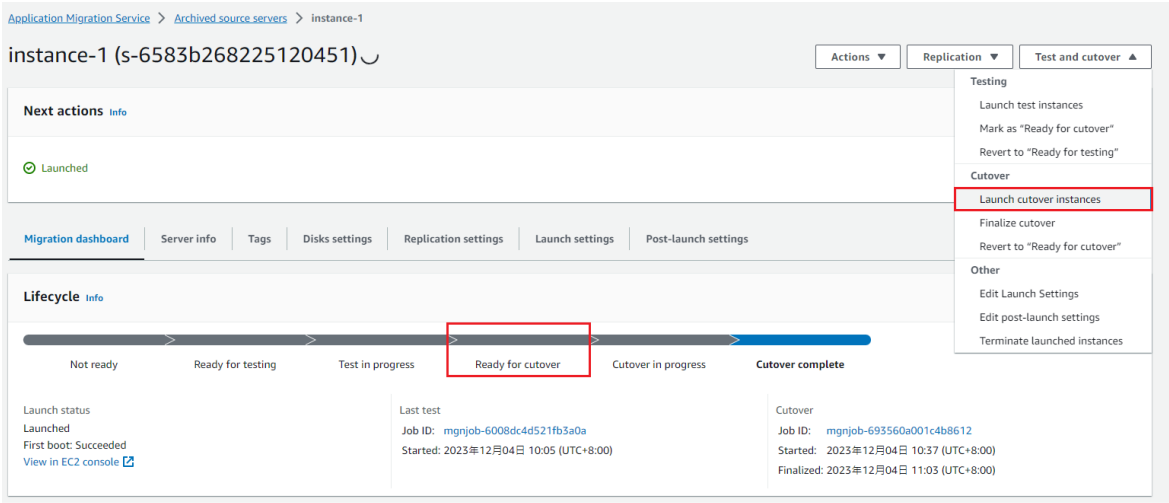
標記測試完畢



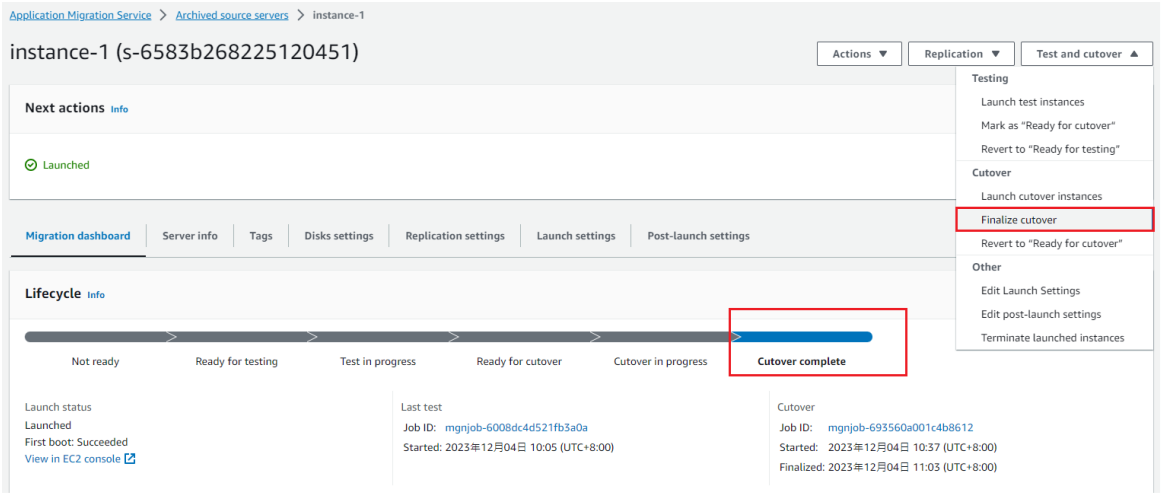
啟動正式遷移機器至EC2

步驟與上面相同

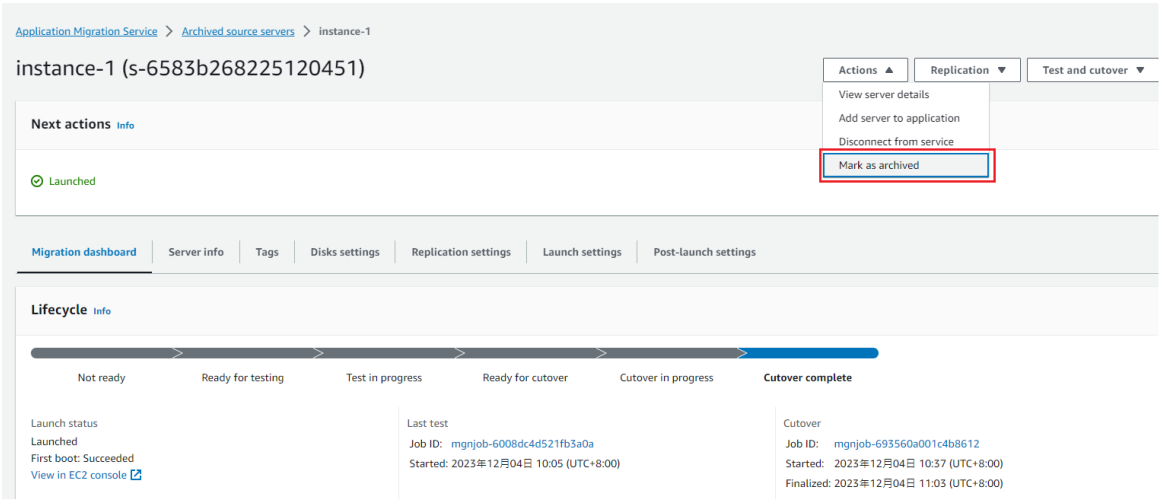
[Note] 停止遷移機器上的所有服務請勿再進行寫入否則快照會無法同步但請勿關機AWS MGN需要確認AGENT的存活狀態



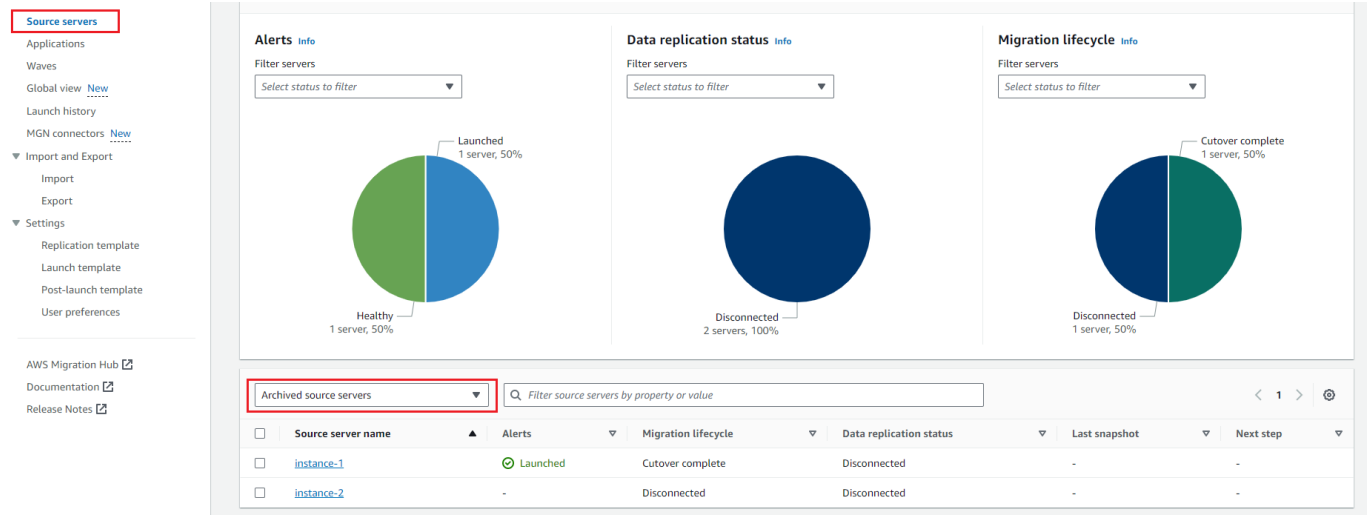
確認完畢後進行最終確認即可



將MGN上的已經機器封存



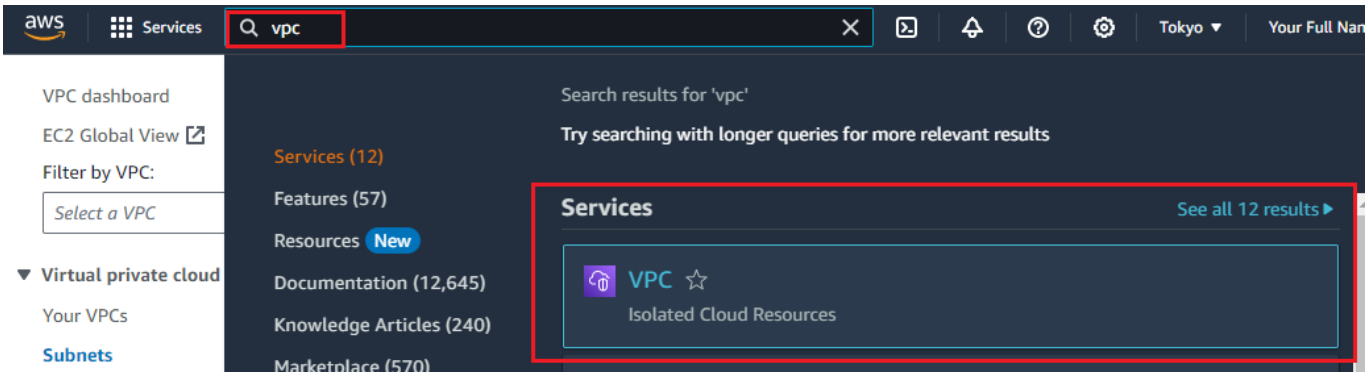
可以在這邊到之前做的

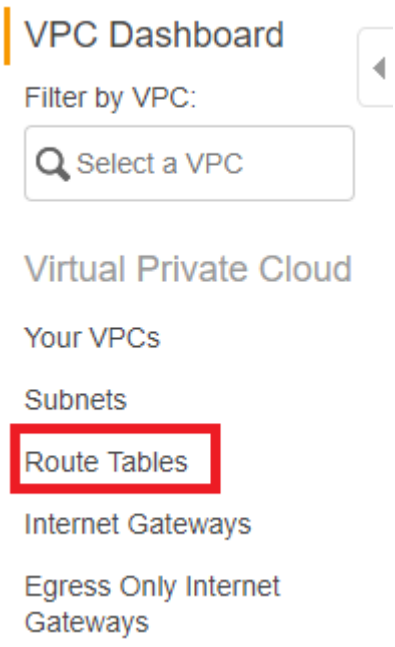


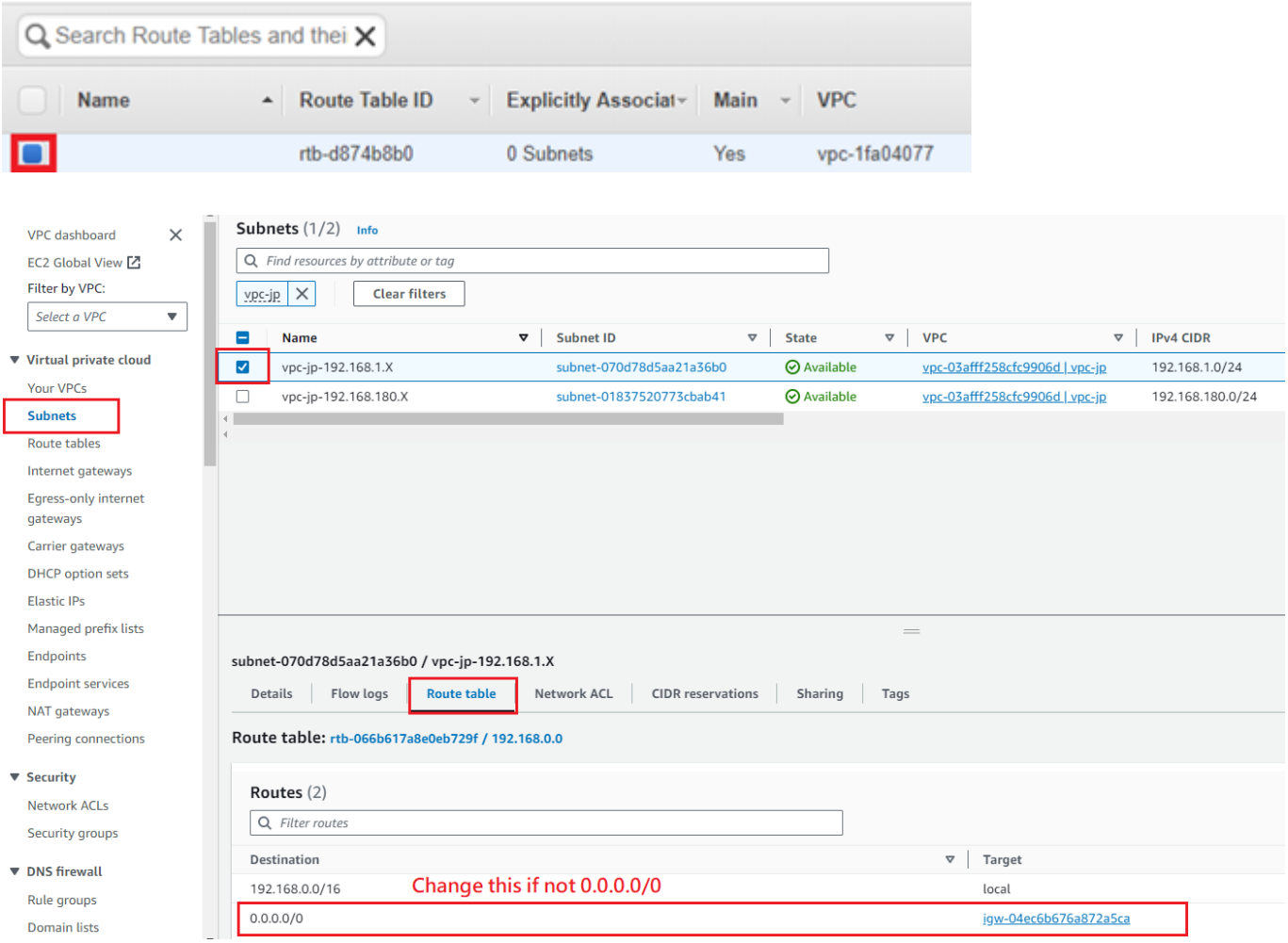
TroubleShooting

如果跟MGN Stage網段無法溝通, 請檢察下列設定是否正確

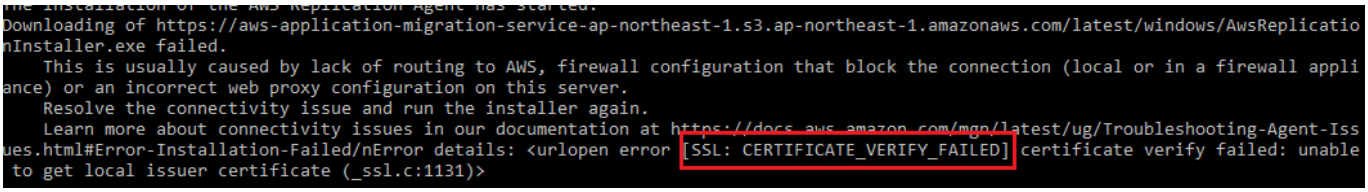
1. 檢查Staging 網段的DHCP/ACL 規則是否正確
2. 確保能夠訪問外部DNS以及出口開放 443/tcp
3. Stage 網段的路由可能設定錯誤





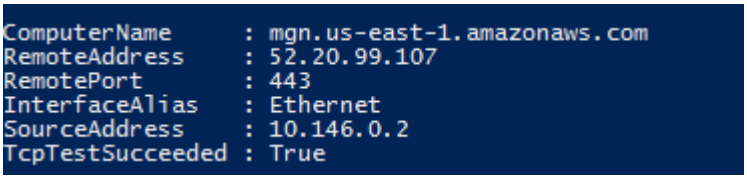


如果你得到SSL 憑證錯誤



Steps 1

```
# Check if 443 port is normal for connection to AWS application migration Service
Test-NetConnection mgn.{Region_ID}.amazonaws.com -Port 443
```



Steps 2

下載並且安裝在對應機器上

Amazon Trust CA Verification and Download

Root CAs

Distinguished Name	SHA-256 Hash of Subject Public Key Information	Self-Signed Certificate	Test URLs
CN=Amazon Root CA 1,O=Amazon,C=US	fbe3018031f9586bcbf41727e417b7d1c45c2f47f93be372a17b96b50757d5a2	DER PEM	Valid Revoked Expired
CN=Amazon Root CA 2,O=Amazon,C=US	7f4296fc5b6a4e3b35d3c369623e364ab1af381d8fa7121533c9d6c633ea2461	DER PEM	Valid Revoked Expired
CN=Amazon Root CA 3,O=Amazon,C=US	36abc32656acfc645c61b71613c4bf21c787f5cabbee48348d58597803d7abc9	DER PEM	Valid Revoked Expired
CN=Amazon Root CA 4,O=Amazon,C=US	f7ecded5c66047d28ed6466b543c40e0743abe81d109254dcf845d4c2c7853c5	DER PEM	Valid Revoked Expired
CN=Starfield Services Root Certificate Authority - G2,O=Starfield Technologies\, Inc.,L=Scottsdale,ST=Arizona,C=US	2b071c59a0a0ae76b0eadb2bad23bad4580b69c3601b630c2eaf0613afa83f92	DER PEM	Valid Revoked Expired

Referencing

https://repost.aws/knowledge-center/mgn-windows-replication-agent-install