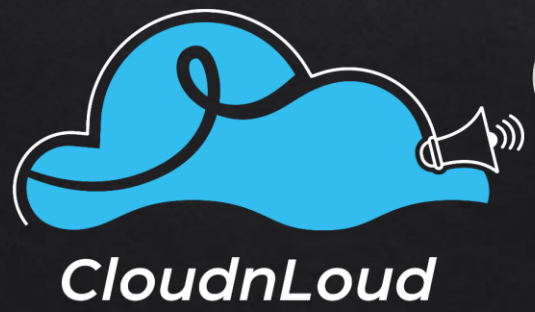
Let’s Migrate to Cloud



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What you are going to learn in this course!!!

- Why Migrate.
- AWS Migration Strategy.
- Most commonly used “Lift & Shift” Migration Strategy.
- Migration Pre-requisites.
- Step-by-step migration walkthrough that we are going to follow.
- Live implementation of the Migration walkthrough.

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Why Migrate?

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Factors that influence Migration

- High capital expenses.
- Complex management.
- Scalability challenges.
- Availability.
- Hardware that needs to be replaced every couple of years.

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AWS Migration Strategy.

The 6R's of Migration

Repurchase aka– Drop & Shop

Rehost aka– Lift and Shift

Replatform aka– Lift, Tinker and Shift

Refactor or Re-Architect

Retire

Retain

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Rehost ---- Lift & Shift

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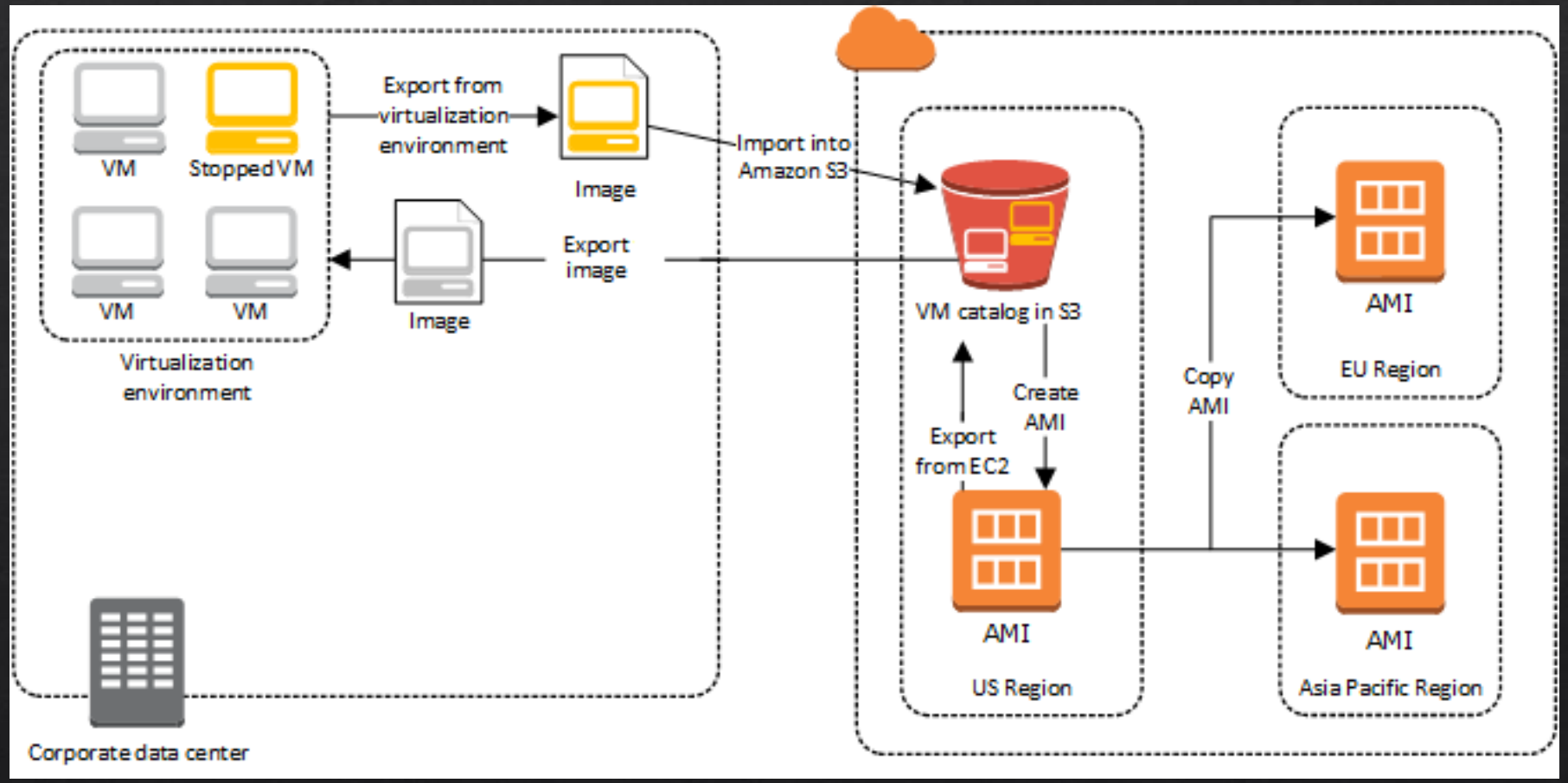
Rehost –Import/Export-- Lift & Shift



Import/Export-- Benefits

Migrate existing applications and workloads to Amazon EC2.

Import your VM image catalog to Amazon EC2.

Create a disaster recovery repository for VM images.

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AWS Migration Pre-requisites.

Things to consider before Migrating to Cloud

- Make sure the Disk images that you have exported are of AWS supported format
  - Ex: VMDK, VHD and OVA
- Check if the OS that you are trying to Migrate, Must be supported by AWS.

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Get Ready with the Pre-requisites!!!

- An AWS Account.
- An IAM user with Required Privileges (Admin privileges) .
- One S3 bucket (We will be copying the disk images here)
- An IAM role named “vmimport”.
- And finally the AWS CLI must be installed and configured on your local system or you can alternatively have an EC2 instance to perform the migration related commands.

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vmimport --- Role!!!

We first need to create the following policies before creating the vmimport role:

- We need to create file named trust-policy.json with following policy document.

```
{
    "Version": "2012-10-17",
    "Statement": [
        {
            "Effect": "Allow",
            "Principal": { "Service": "vmie.amazonaws.com" },
            "Action": "sts:AssumeRole",
            "Condition": {
               "StringEquals":{
                  "sts:Externalid": "vmimport"
               }
            }
        }
    ]
}
```

aws iam create-role --role-name vmimport --assume-role-policy-document "file://C:\import\trust-policy.json"

vmimport --- Role!!!

- Now create a file name ***role-policy.json*** with the following policy.

```
{
   "Version":"2012-10-17",
   "Statement":[
      {
         "Effect": "Allow",
         "Action": [
            "s3:GetBucketLocation",
            "s3:GetObject",
            "s3:ListBucket"
         ],
         "Resource": [
            "arn:aws:s3:::disk-image-file-bucket",
            "arn:aws:s3:::disk-image-file-bucket/*"
         ]
      },
      {
         "Effect": "Allow",
         "Action": [
            "s3:GetBucketLocation",
            "s3:GetObject",
            "s3:ListBucket",
            "s3:PutObject",
            "s3:GetBucketAcl"
         ],
         "Resource": [
            "arn:aws:s3:::export-bucket",
            "arn:aws:s3:::export-bucket/*"
         ]
      },
      {
         "Effect": "Allow",
         "Action": [
            "ec2:ModifySnapshotAttribute",
            "ec2:CopySnapshot",
            "ec2:RegisterImage",
            "ec2:Describe*"
         ],
         "Resource": "*"
      }
   ]
}
```

```
aws iam put-role-policy --role-name vmimport --policy-name
vmimport --policy-document "file://C:\import\role-policy.json"
```

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Step-by-Step Migration Walkthrough!!!

- Export the VM disk image in one of the supported format.
- Configure AWS CLI
- Upload the exported disk image/images to S3 bucket. (You can use CLI for better results.)
- Create the vmimport role with required policy documents.
- Then run the EC2 import image command to create the AMI out of Disk images stored in S3.
- Once we get the AMI, we can launch the EC2 machine or instance

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EC2 VM import image command.

aws ec2 import-image --description "My server VM" --disk-containers "file://C:\import\containers.json"

```
[
  {
    "Description": "My Server OVA",
    "Format": "ova",
    "UserBucket": {
        "S3Bucket": "my-import-bucket",
        "S3Key": "vms/my-server-vm.ova"
    }
}]
```

To monitor the import Image task run the following command:
aws ec2 describe-import-image-tasks --import-task-ids import-ami-1234567890abcdef0

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Important AWS Documentation links.

Links…

How VM Import/Export works:
https://docs.aws.amazon.com/vm-import/latest/userguide/how-vm-import-export-works.html

VM Import/Export Requirements:
https://docs.aws.amazon.com/vm-import/latest/userguide/vmie_prereqs.html

Importing a VM as an Image using VM Import/Export:
https://docs.aws.amazon.com/vm-import/latest/userguide/vmimport-image-import.html