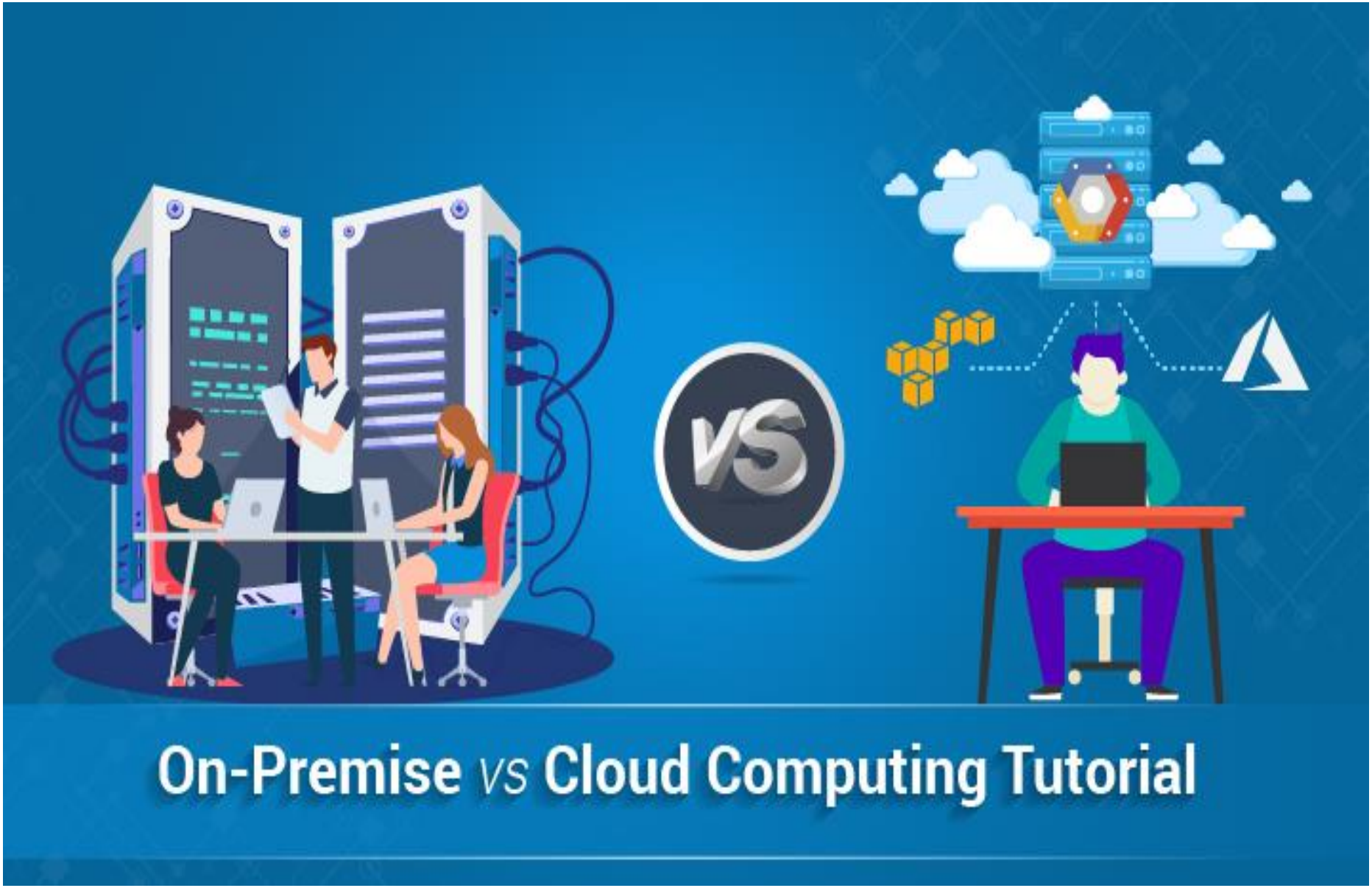
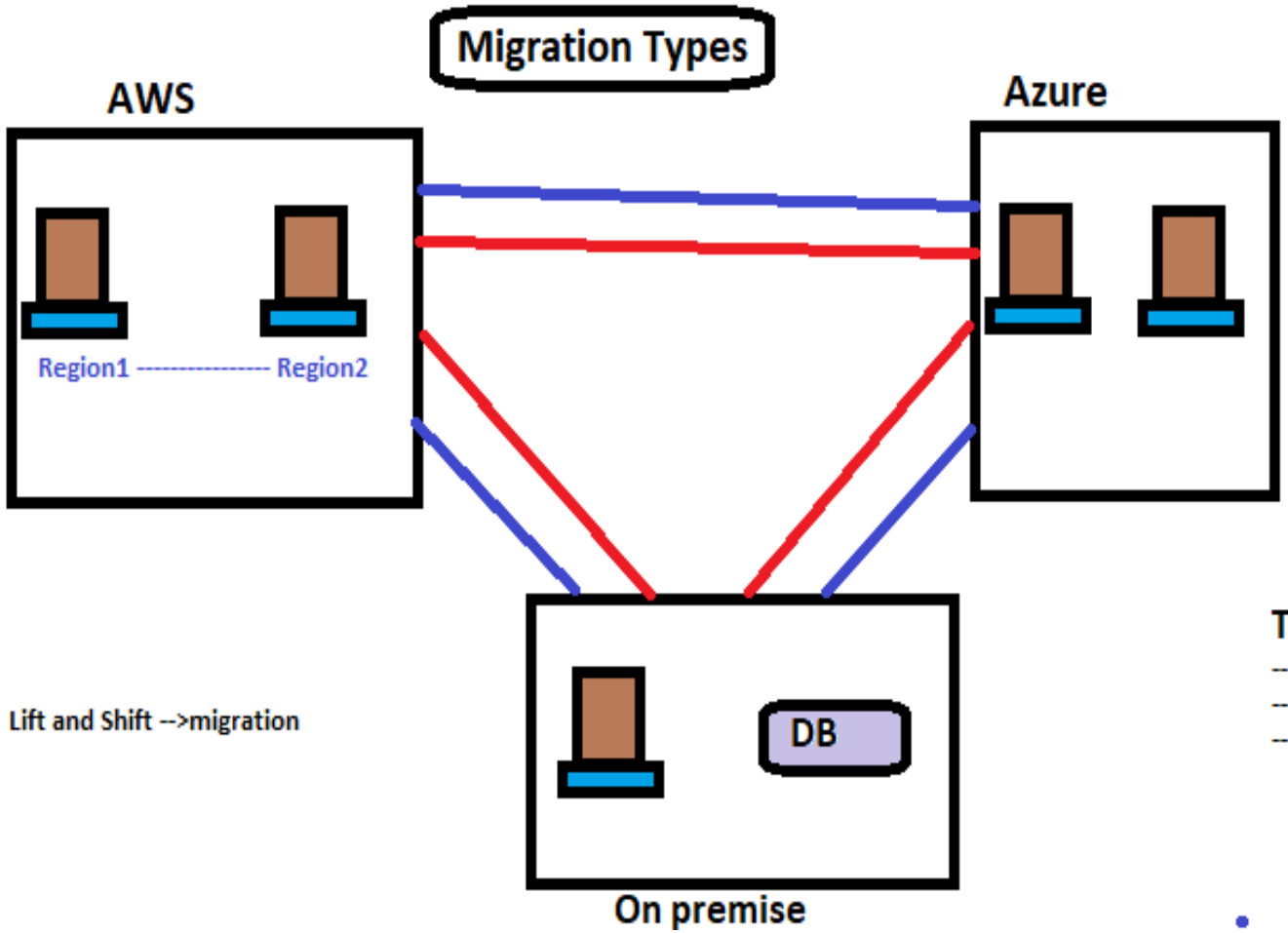

VS
On-Premise vs Cloud Computing Tutorial


Migration Types
AWS
Azure
Region1 ---------- Region2
DB
On premise
Lift and Shift -->migration
Types
-- On premise to cloud
--- cloud to on premise
--- cloud to cloud

Cloud Migration

- Developers and architects looking to build *new applications* in the cloud can simply design the components, processes and workflow for their solution, employ the API of the cloud of their choice, and leverage the latest cloud-based best practices1 for design, development, testing and deployment. In choosing to deploy their solutions in a cloud-based infrastructure like Amazon Web Services (AWS), they can take immediate advantage of instant scalability and elasticity, isolated processes, reduced operational effort, on-demand provisioning and automation.
- Cloud migration is the process of moving data, applications or other business elements to a cloud computing environment.

Cloud Migration Types

There are various types of cloud migrations an enterprise can perform.

- One common model is the transfer of data and applications from a local, **on-premises data center to the public cloud.**
- However, a cloud migration could also entail moving data and applications from one cloud platform or provider to another -- a model known as **cloud- to-cloud-migration.**
- A third type of migration is to un cloud -- also known as a reverse cloud migration or de-clouding where data or applications are moved off of the **cloud and back to a local data center.**

Types of Cloud Migration Strategies--1

- **Homogeneous Lift-and-Shift Migration**

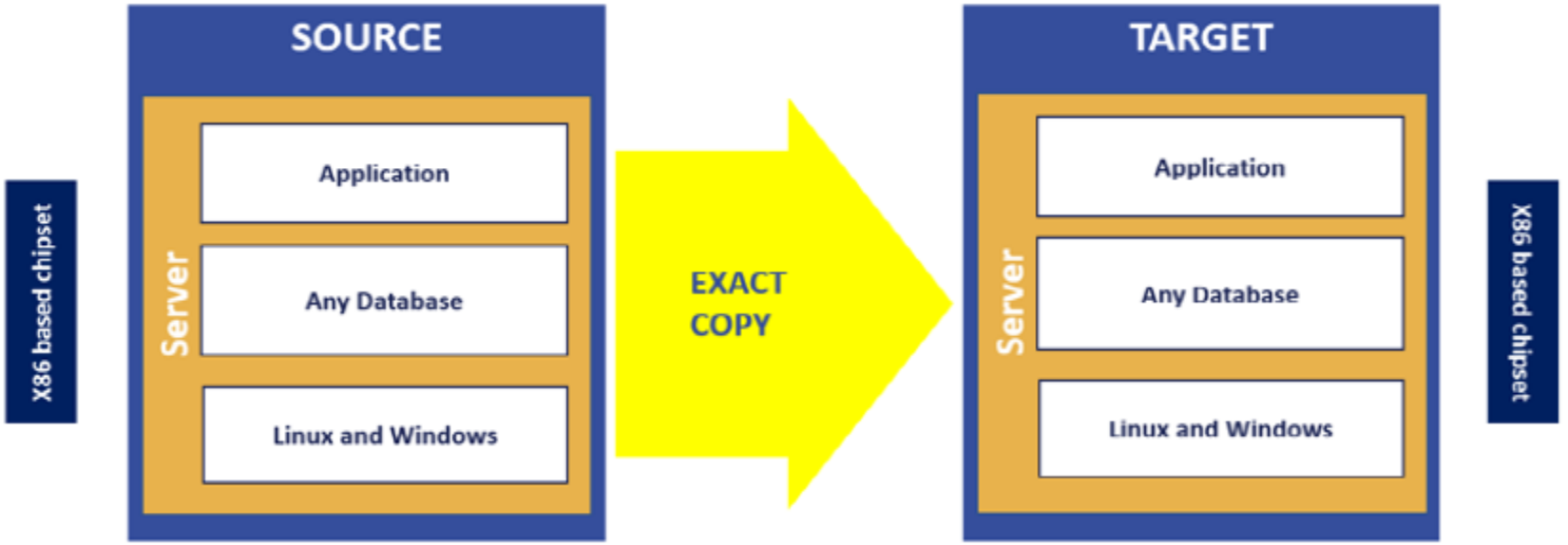


Figure 1.1 : Lift and Shift migrations move compute from on-premise to the cloud.

Source & Target can be on-premise, private or public cloud.

Types of Cloud Migration Strategies --1

- A lift-and-shift migration is exactly what it sounds like: lifting an application or landscape out of its current hosting environment and shifting it to another environment. For example, from on-premise hosting to a public cloud. Lift-and-shift migrations transport an exact copy of the top three layers: application, database and OS layer.
- A lift and shift from on-premise to cloud hosting also increases agility, simplifying future transformation. This makes it a first step for businesses with a conservative culture, or indecision about Long-term cloud strategy. However, as he points out, the lack of modification to your system also prevents you from harnessing certain cloud migration benefits in the short term. Re-platforming is really a variation of lift and shift, involving some further adjustments to improve your landscape in some way. In fact AWS General Manager refers to re-platforming as “lift-tinker-and-shift.” Re-platforming empower businesses to accomplishing important goals beyond re-hosting without greatly expanding the scope of the project.

Types of Cloud Migration Strategies --2

Technical migration maintains existing applications, but upgrades the OS and DB to meet certain some goals. As a cloud migration strategy, this is often done in part to harness cloud native features such as automation, but it also has other benefits

- **Technical Migration**

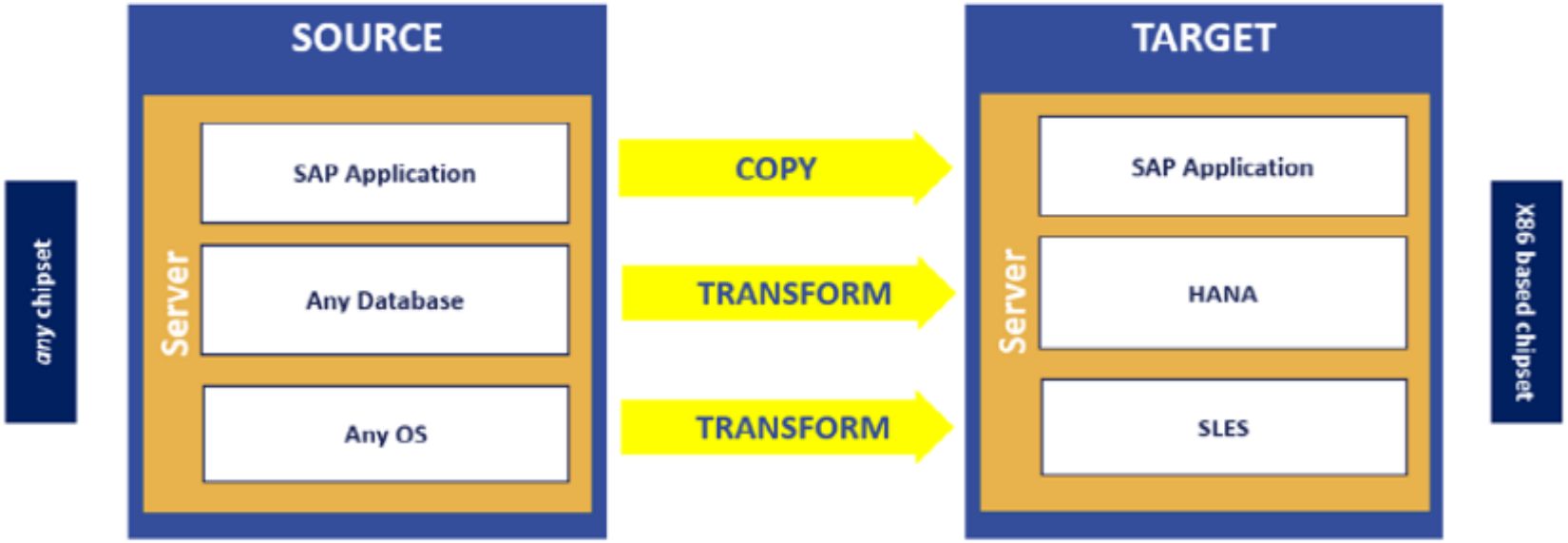


Figure1.2 :Source and Target can be on-premise, private or public cloud.

Types of Cloud Migration Strategies --3

In an application migration, the application layer is transformed, along with the OS and DB. There are three basic strategies for application migration: new system implementation, system conversion and landscape transformation.

- **Application Migration**

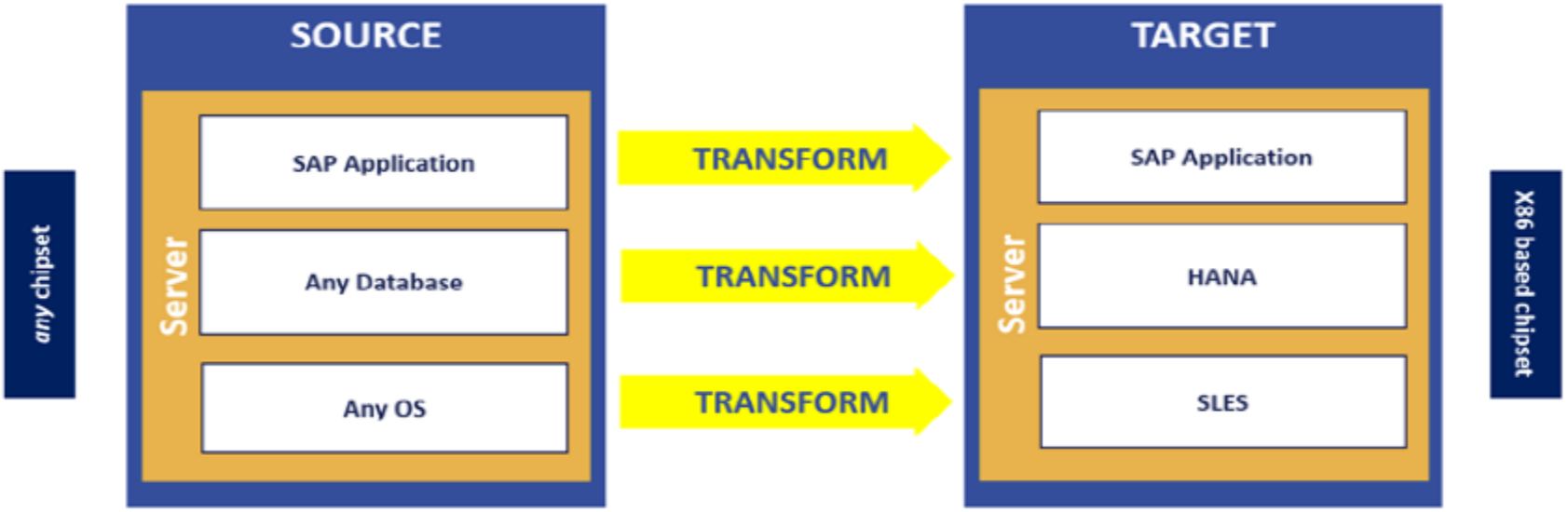
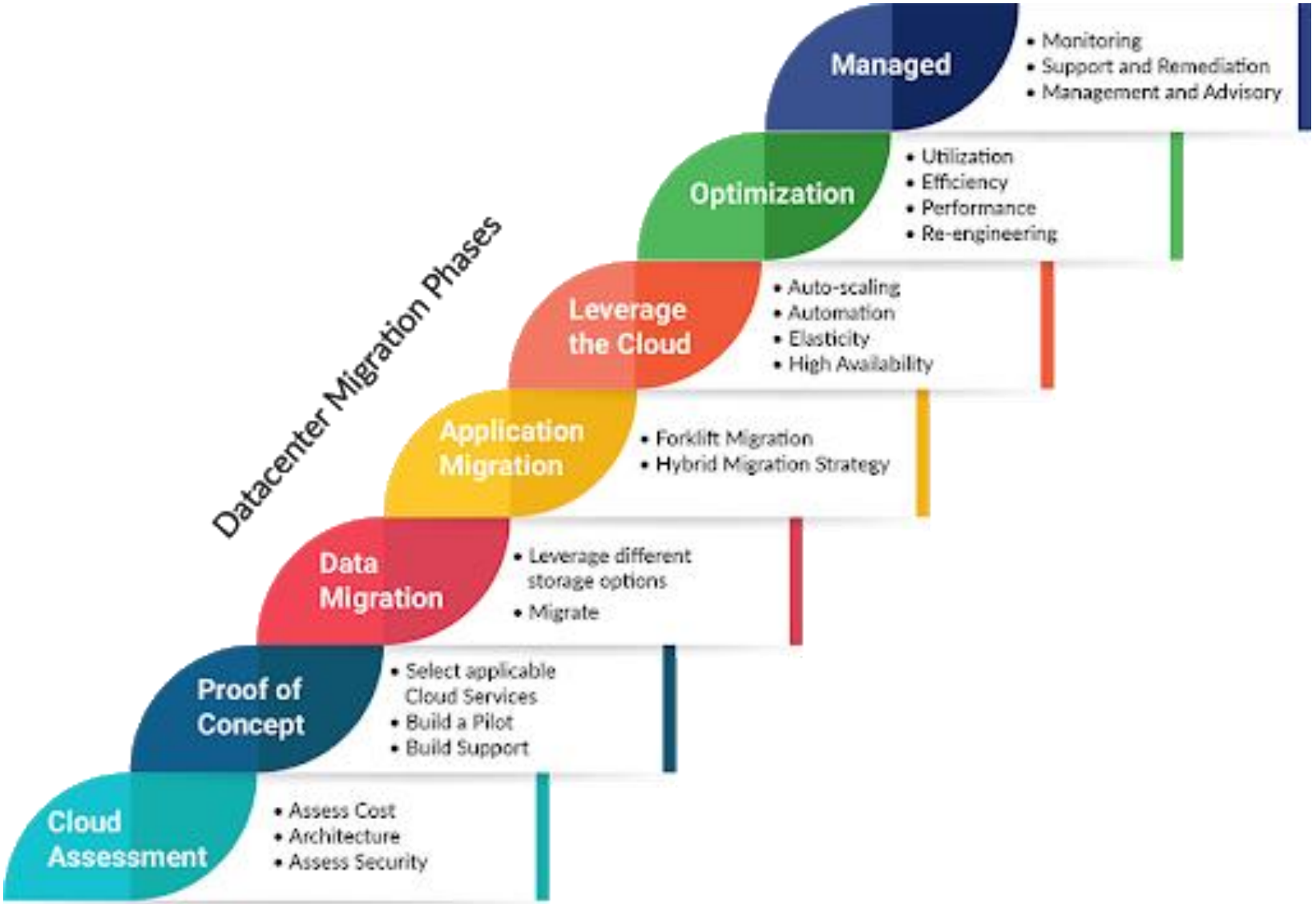


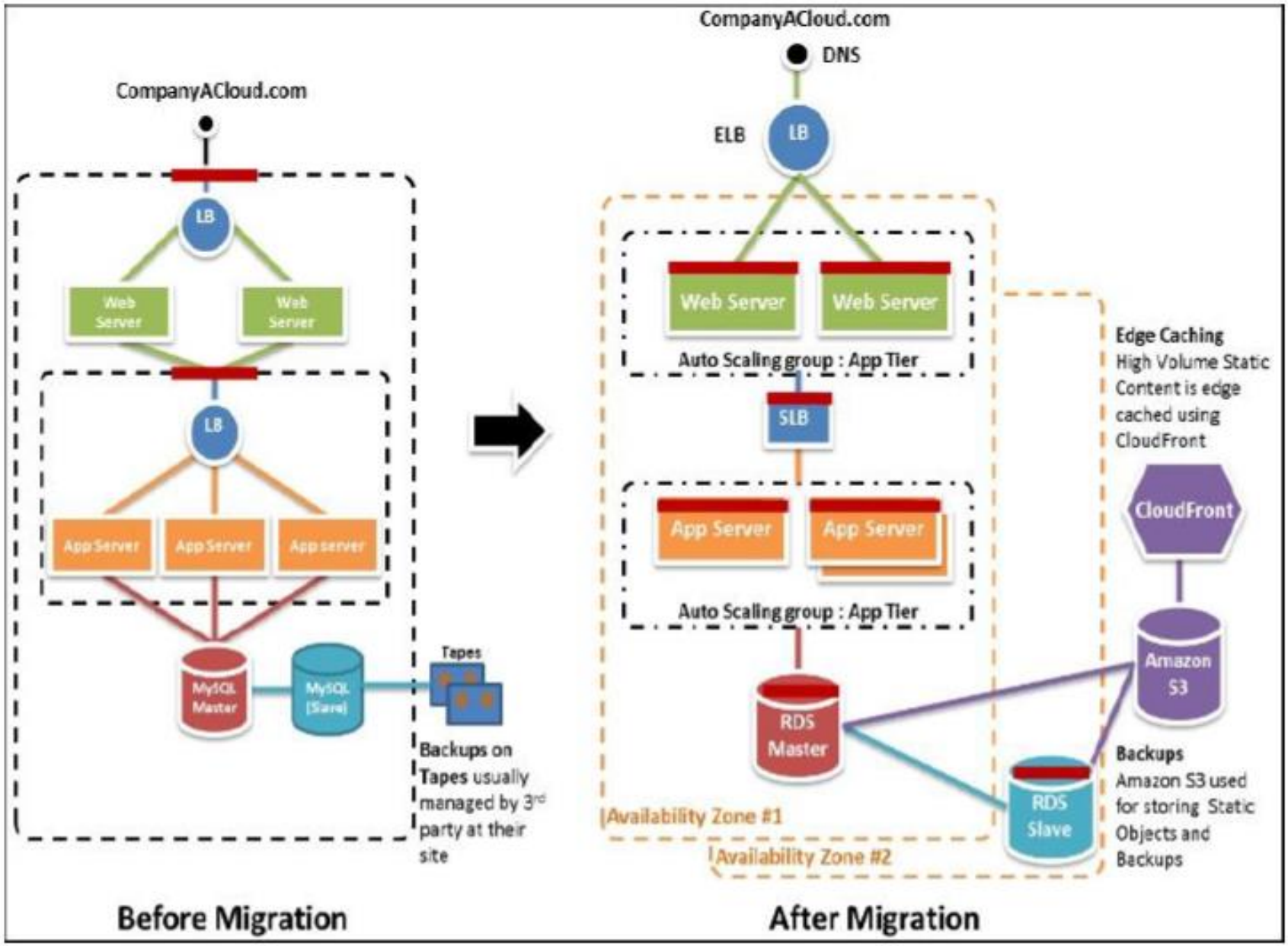
Figure 1.3:Source & Target can be on-premise, private or public cloud.

Phases of Cloud Migration

Cloud Migration Phases

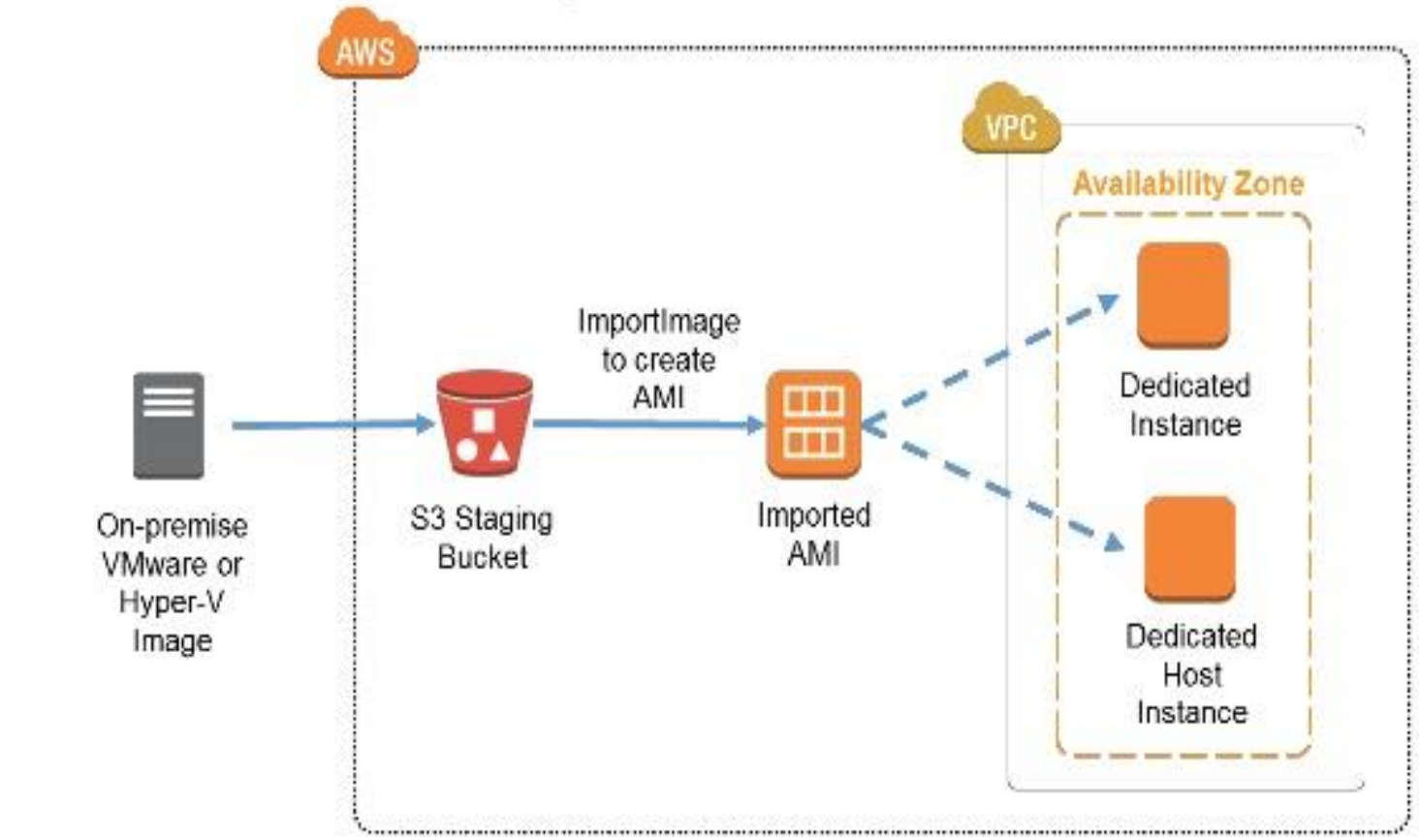
- The steps or processes an enterprise follows during a cloud migration vary based on factors such as the type of migration it wants to perform and the specific resources it wants to move. That said, common elements of a cloud migration strategy include evaluating performance and security requirements, choosing a cloud provider, calculating costs and making any necessary organizational changes.
- Depending on the details of the migration, an enterprise may choose to move an application to its new hosting environment without any modifications -- a model sometimes referred to as a lift-and-shift migration in other cases, it might be more beneficial to make changes to an application's code or architecture before performing the migration.
- In terms of data transfers from its local data center to the public cloud, an enterprise also has several options. These include the use of the public internet, a private/dedicated network connection or an offline transfer, in which an organization uploads its local data onto an appliance and then physically ships that appliance to a public cloud provider, which then uploads the data to the cloud.


Datacenter Migration Phases
Cloud Assessment
• Assess Cost
• Architecture
• Assess Security
Proof of Concept
• Select applicable Cloud Services
• Build a Pilot
• Build Support
Data Migration
• Leverage different storage options
• Migrate
Application Migration
• Forklift Migration
• Hybrid Migration Strategy
Leverage the Cloud
• Auto-scaling
• Automation
• Elasticity
• High Availability
Optimization
• Utilization
• Efficiency
• Performance
• Re-engineering
Managed
• Monitoring
• Support and Remediation
• Management and Advisory

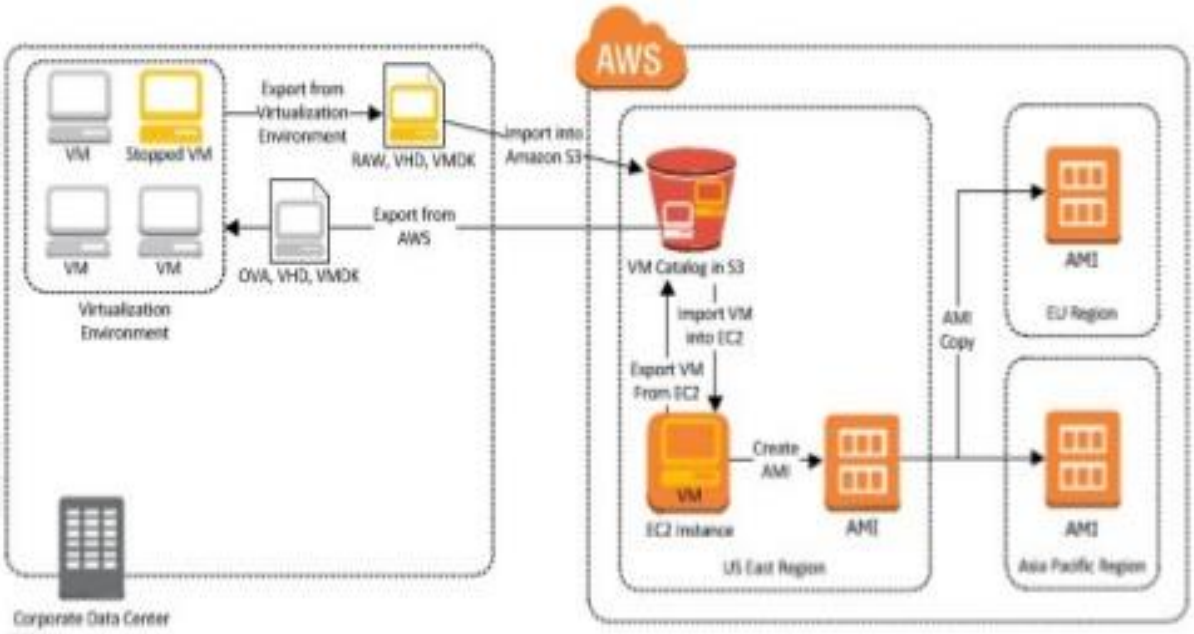

CompanyACloud.com
LB
Web Server
Web Server
LB
App Server
App Server
App server
MySQL Master
MySQL (Slave)
Tapes
Backups on Tapes usually managed by 3rd party at their site
Before Migration
CompanyACloud.com
DNS
ELB
LB
Web Server
Web Server
Auto Scaling group : App Tier
SLB
App Server
App Server
Auto Scaling group : App Tier
RDS Master
RDS Slave
Availability Zone #1
Availability Zone #2
Edge Caching
High Volume Static Content is edge cached using CloudFront
CloudFront
Amazon S3
Backups
Amazon S3 used for storing Static Objects and Backups
After Migration


vmware
amazon
web services

AWS VM Import/Export Demo with PowerShell



What is VM Import/Export



http://docs.aws.amazon.com/AWSEC2/latest/UserGuide/UsingVirtualMachinesinAmazonEC2.html

VM Migration

1) Download AWS CLI

2) Install AWS CLI

3) AWS console—my account—my security credential --Get access key (root user) to configure AWS CLI

Open cmd –

aws configure

Paste access key

Paste secret key

Region: ap-south-1

Output format: table

VM Migration

4) a) https://documentation.commvault.com/commvault/v11/article?p=108828.htm –

and copy the code

b) Copy con **trust-policy.json**

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

VM Migration

4) c) Open IAM --Role -- check “vmimport” is created –open it –and add permission – vmexportimportforawsconnector, administratoraccess.

c) Open aws cli and paste

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

Note: please check the file path

6) In on premise system—open VMware –open the ubuntuvm- configure some application and create some files – shoudown the VM

Export vmmachine –format -.vmdk

7) Create s3 bucket(onpremisetocloud) and upload the image

VM Migration

8) Follow --https://docs.aws.amazon.com/vm-import/latest/userguide/vmimport-image-import.html#import-vm-image

a) copy con containers.json

```
[
  {
    "Description": "On premise VM",
    "Format": "vmdk",
    "UserBucket": {
        "S3Bucket": "onpremisetocloud",
        "S3Key": "Ubuntu-disk1.vmdk"
    }
}]
```

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

VM Migration

9) Now image is importing from s3 to ec2-AMI –console ---it will take around 20 to 25 minutes

10) To check the status

aws ec2 describe-import-image-tasks --import-task-ids import-ami-1234567890abcdef0

11) Now image will show in ec2-ami console –launch instance from it and check the data

Note: Download cmd version of ubuntu 18

https://releases.ubuntu.com/18.04.5/