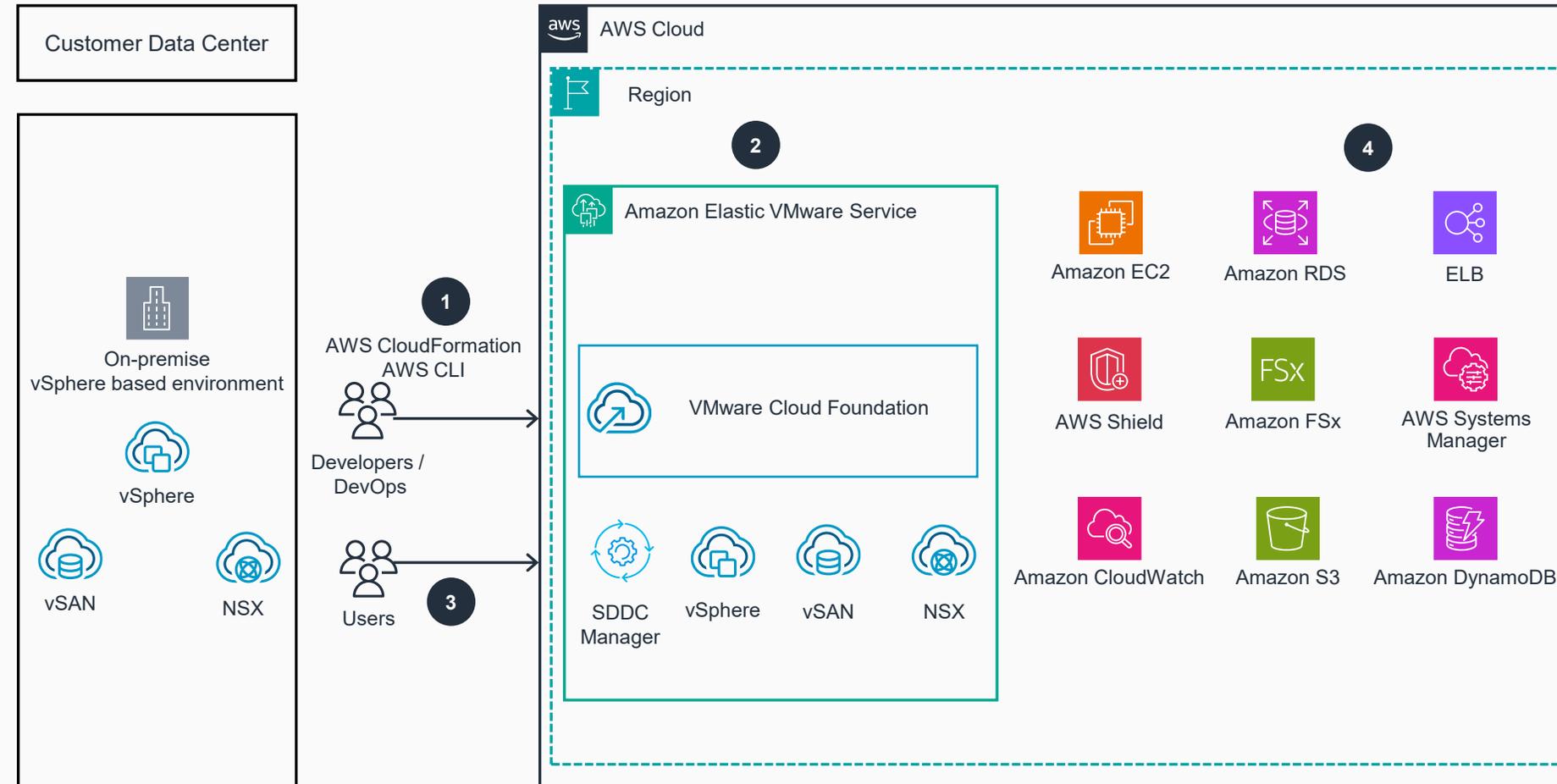# Guidance for Automated Setup for Elastic VMware Service

This reference architecture shows the mapping of on-premise VMware components to Amazon Elastic VMware Service core components and deployment of Amazon EVS with dependencies using AWS CloudFormation.

**Customer Data Center**

On-premise vSphere based environment

vSphere

vSAN          NSX

**AWS Cloud**

**Region**

( 2 )

**Amazon Elastic VMware Service**

VMware Cloud Foundation

SDDC Manager    vSphere    vSAN    NSX

( 1 )
AWS CloudFormation
AWS CLI

Developers / DevOps

( 3 )
Users

( 4 )

Amazon EC2         Amazon RDS         ELB

AWS Shield         Amazon FSx         AWS Systems Manager

Amazon CloudWatch    Amazon S3    Amazon DynamoDB

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( 1 ) Developer/DevOps users use the AWS SDK, AWS CLI, and **AWS CloudFormation** for Infrastructure as Code (IaC) deployment of solution. These automation tools enable programmatic provisioning of **Amazon Elastic VMware Service (Amazon EVS)** through standardized AWS API and declarative CloudFormation template.

( 2 ) CloudFormation provisions **Amazon EVS** as the primary service, integrated with essential AWS infrastructure services including **Amazon Virtual Private Cloud (Amaozn VPC)** for network isolation, **Amazon VPC Route Server**, **Amazon Route 53** for DNS resolution, and others.

( 3 ) Using **Amazon EVS**, users can interact with familiar VMware tools and services: SDDC Manager for infrastructure management, vSphere for virtualization, vSAN for storage, NSX for networking, along with other AWS managed and core services that can integrate with the **Amazon EVS** environment.

( 4 ) Multiple AWS services can be integrated with Amazon EVS such as: Amazon EC2, Amazon Elastic Load Balancing (ELB), Amazon FSx for storage, AWS System Manager, Amazon Simple Storage Service (S3), Amazon DynamoDB, Amazon Cloud Watch and others.

**AWS Reference Architecture**

# Guidance for Automated Setup for Elastic VMware Service

This reference architecture shows setting up network access to Amazon EVS via AWS Direct Connect and AWS Transit Gateway services.
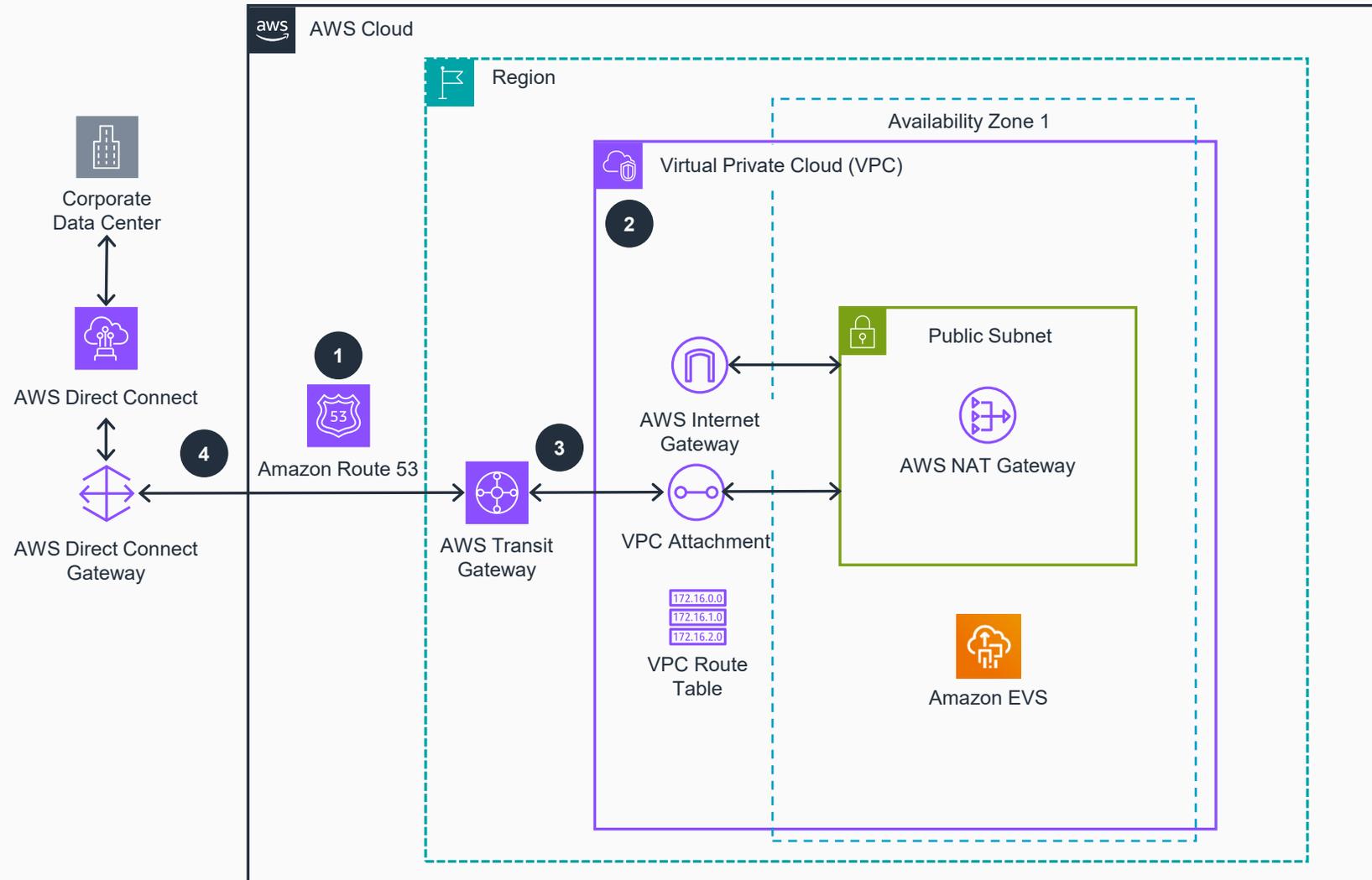


**1** Create **Amazon Route 53** forward and reverse hosted zones in the target AWS Region. Set up **Amazon Route 53** inbound resolver endpoints so the **Amazon Elastic Vmware (Amazon EVS)** management components and ESXi hosts can resolve DNS names properly (implemented by CloudFormation template, see Slide 1).

**2** **Amazon Virtual Private Cloud (Amazon VPC)** is built with service access and public subnets in a single Availability Zone. Amazon Internet Gateway and NAT Gateway provide outbound internet access for private subnets. A custom DHCP Option Set is created to use the inbound resolvers from step 1 for DNS resolution and applied to the VPC. Deploy **Amazon VPC** Route Server with two endpoints in the service access subnet to handle BGP route exchange between **Amazon EVS** overlay networks and AWS underlay infrastructure.
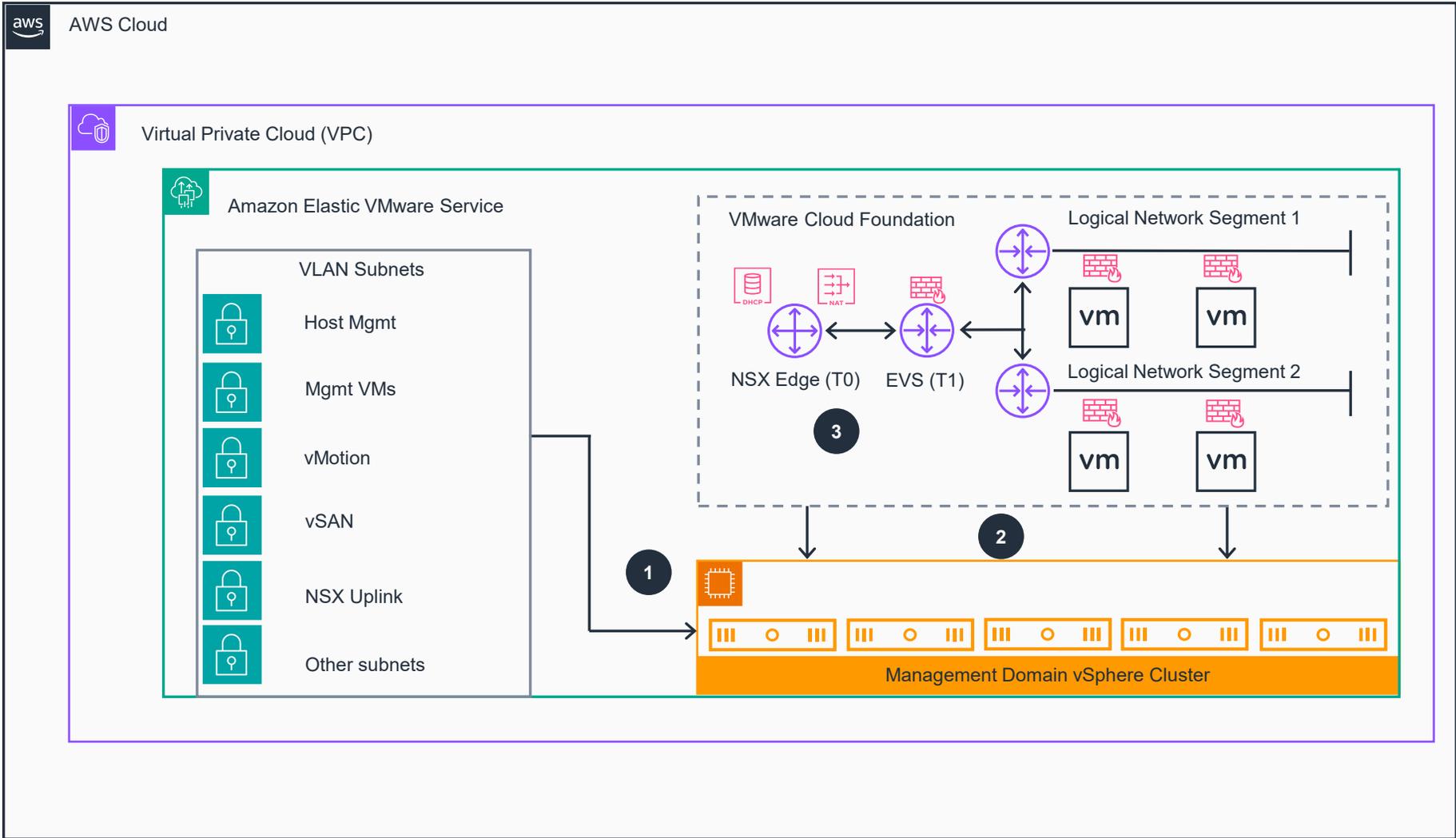
**3** Provision **AWS Transit Gateway** with **Amazon VPC** attachment and connect to the service access subnet.

**4** For external connectivity, users may set up **AWS Direct Connect Gateway** to connect their corporate data center to the AWS Region and configure BGP routing to advertise routes between the on-premises network and **AWS Transit Gateway** for **Amazon EVS** workload migration.

**AWS Reference Architecture**

# Guidance for Automated Setup for Elastic VMware Service

This reference architecture shows internal connectivity and network topology of Amazon Elastic VMware Service components.



**AWS Cloud**

**Virtual Private Cloud (VPC)**

**Amazon Elastic VMware Service**

**VLAN Subnets**
- Host Mgmt
- Mgmt VMs
- vMotion
- vSAN
- NSX Uplink
- Other subnets

**VMware Cloud Foundation**

DHCP   NAT

NSX Edge (T0)   EVS (T1)   **3**

Logical Network Segment 1

vm   vm

Logical Network Segment 2

vm   vm

**2**

**1**

Management Domain vSphere Cluster

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**1** **Amazon Elastic VMware Service (Amazon EVS)** will provision **Amazon EC2** i4i.metal type instances for ESXi hosts using user provided Broadcom keys and credentials. **Amazon EVS** will configure the initial VLAN subnets for host management, vMotion, vSAN, and NSX overlay networks.

**2** The **Amazon EVS** deployment process includes initializing vSphere cluster and deploying the VMware Cloud Foundation software including the vCenter Server, SDDC Manager, and Cloud Builder appliances in the VM Management VLAN network segments.

**3** The **Amazon EVS** deployment process will also deploy a three-node NSX Manager Cluster and a two-node NSX Edge Cluster.

**AWS Reference Architecture**