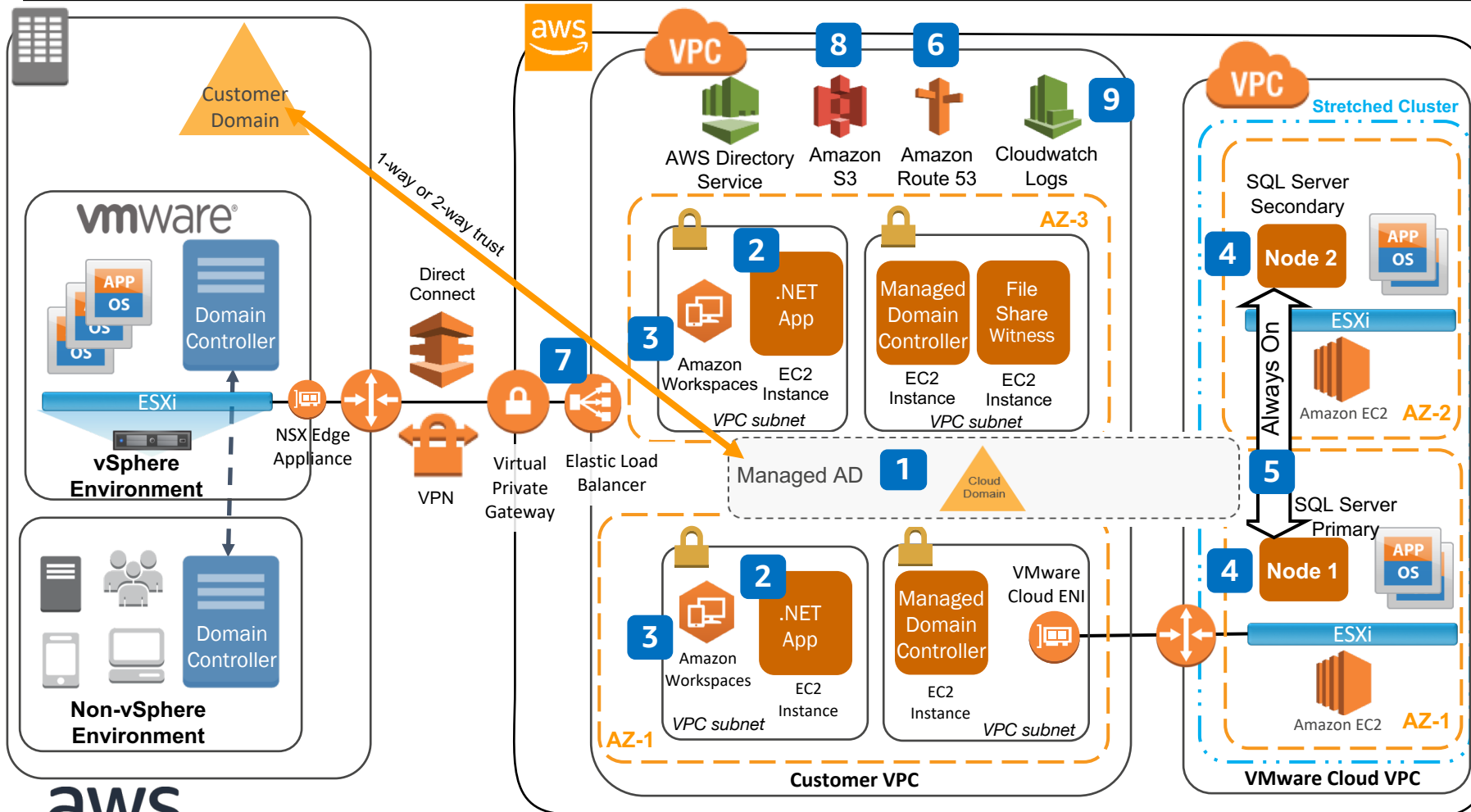# Microsoft SQL Server Reference Architecture

AWS and VMware Cloud Environment

Provides high performance and availability in a hybrid environment with the SQL Server Always On Availability Group feature.

Customer Domain

1-way or 2-way trust

vSphere Environment

Non-vSphere Environment

Domain Controller

ESXi

NSX Edge Appliance

Direct Connect

VPN

Virtual Private Gateway

Elastic Load Balancer

AWS Directory Service

Amazon S3

Amazon Route 53

Cloudwatch Logs

AZ-3

.NET App

Amazon Workspaces

EC2 Instance

VPC subnet

Managed Domain Controller

File Share Witness

EC2 Instance

EC2 Instance

VPC subnet

Managed AD

Cloud Domain

AZ-1

.NET App

Amazon Workspaces

EC2 Instance

VPC subnet

Managed Domain Controller

VMware Cloud ENI

EC2 Instance

VPC subnet

Customer VPC

Stretched Cluster

SQL Server Secondary

Node 2

ESXi

Amazon EC2

AZ-2

Always On

SQL Server Primary

Node 1

ESXi

Amazon EC2

AZ-1

VMware Cloud VPC

AWS Reference Architecture

#	Description
1	AWS Directory Service for Microsoft Active Directory (AWS Microsoft AD) provides a managed AD for the **Customer VPC** and the **VMware Cloud VPC**.
2	.NET applications are seamlessly domain-joined and multi-AZ.
3	Users of Amazon Workspaces have their cloud desktops seamlessly domain-joined.
4	Microsoft SQL Server is deployed on **VMware Cloud VPC** with local NVMe SSDs.
5	The SQL Server Always On Availability Group feature is deployed on a stretched cluster in an availability group.
6	Route 53 updates the DNS A record of the listener from Primary to Secondary (or vice versa) in the event of a failover.
7	An Elastic Load Balancer distributes traffic across multi-AZ .NET applications.
8	Amazon S3 is used to back up SQL Server.
9	Cloudwatch is used to monitor and provide metrics on instances, the load balancer, and network devices.