

AWS re:Invent

DAT383

# Running on-premises and cloud databases with Amazon RDS on VMware

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# Agenda

Introduction: What is Amazon Relational Database Service (Amazon RDS) on VMware?

Getting started – Using the installer

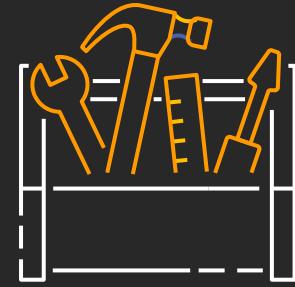
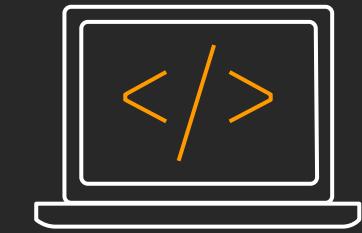
Creating your first database

Demo

Q&A

# Introduction

# Customers want the **same** experience across on-premises and the cloud



Managed,  
available, reliable,  
secure, and high-  
performance  
databases

Same  
operational  
consistency

Same services  
and APIs

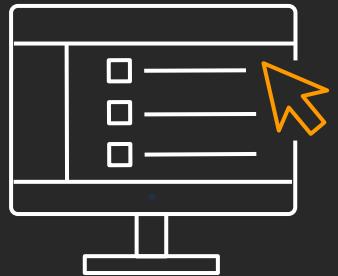
Same tools for  
automation,  
deployments,  
and monitoring

Same pace of  
innovation as in  
the cloud

# Why Amazon RDS on-premises?



Databases that are managed, monitored, and operated by AWS. Reduce operational cost and improve DBA efficiency



Single pane of management using the same APIs, automation, and tools on premises and in AWS Regions



Easily manage a hybrid-cloud database fleet and future-proof your database investment

# Amazon RDS on VMware

## Deploy managed databases in on-premises environments

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### **Easy to administer**

Easily deploy and maintain OS and DB software; built-in monitoring

### **Performant & scalable**

Scale compute and storage with a few clicks; minimal downtime for your application

### **Available & durable**

Health monitoring detects and recovers unhealthy instances; automated backup, snapshots, and failover

### **Leverages existing infrastructure**

Uses familiar VMware infrastructure and operations tooling

# Database engine versions supported

Available in us-east-1 (N. Virginia) Region

MySQL 5.7

PostgreSQL 10.9

Microsoft SQL  
Server 2006 SP2  
Enterprise Edition  
(On-premises  
customer provided  
media and license)

# Getting started

# Getting started to use the service

Create Custom AZ and download Installer to onboard on-premises vSphere cluster

The screenshot shows the 'Custom AZs' page in the Amazon RDS console. At the top left, there's a breadcrumb navigation: 'RDS > Custom AZs'. Below the navigation, a prominent red warning icon with an exclamation mark is displayed next to the text: 'You have unregistered custom AZs in us-east-1.' A detailed explanatory message follows: 'Register a custom AZ using the Installer download for us-east-1. The installer validates your on-premises VMware setup and installs Amazon RDS on VMware components. The custom AZ is active after Amazon RDS on VMware installation is complete.' A blue 'Info' link is provided for more details. Below this message is a blue 'Download Installer' button.

**Custom AZs**

Filter by custom AZ name

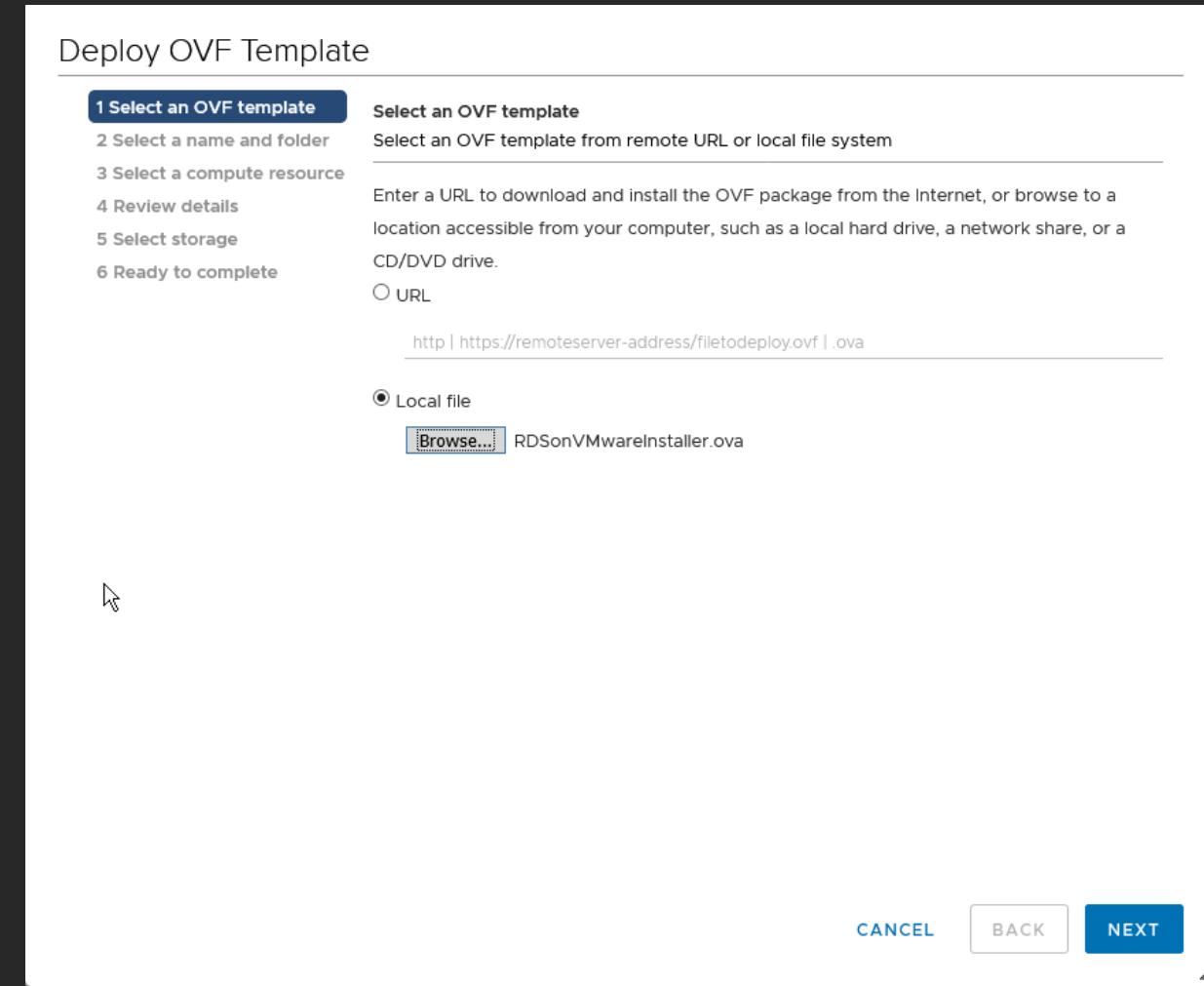
C Delete Import media Create custom AZ

< 1 > |

Custom AZ name	▲	Custom AZ identifier	AZ Status	▼	VPN name	VPN gateway IP	VPN originator IP
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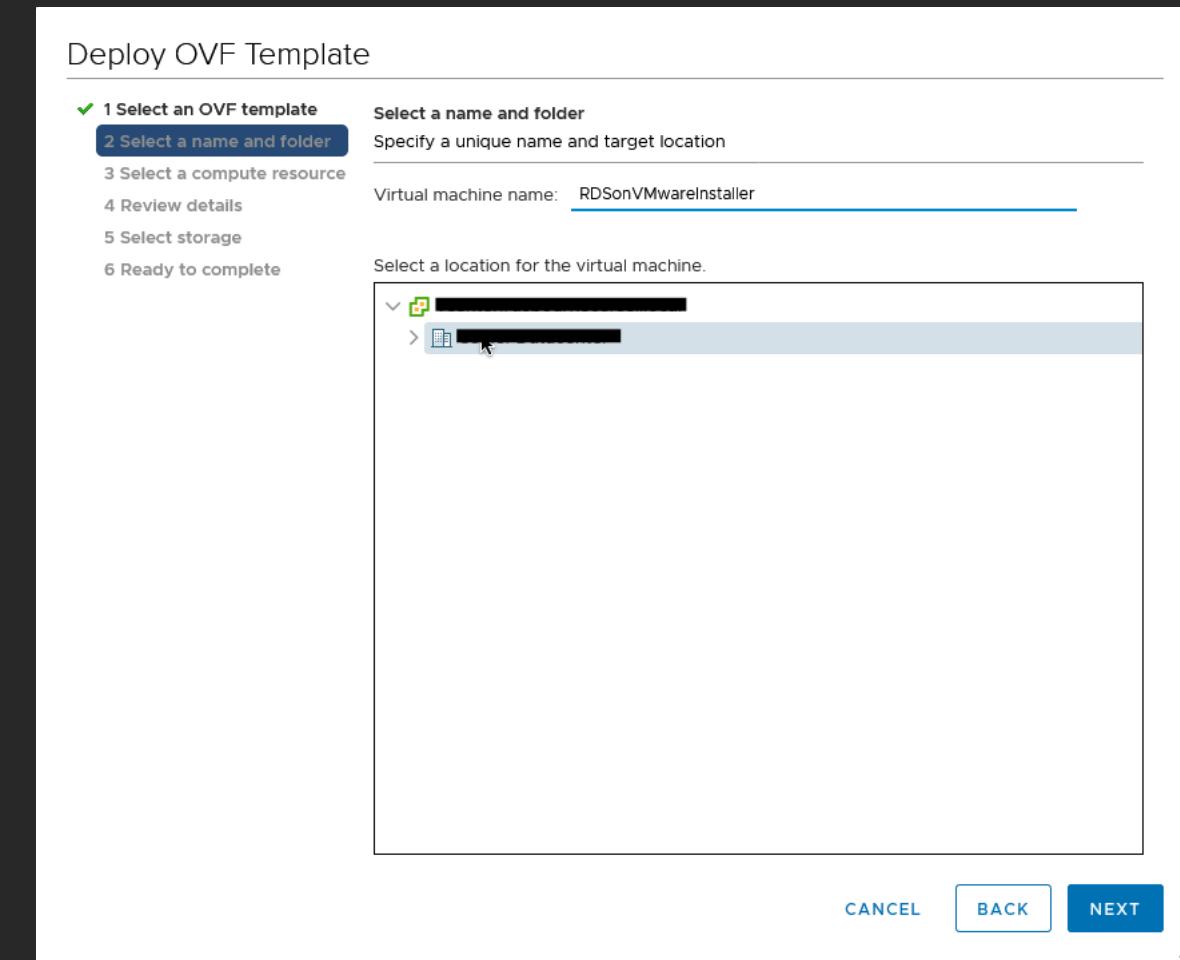
# Getting started – Using the installer

## Deploy installer VM in on-premises vCenter



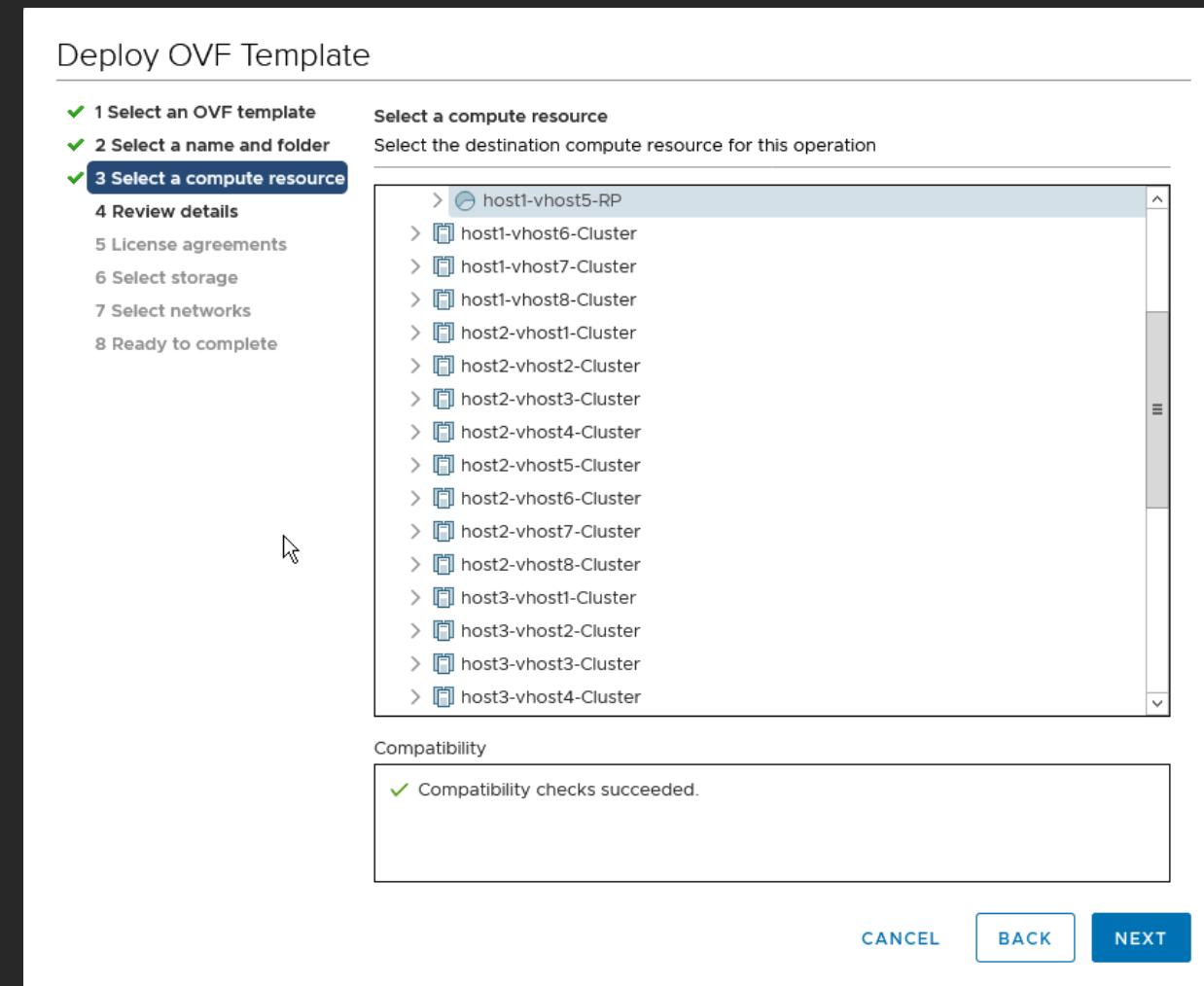
# Getting started to use the service - continued

## Select the data center



# Getting started to use the service - continued

## Select the cluster



# Getting started to use the service - continued

## Review details

Deploy OVF Template

✓ 1 Select an OVF template  
✓ 2 Select a name and folder  
✓ 3 Select a compute resource  
**4 Review details**  
5 License agreements  
6 Select storage  
7 Select networks  
8 Ready to complete

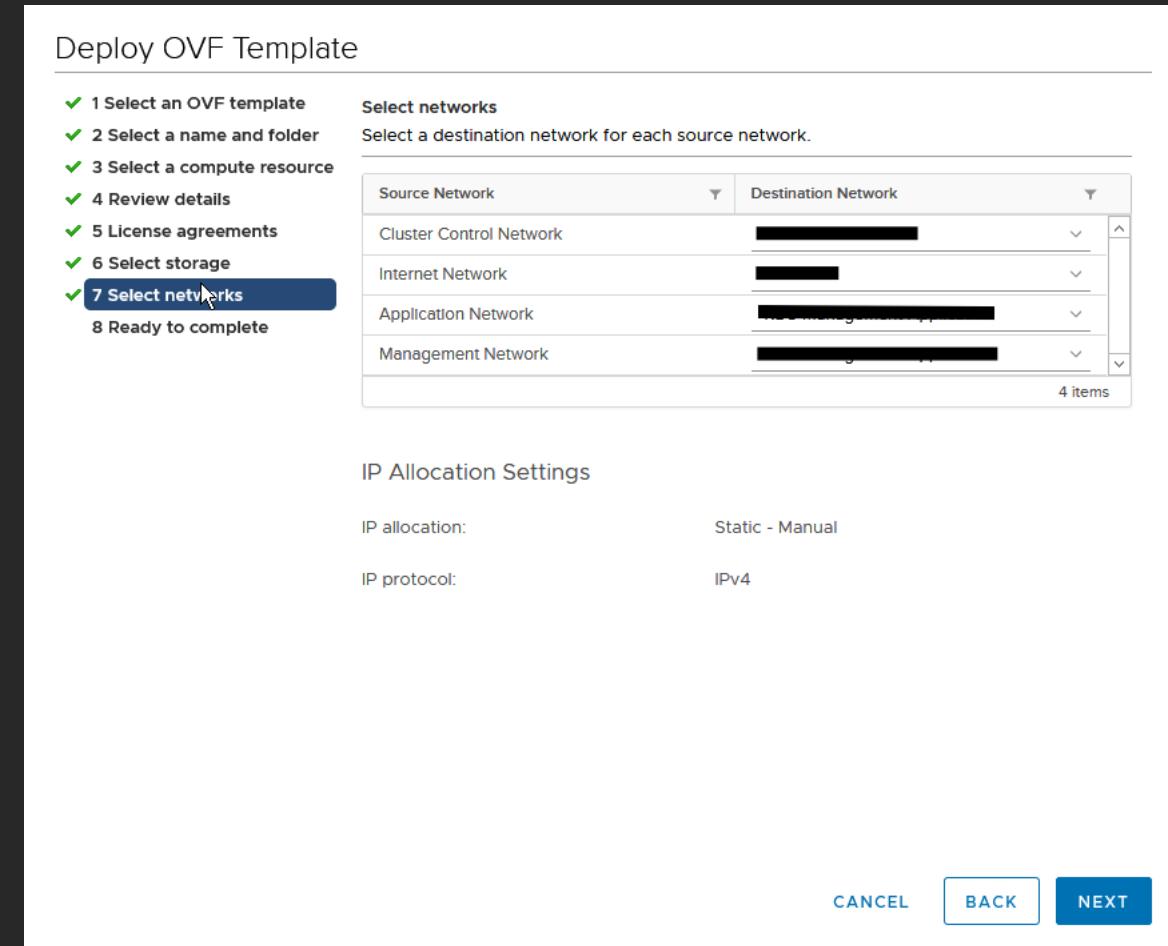
Review details  
Verify the template details.

Publisher	No certificate present
Product	RDS on VMware Deployer
Version	1.0.0.33209
Vendor	VMware Inc.
Description	RDS on VMware Deployer
Download size	4.0 GB
Size on disk	4.5 GB (thin provisioned) 12.0 GB (thick provisioned)

CANCEL BACK NEXT

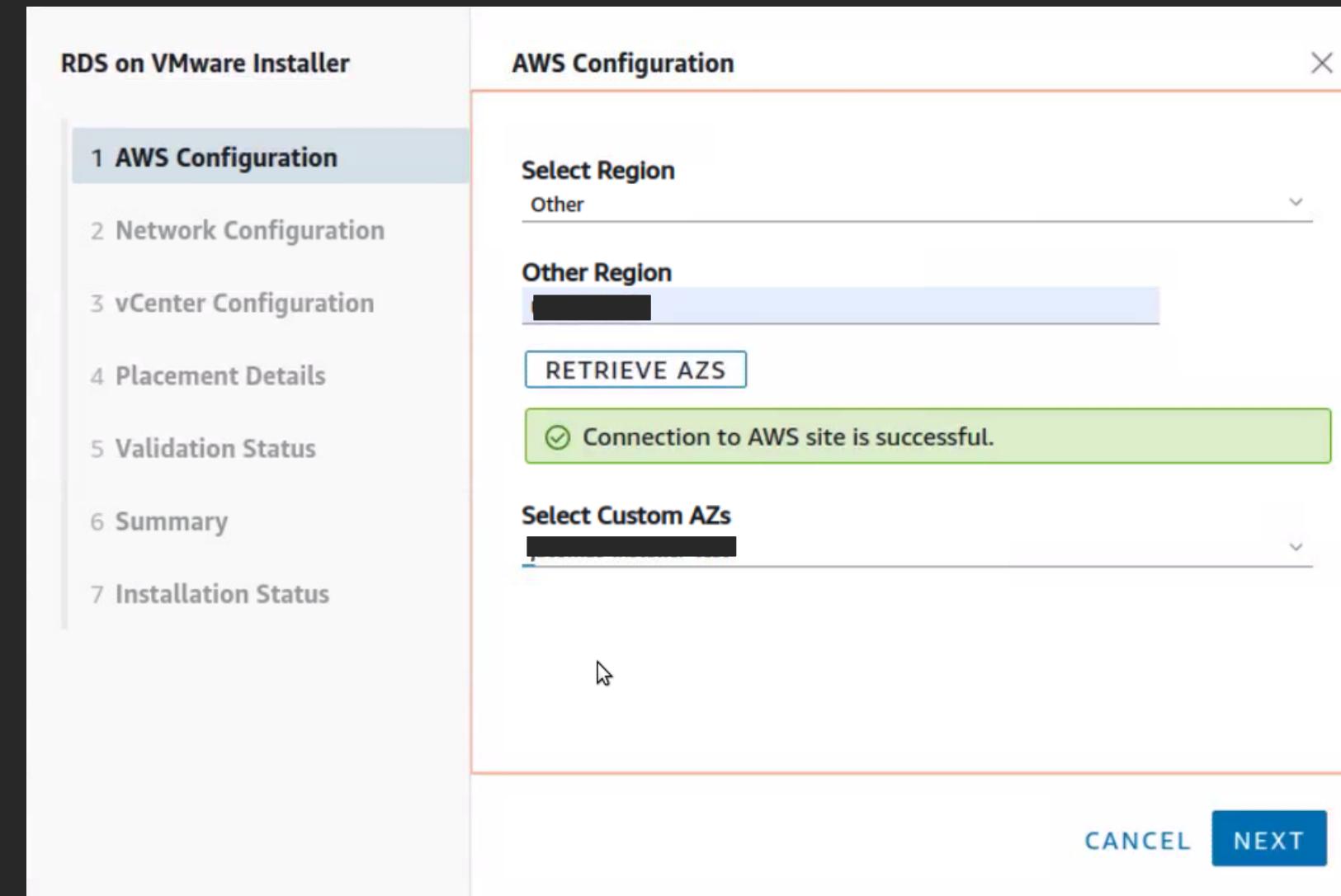
# Getting started to use the service - continued

## Select the networks



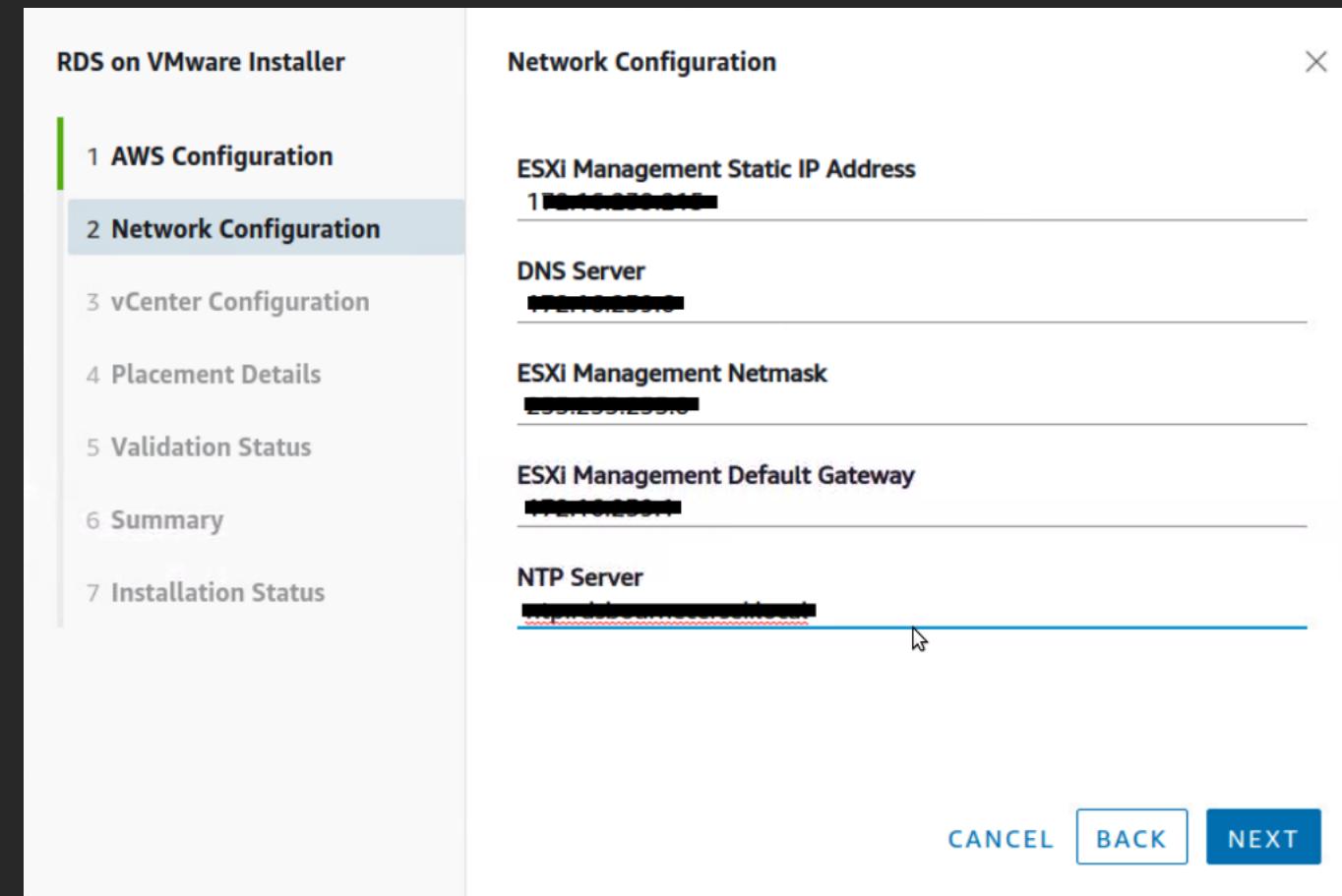
# Run installer – Configuration

## Enter AWS configuration



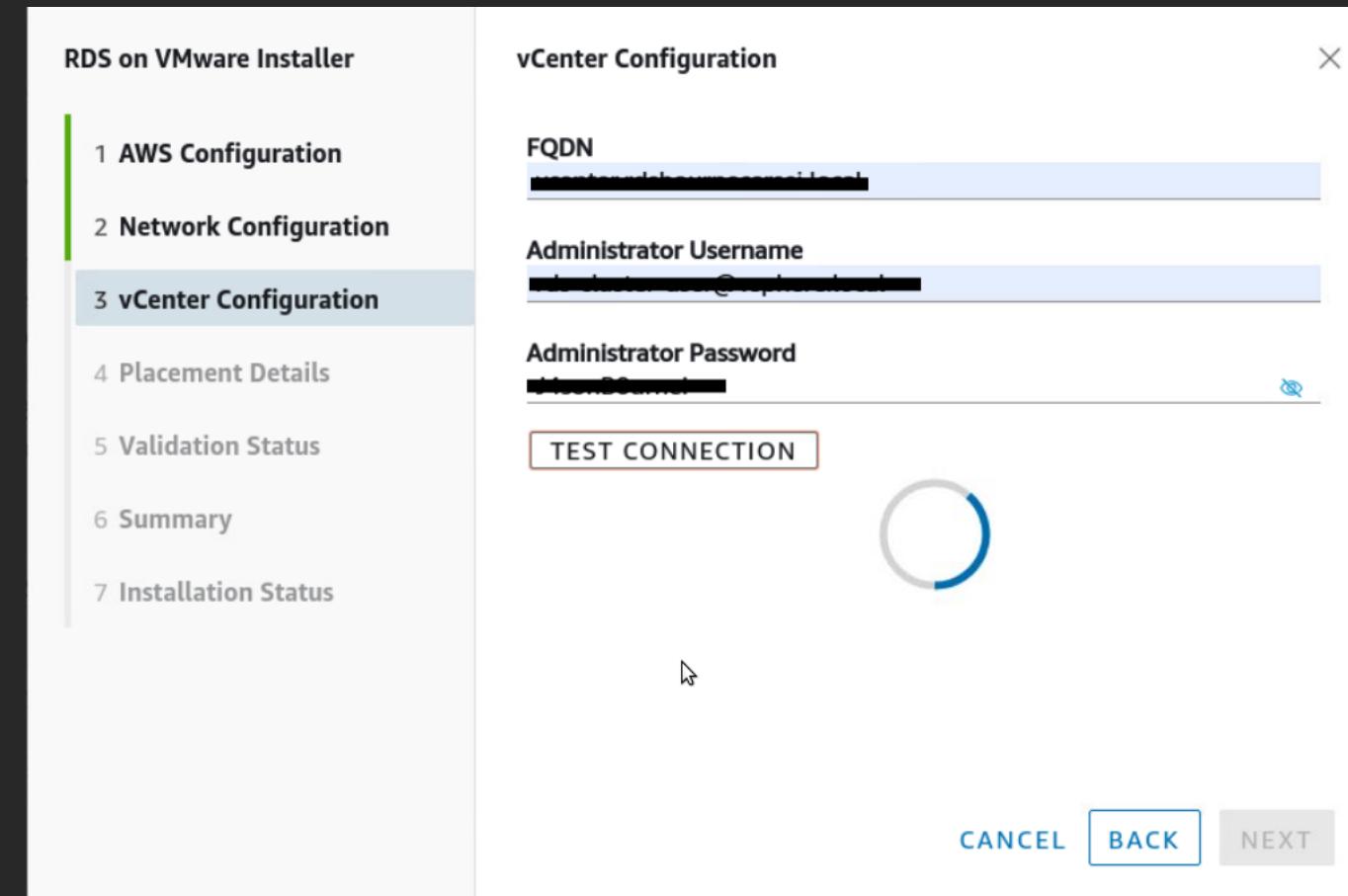
# Run installer – Configuration

## Enter network configuration



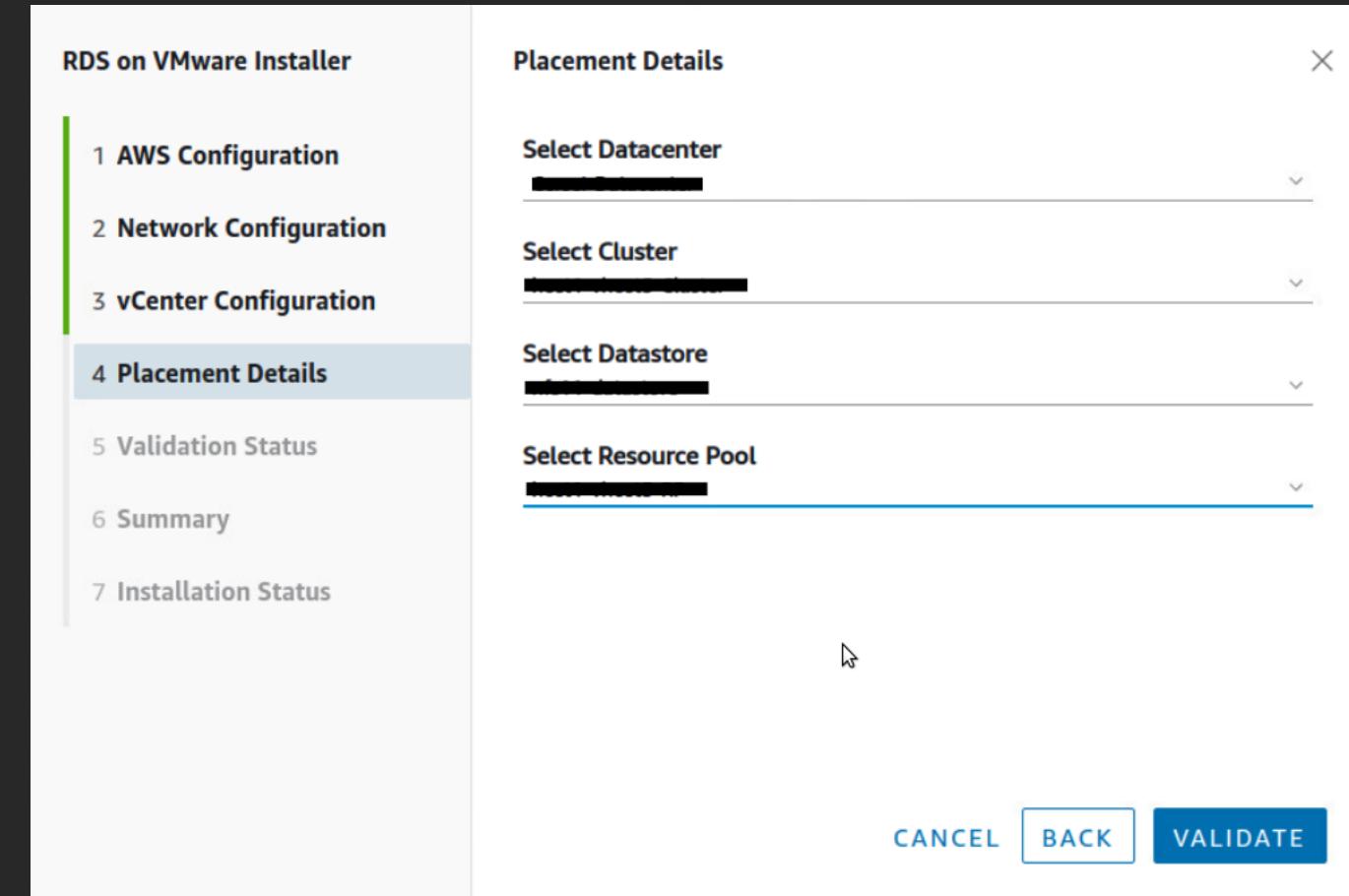
# Run installer – Configuration

## Enter vCenter configuration



# Run installer – Configuration

## Enter placement details



# See installer setting up onboarding environment for you

## Validate your settings

RDS on VMware Installer

1 AWS Configuration  
2 Network Configuration  
3 vCenter Configuration  
4 Placement Details  
**5 Validation Status**  
6 Summary  
7 Installation Status

**Validation Status**

- ⚠ Minimum number of ESXi hosts on the cluster
- ✓ vCenter Version
- ✓ DRS on Cluster
- ✓ Shared Datastore
- ✓ Free space on Datastore
- ✓ Replication enabled
- ⚠ NTP Server
- ✓ Application and Cluster Control Network on distributed switch
- ✓ DHCP on Application network
- ✓ DHCP on Internet Network
- ✓ Unique VLAN id for Cluster Control Network
- ✓ Cluster Control Network has no DHCP

CANCEL BACK NEXT

RDS on VMware Installer

1 AWS Configuration  
2 Network Configuration  
3 vCenter Configuration  
4 Placement Details  
5 Validation Status  
**6 Summary**  
7 Installation Status

**Summary**

AWS Configuration	
Region	[REDACTED]
Custom AZ	[REDACTED]

Network Configuration	
ESXI Management Static IP Address	[REDACTED]
DNS Server	[REDACTED]
ESXI Management Netmask	[REDACTED]
ESXI Management Default Gateway	[REDACTED]
NTP Server	[REDACTED]

vCenter Configuration	
FQDN	[REDACTED]
Host IP	[REDACTED]
Administrator Username	[REDACTED]

Placement Details	
-	[REDACTED]

CANCEL BACK INSTALL

# Custom AZ is active

Installer will bring the custom AZ active

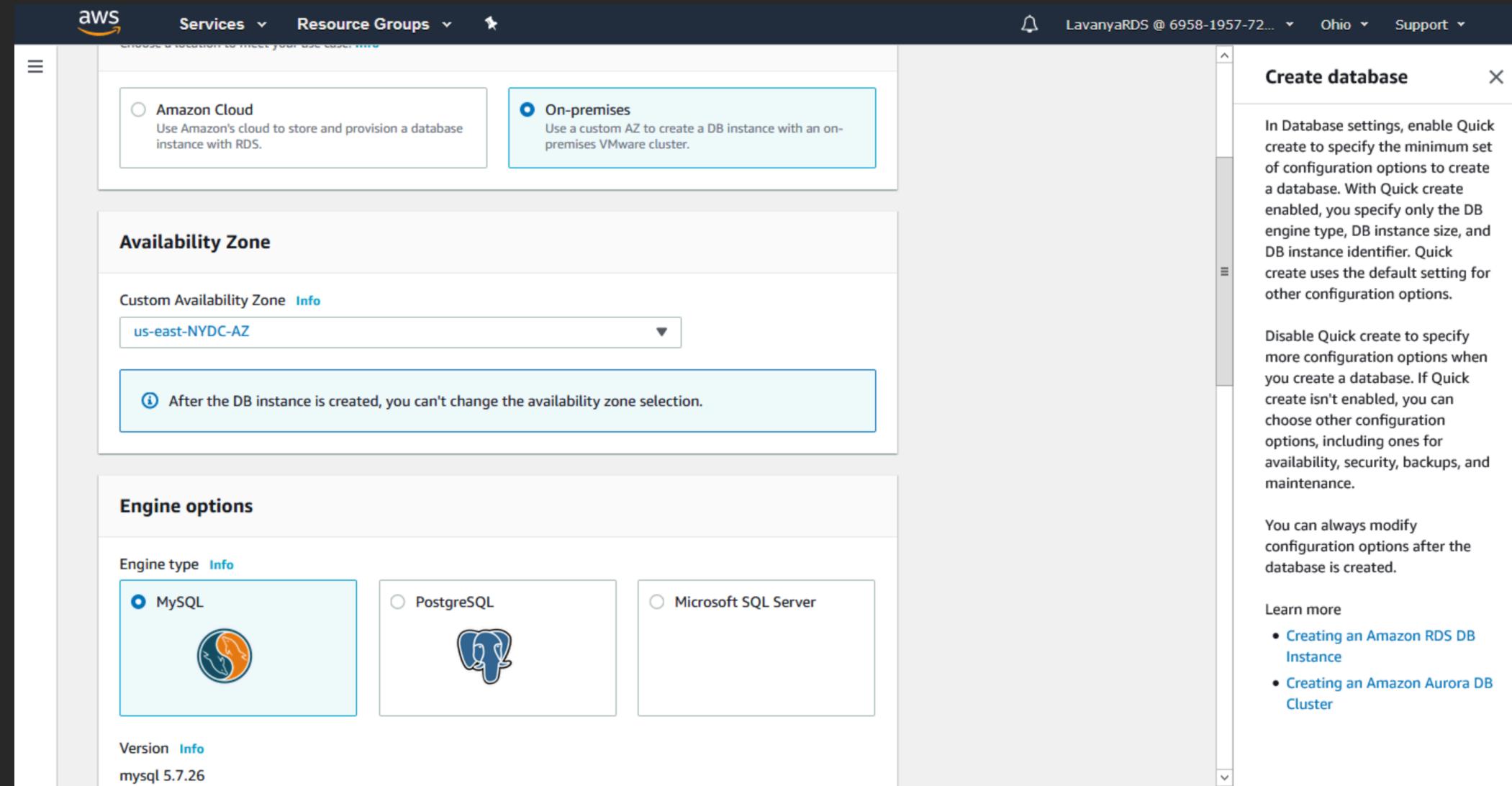
The screenshot shows the AWS RDS Custom AZs management interface. At the top, there is a warning message: "You have unregistered custom AZs in us-east-2. Register a custom AZ using the Connectivity Suite download for us-east-2. The custom AZ is active after you download and deploy the images contained in the Connectivity Suite to a VMware cluster. [Info](#)". Below this, there is a "Download Connectivity Suite" button.

The main section is titled "Custom AZs". It includes a search bar labeled "Filter by custom AZ name" and a set of buttons: "C" (Create), "Delete", "Import media", and "Create custom AZ". A pagination indicator shows "1" of "1" pages.

Custom AZ name	Custom AZ id	Status	VPN name	VPN originator IP
CustomAZ2	rds-caz-3EMilhQm	Active	[REDACTED]	[REDACTED]
CustomAZ3	rds-caz-xSBseHIE	Active	[REDACTED]	[REDACTED]
us-east-NYDC-AZ	rds-caz-3ZIWKL1C	Active	us-east-NYDC-VPN	[REDACTED]

# Create on-premises database

Select your active custom AZ and choose the database type



The screenshot shows the 'Create database' wizard in the AWS RDS console. The 'On-premises' option is selected under 'Amazon Cloud' or 'On-premises'. The 'Availability Zone' section shows 'us-east-NYDC-AZ' selected. The 'Engine options' section shows 'MySQL' selected. A callout box provides information about Quick create and modifying configuration options after creation.

**Create database**

In Database settings, enable Quick create to specify the minimum set of configuration options to create a database. With Quick create enabled, you specify only the DB engine type, DB instance size, and DB instance identifier. Quick create uses the default setting for other configuration options.

Disable Quick create to specify more configuration options when you create a database. If Quick create isn't enabled, you can choose other configuration options, including ones for availability, security, backups, and maintenance.

You can always modify configuration options after the database is created.

Learn more

- [Creating an Amazon RDS DB Instance](#)
- [Creating an Amazon Aurora DB Cluster](#)

Amazon Cloud  
On-premises

Availability Zone

Custom Availability Zone [Info](#)  
us-east-NYDC-AZ

After the DB instance is created, you can't change the availability zone selection.

Engine options

Engine type [Info](#)

MySQL  PostgreSQL Microsoft SQL Server

Version [Info](#)  
mysql 5.7.26

# Database is active

After a few minutes, database is active

The screenshot shows the AWS Amazon RDS Databases page. The left sidebar has links for Dashboard, Databases (which is selected), Query Editor, Performance Insights, Snapshots, Automated backups, Reserved instances, Subnet groups, Parameter groups, Option groups, Custom Availability Zones (with a Preview link), Events, Event subscriptions, and Recommendations. The main content area shows a table titled "Databases" with the following data:

DB identifier	Role	Engine	Region & AZ	Size	Status	CP
us-east-nydc-loan-db2	Instance	PostgreSQL	us-east-NYDC-AZ	db.cv11.small	Available	-
us-east-nydc-mortgage-db1	Instance	MySQL	us-east-NYDC-AZ	db.cv11.small	Available	-
[REDACTED]	Instance	MySQL	CustomAZ2	db.cv11.small	Available	-
[REDACTED]	Instance	PostgreSQL	CustomAZ2	db.cv11.small	Available	-
[REDACTED]	Instance	MySQL	CustomAZ3	db.cv11.small	Deleting	-

# Other features once the database is active

Take snapshot

Take point-in-time recovery

See Amazon CloudWatch metrics for your on-premises database

Reboot, rename your database

# Demo

# Questions?

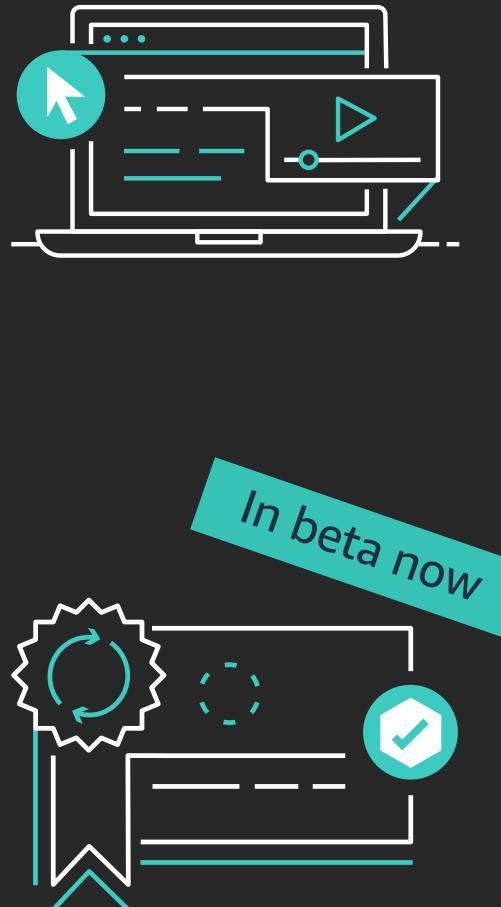
## Related breakouts

[DAT401-R] [Running on-premises databases with Amazon RDS on VMware]

[DAT401-R1 - [Running on-premises databases with Amazon RDS on VMware]]

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# Thank you!

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