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# Azure is coming

Architecting for  
NZ North Azure Region

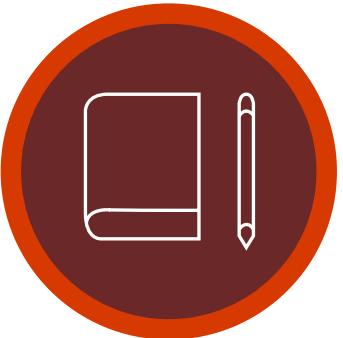
Daniel Larsen  
Principal Customer Engineer  
FastTrack for Azure  
[dalars@microsoft.com](mailto:dalars@microsoft.com)



# 3 things

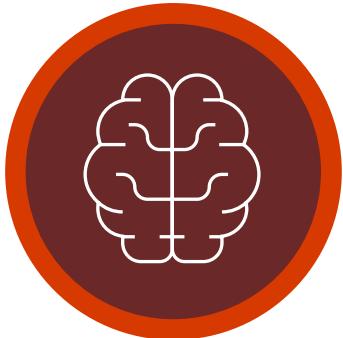
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Azure is coming!



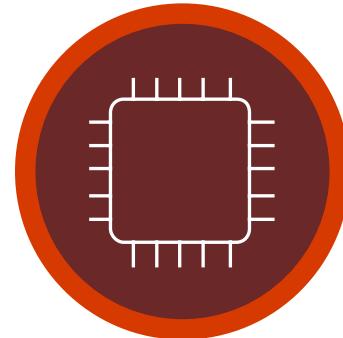
Be ready for this industry defining event

Embrace Availability Zones



Multi-zone designs are better for most customers

DR Region of choice



Choose your own data replication target

# Azure is coming



# Azure global expansion

60+ Azure regions worldwide  
50 – 100 new data centres planned each year\*  
10 new countries announced in 2021 alone







This is a Microsoft data-center at an undisclosed location. The red circle is expansion work, shown in detail on the next slide...



The investment Microsoft makes in global infrastructure is massive. The global expansion programme is continually investing in new Azure regions as well as expanding and enhancing existing ones.



This is data-center infrastructure at industrial scale. In some geographies these projects will be among the largest infrastructure investments ever made.



Microsoft data-centers are clean, highly automated and compliant environments with little human intervention required. No employee, contractor or visitor can visit a hallway like this without a documented reason to be there. When access is granted it is restricted to the hallway, rack and blade.





# Well-Architected Framework

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## Overview of the reliability pillar

11/13/2021 • 4 minutes to read • +6

### In this article

[Topics and best practices](#)  
[Next step](#)

Reliability ensures your application can meet the commitments you make to your customers. Architecting resiliency into your application framework ensures your workloads are available and can recover from failures at any scale.

Building for reliability includes:

- Ensuring a highly available architecture
- Recovering from failures such as data loss, major downtime, or ransomware incidents

To assess the reliability of your workload using the tenets found in the [Microsoft Azure Well-Architected Framework](#), reference the [Microsoft Azure Well-Architected Review](#).

<https://docs.microsoft.com/azure/architecture/framework/resiliency/overview>

# Enabling data residency & data protection in Azure



<https://azure.microsoft.com/resources/achieving-compliant-data-residency-and-security-with-azure/>

# Microsoft Learn

The screenshot shows the Microsoft Learn homepage with a personalized greeting and learning activity summary.

**Welcome back, Daniel Larsen**

Some items for you since your last visit:

- LEARNING PATH**  
Fundamentals of Bicep  
Next module: Build flexible Bicep templates by using conditions and loops  
Progress: 74%  
Dismiss Resume
- LEARNING PATH**  
Introduction to version control with Git  
Next module: Introduction to Git  
Progress: 14%  
Dismiss Resume
- MODULE**  
Build flexible Bicep templates by using conditions and loops  
Progress: 58%  
Dismiss Resume

Help us customize your path [See all activity](#)

**Popular learning paths and modules**

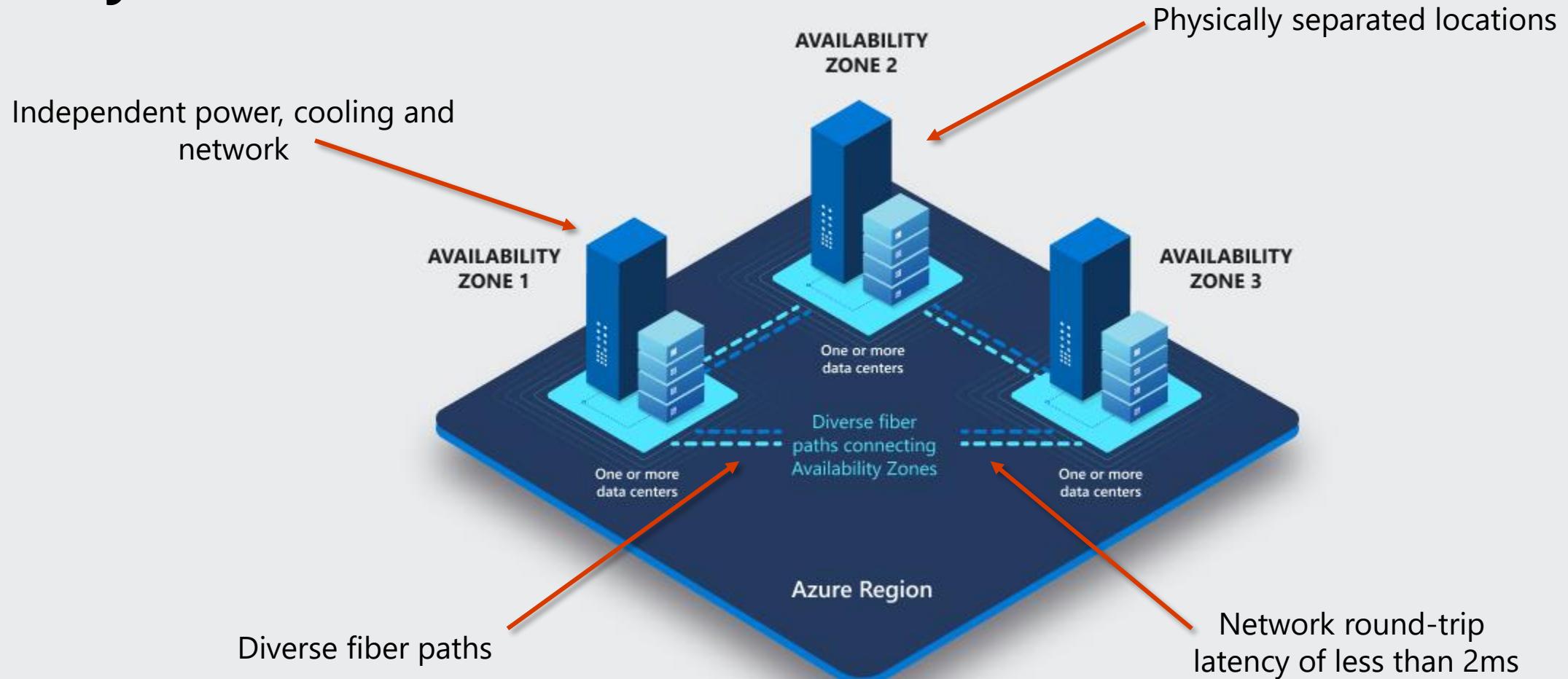
- LEARNING PATH**  
Microsoft Azure Fundamentals: Describe core Azure concepts  
1 hr 34 min  
Azure Administrator Beginner  
Progress: 13% [Save](#)
- LEARNING PATH**  
Microsoft Azure Fundamentals: Describe core Azure services  
2 hr 40 min  
Azure Administrator Beginner  
Progress: 0% [Save](#)
- LEARNING PATH**  
Microsoft Azure Fundamentals: Describe core solutions and management tools on Azure  
2 hr 20 min  
Azure Administrator Beginner  
Progress: 0% [Save](#)

<https://docs.microsoft.com/learn>

# High availability (HA) with Availability Zones



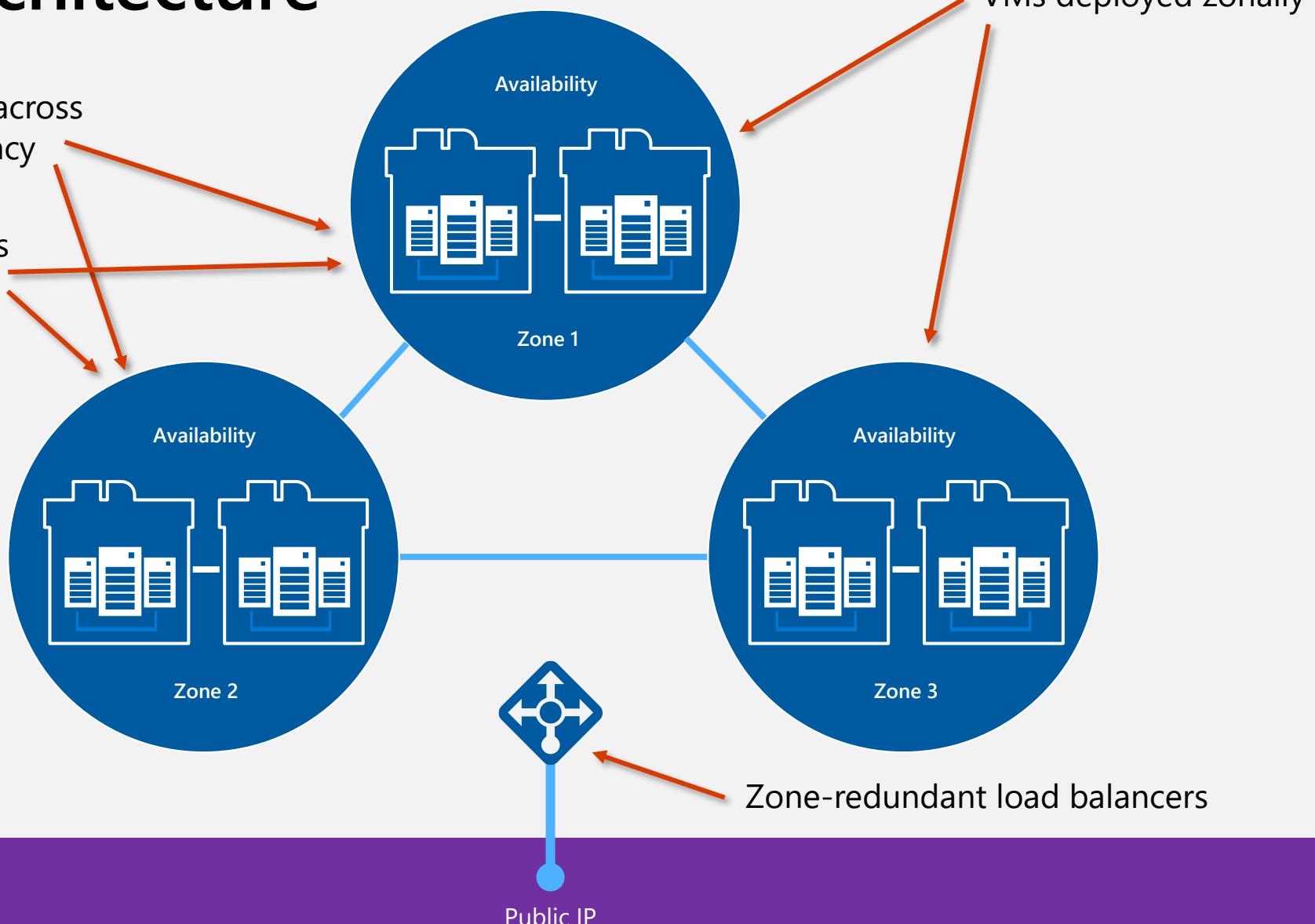
# Physical architecture



# Logical architecture

Platform services deployed across zones for zone-redundancy

Azure management services replicated across zones



# Business requirements for HA

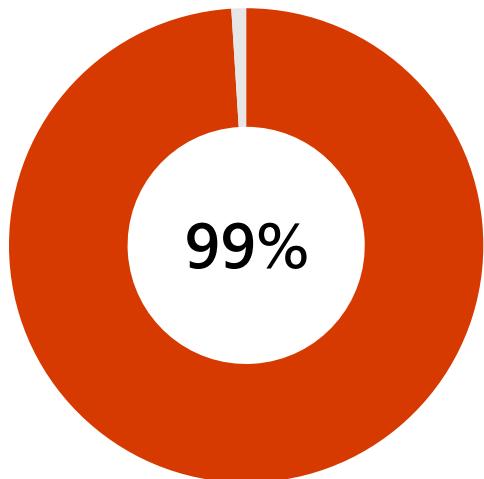
Q. What is your  
RTO?

Q. What is your  
uptime SLO?

# What is the business requirement for uptime?

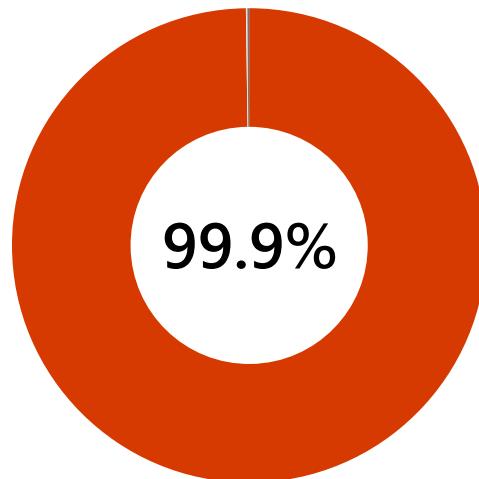
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Two nines



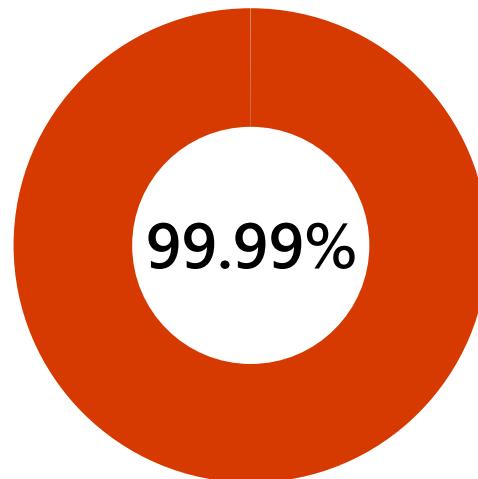
Plan for 7 hours, 18 minutes  
of downtime per month

Three nines



Plan for 44 minutes of  
downtime per month

Four nines



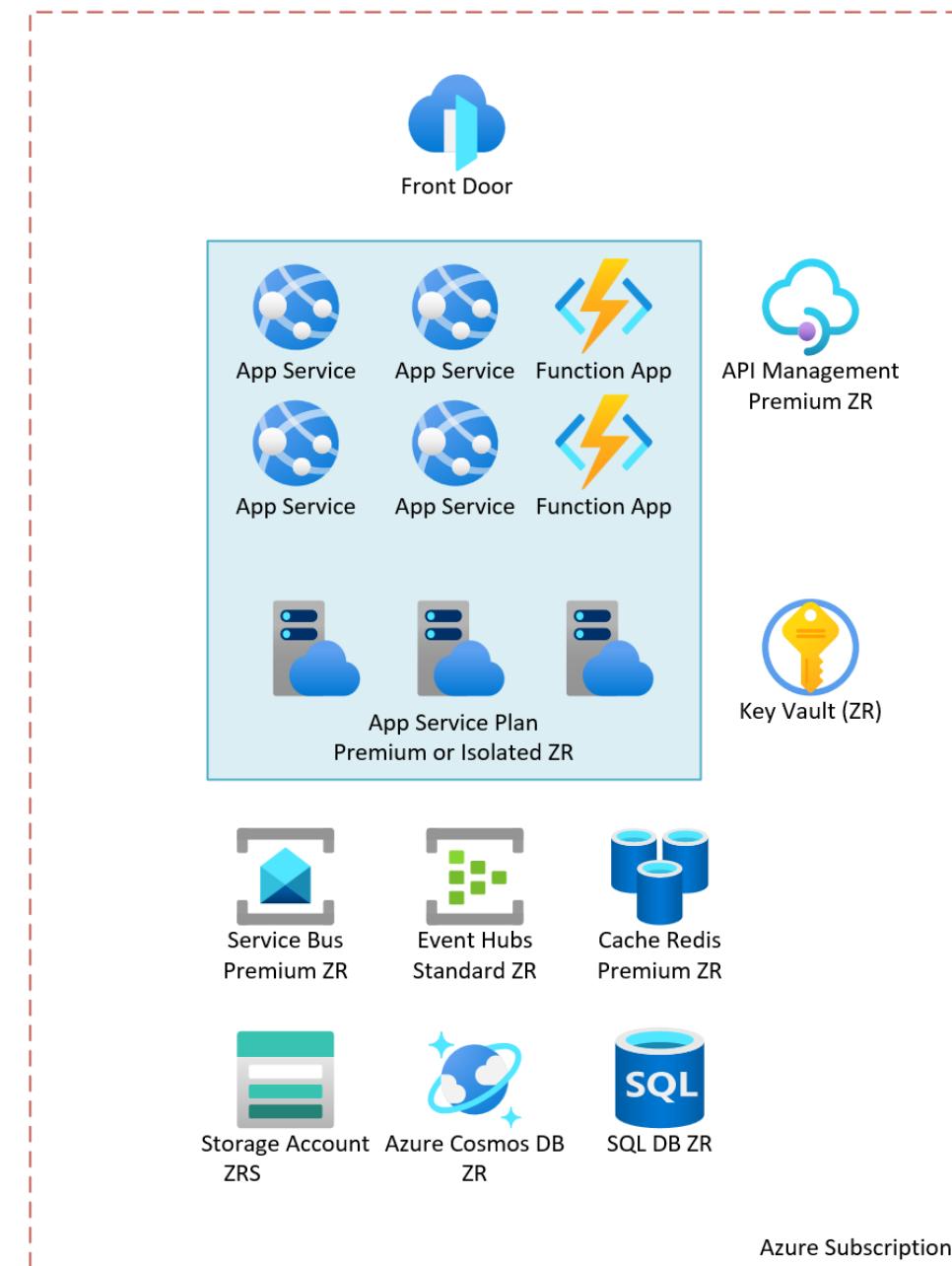
Plan for 4 minutes of  
downtime per month

Five nines



Plan for 26 seconds of  
downtime per month

# Zone-redundancy



# Disaster Recovery



# Business requirements for DR

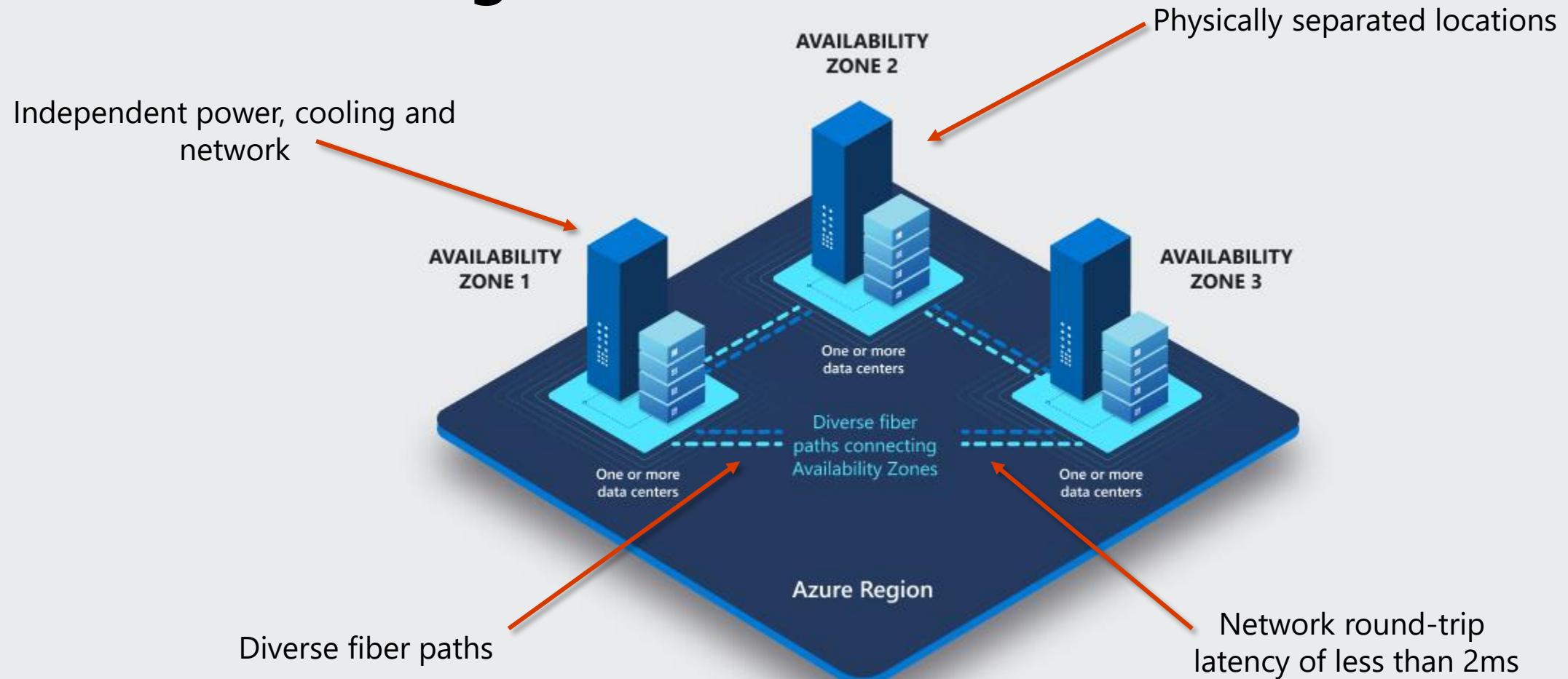
Q. What is your RPO?

Q. Where will you store the backups?

# Region pairs



# DR in same Region



# DR region of choice

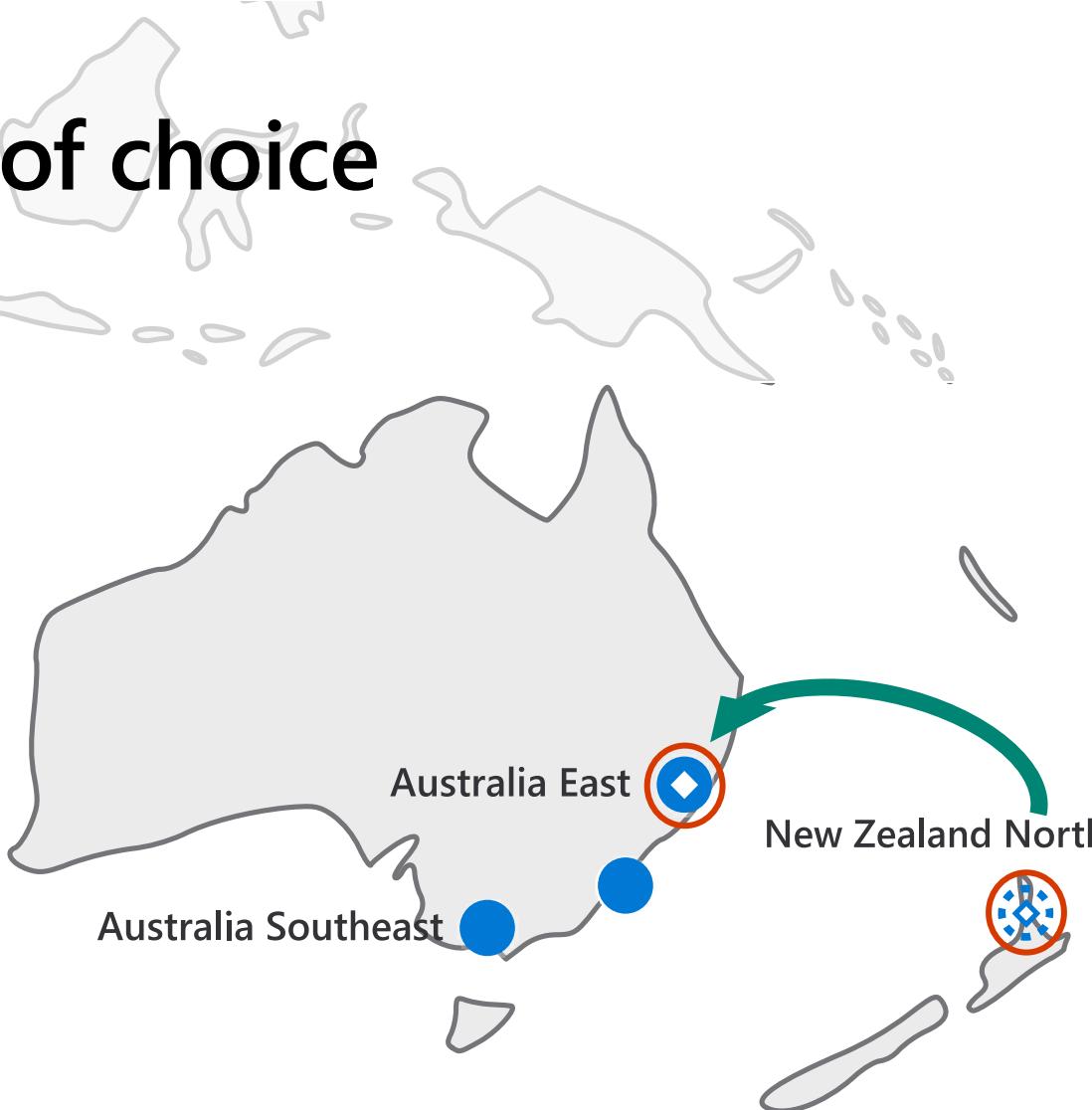


Malaysia West  
Southeast Asia

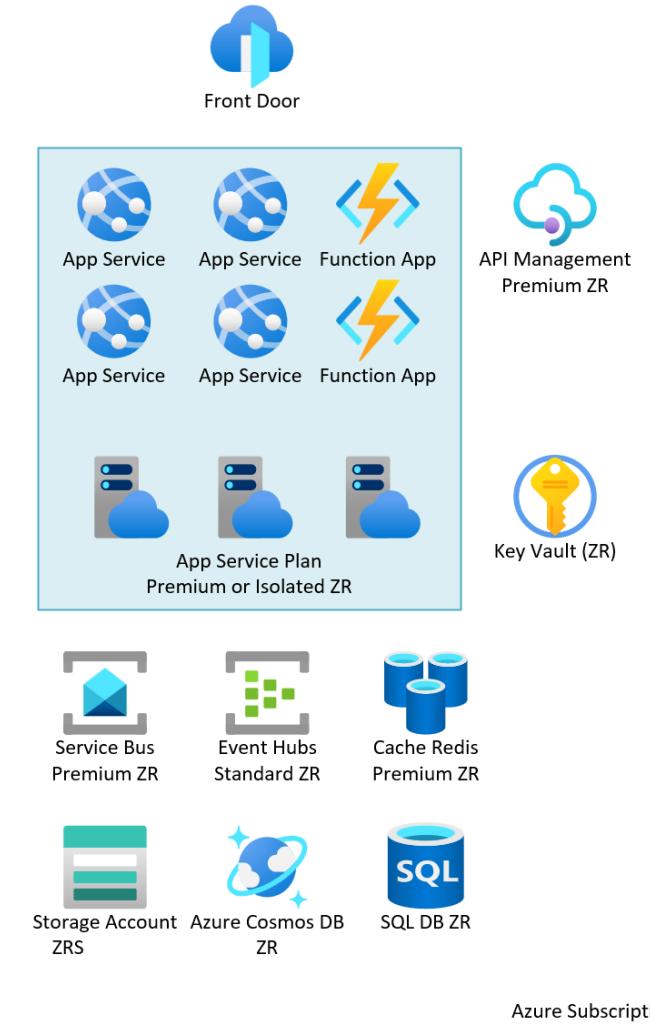
# DR region of choice

Indonesia Central

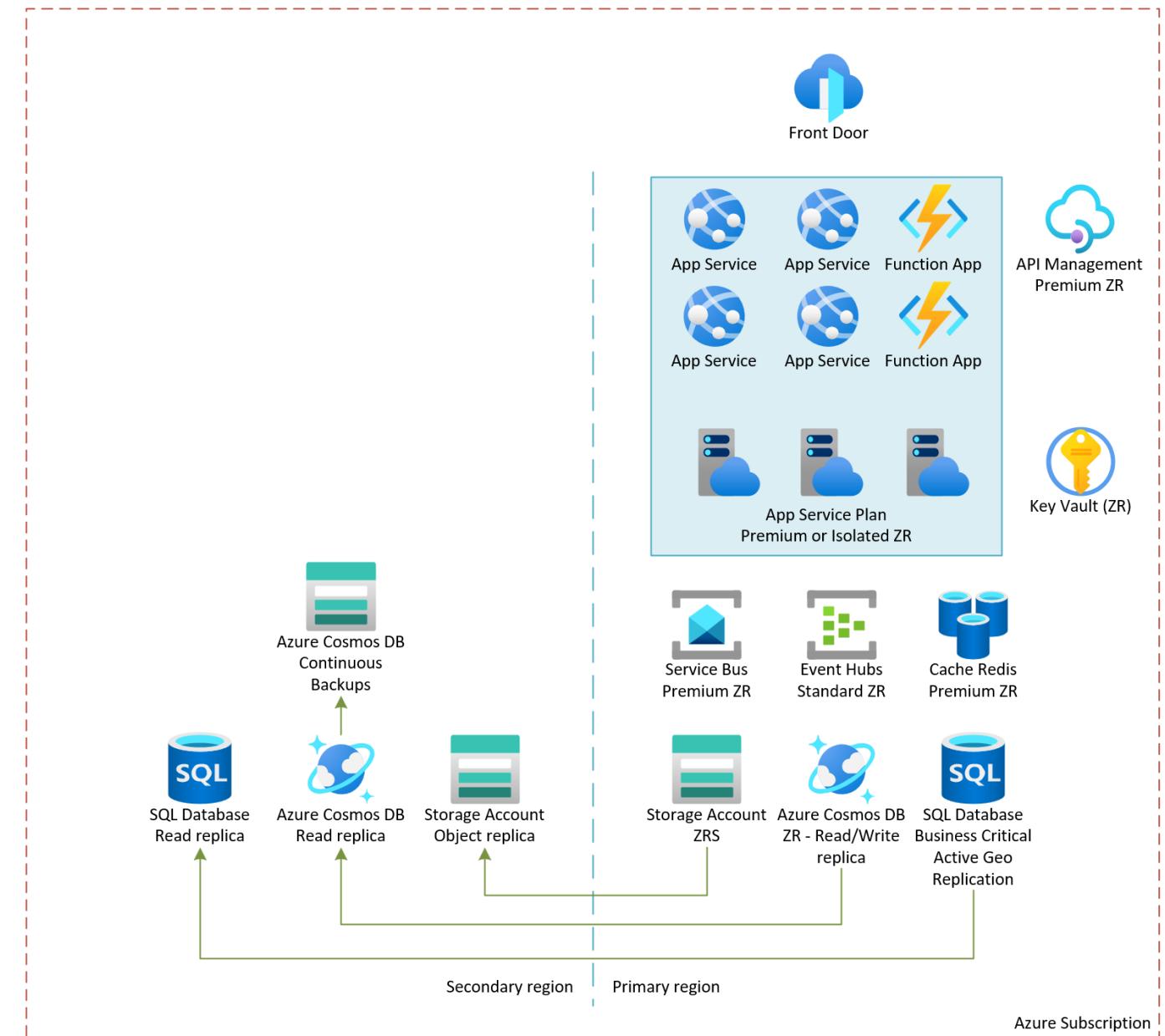
Australia East  
Australia Southeast  
New Zealand North



# Zone-redundancy



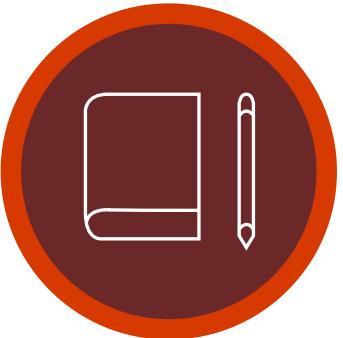
# Zone-redundancy + replication



# 3 things

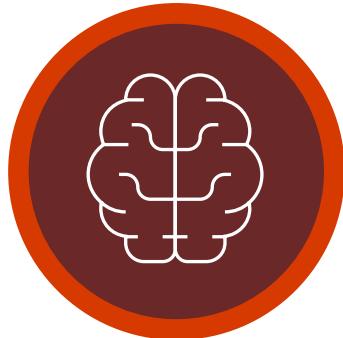
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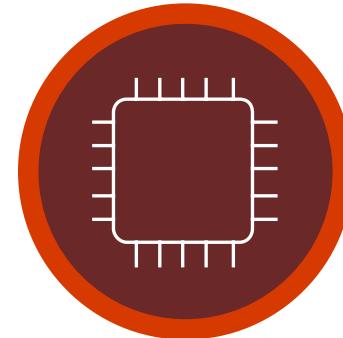
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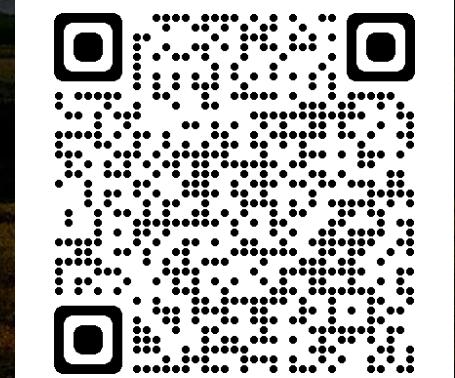


Choose your own data replication target

Thank you!

Kia ora!

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[dalars@microsoft.com](mailto:dalars@microsoft.com)



Slides and more information

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