Microsoft Azure Services and Concepts

UNDERSTANDING AZURE ARCHITECTURE AND MANAGEMENT

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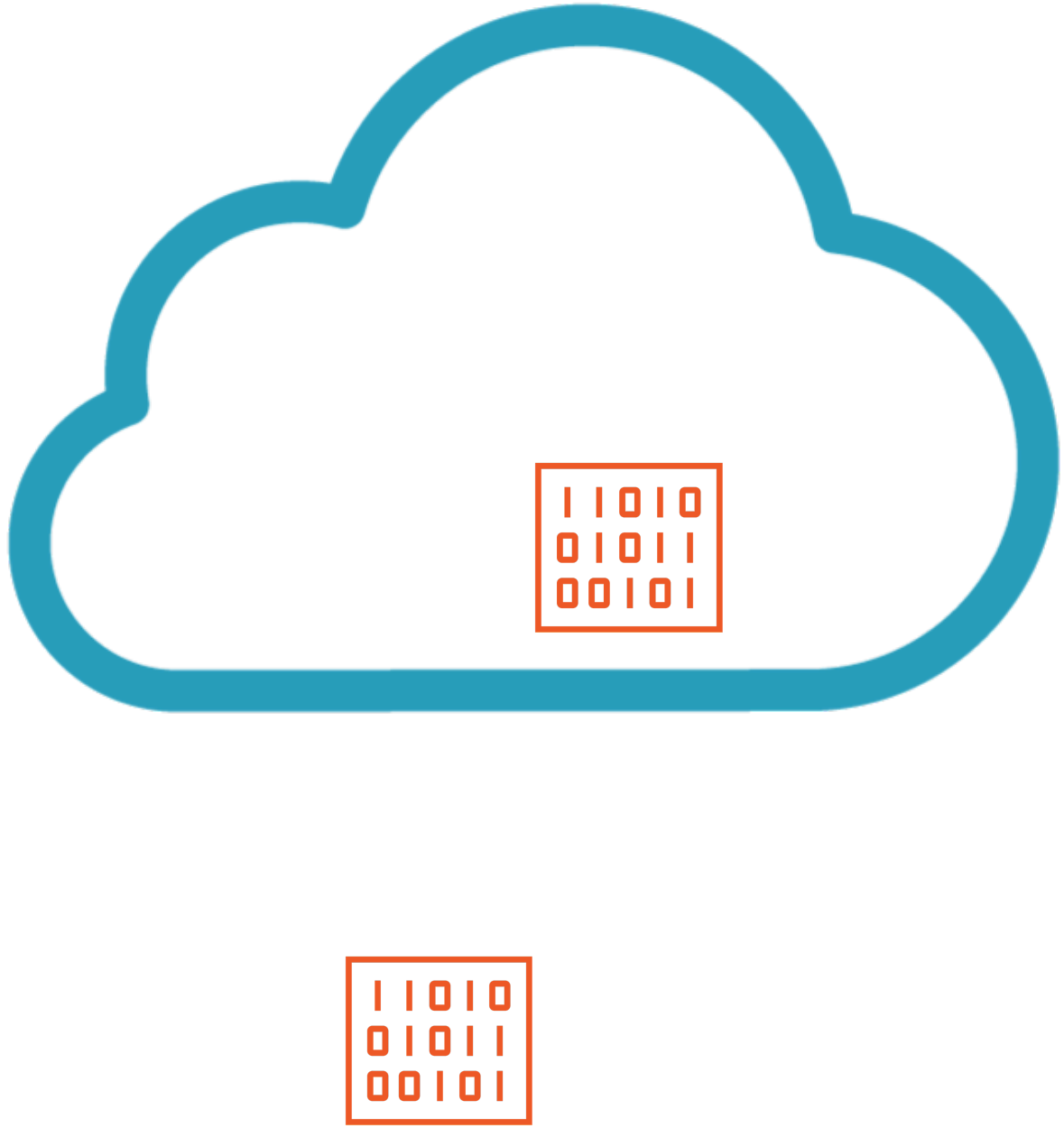
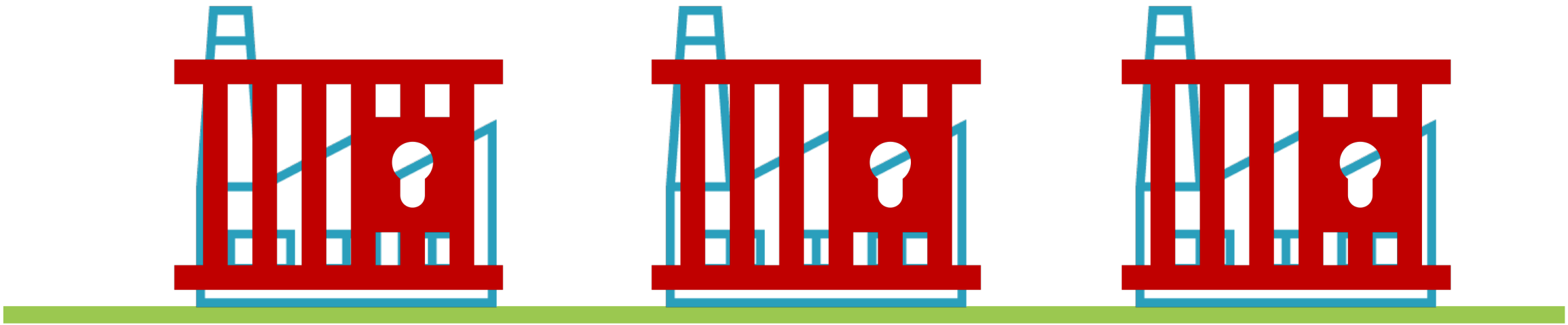
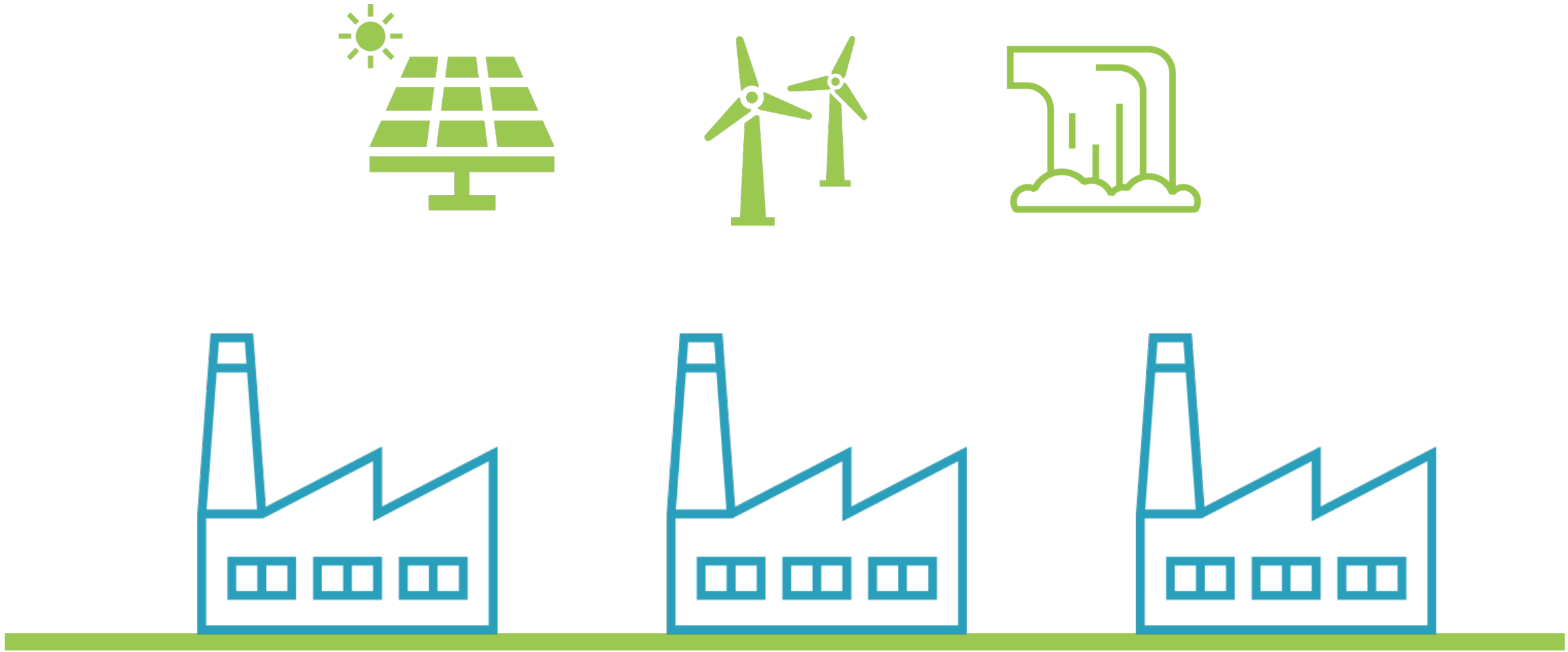
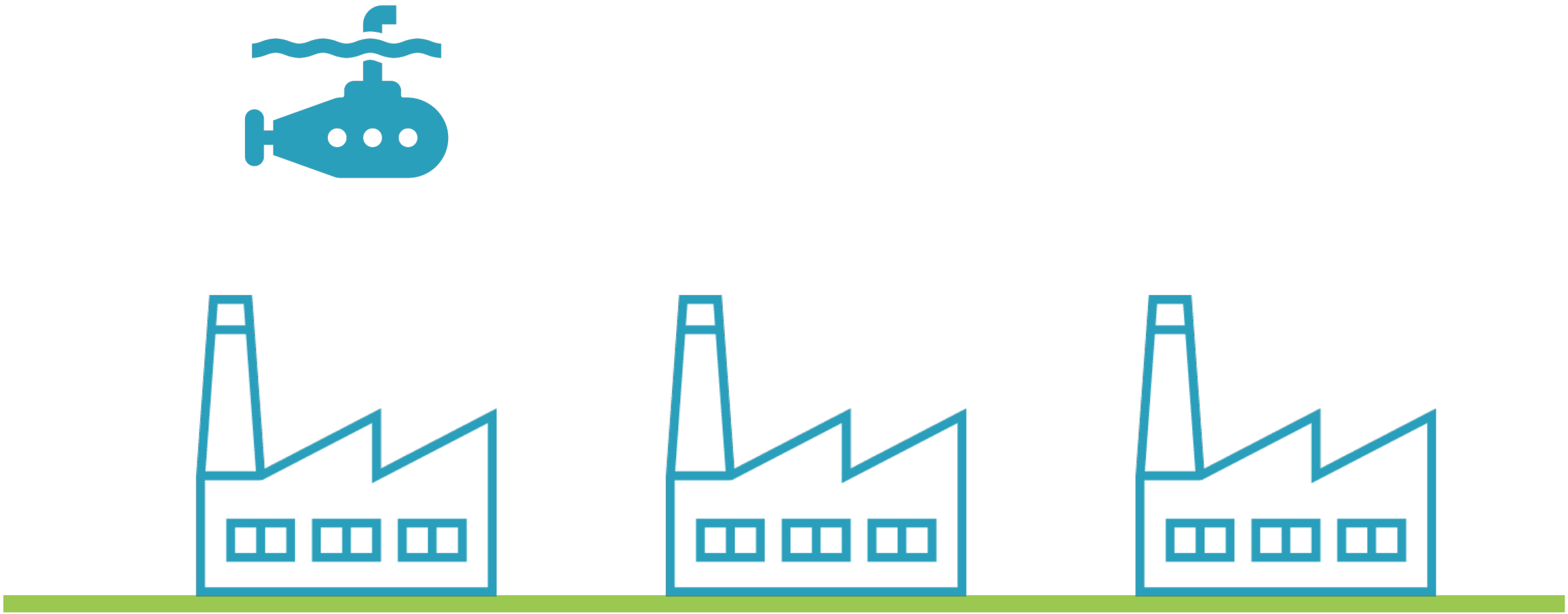








Overview

- Azure Data Centers
- Regions and Availability Zones
- Azure Resource Groups
- Azure Resource Manager
  - Azure Portal
  - Azure PowerShell
  - Azure CLI
  - REST interface
- Resource Manager Templates
- Azure Service Health and Azure Monitor
- Azure Mobile App
- Azure Advisor

Azure Regions and Availability Zones

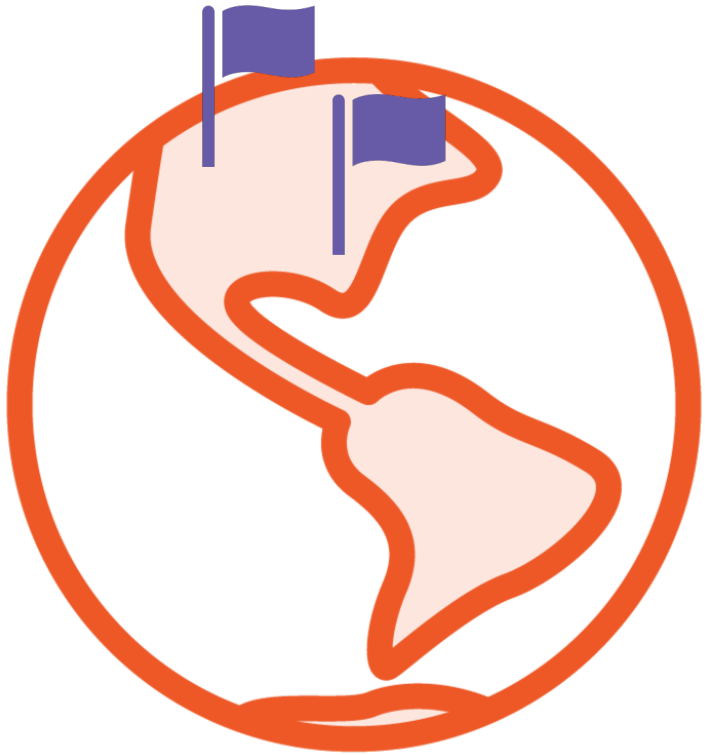
Azure – Physical Deployment

Azure Regions

Azure Geographies

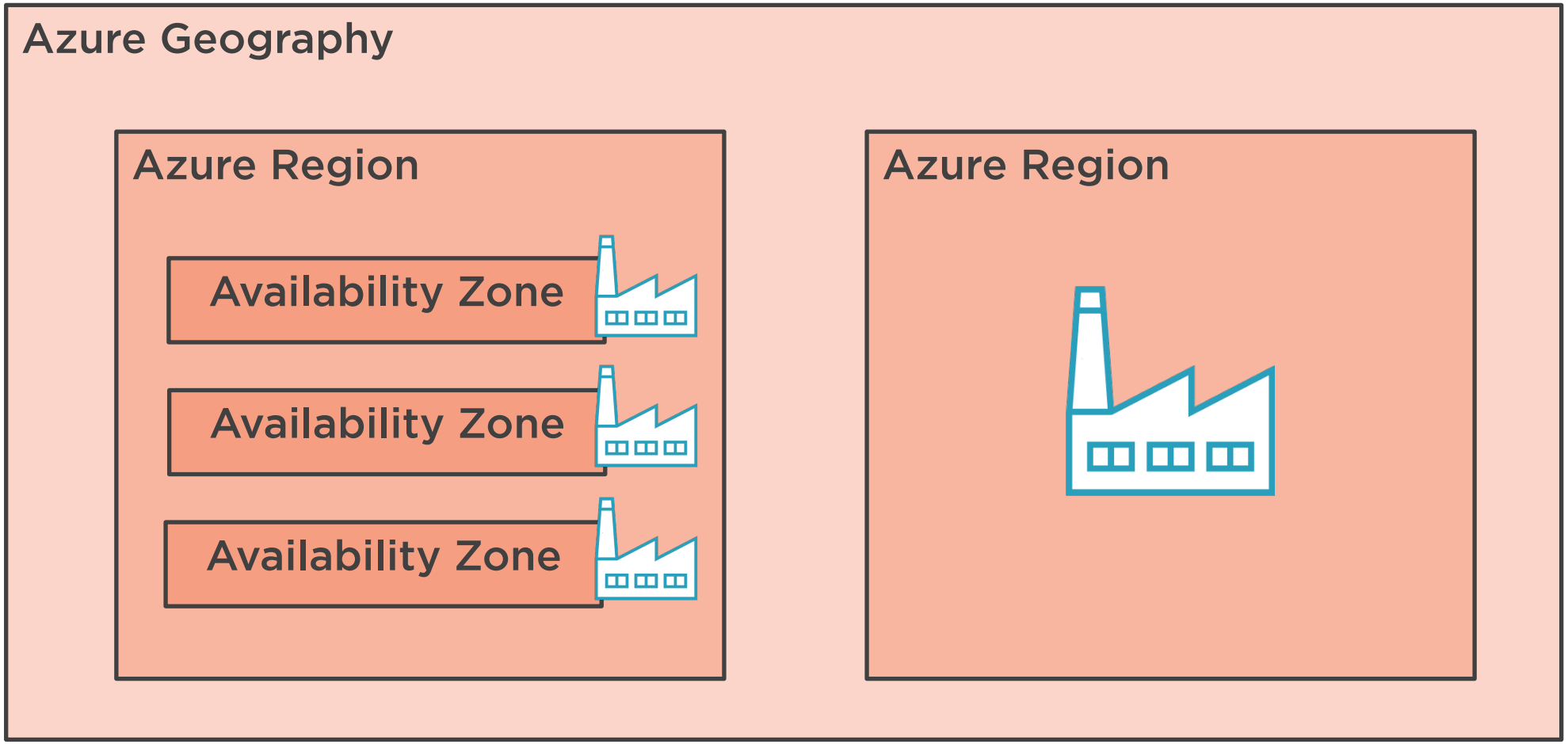
Availability Zones

Region Pairs



Region Pairs

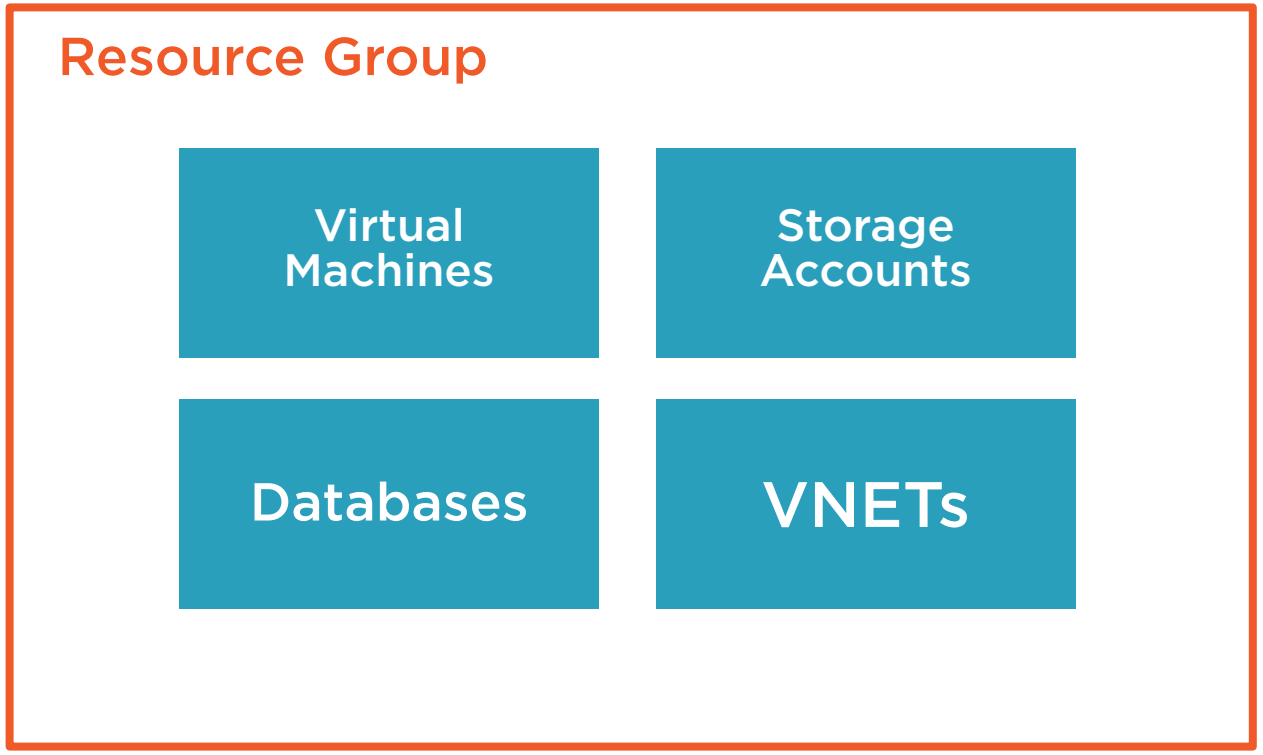
- Regions within a Geography
- Data centers usually 300+ miles apart
- Automatic replication and failover for some Azure services
- High Availability
  - Service updates
  - Outage recovery prioritization

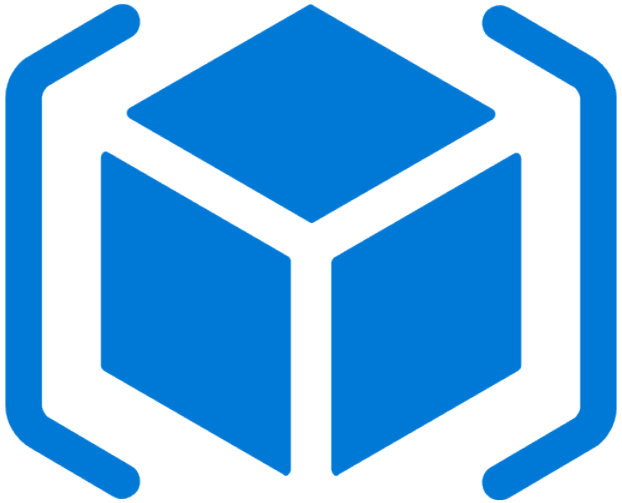

Azure Geography
Azure Region
Availability Zone
Availability Zone
Availability Zone
Azure Region

Understanding Resource Groups

Resources in Azure

Virtual Machines	Storage Accounts	Web Apps
Databases	VNETs	etc.

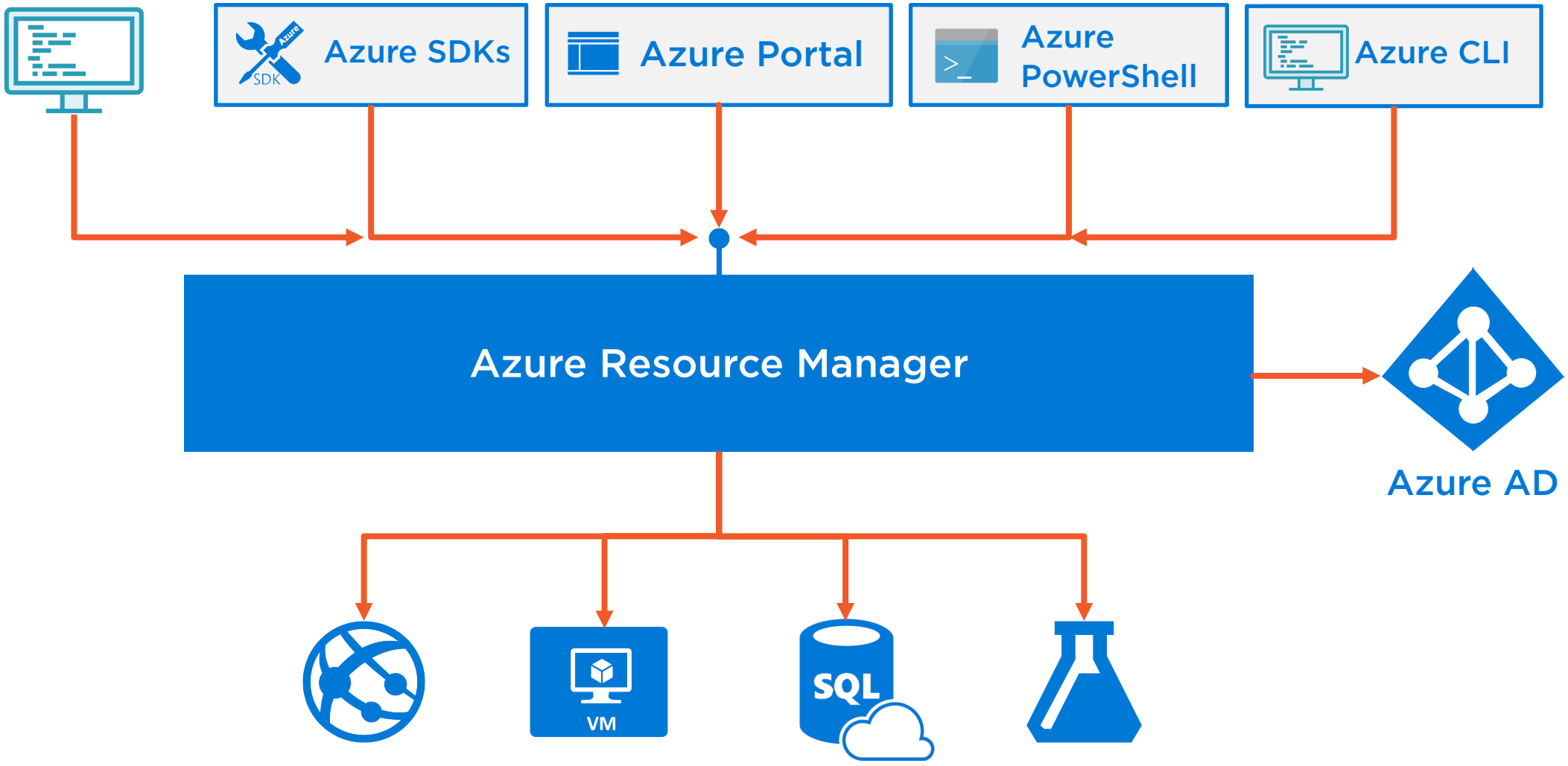

Resource Group
Virtual Machines
Storage Accounts
Databases
VNETs



Resource Group

- Resources share the same lifecycle
- Resources can only exist in one Resource Group
- Resources can communicate across Resource Groups
- Container for security boundaries
- Can export infrastructure-as-code using Resource Manager Templates
- Resources can be in different regions

Azure Resource Manager (ARM) and Management Tools


Azure SDKs
Azure Portal
Azure PowerShell
Azure CLI
Azure Resource Manager
Azure AD
VM
SQL

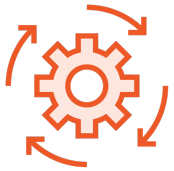
Infrastructure-as-Code using Azure Resource Manager Templates

Agile Development and DevOps

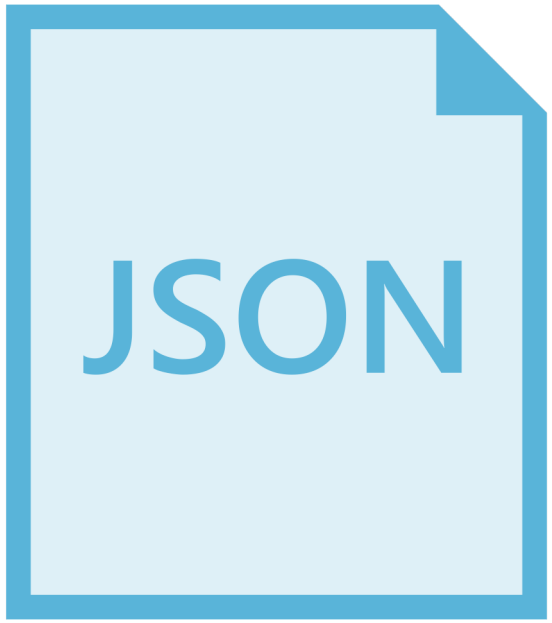
Combines IT Operations and Development

Infrastructure now being managed as code

Can be stored and versioned in code repositories



Included in CI/CD pipelines



Azure Resource Manager Templates

Written in JavaScript Object Notation (JSON)

Defines infrastructure and configuration for Azure resources

Declarative syntax

Deployment

- Using Azure Pipelines (CI/CD)
- From GitHub
- Using PowerShell and the Azure CLI
- Resource Manager REST API
- Using the Azure Portal

Azure Advisor for Optimizing Your Azure Resources

Module Summary

- Azure Data Centers
- Azure Regions and Availability Zones
- Resource Groups
- Azure Resource Manager and tools
  - Azure CLI
- Resource Manager Templates
- Azure Service Health and Azure Monitor
- Azure Mobile App
- Azure Advisor

Up Next:
Exploring Azure Core Products