Microsoft Azure Services and Concepts

Understanding Azure Architecture

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Exam AZ-900: Microsoft Azure Fundamentals

This course

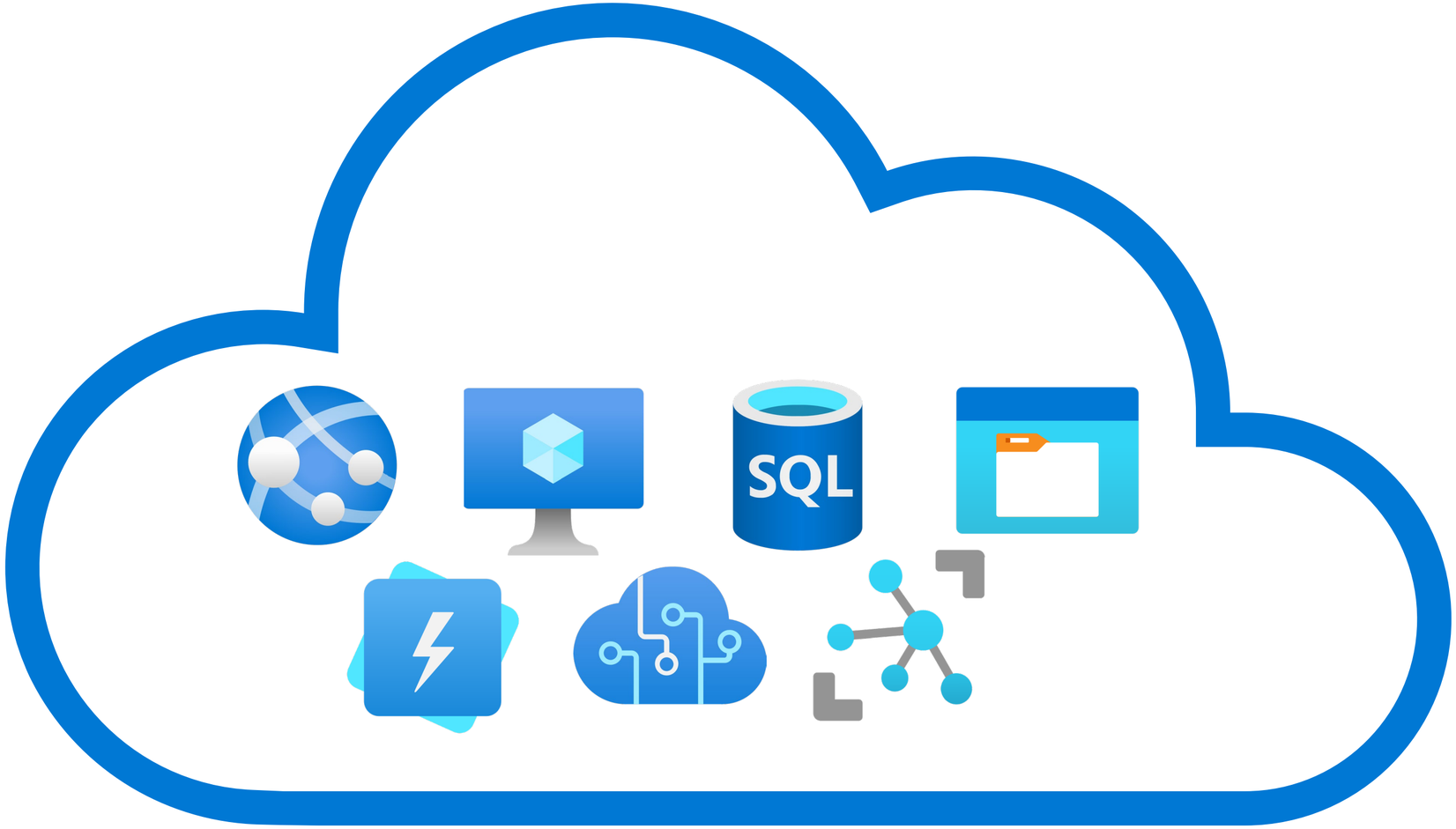
- Covers many objectives on the exam
- Does not cover all objectives on the exam

Objectives:

- https://docs.microsoft.com/certifications/exams/az-900

Microsoft Azure

Microsoft Azure



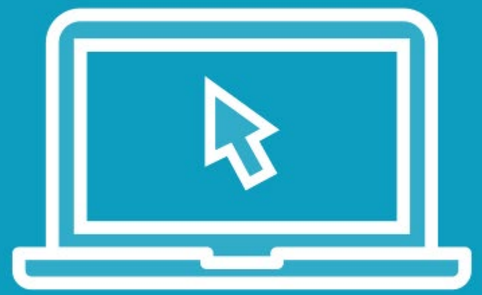
On-premises Hosting

On-premises Hosting

Module Overview

- Create an Azure subscription
- Azure regions and availability zones
- Azure data centres
- Resource groups
- Exploring the Azure portal
- Azure Active Directory
- Directories and subscriptions

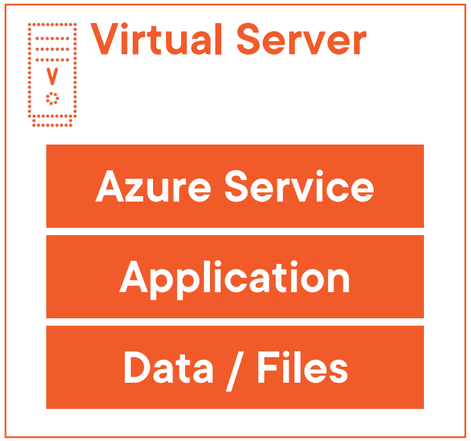
Demo

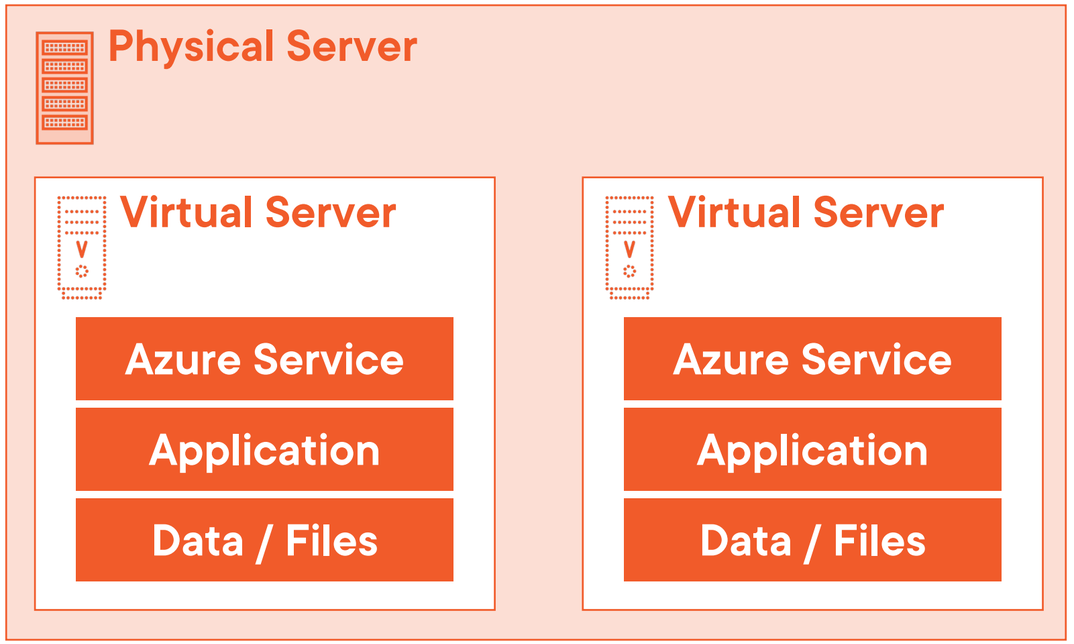


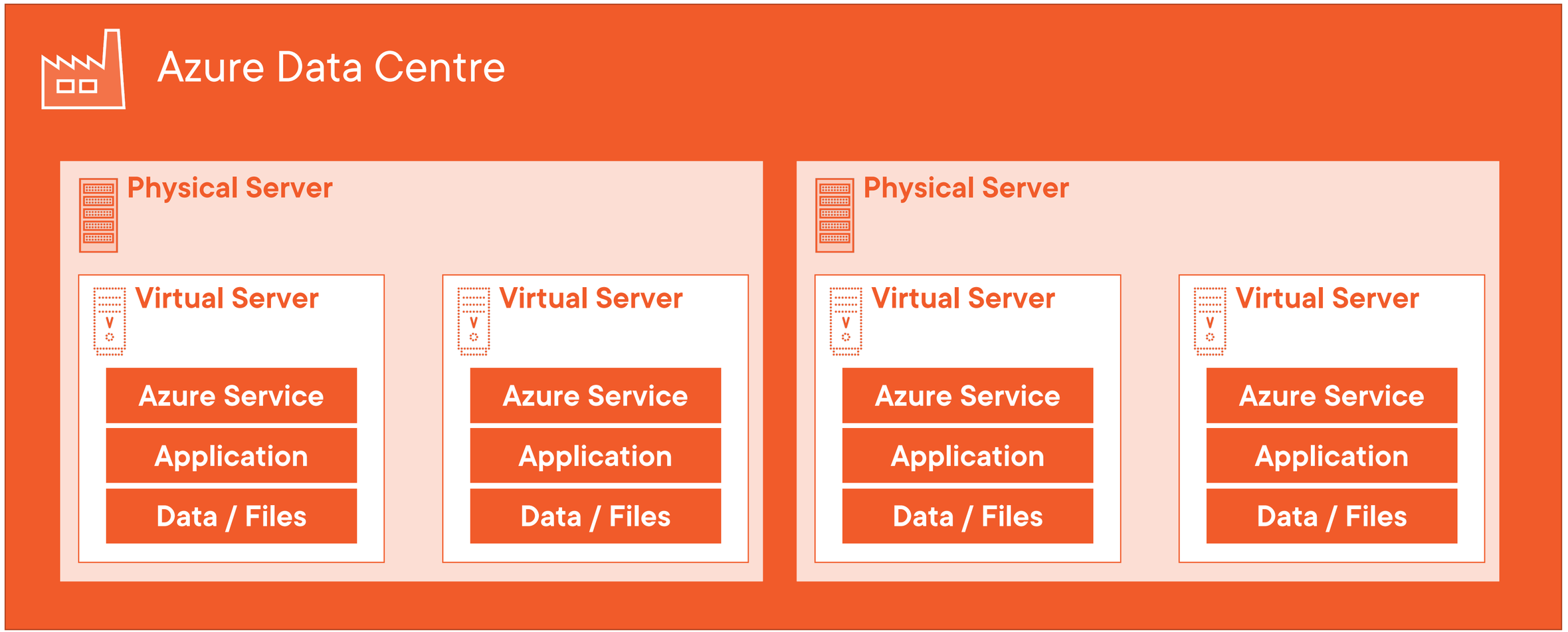
Create an Azure subscription

- https://azure.microsoft.com/free
- Requirements
  - Microsoft account
  - Phone number
  - Credit card

Azure Regions and Availability Zones


Virtual Server
Azure Service
Application
Data / Files


Physical Server
Virtual Server
Azure Service
Application
Data / Files
Virtual Server
Azure Service
Application
Data / Files


Azure Data Centre
Physical Server
Virtual Server
Azure Service
Application
Data / Files
Virtual Server
Azure Service
Application
Data / Files
Physical Server
Virtual Server
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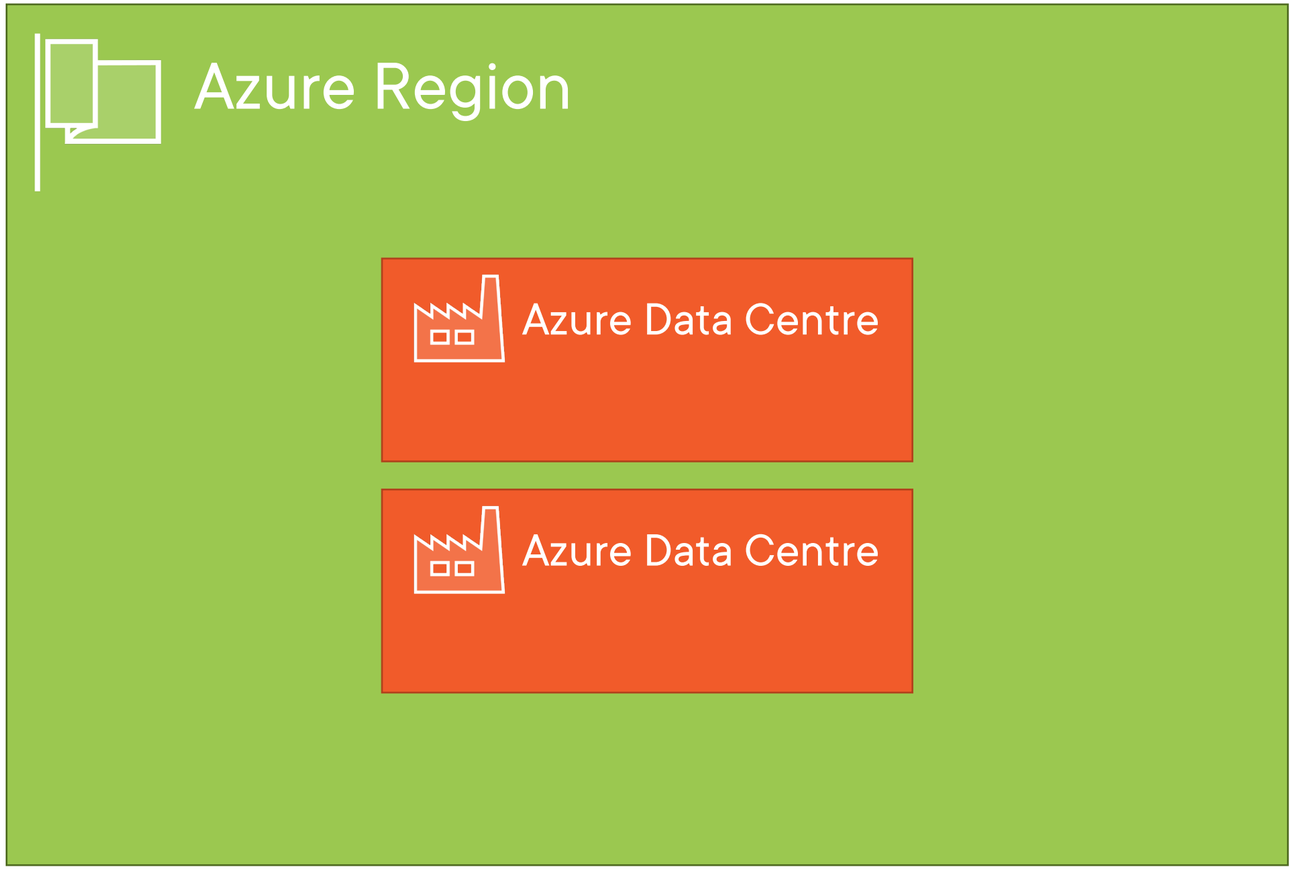
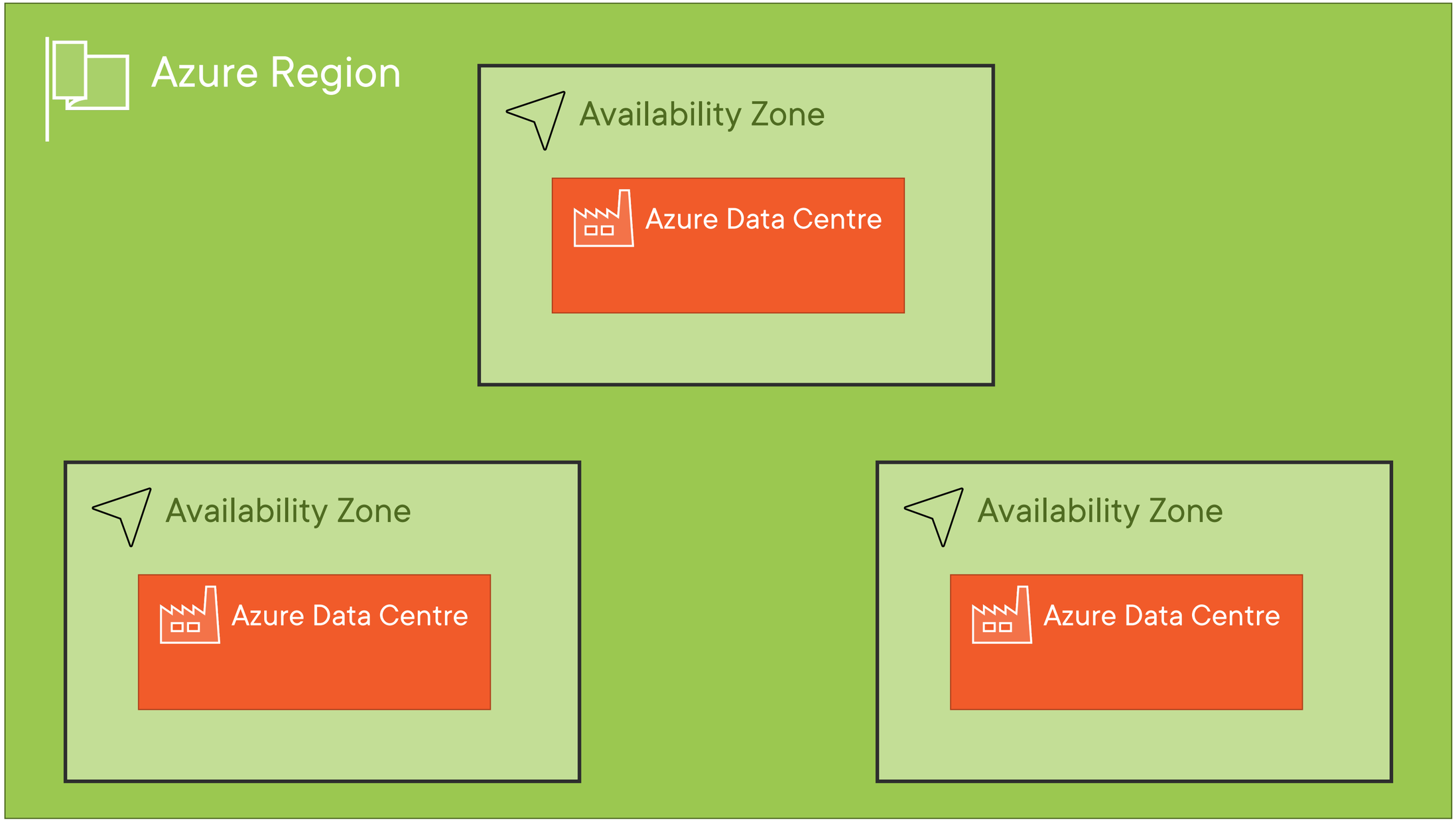
Data / Files
Virtual Server
Azure Service
Application
Data / Files


Azure Region
Azure Data Centre
Azure Data Centre

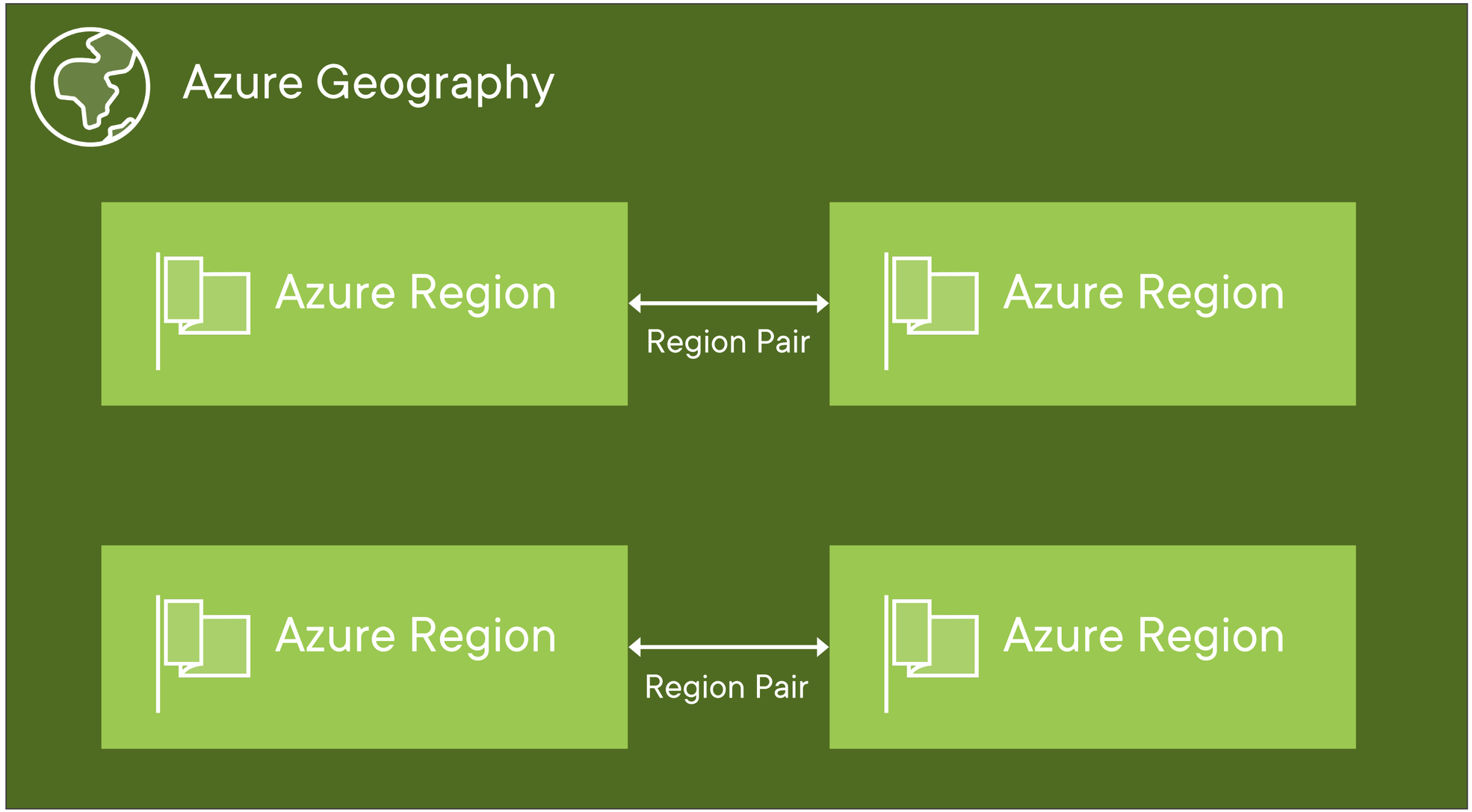
Azure Region

Availability Zone

Azure Data Centre


Azure Region
Availability Zone
Azure Data Centre
Availability Zone
Azure Data Centre
Availability Zone
Azure Data Centre

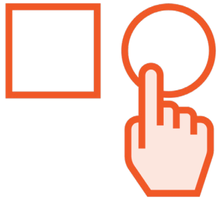
Azure Region


Azure Geography
Azure Region
Region Pair
Azure Region
Azure Region
Region Pair
Azure Region

Factors in Choosing an Azure Region

Proximity to users

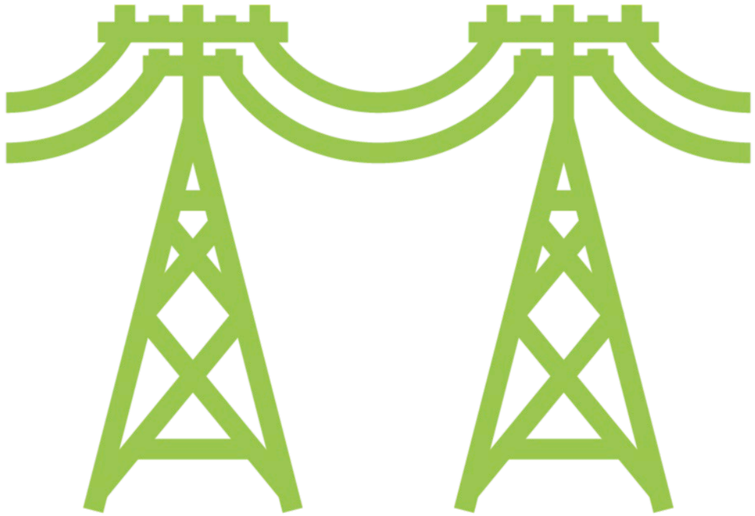
Service availability



Feature availability

Data residency

Azure Data Centres



Data centres often located near renewable energy sources

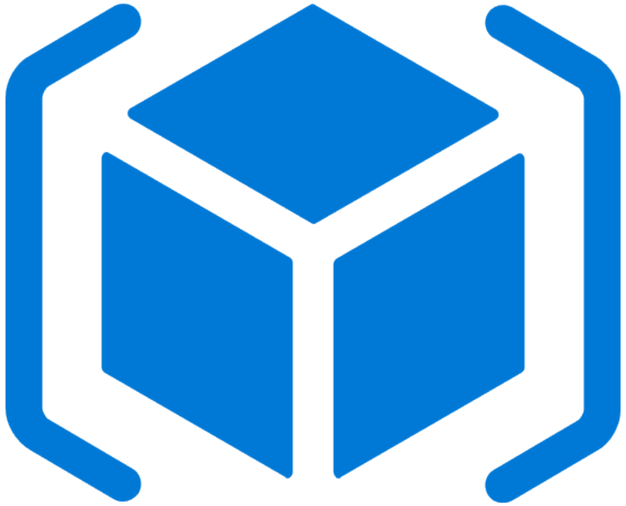
- Wind and solar farms
- Hydroelectric dams
- Natural air cooling in temperate locations

Heat recycling projects in Finland

Backup power often provided by diesel fuel

- Research into alternatives happening
- Plan to eliminate diesel dependency by 2030

Resources and Resource Groups



Resource Group

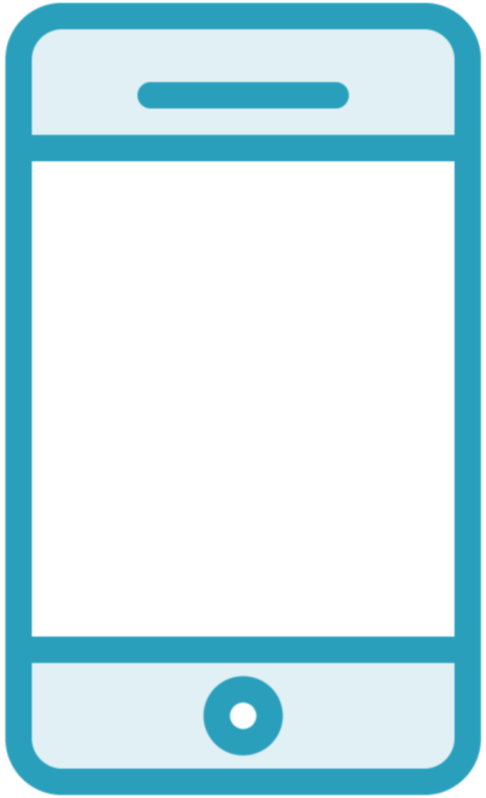
- Resources share the same lifecycle
- Resources can only exist in one Resource Group
- Resources can communicate across Resource Groups
- Container for security boundaries
- Can export infrastructure-as-code using Resource Manager Templates
- Resources can be in different regions

Conditional Access Policies

Permit or deny access based on

- Group membership
- Location
- IP address ranges
- Device
  - Operating system
  - Compliance status (via Microsoft InTune)
- Risky sign-in behavior (Azure AD Identity Protection)

Can be used to force Multi-factor authentication

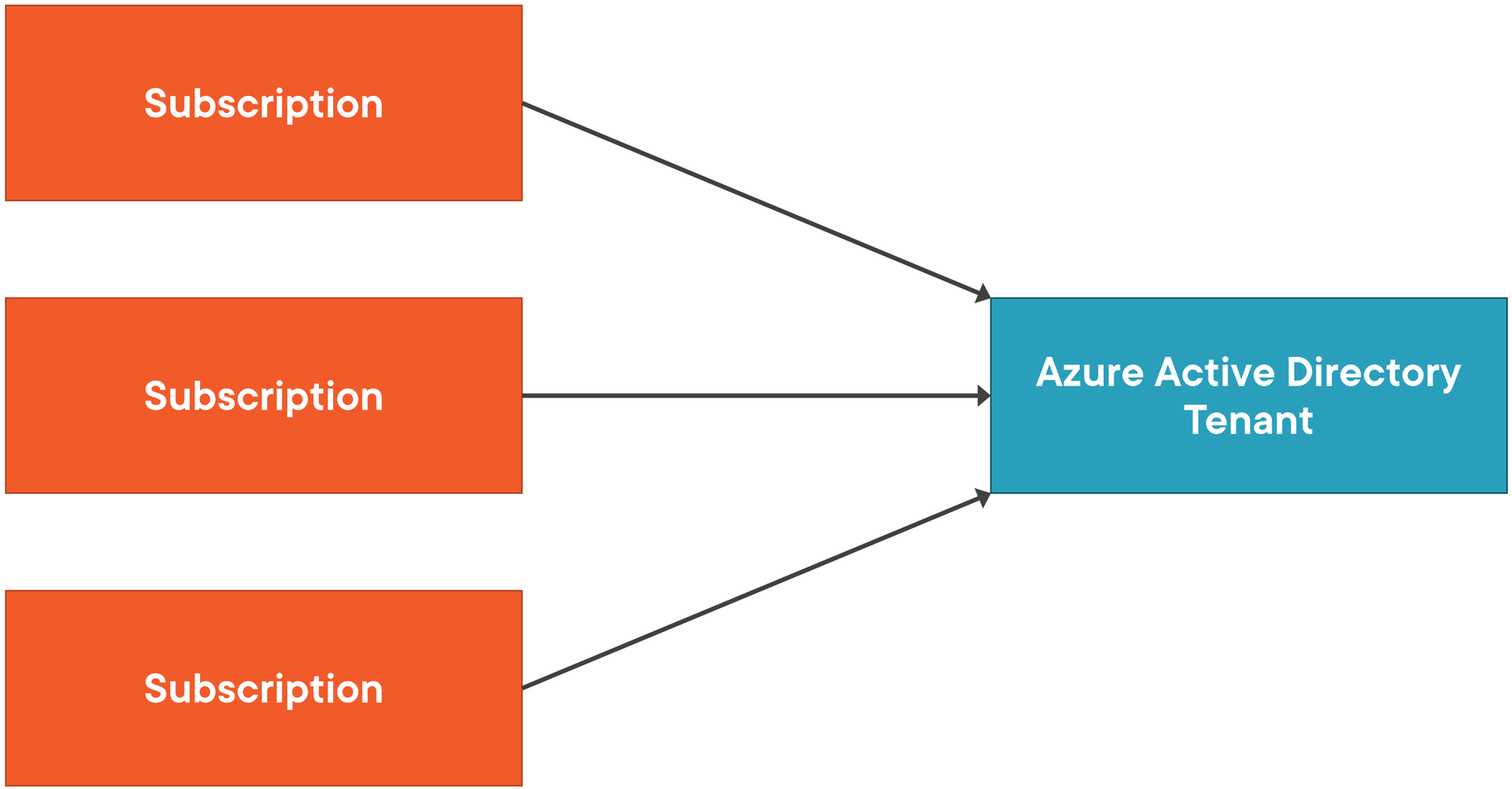


Azure Multi-factor Authentication

User provides second factor of authentication after username/password

- One-time passcode by text or phone call
- Microsoft Authenticator App
  - Push notification to mobile phone
  - Rolling token code generated in app

Understanding Directories and Subscriptions


Subscription
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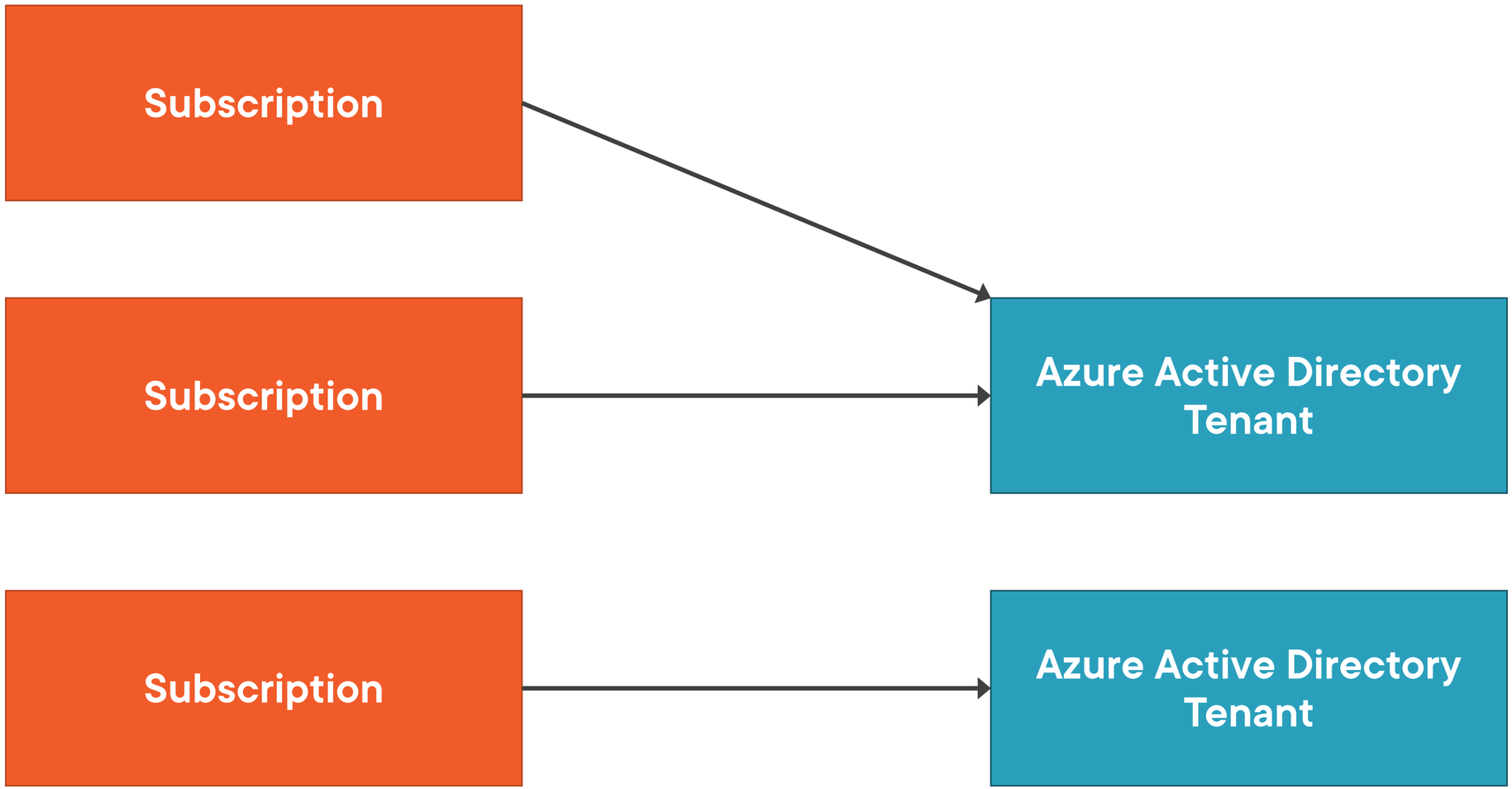
Subscription
Azure Active Directory Tenant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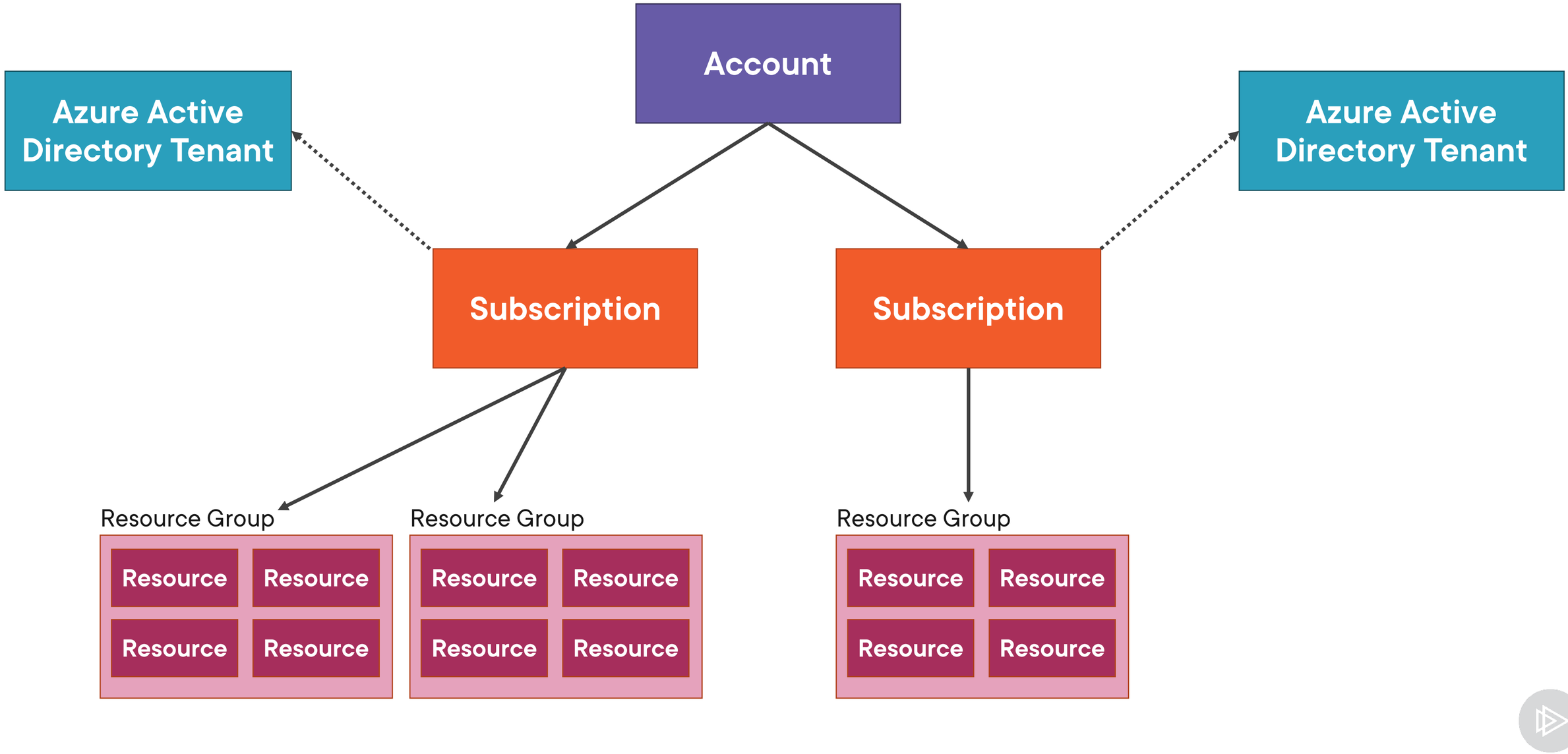
Account
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Resource Group
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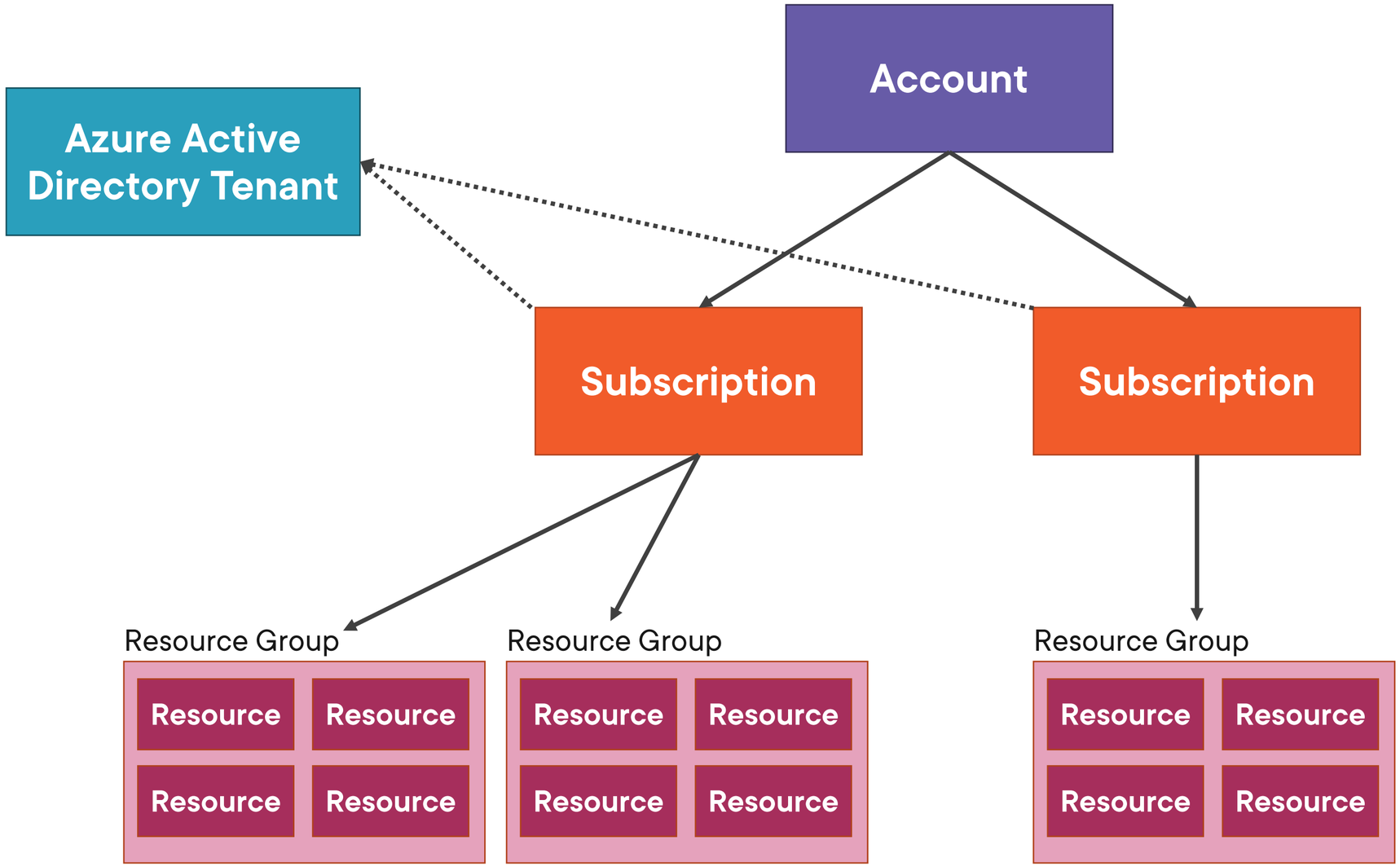
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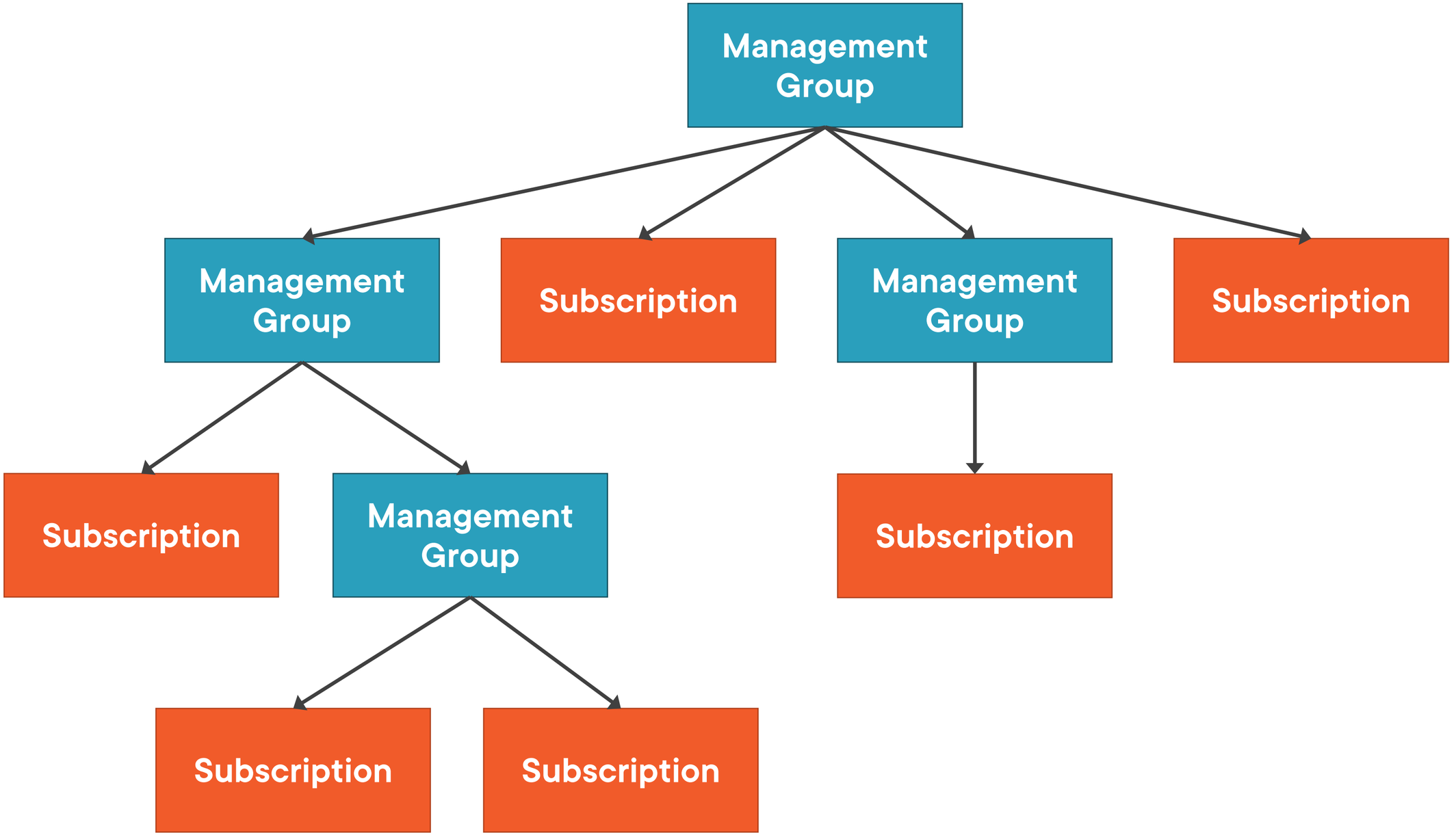
Management Group
Management Group
Subscription
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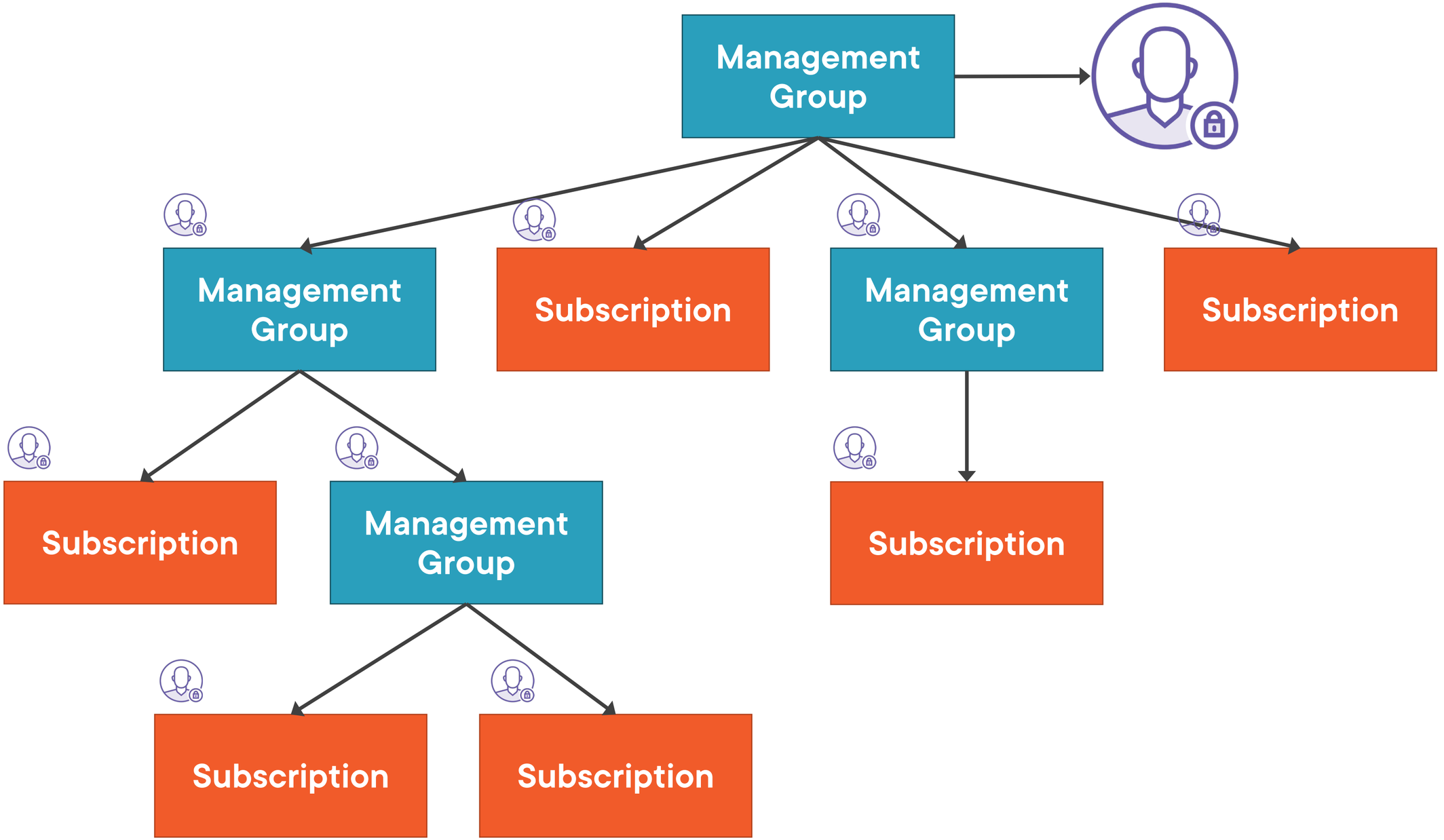
Management Group
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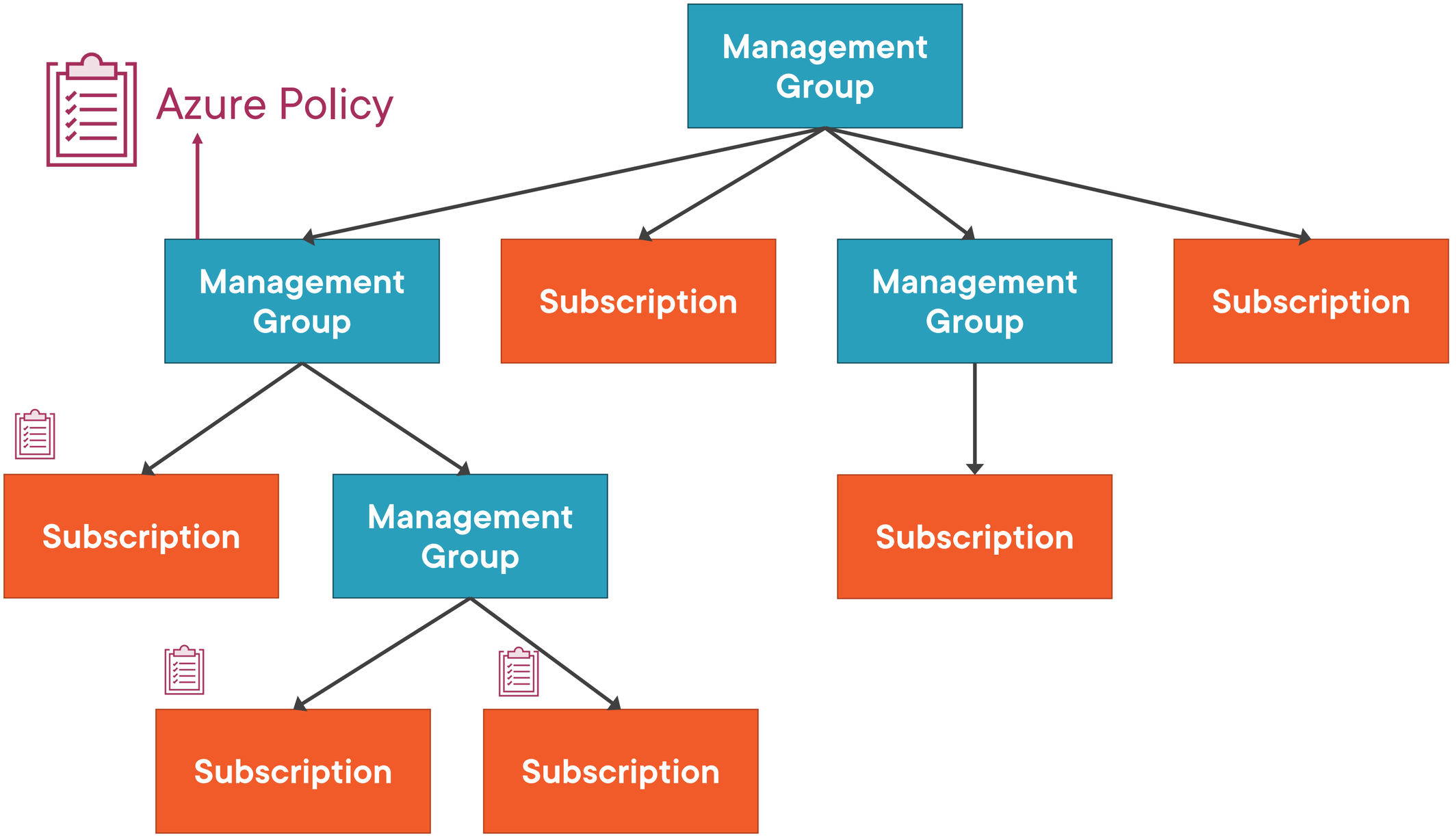
Azure Policy
Management Group
Management Group
Subscription
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Subscription

Module Summary

- Subscriptions
- Resource groups
- Azure regions
- Data centres
- Navigate the Azure portal
- Create resources
- Azure Active Directory

Up Next:
Exploring Azure Compute