Microsoft Azure DevOps Engineer: Leveraging ARM Templates for Infrastructure

AZURE RESOURCE MANAGER ARCHITECTURE

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Course Overview

Azure Resource Manager Architecture

Using ARM Templates

Implementing Source Control

Module Overview

Azure Resource Manager Fundamentals

JSON, the foundation of modern Azure

Utilizing Resource Groups

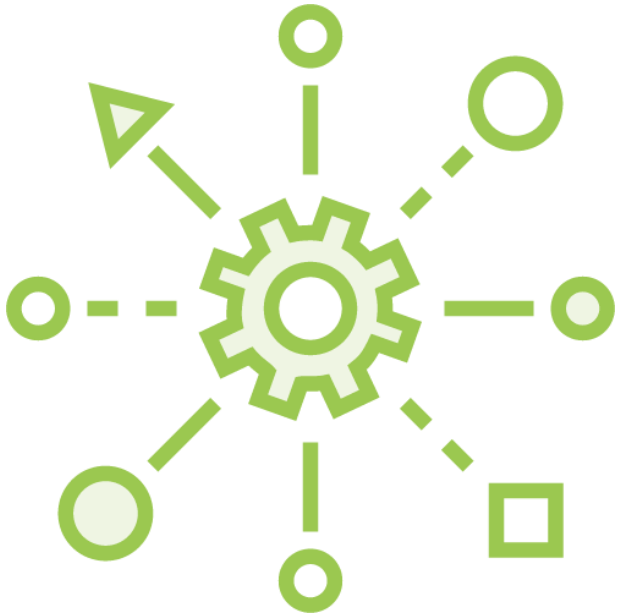
Azure Provisioning Options

Why This Is Important

Business value is what organizations expect from technology today and that value needs to be delivered quickly and efficiently

A new methodology is required that embraces modern development and operational practices

Azure Resource Manager Fundamentals



Modern Azure functionality is built on the Azure Resource Manager management and deployment service

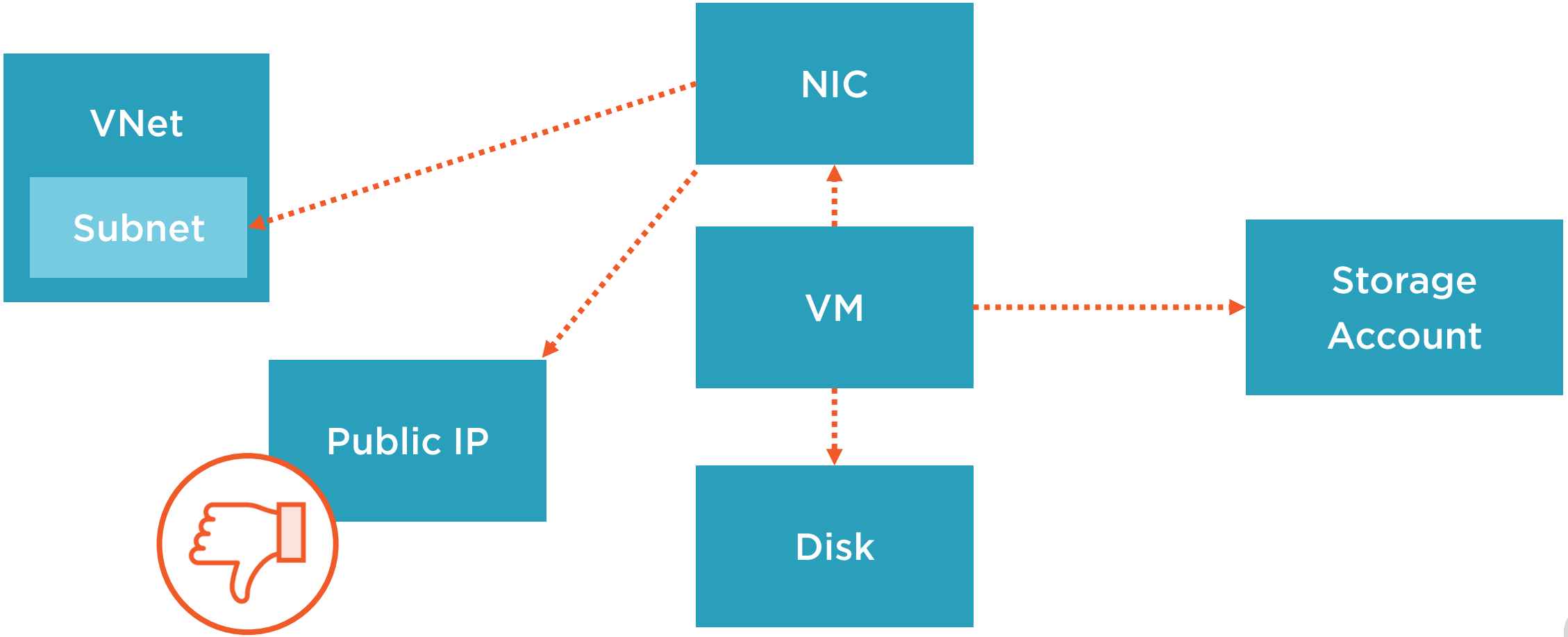
All APIs and management interfaces operate via the ARM layer

ARM supports massive parallel operations via declarative templates with granular RBAC

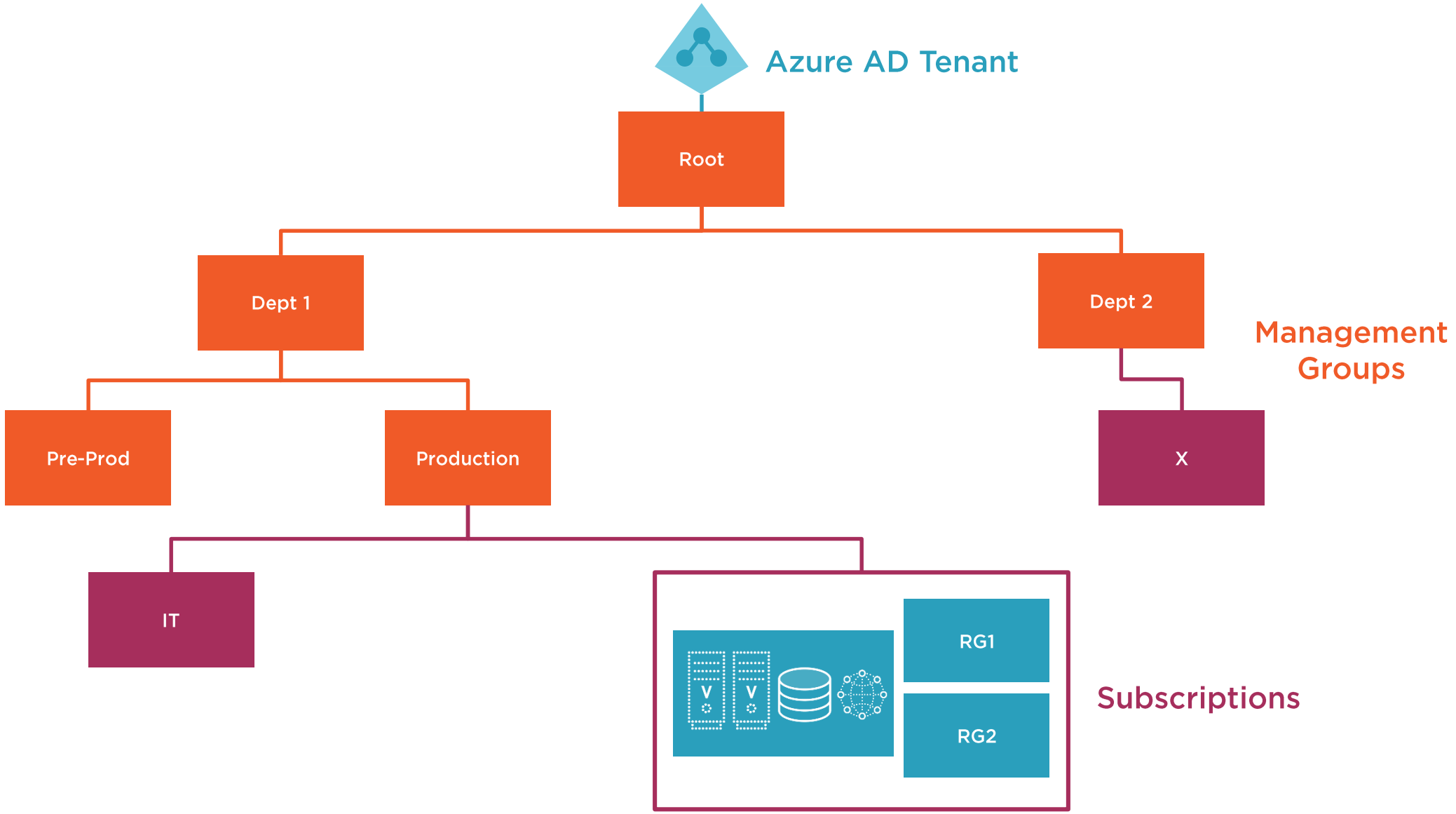
Azure resource types are provided by resource providers

Resource Relationships

Resources will often reference and depend on other resources



Resource Organizational Structure



JavaScript Object Notation (JSON)

JSON is your friend in Azure

All configurations and deployments are internally stored as JSON in ARM

While verbose, it is easy to read and understand

Resource Groups

Resource groups are fundamental to ARM

Use them to provide natural grouping of resources

Resource groups provide numerous benefits and features:

1. Grouping of resources that share a common lifecycle
2. RBAC is commonly applied at the resource group level
3. Policies can be applied at the resource group level
4. Tags can be configured (not inherited to container resources)

Resources exist within
one and only one resource
group which cannot
be nested

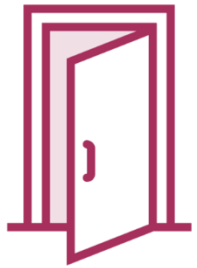
Resource Groups are NOT

Boundaries of access

Confined to a region

Azure Resource Provisioning Options

The Portal



- ⊕ Intuitive
- ⊖ Not scalable, prone to error and not repeatable

PowerShell/CLI

- ⊕ Can be change controlled and is repeatable
- ⊖ Not declarative nor idempotent

JSON Template

- ⊕ Declarative, idempotent, prescriptive with easy re-use and deployment between environments
- ⊖ May be intimidating at first!

Summary

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Utilizing Resource Groups

Azure Provisioning Options

Next Up:
Using ARM Templates