SYNERGETICS

GET IT RIGHT

Component Configuration

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Gold Cloud Platform

Microsoft Cloud Solution Provider

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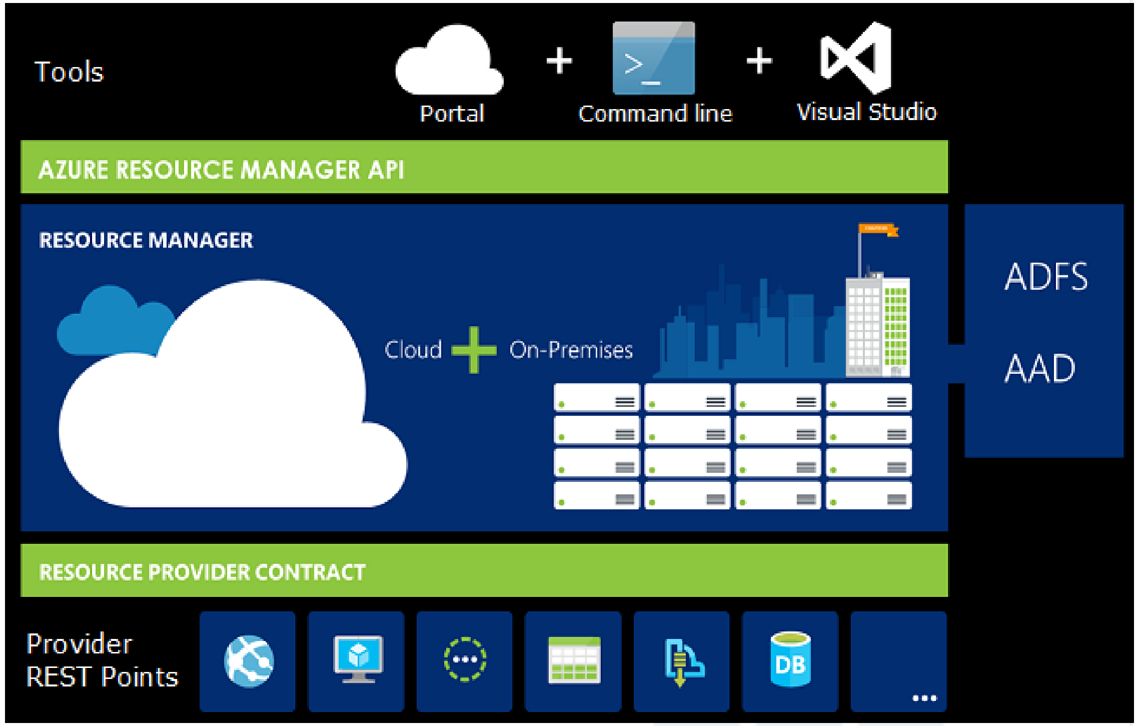
Agenda

- ARM Templates
- Deployment using CI/CD
- GitHub Integration

ARM Templates : Resource Manager

- Provides a consistent management layer
- Enables you to work with the resources in your solution as a group
- Deploy, update, or delete in a single, coordinated operation
- Provides security, auditing, and tagging features
- Choose the tools and APIs that work best for you



Tools

Portal + Command line + Visual Studio

AZURE RESOURCE MANAGER API

RESOURCE MANAGER

Cloud + On-Premises

ADFS

AAD

RESOURCE PROVIDER CONTRACT

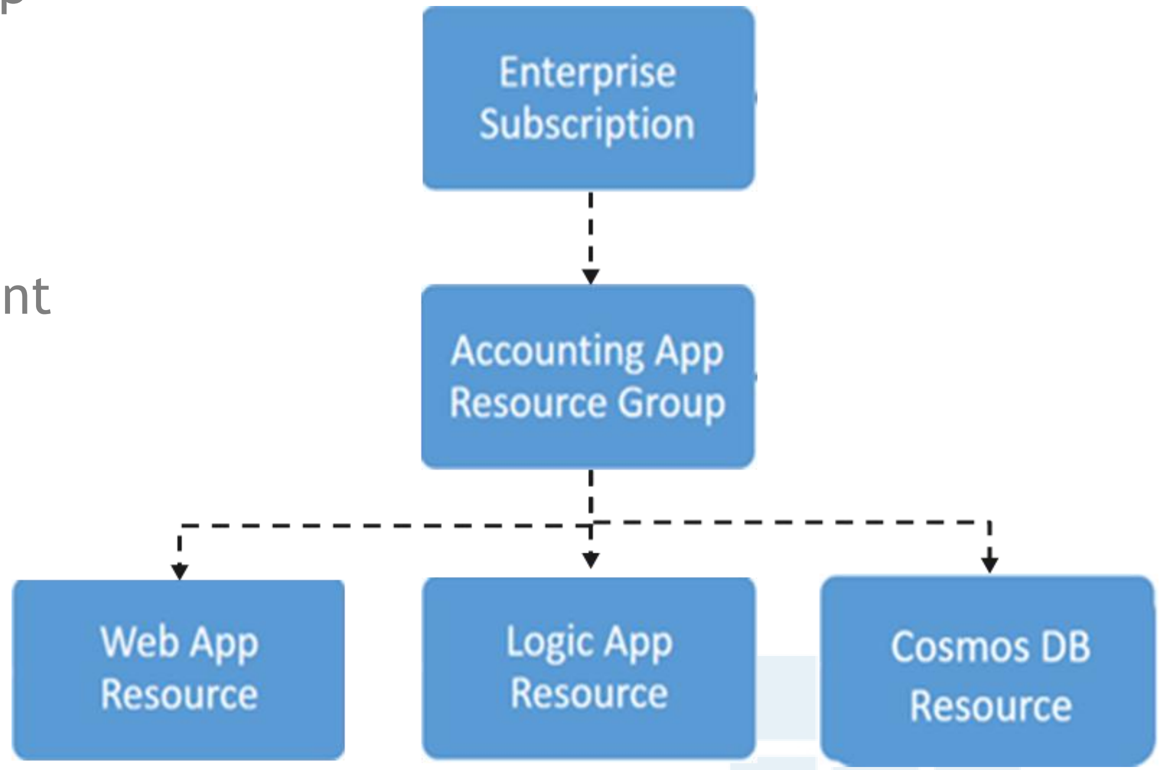
Provider
REST Points

Terminology

- A **resource** is simply a single service instance in Azure
- A **resource group** is a logical grouping of resources
- An **Azure resource manager template** is a JSON file that allows you to declaratively describe a set of resources
- A **declarative syntax** is what a template uses to state what you intend to create
- A **resource provider** is service that supplies the resources you can deploy and manage through Resource Manager

Resource Groups and Deployments

- Resources can only exist in one resource group
- Groups cannot be renamed
- Groups can have resources of many different types (services)
- Groups can have resources from many different regions
- Deployments are incremental



Enterprise Subscription

Accounting App Resource Group

Web App Resource

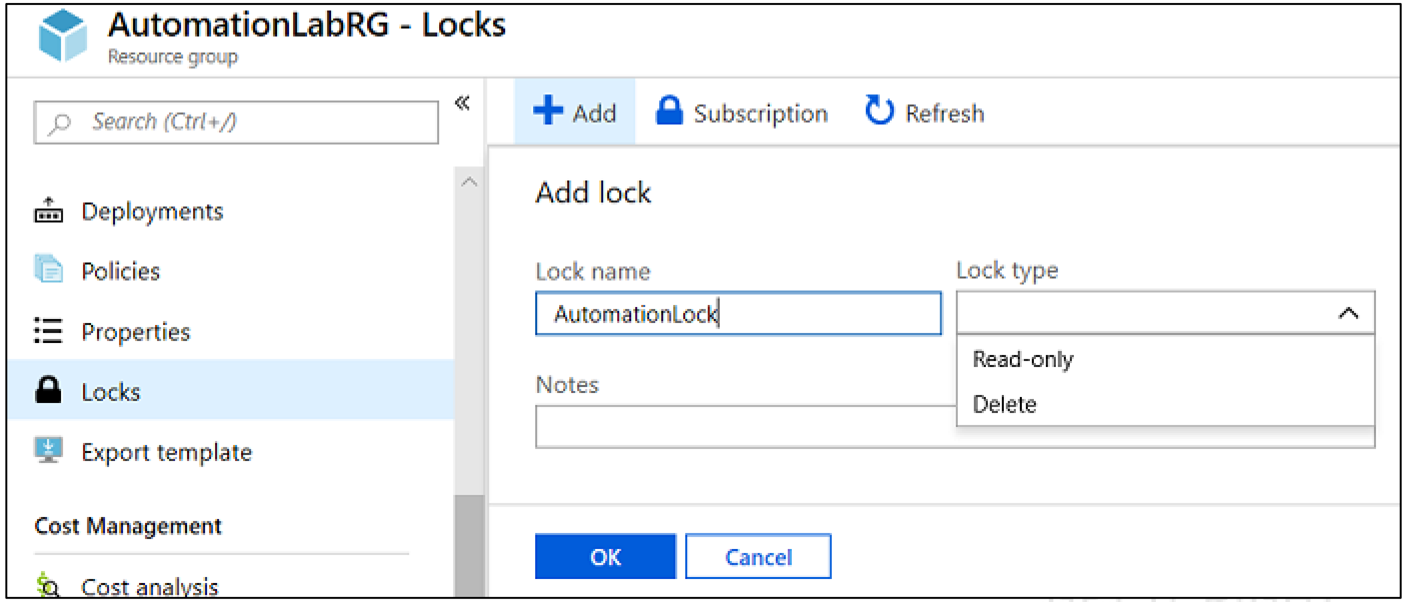
Logic App Resource

Cosmos DB Resource

✓ By scoping permissions to a resource group, you can add/remove and modify resources easily

Resource Manager Locks

- Associate the lock with a subscription, resource group, or resource
- Locks are inherited by child resources
- Read-Only locks prevent any changes to the resource
- Delete locks prevent deletion



AutomationLabRG - Locks

Resource group

Lock name: AutomationLock

Lock type: Read-only / Delete

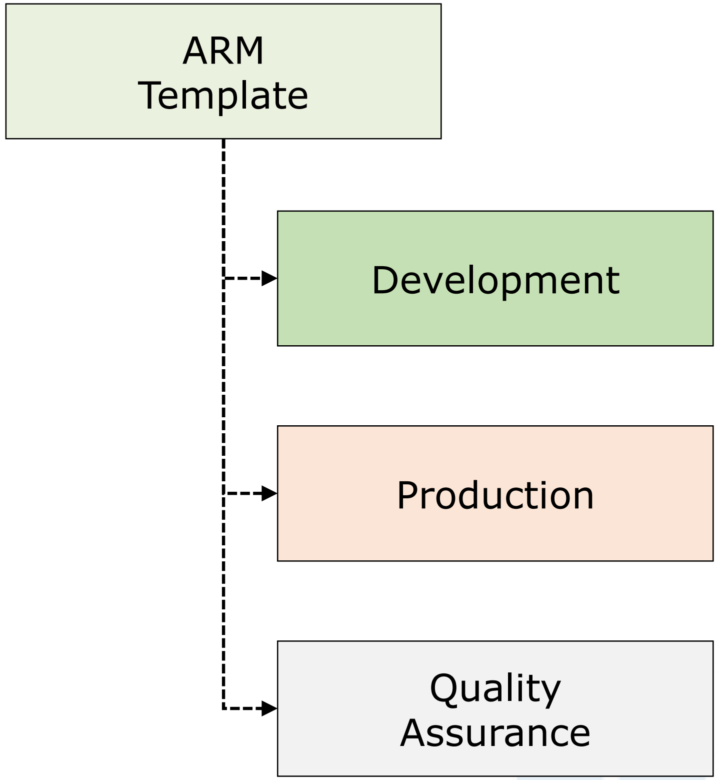
Notes:

ARM Templates Overview

- Template Advantages
- Template Schema
- Template Parameters
- Template Variables
- QuickStart Templates
- Demonstration – QuickStart Templates
- Demonstration – Run Templates with PowerShell

Template Advantages

- Improves consistency
- Express complex deployments
- Reduce manual, error prone tasks
- Express requirements through code
- Promotes reuse
- Modular and can be linked
- Simplifies orchestration



ARM Template

Development

Production

Quality Assurance

Template Schema

- Defines all the Resource Manager resources in a deployment
- Written in JSON
- A collection of key-value pairs
- Each key is a string
- Each values can be a string, number, Boolean expression, list of values, object

```
{
    "$schema":
     "http://schema.management.
     azure.com/schemas/2015-01-
     01/deploymentTemplate.json#"
,
    "contentVersion": "",
    "parameters": {  },
    "variables": {  },
    "functions": [  ],
    "resources": [  ],
    "outputs": {  }
}
```

Template Parameters

- Specify which values are configurable when the template runs
- This example has two parameters: one for a VM’s username (adminUsername), and one for its password (adminPassword)

```
"parameters": {
  "adminUsername": {
    "type": "string",
    "metadata": {
      "description": "Username for the
Virtual Machine."
    }
  },
  "adminPassword": {
    "type": "securestring",
    "metadata": {
      "description": "Password for the
Virtual Machine."
    }
  }
}
```

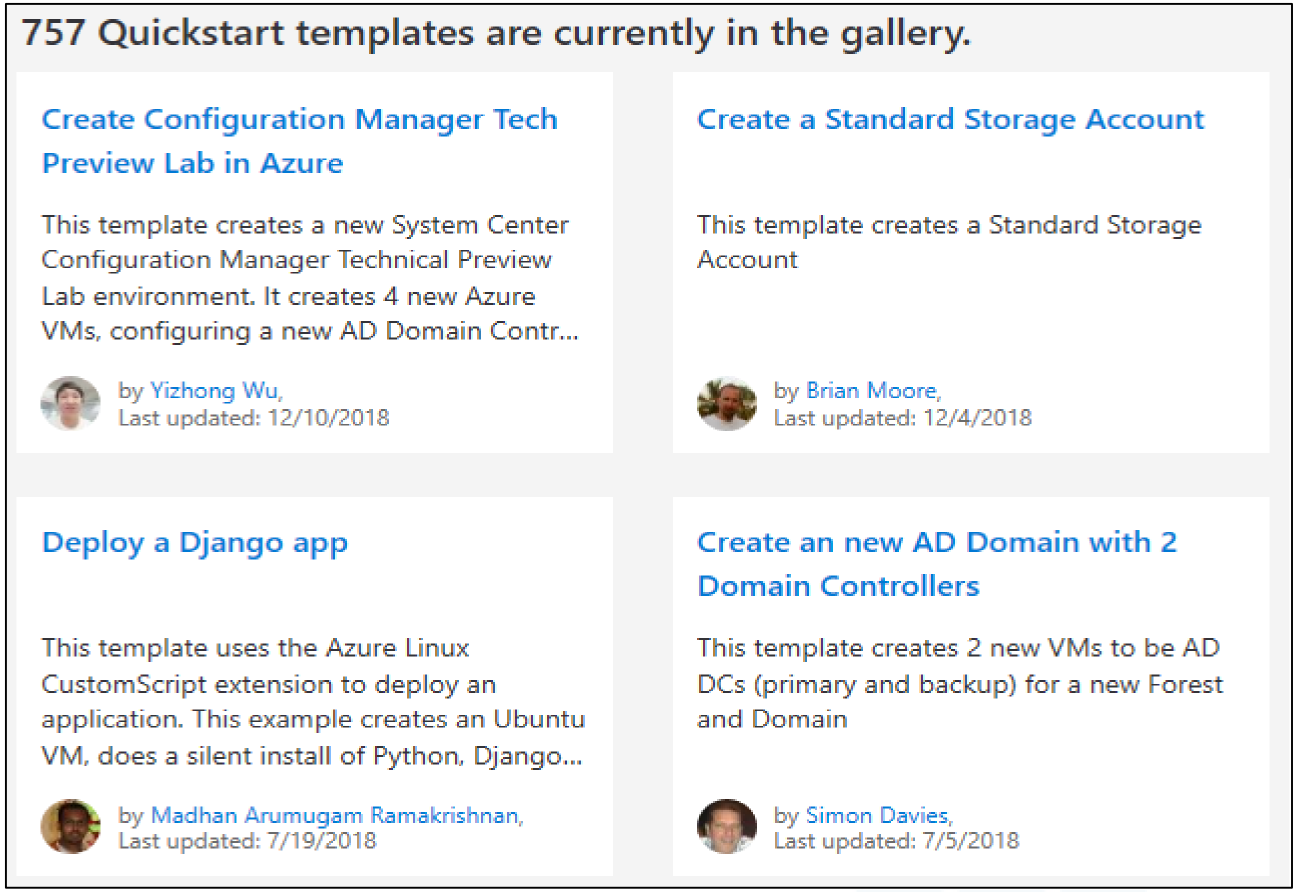
Template Variables

- Define values that are used throughout the template
- Makes your templates easier to maintain
- This example provides variables that describe networking features for a virtual machine

```
"variables": {
  "nicName": "myVMNic",
  "addressPrefix": "10.0.0.0/16",
  "subnetName": "Subnet",
  "subnetPrefix": "10.0.0.0/24",
  "publicIPAddressName": "myPublicIP",
  "virtualNetworkName": "MyVNET"
}
```

QuickStart Templates

- Resource Manager templates provided by the Azure community
- Provides everything you need to deploy your solution or serves as a starting point for your template



757 Quickstart templates are currently in the gallery.

Create Configuration Manager Tech Preview Lab in Azure

This template creates a new System Center Configuration Manager Technical Preview Lab environment. It creates 4 new Azure VMs, configuring a new AD Domain Contr...

by Yizhong Wu,
Last updated: 12/10/2018

Create a Standard Storage Account

This template creates a Standard Storage Account

by Brian Moore,
Last updated: 12/4/2018

Deploy a Django app

This template uses the Azure Linux CustomScript extension to deploy an application. This example creates an Ubuntu VM, does a silent install of Python, Django...

by Madhan Arumugam Ramakrishnan,
Last updated: 7/19/2018

Create an new AD Domain with 2 Domain Controllers

This template creates 2 new VMs to be AD DCs (primary and backup) for a new Forest and Domain

by Simon Davies,
Last updated: 7/5/2018

https://azure.microsoft.com/en-us/resources/templates/

Demonstration – QuickStart Templates

- In this demonstration, you will explore QuickStart templates
  - Explore the QuickStart gallery
  - Explore a template

SYNERGETICS

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Deployment with CI/CD

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App Service Deployment

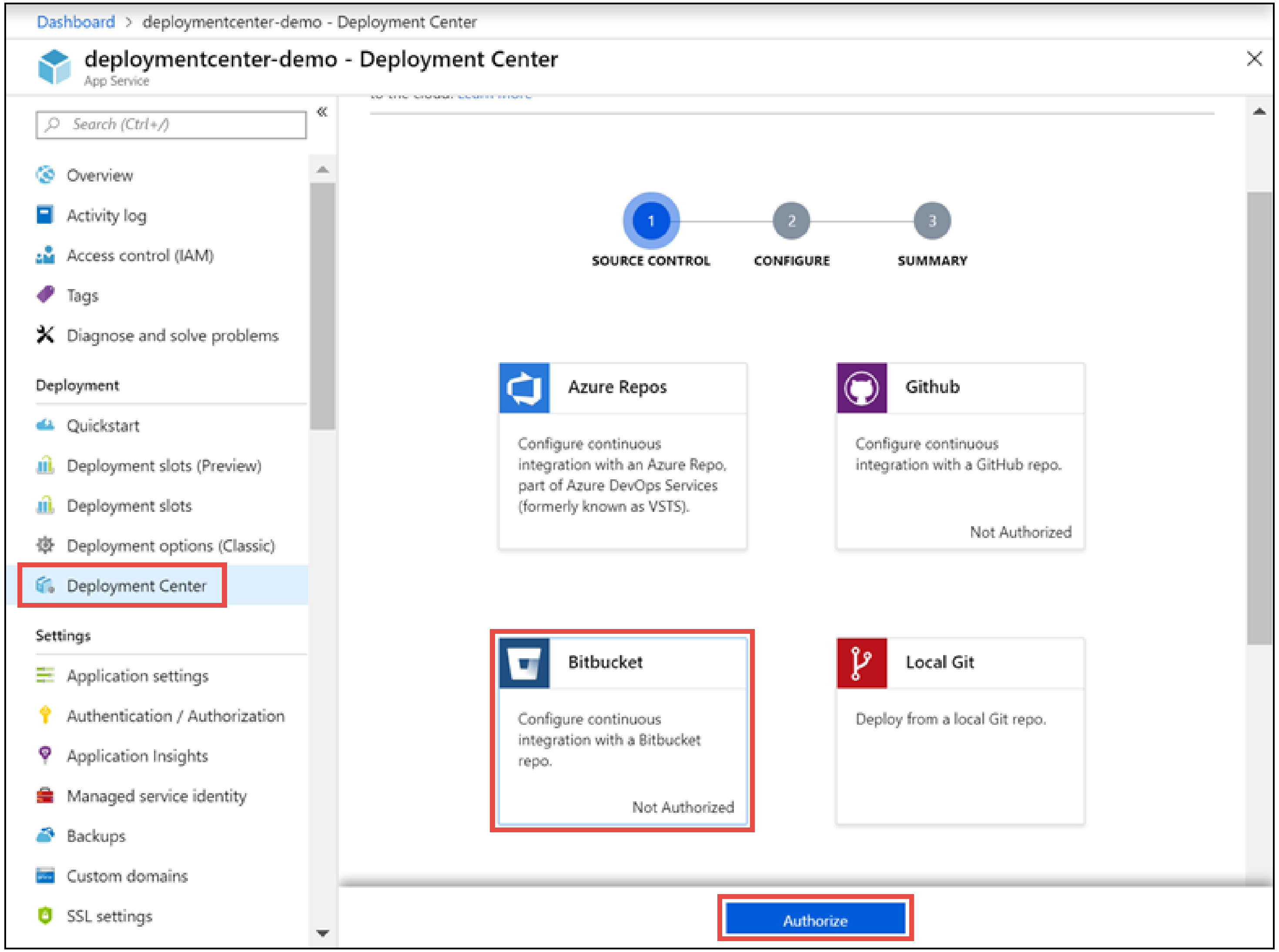
- Azure App Services Currently support continuous deployment using
  - BitBucket
  - GitHub
  - Azure DevOps

Deploying An App Service

Dev Environment	Files Expected in ROOT Directory
ASP.NET (Windows only)	**.sln*, **.csproj*, or *default.aspx*
ASP.NET Core	**.sln* or **.csproj*
PHP	*index.php*
Ruby (Linux only)	*Gemfile*
Node.js	*server.js*, *app.js*, or *package.json* with a start script
Python	**.py*, *requirements.txt*, or *runtime.txt*
HTML	*default.htm*, *default.html*, *default.asp*, *index.htm*, *index.html*, or *iisstart.htm*

Deploy through BitBucket

Deployment Center > BitBucket >
Authorize
Authorize BitBucket repository only once.



Dashboard > deploymentcenter-demo - Deployment Center

deploymentcenter-demo - Deployment Center
App Service

Azure Repos
Configure continuous integration with an Azure Repo, part of Azure DevOps Services (formerly known as VSTS).

Github
Configure continuous integration with a GitHub repo.
Not Authorized

Bitbucket
Configure continuous integration with a Bitbucket repo.
Not Authorized

Local Git
Deploy from a local Git repo.

Deploy through Azure Repos

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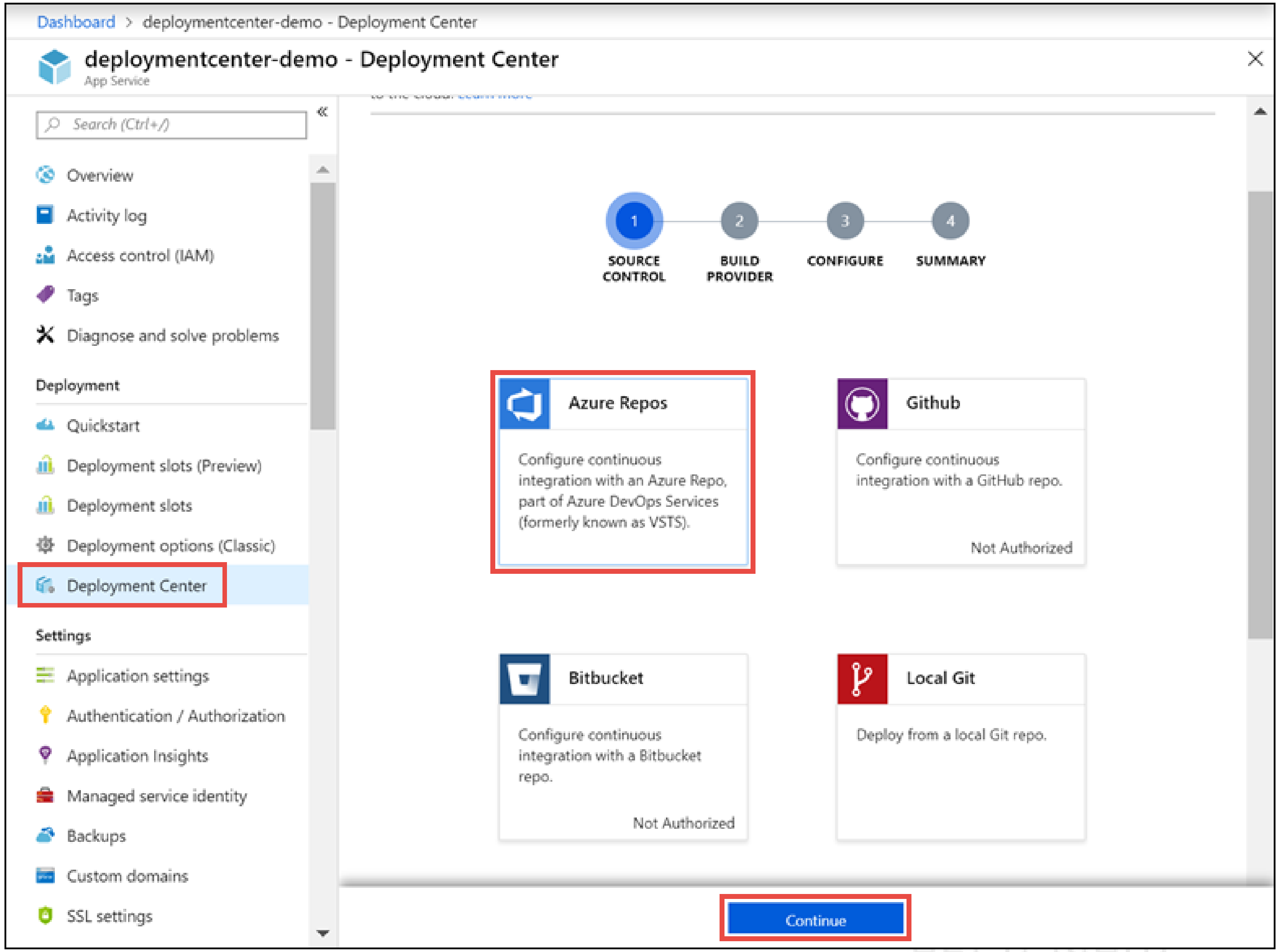

Dashboard > deploymentcenter-demo - Deployment Center

deploymentcenter-demo - Deployment Center
App Service

Search (Ctrl+/)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

Deployment

- Quickstart
- Deployment slots (Preview)
- Deployment slots
- Deployment options (Classic)
- Deployment Center

Settings

- Application settings
- Authentication / Authorization
- Application Insights
- Managed service identity
- Backups
- Custom domains
- SSL settings

1 SOURCE CONTROL — 2 BUILD PROVIDER — 3 CONFIGURE — 4 SUMMARY

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Continue

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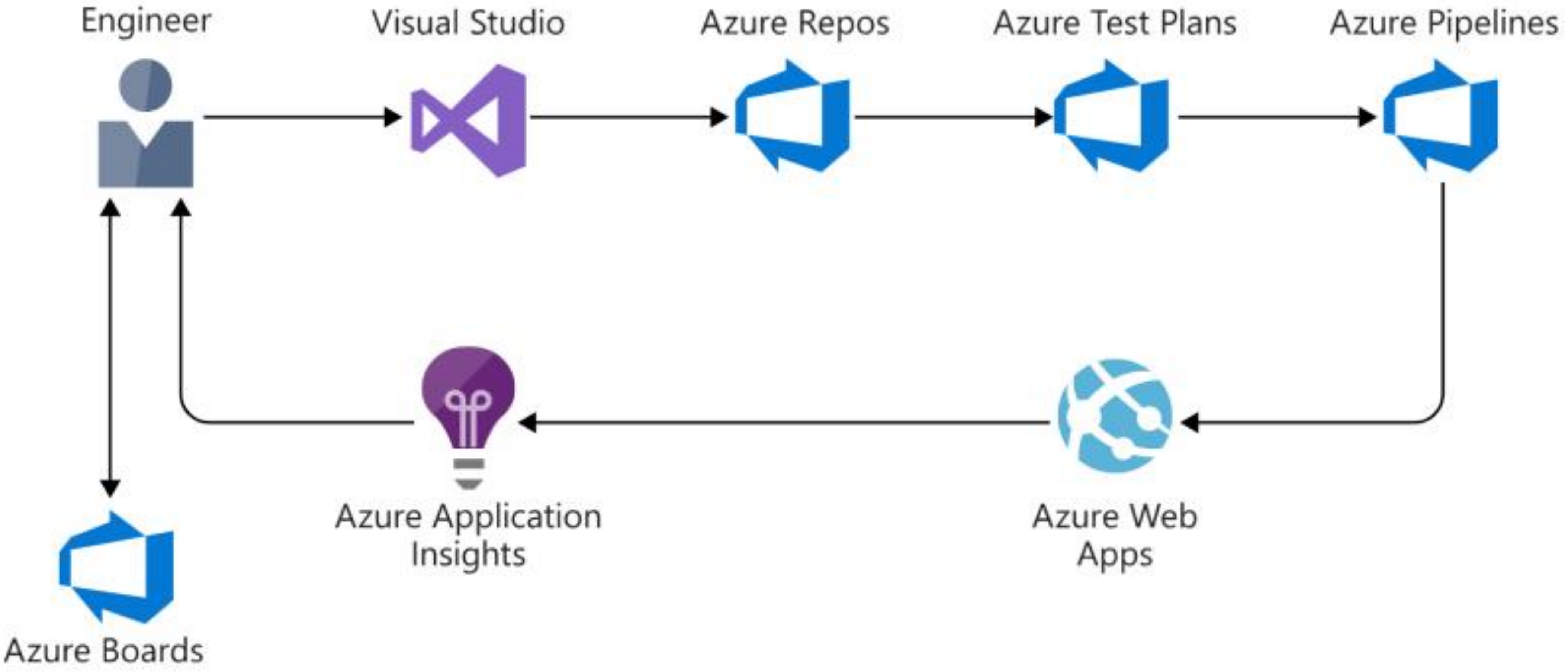
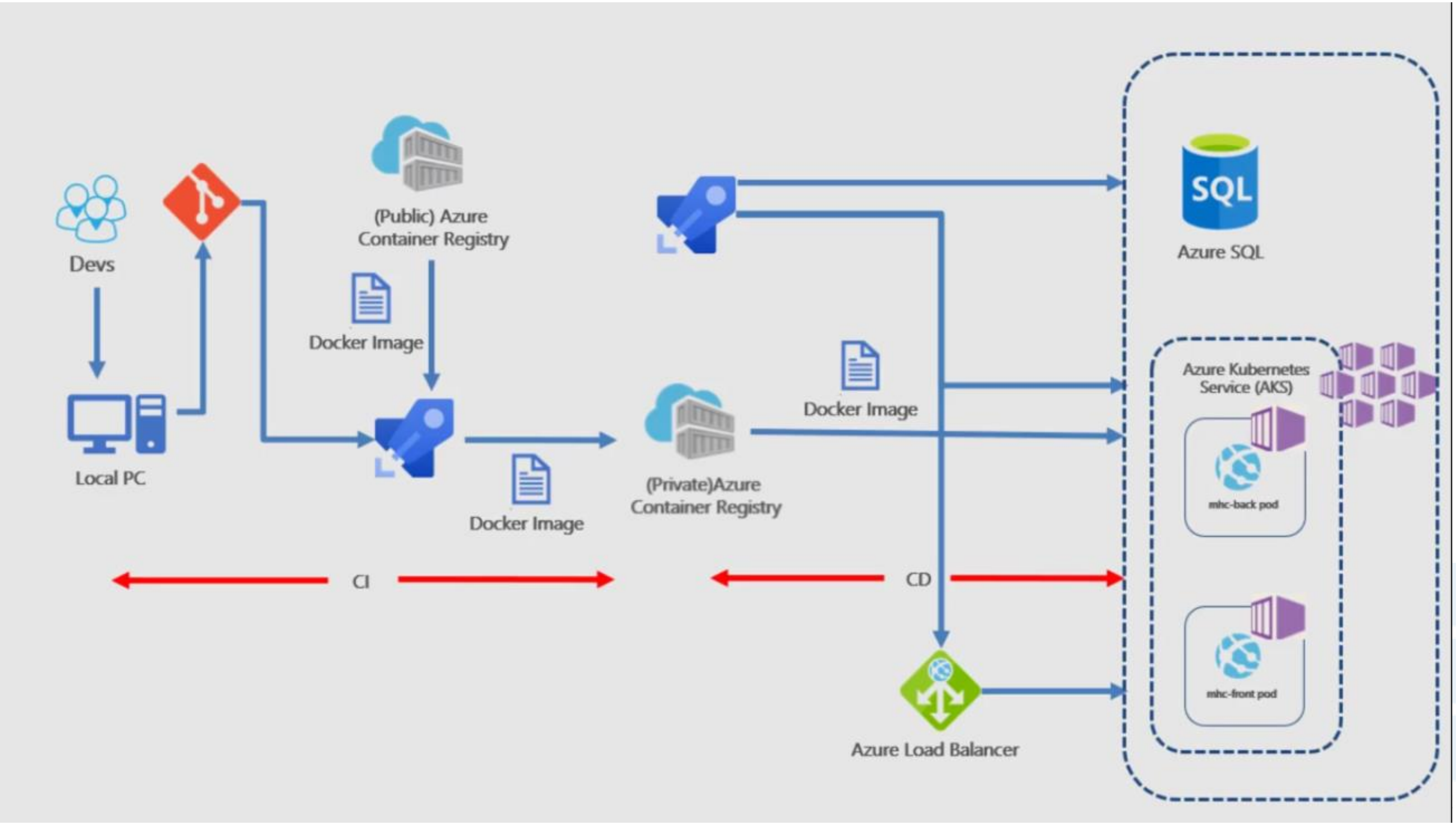
Deploy through Azure DevOps

- Azure DevOps : A Complete ALM and CI/CD Solution
- Integrate your Azure Subscription with Azure DevOps account to continuously build and release application.
  - Deploy on IaaS VMs
  - Deploy Container instances
  - Deploy App Services
  - Deploy to AKS

Azure DevOps : App Service Deployment



Azure DevOps : Deploy to AKS


Devs
Local PC
(Public) Azure Container Registry
Docker Image
Docker Image
(Private)Azure Container Registry
Docker Image
Azure SQL
Azure Kubernetes Service (AKS)
mhc-back pod
mhc-front pod
Azure Load Balancer
CI
CD