



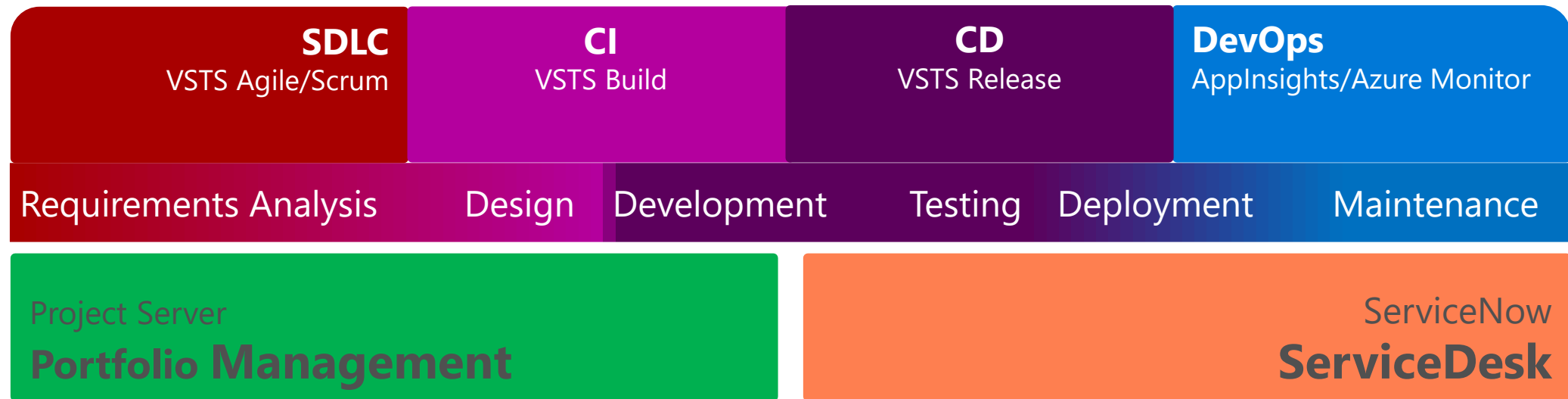
Application Lifecycle Management at Auckland Transport VSTS Continuous Delivery Guidance

Nikolai Blackie
Premier Field Engineer Sub-Contractor

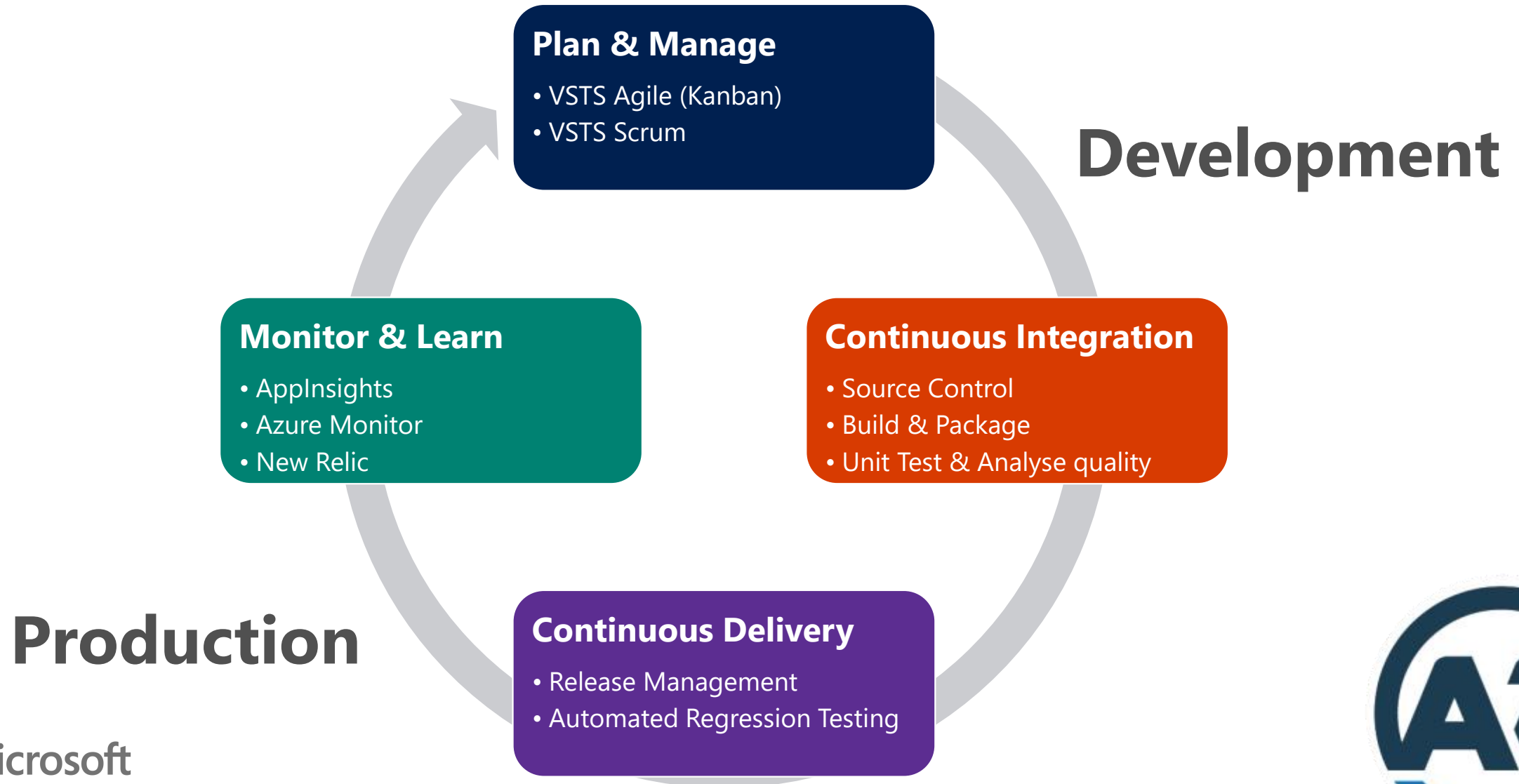


What is Application Lifecycle Management?

- Everything from birth to death of a product
- Agile methods are Auckland Transports preferred SDLC
- CI and CD tools help automate parts of the SDLC
- DevOps focus on the steps to get software built and deployed

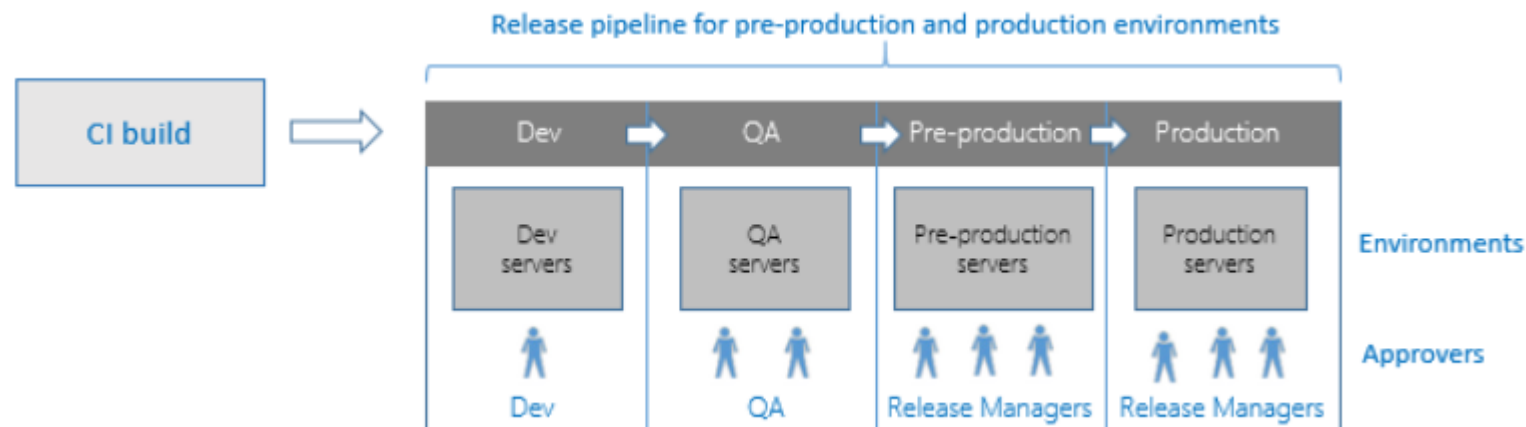
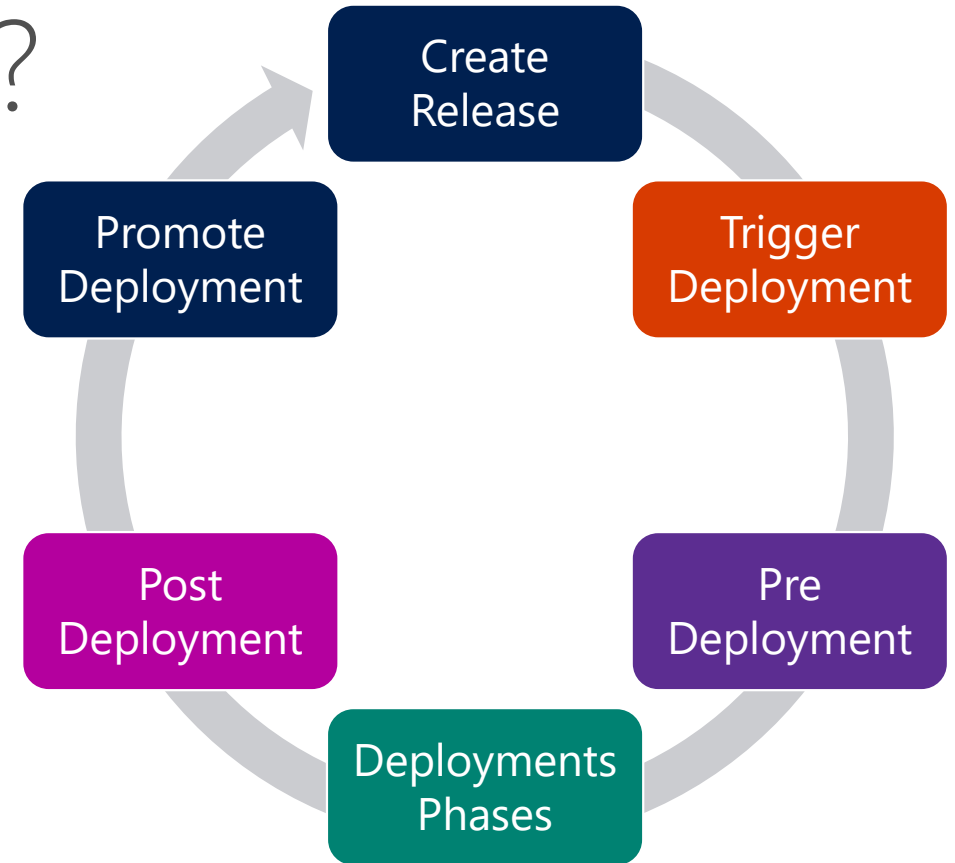


ALM at Auckland Transport



What is Continuous Delivery?

- Automation of the release of features, configuration & fixes
- Multiple benefits
 - Low risk releases
 - Faster release times
 - Higher quality
 - Lower costs
 - Happier teams
- Continuous Delivery != Continuous Deployment

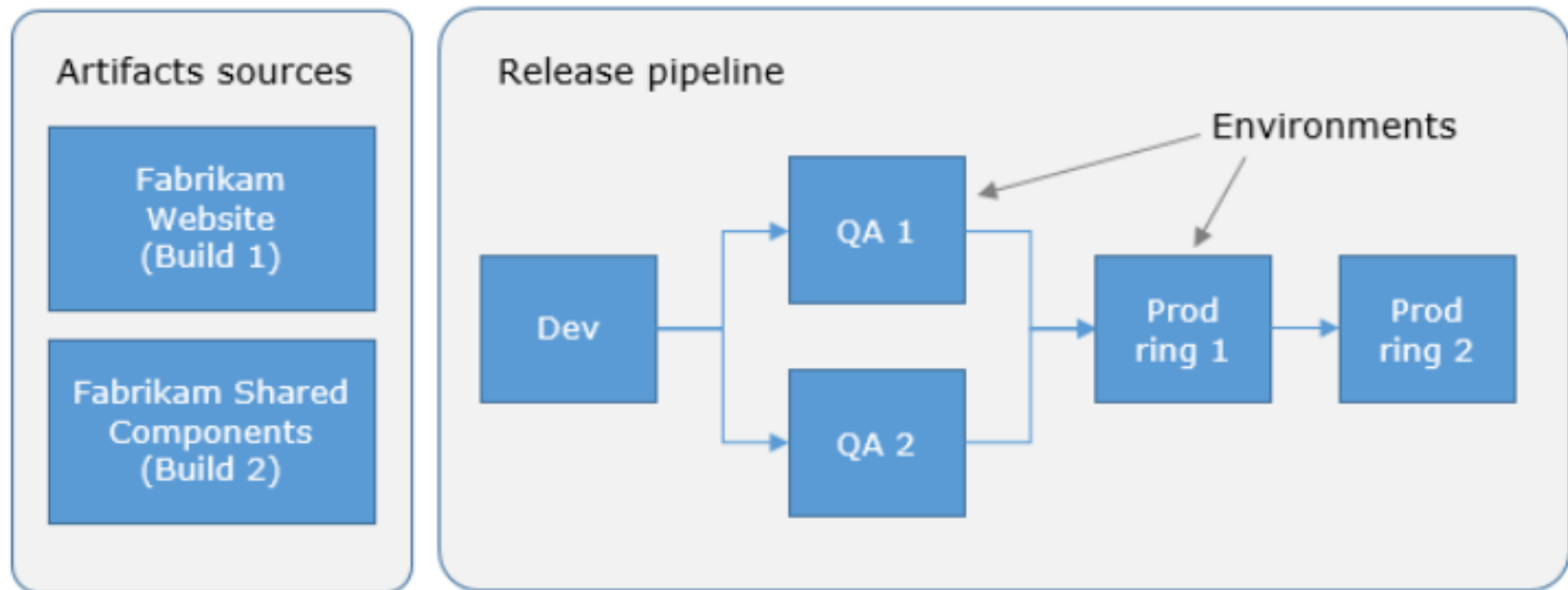


AT VSTS Continuous Delivery Guidance

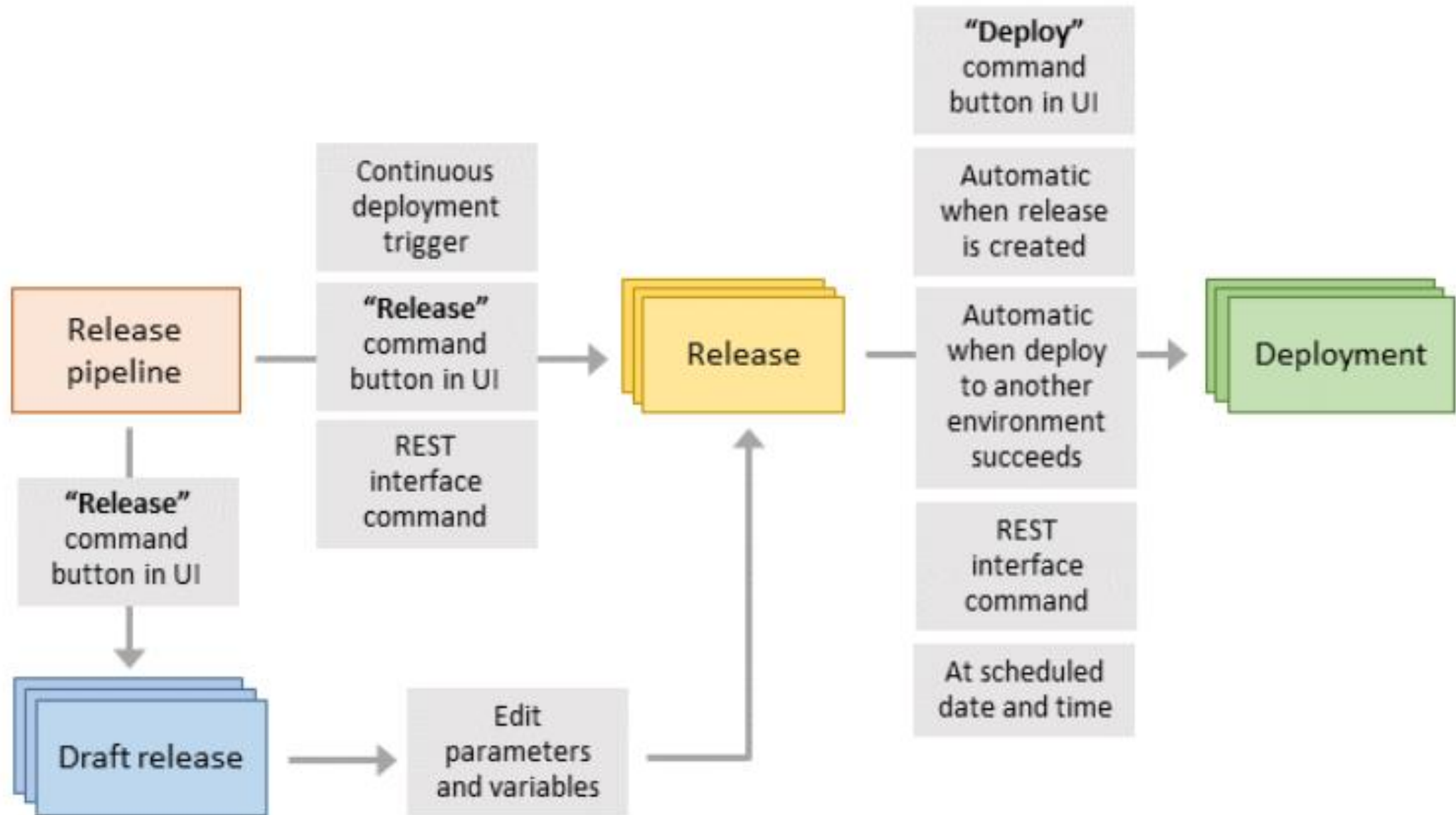
- Release Definitions
- Release Environments
- Service Endpoints
- Artifacts
- Triggers
- Variables
- Release Approvals
- Release Gates

Release Definitions

- Define artifacts, environments and release process
- Will establish infrastructure, deploy applications and test outcomes of release

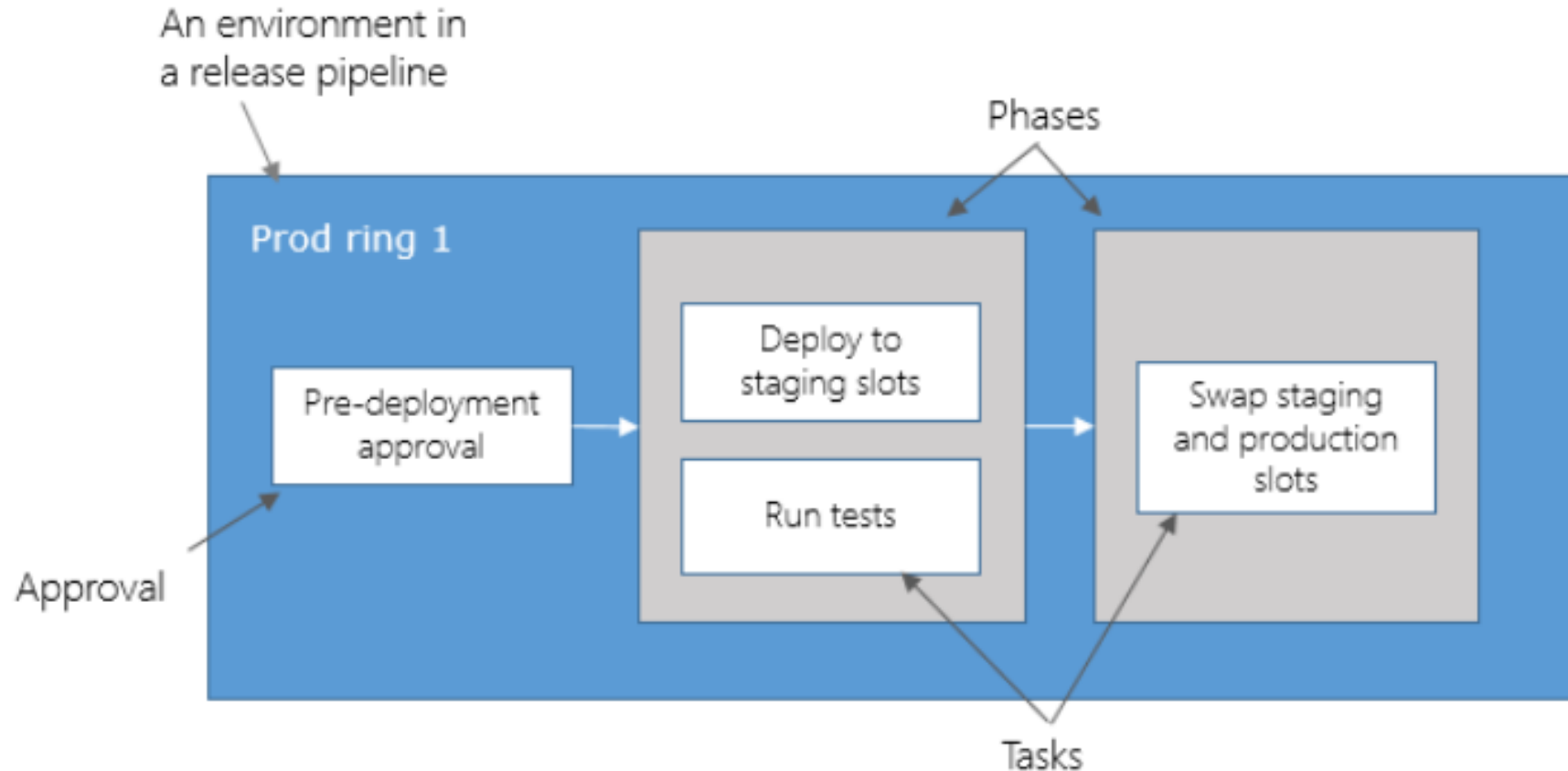


Release Definitions



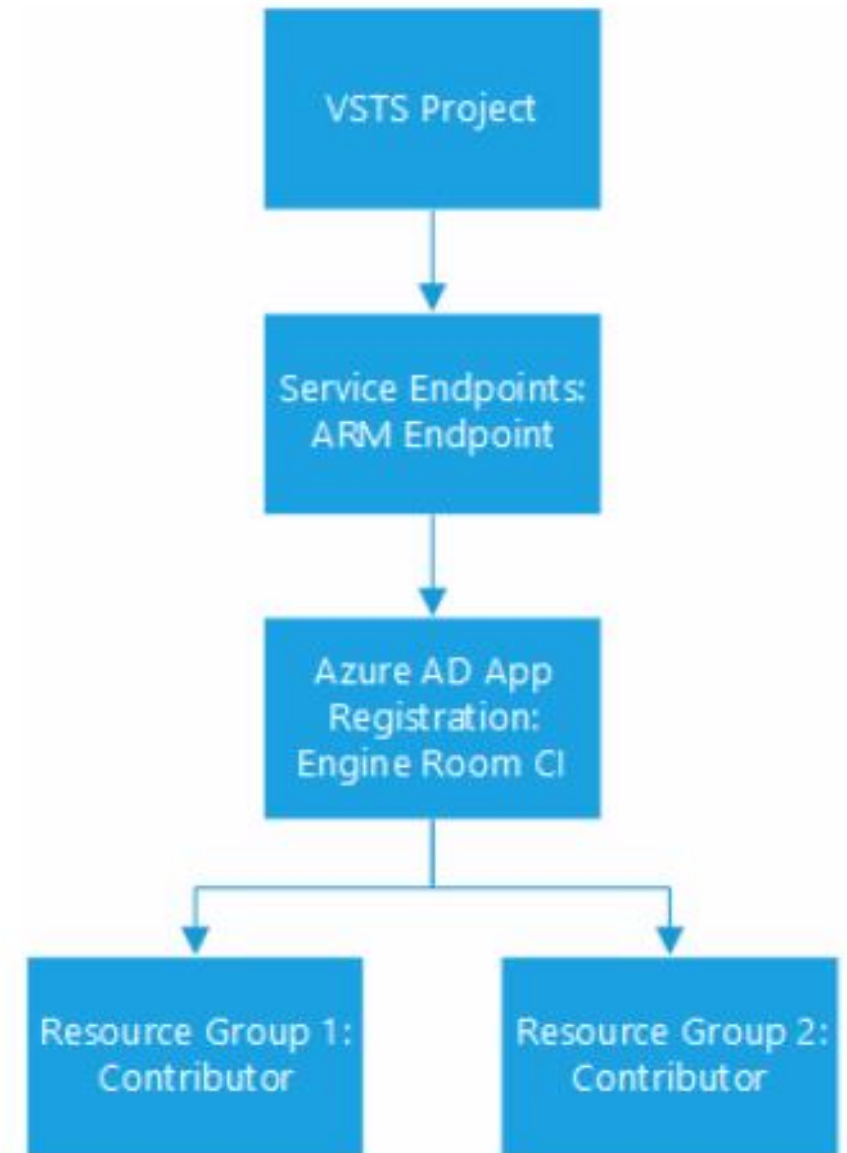
Release Environments

- Encapsulate a series of pre deployment stages, phases, tasks and post deployment stages



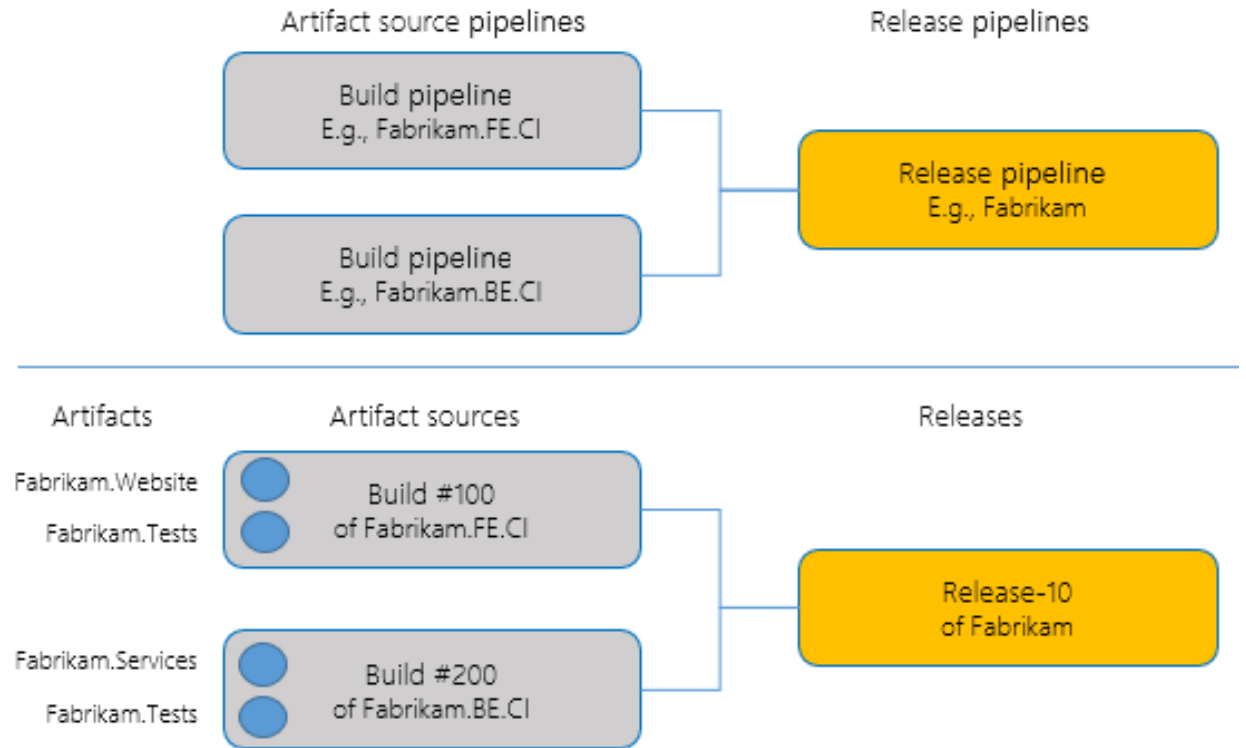
Azure Resource Manager service endpoint

- Provide VSTS with access to Azure
- Secure access to resource group so that infrastructure & code can be deployed
- Teams should never require access to Azure PreProd or Prod subscriptions



Release Artifacts

- A deployable component in release definition
- Can define multiple artifacts for release
- Artifacts are an output of builds or repos
- Can control versions used. i.e. latest, tagged, selected



Release Triggers

- Release triggers control how release is created
- Environment triggers control how releases are promoted between environment
- Types
 - Continuous Deployment
 - Predefined scheduled
 - Artifact filters
 - Environment filter
 - Manual






Release Variables

- Separate environment configuration from code & scripts
- Specify at dev time, edit during releases i.e. Change control numbers
- Can link variable groups to Azure Key vaults
- Basically prevents devs leaking secrets in plain text


Name	Release	DEV - D01	PREPROD - U01
ChangeDeployFunctionKeyName	VstsAccess		
ChangeDeployFunctionKeyValue		VwlW3kJ8H/oq/YYYYIUI3xheVXCXpHuQbIA5Er...	UGMo9IbNHgR29otKycdJn8Lu
ChangeDeployFunctionName	ChangeControlCanDeploy		
ChangeRequestToTest		CHG200005536	CHG200005104



Release Approvals



- Pre and Post Deployment
- Apply approval order
- Set timeout
- Policies
 - AT require requesting user can't approve



 Pre-deployment approvals   Enabled

Select the users who can approve or reject deployments to this environment

Approvers 

 RW Riki Williscroft 


 Duncan Kirkman (AT) 

 KH Kevin Hill (AT) 


Search users and groups

Approval order

☐ Any order ☐ In sequence ☒ Any one user

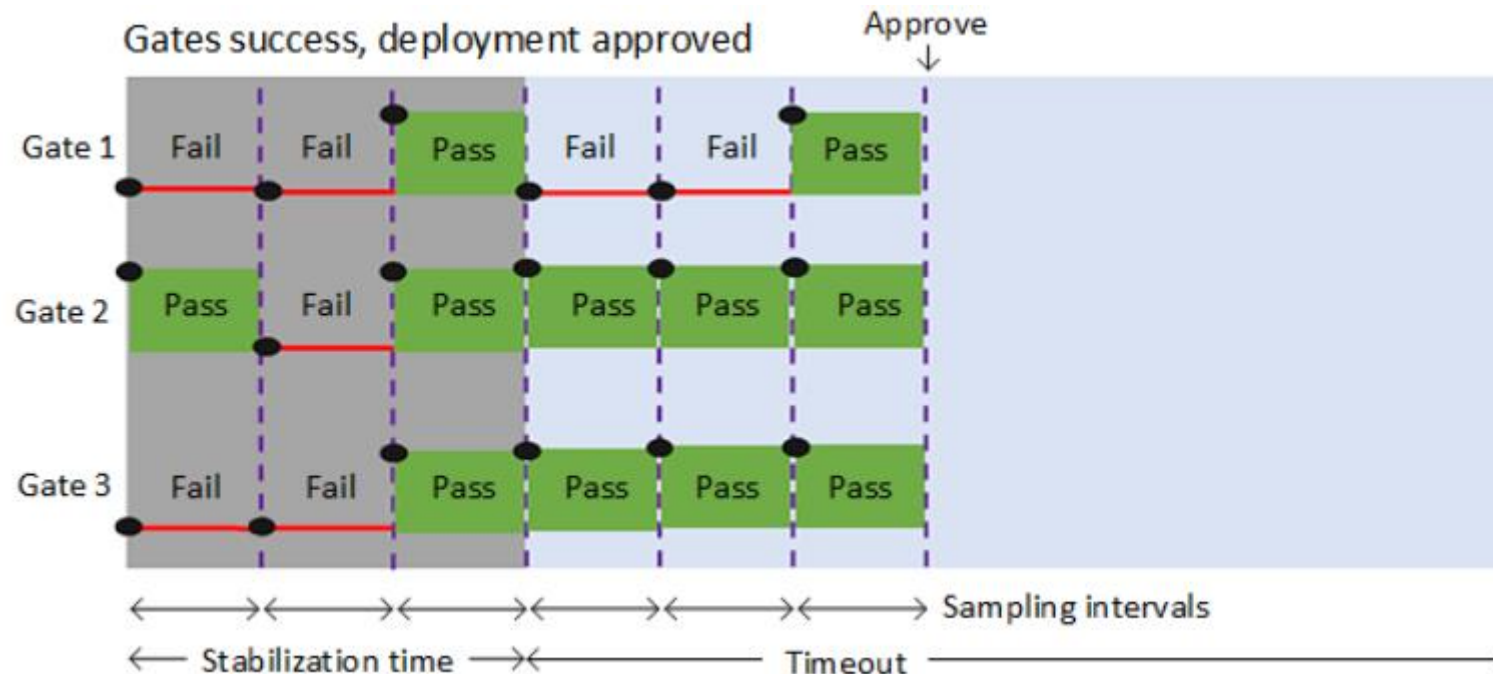
Timeout 

Approval policies

- ☐ User requesting a release or deployment should not approve
- ☐ Revalidate identity of approver before completing the approval.
- ☐ Skip approval if the same approver approved the previous environment 

Release Gates

- Check for external health signals
 - Check Incident and issues management for open issues that prevent a release
 - Quality validation via code coverage checks
 - Infrastructure health via AppInsight checks
 - Change management check such as [ServiceNow-VSTS Change Control Integration](#)



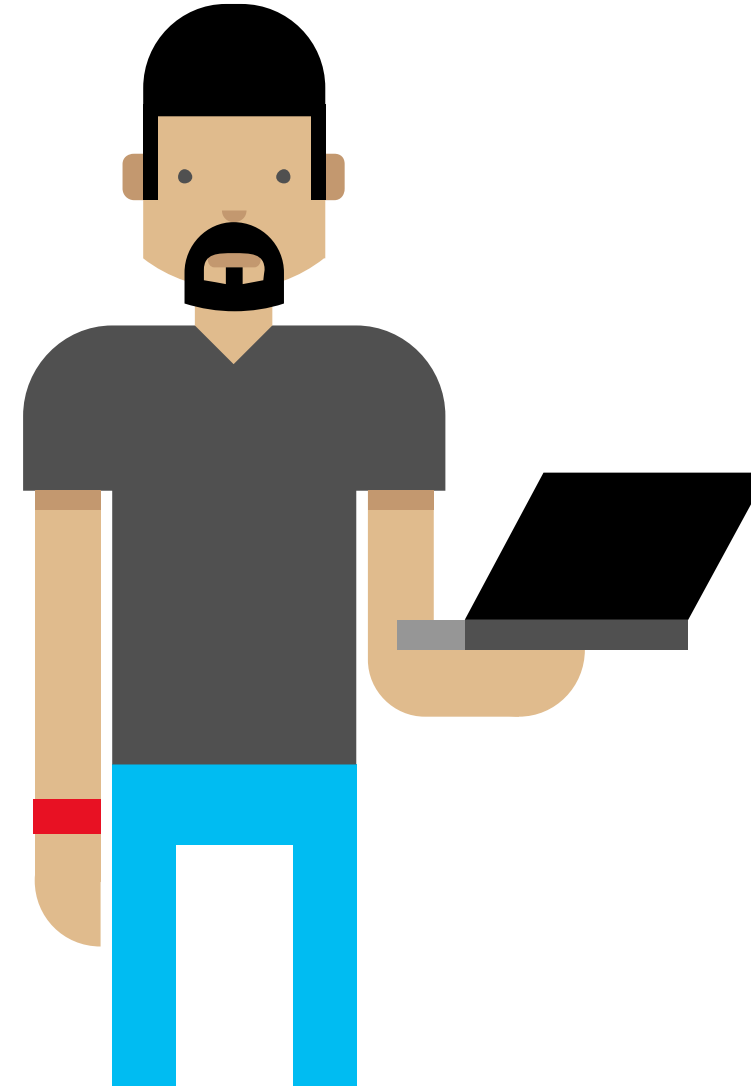
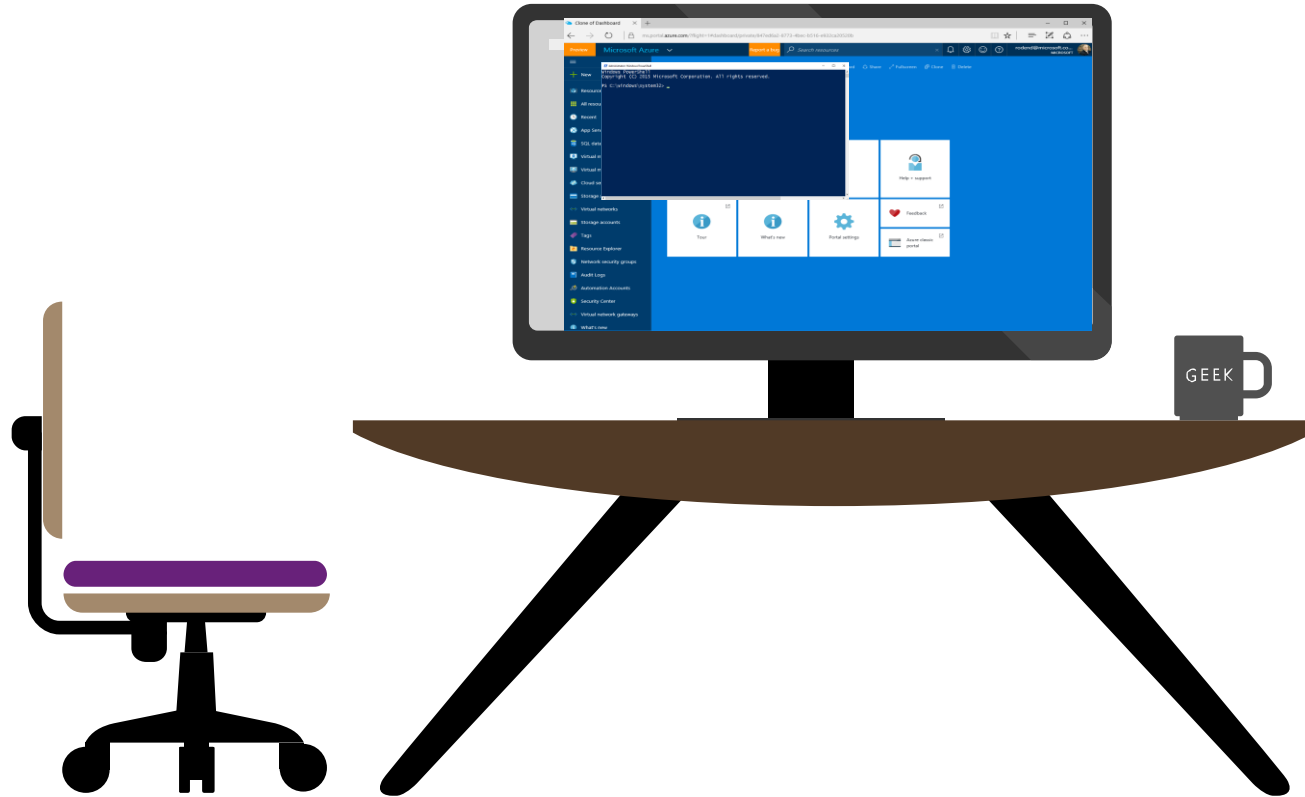
Smoke, Integration and Load Testing

- Implement post deployment phases
- Run functional tests (CodedUI or Selenium tests)
- Run load tests

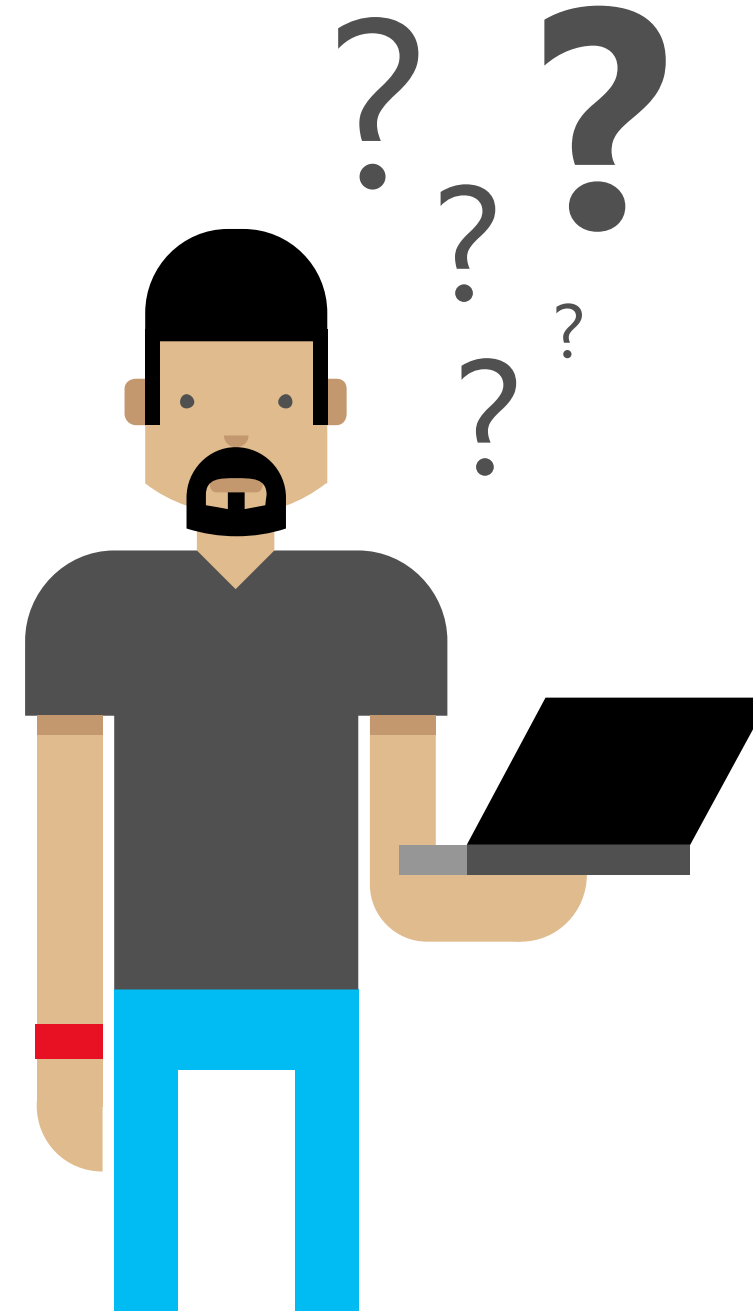
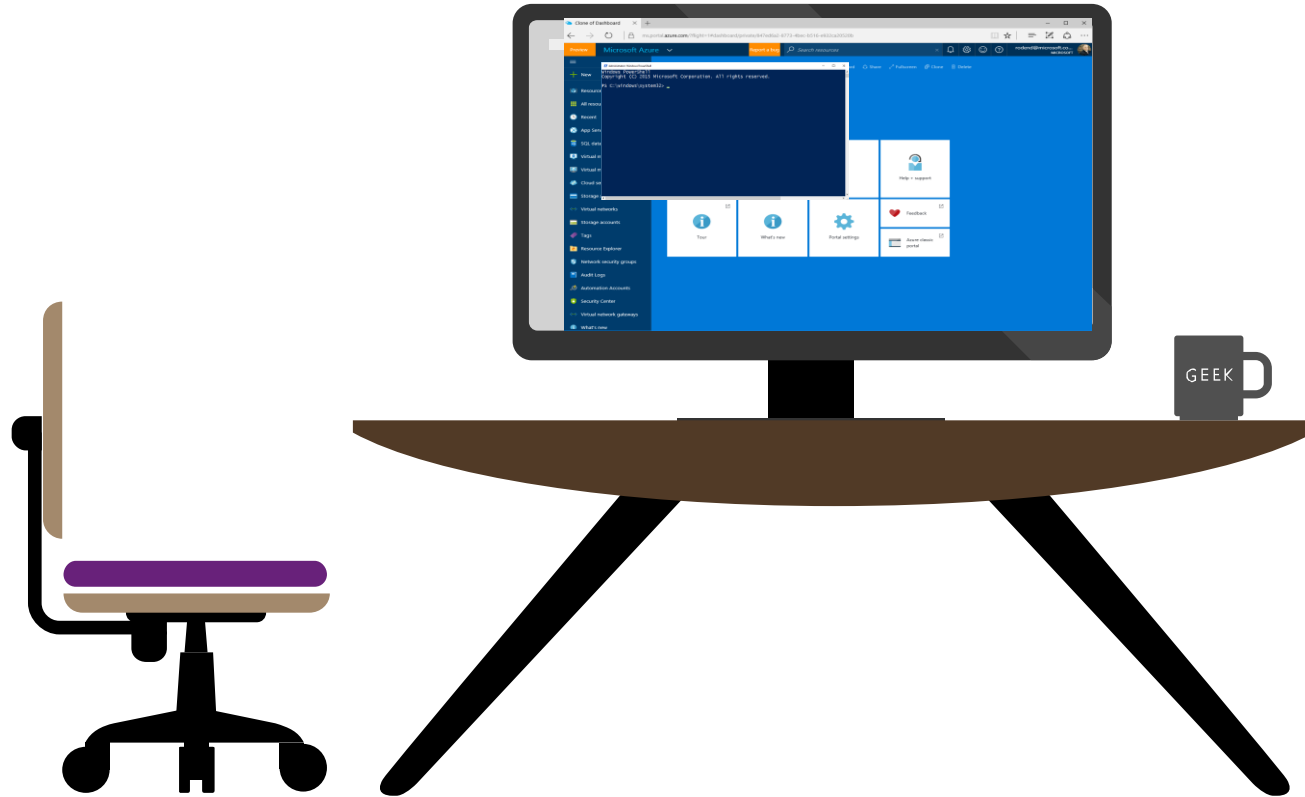
```

/TestCaseFilter:"TestCategory=SmokeTest"
/Settings:"D:\a\_temp\5886b1c0-96a6-11e8-929b-e75dae335d74.runsettings"
/logger:"trx"
/TestAdapterPath:"D:\a\r1\a"
Starting test execution, please wait...
Test run will use DLL(s) built for framework .NETFramework,Version=v4.0 an
ALM.ServiceNow.FunctionApp.Test.dll is built for Framework 4.6.1 and Platf
[MSTest][Discovery][D:\a\r1\a\_ALM.ServiceNow.Functions-CI\ServiceNowFunct
Passed    TestChangeDeployFunction
Passed    TestChangeWorknoteFunction
Passed    TestDeploymentReportFunction
Passed    TestCiCdReportFunction
Total tests: 4. Passed: 4. Failed: 0. Skipped: 0.
Test Run Successful.
```

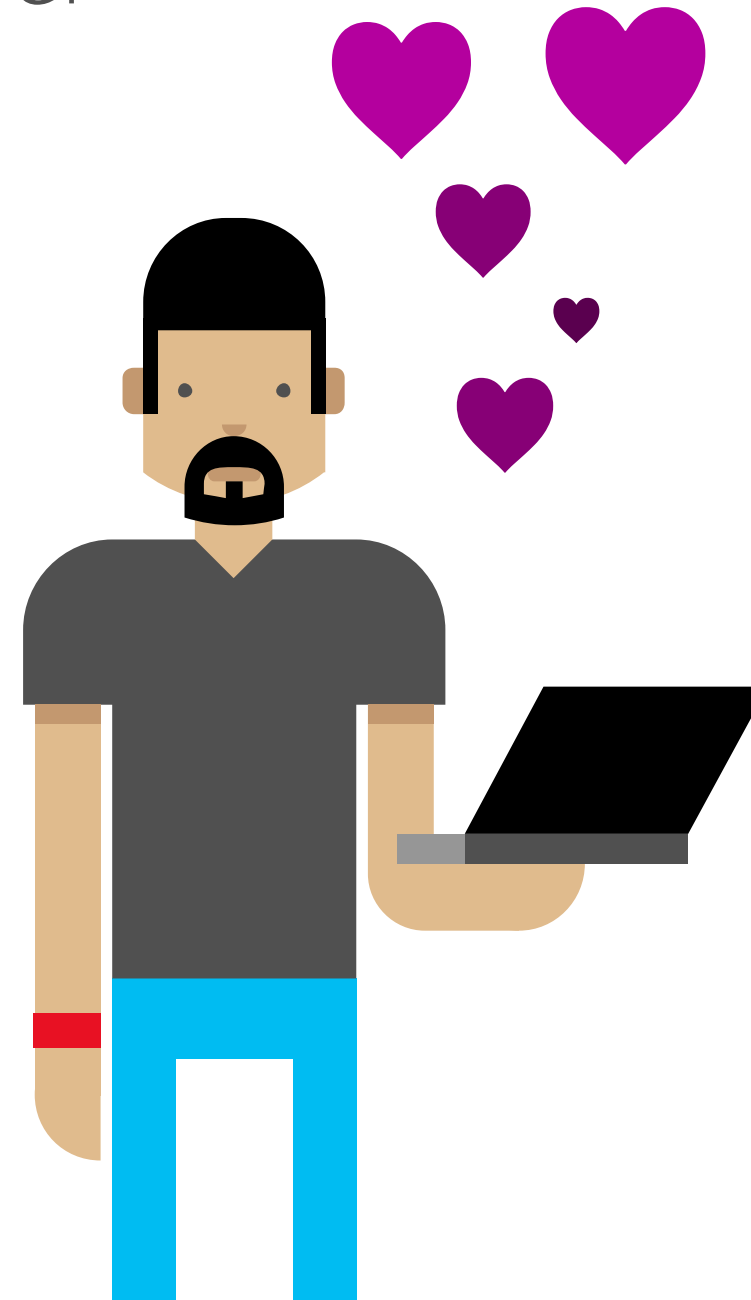
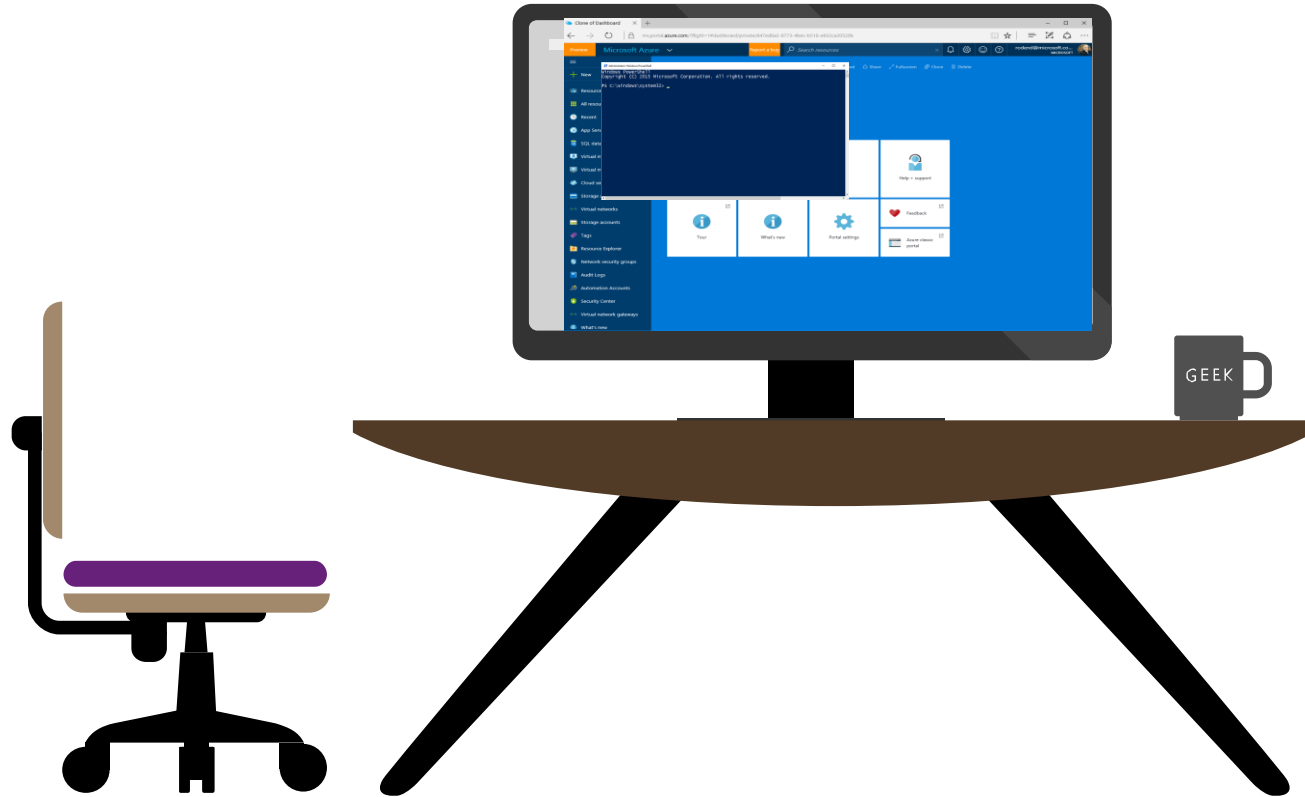
Azure Scaffold is a lightweight Cloud governance framework for enterprises



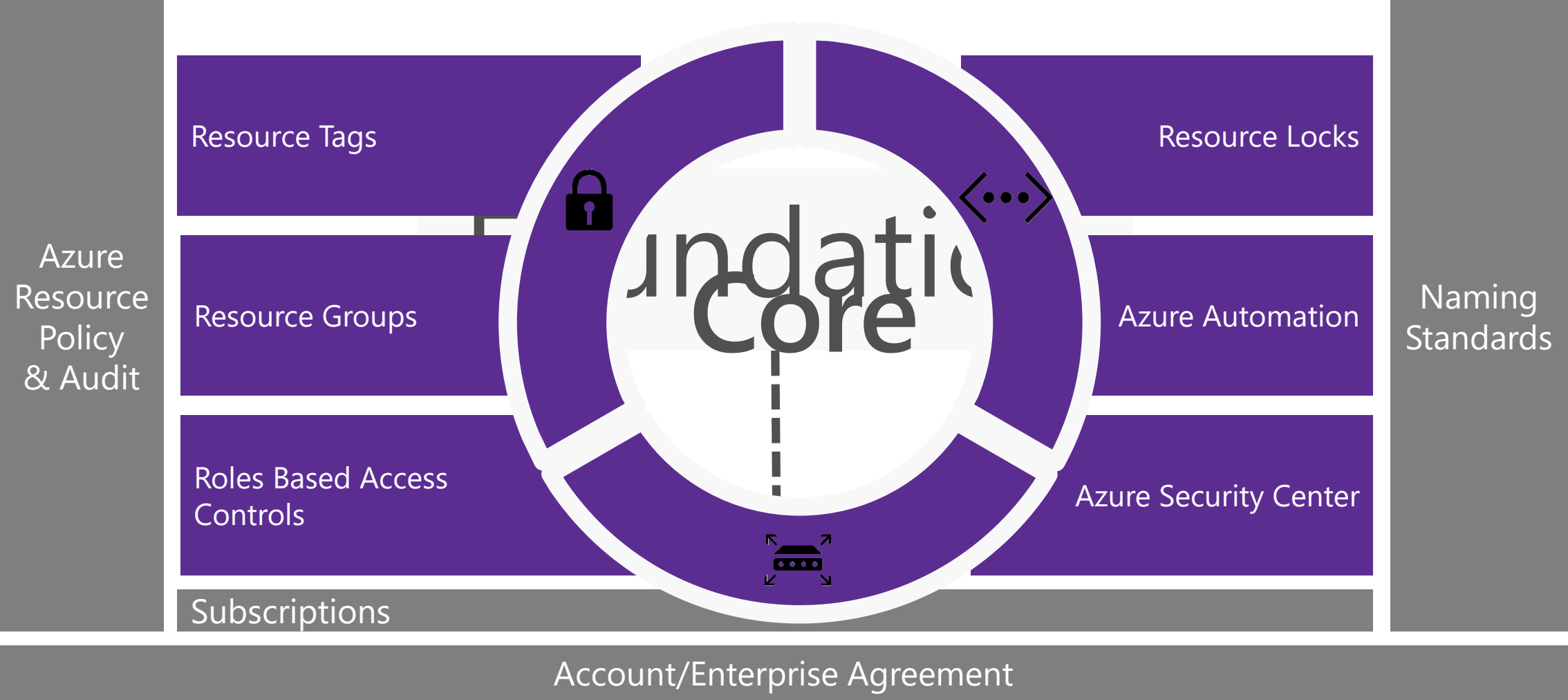
It provides guidance for IT pros,
Business users and Security officers
on how to effect policies, compliance
and control in Azure



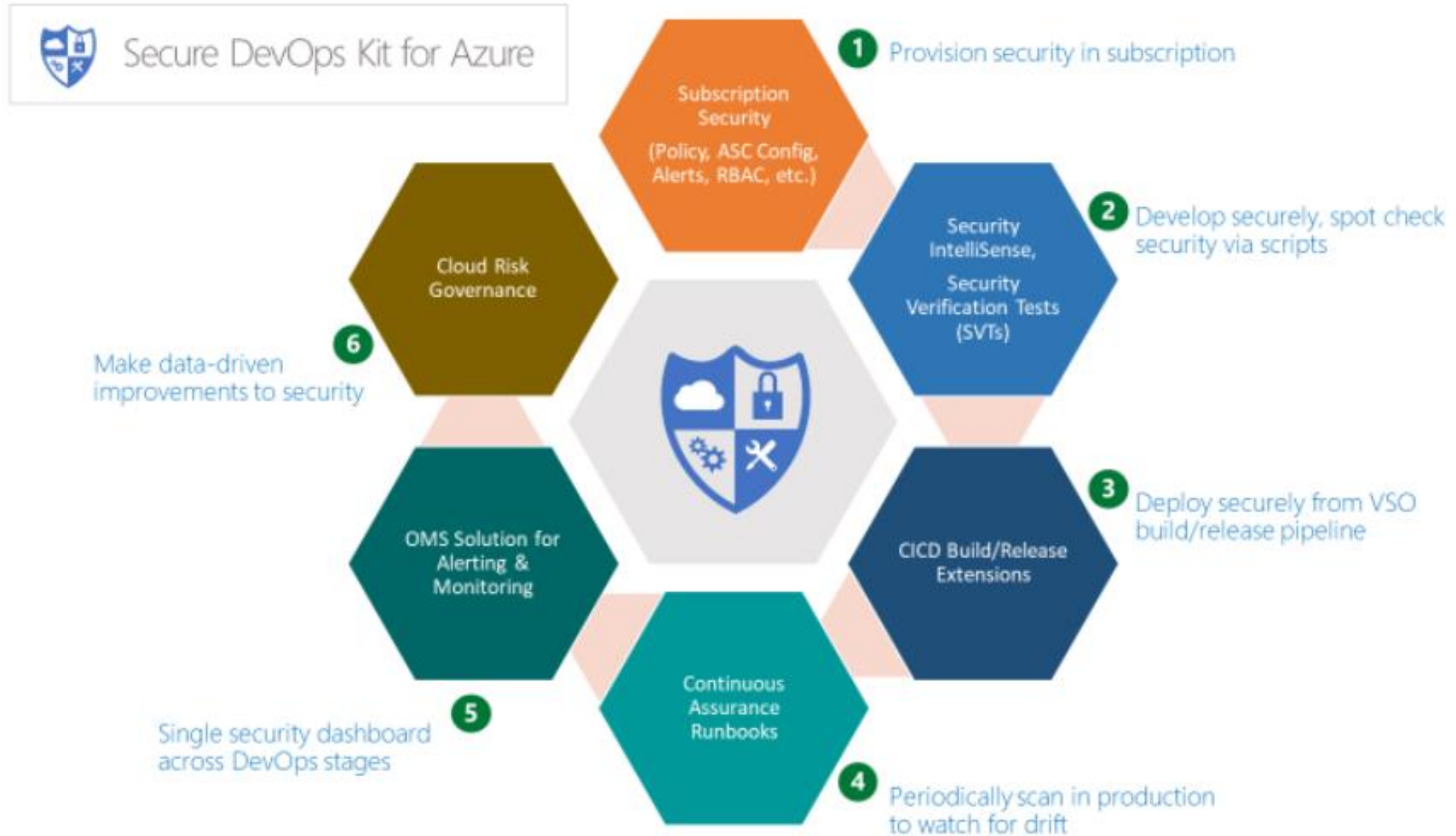
To create a safe environment for Developer innovation... without slowing them down



Azure Scaffold



Secure DevOps Kit for Azure (AzSK)



AT Minimum Standards for Project Teams

- Continuous Delivery Guidance

- All components should adhere to naming conventions
- All solution components deployed to Azure should be done so via release definitions
- All release definitions to pre prod and prod must have approvals set assigned to service owner
- All release definitions to pre prod and prod must have ServiceNow change control integration configured
- Ideally releases should have integration tests
- All release should include Secure DevOps Kit for Azure (AzSK) Security Verification Tests (SVTs) in VSTS pipeline
- All release should include release gate and rollback plan

Lab: Continuous Deployment using Visual Studio Team Services

Wrap Up & Questions



Microsoft





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