Azure DevOps Pipelines to bring cloud magic

Peter De Tender

petender@microsoft.com

@pdtit

https://www.007FFFLearning.com
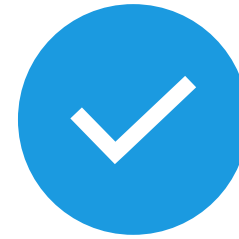
What will be covered

SOURCE CONTROL

PROJECT MANAGEMENT

VALIDATION (PRE-FLIGHT)

DEPLOYMENT OPTIMIZATION

Q & A

Session Scenarios

- I have an ARM template deployment I want to put into Devops, creating a WebVM and SQLDBVM
- I have web application source code I want to publish to Azure Web Apps
- I have web application source code I want to containerize and run on Azure Container Instance
- Would be nice if I could deploy "everything" at once
- My managers want to approve my deployments before pushing them out
- I need a dev/test – staging – production setup
- I want to validate deployments based on conditions and the health state of Azure
- …

About Me : Peter De Tender

- Peter De Tender – Board member MC2MC.be UG

- Azure Business Program Mgr |
  Azure Technical Trainer - @ Microsoft

- Former Azure MVP (5y)

- Technical Writer & Book publisher
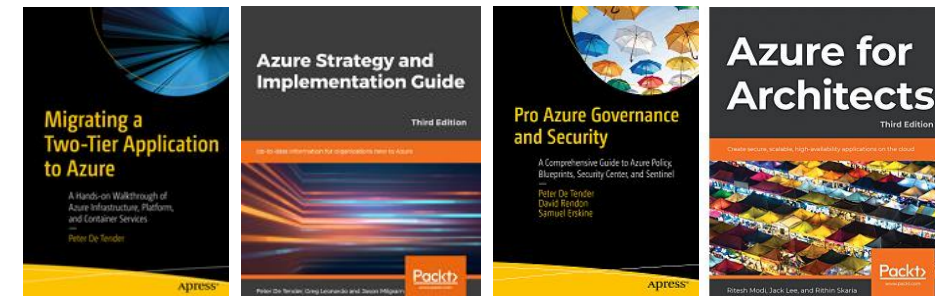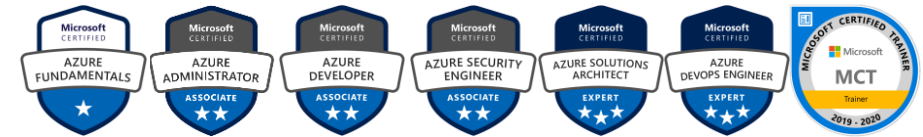
Introducing Azure DevOps

"... Azure DevOps is a suite of products that allows any organization to do better DevOps..."

Azure Boards

Deliver value to your users faster using proven agile tools to **plan, track**, and discuss work across your teams.

Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.

Azure Repos

Get unlimited, cloud-hosted private Git repos and **collaborate to build better code with pull requests** and advanced file management.

Azure Test Plans

Test and ship with confidence using manual and exploratory testing tools.

Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.

Source / Version Control

- **Azure DevOps Repos** is by itself a GIT compatible source control system

- Integrate with "any" GIT compatible source control version (GitLab, BitBucket, GitHub,...)

- Commit changes, Branching, Pull Requests,...
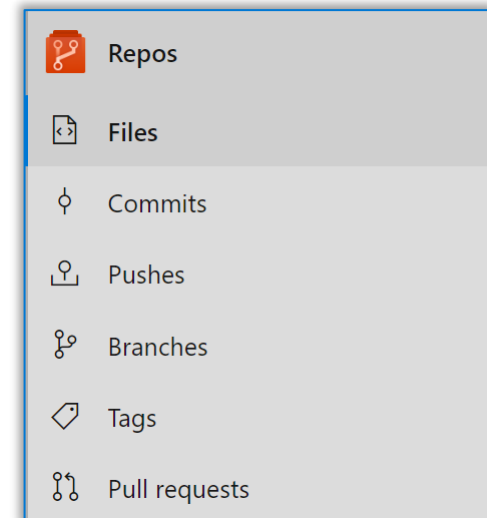
Project Management

- **Azure DevOps Boards** (Scrum, Agile, Basic,...) Proj Mgmt

- DevOps Project Members are Azure AD or guest users

- Create and follow-up on different *"work items"*

- Integrate work items with deployment
  (initiate, update, close)
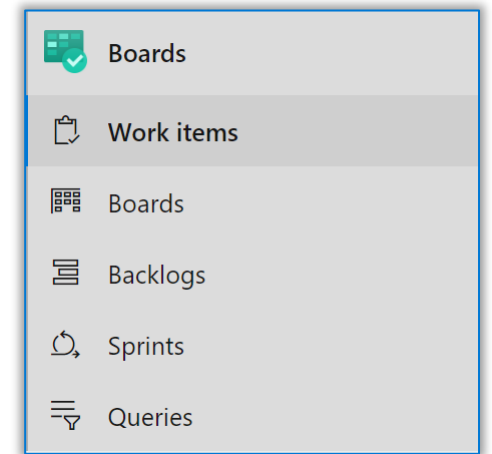
Code Validation (Pre-flight)

- **Azure DevOps Pipelines** (Build) allows for testing and validation of your source code, before it gets deployed

- Hosted or Custom Build Agents (also on-prem) running Linux, MacOS and Windows

- FREE (Public Projects), build queue

- Extend with functional testing, code scanning,...

Pipelines

Pipelines

Environments

Releases

Library

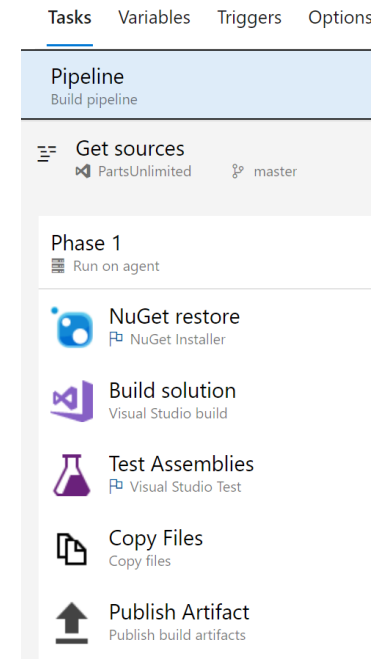Task groups

Deployment groups
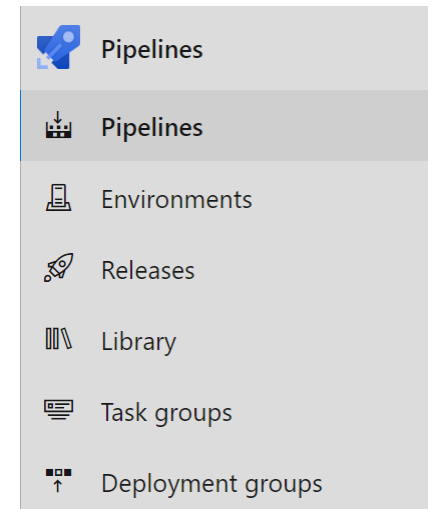
Code Validation (Pre-flight)

- <u>Classic Pipelines</u>
  - Collection of Tasks from a GUI
  - Tasks can be grouped as templates

- <u>YAML</u>
  - DevOps as Code
  - Open Standard Yaml syntax
  - Migrate snippets of Classic into Yaml is avail

Demo
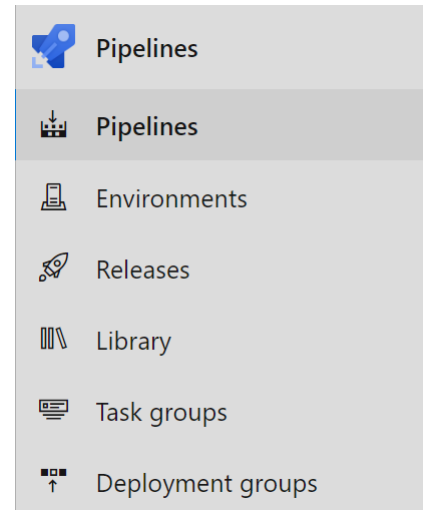
Code Validation – DevOps Optimized

Deployment (Release)

- **Azure DevOps Pipelines** (Release) starts from the Build Artifact, and runs the actual deployment

- Service Connection to integrate with "any" platform (Azure, VMware, AWS,...)

- Easy deployment across different stages (Dev/Test, Q&A, Production,...)

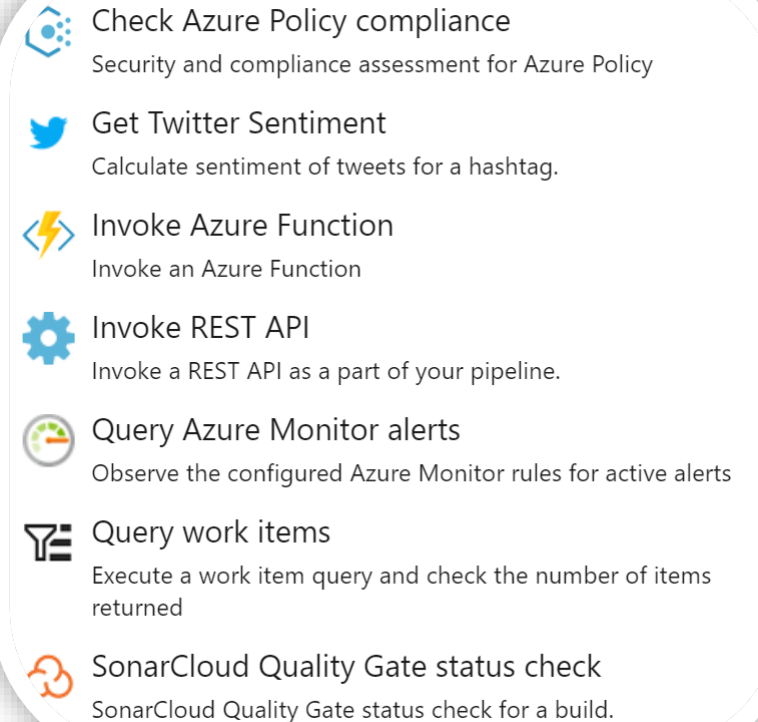- Integrate deployment variables

Demo

Release Pipelines – DevOps Optimized

Deployment (Release) - Optimization

1. Integrate manual approval(s)

2. Integrate with Azure Boards – Work Items

3. Check Azure Governance & Compliance

4. Validate platform status with REST API

5. Integrate 3rd party validation (e.g. security scans)

Check Azure Policy compliance
Security and compliance assessment for Azure Policy

Get Twitter Sentiment
Calculate sentiment of tweets for a hashtag.

Invoke Azure Function
Invoke an Azure Function

Invoke REST API
Invoke a REST API as a part of your pipeline.

Query Azure Monitor alerts
Observe the configured Azure Monitor rules for active alerts

Query work items
Execute a work item query and check the number of items returned

SonarCloud Quality Gate status check
SonarCloud Quality Gate status check for a build.

Demo

Release Pipelines – Quality Gates

What did we cover

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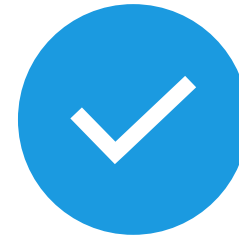
DEPLOYMENT OPTIMIZATION

Q & A

One last thing…

Migrating a Two-Tier Application to Azure

A Hands-on Walkthrough of Azure Infrastructure, Platform, and Container Services

Peter De Tender

Apress
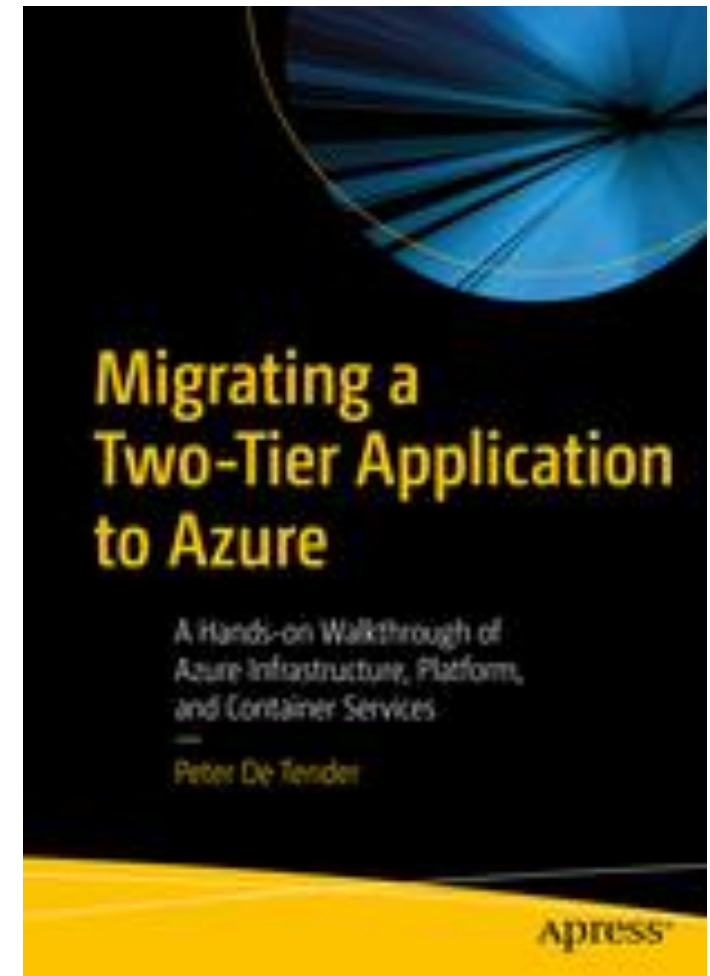
Tweet a message with **@pdtit** and **@azuredevops** and **@mc2mc** and you might win a free copy of my latest e-book, covering a bit of DevOps

Thank you

peter@pdtit.be
@pdtit
http://www.007ffflearning.com