START (*-start.yml) Template ⇠ extends ⇠ # CI (*-ci.yml) Template ⇠ includes ⇠ # CD (*-cd.yml) Template
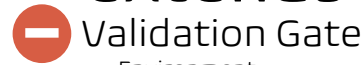
⊖ Validation Gate
- Environment
- Service Connection

owned by development engineering team

owned by cloud engineering and pipeline working group

```yaml
trigger:
  batch: true # batch changes if true
  branches:
    include:
    - '*'    # Trigger on all branches

resources:
  repositories:
  - repository: CeSAppTemplates
    type:      git
    name:      'CeS/AzDO.Automation.Pipeline.Templates'

# Semantic version as per Naming Conventions.
name:
  $(portfolioName)_$(productName)_$(GITVERSION_MAJORMINORPATCH)_
  $(date:yyyyMMdd).$(date:HHmmss).$(Build.SourceBranchName)

# VARIABLES
variables:
- name:  portfolioName
  value: 'TODO REPLACE WITH PORTFOLIO NAME'
- name:  productName
  value: 'TODO REPLACE WITH PRODUCT NAME'
- template: /Operations/Config/${{variables.portfolioName}}
          -${{variables.productName}}-config.yml@CeSTemplates
extends:
  template: /Blueprints/AzureFunction/
          azure-pipeline-azure-function-ci.yml@CeSAppTemplates
  parameters:
    portfolioName:  $(portfolioName)
    productName:    $(productName)
    # suppressCD:    true
```

Optional parameters

PARAMETER	VALUES	DESCRIPTION
forceCheck	'false', 'true'	Enforce validations, irrespective of source branch.
previews	'false', 'true'	Evaluate new preview features and provide feedback`.
verbose	'false', 'true'	Verbose logging.
forceToolbox	'false', 'true'	Force a reload of the toolbox config and scripts.
loadDVTBox	'no', 'yes'	If 'yes' load the DV toolbox, else load PROD toolbox.
customCDTemplate	'blueprint'	Default to app-type CD blueprint if 'blueprint', else override.
customQATemplate	'blueprint'	Default to app-type CD blueprint if 'blueprint', else override.
suppressCD	true, false	Suppress CD
suppressQA	true, false	Suppress QA Scans

⊖ Your Application Repo
All changes should be made through and protected by the pull request workflow

WORKSAFE BC
WORKING TO MAKE A DIFFERENCE

App-type CI/CD
Blueprint-based Pipeline Quick Reference
2021.04.30 v1.2 WS - See https://aka.ms/yaml for Azure DevOps Pipeline documentation

```yaml
parameters:
- name:    portfolioName
  type:    string
- name:    productName
  type:    string
# Bootstrap optionals
- name:    verbose
  type:    boolean
  default: false
- name:    forceToolbox
  type:    boolean
  default: false
- name:    previews
  type:    boolean
  default: false
# CI Blueprint optionals
- name:    customCDTemplate
  type:    string
  default: 'blueprint'
- name:    suppressCD
  type:    boolean
  default: false
- name:    customQATemplate
  type:    string
  default: 'blueprint'
- name:    suppressQA
  type:    boolean
  default: false
- name:    loadDVTBox
  type:    string
  default: 'no'
```

```yaml
stages:
- stage: CI
  displayName: Continuous Integration

  # Configure the default agent pool and image to use for the pipeline
  pool:
    name:    'Azure Pipelines'
    vmImage: 'Windows-latest'

  jobs:
  - job: ContinuCIousIntegration
    steps:
    - template: /Templates/Utility/git-tools-git-version.yml
      parameters:
        versionSpec: '5.x'

    - task: PowerShell@2
      name: setVersion
      displayName: "Set Version"
      inputs:
        targetType: 'inline'
        script: Write-Host "##vso[task.setvariable
                            variable=semVersion;isOutput=true]
                            $(GitVersion.MajorMinorPatch)"
      failOnStderr: true
      pwsh: true
      continueOnError: false

    - template: /Templates/boot-strap.yml
      parameters:
        bootstrapMode:        'init'
        applicationType:      'universal artifacts'
        applicationBlueprint: 'universal-artifact'
        portfolioName:        ${{parameters.portfolioName}}
        productName:          ${{parameters.productName}}
        sourcesDirectory:     $(Build.SourcesDirectory)
        verbose:              ${{parameters.verbose}}
        forceToolbox:         ${{parameters.forceToolbox}}
        previews:             ${{parameters.previews}}
        loadDVTBox:           ${{parameters.loadDVTBox}}

    - task: PublishBuildArtifacts@1
      displayName: 'Publish Artifact'
      inputs:
        PathtoPublish:  '$(Build.SourcesDirectory)/$(publishFolder)'
        ArtifactName:   'drop'

    - template: /Templates/boot-strap.yml
      parameters:
        bootstrapMode:        'run'
        applicationType:      'dotnet'
        applicationBlueprint: 'universal-artifact'
        portfolioName:        ${{parameters.portfolioName}}
        productName:          ${{parameters.productName}}
        sourcesDirectory:     $(Build.SourcesDirectory)
        verbose:              ${{parameters.verbose}}
        forceToolbox:         ${{parameters.forceToolbox}}
        previews:             ${{parameters.previews}}
        loadDVTBox:           ${{parameters.loadDVTBox}}

  - ${{ if and( ne( parameters.suppressCD, true),
              ne( lower(parameters.customCDTemplate), 'blueprint' )) }}:
    - template: /Operations/Custom/${{parameters.customCDTemplate}}.yml
  - ${{ if and( ne( parameters.suppressCD, true),
              eq( lower(parameters.customCDTemplate), 'blueprint' )) }}:
    - template: /Blueprints/ArtifactsUniversal/
              azure-pipeline-universal-artifact-cd.yml
```

flow variable

```yaml
stages:

- stage:    'Development'
  dependsOn:
  - CI

              …<snip>…

- stage:    'SecurityScans'
  displayName: 'Security Scans'
  dependsOn:
  - CI
  - Development
  pool:
    vmImage:   $(securityScansStageVmImage)
  jobs:
  - job:    'SecurityScans'
    steps:
    - template: /Templates/DevSecOps/security-scans-cd.yml

- ${{ if or( eq(lower(variables['Build.SourceBranch']),
          'refs/heads/release'),
          startsWith(lower(variables['Build.SourceBranch']),
          'refs/heads/release/')) }}:
  - stage:    'Production'
  - stage:    'SecurityReview'
    displayName: 'Security Review'
    dependsOn:
    - Development

              …<snip>…

- ${{ if or( eq(lower(variables['Build.SourceBranch']),
          'refs/heads/release'),
          startsWith(lower(variables['Build.SourceBranch']),
          'refs/heads/release/')) }}:
  - stage:    'Production'
    dependsOn:
    - CI
    - SecurityScans
    - SecurityReview
    variables:
      currentVersion: $[ stageDependencies.CI.CI
                        .outputs['setVersion.semVersion'] ]
    pool:
      vmImage:   $(productionStageVmImage)
    jobs:
    - deployment: 'Production'
      environment: $(productionStageEnvName)
      strategy:
        runOnce:
          deploy:
            steps:
            - script: echo Toolkit Version = $(currentVersion)
            - task: UniversalPackages@0
              name: Create_PR_Universal_Package
              inputs:
                command: 'publish'
                publishDirectory:        $(Agent.BuildDirectory)/drop
                feedsToUsePublish:       'internal'
                vstsFeedPublish:         $(productionStageFeedPublish)
                vstsFeedPackagePublish: $(productionStagePackagePublish)
                versionOption:           'custom'
                versionPublish:          $(semVersion)
```

CeS.Automation.Pipelines.Templates Repo ⊖
All changes made through and protected by the pull request wortkflow

includes

Variable Template
(config)

```yaml
- name:  productionStageEnvName
  value: 'SHARED_PR_Universal_Artifacts'
- name:  productionStageVmImage
  value: 'windows-latest'
- name:  productionStageFeedPublish
  value: '9e070486-893d-44c7-8840-2e82011555b6/60506877-90cb-47b3-aa4c-cdd1b05db462'
- name:  productionStagePackagePublish
  value: 'toolbox'
```