

DevOps is the goal – but what are the options?

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Owner @ Dynex bv
Partner @ iFacto Business Solutions nv
Partner @ Hodor nv





Tobias Fenster



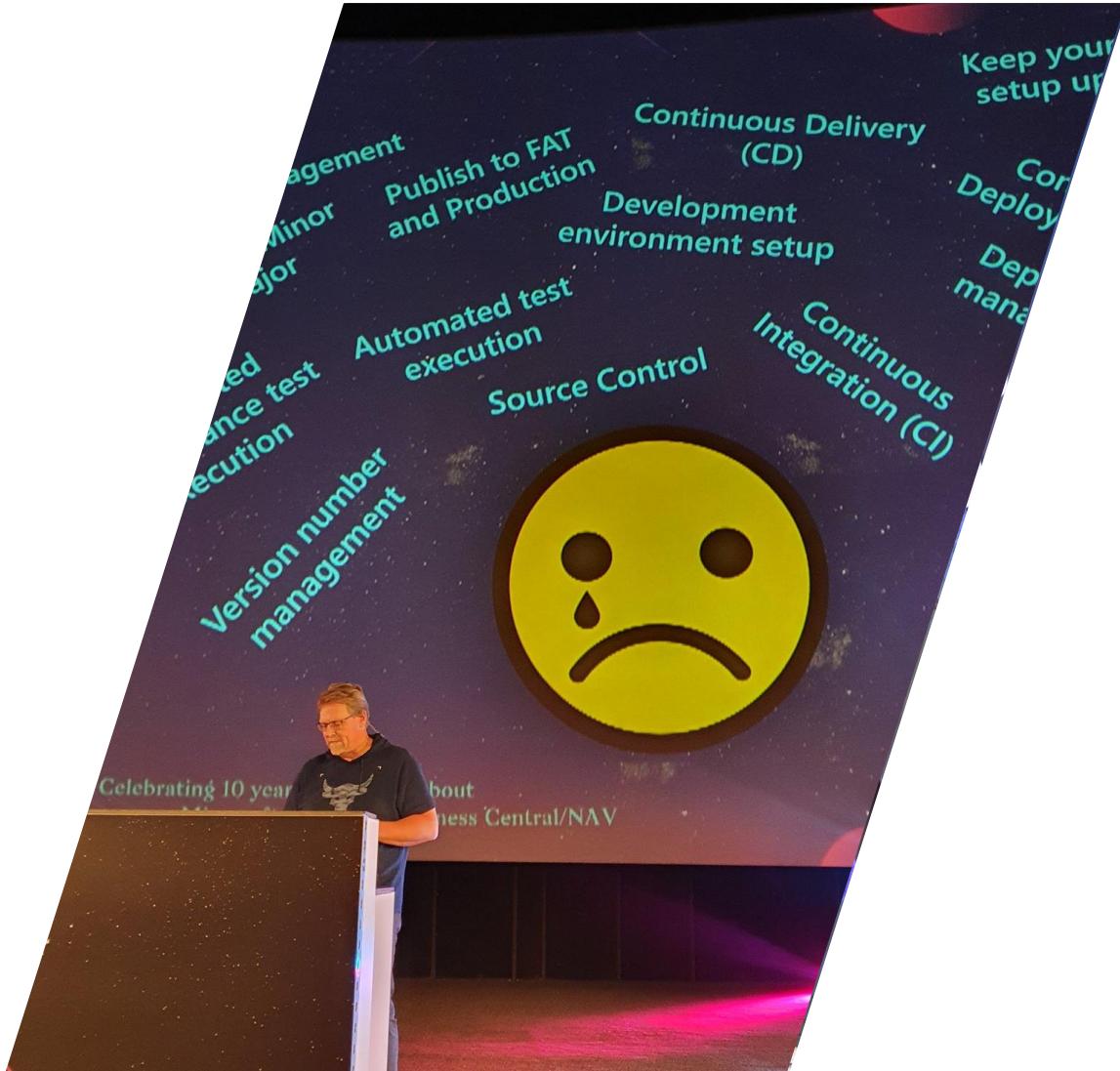
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previously CTO @ COSMO CONSULT and Alpaca lead





Freddy Kristiansen

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Microsoft

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<https://freddysblog.com>

Areas of responsibility:
Business Central on Docker
BcContainerHelper
BC ARM templates
AL-Go for GitHub





ALOps
COSMO Alpaca
AL-Go for GitHub



Scope

Compare apples and apples...

DevOps, CI/CD, tools, platforms, frameworks, templates, ...

All offerings

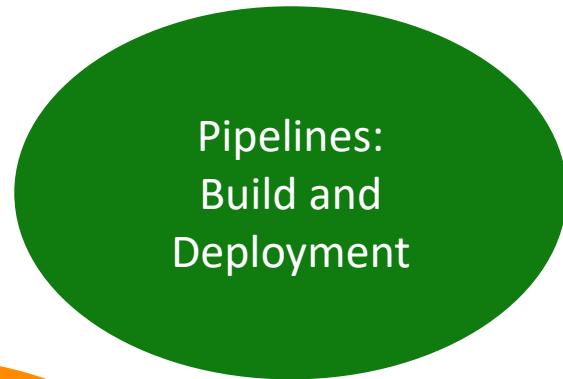
Pipelines:
Build and
Deployment



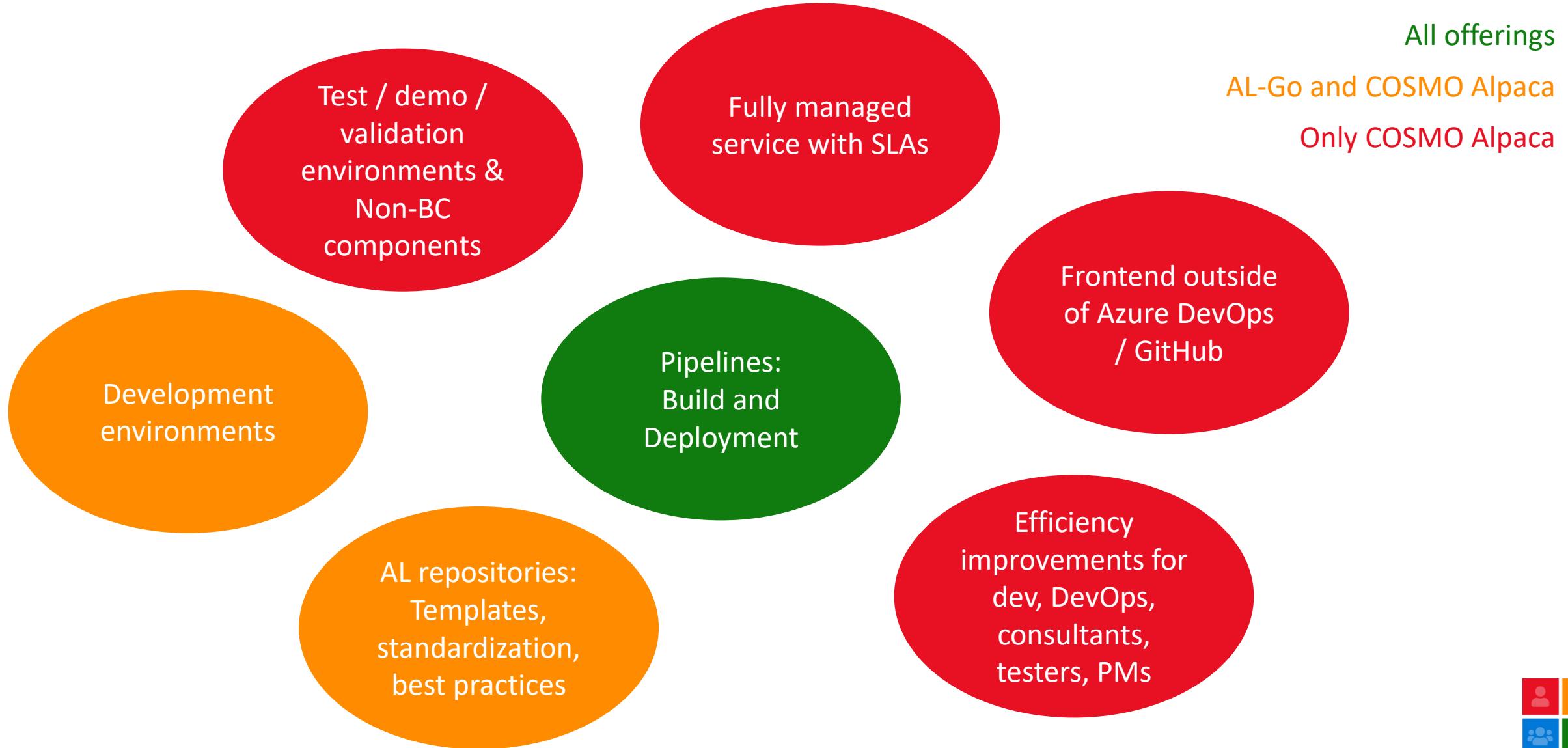
DevOps, CI/CD, tools, platforms, frameworks, templates, ...

All offerings

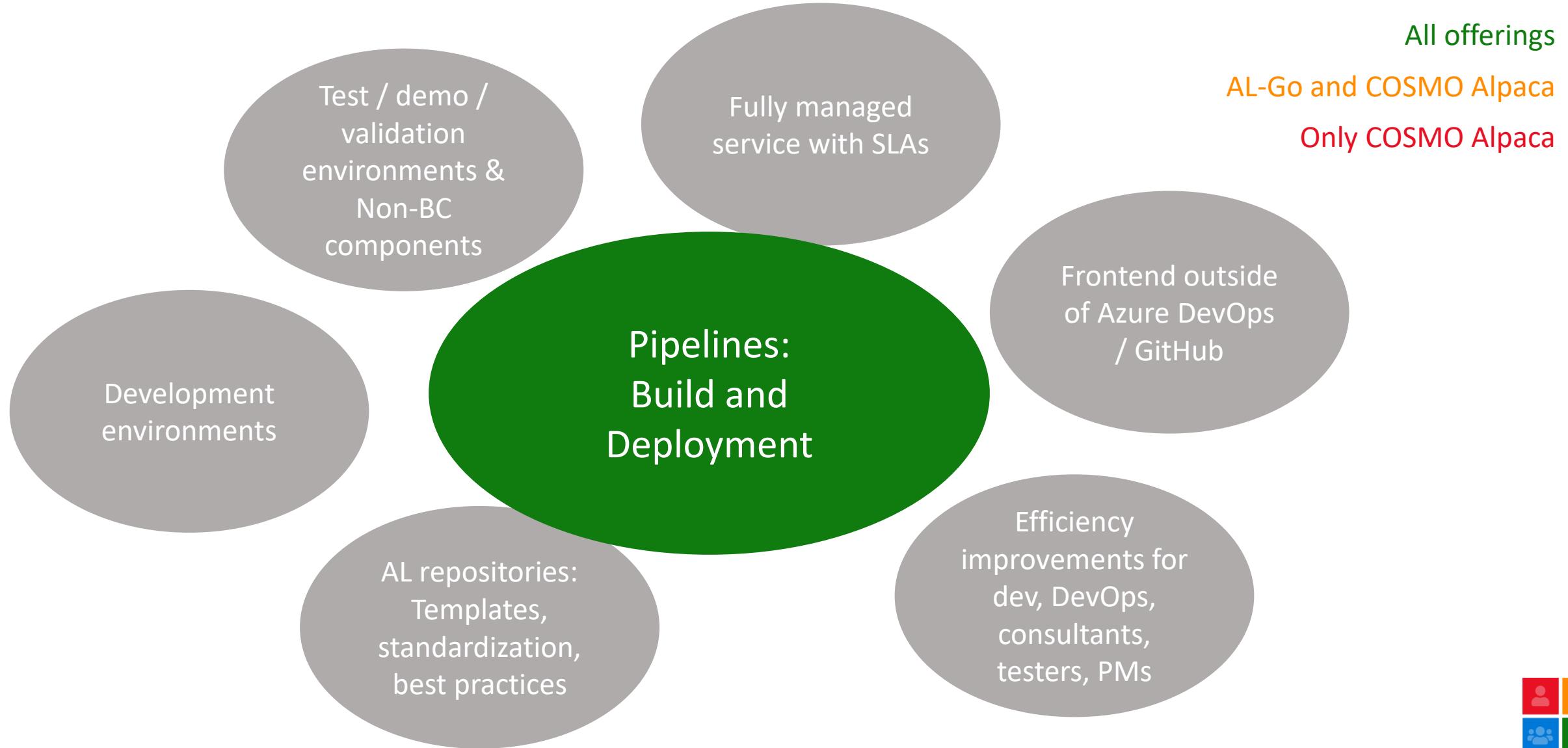
AL-Go and COSMO Alpaca



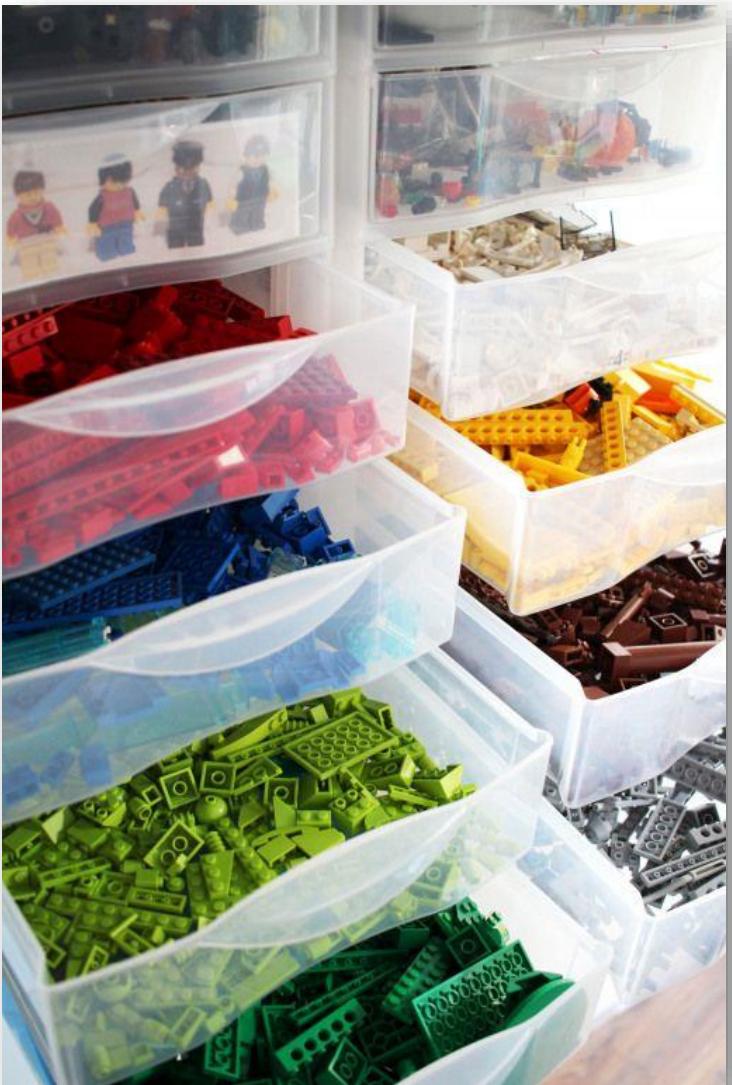
DevOps, CI/CD, tools, platforms, frameworks, templates, ...



DevOps, CI/CD, tools, platforms, frameworks, templates, ...



Buy the building or buy the building blocks?



Pipelines:
Build and
Deployment



ALOps
AL-Go for GitHub
COSMO Alpaca

Availability

	ALOps	AL-Go for GitHub	COSMO Alpaca
Azure DevOps	✓		✓
GitHub	(✓)	✓	*
GitLab	(✓)		
BitBucket	(✓)		

* Potentially in the future



Price, SLA & more

	ALOps	AL-Go for GitHub	COSMO Alpaca
Price	\$	free	\$\$
Support	via GitHub issues / SLA	via GitHub issues	via support team / SLA
Team Size	2 (5)	3 (5)	4 (10)



Comparison

	ALOps	AL-Go for GitHub	COSMO Alpaca
CI/CD	✓	✓	✓
PTEs & AppSource Apps	✓	✓	✓
Modified Base App	✓	(✓)	✓
On-premises	✓	(✓)	✓
Manage from VS Code			✓
Managed dev. Environments		(✓)	✓
Custom runners	✓	✓	
Needed skills	Azure DevOps, Yaml	GitHub	Azure DevOps



Build Agents / Workflow Runners

	ALOps	AL-Go for GitHub	COSMO Alpaca
Azure Hosted Agents / GitHub Hosted Runners	✓	✓	
Self-Hosted Agents / Runners	✓	✓	
Managed Agents (included)	*		✓
Using online sandboxes	(*)	*	

* in the future

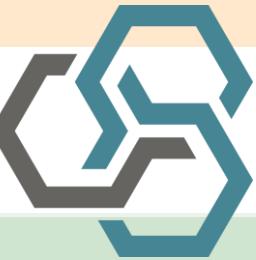


GitHub vs Azure DevOps

Functionality (high level, not exhaustive)

	Azure DevOps	GitHub
Public repositories	★★	★★★
Private repositories	★★★	★★
Source Control, Code reviews	★★★	★★★
Projects, Wiki, Boards	★★★	★★
CI/CD	★★★	★★★
Test plans, Test analytics	★★★	★
Artifacts	★★★	★★
Release Management	★★★	★
Extensibility	Marketplace Extensions	Marketplace Actions, Apps
Price	Depends	Depends

Brief introduction to

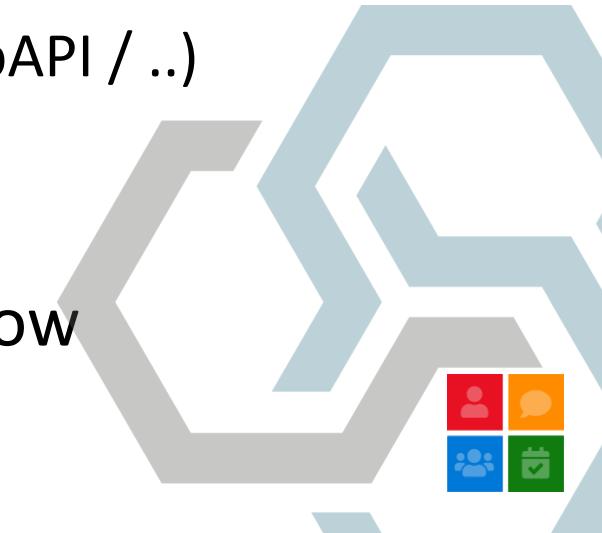


ALOps

What is ALOps?

- Azure DevOps Extension
- Adds Business Central Development specific tasks for Azure DevOps Pipelines
- Simplifies the setup of pipelines
- Preserves DevOps flexibility:
 - DevOps pipelines (yaml (templates))
 - Combine builds with non-AL technology (Azure Functions / WebAPI / ..)
 - Combine releases of AL Apps with non-AL tech

When you want full control over your Azure DevOps workflow



“

Every pipeline is a recipe

ALOps can be seen as the **ingredients** for a good meal

“

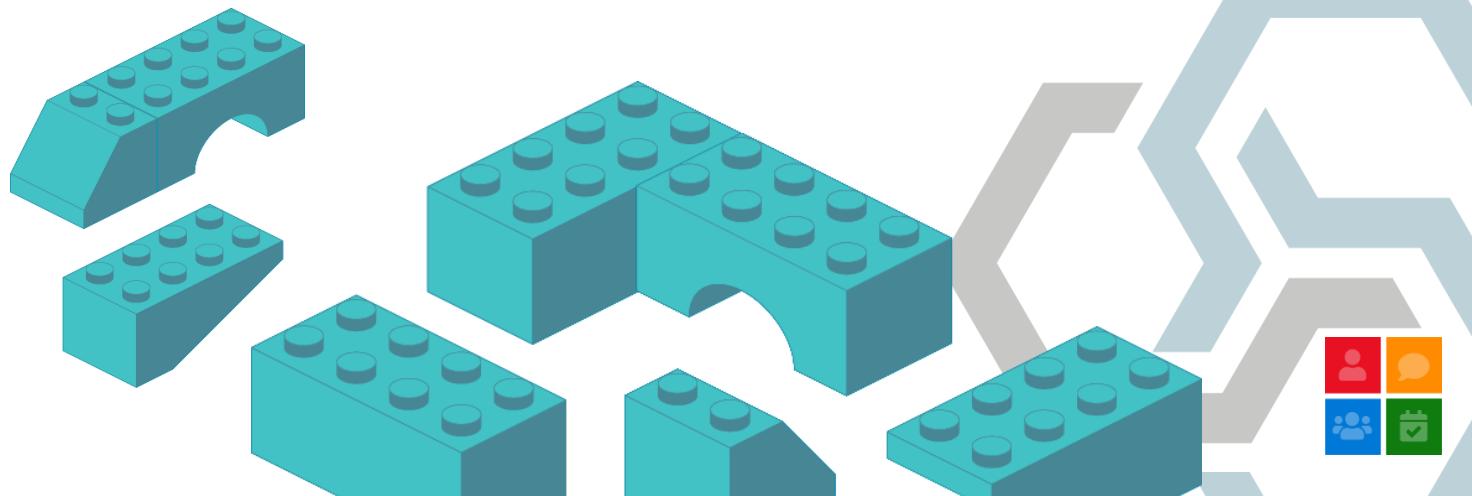
Every pipeline is a lego masterpiece

ALOps provides the AL-specific **Building Blocks**

Building Blocks

- Managing Docker
- Creating Apps
 - Compile / Sign / Runtime / ..
 - Manage Version / exposure / codecops /
- Publish Apps
 - In Batch
 - Manage dependencies
 - ..
- Deploy Apps – SaaS & OnPrem
- Maintain build server
- BC License check (OnPrem)
- Admin Center API tasks
- [Run Automated Tests](#)
- Exec Custom PowerShell within Docker Container
- [Fast Compile](#) (no docker container needed)
- [Generate OpenAPI/Swagger](#)
- ...

[Full List](#)



Yaml

```
Settings
  - task: PowerShell@2
    displayName: 'Publish App'
    inputs:
      targetType: filePath
      filePath: 'scripts\Publish-App.ps1'
      arguments: '-version "$(version)" --credential ([PSCredential]::FromWindowsCredentials("$(username)", $(password)))'
```

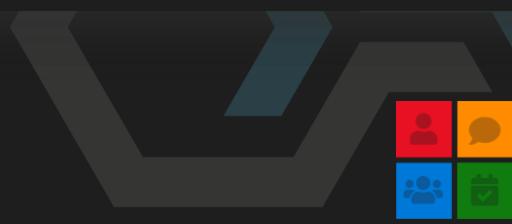


Yaml

```
Settings
- task: PowerShell@2
  displayName: 'Publish App'
  inputs:
    targetType: filePath
    filePath: 'scripts\Publish-App.ps1'
    arguments: '-version "$(version)" -credential ([PSCredential]::new("$Username"), (ConvertTo-
```

Settings

```
- task: ALOpsAppPublish@1
  displayName: 'Publish AL-App'
  inputs:
    usedocker: true
    nav_artifact_app_filter: '*Base_*.app'
    skip_verification: true
    ...
```



Yaml

```
Settings
- task: PowerShell@2
  displayName: 'Publish App'
  inputs:
    targetType: filePath
    filePath: 'scripts\Publish-App.ps1'
    arguments: '-version "$(version)"'
```

```
Settings
- task: ALOpsAppPublish@1
  displayName: 'Publish AL-App'
  inputs:
    usedocker: true
    nav_artifact_app_filter: '*Base_*.app'
    skip_verification: true
    ...
```

artifact_path

fixed_tag

install_al_app_names

installaltesttool

nav_serverinstance

publish_scope

tenant

Extended logging

- All parameters for all steps
 - All Variables that are available at any time in the pipeline
 - Detailed output

Simplifies troubleshooting

[← Jobs in run #1.0.202236.1762](#)

Default With Testability

Jobs		
Job	Duration	
Initialize job	<1s	
Checkout Demo@master to s	2s	
ALOPS - Create Docker Image	19m 1s	
ALOPS - Start Docker Container	7s	
ALOpsDockerExec	16s	
ALOPS - Wait for Docker Contain...	31s	
ALOPS - License Import	8s	
ALOPS - Install AL TestTool	53s	
ALOPS - Compile Extension: App	22s	
ALOPS - Publish Extension	10s	
ALOPS - Compile Extension: Test...	20s	
ALOPS - Publish Extension	8s	
ALOPS - Run TestSuite	54s	
Publish Test Results **/TestResults...	2s	
ALOPS - Remove Docker Contai...	13s	
Post-job: Checkout Demo@mast...	< 1s	
Finalize Job	< 1s	
Report build status	< 1s	





Getting Started with ALOps

Getting Started with ALOps

MarketPlace
For DevOps

<https://marketplace.visualstudio.com/items?itemName=Hodor.hodor-alops>

Examples on
GitHub

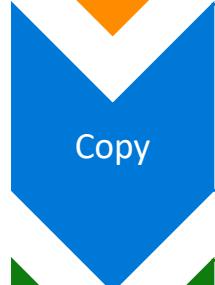
<https://github.com/HodorNV/ALOps>



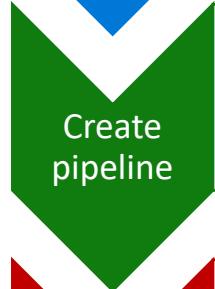
Scenario: Getting started with ALOps



- Navigate to the DevOps Marketplace
- Search “[ALOps](#)” and install



- Go to [ALOps/Examples](#)
- Copy required example to clipboard



- Create a pipeline in Azure DevOps



- Paste the yaml in Azure DevOps
- Adjust if necessary



Scenario: Getting started with ALOps



- Navigate to the DevOps Marketplace
- Search "[ALOps](#)" and install

Copy

- Go to [ALOps/Examples](#)
- Copy required example to clipboard

Create pipeline

- Create a pipeline in Azure DevOps

Paste

- Paste the yaml in Azure DevOps
- Adjust if necessary



Demo

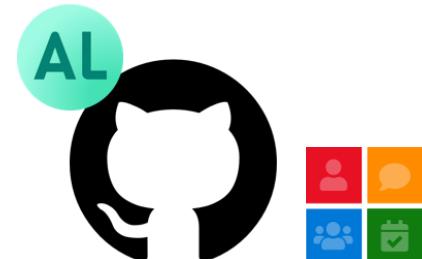
Getting started with ALOps



Brief introduction AL-Go for GitHub

What is AL-Go for GitHub?

- The Plug-and-play DevOps solution for BC development on GitHub
 - Open source and free for all (GitHub costs accrue)
 - Supports PTEs and AppSource apps
 - Adding PowerPlatform Solutions from spring 2023
 - Easy to get started, easy to use, easy to maintain
 - No prior knowledge in docker, PowerShell or yaml needed
 - No need for a DevOps engineer
 - DevOps becomes a tool, not an investment area
- Templates and Actions, ready to use
 - Just add source code



What is AL-Go for GitHub?

Artifacts

Produced during runtime

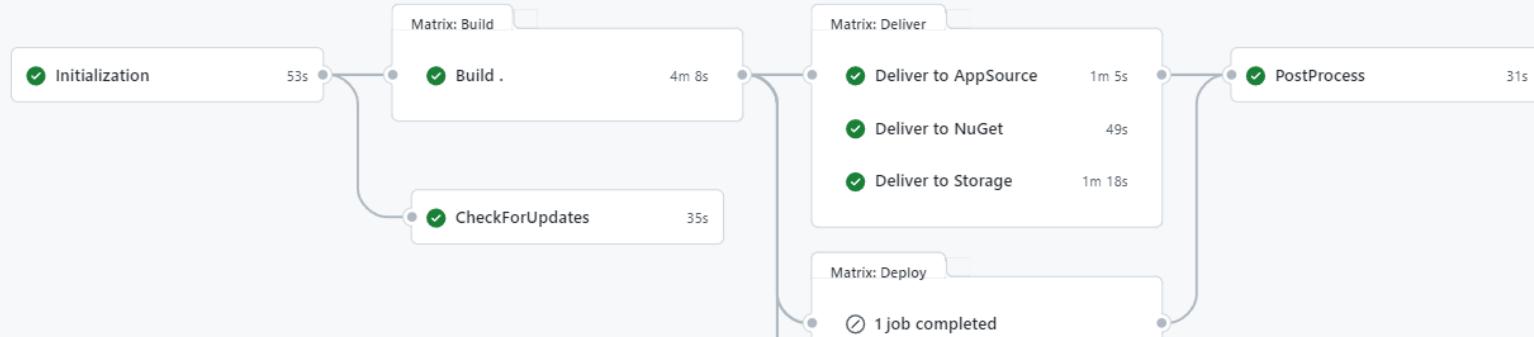
Name	Size
BingMaps.AppSource-main-Apps-3.1.254.0	35 KB
BingMaps.AppSource-main-BuildOutput-3.1.254.0	700 Bytes
BingMaps.AppSource-main-TestApps-3.1.254.0	4.5 KB
BingMaps.AppSource-main-TestResults-3.1.254.0	15.8 KB

Build . summary

Test app	Tests	Passed	Failed	Skipped	Time
BingMaps.AppSource_Test	10	10			22.006s

CICD.yaml

on: workflow_dispatch



BusinessCentralApps / BingMaps.AppSource

Code Issues Pull requests Actions Projects Security Insights Settings

Actions

New workflow

- I workflows
- /CD
- Create Online Dev. Environment
- Create release
- Increment Version Number
- Publish To AppSource
- Publish To Environment
- Test Current
- Test Next Major

All workflows

Showing runs from all workflows

744 workflow runs

- Test Current**
Test Current #158: Scheduled
- Test Current**
Test Current #157: Scheduled
- CI/CD**
CI/CD #254: Manually run by freddydk
- Update AL-Go System Files**
Update AL-Go System Files #71: Manually run by freddydk

- Test Current**
Test Current #156: Scheduled

- Test Current**
Test Current #155: Scheduled

- CI/CD**
CI/CD #253: Manually run by freddydk

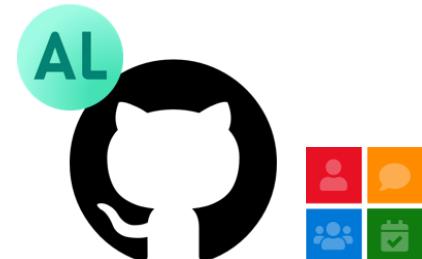
“

All workflows are like ready-made meals

Just heat them up and enjoy

AL-Go for GitHub – ready-made workflows

- CI/CD
 - Dependency management
 - Build, Sign, Publish, Install/Upgrade, Test, Performance test
 - Continuous Delivery / Continuous Deployment
- Test Current, Next Minor, Next Major
 - To ensure your app is compatible with next version
- Create Online Development environment
- Publish to BC SaaS environments
- Publish to AppSource
- Upgrade AL-Go
 - New functionality, new workflows and utilize new GitHub features

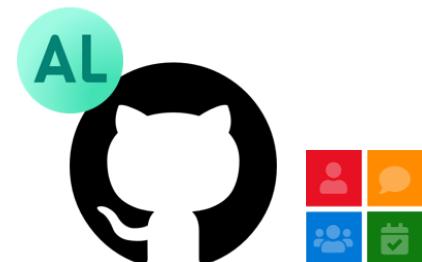


“

AL-Go workflows are like playmobil kits
You can configure the behavior of things in many ways,
but there are limits to what you can do.

AL-Go for GitHub – continuous improvements

- <https://aka.ms/algoroadmap>
- Support NuGet packages for external dependencies
- Support GitHub packages for internal dependency resolution
- BCPT Test results viewer (in GitHub and PowerBI)
- Code coverage support
- Use Azure VMs and ACIs for development environments
- Performance improvements
- ...



Getting started with AL-Go for GitHub

Getting started with AL-Go for GitHub

Create
repository

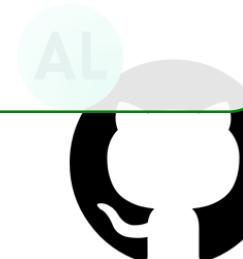
- Go to <https://aka.ms/algopte>
- Click *Use This Template*

Add apps and
test apps

- Add your source code to the repository
- Modify settings if needed

Build

- Wait for build to complete
- Investigate result



Demo

Getting started with AL-Go for GitHub



Brief introduction

COSMO Alpaca

How does COSMO Alpaca help you as ISV or implementation partner?

Standardized templates & policies for projects, products & source code, 1-click setup

1-click dev environments on Azure, no infrastructure expertise needed, prereqs automatically installed, full control

1-click acceptance environments on Azure for functional validation by consultants or customers, no infra expertise needed

Autom. deployment of releases into SaaS or on-prem environments, no manual steps

Project & Source Code Setup

Requirement Management

Development

Review & Test

QA

Release

Deployment

Automated E2E tracking from requirement over change up to release

Automated builds, built-in standardized process to validate changes & run automated tests

Release & artifact management simplifies dependency handling, versioning strategies & deployment tracking



Why COSMO Alpaca?

- All-in-one, full-scope implementation toolset with focus on self-service & efficiency without needing expertise
 - Reuse your investment for pipelines in other areas as well!
- Huge time savings for all key roles in product and project development
- Ready-to-use, fully-managed & professionally supported solution with SLAs (with telemetry and monitoring)
- Built for devs, consultants & project managers on top of VS Code, Azure DevOps & Power Platform



“

COSMO Alpaca is like eating in a restaurant
You get ready meals prepared by professionals
that you can customize to your own taste, and
everything is included

VS Code Extension

PowerApp

Azure DevOps

Create Organization

Create Project

Create App(s)

Create CD Pipeline

Project Maintenance

Containers

Project Container

Demo Container

Pull Requests

DevOps Organizations (205)

COSMO ALPACA

AZURE DEVOPS

- selfservice-demo COSMO CONSULT...
- myproject
 - Repositories
 - DevOps
 - myapp
 - Artifacts
 - Pipelines
 - WorkItems (max 25 per query)

CONTAINER

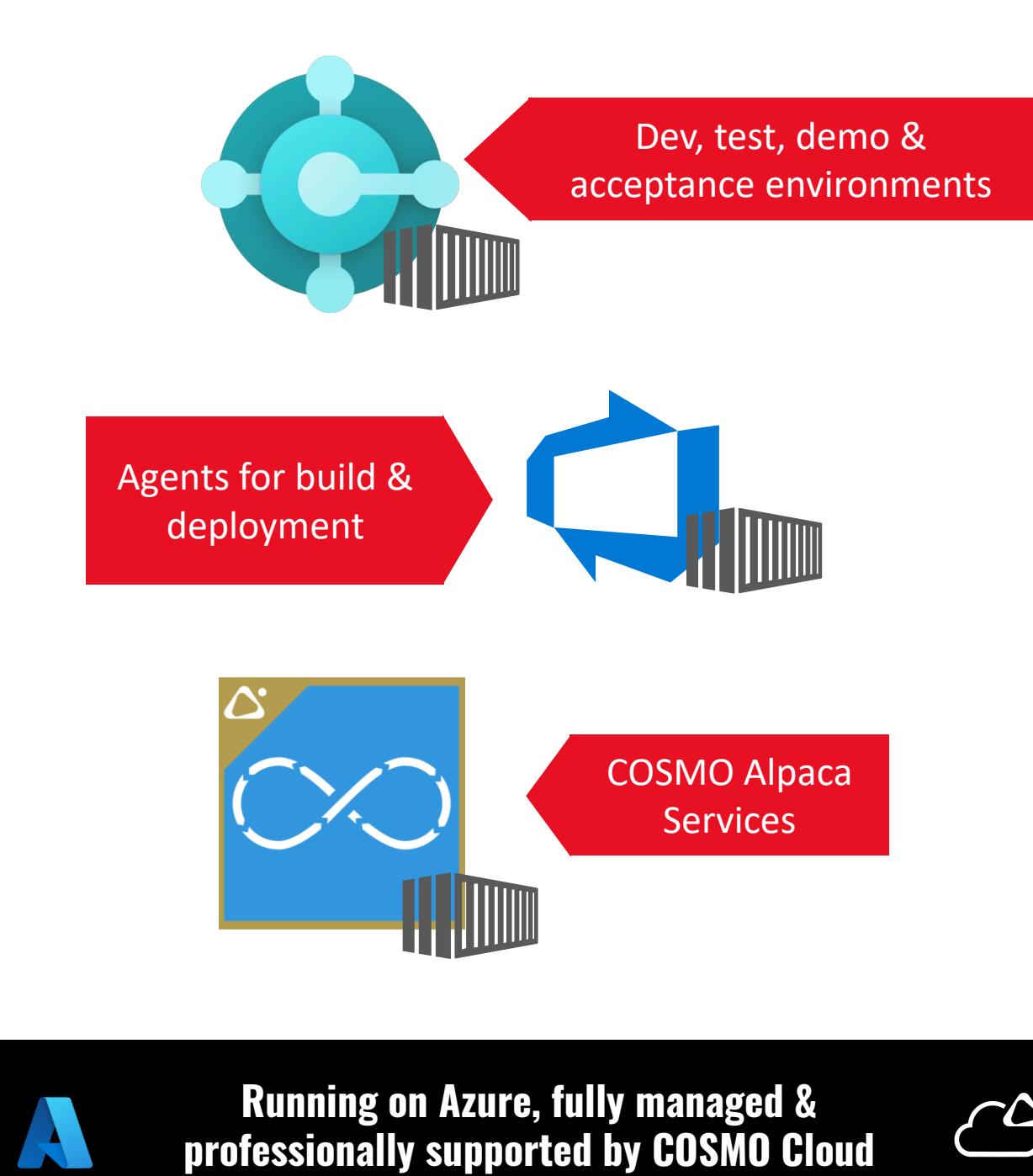
- mycontainer sandbox-20.5.45456.48...
 - Organization: selfservice-demo
 - Project: myproject
 - Repository: myapp
 - User: mlippert9438

PRODUCT PACKAGES

- COSMO Advance Payment for Co...
- COSMO Advance Payment OPplus...
- COSMO Advanced Construction S...

Azure DevOps

Running on customer side



“

COSMO Alpaca is like a prebuilt LEGO model
You get it fully assembled, but you can still make
the changes that you need.

Getting Started with COSMO Alpaca

Scenario: Getting started with COSMO Alpaca

Evaluate

Register for a free 30d trial or schedule a demo via
cosmoconsult.com/alpaca to evaluate if COSMO Alpaca fits you.

Order package

Select & order a package via [COSMO Marketplace](#)

Set-up

We set up the infrastructure & PowerApp for you,
you [install the COSMO Alpaca VS Code Extension](#)

Onboarding

Create a new or automatically onboard an existing project/app &
you're ready to go!



Demo

Getting started with COSMO Alpaca



ALOps

Scenarios

Jobs

Job

```

29 showmycode
30 resourceexposurepolicy_allowdebugging
31 resourceexposurepolicy_allowdownloadingsource
32 resourceexposurepolicy_includesourceinsymbolfile
33 internalsvisibleto
34 preprocessorsymbols
35 applicationinsightskey
36 alcachepath
37 publishartifact
38 publishxlf
39 failonwarnings
40 storageaccount
41 sastoken
42 printappmanifest
43 outputalclogs
44 additionalprobingpaths
45
46
47 *** For documentation, please visit : https://www
48
49 *** ALOps License:
50 * Licensed To: ALOps @ BCTechDays 2022
51 *** Importing required Task-Functions
52
53
54 *** Artifact Type : [Sandbox]
55 *** Artifact Version: []
56 *** Artifact Country: []
57 *** AL Source Path : [C:\vsts-agent-alops-warp10\_ALSourcePath]
58 *** AL Cache Path : [C:\vsts-agent-alops-warp10\_ALCachePath]
59
60
61 *** Default Working Folder: C:\vsts-agent-alops-war...
62 *** Artifact Folder : C:\vsts-agent-alops-war...
63 *** Agent Tool Folder : C:\vsts-agent-alops-war...
64 *** Agent Temp Folder : C:\vsts-agent-alops-war...
65
66 *** Resolving Path: [C:\vsts-agent-alops-warp10\_...
67 *** AL Source Folder : C:\vsts-agent-alops-war...
68 *** Resolving Path: [C:\vsts-agent-alops-warp10\_...
69 *** AL Cache Folder : C:\vsts-agent-alops-war...
70
71 *** Check BcContainerHelper
72 *** Load BcContainerHelper
73 BcContainerHelper version 4.0.2
74 BcContainerHelper emits usage statistics telemetry
75
76 "Get-BCArtifactUrl"
77 Name ----- Value -----
78 ----
79 select
80 type Sandbox

```

Validation / Builds

In this example, we will:

- Compile
- Sign Apps
- Build Docker Container
- Test upgrade
- Check objects against the Customer license (Onprem)
- Run Tests
- Build up-to-date OpenAPI Description

When anything fails:

- Backup the SQL database and make it an artifact
- Make the eventlog an artifact

At the end:

- Clean up my build agent
- Show all variables that ALOps has been building/using

Demo

Extensive build pipeline



Create Development Environment

Or in other words:

Can I automate the Admin Center functions from a pipeline?

```
- task: ALOpsAdminCenterAPI@1
  displayName: 'Copy Environment'
  inputs:
    - azure_tenant_id: '$(alops-azure-tenant-id)'
    - azure_app_client_id: '$(alops-azure-client-id)'
    - azure_app_client_secret: '$(alops-azure-client-secret)'
    - username: '$(alops-azure-bc-username)'
    - password: '$(alops-azure-bc-password)'
    - interaction:
        - wait_for_oper
        - app_install
        - environment:
            - app_installed_list
            - target_enviro:
                - app_uninstall
                - app_update
                - environment_copy
                - environment_delete
                - environment_get
                - environment_list
                - environment_rename
```



Demo

Create DEV Environment



Deployment

- Multiple steps available
 - Publish App
 - Batch Publish
 - Publish through Automation API
- Same experience for SaaS and OnPrem
 - OnPrem: [ALOps.ExternalDeployer](#)



Demo

A simple release pipeline

Multi-stage pipelines (with templates)



AppSource Validation

Use case:

- 43 Apps
- 7 Offerings
- All offerings need to be released (and validated) at the same time



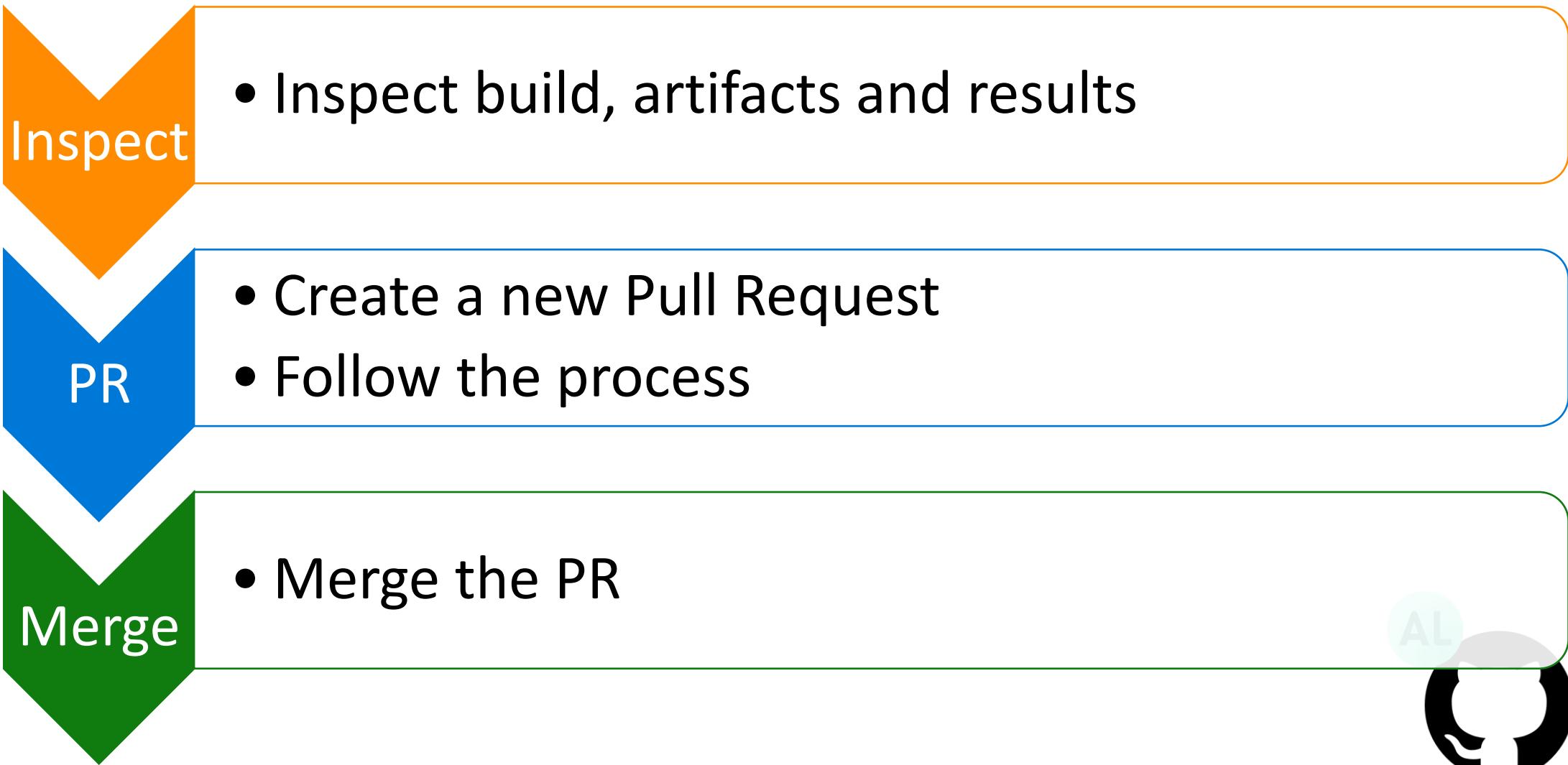
Demo

AppSource Validation

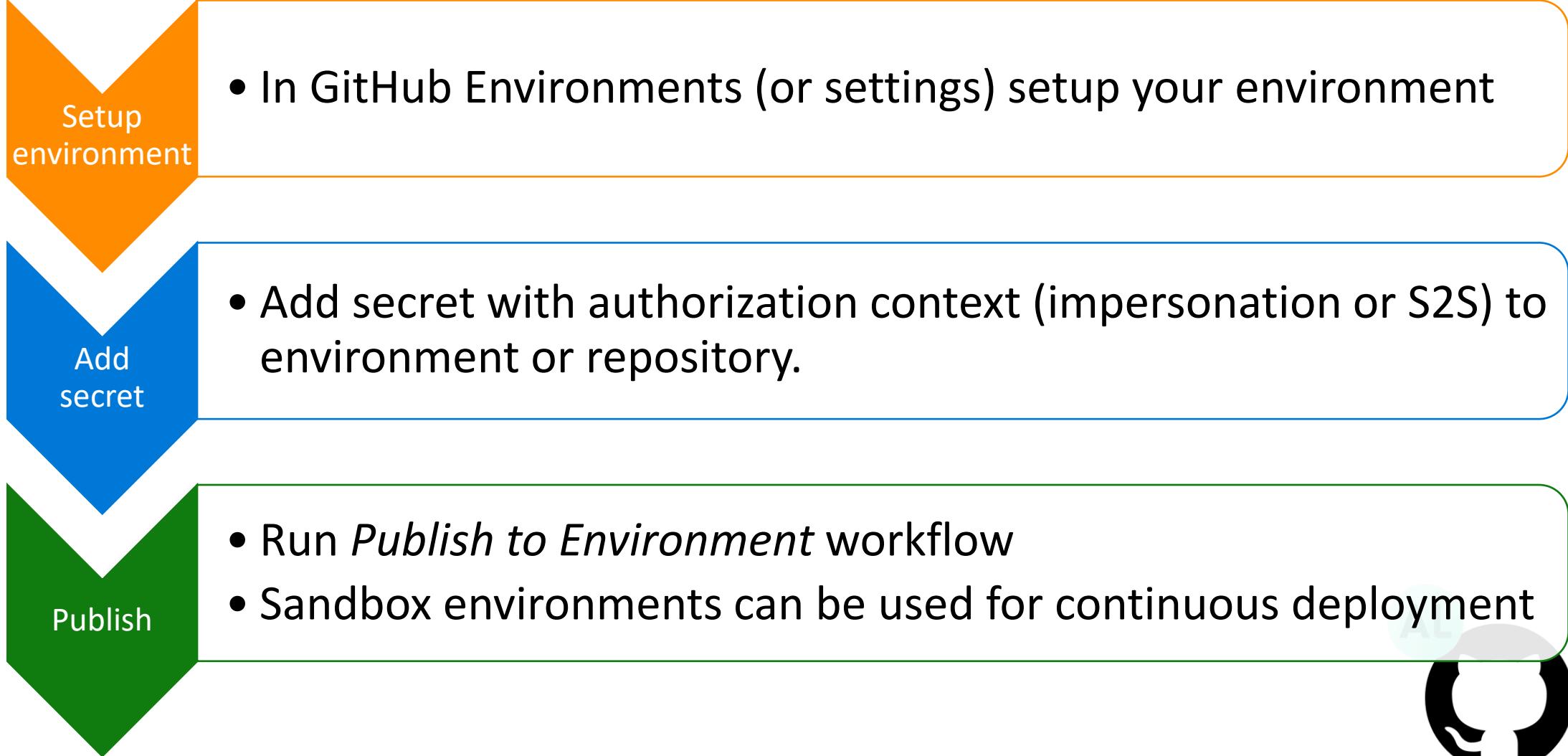


AL-Go for GitHub Scenarios

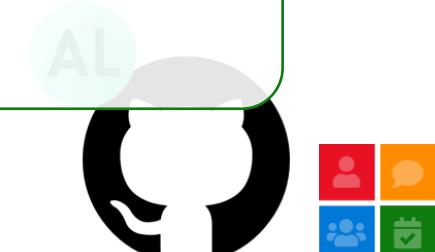
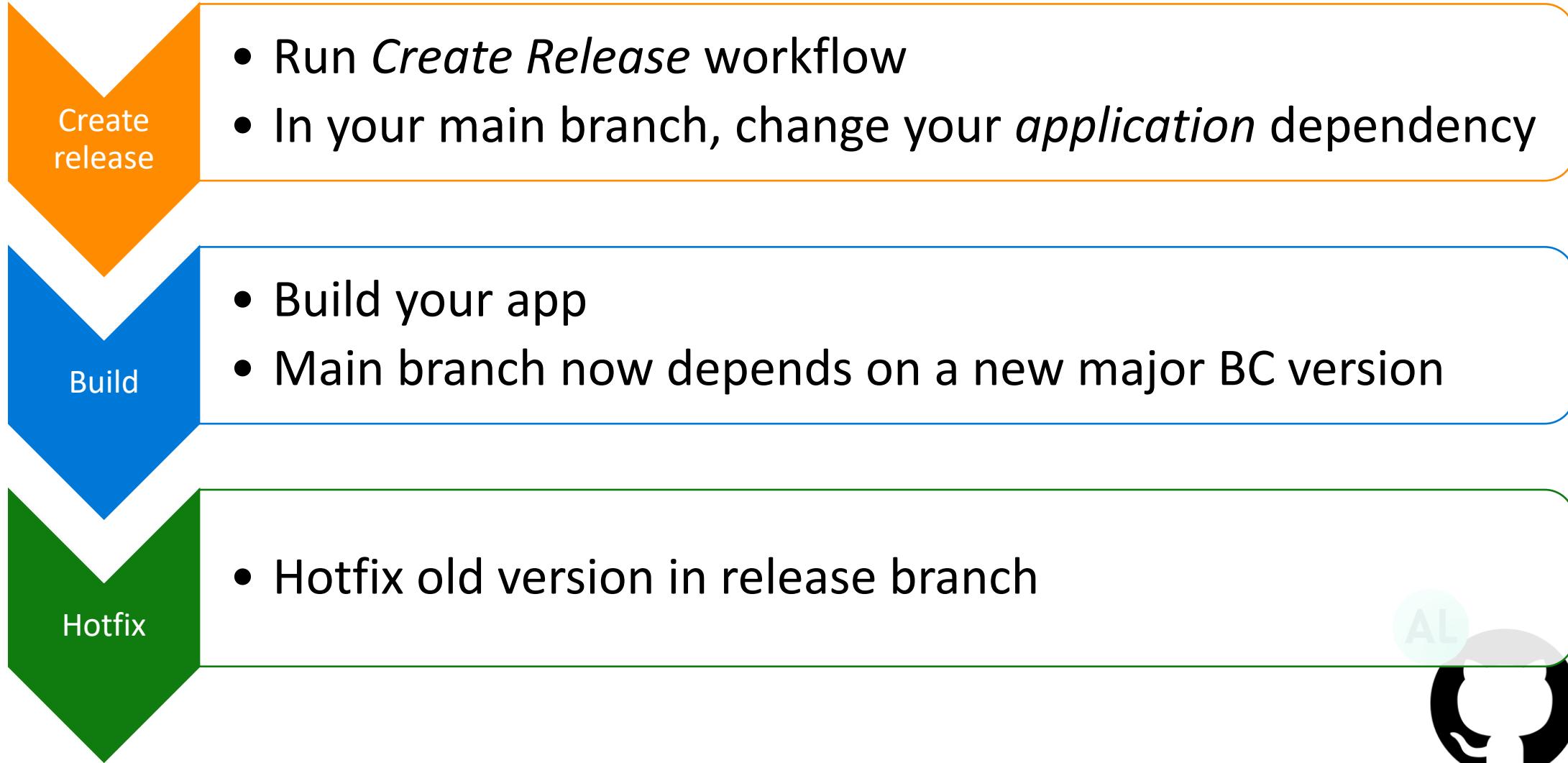
Scenario: Validation / Builds



Scenario: Deployment



Scenario: Major Version Change



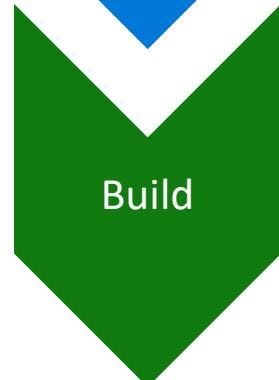
Scenario: New functionality (Example: Submit to AppSource)



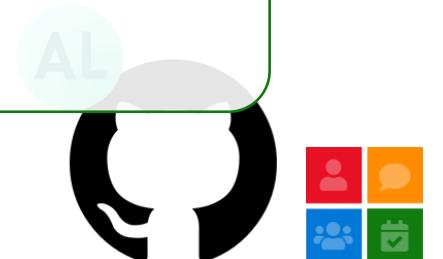
- Run *Update AL-Go System Files* action



- Add secret: *AppSourceContext*
- Add settings: *AppSourceContinuousDelivery*, *AppSourceProductId*



- Watch that *continuous delivery* is enabled
- Run *Publish To AppSource* workflow manually



Demo

Validation / Builds

Deployment

Major Version Change

New functionality



COSMO Alpaca Scenarios

Demo

Configuration: How to set up and interact with your containers for build, dev, demo, ...



Sc

- |

- |

- |

- |

- |

- |

- |

```
9   "enableSymbolLoading": true,
10  "customNavSettings": [
11    {
12      "settings": "EnableTaskScheduler=false",
13      "ignoreIn": []
14    }
15  ],
16  "artifacts": [
17    {
18      "name": "Default-Fonts",
19      "url": "c:\\\\azurefileshare\\\\common\\\\default-fonts.zip",
20      "target": "fonts",
21      "ignoreIn": ["build"]
22    },
23    {
24      "name": "Database Backup",
25      "url": "C:\\\\azurefileshare\\\\$(azurefileshare.ProjectFolder)\\\\customer_clean.bak",
26      "target": "bak",
27      "ignoreIn": []
28    },
29    {
30      "name": "DMS",
31      "url": "C:\\\\azurefileshare\\\\$(azurefileshare.ProjectFolder)\\\\CCDMS\\\\CosmoConsult.DMS.SharePoint.Communication.1.0.0.8.dll",
32      "target": "dll",
33      "targetFolder": "CCDMS",
34      "ignoreIn": []
35    }
36  ],
37  "devopsArtifacts": [
38    {
39      "organization": "MyDemoOrg",
40      "project": "0740989b-256a-4047-849f-91dd8b4d1d33",
41      "scope": "project",
42      "feed": "MyFeed",
43      "name": "myapp",
44      "appImportScope": "Tenant"
45    }
46  ],
47  "ipArtifacts": [
48    {
49      "name": "advanced-manufacturing-pack",
50      "version": "2.8.12341",
51      "type": ["app"]
52    }
53  ],
54  "ipContent": [
55    {
56      "name": "Advanced Manufacturing Pack"
57    }
58  ]
59 ]
```



Demo

Build Pipelines: Let's see what comes out of the box without doing anything



Demo

Pull request validation containers and
demo environments for non-techies





Setup new Demo Container

API 0.11
Docker 0.11
PowerApp 2.3.36



Configuration

Filter by: Entity, Configuration



schulung

- default - latest-onprem-germany-anlagenbuchhaltung
- default - latest-onprem-germany-einkauf
- default - latest-onprem-germany-finanzbuchhaltung-anke
- default - latest-onprem-germany-finanzbuchhaltung-anke-neu
- default - latest-onprem-germany-opplus-zahlungsverkehr
- default - latest-sandbox-germany
- default - latest-sandbox-germany-amp
- default - latest-sandbox-germany-opplus
- default - latest-sandbox-germany-opplus-ckl
- default - latest-sandbox-germany-opplus-ckl-amp
- default - latest-sandbox-germany-wertefluss

default - latest-sandbox-germany-workflow-amp

- default - latest-sandbox-germany-workflow-amp-bc19

Name

default - latest-sandbox-germany-workflow-amp

Description

AMP-SaaS

Artifacts (4)

COSMO Workflow

COSMO Workflow 2.1.0.90531 (app)

COSMO Advanced Manufacturing Pack

COSMO Advanced Manufacturing Pack 3.1.87024.0 (app)

COSMO Licensing

COSMO Licensing 1.5.0.86008 (app)

COSMO Graphical Extension

COSMO Graphical Extension 2.11.87644.0 (app)

Username: admin
Password: Passw0rd!

Create Container

Demo

Setup deployment and next minor/major pipelines



Demo

The things you can do when you have
the platform in place



APIs Summer 22 - Documentation

4ps.atlassian.net/wiki/spaces/DOC/pages/459603986/APIs+Summer+22

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draw.io Diagrams

Pages Getting started How-to articles Apps Swagger UI Summer 22 APIs Summer 22 Spring 22 Winter 21 Archived pages

Documentation (public) / Swagger UI / Summer 22

APIs Summer 22

Created by Joey Leppers Last updated: about 7 hours ago by Jl Swagger UI

APIs

Auto-generated content, do not edit.

- 4PS App API v1.0
- 4PS App API v1.1
- 4PS Appointment API v1.0
- 4PS Calculation API v1.0
- 4PS CRM API v1.0
- 4PS Document API v1.0
- 4PS Document Scanning API v1.0
- 4PS Finance API v1.0
- 4PS HR API v1.0
- 4PS IDB API v1.0
- 4PS Job API v1.0
- 4PS Logistic API v1.0

(v1.1) 4PS App API v1.1 OAS3

Swagger UI for (v1.1) 4PS App API.

Servers https://fps-wmjjyfrl.germanywestcentral.cloudapp.azure.com/4968c227af86rest/api/4ps/app/v1.1 Authorize

applicationsInfo.applicationInfo

GET /applicationsInfo Returns a list of objects of type applicationInfo from 4PS Construct

GET /applicationsInfo{{companyName}} Returns a list of objects of type applicationInfo from 4PS Construct

applicationsInfo.extensionManagement

GET /applicationsInfo{{companyName}}/extensionsManagement Returns a list of objects of type extensionManagement from 4PS Construct

GET /applicationsInfo{{companyName}}/extensionsManagement{{runtimePackageID}} Returns a list of objects of type extensionManagement from 4PS Construct

PATCH /applicationsInfo{{companyName}}/extensionsManagement{{runtimePackageID}} Updates an object of type extensionManagement in 4PS Construct

DELETE /applicationsInfo{{companyName}}/extensionsManagement{{runtimePackageID}} Deletes an object of type extensionManagement in 4PS Construct

companies.company

GET /companies Returns a list of objects of type company from 4PS Construct

Once you are there...

- Other things you can do when you have the platform in place:
 - Restore and use SaaS backups for “local” dev
 - Clone your container easily, e.g. to share your data / scenarios with your colleague
 - Upgrade your container with a couple of clicks
 - Share work in progress to you customer in a secure way
 - Check out nextMajor / nextMinor with a couple of clicks
 - ...



Pricing

ALOps – Flexible cloud pricing

Per Pipeline Run

Per 5 Repos

Per Project

Per Collection / Organization

Enterprise Agreement



ALOps – Flexible cloud pricing

Per Pipeline Run	Per 5 Repos	Per Project	Per Collection / Organization	Enterprise Agreement
€1 <ul style="list-style-type: none">• All steps• Community Support	€50/Month <ul style="list-style-type: none">• All steps• Community Support• ∞ builds	€250/Month <ul style="list-style-type: none">• All steps• Community Support• ∞ builds	€450/Month <ul style="list-style-type: none">• All steps• Community Support• ∞ builds	From €750/Year Everything + Personal Support



COSMO Alpaca Pricing

Depends on # containers you want to run in parallel (stopped ones don't count). We recommend 1.5 per dev & 1 per consultant/project manager.

	Up to 4 containers	Up to 8 containers	Up to 15 containers	Up to 30 containers
Monthly Contract	1.750 €/month	2.700 €/month	3.950 €/month	7.750 €/month
Yearly Contract	1.400 €/month	2.200 €/month	3.300 €/month	6.250 €/month

Dynamically scalable, all features included, ∞ orgs/projects/apps/pipelines, professional support & SLAs included



COSMO Alpaca Pricing

Pricing optimizations available soon (made possible by a backend switch to Kubernetes):

- Pay-per-use: Dev containers and pipelines are charged per minute, stopped ones are free, auto-shutdown options – can be a lot cheaper, depending on your usage
- Hosted option: Dedicated infrastructure for you, fully-managed by us & automated scale down – ~70% cheaper
- Self-Host option: Fully-managed by us but in your own subscription (cheap dev/test subscription plan) & automated scale-down – ~80% cheaper



Summary... 😊



“

We have three great options

Depending on your situation and requirements,
you need to decide which is the best fit for you

But there is no reason at all anymore for not
doing professional DevOps and CI/CD!

“

But there is no reason at all anymore for not doing professional DevOps and CI/CD!

More Information

AL-Go for GitHub – <https://aka.ms/algo>

COSMO Alpaca – cosmoconsult.com/alpaca

ALOps – www.alops.be



Thank you !

Please rate the session in the Conference App !

What questions can we answer?

