

DevOps is the goal – but what are the options?

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Tobias Fenster



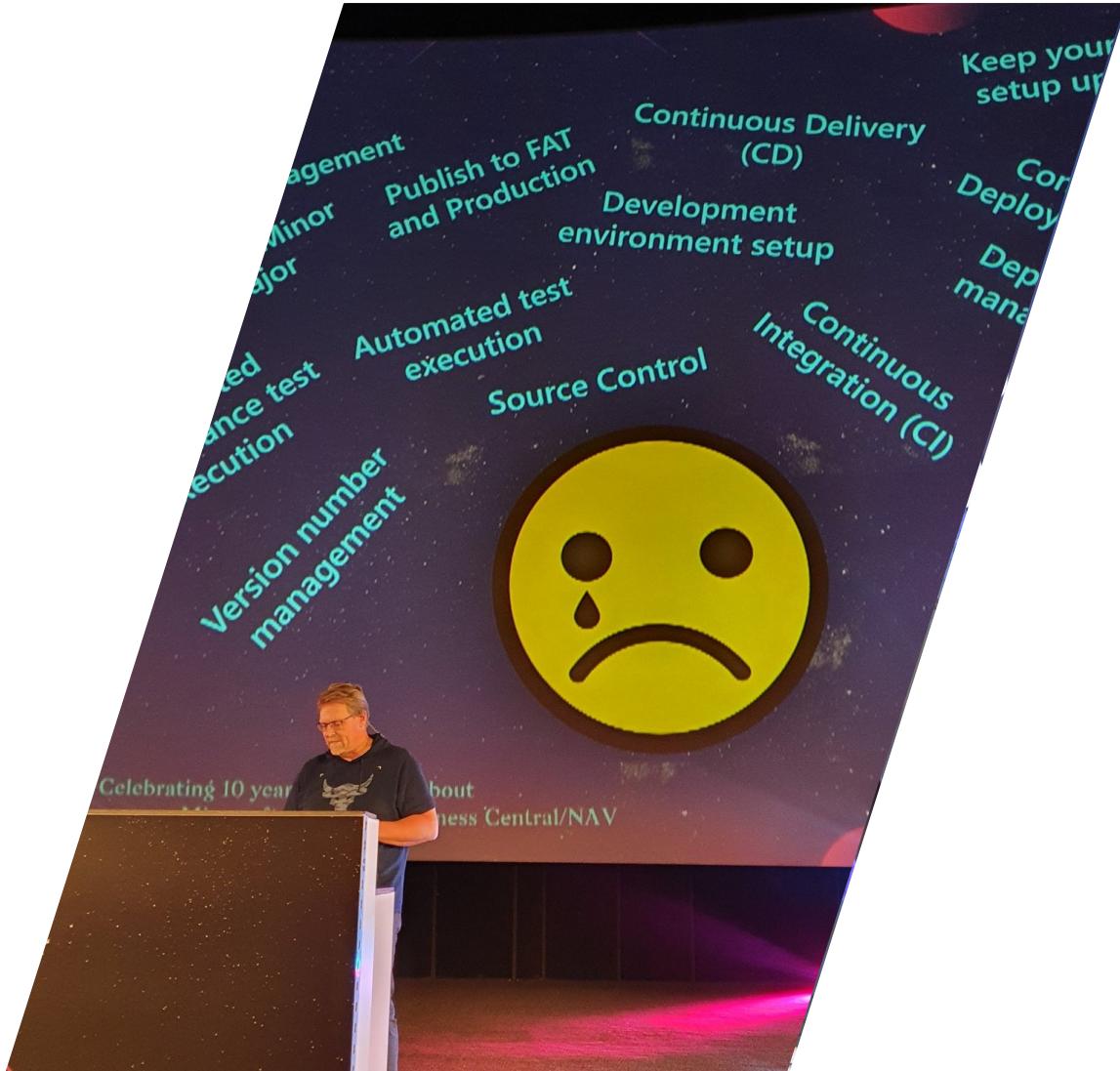
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Freddy Kristiansen

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Microsoft

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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

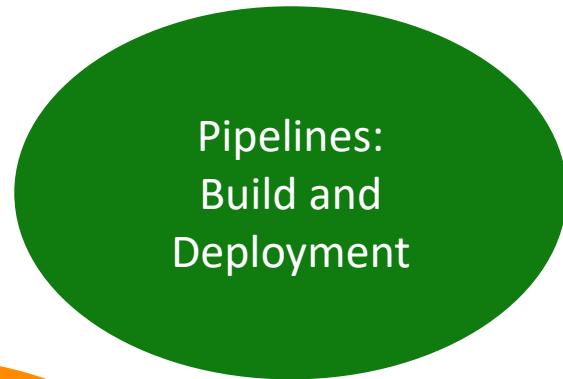
Pipelines:
Build and
Deployment



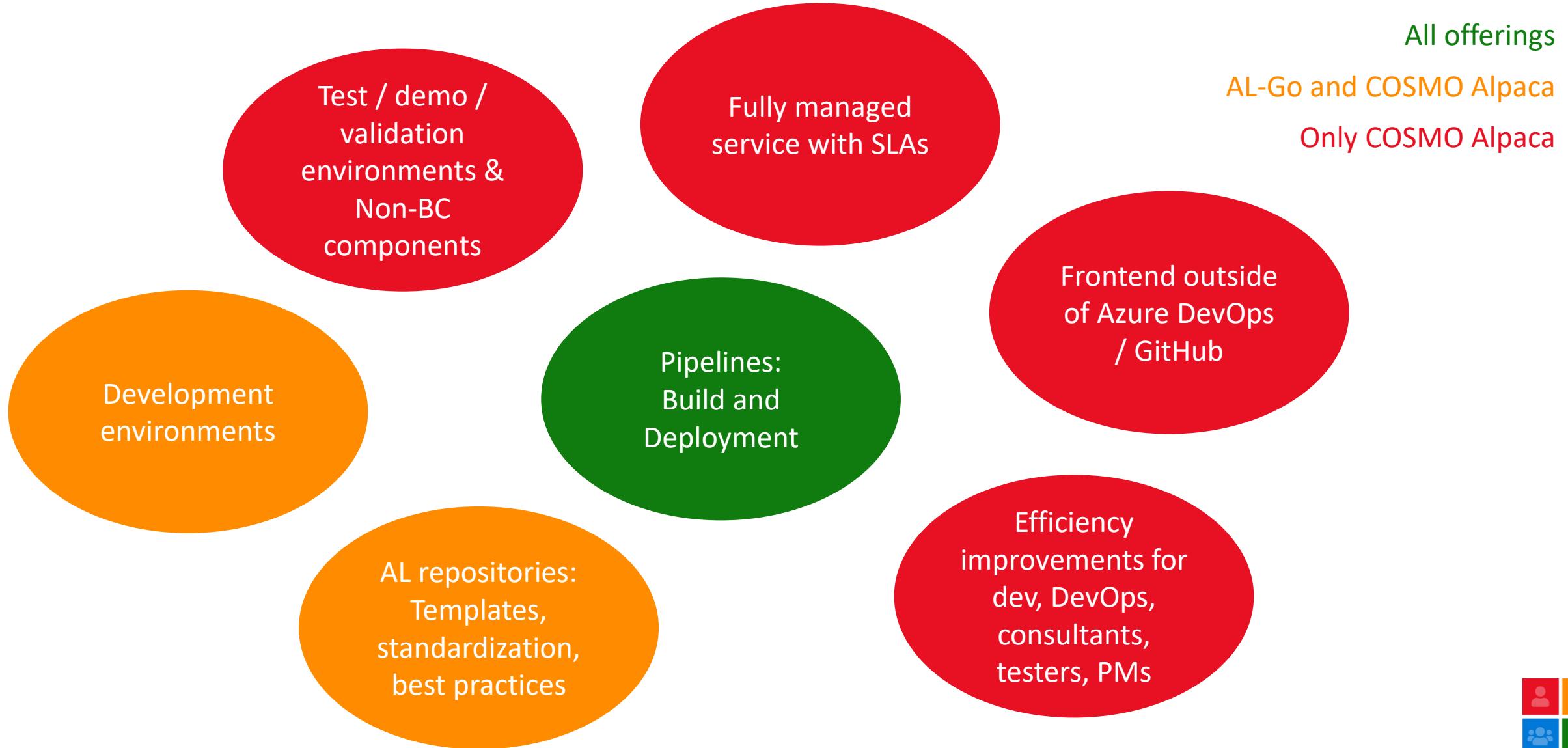
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All offerings

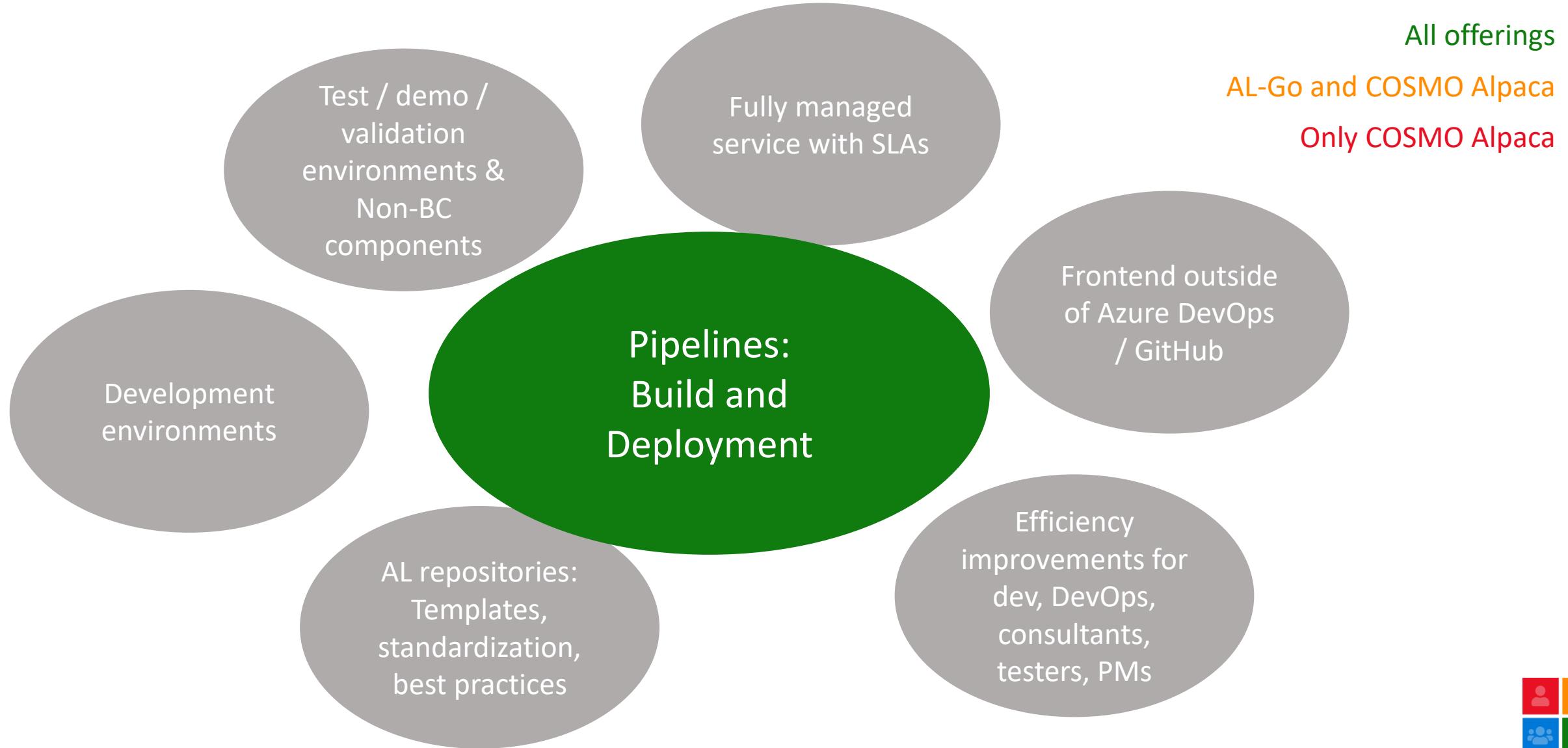
AL-Go and COSMO Alpaca



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)	1 (3)	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	(*)	*	

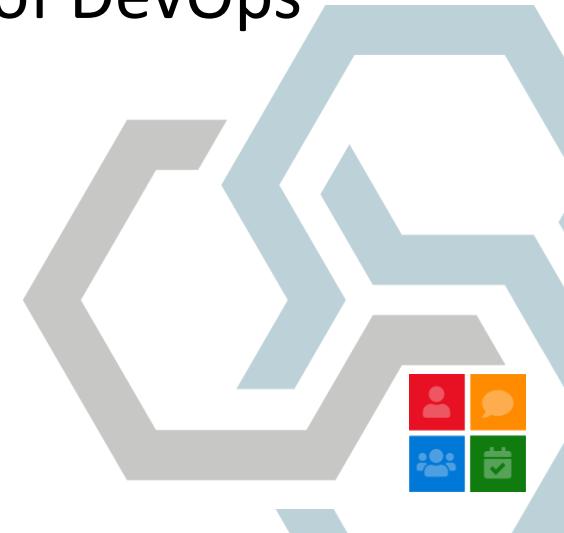
* in the future



ALOps Managed Agents

ALOps Managed Agents

- Dedicated Hardware on our own farm
 - Much cheaper than Azure
- Business Central caching
 - Pre-download of all artifacts
 - Docker images are pre-cached as much as possible
- Available 24/7
- “Just works” principle – takes away the infrastructure-part of DevOps
- Blazing fast
 - Specialized for AL development
- Will support:
 - GitHub Runners
 - Azure DevOps Agents



Why fast agents might matter ..

- Parallel jobs comes with a cost (\$15/month)
- Multiple customers
- Multiple Apps
- Multiple localizations
- Big team = many pullrequests = many builds
- Quick Fix also needs to go through pullrequests

Tip: Speed up a build by make it fail fast

→ [Compile before building containers](#)



AL-Go for GitHub Runners

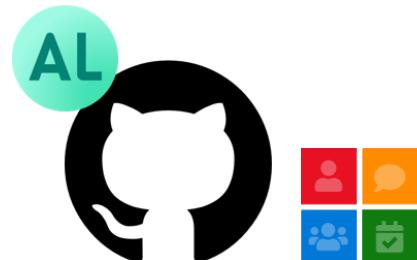
AL-Go for GitHub Runners - now

- Use <https://aka.ms/getbuildagent> to create self-hosted agents
 - Don't troubleshoot; throw out and recreate
- GitHub hosted runners
 - Come in different sizes and flavours
 - 2000 GitHub minutes free (= 1000 Windows minutes)
 - Additional minutes are \$0,016
 - Price of building a medium size app is around \$0,50



AL-Go for GitHub Runners - future

- Add workflow to create and maintain self-hosted runners
- Support auto-scaling runner groups
 - As part of <https://aka.ms/getbuildagent> (and above workflow)
- Optionally use online BC SaaS sandbox
 - For upgrade tests, test runs and performance tests
- Investigate using GitHub cache for performance improvements



COSMO Alpaca Agents

COSMO Alpaca Agents

- Fully managed by the COSMO Operations team
 - It “just works”, nothing to do on your side
- Runs on Azure
 - Unlimited scale, guaranteed SLA and professional support structure
- Improvements of the platform automatically appear
 - And Azure improves a lot...
- Optimized backend and setup for BC



Proven Tech!

	ALOps	AL-Go for GitHub / Run-AIPipeline	COSMO Alpaca
# of pipeline runs last year	~330.000	~700.000	~120.000
Avg # of builds per day	~1350	~1900	~450
Avg # of releases per day	~180	N/A	~50
# Nodes	30	N/A	82
# Cores	240	N/A	380
Core Speed	5 GHz	N/A	3.6 GHz
RAM	2 TB	N/A	3 TB
Disks	20 TB	N/A	31 TB



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

Strategy (today) of Microsoft Azure DevOps & GitHub teams



“I feel it’s important to always
have a plan to ignore.”



Strategy (today) of Microsoft Azure DevOps & GitHub teams

If you currently are on Azure DevOps or on GitHub and have no specific reason for changing, **stay there**



Strategy (today) of Microsoft Azure DevOps & GitHub teams

If you are new to DevOps and both solutions meet your needs,
Microsoft would lead with GitHub,
but both are fine



Strategy (today) of Microsoft Azure DevOps & GitHub teams

If you want to manage your full project
including non-dev tasks and manual test
tracking,
go with **Azure DevOps**



I CAN'T KEEP
CALM
BECAUSE
I WANT
MORE

Strategy (today) of Microsoft Azure DevOps & GitHub teams

**Investment from Microsoft into Azure DevOps
will ramp up again**

**new big features typically will be released to
both platforms**

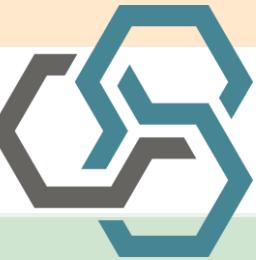


Strategy (today) of Microsoft Azure DevOps & GitHub teams

Hybrid solutions with deep integration like
e.g. Azure Pipelines with GitHub repos
will see **continuous improvements**



Brief introduction to

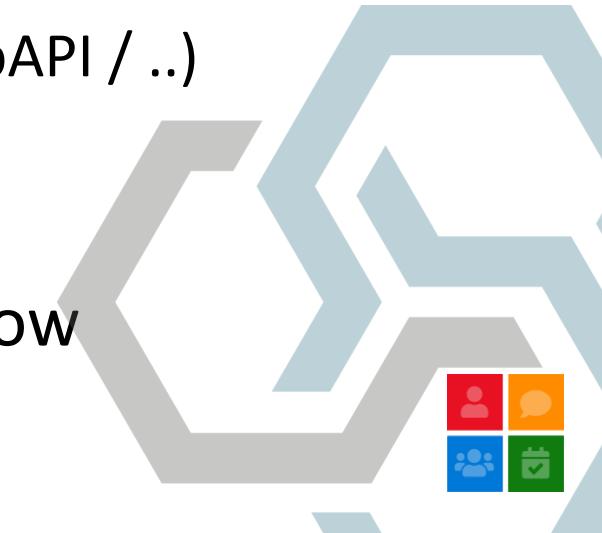


ALOps

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

“

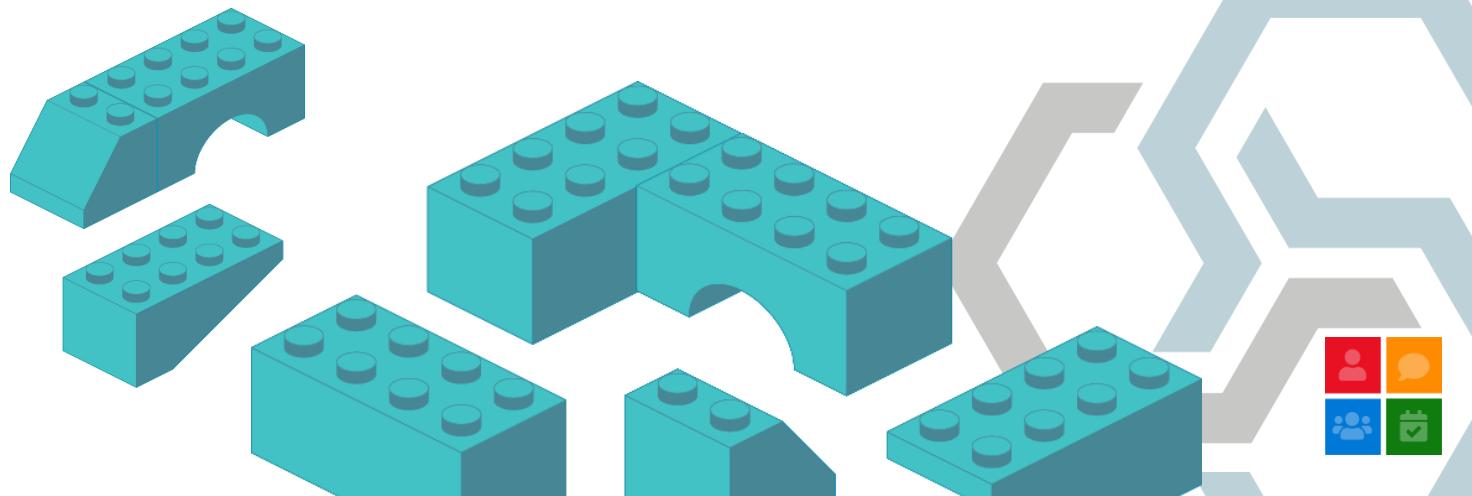
Every pipeline is a lego masterpiece

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

Building Blocks

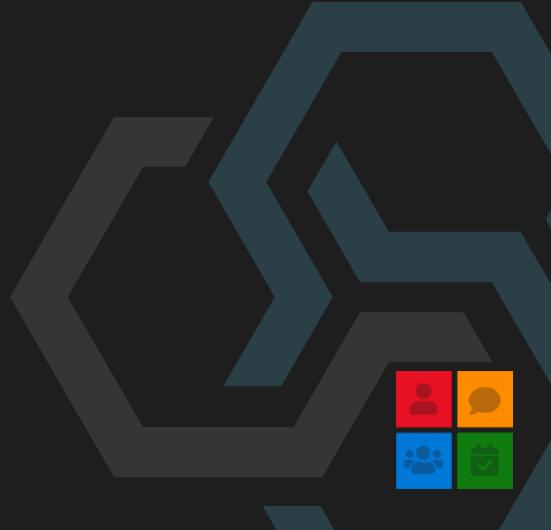
- Managing Docker
- Creating Apps
 - Compile / Sign / Runtime / ..
 - Manage Version / exposure / codecops /
- Publish Apps
 - In Batch
 - Manage dependencies
 - ..
- Deploy Apps – SaaS & OnPrem
- Maintain build server
- BC License check (OnPrem)
- Admin Center API tasks
- [Run Automated Tests](#)
- 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 "$(version)" --credential ([PSCredential]$env:SYSTEM_CREDENTIALS)'
```



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



ALOPS - Compile Extension:

```
89 * App.Platform      = 15.0.0.0
90 * App.Application   = 14.0.0.0
91 *** Check Runtime: [9.0]
92 ***
93 *** Match: yyyyWW
94 *** Setting Managed App Version [c:\Run
95 *** Final app.json:
96 {
97   "id": "387c89df-1def-40e2-8953-e4
98   "name": "WaldoApp-Base für bleh",
99   "publisher": "waldo",
100  "version": "1.0.202236.1762",
101  "brief": "",
102  "description": "",
103  "privacyStatement": "",
104  "EULA": "",
105  "help": "",
106  "url": "",
107  "logo": "",
108  "dependencies": [
109    {
110      "id": "00000000-0000-0000-0000-000000000000",
111      "published": "2022-06-20T12:00:00Z",
112      "name": "AL TestTool",
113      "version": "1.0.202236.1762"
114    }
115  ],
116  "screenshots": [
117    {
118      "id": "40000000-4000-4000-4000-400000000000",
119      "published": "2022-06-20T12:00:00Z",
120      "name": "Screenshot 1"
121    }
122  ],
123  "platform": "15.0.0.0",
124  "application": "14.0.0.0",
125  "idRanges": [
126    {
127      "id": "387c89df-1def-40e2-8953-e4
128      "published": "2022-06-20T12:00:00Z",
129      "name": "WaldoApp-Base für bleh"
130    }
131  ]
132}
```



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
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Create pipeline

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Paste

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Demo

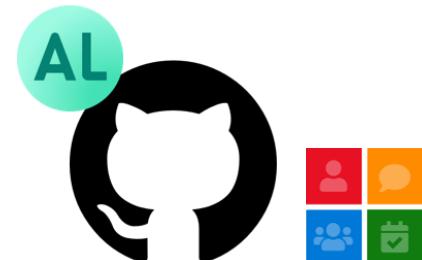
Getting started with ALOps



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
 - 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

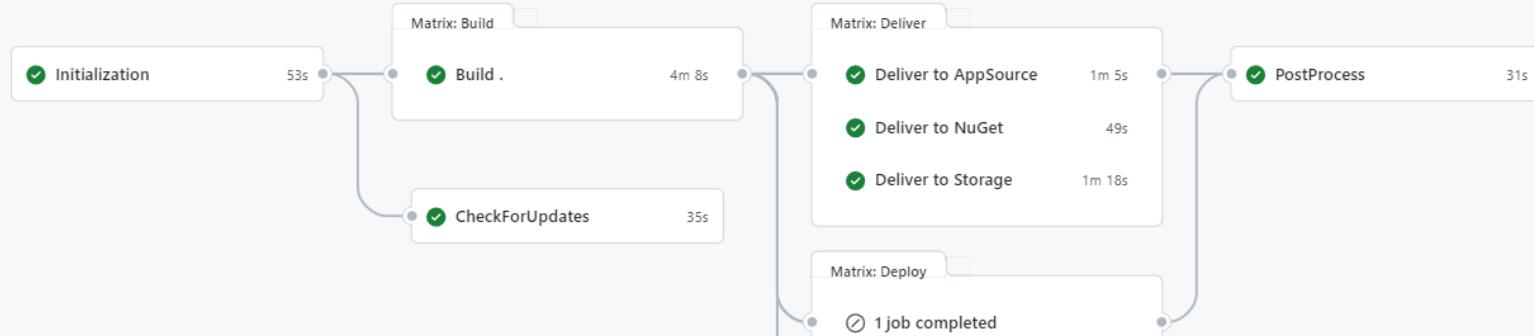
Name	Size
BingMaps.AppSource-main-Apps-3.1.254.0	35 KB
BingMaps.AppSource-main-BuildOutput-3.1.254.0	700 Bytes
BingMaps.AppSource-main-TestApps-3.1.254.0	4.5 KB
BingMaps.AppSource-main-TestResults-3.1.254.0	15.8 KB

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

- Matrix: Deploy
 - Deploy to QA
- 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

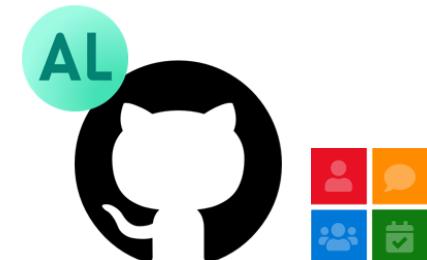
“

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

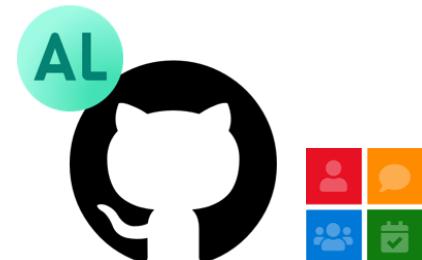


“

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

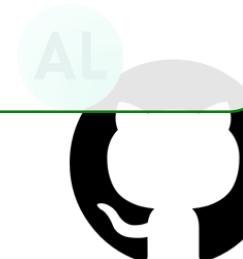
- Go to <https://aka.ms/algopte>
- Click *Use This Template*

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



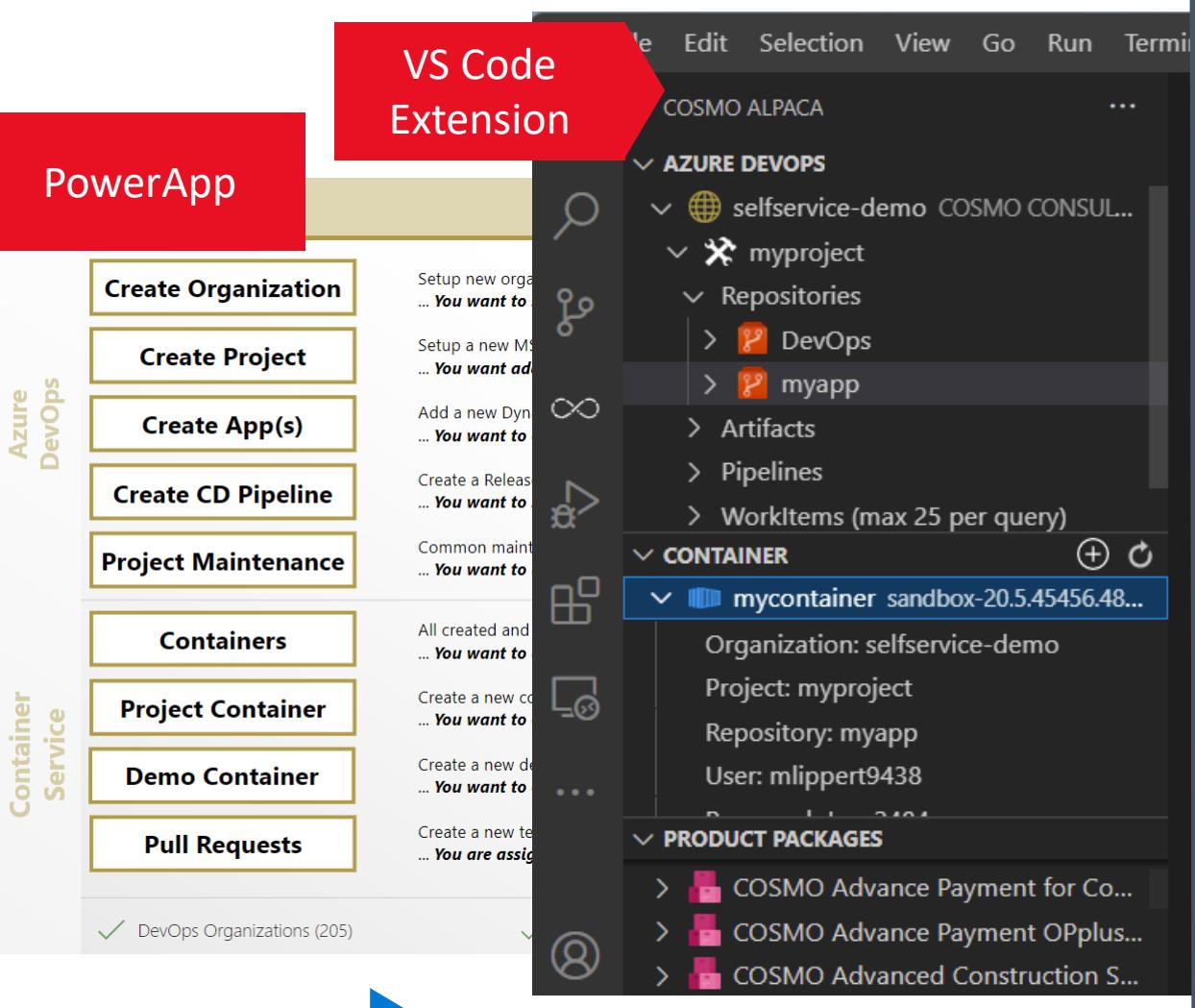
Why COSMO Alpaca?

- 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



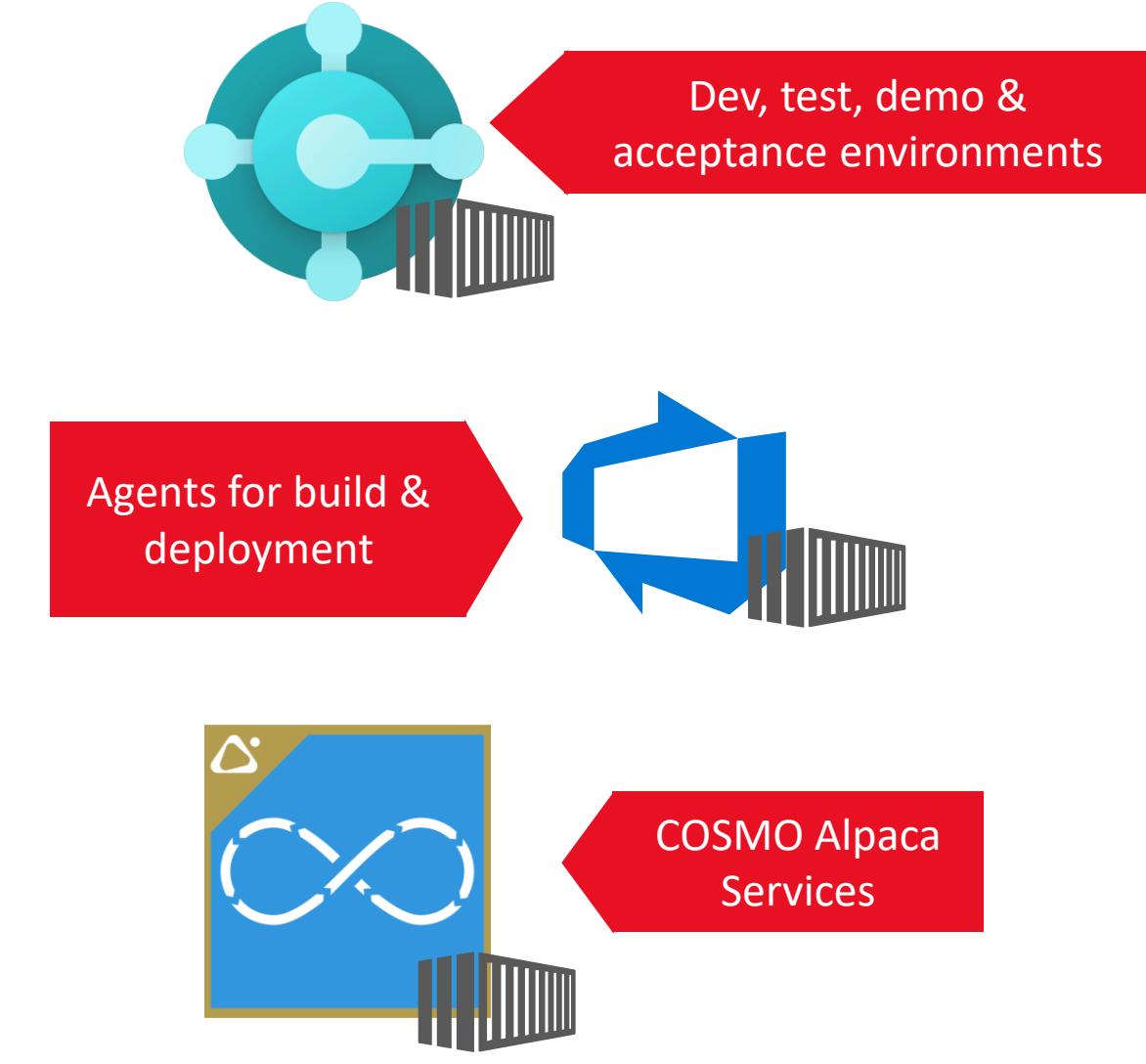
“

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



Azure DevOps

Running on customer side



Running on Azure, fully managed & professionally supported by COSMO Cloud



“

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\_w...
67 *** AL Source Folder : C:\vsts-agent-alops-war...
68 *** Resolving Path: [C:\vsts-agent-alops-warp10\_w...
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
          - 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

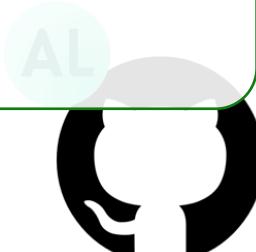
Scenario: Validation / Builds



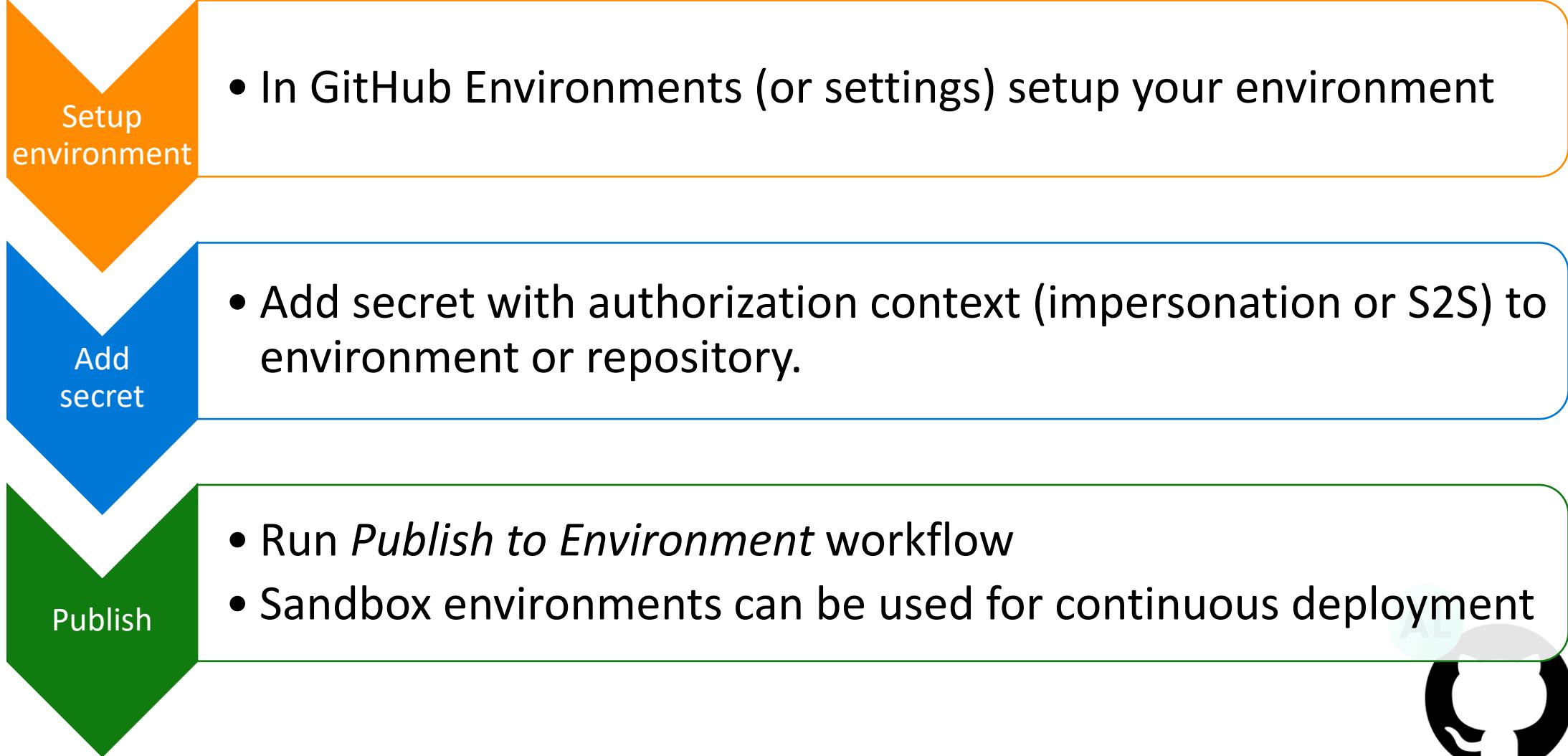
- Inspect build, artifacts and results

- Create a new Pull Request
- Follow the process

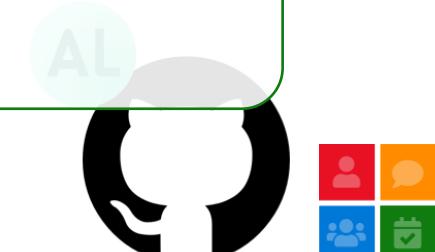
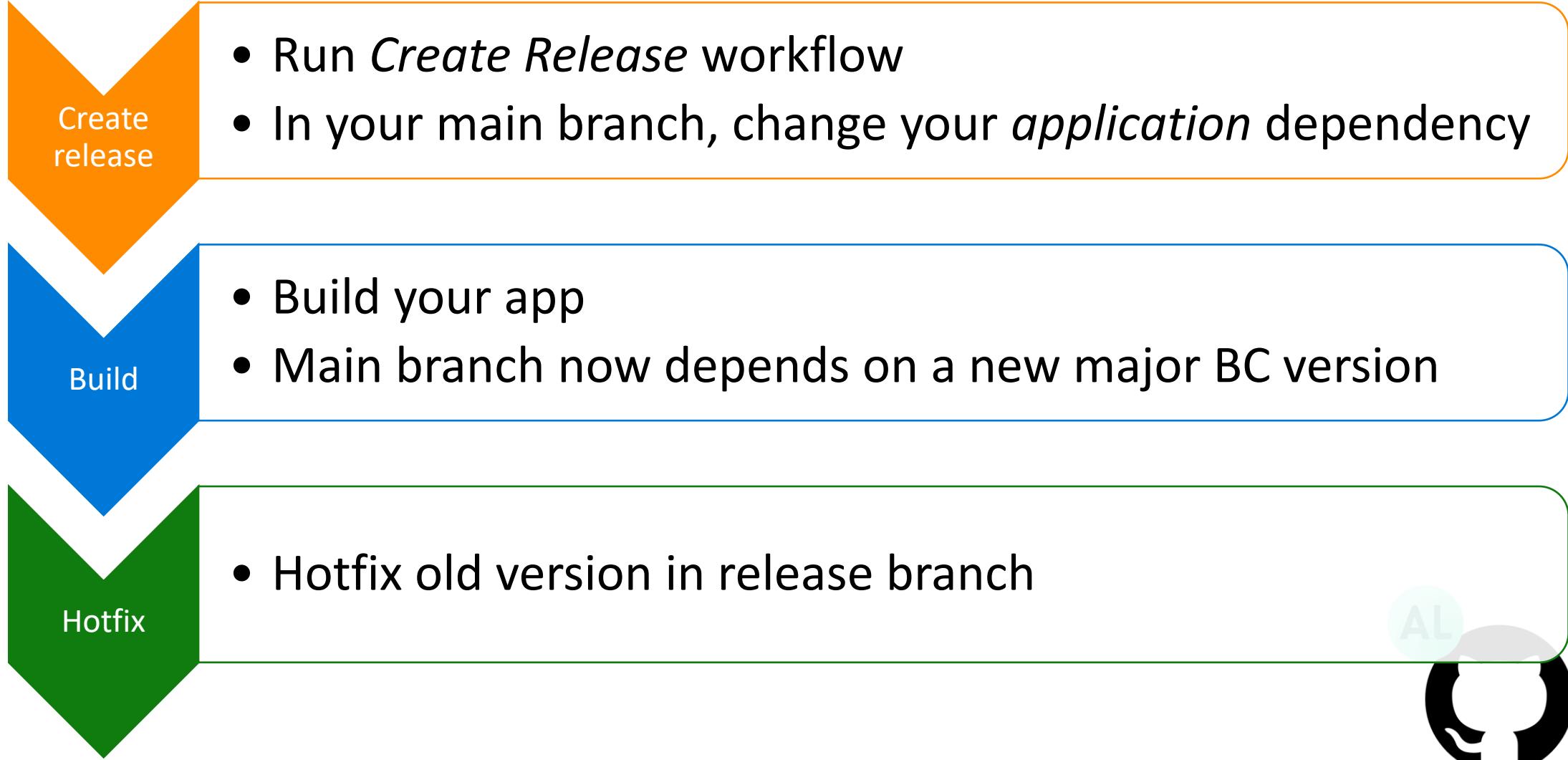
- Merge the PR



Scenario: Deployment



Scenario: Major Version Change



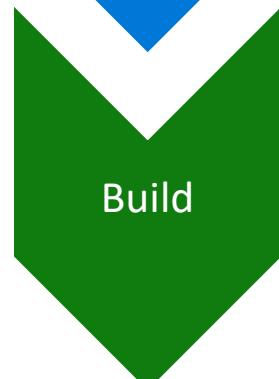
Scenario: New functionality (Example: Submit to AppSource)



- 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, ...



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```
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

Home Recent Spaces People Apps Templates Create Search 9+ ? T

Documentation (public) Space Settings

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 JS 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

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



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

[Roundtable DevOps & CI/CD](#) today at 16:15

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

[AL-Go for GitHub](#) – from Zero to Hero tomorrow at 11:15 – 13:00 (this room)

COSMO Alpaca – cosmoconsult.com/alpaca

- [ISV Theater Session](#) tomorrow at 10:55

ALOps – www.alops.be

No session, but you can vote 😊 (Tech Awards – Hodor NV – ALOps)



Give us Feedback !

 Hope you enjoyed this session!

 Please help us improve and give session feedback in the App!

 Thank you !

