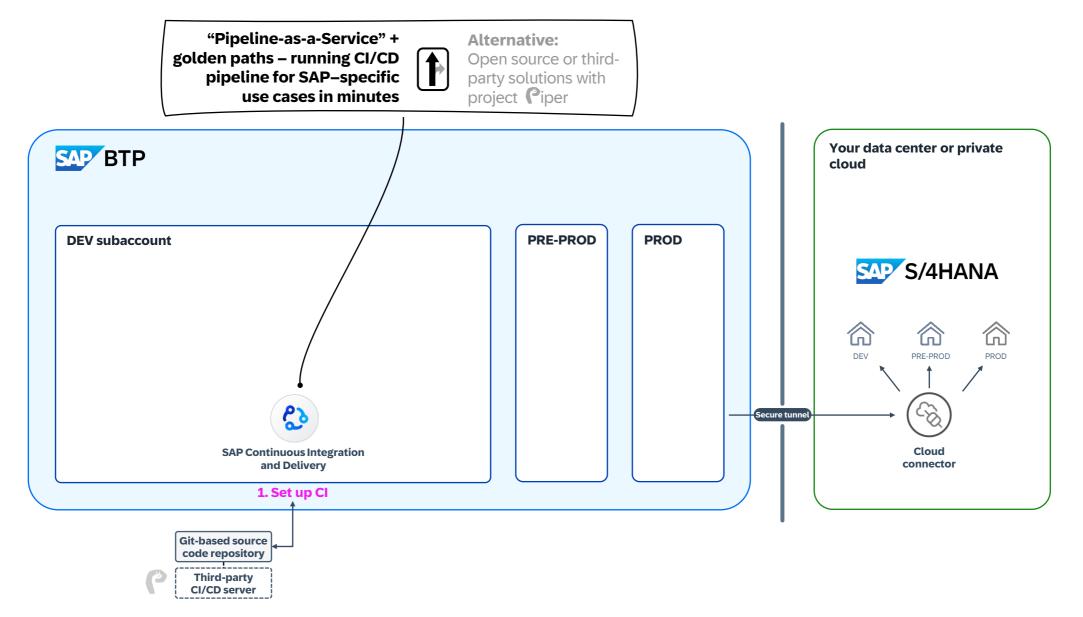


## **DevOps with SAP BTP**

Boris Zarske, SAP SE

Public



#### 1. Set up CI/CD efficiently for SAP environments

#### **SAP Continuous Integration and Delivery**

Who For SAP customers and partners with ABAP background transitioning into the cloud

what The service provides a golden path for customers and partners that develop SAP-specific scenarios – with certain degrees of freedom

where SAP BTP service, regional coverage (EU, US, APJ), Azure + AWS available, Trial + Free Tier

**NOW** No own infrastructure required, running pipeline in minutes, support provided by SAP



developers

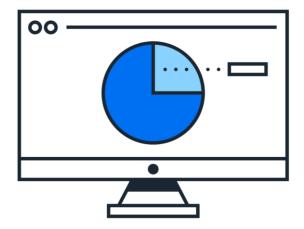
## **Keeping things simple**

- Managed infrastructure
- UI-based job editor (configuration-as-code optional)
- Superior integration with SAP DevOps tools

## Set up pipelines in minutes,

instead of hours, days ... or worse.

# Demo



#### 1. Set up CI/CD efficiently for SAP environments

## SAP Continuous Integration and Delivery

**Who** For SAP customers and partners with ABAP background transitioning into the cloud

**What** The service provides a golden path for customers and partners that develop SAP-specific scenarios – with certain degrees of freedom

**Where** SAP BTP service, regional coverage (EU, US, APJ), Azure + AWS available, Trial + Free Tier

**how** No own infrastructure required, running pipeline in minutes, support provided by SAP



developers



**Who** For experienced customers that need full flexibility

**What** Enablement, learnings and open source CI/CD library for custom CI/CD pipelines, covering many SAP-specific scenarios

**Where** Customers/partners must bring their own CI/CD stack, widely used also SAP-internally

**how** CI/CD expertise required, you build pipeline on separate infrastructure – running pipeline in hours/days, no direct support by SAP



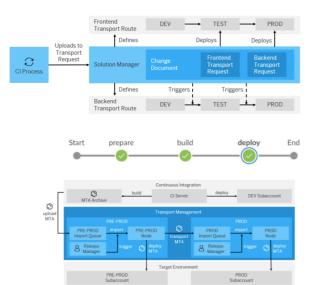
to automate complex and customer-specific development scenarios

#### 1. Set up CI/CD efficiently for SAP environments – Project "Piper"

CI/CD enablement



TYPICAL SCENARIOS



ing imag	es are published on hub docker com:		Description		
me	Description	Docker Image			
	Use a preconfigured Jenkins to run project "Riper" pipelines.	ppiper/jankine- master	The CR Server is a collection of Dordrefiler for images that can be used in Contribution Delivery ICDI profilmen for SAR development projects. The images are optimized for use with project "Point" on Janimin. Dockie containers simplify your C field evelopment projects and eminimenter that are required to second pather steps.		
tive	Build multitarget applications with the MTA Archive Builder.	ppiper/mta- archive-builder	If you want to learn how to use project. Types' plane have a look at the documentation, introductory material and a lat of SAP scenarios nat exercisely project. Pipes' we described in nat Castinana's Integration Red Pareton.		
9	Interact with SAP Solution Manager or CTS using the command line.	ppiper/on-client	This reportary contains Dacharillies that are designed to run project "Pper" pipelines. Nevertheless, they can also be used freshly in any costom environment and automation process.		
undry	Use command line tools for Cloud Foundry with plugins for blue-green deployment and MTA.	ppiper/cl-clt	The dealed using intermeting place can be available to provide a provide the second se		
	Use SAP Cloud Platform tools for Neo.	neo-di/			
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ir ar	Improve life-cycle management of the co-server by using a sidecar image.	ppiper/cr-server- comparion	Jesikim.	Preconfigured Jenkins to nar project "Piper" pipelines	autorijeskos- master
ir r Test	Four container structure tests with a shell for gapper/jenking-master	ppiper/containe- structure-test	Accientia Racent	landardin Rumme based on patient/people exercise, allows naming a Sententitie without a long-naming, stateful knicks mester.	sprace/periodites
owsers	Use web browsers for end-to-end tests of web applications in tenkins pipelines.	node-browsers/	Jenkinstile Russus Gittudo Action	Giffids Action for using the lanking is narrow	protection nation-gettente- action
NA XS id CU	Use command line tools to deploy to SAP HANA XS Advanced.	Dockerfile	Life Cycle Container	Valuese image for tills cycle management of the co-server	pplant/cr salvar-

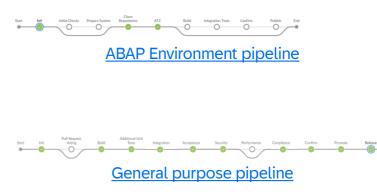


#### **STEP LIBRARY**

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in gittab Enhance CONTRIBUTING and (#910)		24 days ago
in pipeline Add publishing of master binary to latest release (#972)		6 days ago
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ill consumer-test Add ods test case (#810)		4 months ago
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In resources Merge branch 'master' into pultitipsPushArtifactSetVersion		4 days ago

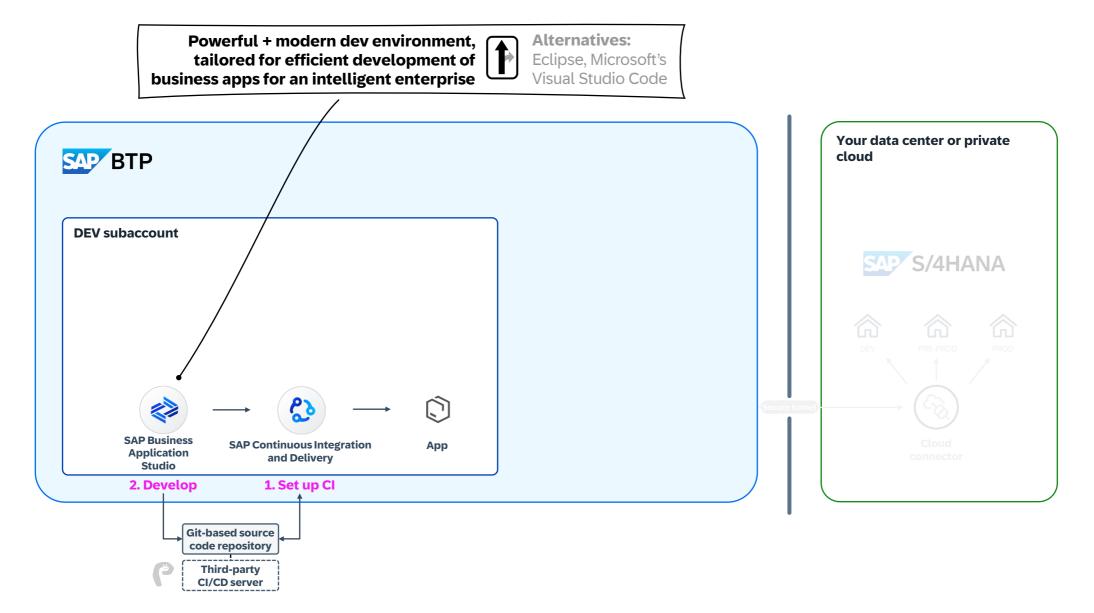
Linux command line tool							
resources	Merge branch 'master' into pultttpsPushArtifactSetVersion	4 days ago					
# \$40	assign library field in logger with respect of containing repository (#	7 days ago					
documentation	Use credentialsId in step abapEnvironmentPullGitRepo (#974)	6 days ago					
CONSUMETION	word cos read case dva rea						

PIPELINE TEMPLATES



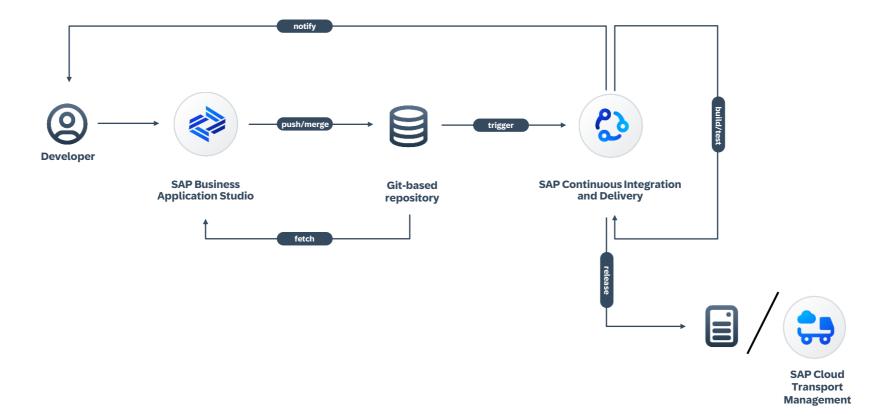
Start

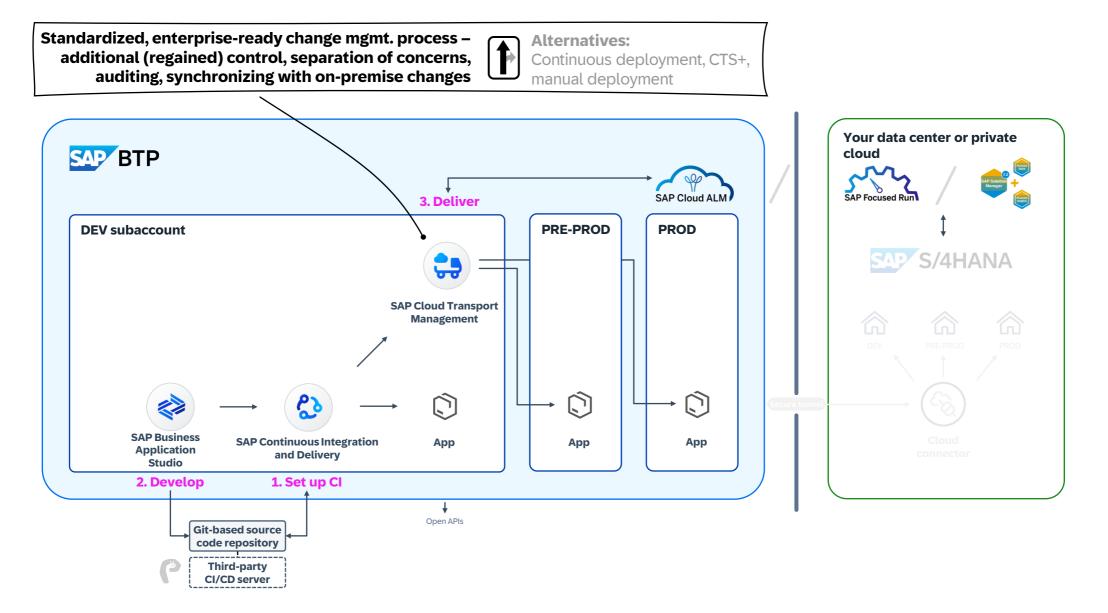
prepare



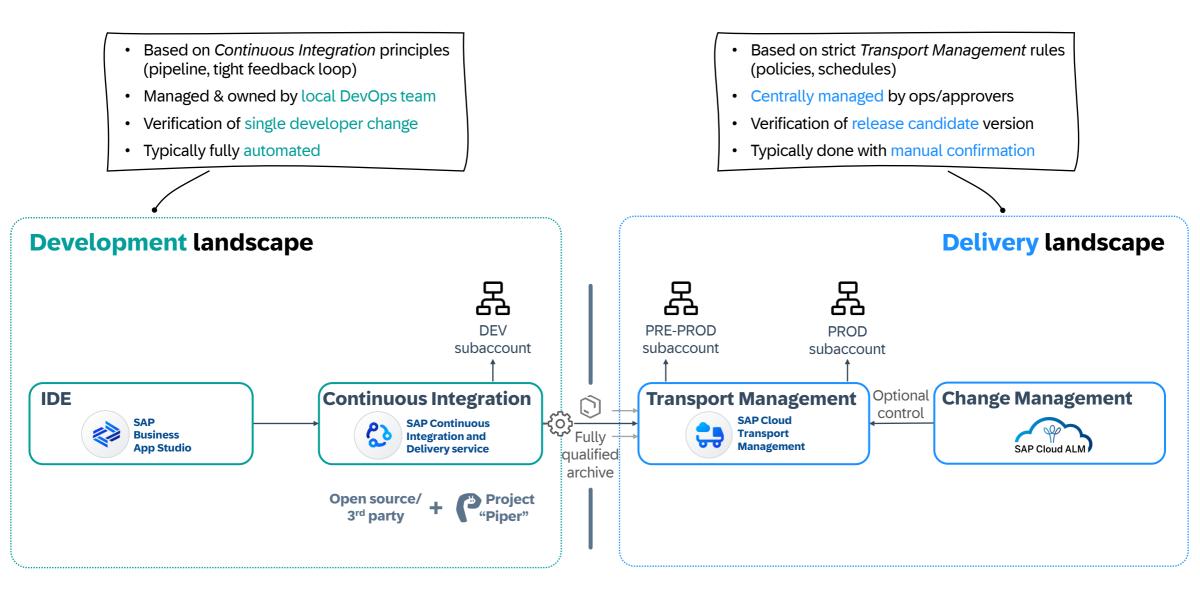
#### 2. Agile development – Using CI/CD pipelines on Cloud Foundry

CI/CD





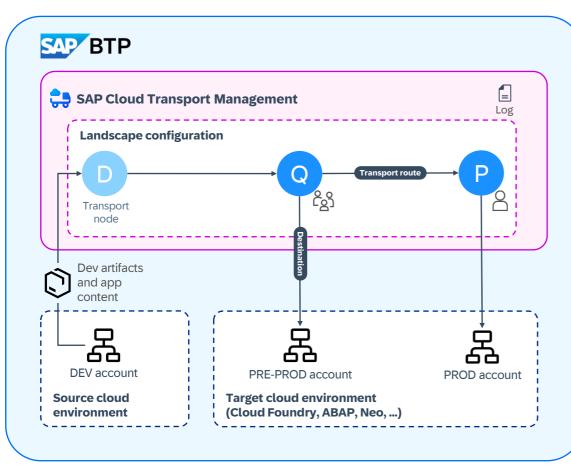
#### 3. Deliver your cloud changes toward production



Transport mgmt

#### 3. Deliver your cloud changes toward production

SAP Cloud Transport Management service provides a cloud-based transport management solution to handle the propagation of your changes in the cloud



- Allows to apply standardized, enterprise-ready change management process – no ABAP system required
- Add transparency on **audit trail of changes**
- Establish separation of concerns + regain control
- Option for synchronizing transports with on-premise artifacts

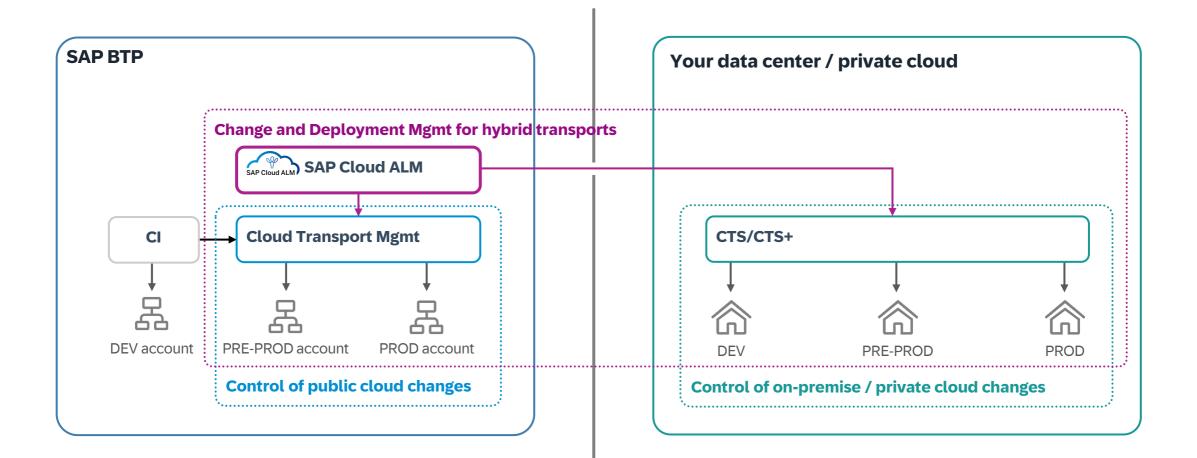
Transport in SAP BTP ABAP, Cloud Foundry & Neo envs. of:

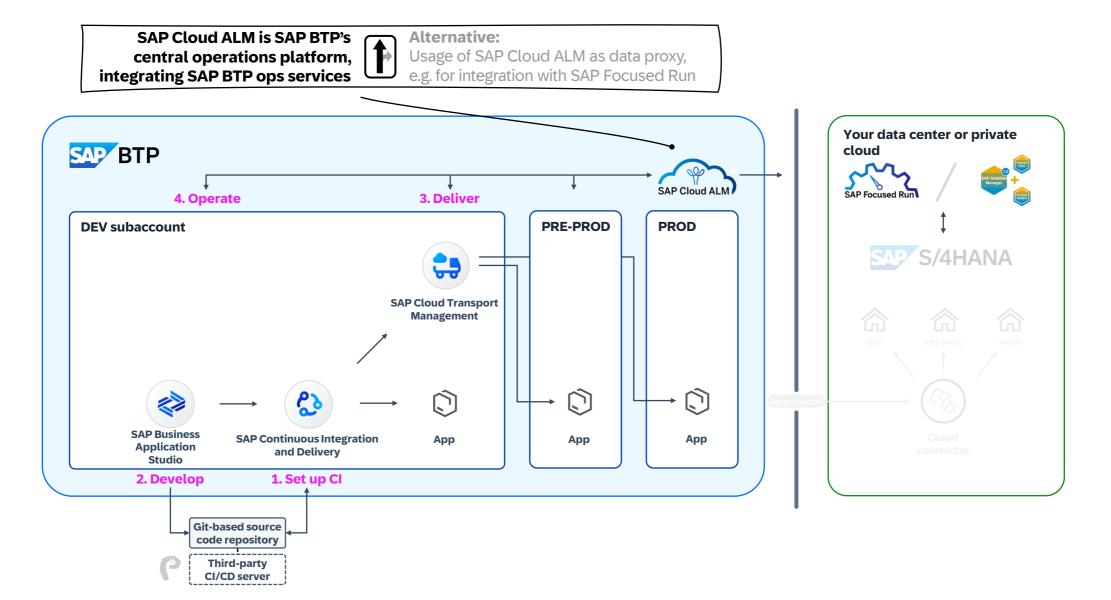
- **Dev artifacts** (MTA archives like CTS+)
- In addition: application content
  - 🗊 🎡 ≫ 🛛 •
- Further content types planned

Manifold integration options:

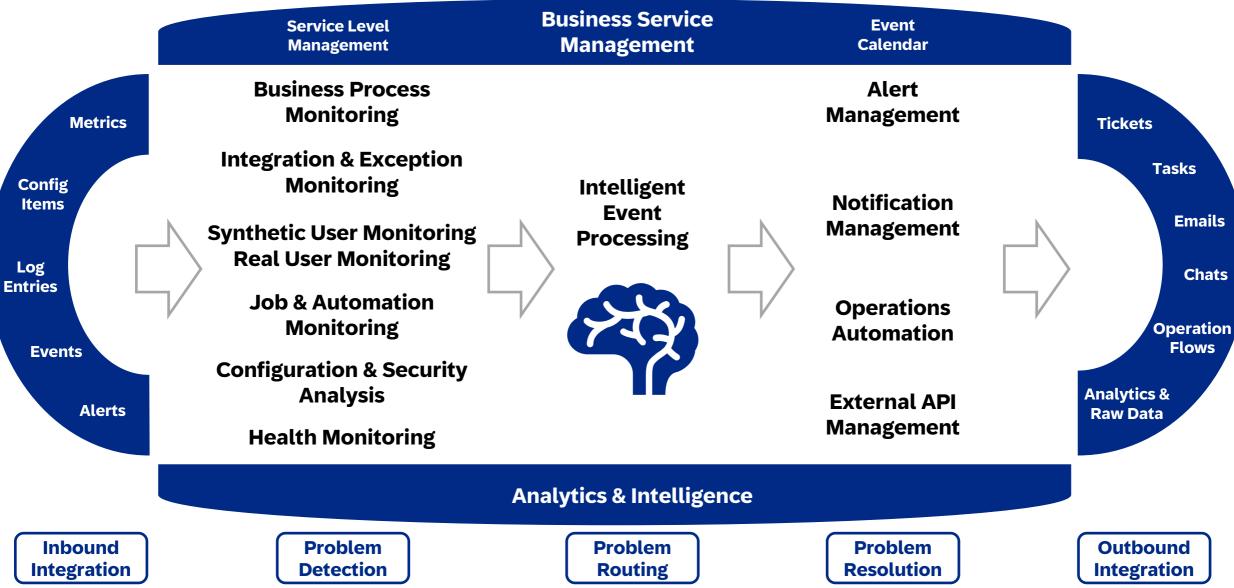
- With CI/CD
- Basis for cloud integration into Change Management by SAP Solution Manager and SAP Cloud ALM
- Open APIs

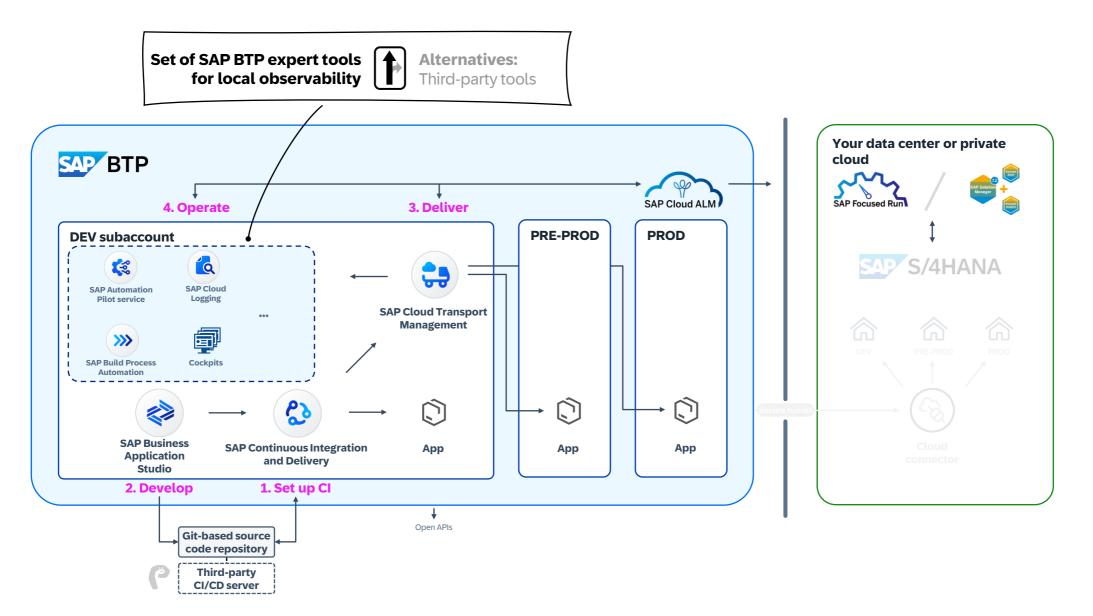
#### 3. Deliver your hybrid changes toward production – with SAP Cloud ALM





#### 4. Operations: SAP Cloud ALM for Operations – Functional Overview



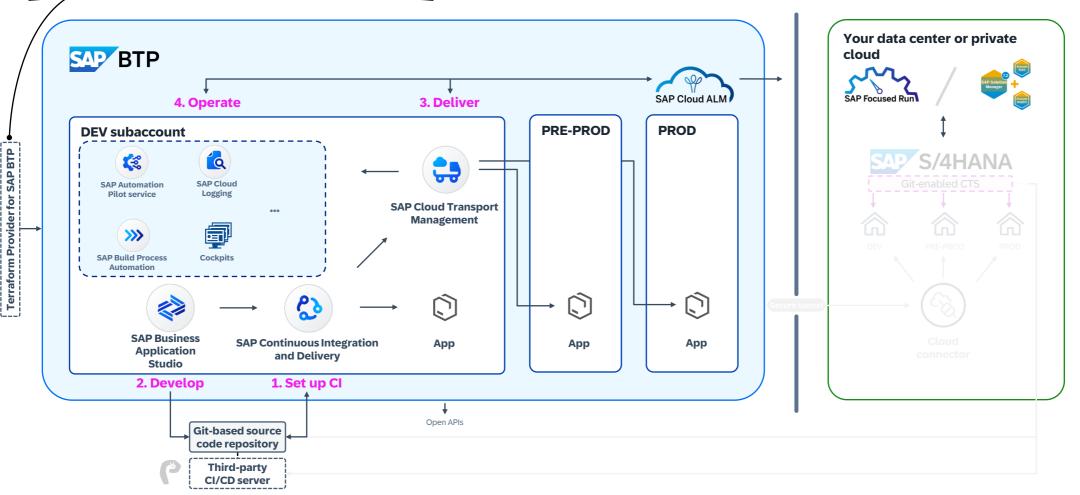


#### 4. Operations: SAP Cloud ALM for operations – Flow with local tools

#### Autoscaling **Business Service** Service Level Event Management Management Calendar SAP BTP resources mgmt **Business Process** Monitoring Alert Metrics Tickets **SAP BTP** Management runtimes (incl. Kyma) **Integration & Exception** Tasks Monitoring Config Intelligent Notification Items **Event** SAP HANA Cloud 🕋 **Emails** Synthetic User Monitoring Management **Processing Real User Monitoring** Log Chats **Entries Job & Automation Operations** Monitoring ÷ **Automation** Operation **SAP BTP** Flows **Configuration & Security** Analysis **Analytics** & External API Alerts **SAP** Automation **Raw Data** Management **Health Monitoring** Pilot **Analytics & Intelligence** Inbound Problem **Problem** Problem Outbound Integration Routing Integration Detection Resolution

Recommended and corrective actions initiated by SAP Cloud ALM events

Apply Infrastructure-as-Code based on industry standard to automate provisioning, management and configuration of resources on SAP BTP



### 4. Operations: Infrastructure-as-Code (IaC)



## **Terraform provider for SAP BTP**

- Based on Terraform as de-facto industry standard supported by all major cloud providers
- Available at <a href="https://registry.terraform.io/providers/SAP/btp/latest/docs">https://registry.terraform.io/providers/SAP/btp/latest/docs</a>
  - To automate provisioning, management and configuration of resources on SAP BTP
  - <u>Blog post</u>, <u>GitHub repository</u> with samples + best practices, covering commonly used patterns from SAP customers, open to contributions

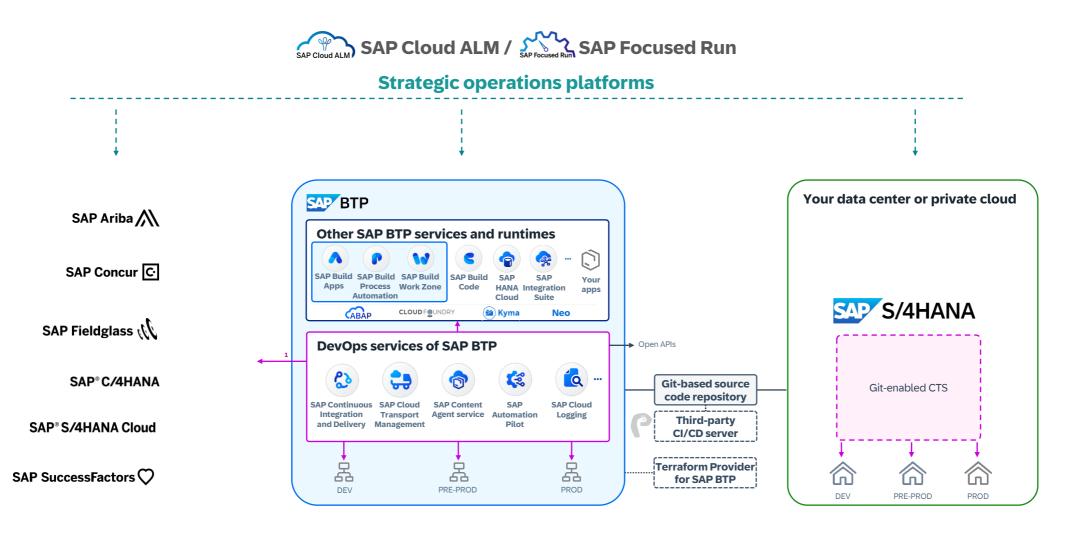
## Potential use cases around DevOps

- Automatically commission and decommission of **temporary test landscapes** triggered by CI/CD pipelines, used for automatic testing
- **Reduce manual ops efforts** of platform engineering teams based on de-facto standard such as automatic ad-hoc creation of SAP BTP environments for new projects or teams
- Quick setup of SAP BTP accounts for SAP Discovery Center missions (blog post)

## Summary



#### Vision of DevOps in hybrid enterprise environments



#### 1) In progress

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#### Call to action

#### Learn more about DevOps with SAP:

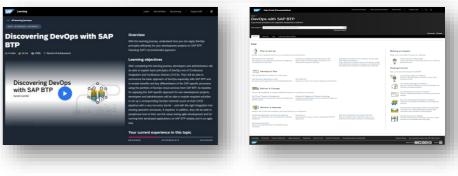
- DevOps SAP Community page
- <u>CI/CD in ABAP An Outside-In View</u> (blog post)
- <u>CI/CD Tools for SAP BTP, ABAP Environment</u> (blog post)
- SAP Help Portal page about DevOps with SAP BTP
- Best Practices for SAP BTP guide
- SAP Learning Journey <u>Discovering DevOps with SAP BTP</u>
- <u>App Development & Integration in SAP Road Map Explorer</u>
- SAP TechEd 2022 session "Overview How to Enable DevOps on SAP BTP" (YouTube)
- Recordings from SAP TechEd 2023:
  - AD104v Practical DevOps Approaches and Best Practices for CI
  - XP109v Operations of SAP BTP with SAP Cloud ALM
- Webcast series on DevOps and Observability with SAP BTP and SAP Cloud ALM (April/May 2024)
- SAP Cloud ALM for Implementation
- <u>SAP Cloud ALM for operations</u>

#### Try out our services on SAP BTP:

- Set up our services in <u>SAP BTP Trial / free tier for SAP BTP</u>
- Run missions and tutorials for CI/CD, booster for SAP Automation Pilot

#### Contribute to our SAP Continuous Influence session





# Thank you.

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SAP