



DevOps with SAP BTP


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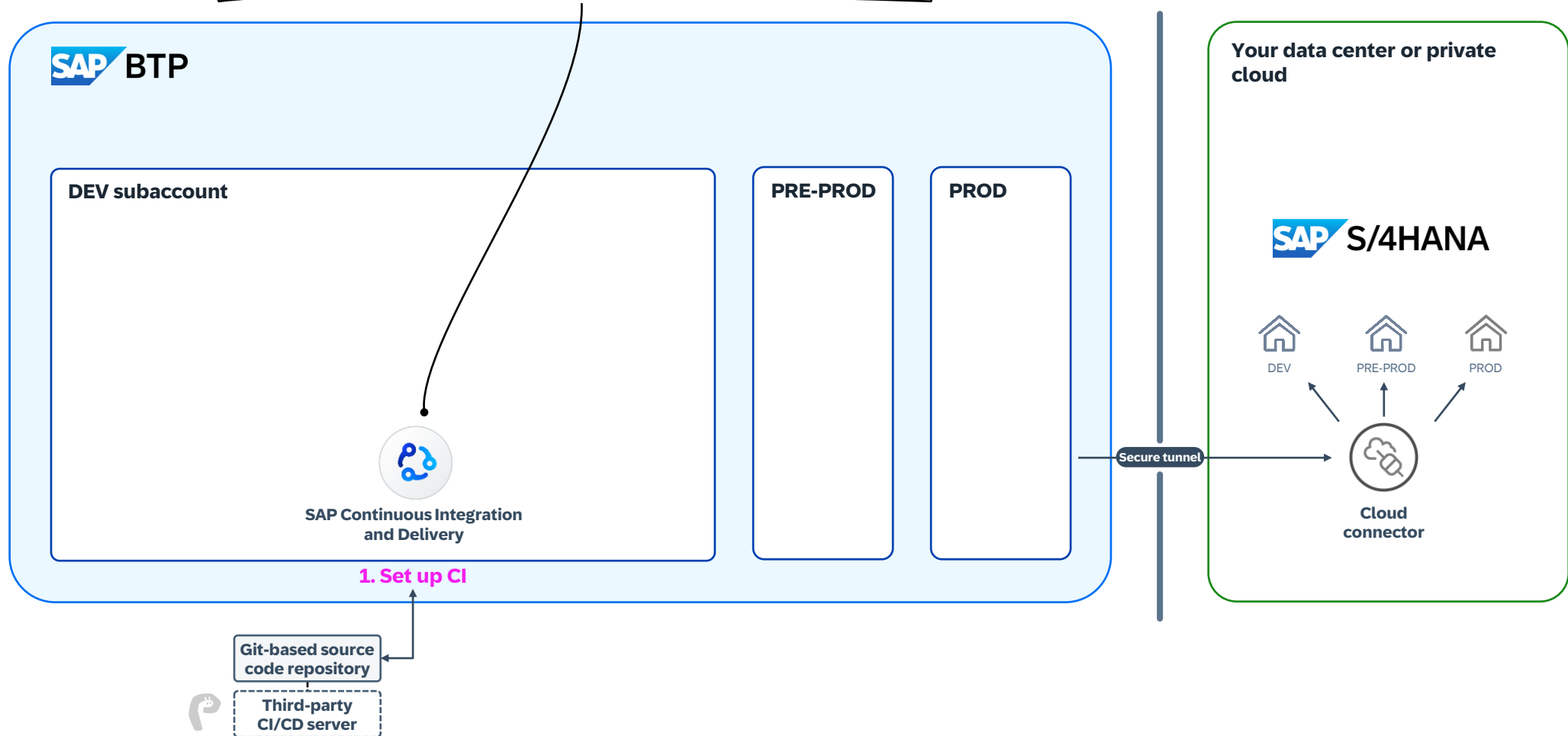
Public



Enable DevOps in SAP enterprise environments

“Pipeline-as-a-Service” + golden paths – running CI/CD pipeline for SAP-specific use cases in minutes

Alternative: Open source or third-party solutions with project 



1. Set up CI/CD efficiently for SAP environments

CI/CD enablement



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



Simplicity

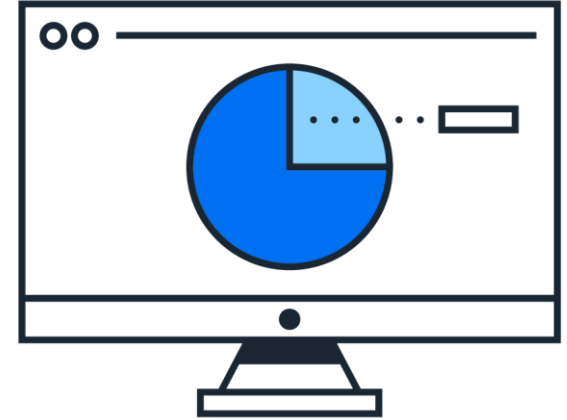
for typical SAP business application developers

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



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Simplicity

for typical SAP business application developers



Project “Piper”

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

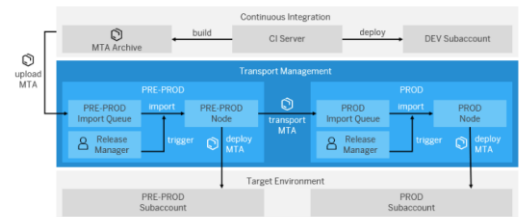
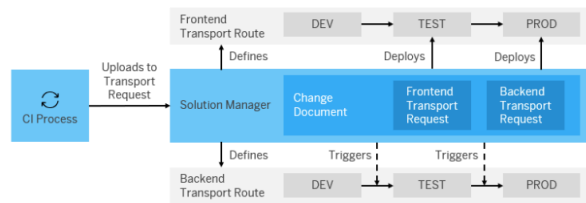


Full flexibility

to automate complex and customer-specific development scenarios

1. Set up CI/CD efficiently for SAP environments – Project “Piper”

CI/CD enablement



Name	Description	Docker Image
Jenkins	Use a preconfigured Jenkins to run project "Piper" pipelines.	pipers/jenkins-master
MTA Archive Builder	Build multitarget applications with the MTA Archive Builder.	pipers/mta-archive-builder
CI4-Client	Interact with SAP Solution Manager or CIS using the command line.	pipers/ci4-client
CloudFoundry CLI	Use command line tools for Cloud Foundry with plugins for blue-green deployment and MTA.	pipers/cf-cli
Neo CLI	Use SAP Cloud Platform tools for Neo.	neo-cli
Jenkinsfile Runner	Run a Jenkinsfile without a long running, stateful Jenkins master. The Jenkinsfile Runner is based on jasper/jenkins-runner.	pipers/jenkinsfile-runner
Life Cycle Container	Improve life-cycle management of the container by using a sidecar image.	pipers/life-cycle-companion
Container Structure Test	Run container structure tests with a shell for jasper/jenkins-structure-test.	pipers/container-structure-test
Node Browser	Use web browsers for end-to-end tests of web applications in Jenkins pipelines.	node-browser
SAP HANA XS Advanced CLI	Use command line tools to deploy to SAP HANA XS Advanced.	Dockerfile

CONTAINERIZED TOOLS

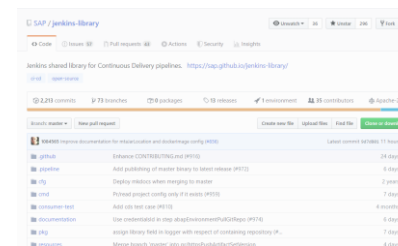
TYPICAL SCENARIOS

PIPELINE TEMPLATES



sap.github.io/jenkins-library/

STEP LIBRARY



Linux command line tool



ABAP Environment pipeline



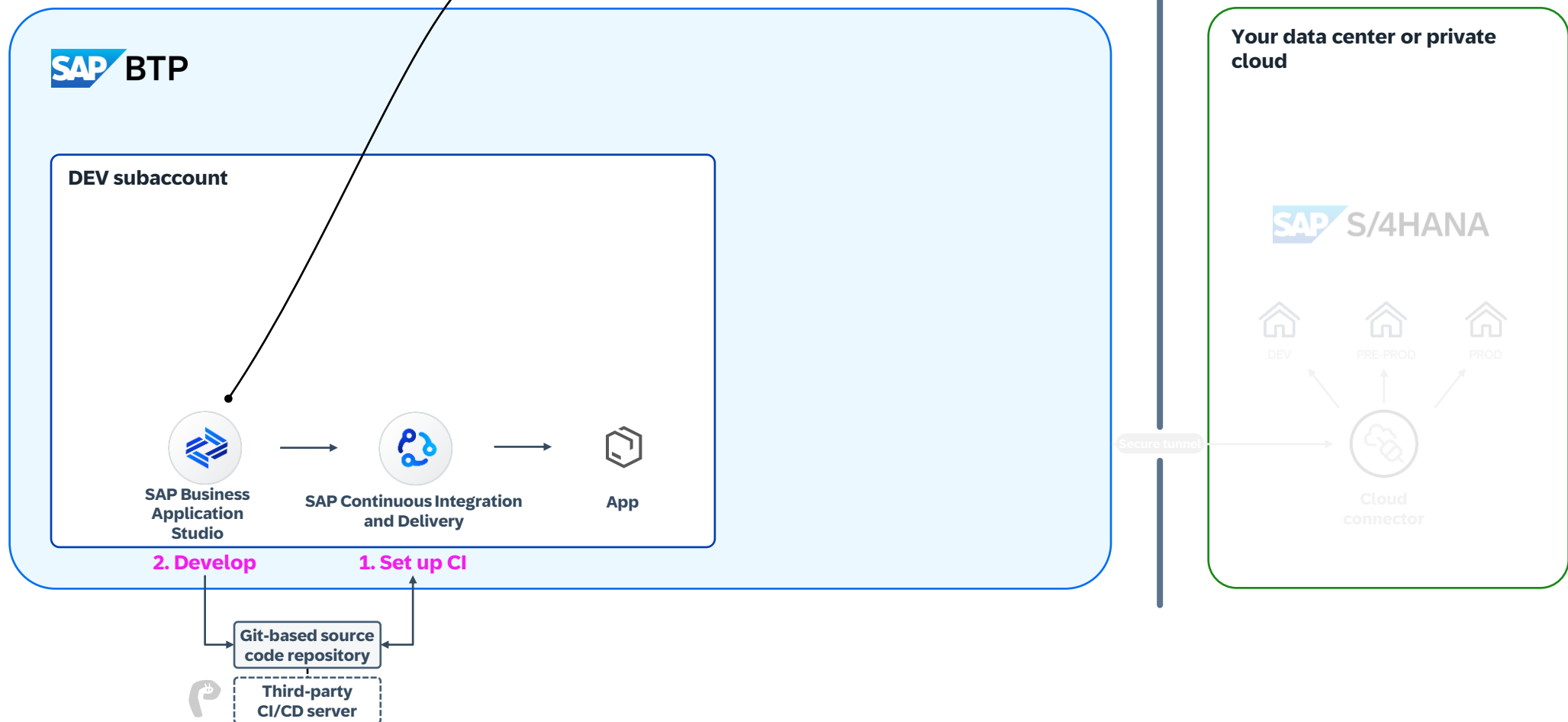
General purpose pipeline

Enable DevOps in SAP enterprise environments

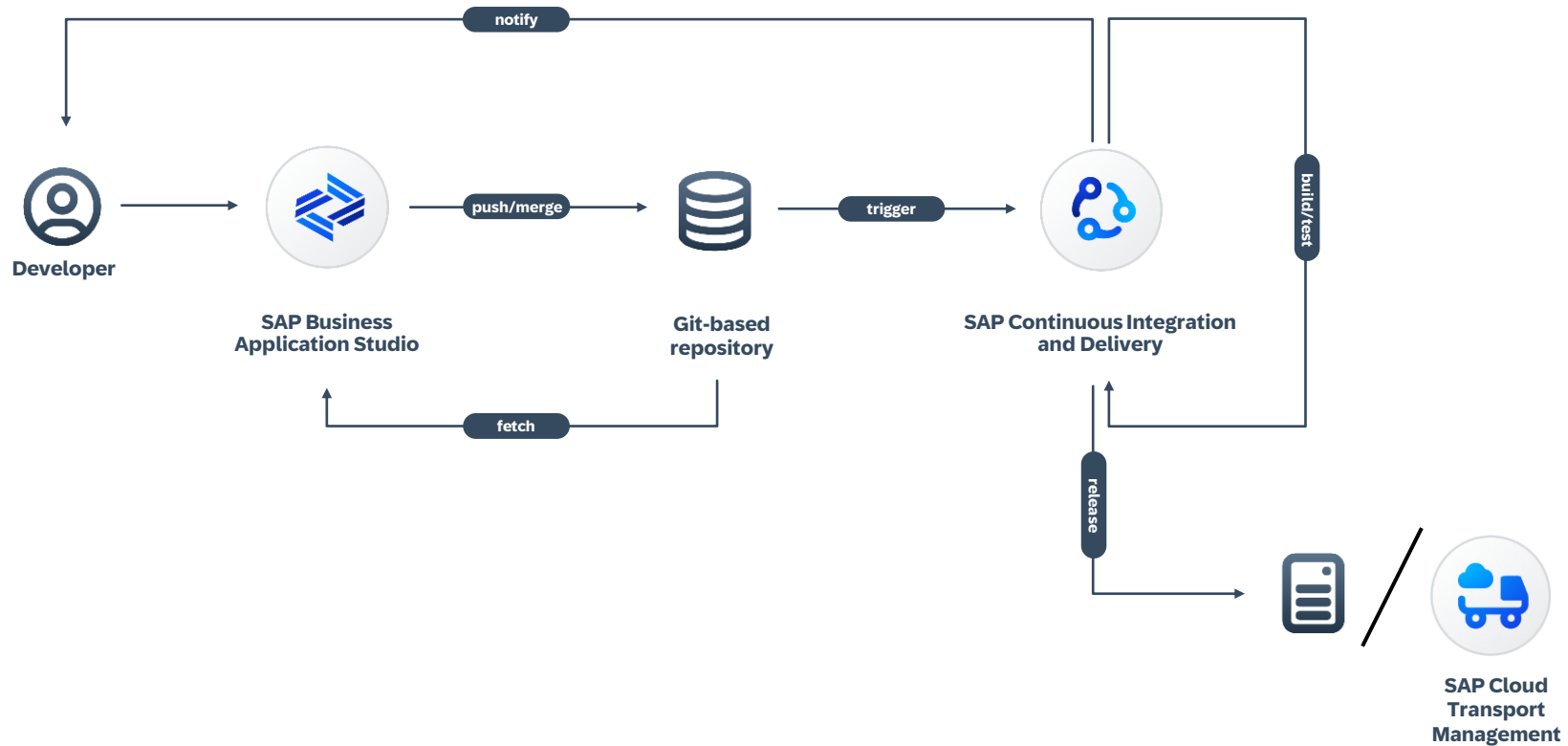
Powerful + modern dev environment,
tailored for efficient development of
business apps for an intelligent enterprise



Alternatives:
Eclipse, Microsoft's
Visual Studio Code



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

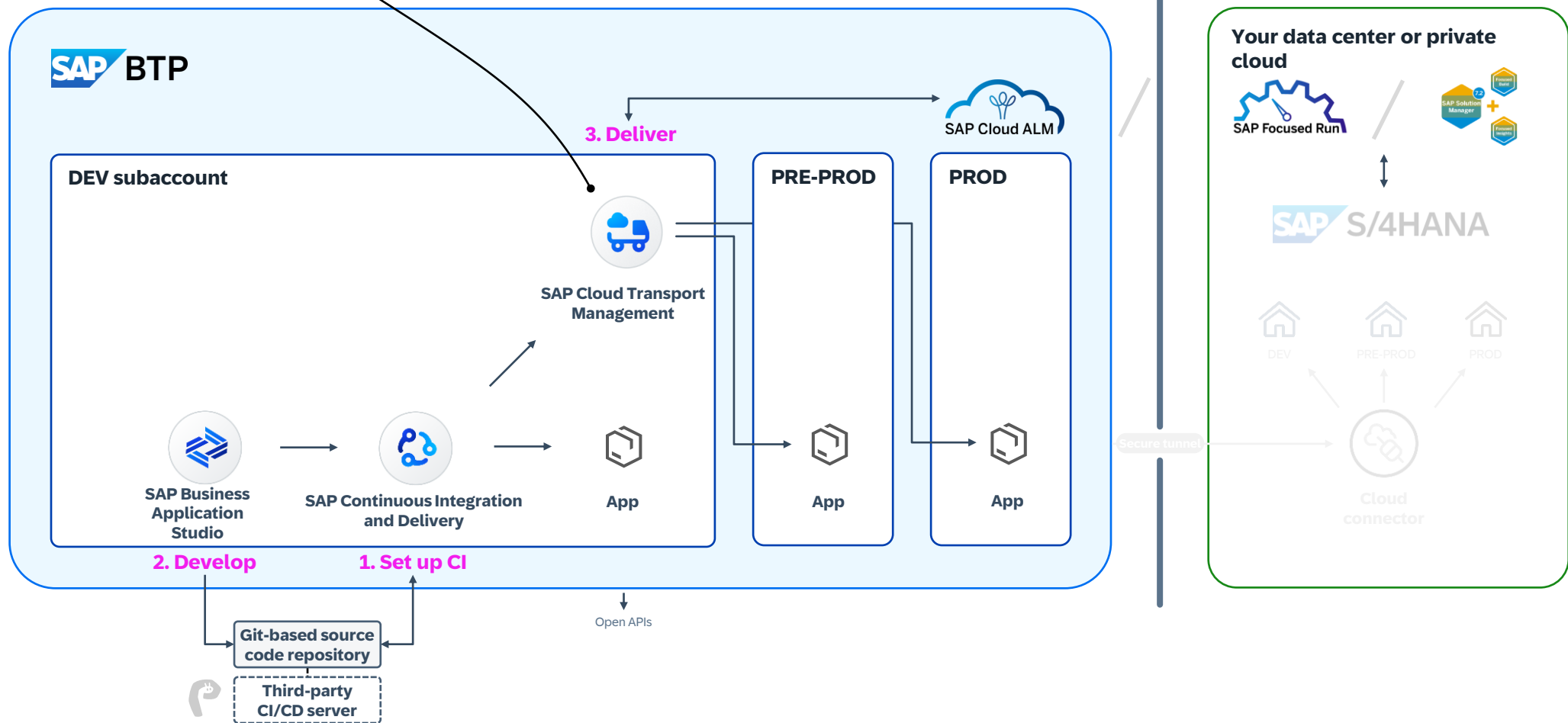


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Standardized, enterprise-ready change mgmt. process – additional (regained) control, separation of concerns, auditing, synchronizing with on-premise changes



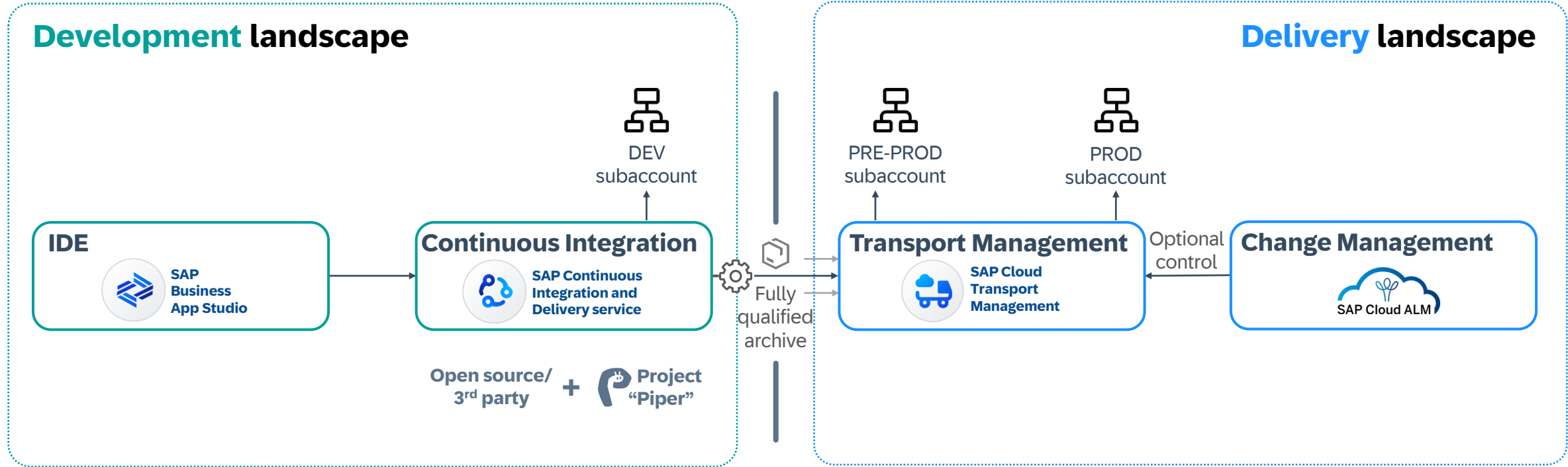
Alternatives:
Continuous deployment, CTS+, manual deployment



3. Deliver your cloud changes toward production

- Based on *Continuous Integration* principles (pipeline, tight feedback loop)
- Managed & owned by **local DevOps team**
- Verification of **single developer change**
- Typically fully **automated**

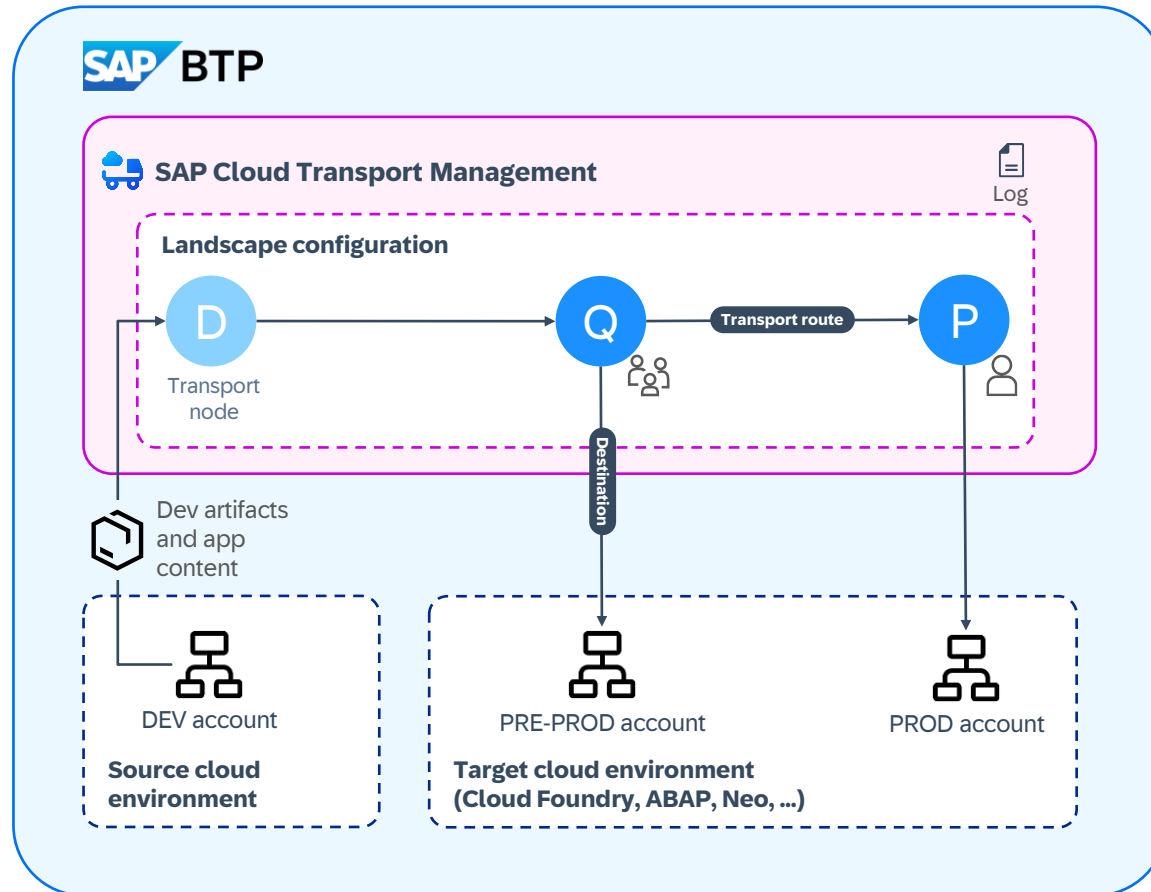
- Based on strict *Transport Management* rules (policies, schedules)
- **Centrally managed** by ops/approvers
- Verification of **release candidate** version
- Typically done with **manual confirmation**



3. Deliver your cloud changes toward production



Transport mgmt

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:

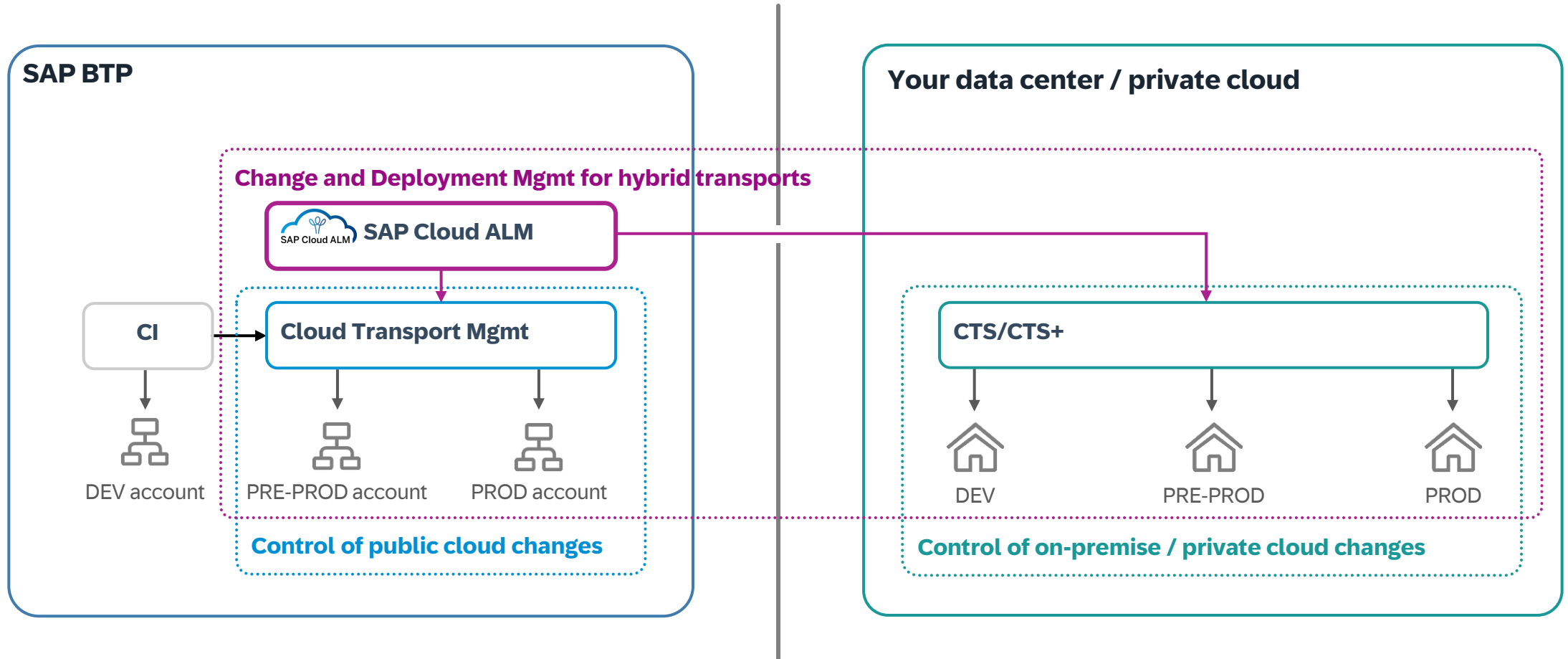
- **Dev artifacts** (MTA archives – like CTS+)
- In addition: **application content**      ...
- Further content types planned

Manifold integration options:

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

Available via [SAP BTP free tier model](#), [PAYG](#), [CPEA](#)

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

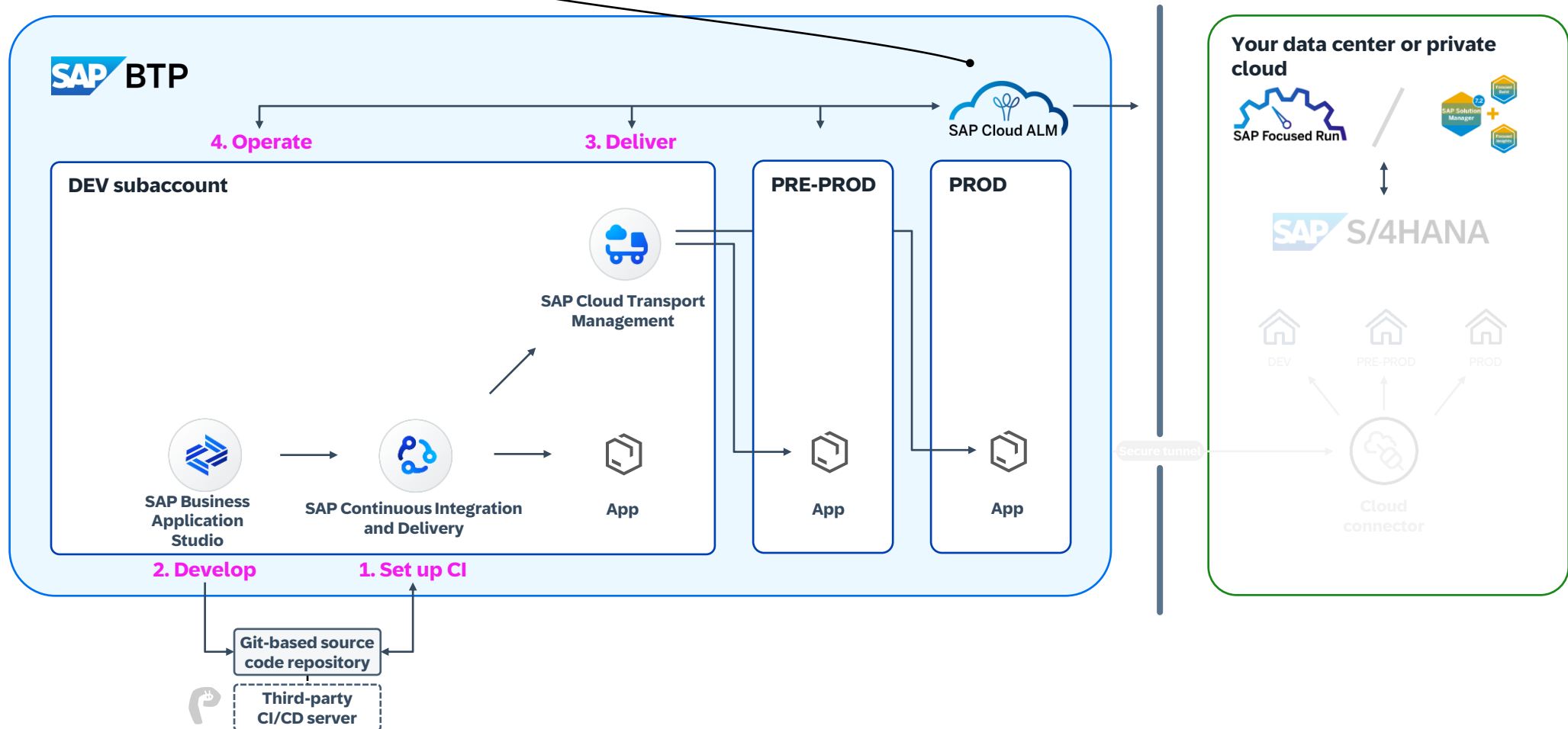


Enable DevOps in SAP enterprise environments

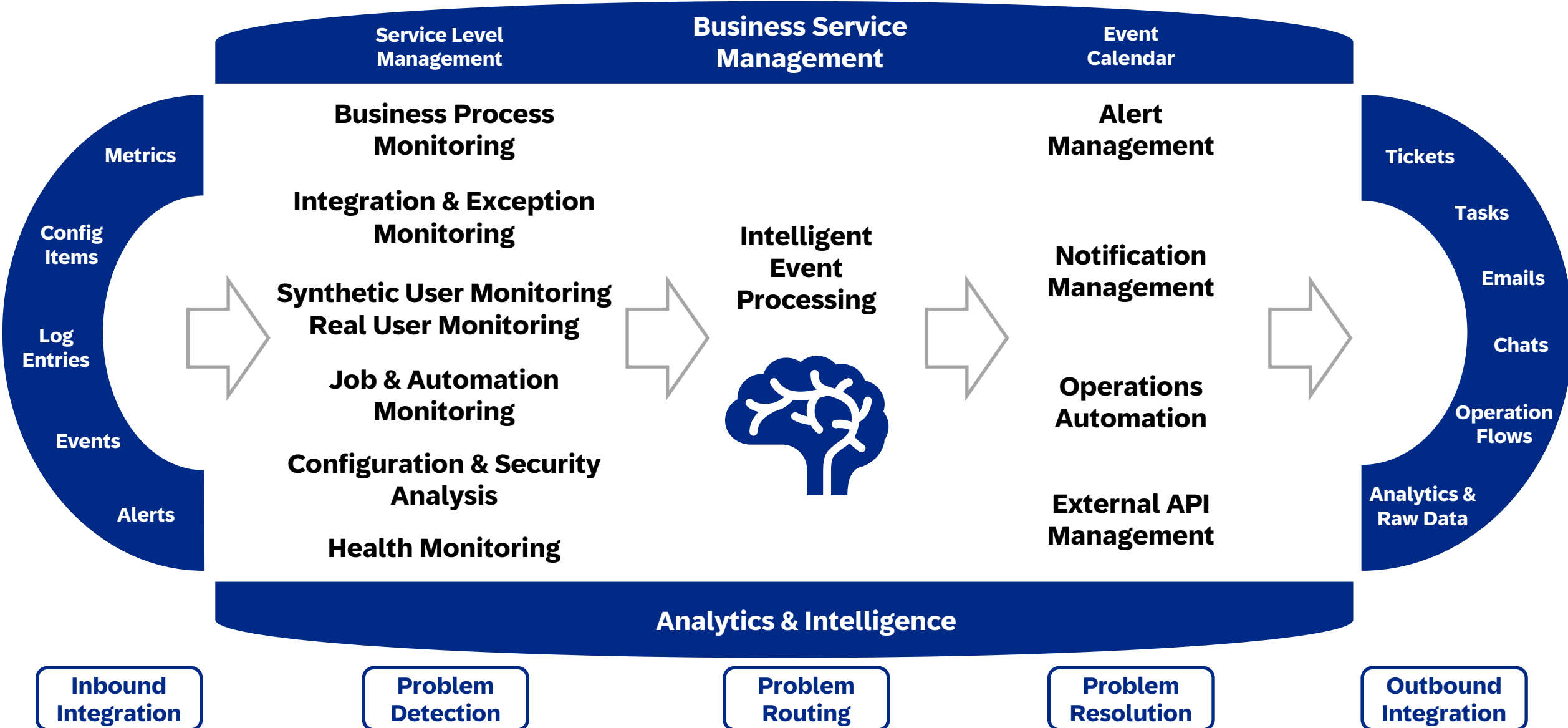
SAP Cloud ALM is SAP BTP's central operations platform, integrating SAP BTP ops services



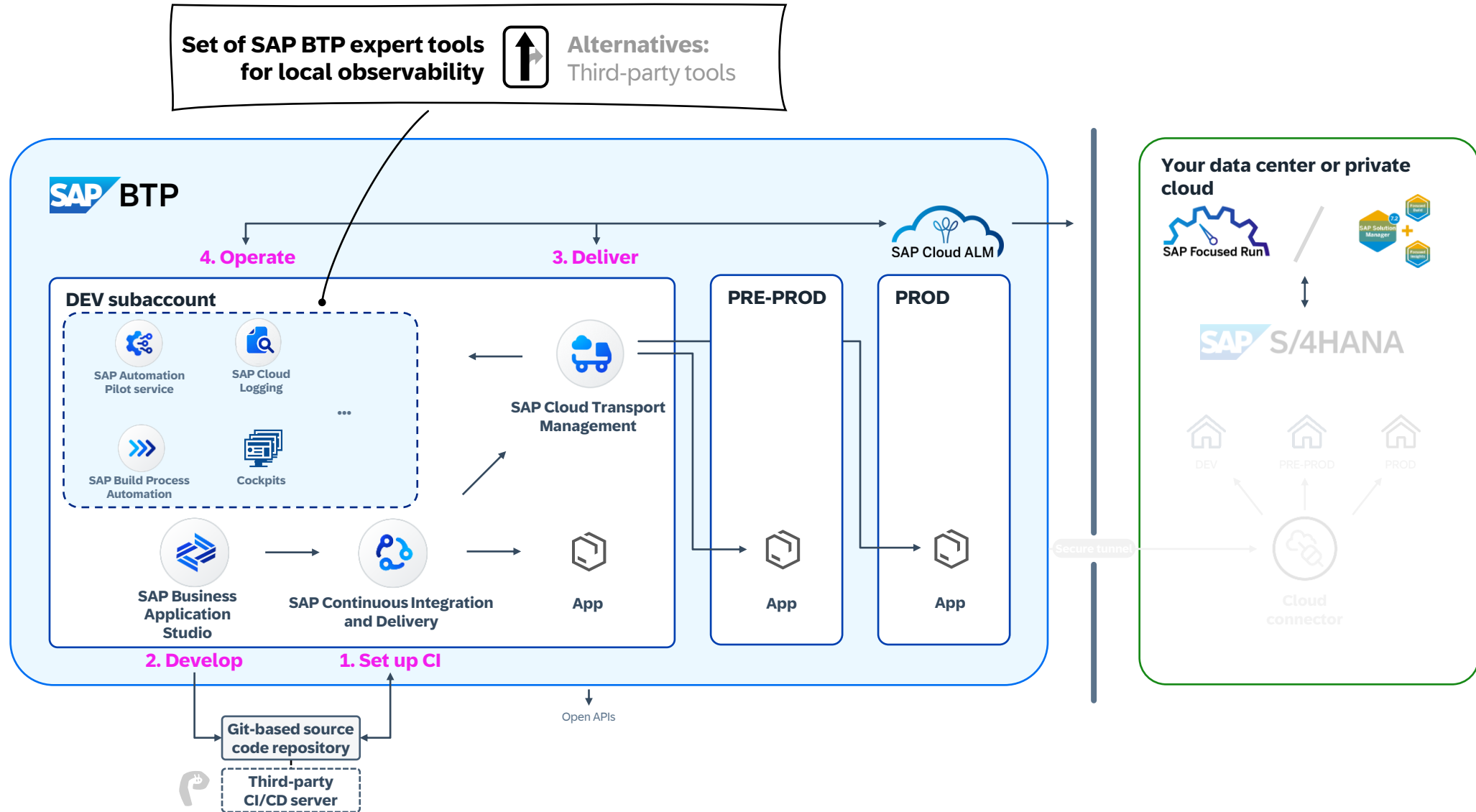
Alternative: Usage of SAP Cloud ALM as data proxy, e.g. for integration with SAP Focused Run



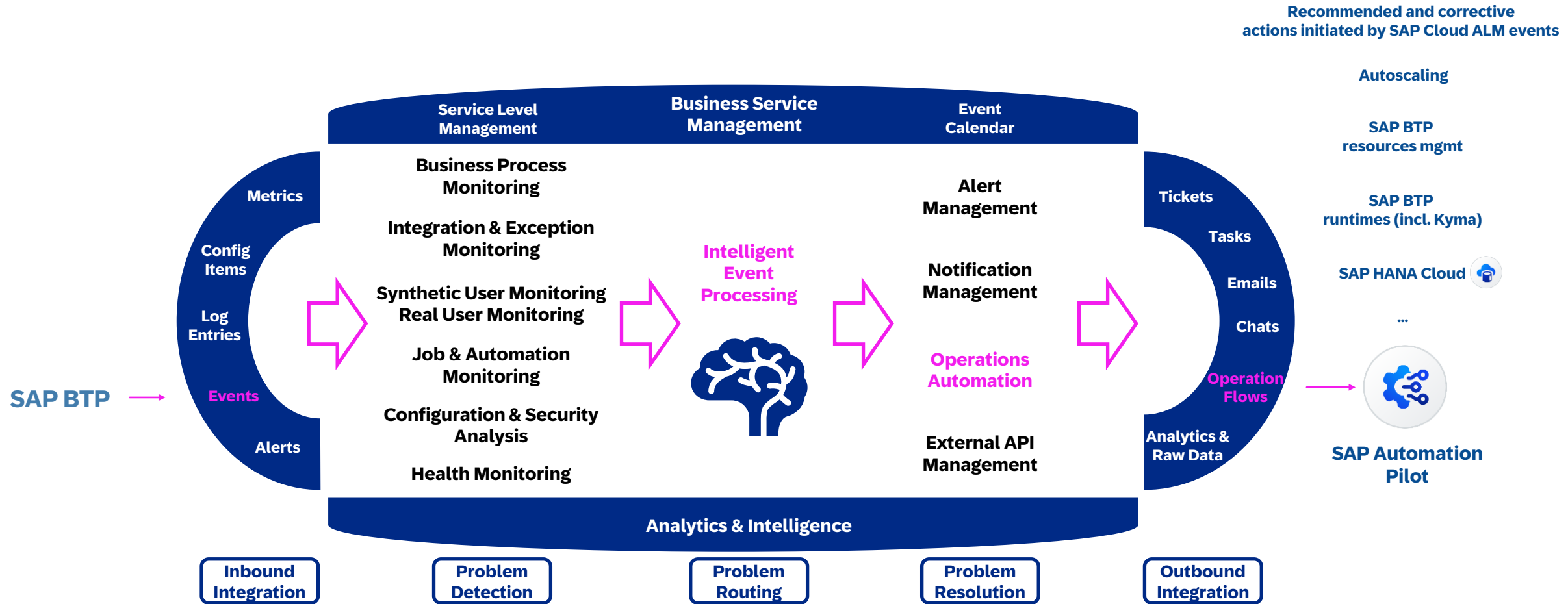
4. Operations: SAP Cloud ALM for Operations – Functional Overview



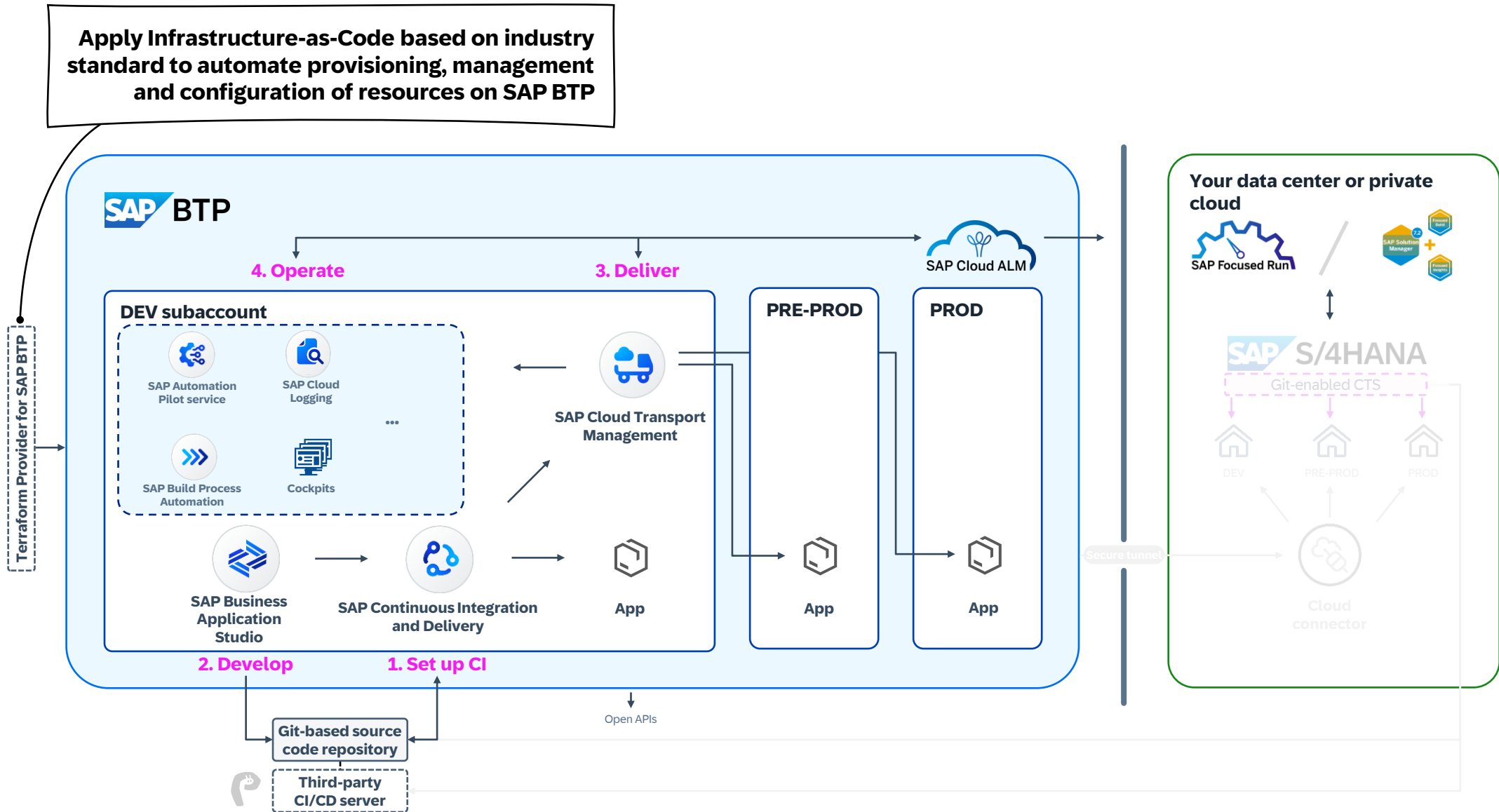
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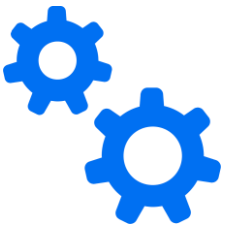


4. Operations: SAP Cloud ALM for operations – Flow with local tools



Enable DevOps in SAP enterprise environments





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 <https://registry.terraform.io/providers/SAP/btp/latest/docs>
 - To automate provisioning, management and configuration of [resources on SAP BTP](#)
 - [Blog post](#), [GitHub repository](#) 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



Call to action

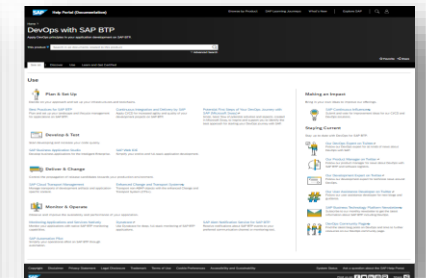
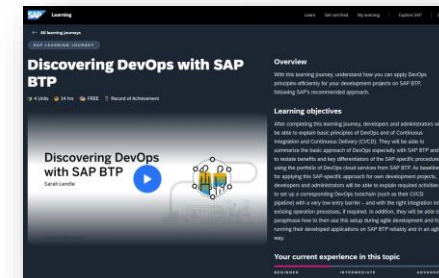
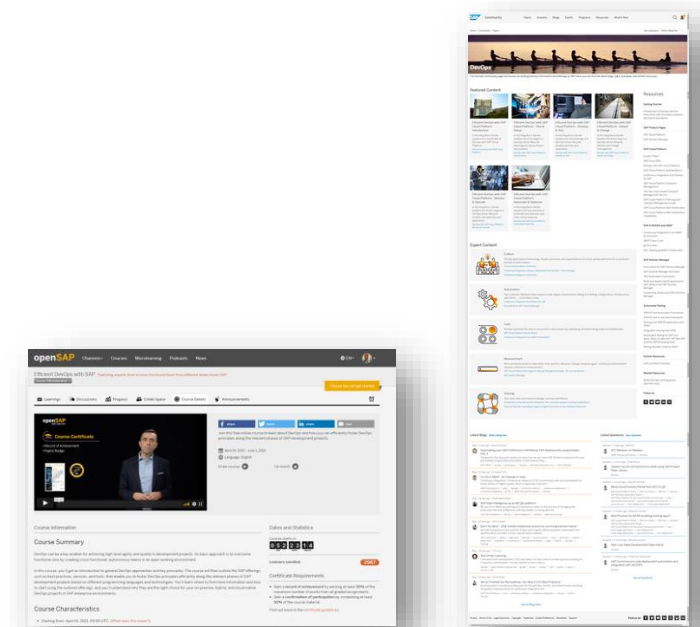
Learn more about DevOps with SAP:

- [DevOps SAP Community page](#)
- [CI/CD in ABAP – An Outside-In View](#) (blog post)
- [CI/CD Tools for SAP BTP, ABAP Environment](#) (blog post)
- [SAP Help Portal page about DevOps with SAP BTP](#)
- [Best Practices for SAP BTP guide](#)
- SAP Learning Journey [Discovering DevOps with SAP BTP](#)
- [App Development & Integration in SAP Road Map Explorer](#)
- [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](#)
- [SAP Cloud ALM for operations](#)

Try out our services on SAP BTP:

- Set up our services in [SAP BTP Trial / free tier for SAP BTP](#)
- 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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