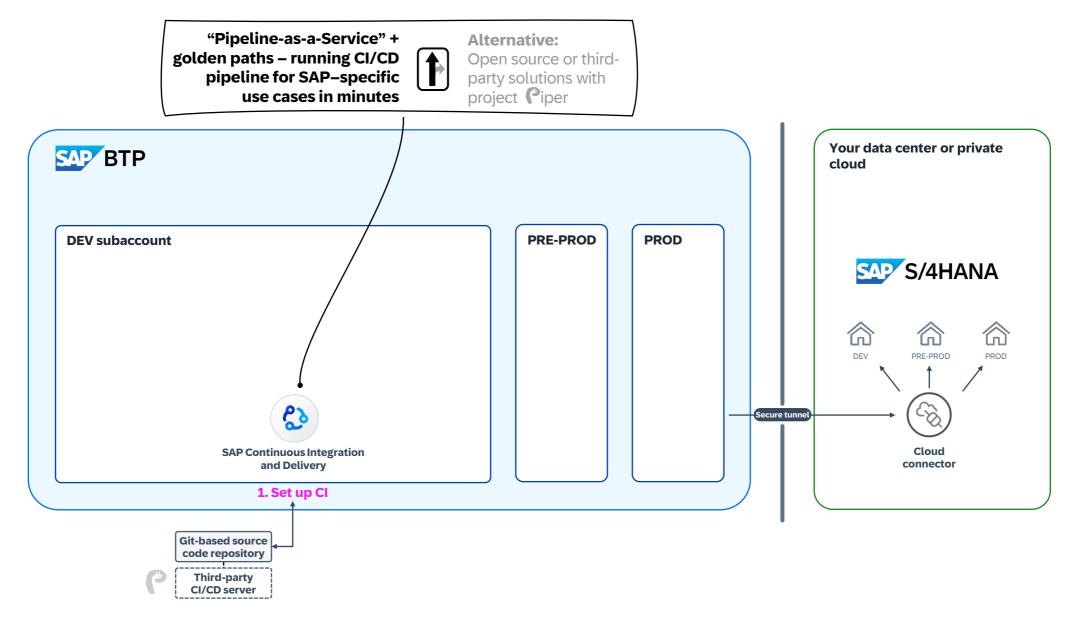


DevOps with SAP BTP

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

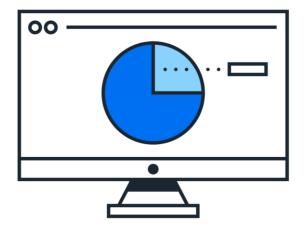
Keeping things simple

- 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

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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



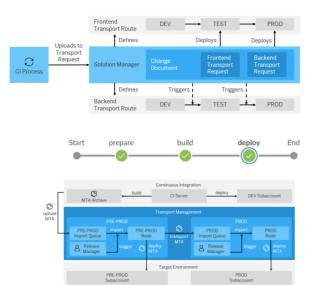
to automate complex and customer-specific development scenarios

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/ | | | |
| le . | Run a Jaskinstilla without a long-naming stateful lenkins moster. The Archimite Ruman is based on polary/section-watter. | ppiper/jeniorafile- | | | |
| 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- |

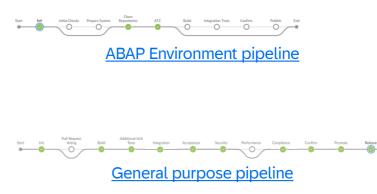


STEP LIBRARY

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| Branche matter + New pull request Coste new file Up | plaat ties Find the | Close or download - |
| 1004385 Improve documentation for retailed costion and docker/mage config (4858) | Labert comm | sit 9474885 11 hours age |
| in gittab Enhance CONTRIBUTING and (#910) | | 24 days ago |
| in pipeline Add publishing of master binary to latest release (#972) | | 6 days ago |
| the chy Deploy mixdocs when merging to master | | 2 years ago |
| in and Pr/read project config only if it exists (#555) | | 7 days ago |
| ill consumer-test Add ods test case (#810) | | 4 months ago |
| In documentation Use predentialsid in step abapEnvironmentPullQitRepp (#974) | | 6 days ago |
| pkp assign library field in logger with respect of containing repository (# | | 7 days ago |
| In resources Merge branch 'master' into pultitipsPushArtifactSetVersion | | 4 days ago |

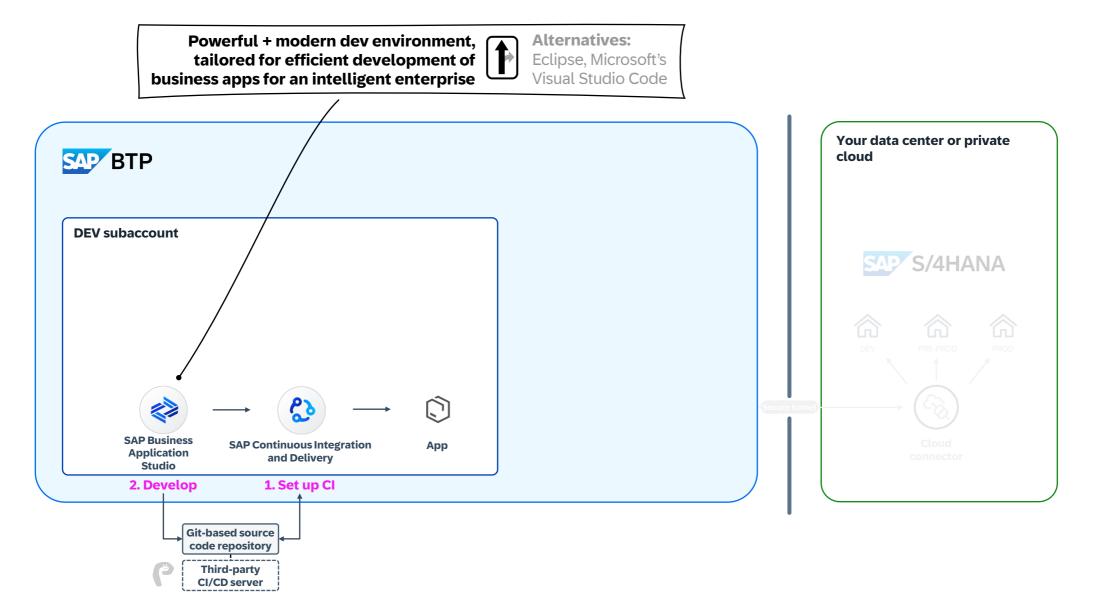
| Linux command line tool | | | | | | | |
|-------------------------|---|------------|--|--|--|--|--|
| resources | Merge branch 'master' into pultttpsPushArtifactSetVersion | 4 days ago | | | | | |
| # \$40 | assign library field in logger with respect of containing repository (# | 7 days ago | | |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

PIPELINE TEMPLATES



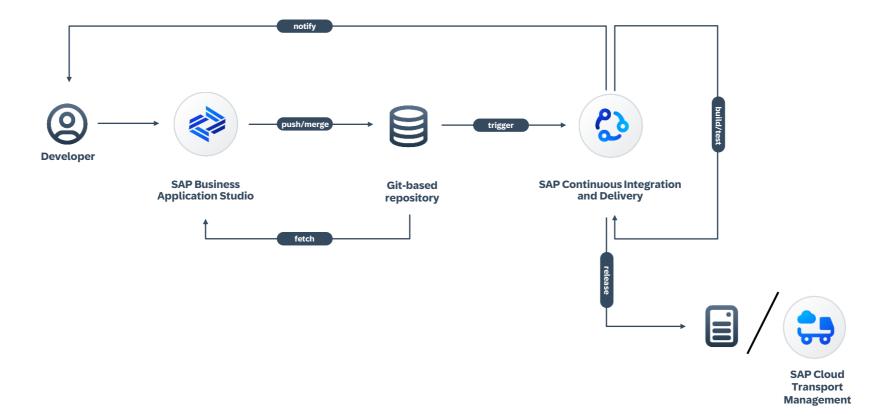
Start

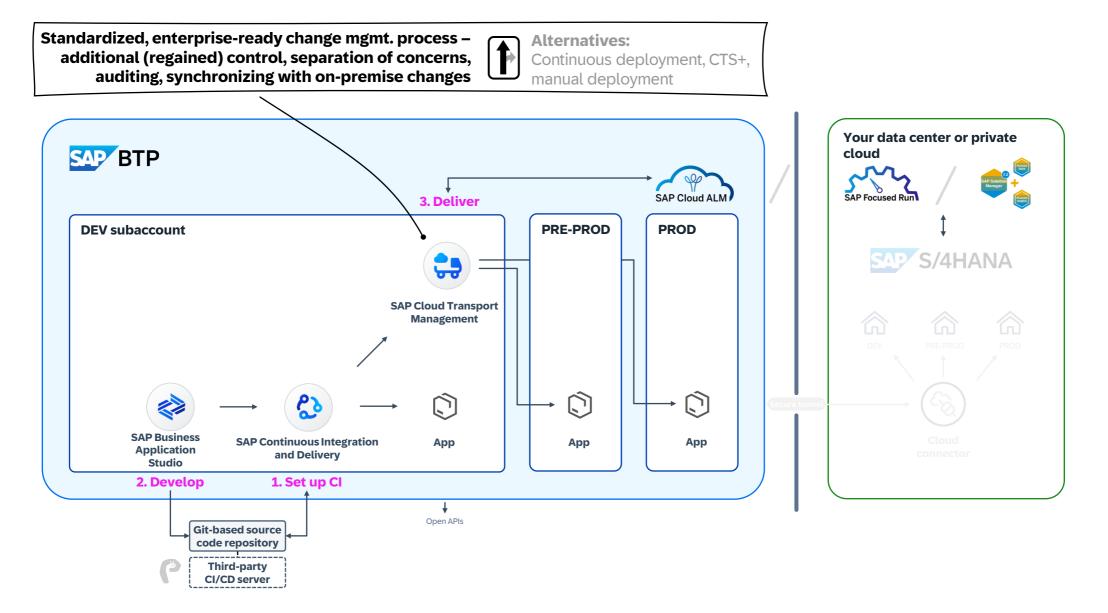
prepare



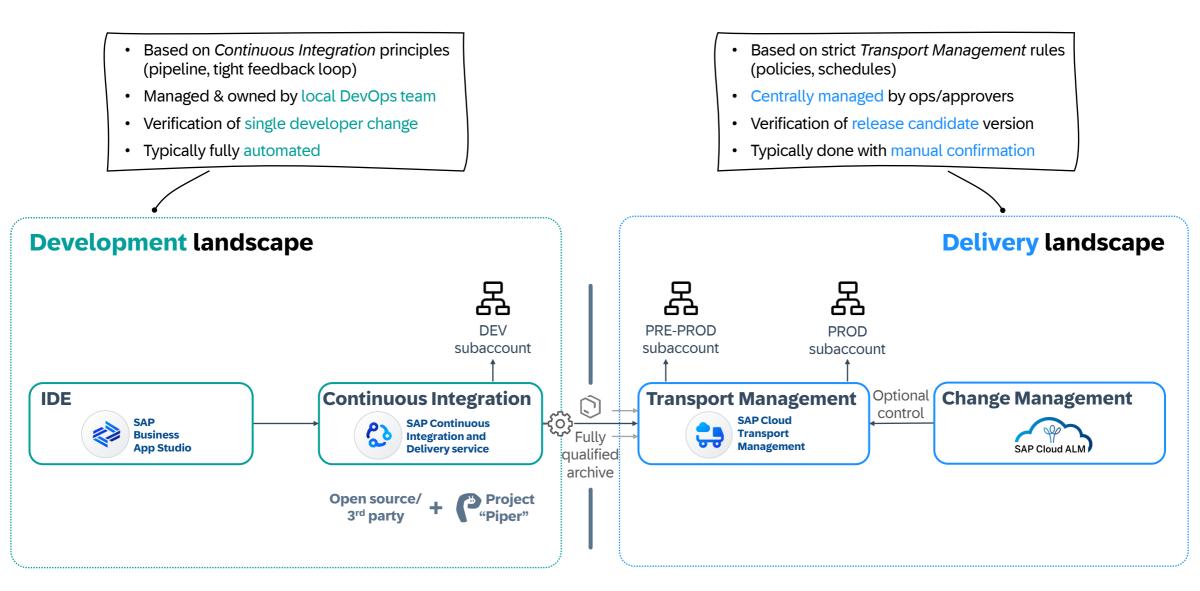
2. Agile development – Using CI/CD pipelines on Cloud Foundry

CI/CD





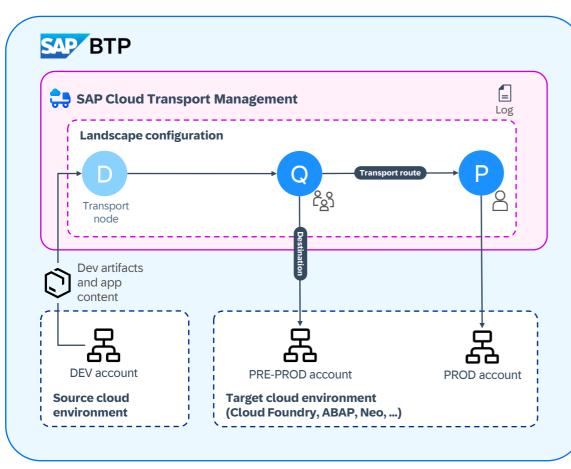
3. Deliver your cloud changes toward production



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

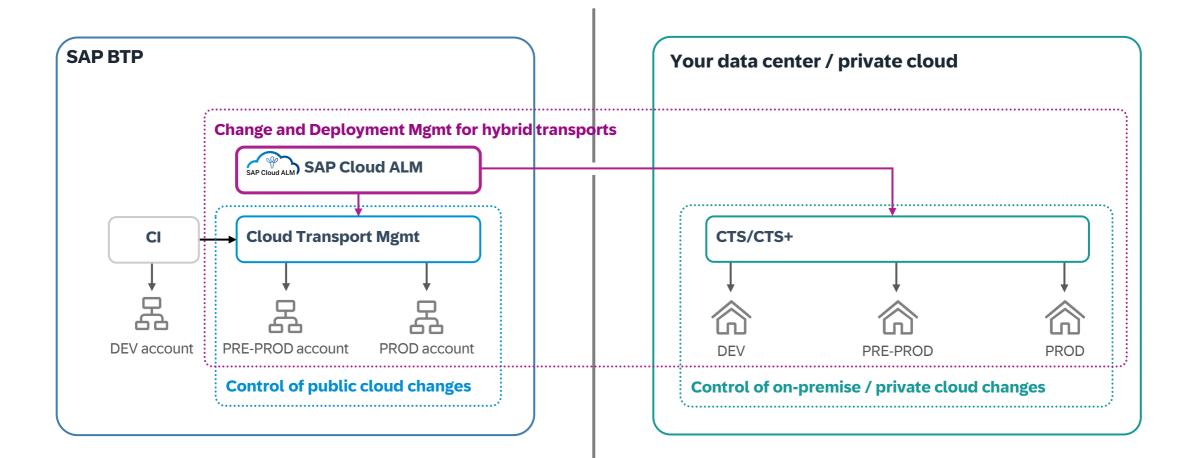
Transport in SAP BTP ABAP, Cloud Foundry & Neo envs. of:

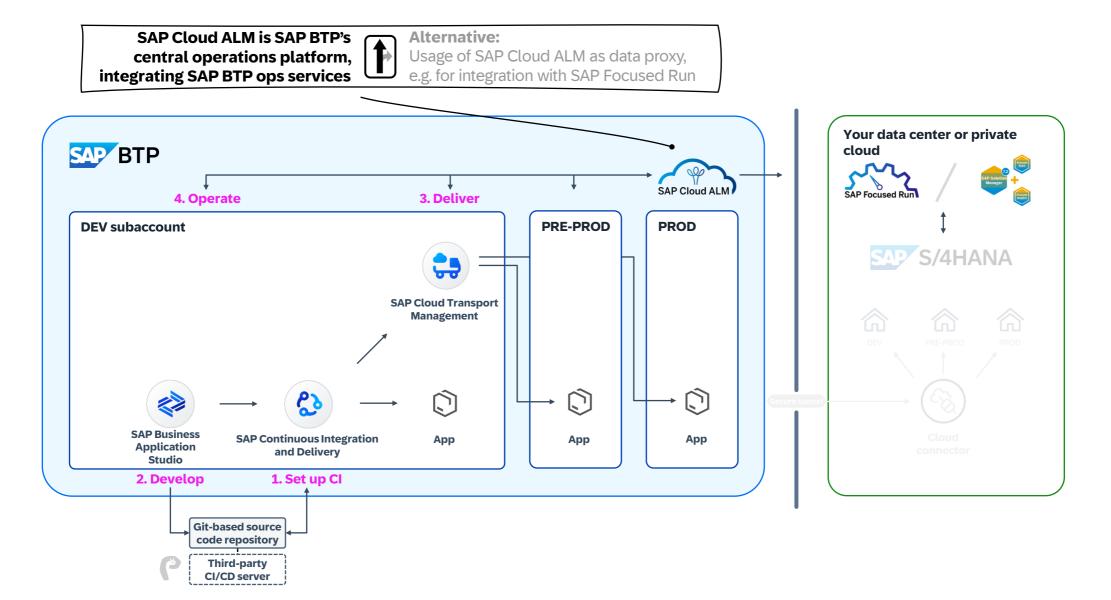
- **Dev artifacts** (MTA archives like CTS+)
- In addition: application content
 - 🗊 🎡 ≫ 🛛 •
- Further content types planned

Manifold integration options:

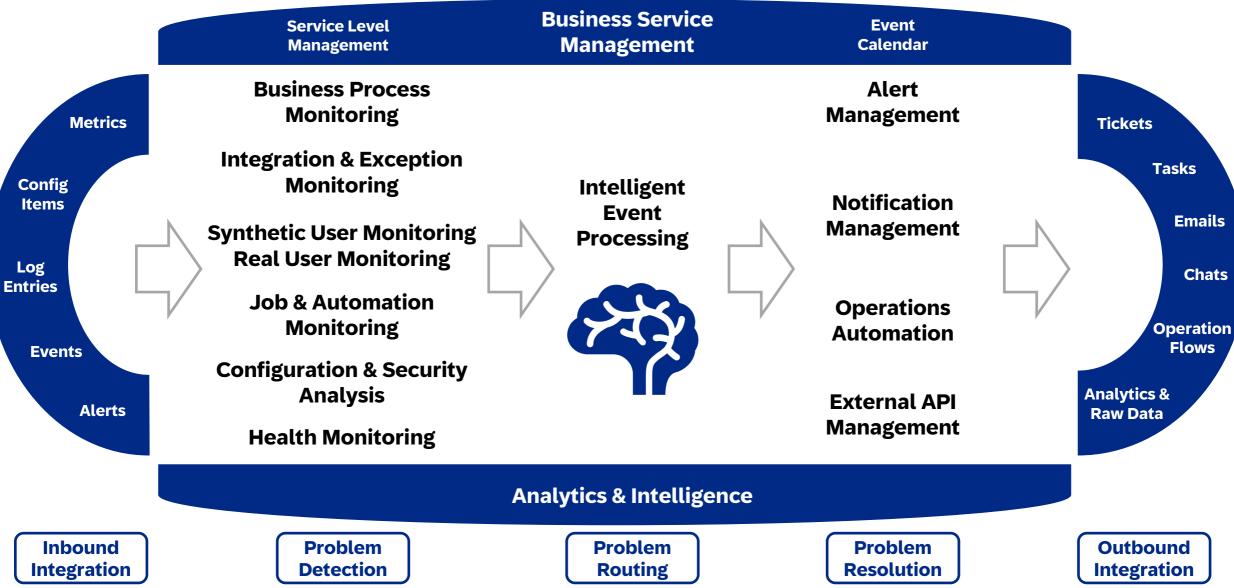
- With CI/CD
- Basis for cloud integration into Change Management by SAP Solution Manager and SAP Cloud ALM
- Open APIs

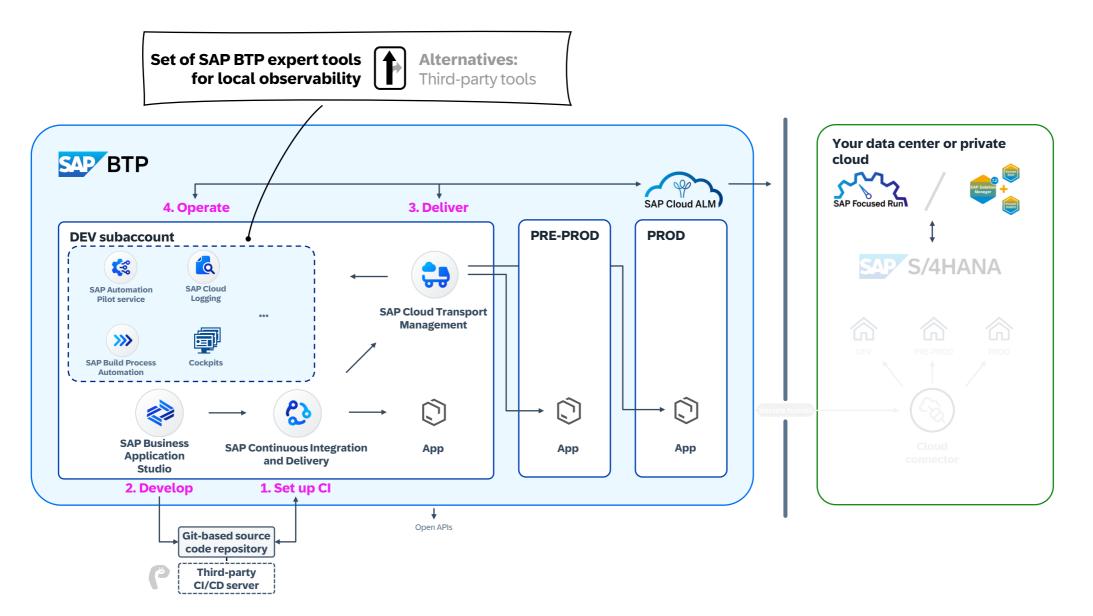
3. Deliver your hybrid changes toward production – with SAP Cloud ALM





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



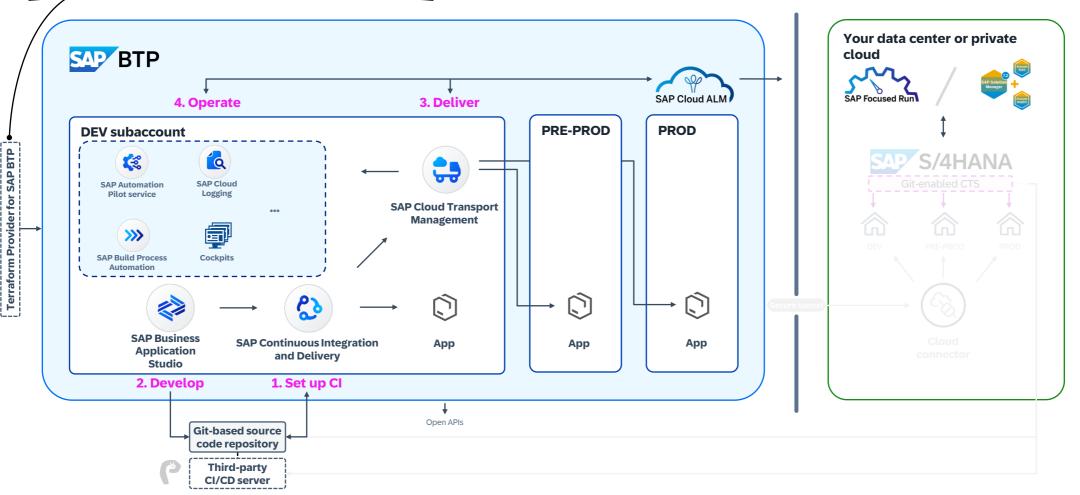


4. Operations: SAP Cloud ALM for operations – Flow with local tools

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 https://registry.terraform.io/providers/SAP/btp/latest/docs
 - 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

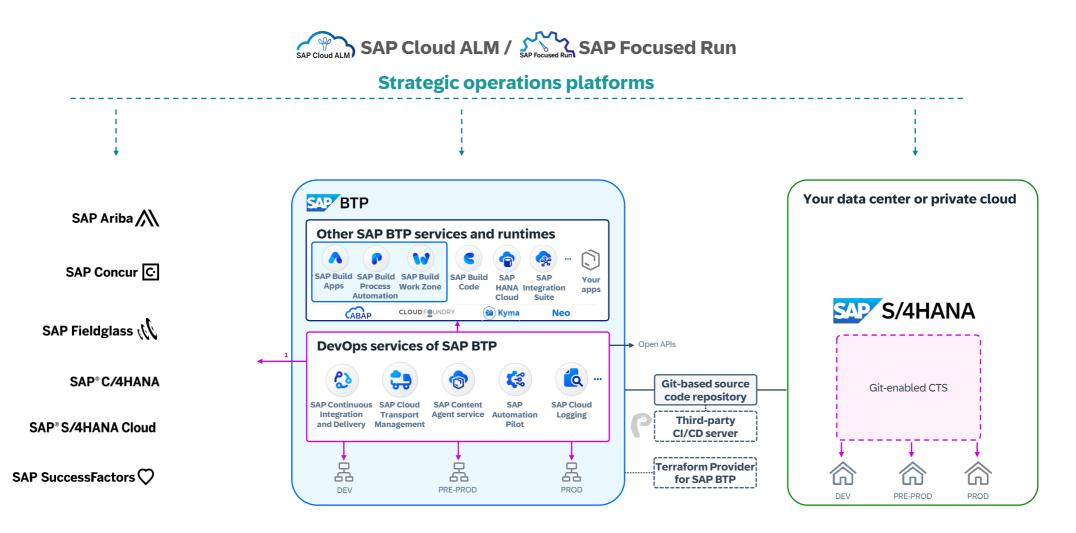
Potential use cases around DevOps

- 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

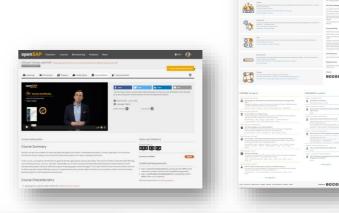
Learn more about DevOps with SAP:

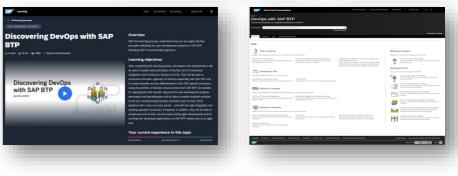
- DevOps SAP Community page
- <u>CI/CD in ABAP An Outside-In View</u> (blog post)
- <u>CI/CD Tools for SAP BTP, ABAP Environment</u> (blog post)
- SAP Help Portal page about DevOps with SAP BTP
- Best Practices for SAP BTP guide
- SAP Learning Journey <u>Discovering DevOps with SAP BTP</u>
- <u>App Development & 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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