DevOps with SAP BTP – Latest News + Updates

Harald Stevens, Dimitar Donchev, Boris Zarske – SAP
October 12, 2021

PUBLIC

THE BEST RUN SAP

Disclaimer

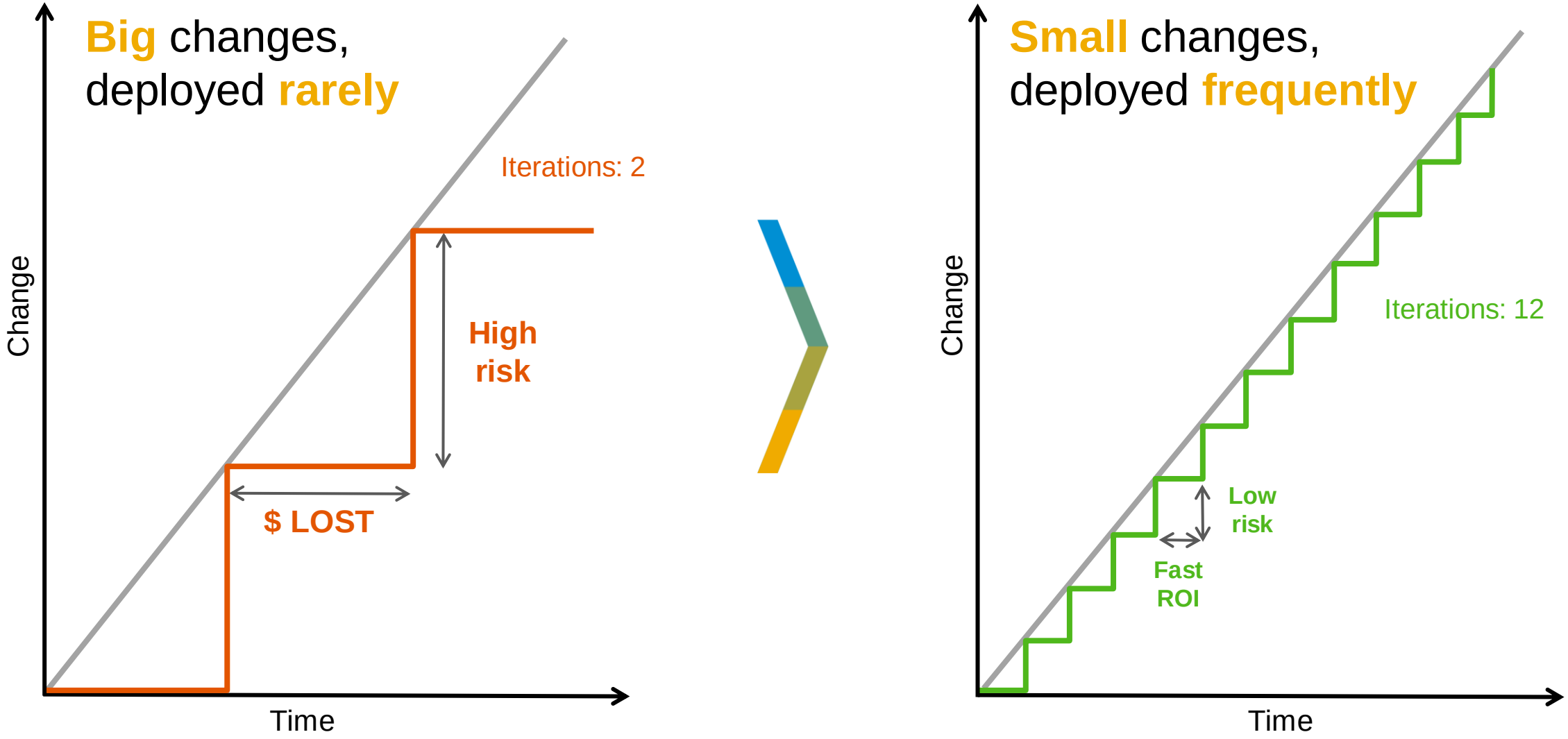
The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

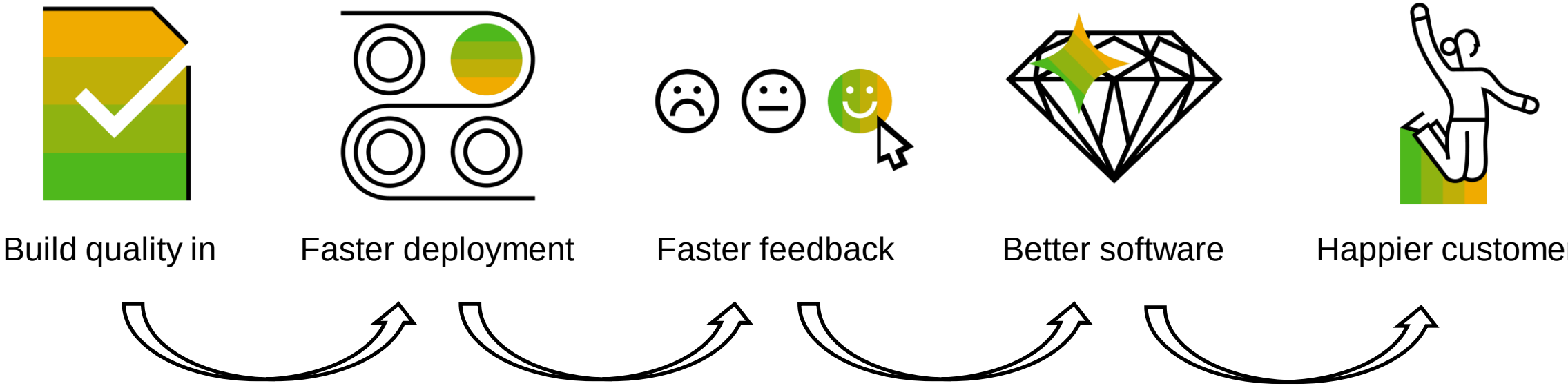
© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Benefits of continuously delivering software changes



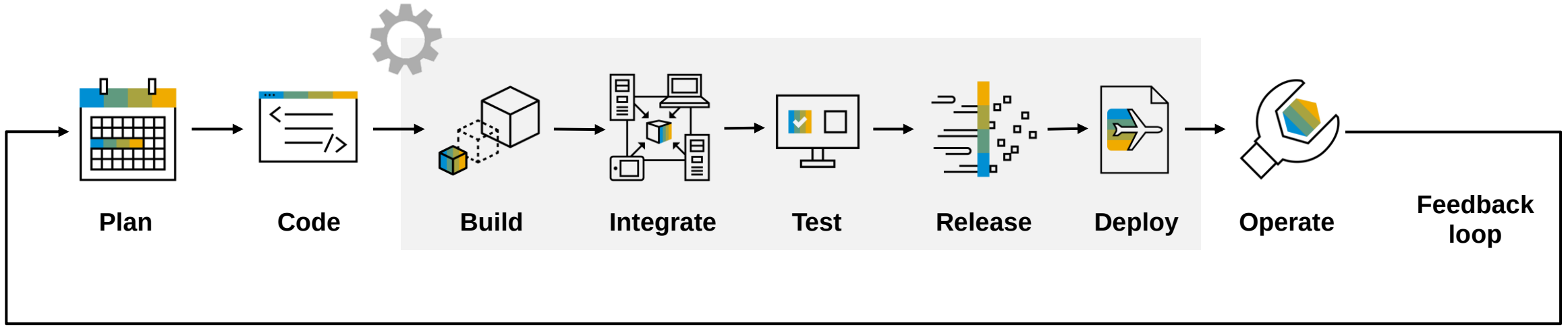
© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

The goal of continuous delivery



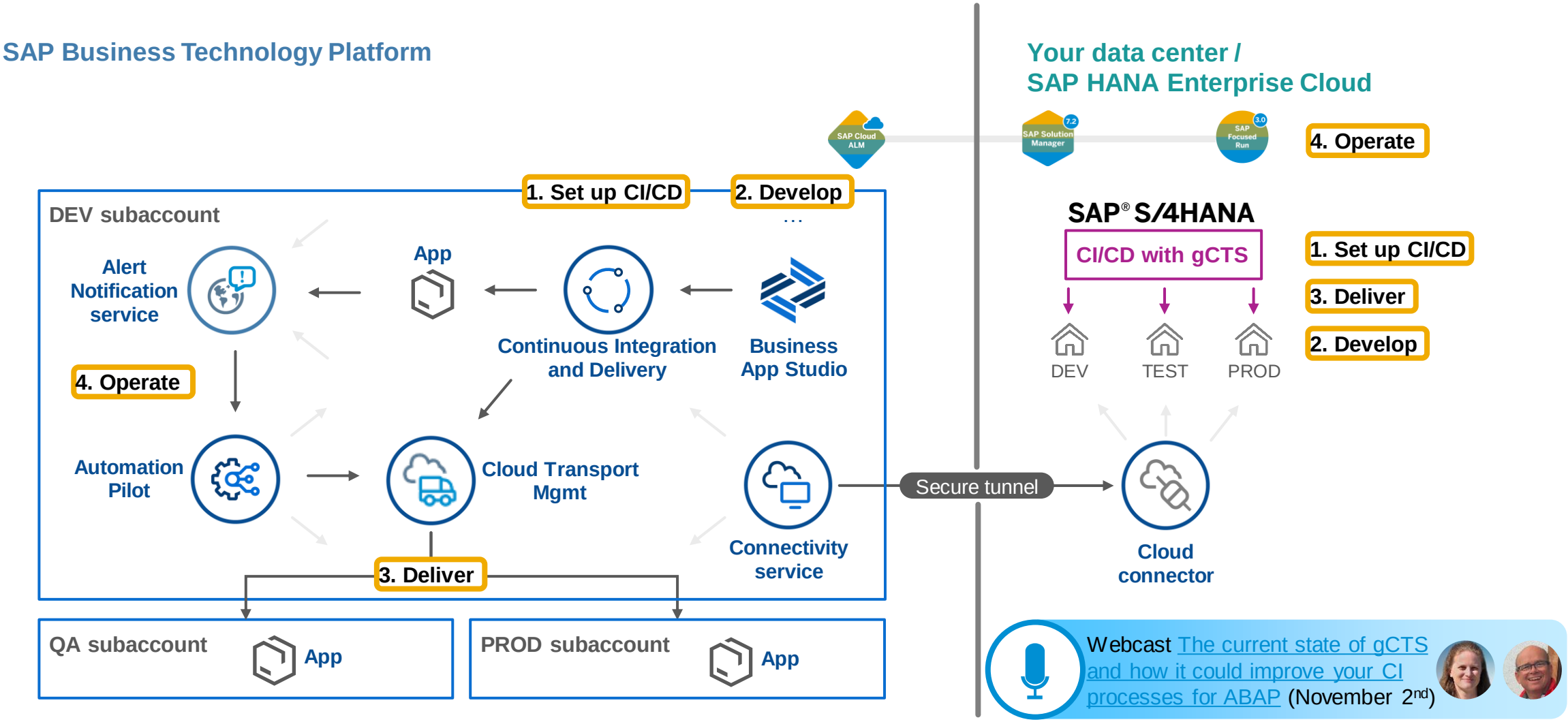
© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

The deployment pipeline – automated



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Example landscape to develop and run your SAP application with DevOps

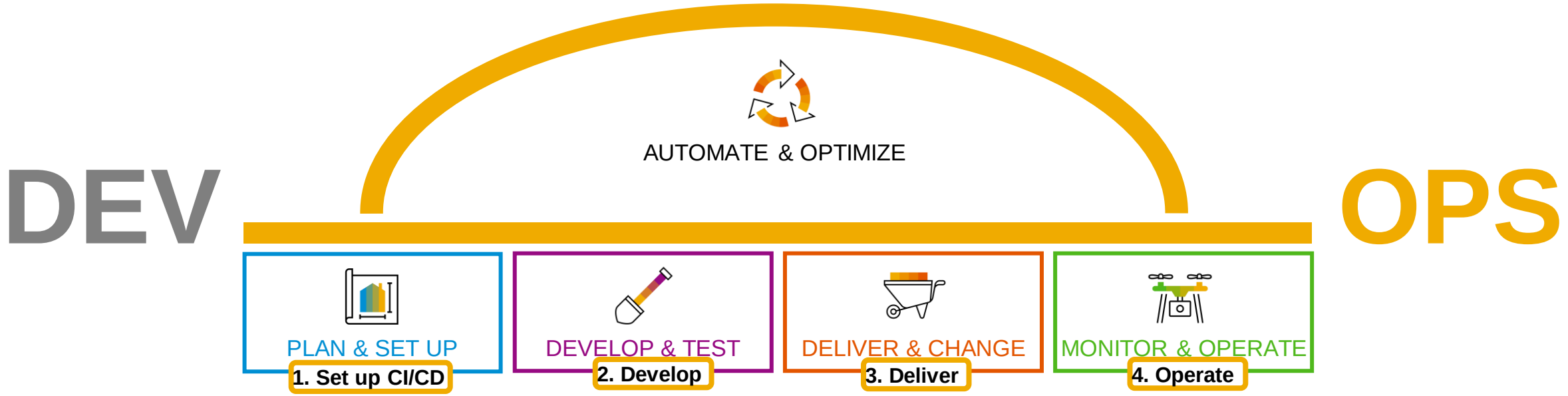


© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Blog post from Murali Shanmugham

DevOps with SAP BTP

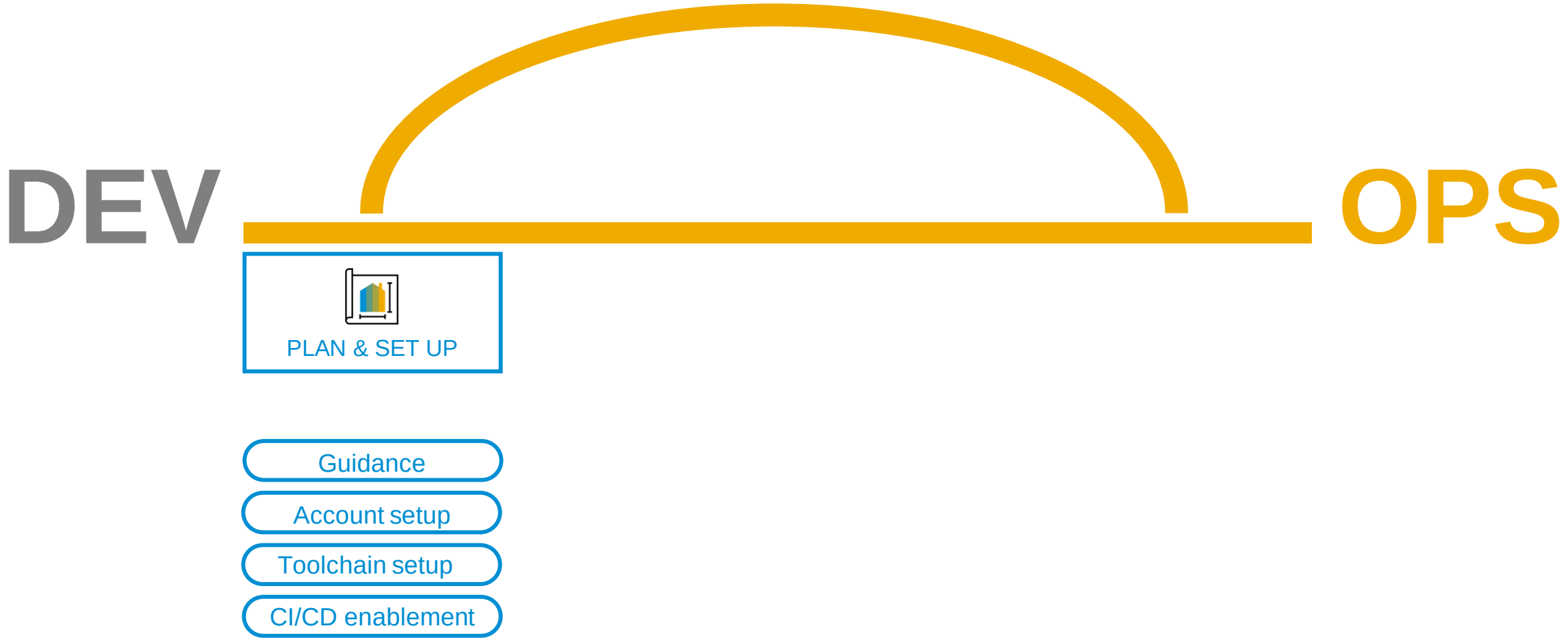
Categories



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP BTP

1. Plan & set up



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

1. Set up CI/CD efficiently for SAP environments

CI/CD enablement

Our mission

… is to enable the implementation of CI/CD for the development of business solutions on SAP BTP and thereby, strongly focus on our customers' and partners' needs.

You can choose from two different solutions, depending on your level of **expertise** and the level of **flexibility** you require:

SAP Continuous Integration and Delivery

- Simplify and speed up your CI/CD setup trough predefined pipelines that are ready-to-use
- Follow SAP recommendations and best practices
- Don't worry about the underlying CI/CD infrastructure

Project "Piper"

- Build custom pipelines with the help of our shared library
- Reuse your own CI/CD infra-structure
- Simplify your tool setup through our set of Docker images

+ **CI/CD Best Practices Guide**

Apply CI/CD principles to SAP-specific technologies

Simplicity

for typical SAP business application developers

Flexibility

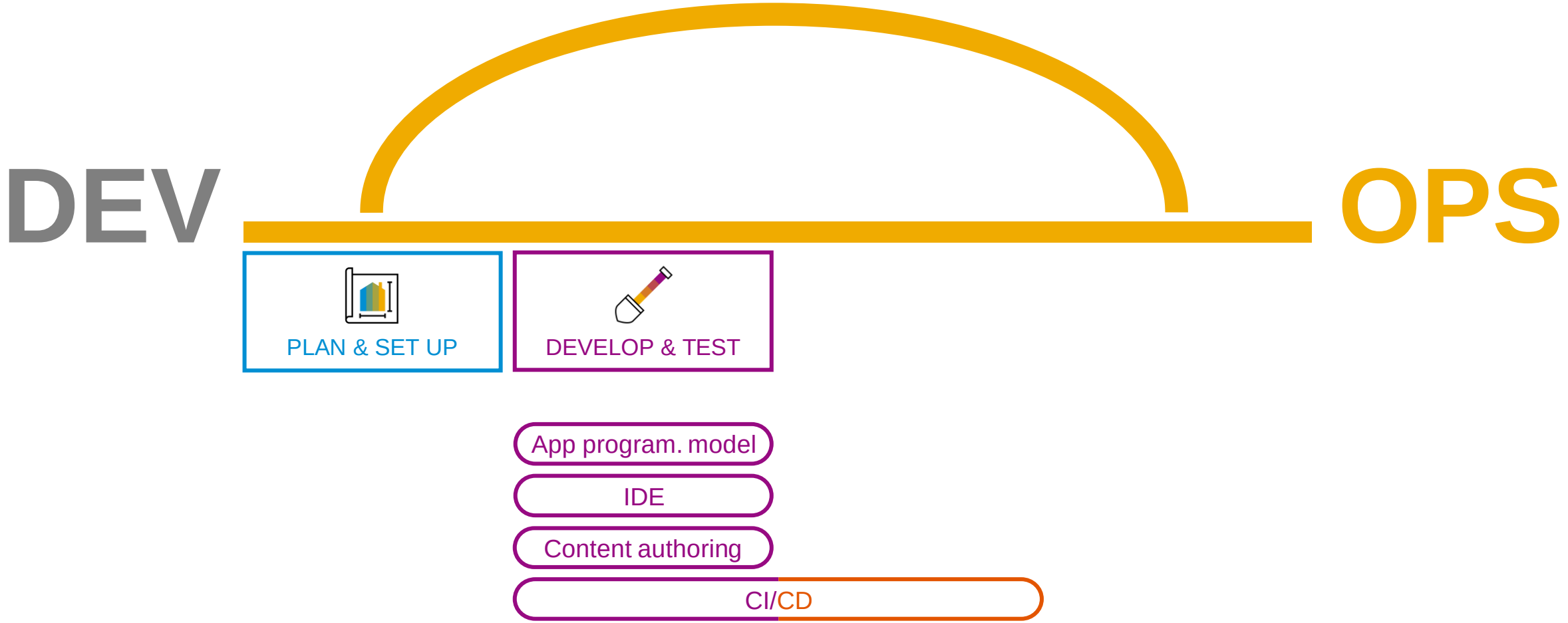
to automate complex and customer-specific development scenarios

Webcast SAP Solutions for CI/CD – Update on latest features (October 19)

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP BTP

2. Develop & test

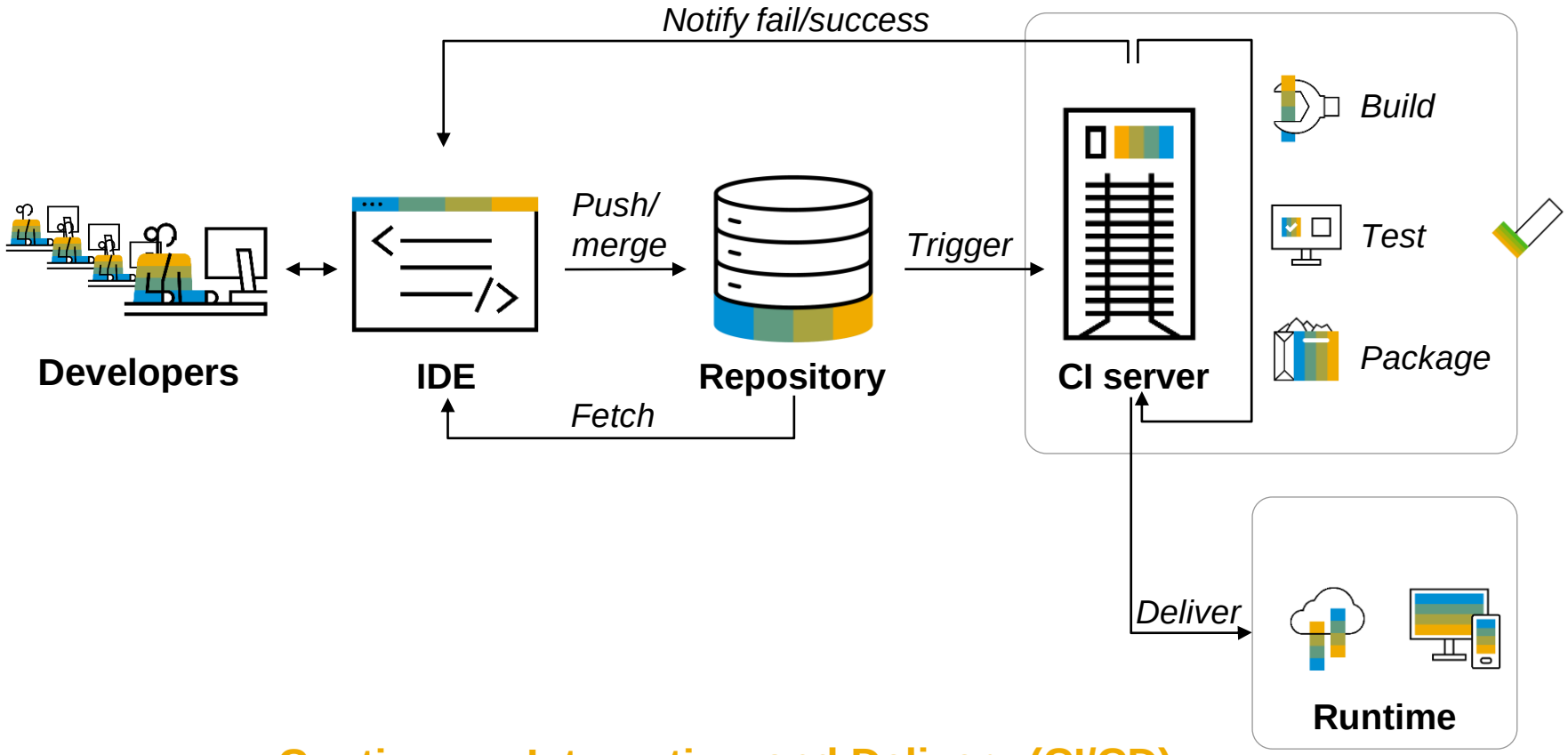


© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

2. Agile development

CI/CD

Using automated Continuous Integration and Continuous Delivery pipelines



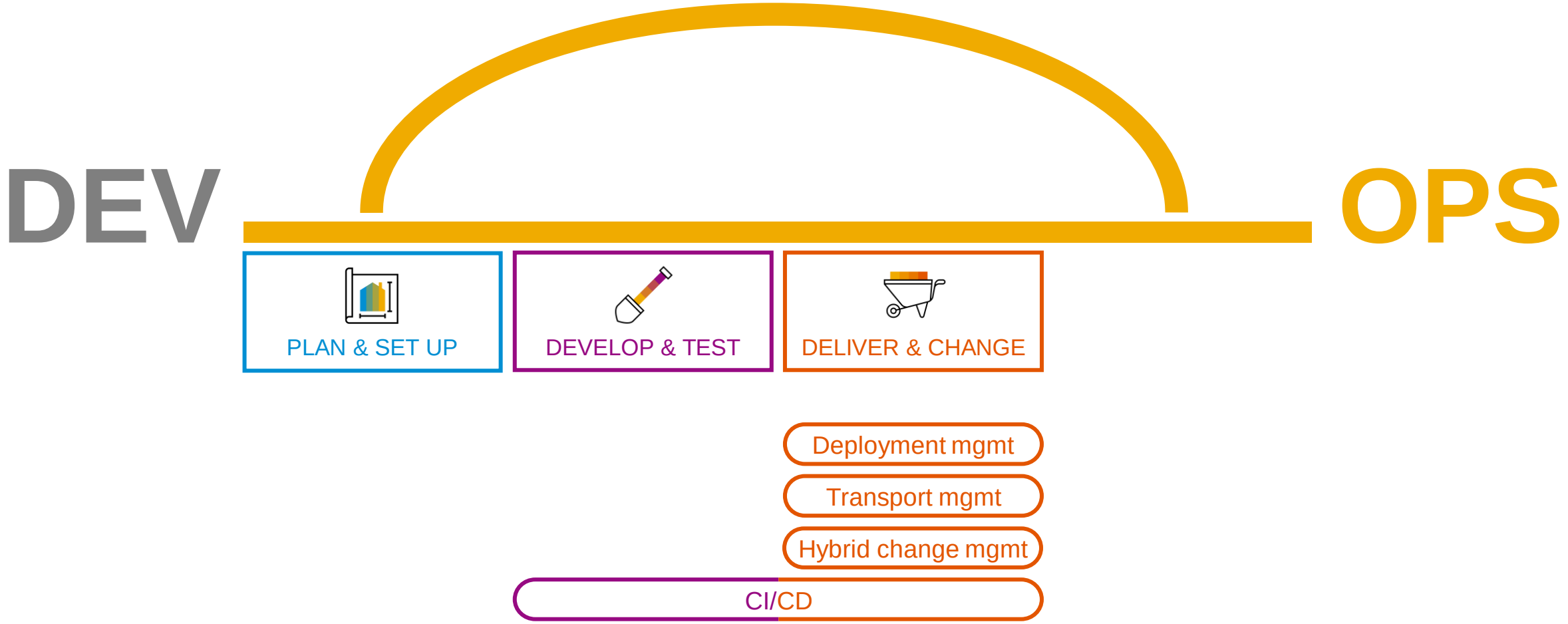
Continuous Integration and Delivery (CI/CD)

Webcast CI/CD with SAP Solution Manager (November 9th)

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP BTP

3. Delivery & change



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

3. Deliver your cloud changes toward production

Transport mgmt

Continuous Delivery

- Mainly **source-code-based** and for isolated development
- Ideally fully automated

SAP Continuous Integration and Delivery service

Open source/ 3rd party +

Project "Piper"

+

Transport Management

- Apply standardized, enterprise-ready change management process
- Add transparency on **audit trail of changes**
- Establish **separation of concerns** + regain control
- Option for **synchronizing transports** with on-premise artifacts

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

3. Deliver your cloud changes toward production

Integration into CI/CD: Combining agility + control

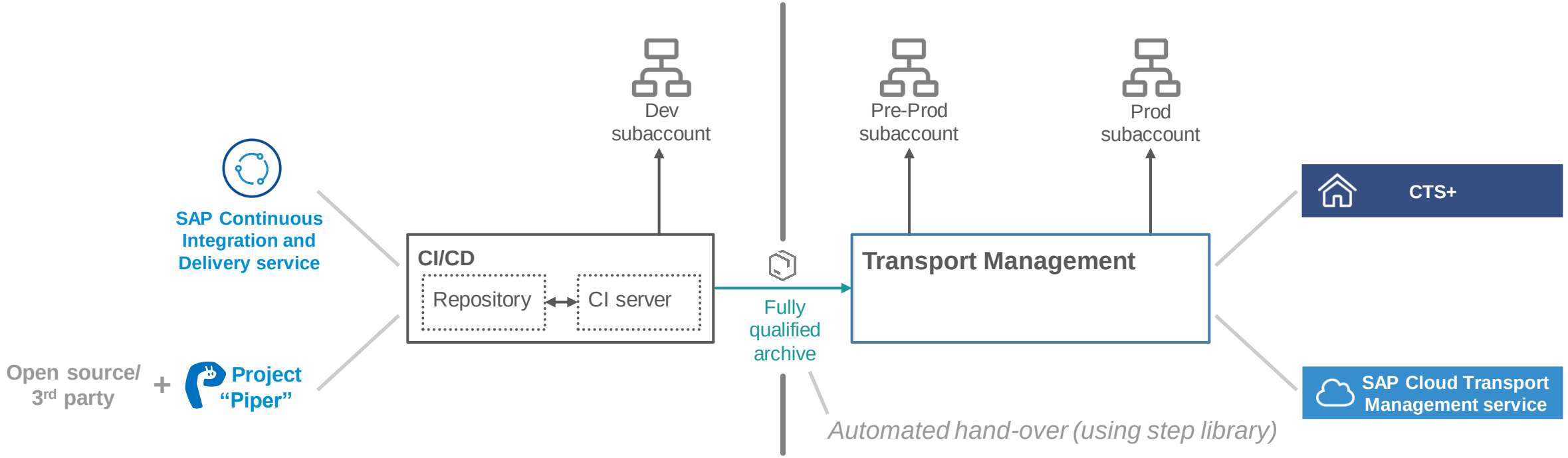
Transport mgmt

Development landscape

- Based on *Continuous Integration* principles, managed by DevOps team
- Verification of single developer change
- Typically fully automated

Delivery landscape

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



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

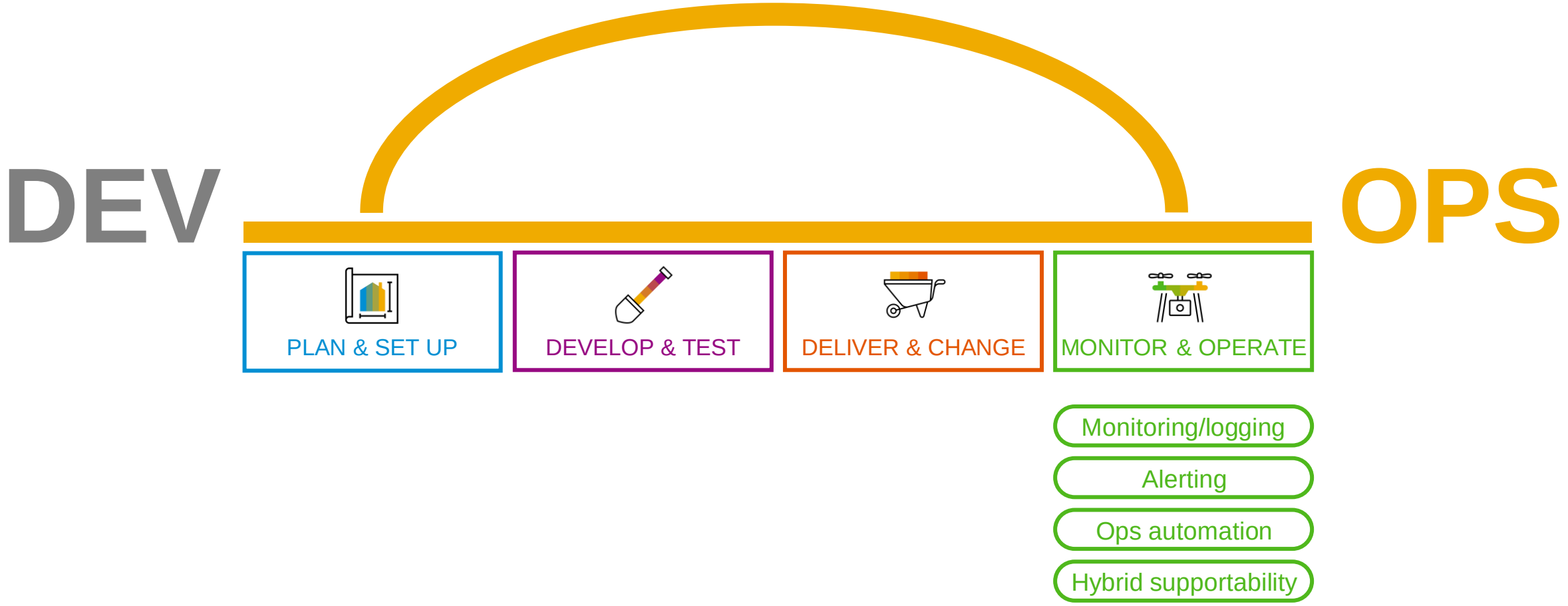
Demo

SAP Cloud Transport Management service

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP BTP

4. Monitor & operate

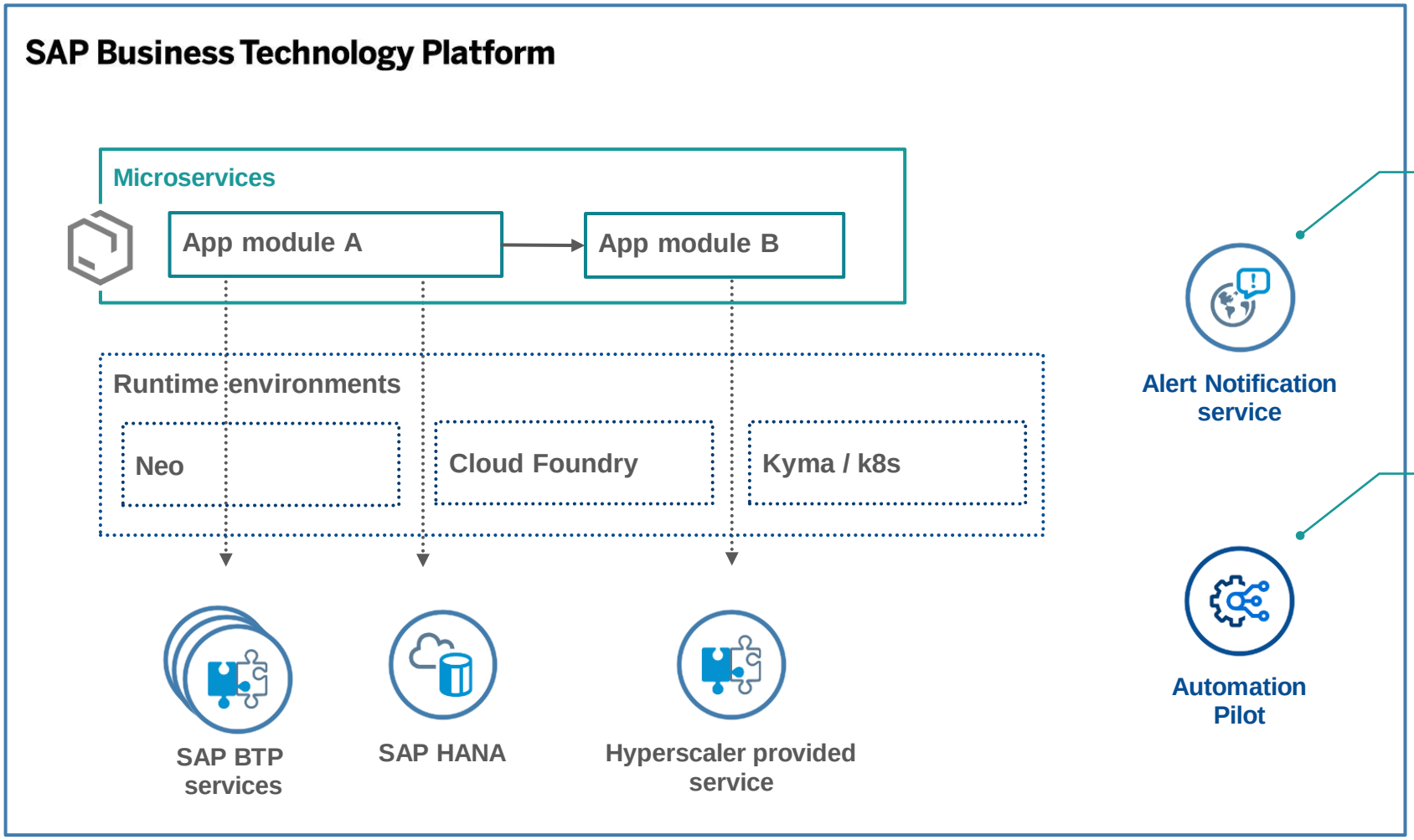


© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Operations for SAP BTP

Alerting

Ops automation



Chanel alerts from SAP BTP to various channels & recipients

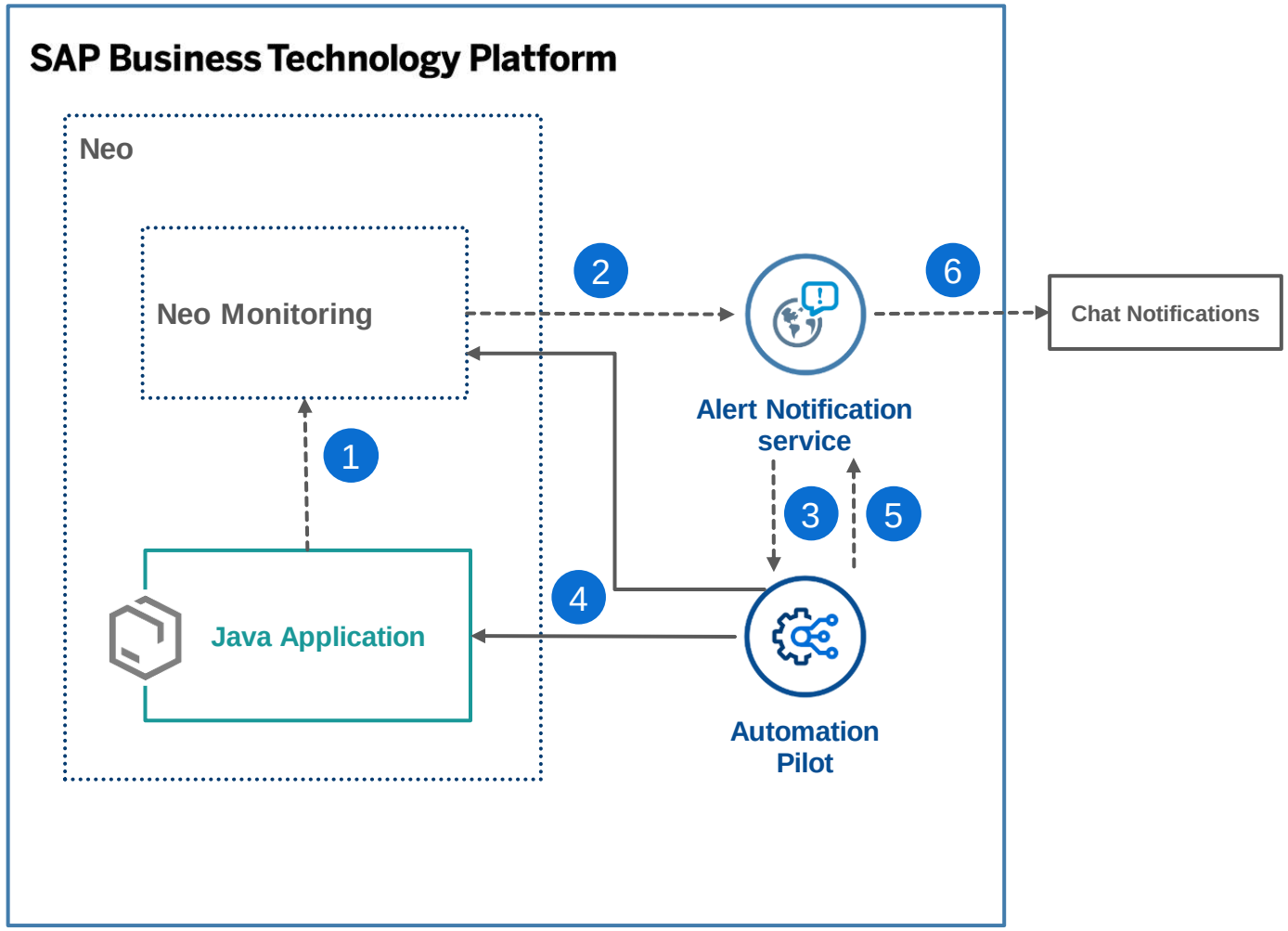
Automate DevOps: Schedule maintenance, React to alerts …

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Automatic scaling in SAP BTP Neo environment

Alerting

Ops automation



1. Neo Monitoring watches app metrics
2. An event is sent on CPU spike
3. Alert Notification service triggers Automation Pilot
4. Automation Pilot scales the app & monitors it's state
5. Status events are pushed to Alert Notification service
6. Alert Notification service delivers everything to an MS Teams channel

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Demo

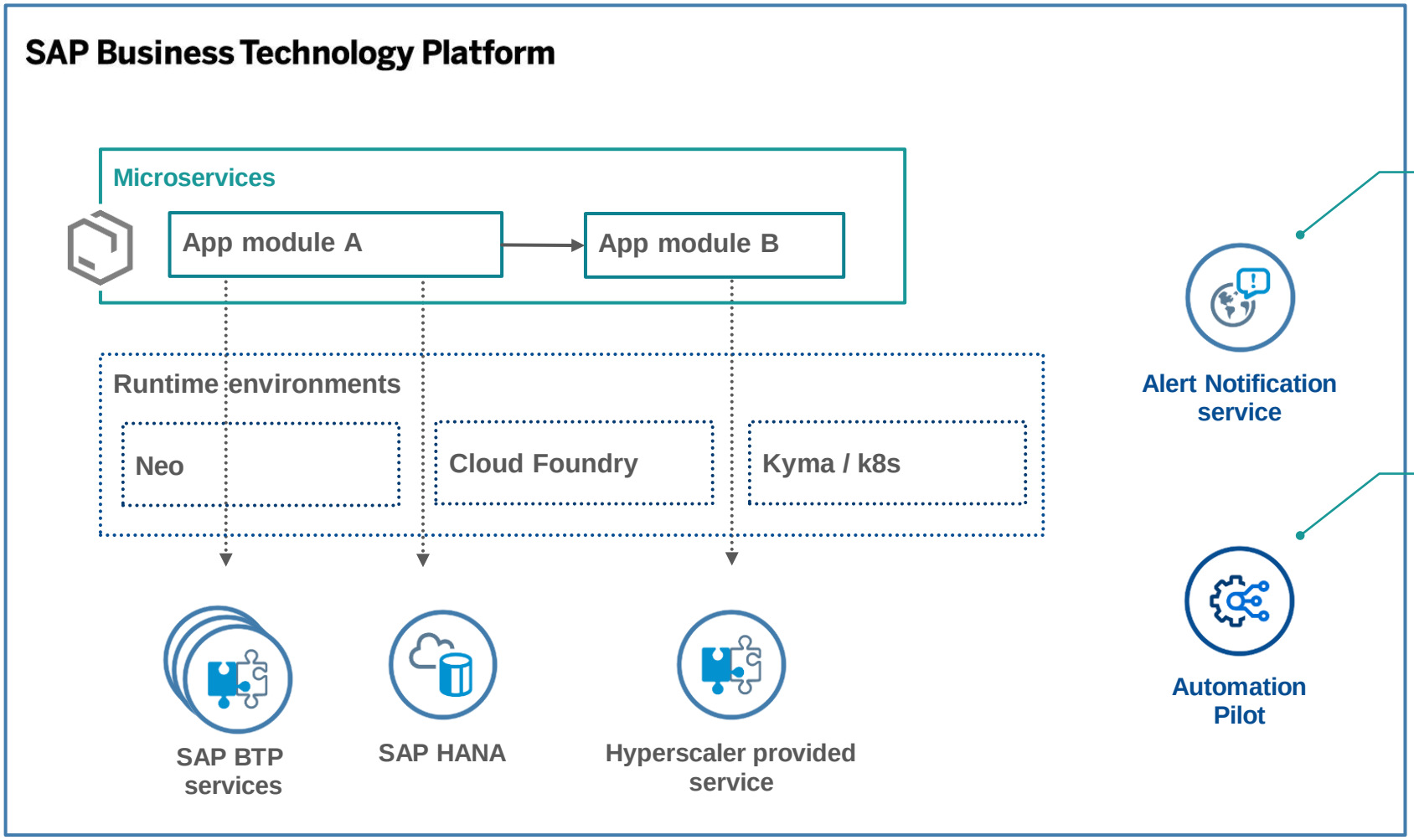
Automated application scaling in SAP BTP Neo environment

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Operations for SAP BTP

Alerting

Ops automation



Chanel alerts from SAP BTP to various channels & recipients

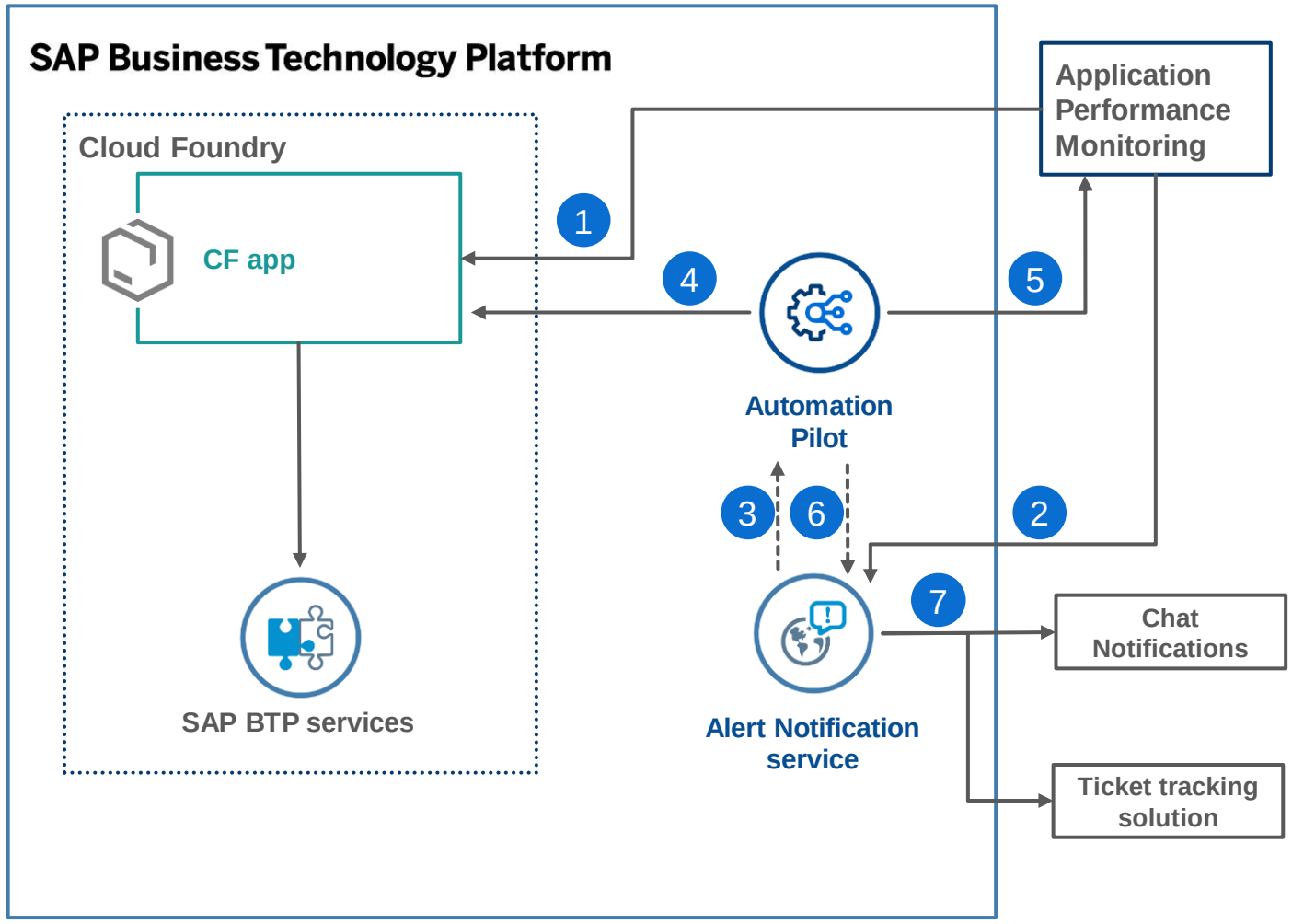
Automate DevOps; Schedule maintenance; React to alerts;

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Automatic outage reaction in SAP BTP Cloud Foundry

Alerting

Ops automation



1. Monitoring system observes the CF solution
2. On service connectivity issues, an event is sent to Alert Notification service
3. Alert Notification service triggers Automation Pilot
4. Automation Pilot restarts the application
5. Automation Pilot checks if the problem is resolved and rebinds the service if necessary
6. Status events are pushed to Alert Notification service
7. Alert Notification delivers the events to chat and updates a ticket of the ongoing status

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Demo

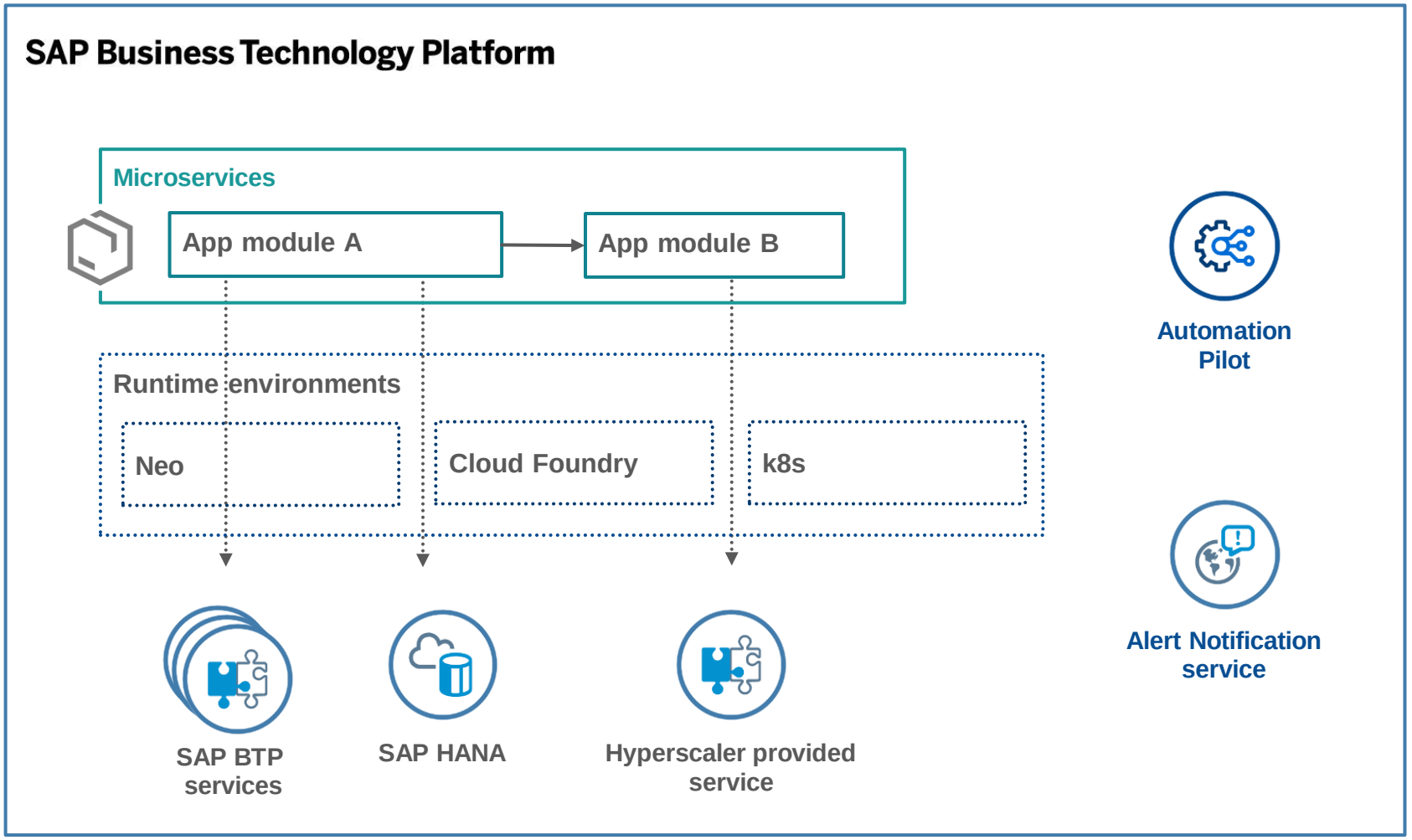
Automated outage reaction in Cloud Foundry environment

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Operations for SAP BTP

Alerting

Ops automation

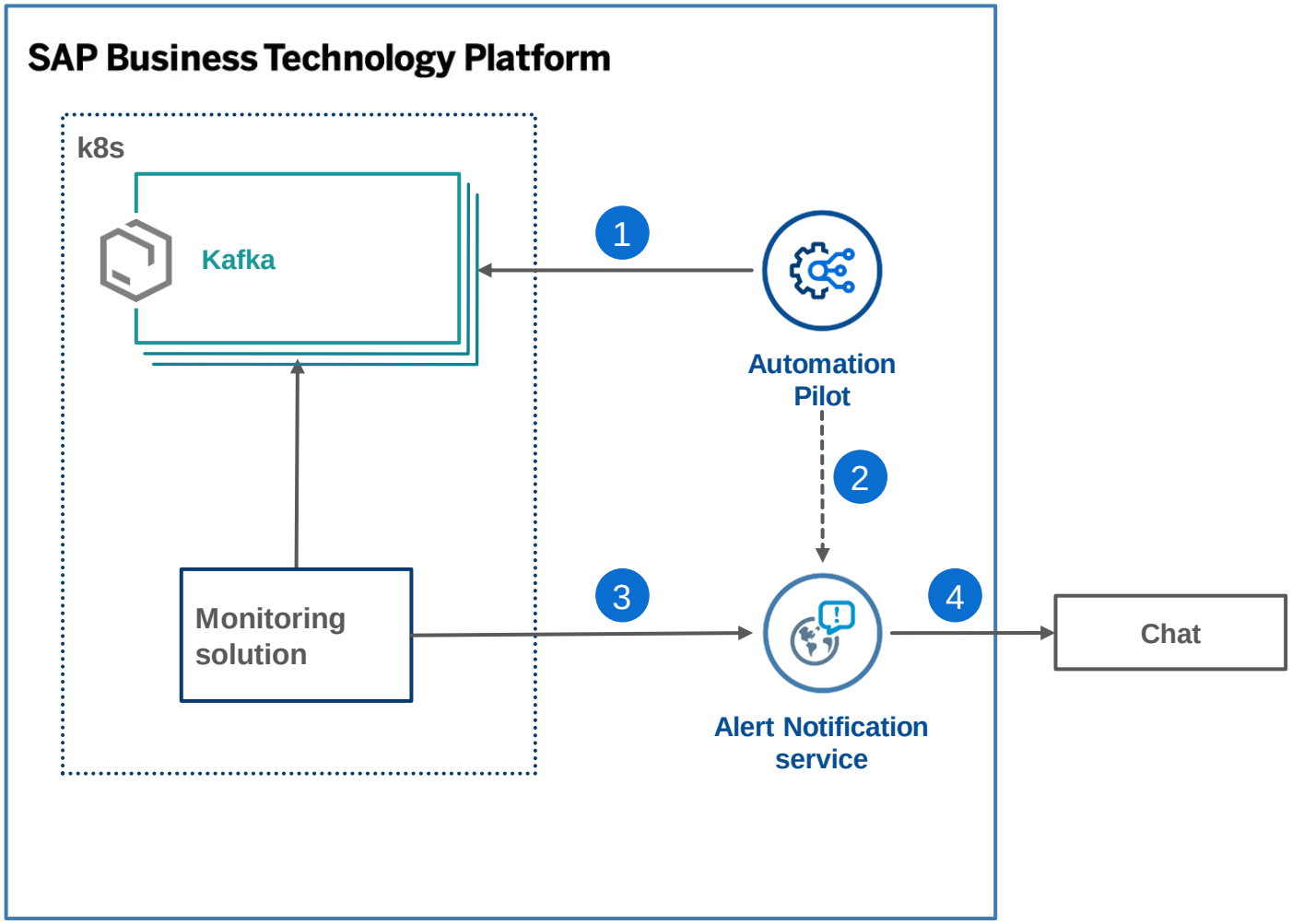


© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Scheduled maintenance procedures in k8s runtime

Alerting

Ops automation



1. Automation Pilot does a scheduled rolling restart of the Kafka cluster
2. Automation Pilot sends status events to Alert Notification service
3. In-cluster monitoring sends events to Alert Notification service
4. Alert Notification delivers the events to chat

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Demo

Automated planned maintenance procedure on k8s workloads

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

4. Scheduled maintenance procedures in k8s runtime

Alerting

Ops automation

Alert Notification service

- Sources events from within SAP BTP and external services
- Delivers notifications to various channels
  - Chat [MS Teams, Slack,…]
  - Incident management [VictorOps, SNOW, PagerDuty, Jira, …]
  - Triggers automated procedures [Automation Pilot, BTP Workflow service …]
  - …

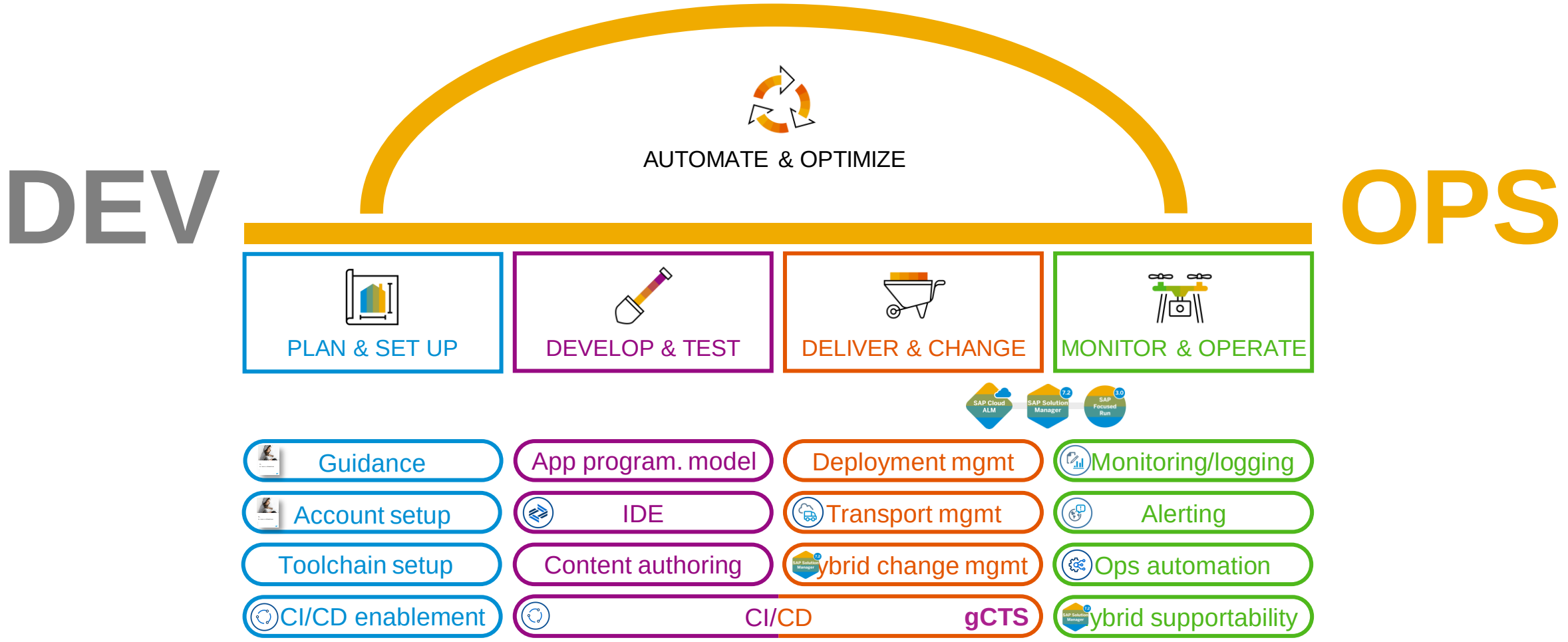
Automation Pilot

- No-code engine for operations automation
- Utility commands & a rich API service specific command catalog for managing workloads across SAP BTP runtimes & services
- Handles well various use cases
  - Command chaining & composition
  - Flow control
  - Script execution
  - …

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Summary

DevOps with SAP



© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Vision of DevOps in hybrid enterprise environments

Webcast CI/CD with SAP Solution Manager (November 9th)

SAP Cloud ALM / SAP Solution Manager / Focused Run

Strategic operations platforms

SAP Ariba

SAP Concur

SAP Fieldglass

SAP® C/4HANA

SAP® S/4HANA Cloud

SAP SuccessFactors

SAP BTP

Business Rules | Int. Suite | Work-flow Mgmt | API Mgmt | SAP Fiori Cloud | Portal service | SAPUI5 | ABAP gCTS[1] | Your app | ...

DevOps services of SAP BTP

CI/CD service | Cloud Transport Mgmt | App Logging | Alert Notification service | Automation Pilot | ...

[1]

Open APIs

DEV | PRE-PROD | PROD

CI/CD (e.g. GitHub + Jenkins)

Your data center / SAP HANA Enterprise Cloud

CI/CD with gCTS

SAP® S/4HANA

DEV | PRE-PROD | PROD

Webcast SAP Solutions for CI/CD – Update on latest features (October 19)

Webcast The current state of gCTS and how it could improve your CI processes for ABAP (November 2nd)

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

How your company can make first steps

Deepen your knowledge about DevOps with SAP

Identify suitable projects + teams interested in DevOps with SAP

Enable **quick results**: start simple + non-disruptively

- Greenfield: SAP CI+D service
- Existing CI/CD infrastructure: Project “Piper”
- ABAP on-premise: gCTS

Regain control & **integrate**, when needed

- Automated hand-over from automated pipeline into transport and change management
- Integration into strategic ops platform of choice

Scale: extend & adapt as needed, engage inside + outside your company with peers and experts on the same journey

[Sway about potential first steps]

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Call to action

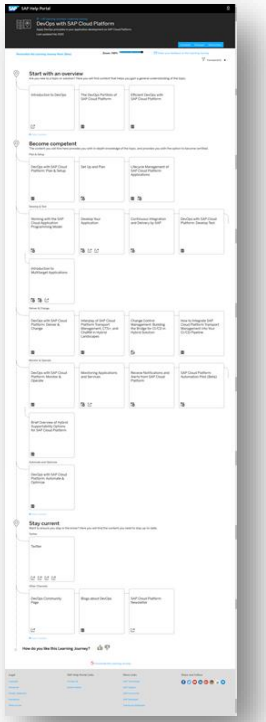
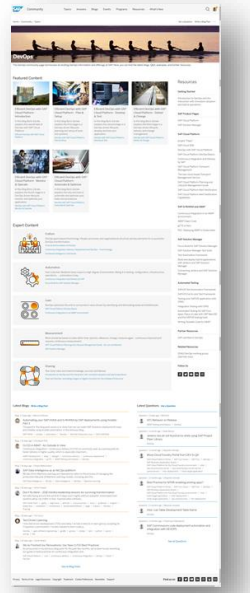
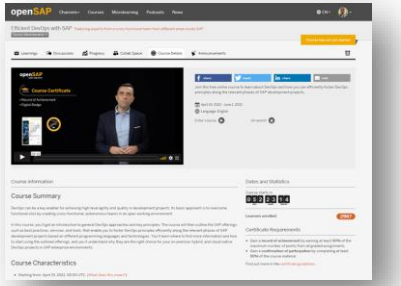
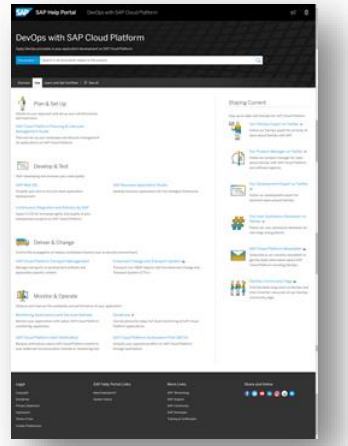
Learn more about DevOps with SAP:

- DevOps SAP Community page
- openSAP course “Efficient DevOps with SAP”
- Sway about potential first steps
- SAP Help Portal page about DevOps with SAP BTP
- Learning Journey – DevOps with SAP BTP
- Best Practices for SAP BTP guide
- App Development & Integration in SAP Road Map Explorer
- DevOps essentials webcast series (registration + recordings)
- SAP TechEd session "SAP BTP’s DevOps Portfolio in Action"

Try out our services on SAP BTP:

- Set up our services in the trial environment for SAP BTP and in the free tier
- Run our missions in SAP Discovery Center (such as for transport management)
- Tutorials for CI/CD

Contribute to our SAP Continuous Influence session

© 2021 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Thank you.

Contact information:

Boris Zarske
Product Manager – SAP SE
Boris.Zarske@sap.com | LinkedIn | Twitter

THE BEST RUN SAP®

Follow us

www.sap.com/contactsap

© 2021 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

The information contained herein may be changed without prior notice. Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platforms, directions, and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, and they should not be relied upon in making purchasing decisions.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

See www.sap.com/copyright for additional trademark information and notices.

THE BEST RUN SAP®