Efficient **DevOps** with **SAP Cloud Platform**

Boris Zarske, SAP
October 2020

PUBLIC

THE BEST RUN **SAP**

Boris Zarske

Boris is product manager at SAP in the *cloud and lifecycle management* area. He is responsible for DevOps and lifecycle management topics around SAP Cloud Platform.

Together with colleagues from other areas, he is forging the overall DevOps story for SAP. In addition, he has a broad experience with system provisioning topics and enterprise architecture. He is a regular speaker at SAP events, such as SAP TechEd.

Follow Boris on LinkedIn.

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.

SAP Cloud Platform – Elevate Your Enterprise Experience
Accelerate integrations. Simplify extensions. Expand business value.
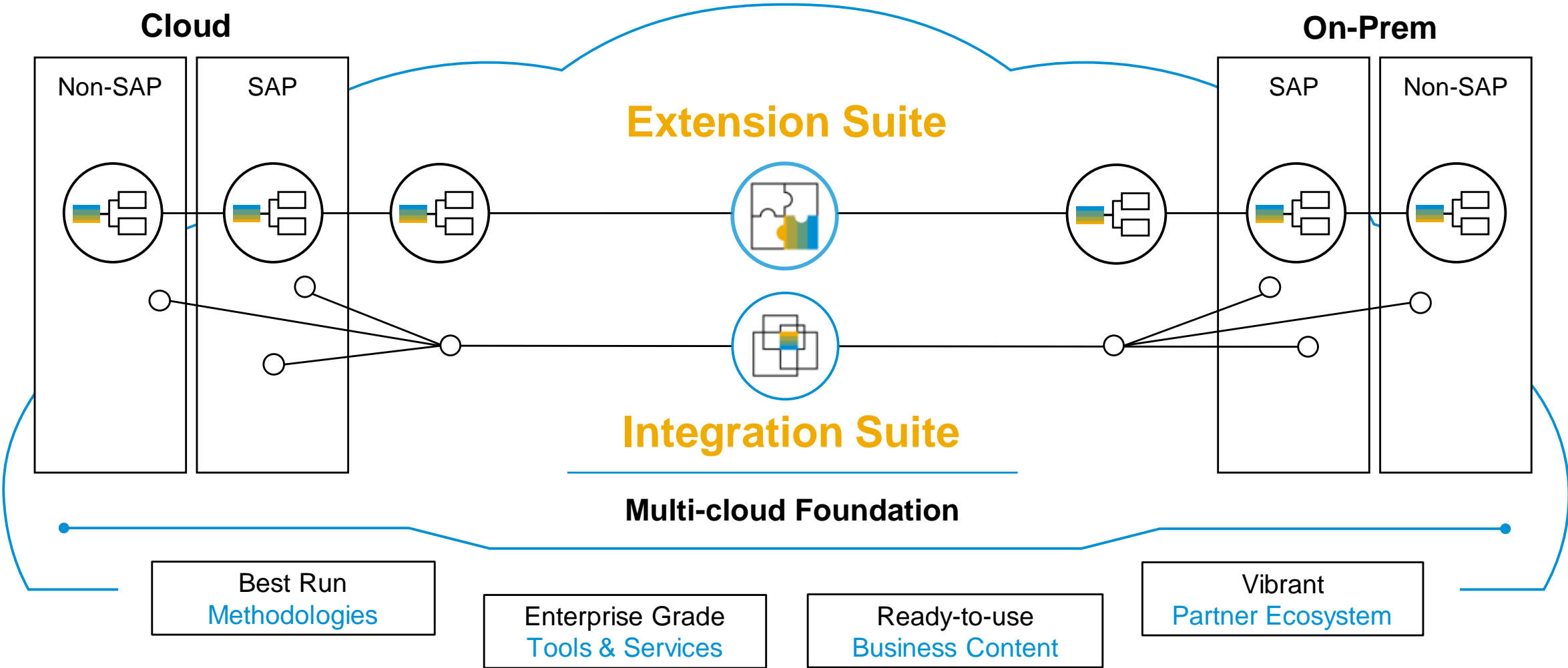
DEV   OPS

"A **culture** where people, regardless of title or background, **work together** to imagine, develop, deploy, and operate a system."

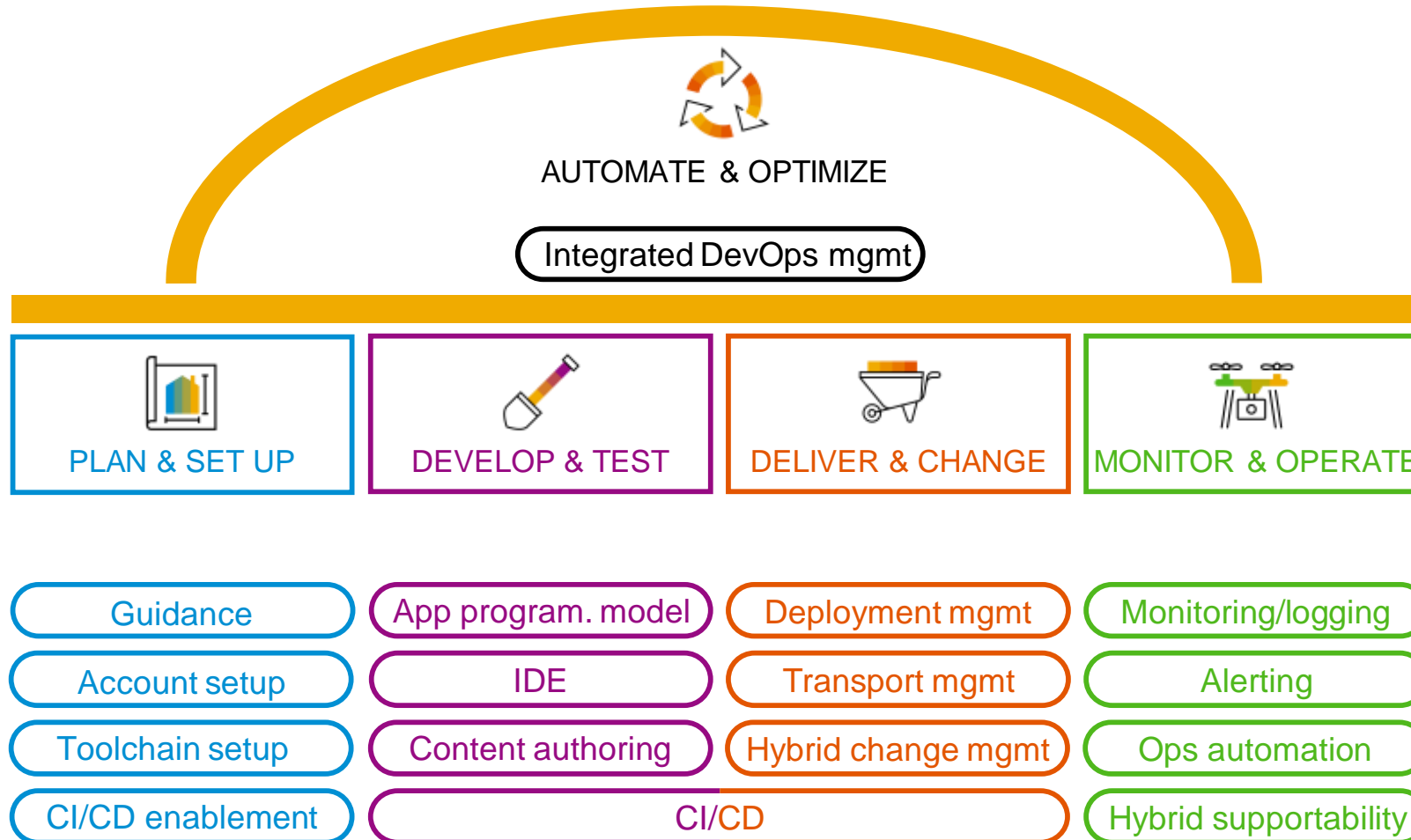Definition by Ken Mugrage, ThoughtWorks
http://kenmugrage.com/post/my-new-definition-of-devops/

DevOps with SAP Cloud Platform
Categories and service portfolio

AUTOMATE & OPTIMIZE

Integrated DevOps mgmt

DEV

OPS

PLAN & SET UP	DEVELOP & TEST	DELIVER & CHANGE	MONITOR & OPERATE
Guidance	App program. model	Deployment mgmt	Monitoring/logging
Account setup	IDE	Transport mgmt	Alerting
Toolchain setup	Content authoring	Hybrid change mgmt	Ops automation
CI/CD enablement	CI/CD		Hybrid supportability

DevOps with SAP Cloud Platform

Plan & set up

DEV OPS

PLAN & SET UP

Guidance

Account setup

Toolchain setup

CI/CD enablement

Best practices for SAP Cloud Platform guide

Available in SAP Help Portal

- Contains detailed **planning section**:
  - Governance model
  - Account model (with examples!)
  - Security and compliance model

- Covers further aspects around **lifecycle management**

How tools enable DevOps
Example for automation as driver for DevOps
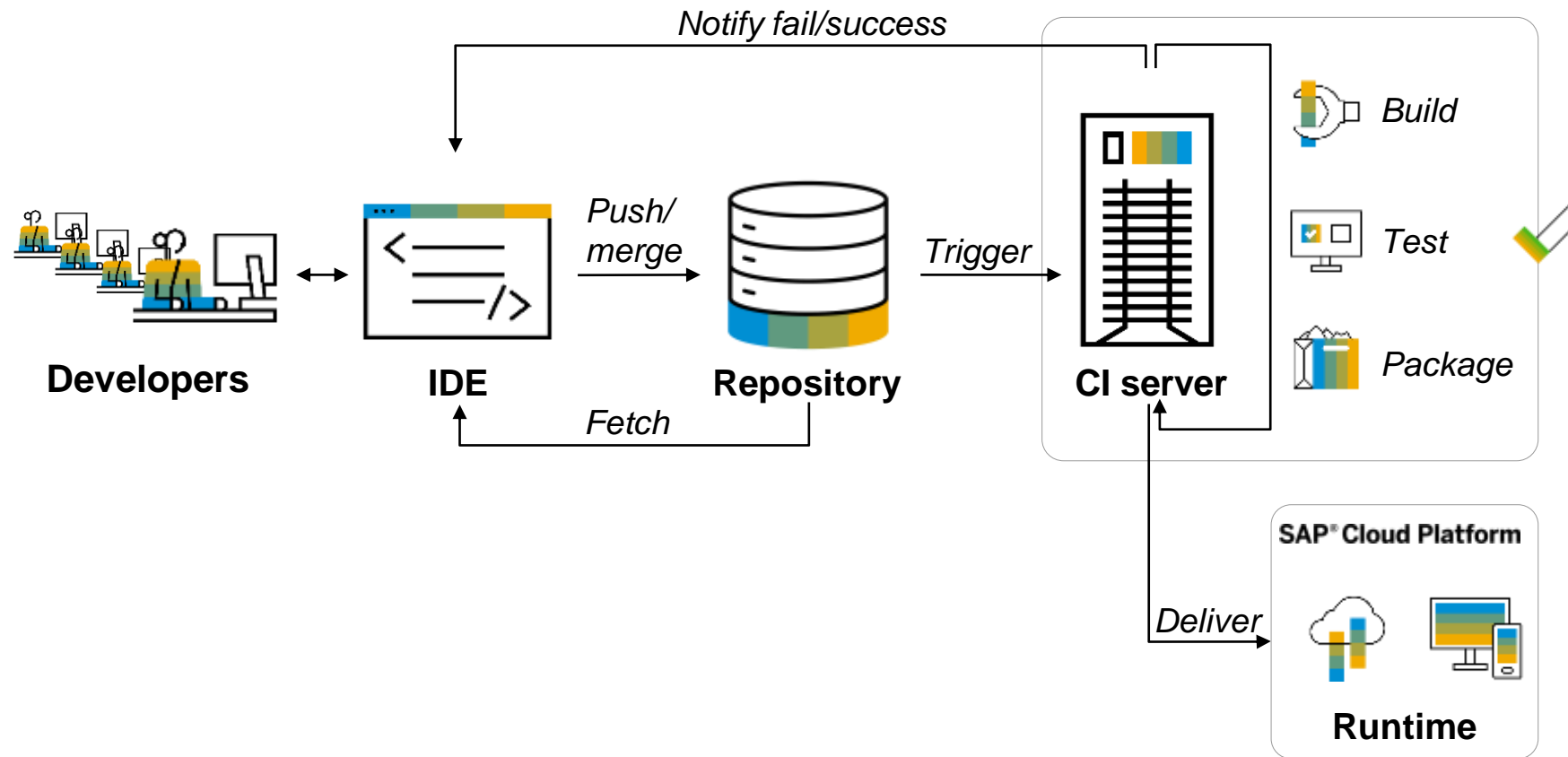
Continuous Integration and Delivery (CI/CD)

Continuous Integration and Delivery
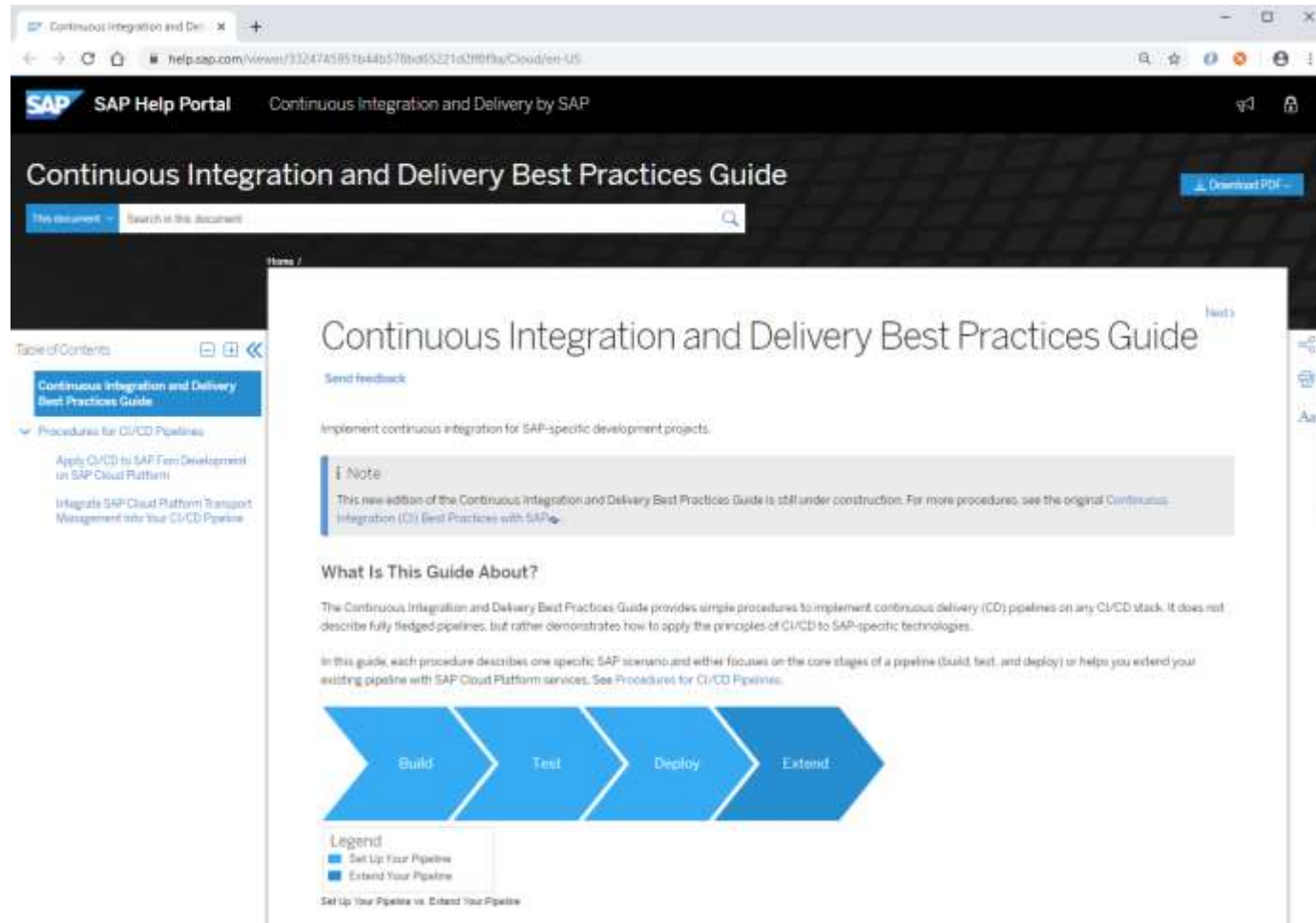## SAP offerings that ease applying CI/CD for your projects

Flexibility

CI/CD Best Practice Guide

Required expertise

Continuous Integration and Delivery
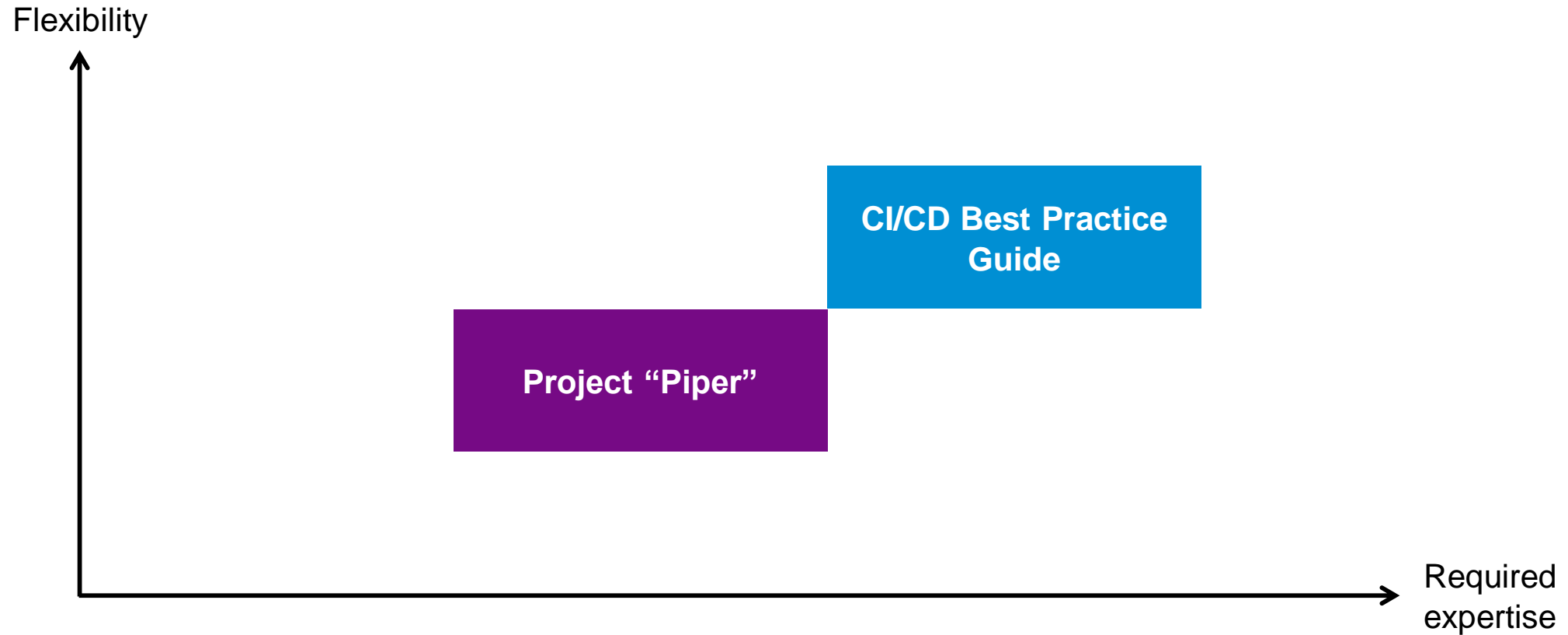## Continuous Integration and Delivery Best Practices Guide

- Provides simple procedures to implement continuous delivery pipelines **on any CI/CD stack**

- Demonstrates how to apply principles of CI/CD to **SAP-specific technology**

Continuous Integration and Delivery Best Practices Guide

Continuous Integration and Delivery
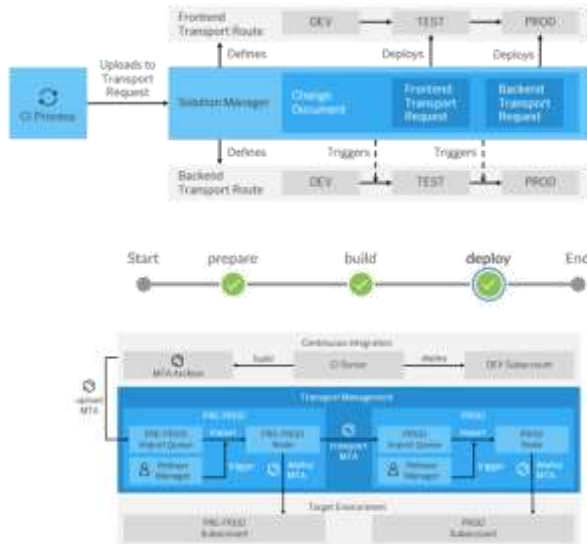SAP offerings that ease applying CI/CD for your projects

Flexibility

CI/CD Best Practice Guide

Project "Piper"

Required expertise

Continuous Integration and Delivery
Project "Piper"

Containerized tools

Project "Piper"

sap.github.io/jenkins-library/

General purpose pipeline

SAP Cloud SDK pipeline

Typical scenarios

Step library

Continuous Integration and Delivery
SAP offerings that ease applying CI/CD for your projects

CI/CD enablement

Flexibility

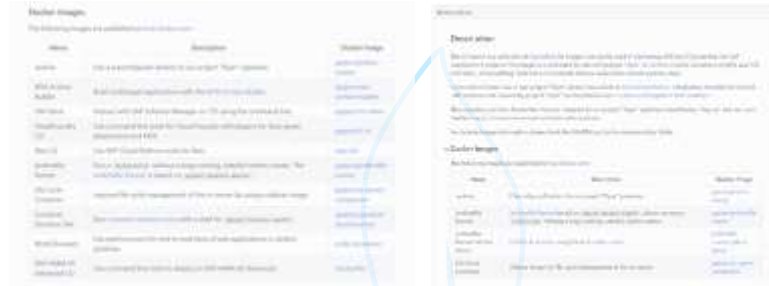CI/CD Best Practice Guide

Project "Piper"

CI/CD service

Required expertise

SAP Solutions for Continuous Integration and Delivery

SAP Cloud Platform Continuous Integration and Delivery

Configure and run predefined pipelines to automatically test, build, and deploy your code changes.

- **Simple onboarding** for SAPUI5 and cloud application programming model (CAP) development projects
- **No customer CI infrastructure** required
- **No in-depth CI/CD knowledge** required
- Well-integrated in tooling ecosystem for SAP Cloud Platform

Documentation

DevOps with SAP Cloud Platform
Develop & test

DEV   OPS

PLAN & SET UP

DEVELOP & TEST

App program. model

IDE

Content authoring

CI/CD
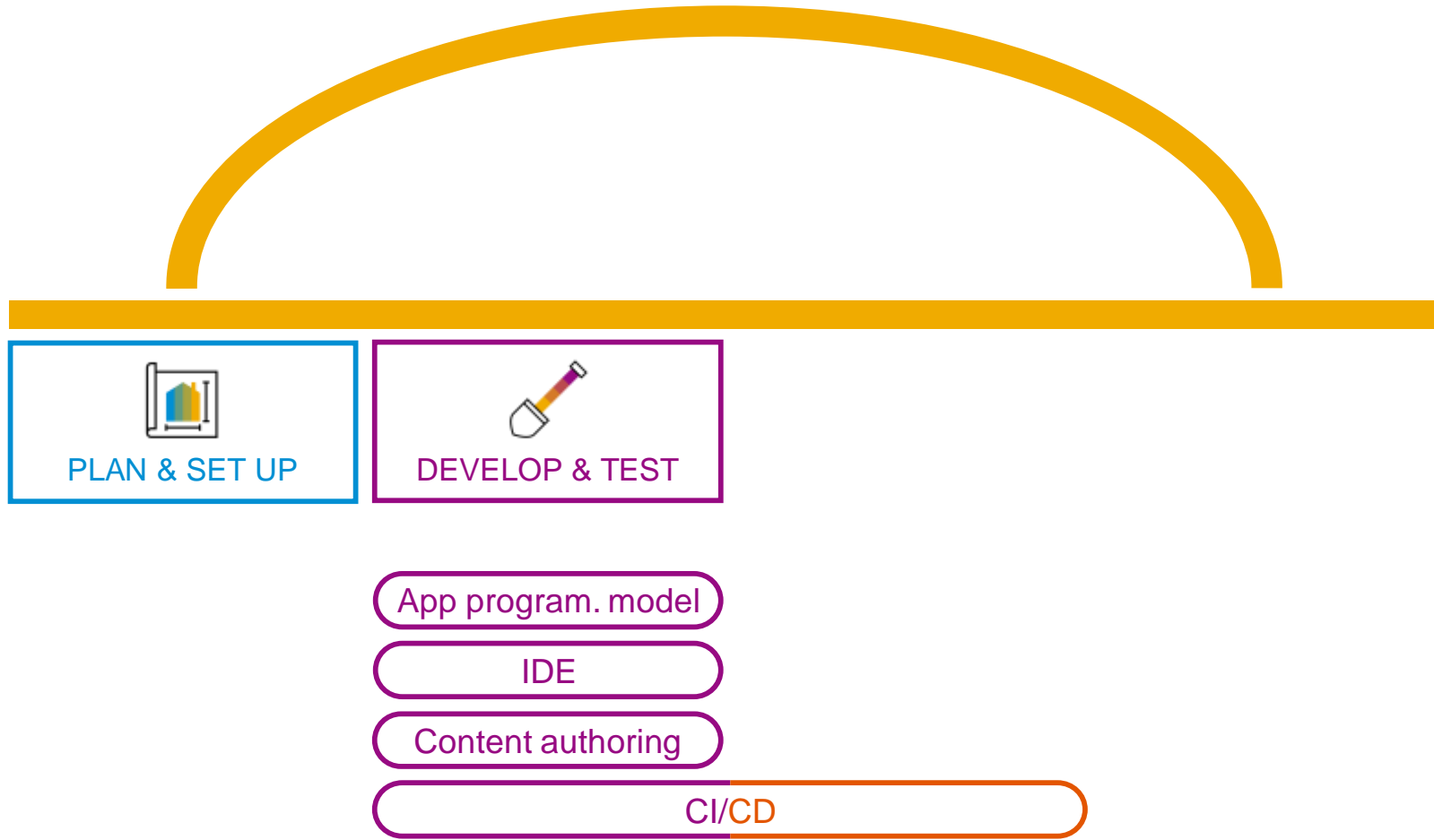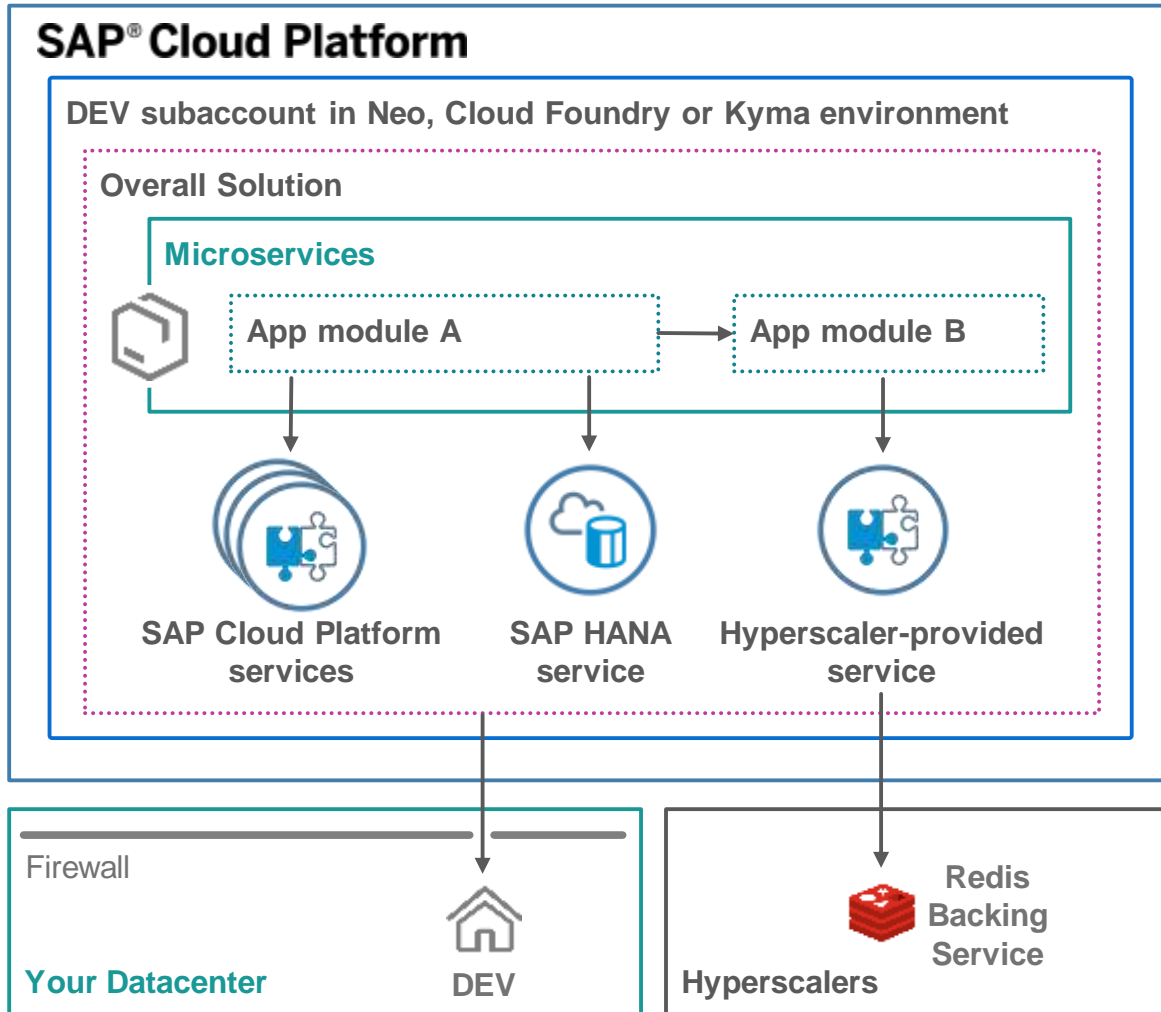
Example app

DevOps with SAP Cloud Platform
Delivery & change

DEV OPS

PLAN & SET UP

DEVELOP & TEST

DELIVER & CHANGE

Deployment mgmt

Transport mgmt

Hybrid change mgmt

CI/CD
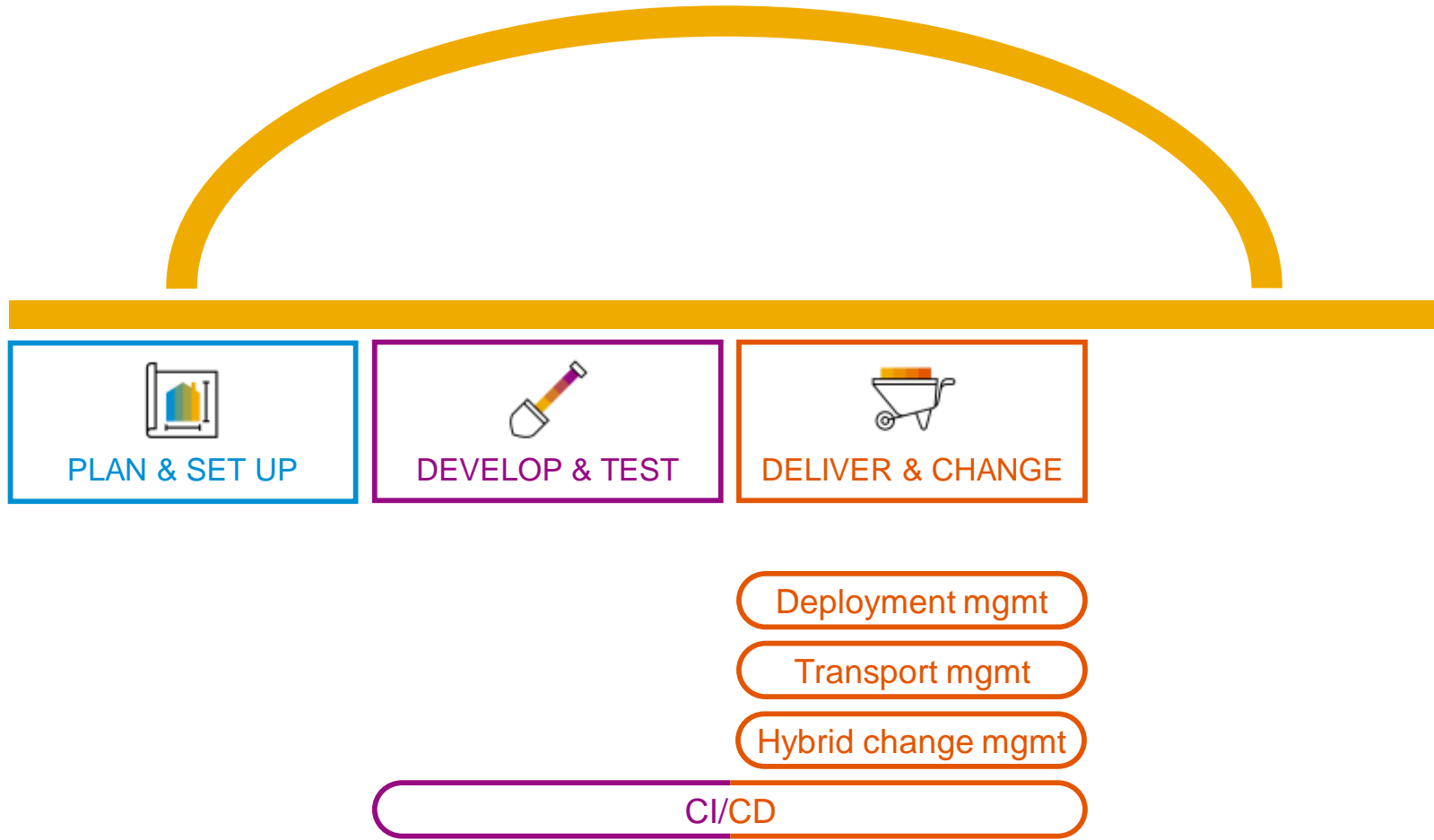
Example app
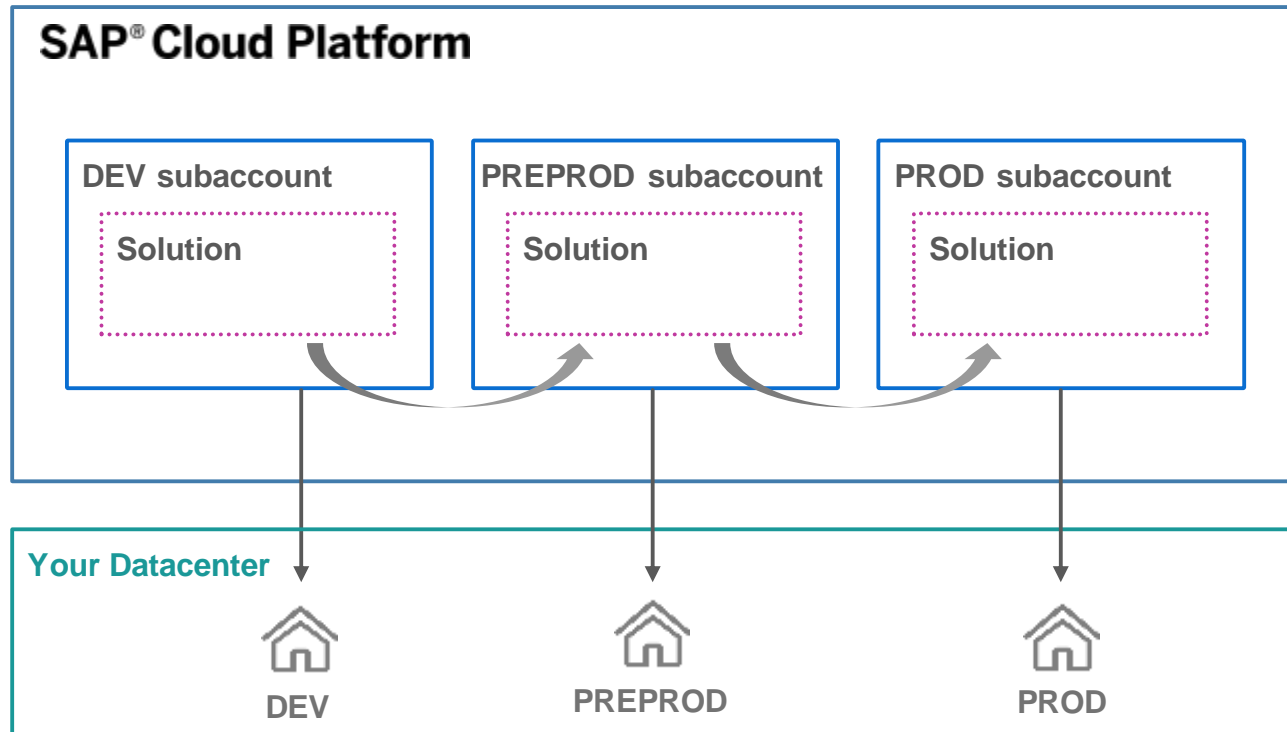
Deliver your changes toward production

Continuous Delivery

- Mainly **source-code-based** development
- Typically fully automated

Transport Management

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

SAP Cloud Platform Transport Management

- **Cloud-centric** solution desired
- Transport of cloud **development** and **application content** (also beyond MTA)

CTS+

- **ABAP-centric** landscape
- Transport of "Multitarget Application Archive **(MTA)**"-based cloud content **only** (in addition to on-premise content)

Deliver applications with transport management
Best practice and way forward for hybrid scenarios

Hybrid change mgmt

SAP® Cloud Platform

Your Datacenter

ChaRM/QGM for hybrid transports

SAP Solution Manager

ChaRM/QGM

CI/CD → Transport Management

CTS, CTS+, gCTS (gCTS integration planned)

DEV account | PRE-PROD account | PROD account

DEV | PRE-PROD | PROD

Transport Management service

CTS+ for on-premise and MTA transports*
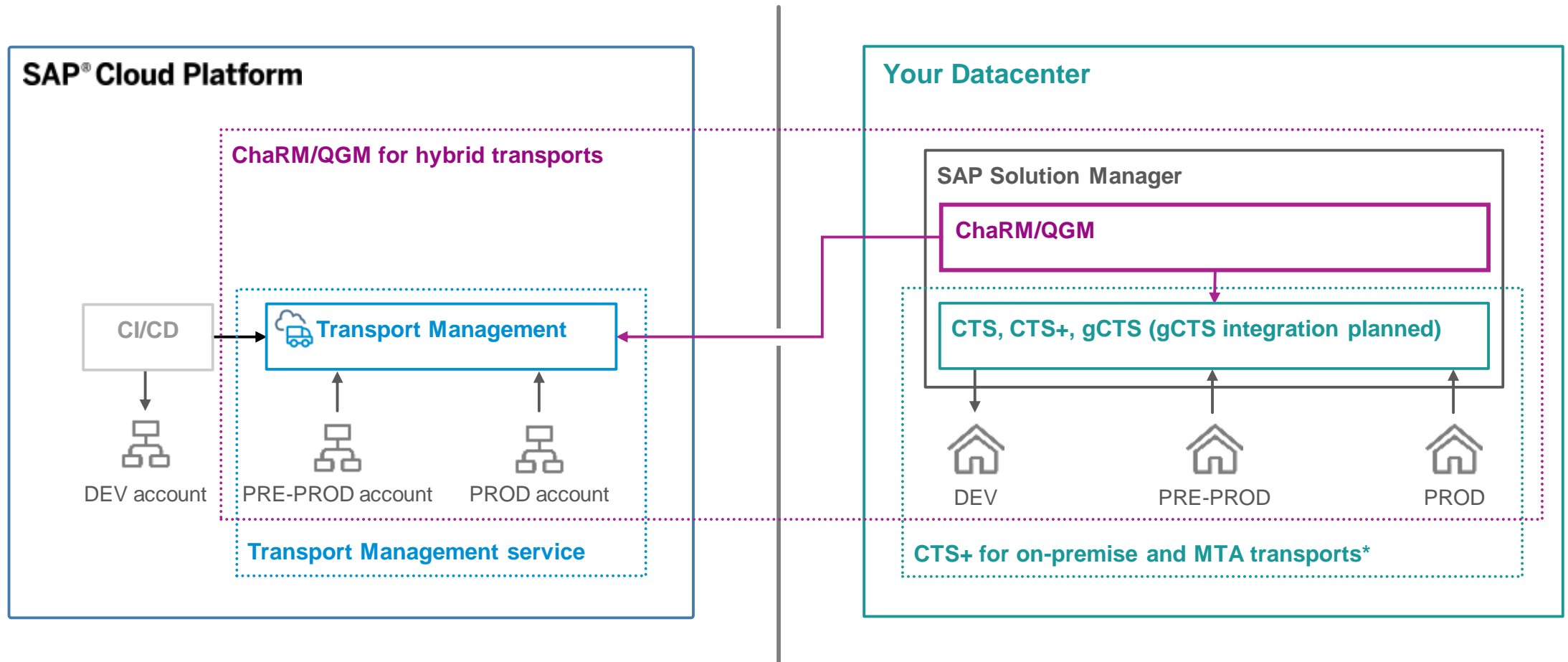
*) CTS+ can also handle MTA-based transports on SAP Cloud Platform (such as for SAP Cloud Platform Integration)

Deliver your changes toward production
Example for evolution of delivery approaches for a project

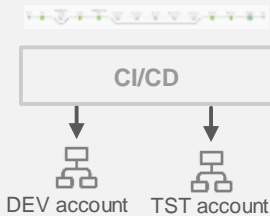**3** Hybrid interdependencies come up or get more important, so that you want to control them by synchronizing on-premise changes with SAP CP development

2 You release your project and want to have more control of your prod environment

1 You start your project with a pipeline

*Consider **project "Piper"** and **Continuous Integration and Delivery service** to set up your environment quickly*
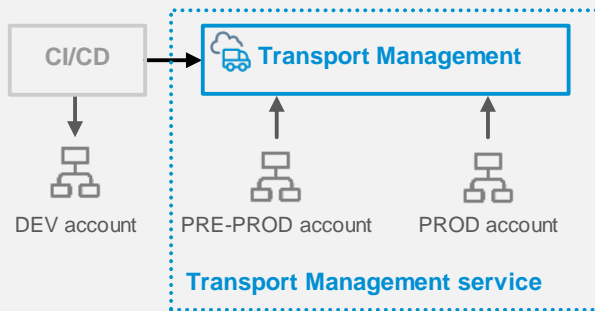
*Configure **automated hand-over** of release candidates from pipeline to transport mgmt*
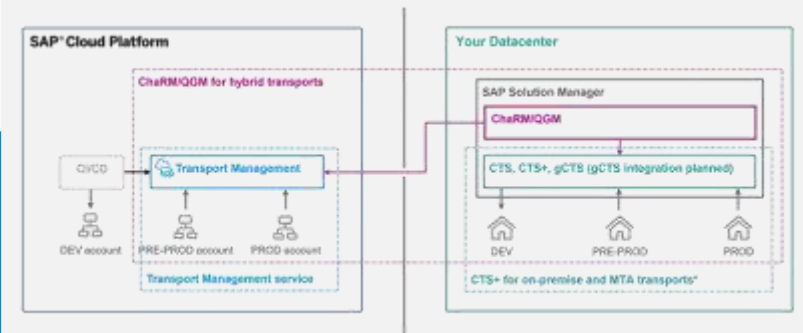
*Integrate transport management into **change management***

DevOps with SAP Cloud Platform
Monitor & operate

DEV **OPS**

| PLAN & SET UP | DEVELOP & TEST | DELIVER & CHANGE | MONITOR & OPERATE |

Monitoring/logging

Alerting

Ops automation

Hybrid supportability

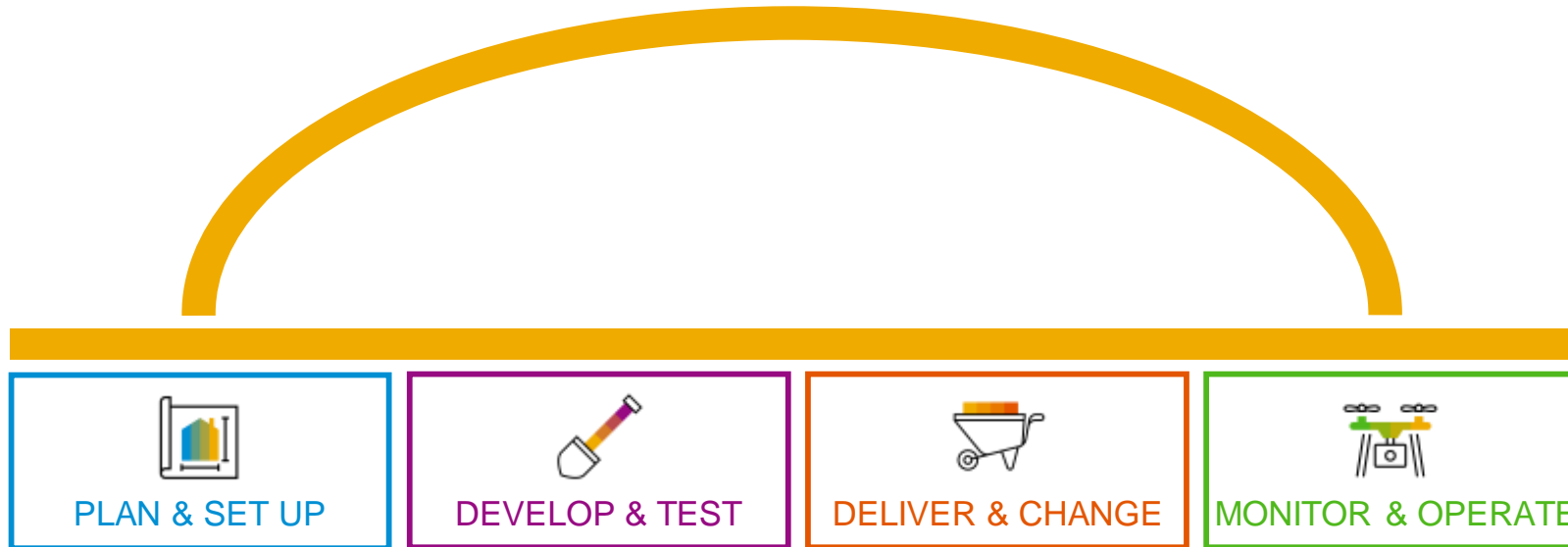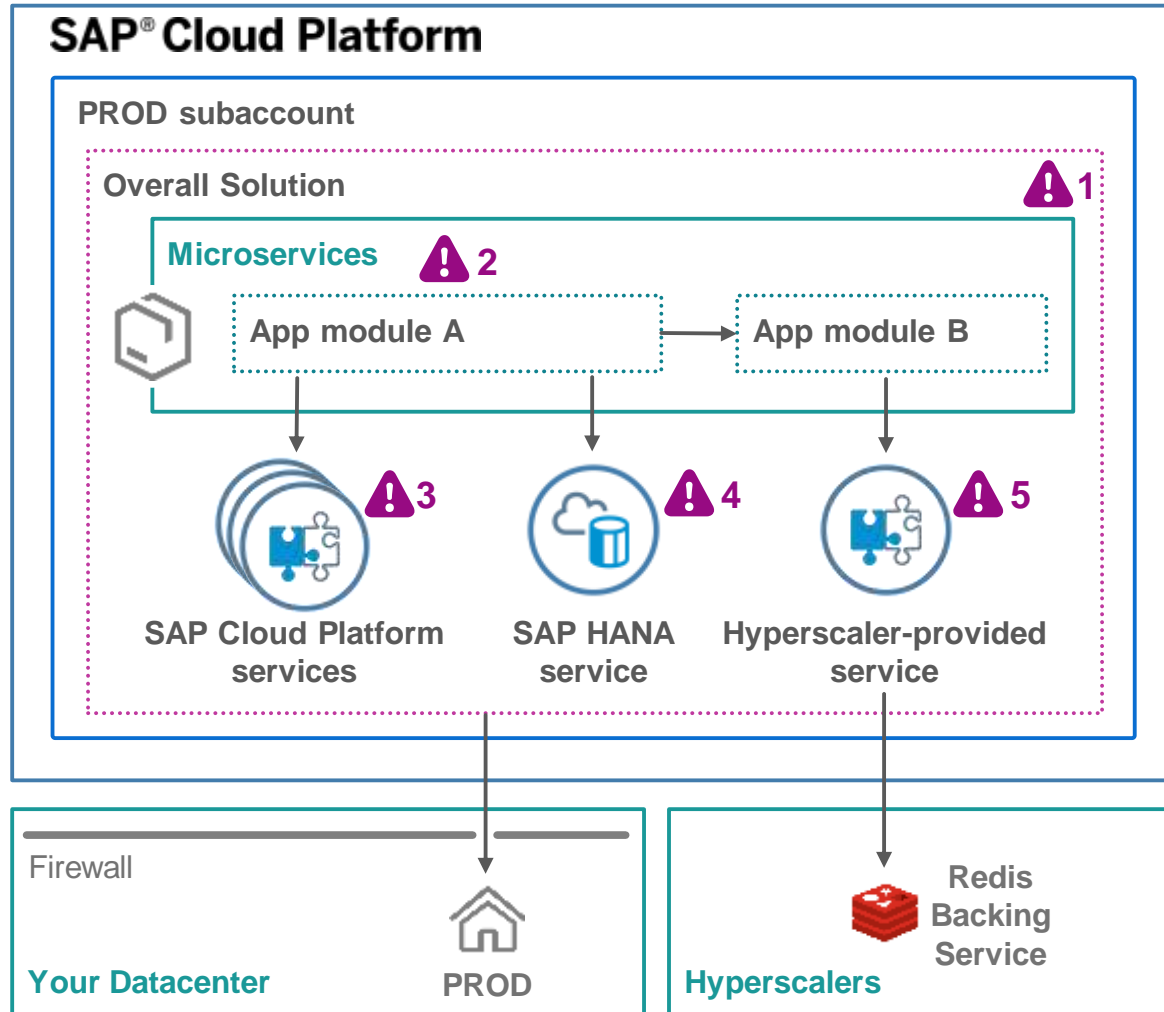# Cloud-native problem space for Site Reliability Engineering (SRE)

SAP Cloud Platform Alert Notification

SRE team

Automation Pilot service

Alert Notification service

✓ **1** Keep their solution up 24x7

✓ **2** Observe & control microservices

✓ **3** Configure & troubleshoot SAP services

✓ **4** Lifecycle & troubleshoot DB

✓ **5** Configure & troubleshoot IaaS services

Send alerts from SAP CP to different recipients/channels

SAP Cloud Platform Automation Pilot

SRE Team

Automation Pilot service

React to alerts; automate DevOps
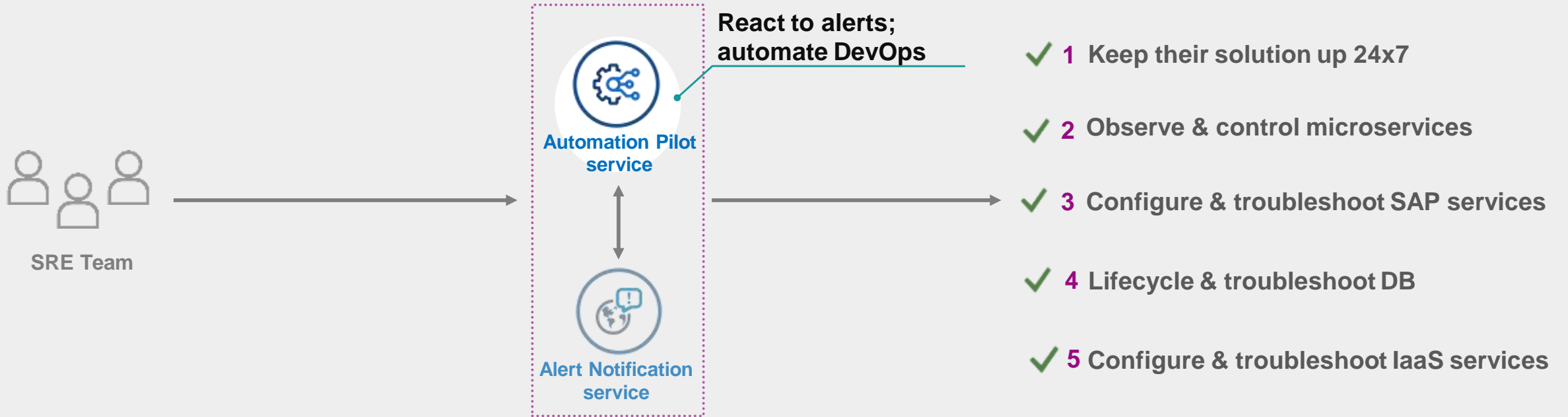
Alert Notification service

✓ **1** Keep their solution up 24x7

✓ **2** Observe & control microservices

✓ **3** Configure & troubleshoot SAP services

✓ **4** Lifecycle & troubleshoot DB

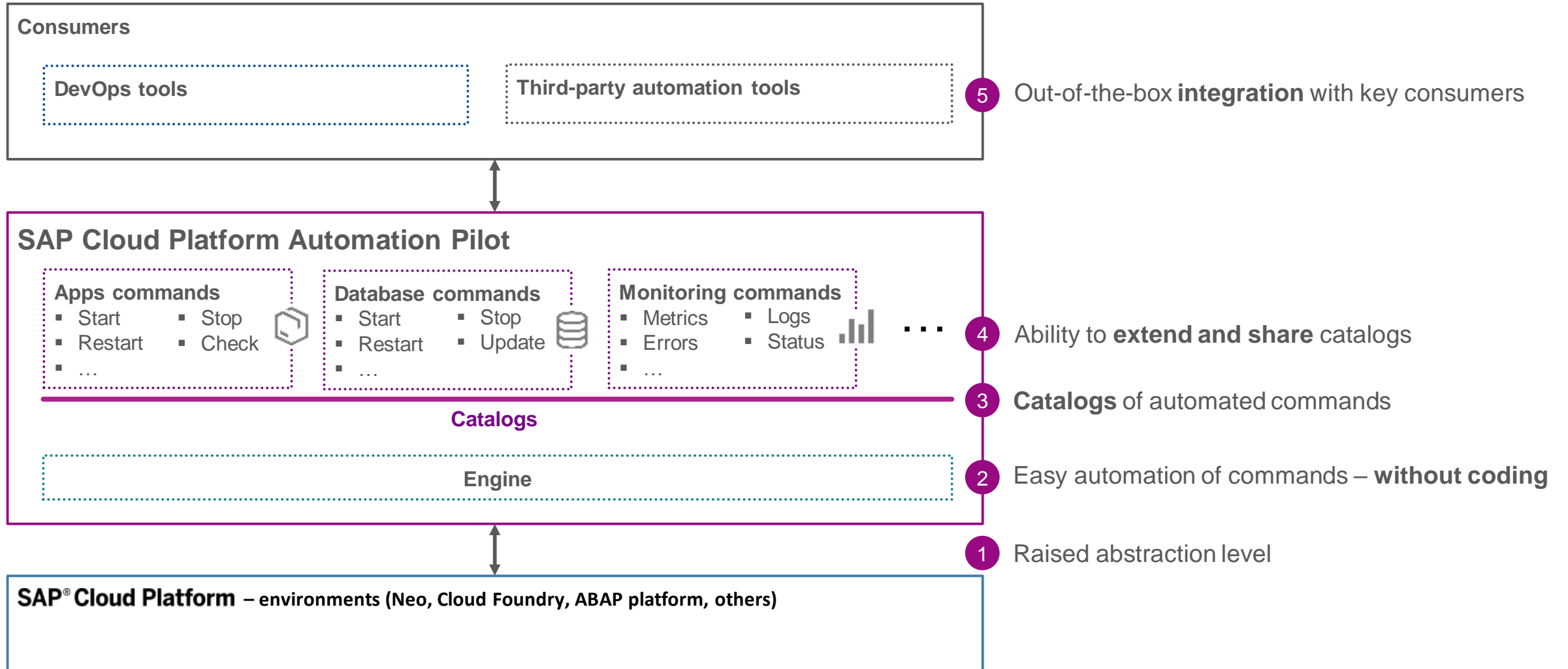✓ **5** Configure & troubleshoot IaaS services

SAP Cloud Platform Automation Pilot

Consumers

DevOps tools

Third-party automation tools

(5) Out-of-the-box **integration** with key consumers

SAP Cloud Platform Automation Pilot

Apps commands
- Start
- Restart
- …
- Stop
- Check

Database commands
- Start
- Restart
- …
- Stop
- Update

Monitoring commands
- Metrics
- Errors
- …
- Logs
- Status

· · ·

(4) Ability to **extend and share** catalogs

Catalogs

(3) **Catalogs** of automated commands

Engine

(2) Easy automation of commands – **without coding**

(1) Raised abstraction level

SAP® Cloud Platform – environments (Neo, Cloud Foundry, ABAP platform, others)
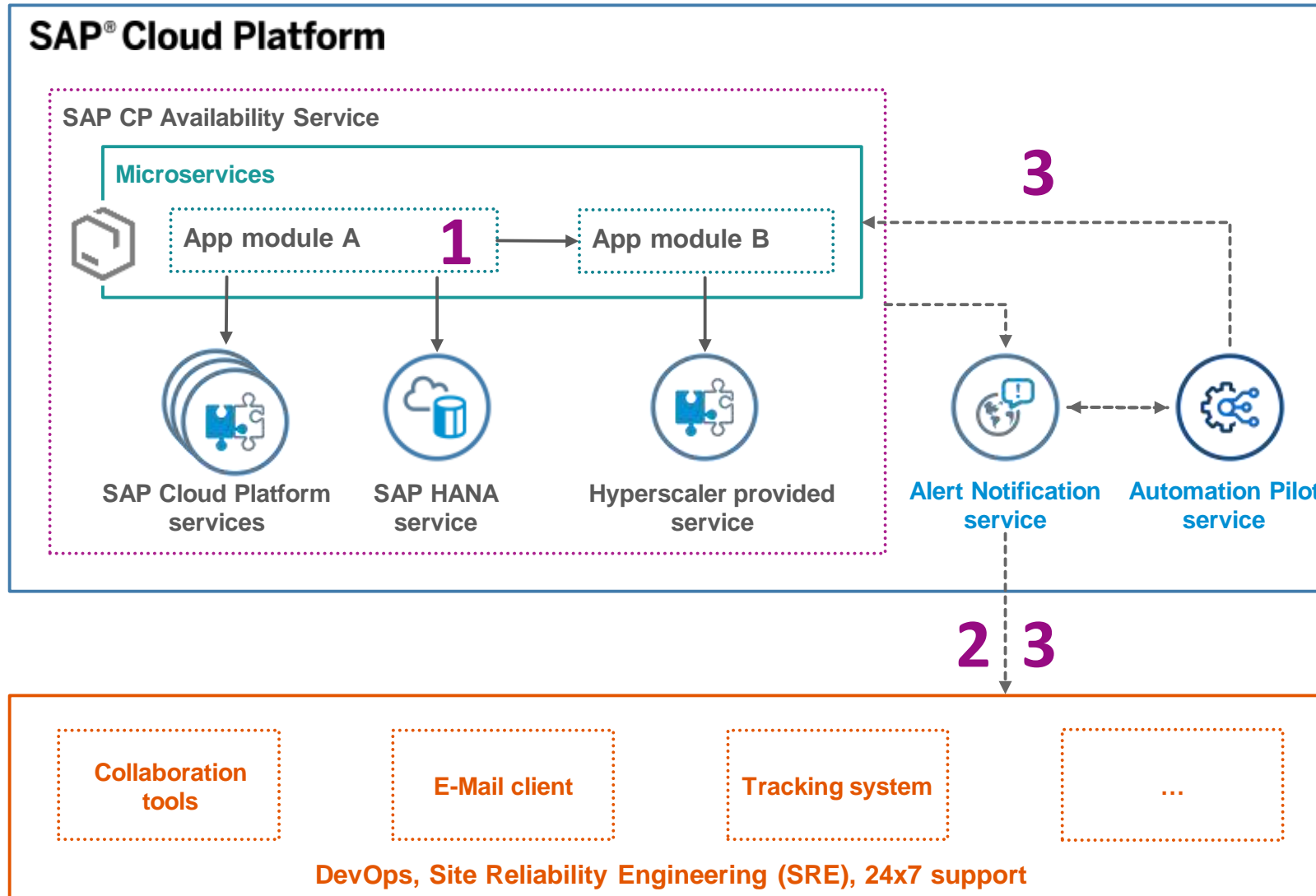
Example: complement alerts with automation

Ops automation
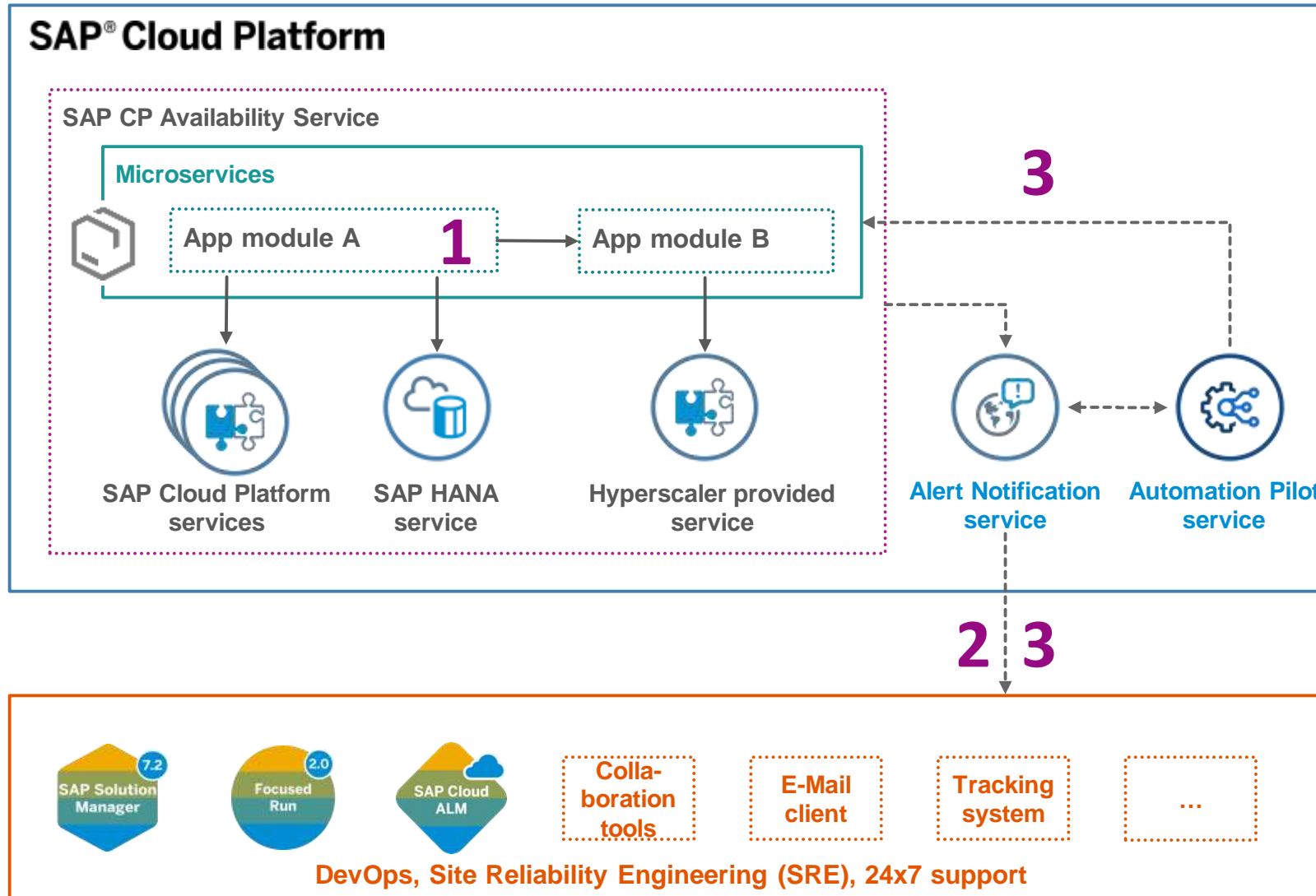

1 Event (e.g. service stops working)

2 Notify + trigger

3 Recover service + notify

Example: complement alerts with automation

SAP® Cloud Platform

SAP CP Availability Service

Microservices

App module A ──1──▶ App module B

SAP Cloud Platform services

SAP HANA service

Hyperscaler provided service

Alert Notification service

Automation Pilot service

3

2 3

DevOps, Site Reliability Engineering (SRE), 24x7 support

SAP Solution Manager 7.2

Focused Run 2.0

SAP Cloud ALM

Colla-boration tools

E-Mail client

Tracking system

...

1 Event (e.g. service stops working)

2 Notify + trigger

3 Recover service + notify

Monitor and operate your hybrid application
Hybrid supportability offerings

Hybrid supportability

Integration Monitoring

Ensure reliable data exchange between SAP on-premise and cloud

Trace Analysis

Trace performance of SAP Cloud Platform apps, based on exposed statistics

SAP Solution Manager 7.2

Focused Run 2.0

User Monitoring

Ensure availability and performance of SAP Cloud scenarios from customer on-premise locations

Exception Management

Forward business-critical exceptions from SAP Cloud to on-premise operations

Hybrid SAP operations

Approach to extend towards hybrid operations from on-premise center of gravity

**Existing
on-premise ops**

**Upcoming
cloud scenarios**

SAP Solution Manager 7.2

Focused Run 2.0

SAP® Cloud Platform

DEV

AUTOMATE & OPTIMIZE

OPS

PLAN & SET UP

DEVELOP & TEST

DELIVER & CHANGE

MONITOR & OPERATE
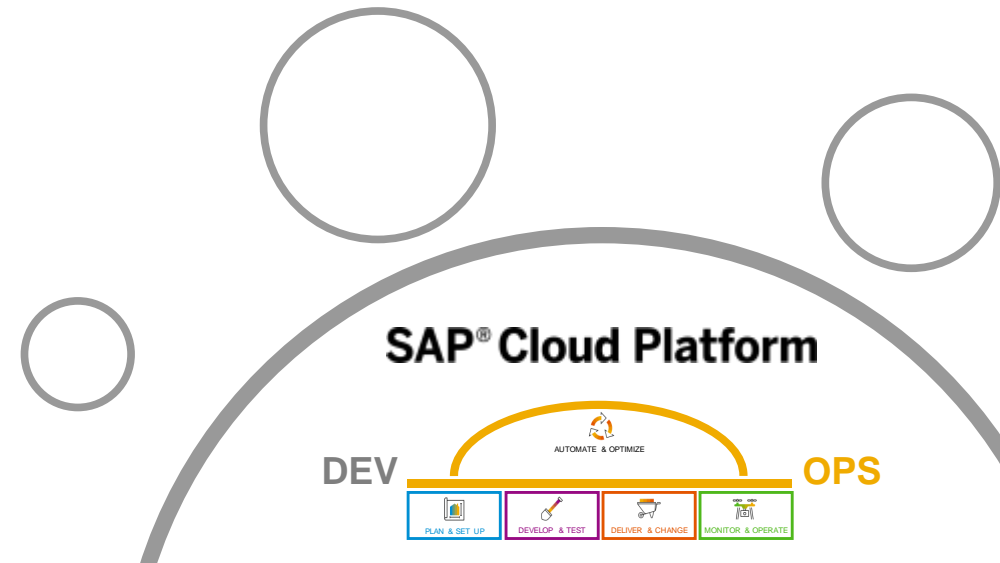
Hybrid SAP operations

Approach to extend towards hybrid operations from on-premise center of gravity

Existing on-premise ops

Upcoming cloud scenarios

Proposed approach:
Smooth the transition by extending existing on-premise ops processes with cloud aspects

- Retaining center of gravity around on-premise
- Optionally with defined hand-over from cloud-native processes

7.2
SAP Solution Manager

2.0
Focused Run

SAP® Cloud Platform

DEV   AUTOMATE & OPTIMIZE   **OPS**

PLAN & SET UP   DEVELOP & TEST   DELIVER & CHANGE   MONITOR & OPERATE
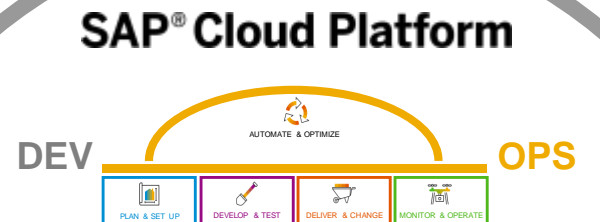
"Offers **hybrid** lifecycle management support"

Hybrid SAP operations
Exemplary options to extend towards hybrid operations

Hybrid operations

7.2 SAP Solution Manager

2.0 Focused Run

AUTOMATE & OPTIMIZE

PLAN & SET UP | DEVELOP & TEST | DELIVER & CHANGE | MONITOR & OPERATE
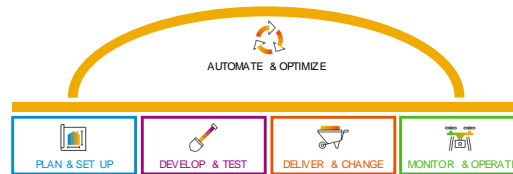
SAP® Cloud Platform

Proposed approach:
Smooth the transition by extending existing on-premise ops processes with cloud aspects

- Retaining center of gravity around on-premise
- Optionally with defined hand-over from cloud-native processes

DELIVER & CHANGE

- Use transport mgmt – to integrate SAP CP into **change mgmt,** optionally with **defined hand-over from CI/CD** pipelines

MONITOR & OPERATE

- Forward SAP CP alerts towards SAP Solution Manager
- No-coding approach for technical ops automation
- Hybrid supportability

SAP Cloud ALM for operations

Detect	Diagnose	Correct	Automate
Monitoring	**Analytics and intelligence**	**Event and alert management**	**Operation automation**
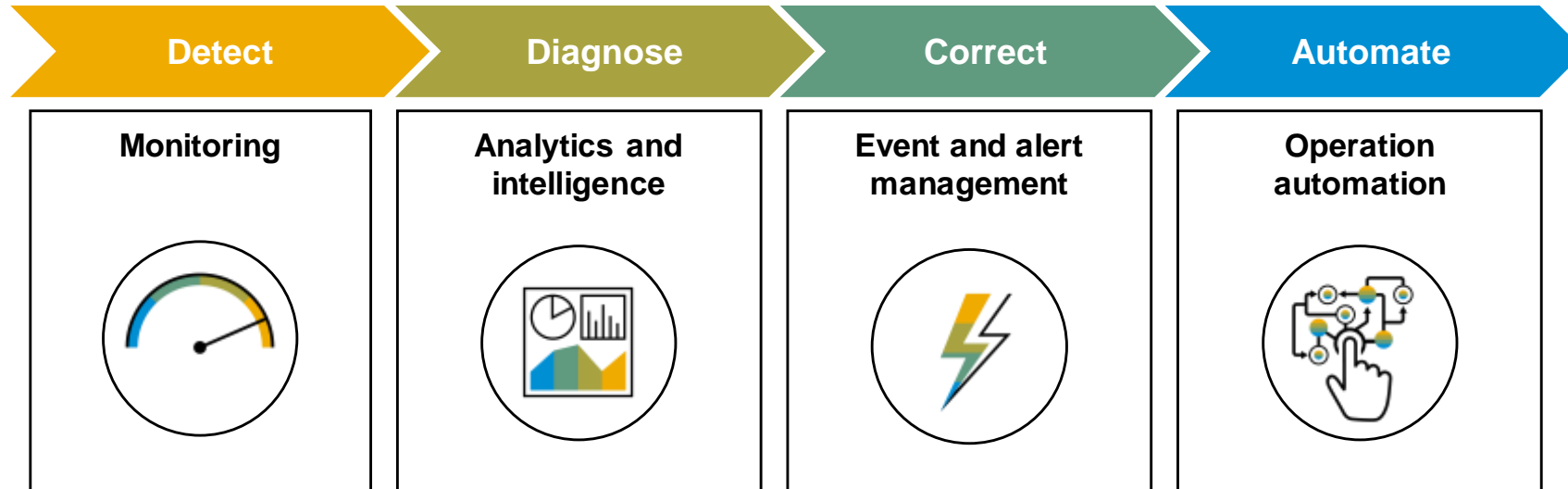
DevOps with SAP Cloud Platform
Automate & optimize

AUTOMATE & OPTIMIZE

Integrated DevOps mgmt

DEV OPS

PLAN & SET UP

DEVELOP & TEST

DELIVER & CHANGE

MONITOR & OPERATE
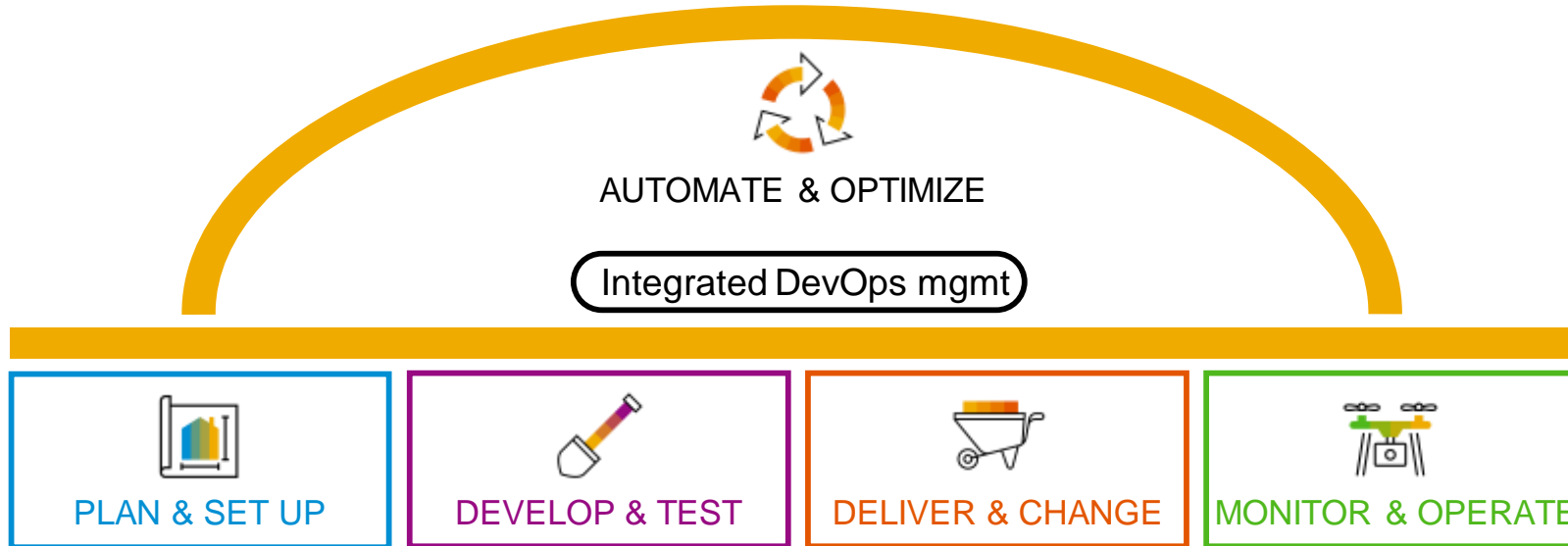
Automate & operate
Preview at planned service for integrated DevOps management

Mockup

Summary

DevOps with SAP

AUTOMATE & OPTIMIZE

DEV — OPS

PLAN & SET UP	DEVELOP & TEST	DELIVER & CHANGE	MONITOR & OPERATE
Guidance	App program. model	Deployment mgmt	Monitoring/logging
Account setup	IDE	Transport mgmt	Alerting
Toolchain setup	Content authoring	Hybrid change mgmt	Ops automation
CI/CD enablement	CI/CD		Hybrid supportability
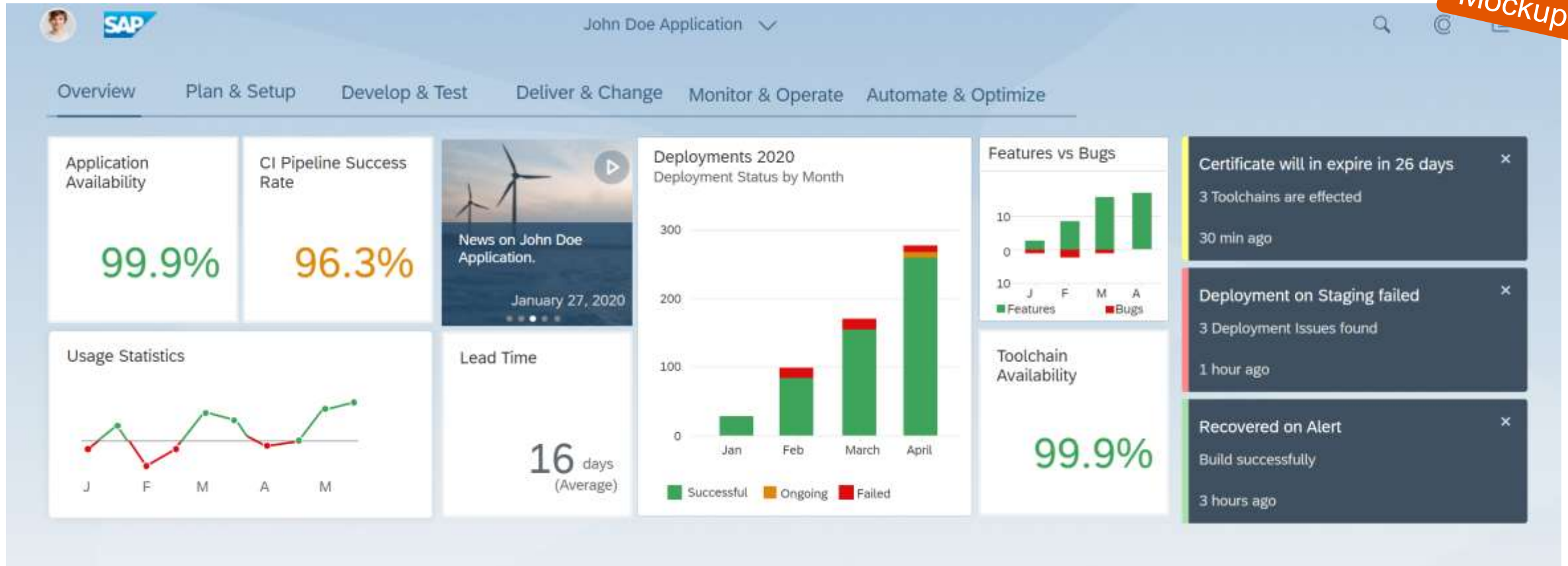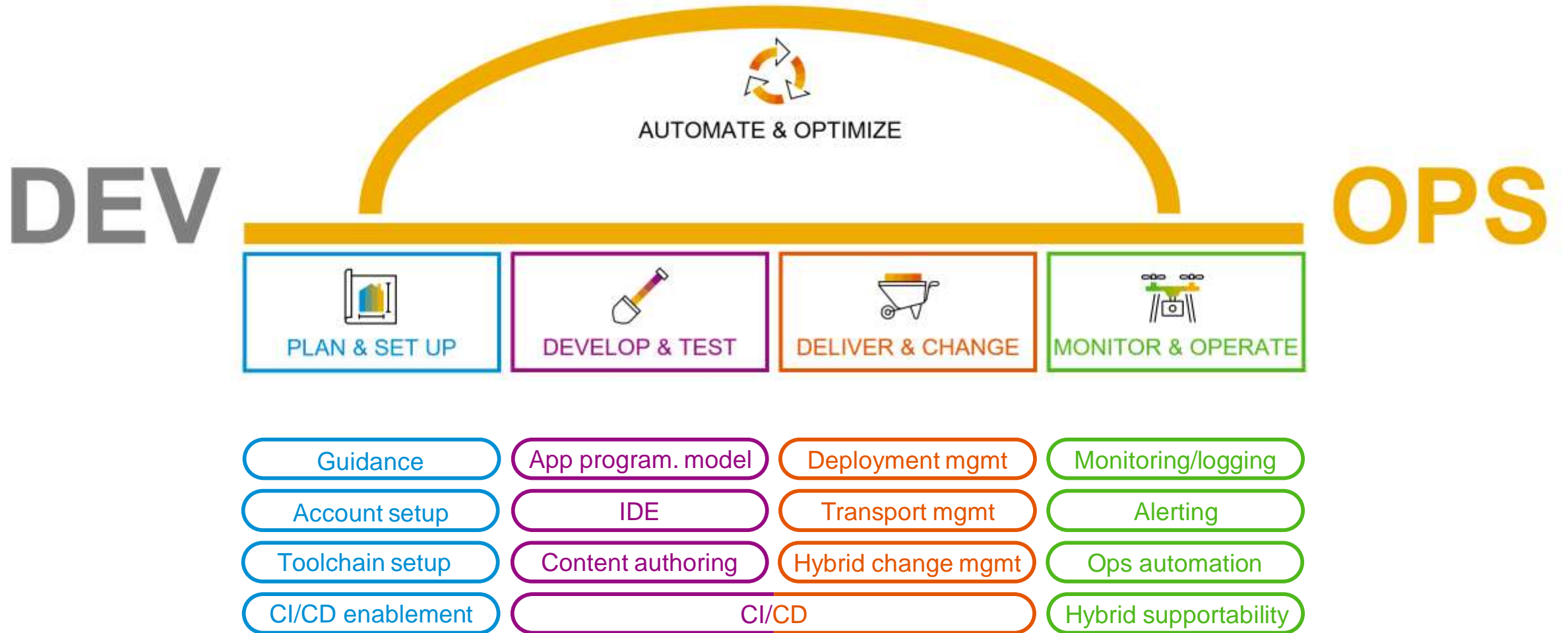
DevOps with SAP Cloud Platform

Corner stones of our offering

Covers the **entire lifecycle**, not just CI/CD

Guidance, not just tools

NEO

CLOUD **FOUNDRY**

CABAP

Spans the different SAP Cloud Platform **environments**

DEV   OPS

AUTOMATE & OPTIMIZE

PLAN & SET UP | DEVELOP & TEST | DELIVER & CHANGE | MONITOR & OPERATE

Open

Offers **hybrid** lifecycle management support

Multi-cloud enabled

aws   Microsoft Azure   Google Cloud   Alibaba Cloud

Integrated into SAP Cloud Platform toolset

Call to **action**

Learn more about DevOps with SAP:

- DevOps SAP Community page

- gCTS documentation page and central SAP Note 2821718

- SAP Help Portal page about DevOps with SAP Cloud Platform
- Blog post series around efficient DevOps with SAP Cloud Platform
- Learning Journey – DevOps with SAP Cloud Platform
- Best Practices for SAP Cloud Platform guide

Try out our services on SAP Cloud Platform:

- Set up our services in the trial environment for SAP Cloud Platform
- Run our missions in SAP Cloud Platform Discovery Center
(such as for transport management)

Contribute to our SAP Continuous Influence session

SAP Community Call series

SAP Continuous Influence

Are you missing any SAP Cloud Platform features in the area of platform foundation?

Contribute to our SAP Continuous Influence session: https://influence.sap.com/sap/ino/#campaign/2277
- Browse through existing improvement requests submitted by other customers and partners & vote for them
- Submit own requests
- Requests that reach the vote threshold will be assessed in the next review cycle

Available categories in the *SAP Cloud Platform – Platform Foundation* session:
- Multi-cloud
- Security services
- CI/CD
- Lifecycle management

Thank you.

Contact information:

Boris Zarske
Product Manager – SAP SE
Boris.Zarske@sap.com

THE BEST RUN **SAP**

Follow us

THE BEST RUN **SAP**

SAP folgen auf

www.sap.com/germany/contactsap

THE BEST RUN SAP