Efficient DevOps with SAP Cloud Platform

Boris Zarske, Harald Stevens, Kiril Gavrailov – SAP
October 22nd, 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.

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

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.

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Recap

Introduction to DevOps

Recap

“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/

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps key principals

Culture

Automation

Lean

Measurement

Sharing

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

“As trusted advisor, we enable customers to apply DevOps principles to their SAP technology stack (and beyond).

Along the CALMS principles, we provide best practices, services, tools, trainings, and knowledge exchange.”

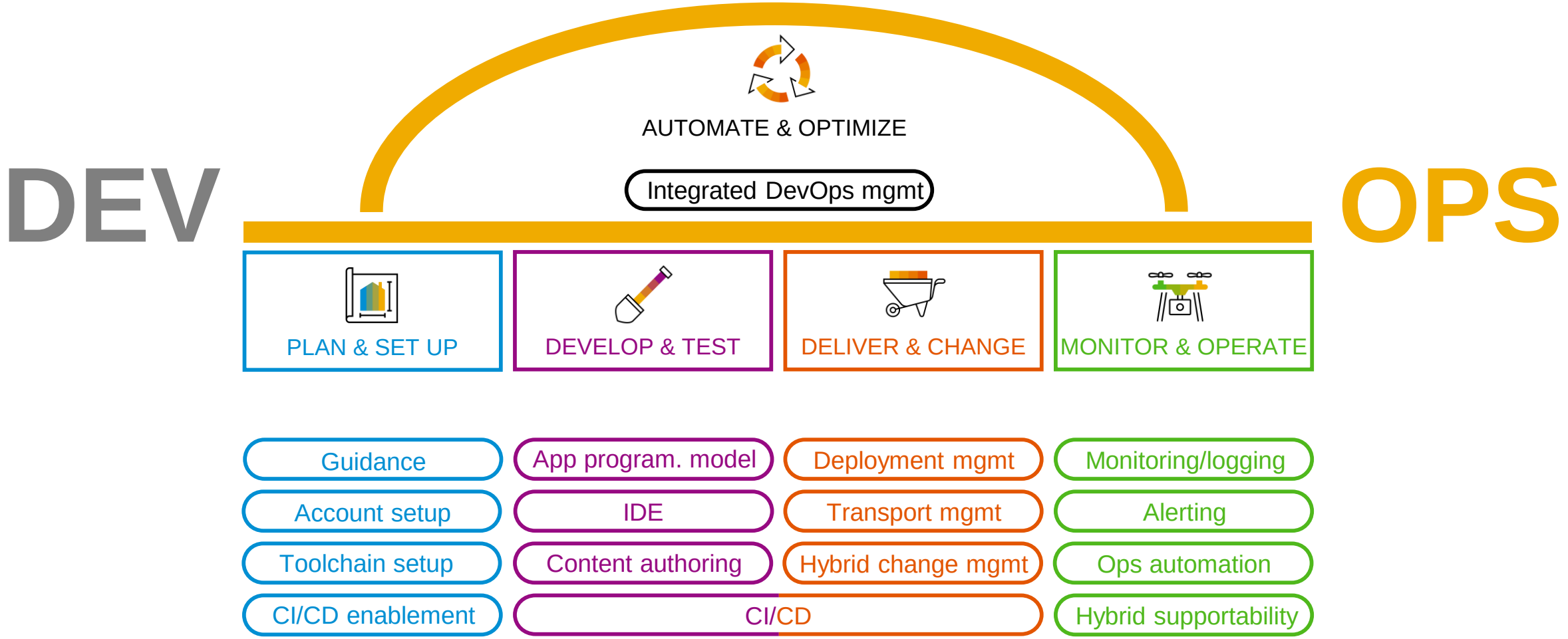
SAP DevOps vision statement

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP Cloud Platform

DevOps with SAP Cloud Platform

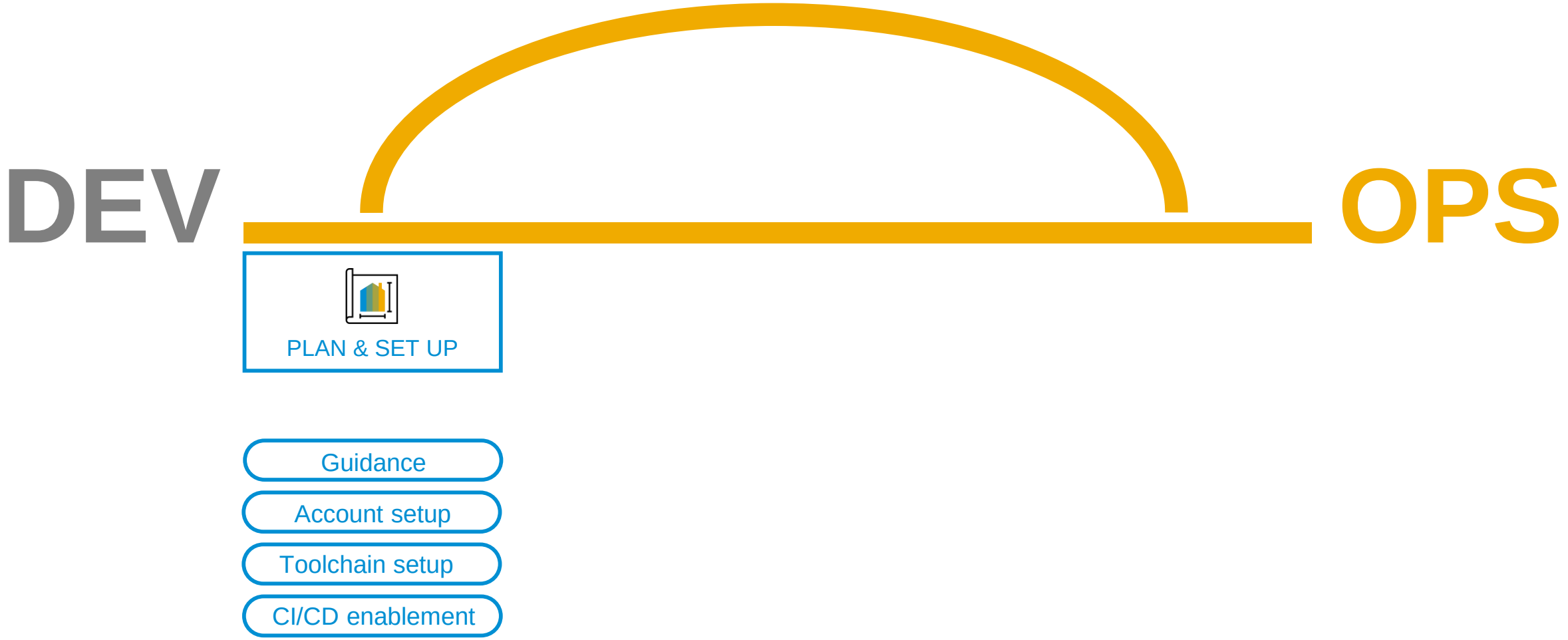
Categories and service portfolio



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

DevOps with SAP Cloud Platform

Plan & set up



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

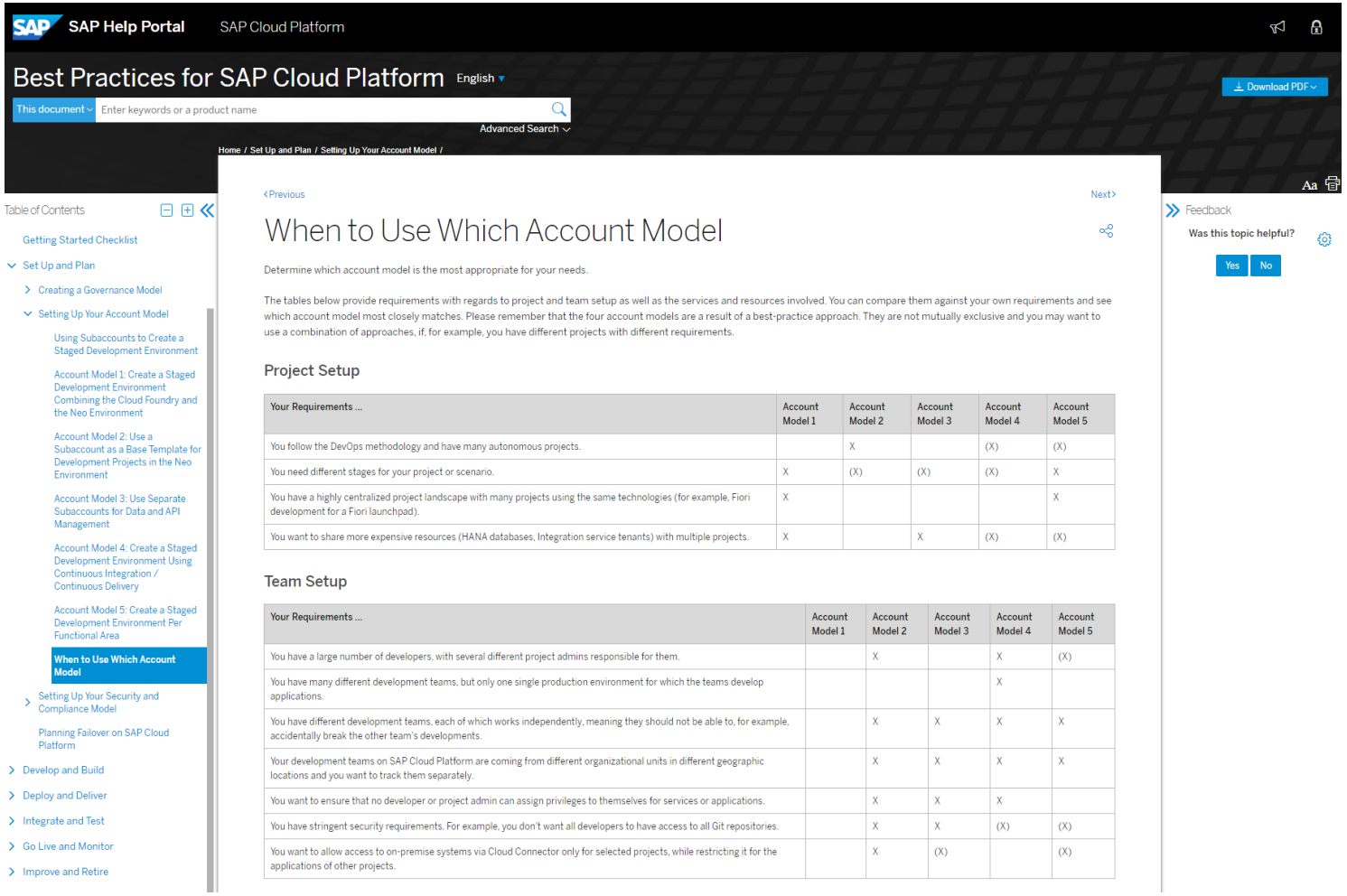
Best practices for SAP Cloud Platform guide

Guidance

Available in SAP Help Portal

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

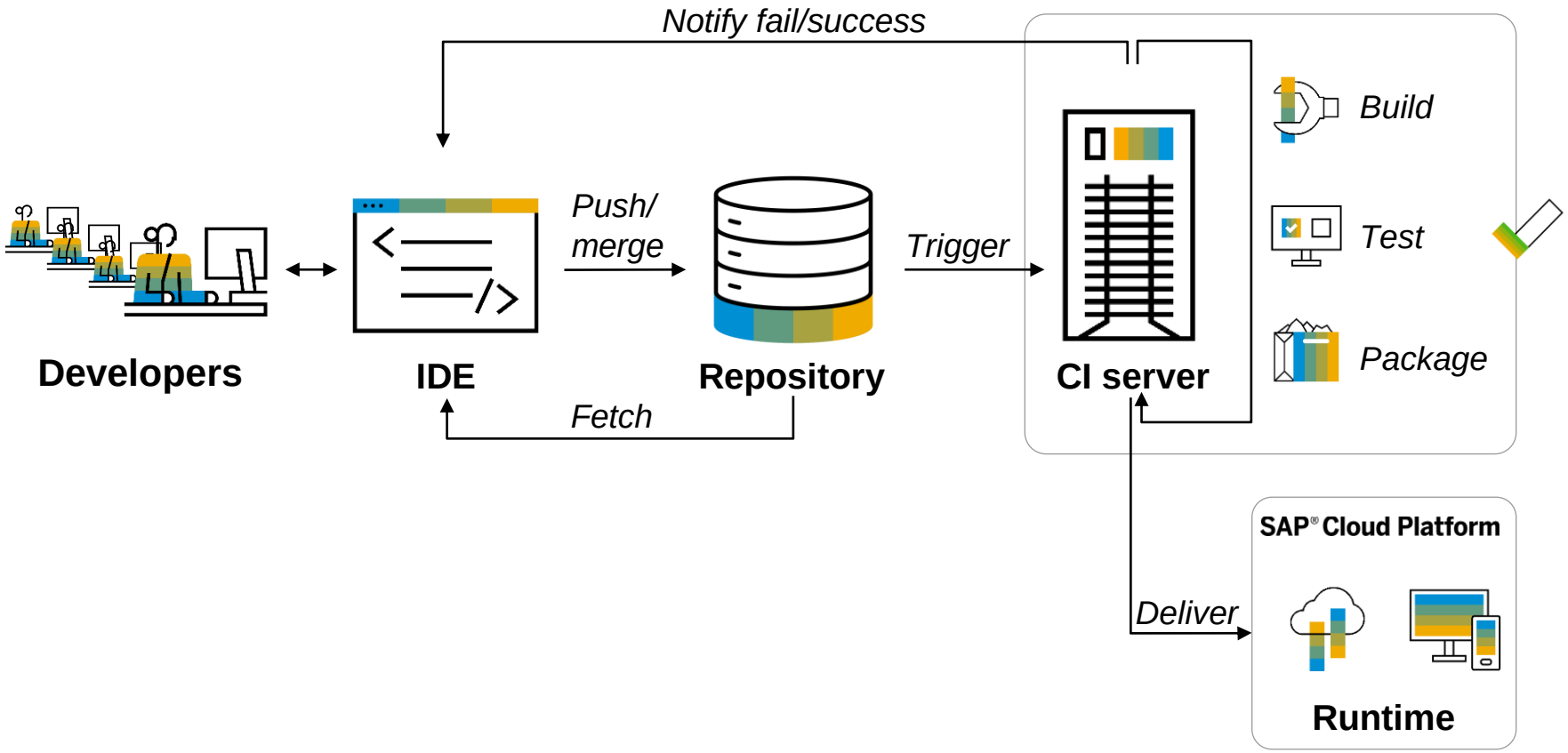
- Covers further aspects around **lifecycle management**



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

How tools enable DevOps

Example for automation as driver for DevOps



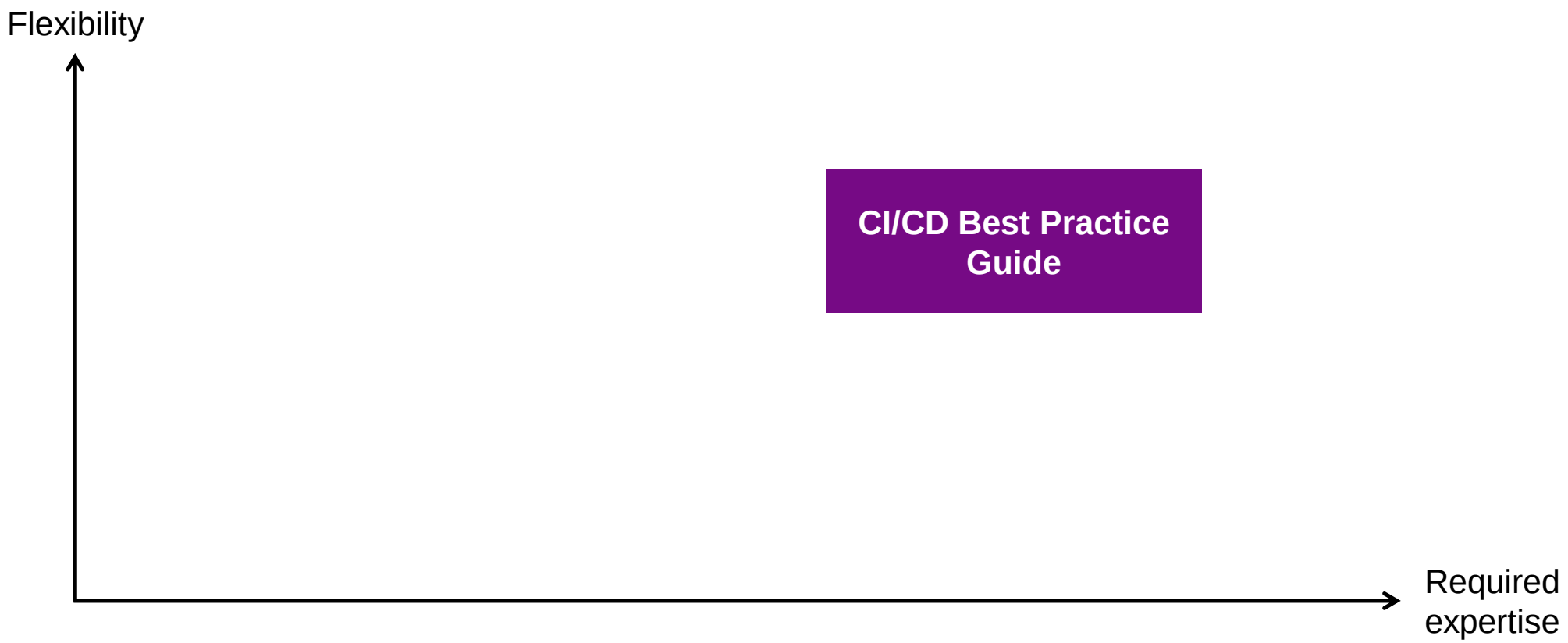
Continuous Integration and Delivery (CI/CD)

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Continuous Integration and Delivery

SAP offerings that ease applying CI/CD for your projects

CI/CD enablement



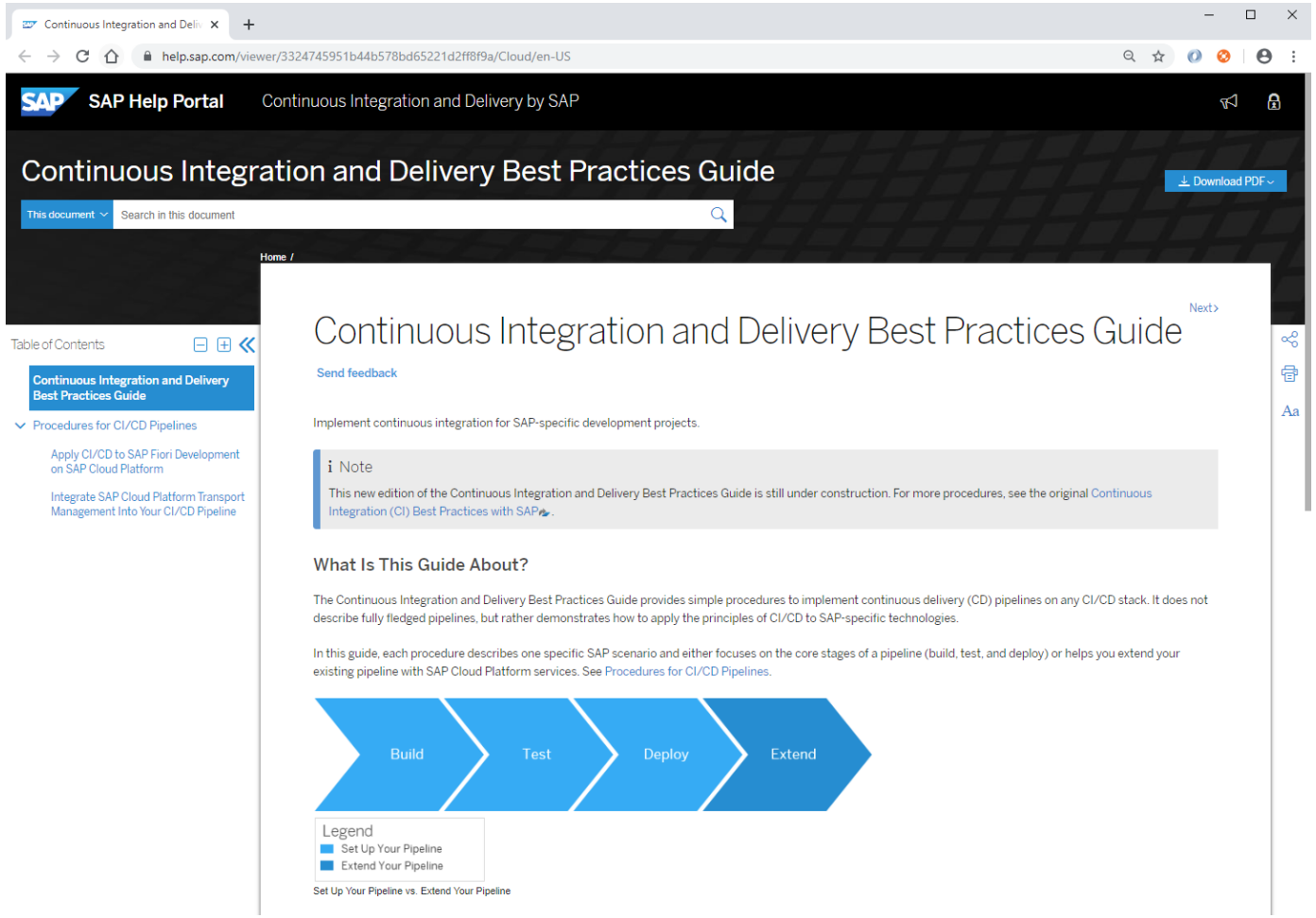
SAP Solutions for Continuous Integration and Delivery

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Continuous Integration and Delivery

Continuous Integration and Delivery Best Practices Guide

CI/CD enablement



- 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**

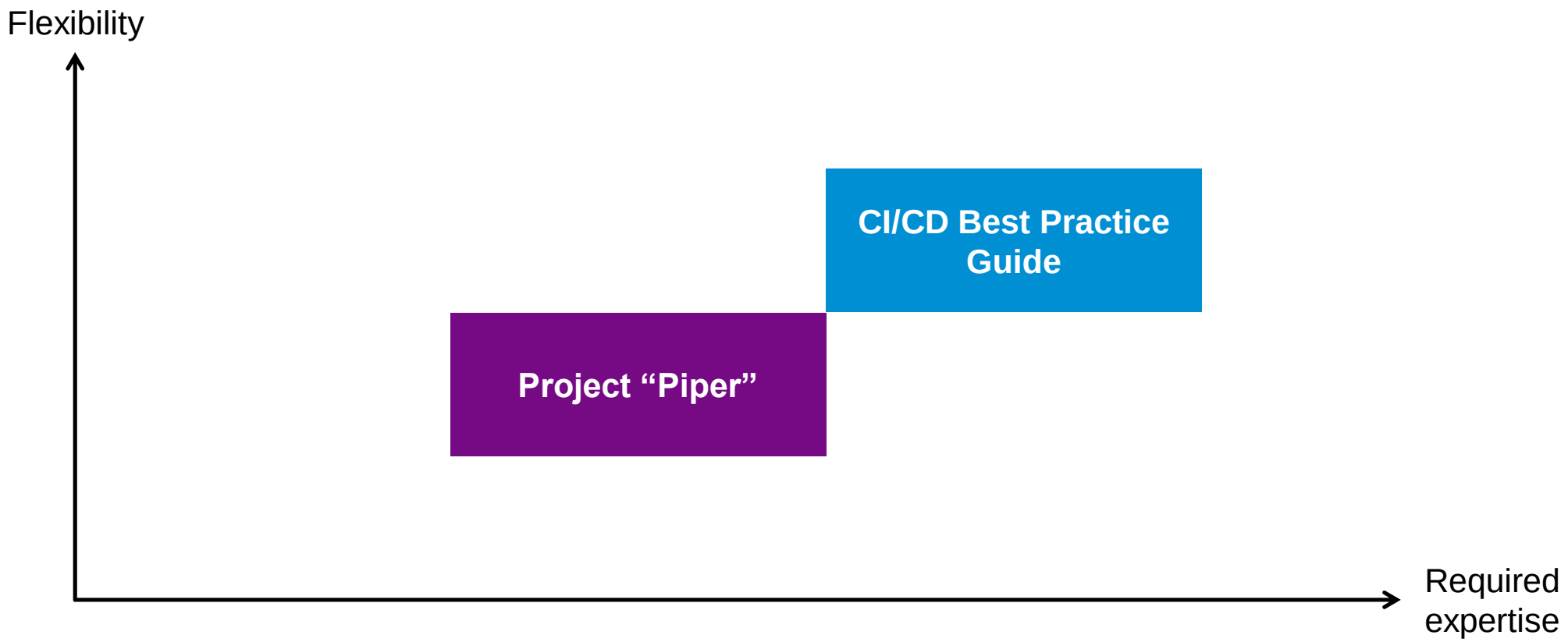
Continuous Integration and Delivery Best Practices Guide

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Continuous Integration and Delivery

SAP offerings that ease applying CI/CD for your projects

CI/CD enablement



SAP Solutions for Continuous Integration and Delivery

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Continuous Integration and Delivery

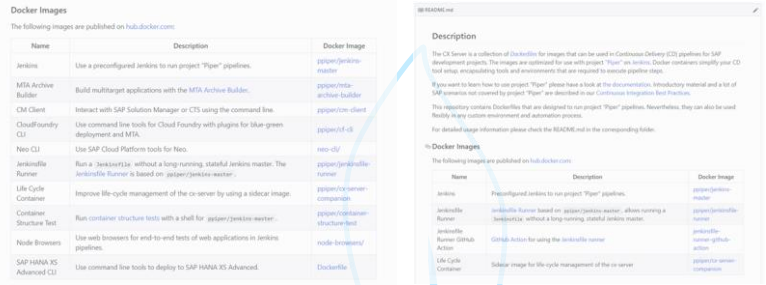
Project "Piper"

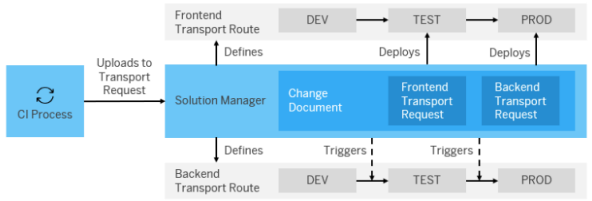
CI/CD enablement

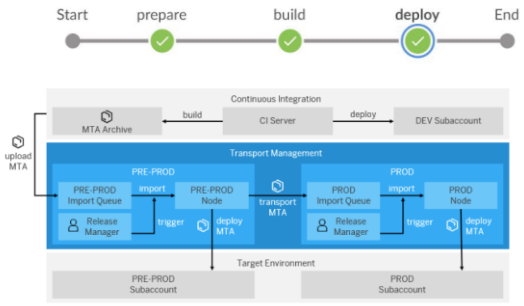
Project "Piper"

sap.github.io/jenkins-library/

Containerized tools



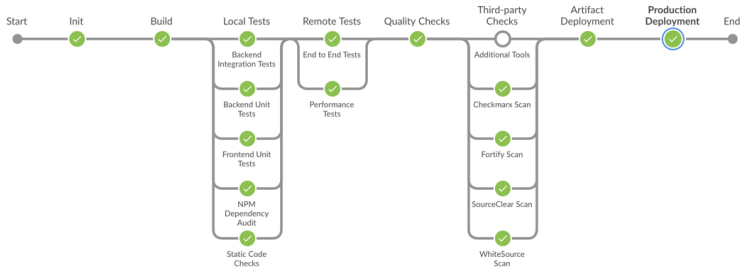


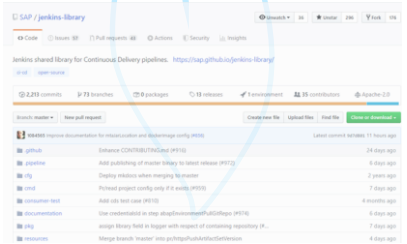


Typical scenarios

General purpose pipeline

SAP Cloud SDK pipeline





Step library

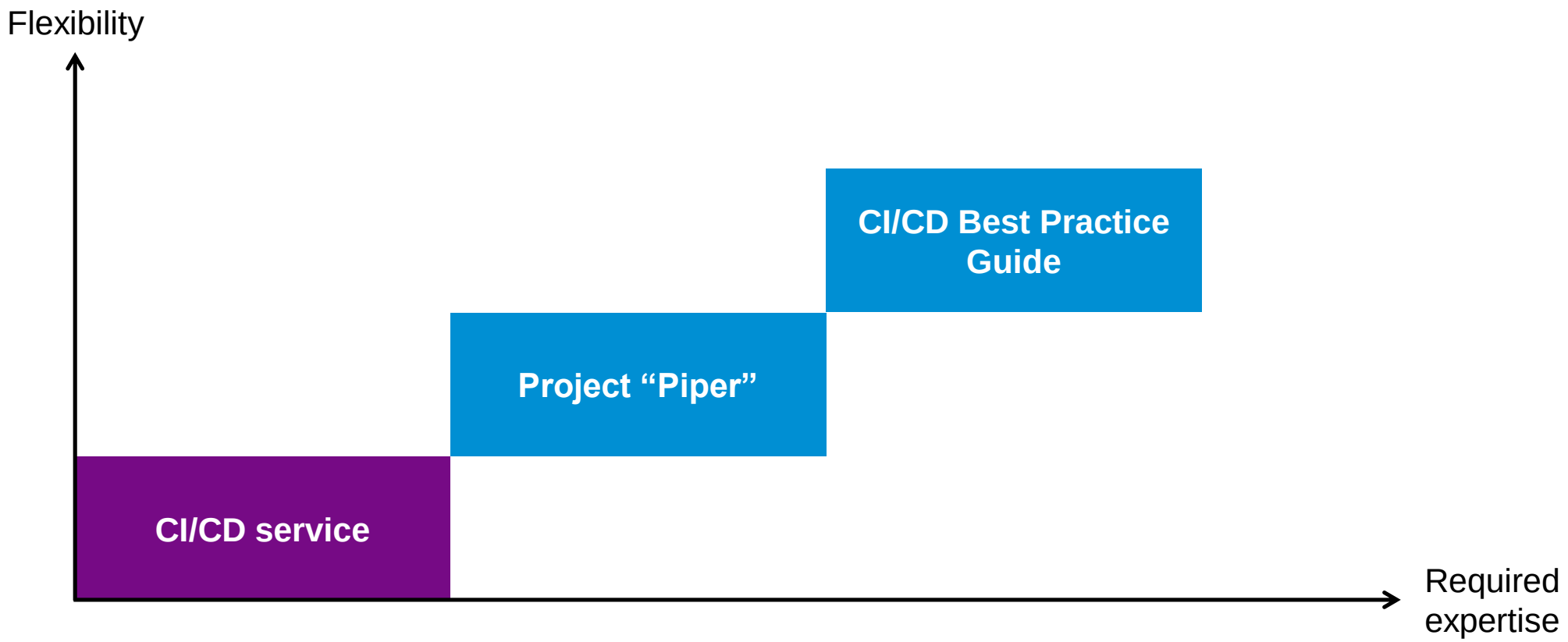
This presentation and SAP's strategy and possible future developments are subject to change and may be changed by SAP at any time for any reason without notice. This document is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of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

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Continuous Integration and Delivery

SAP offerings that ease applying CI/CD for your projects

CI/CD enablement



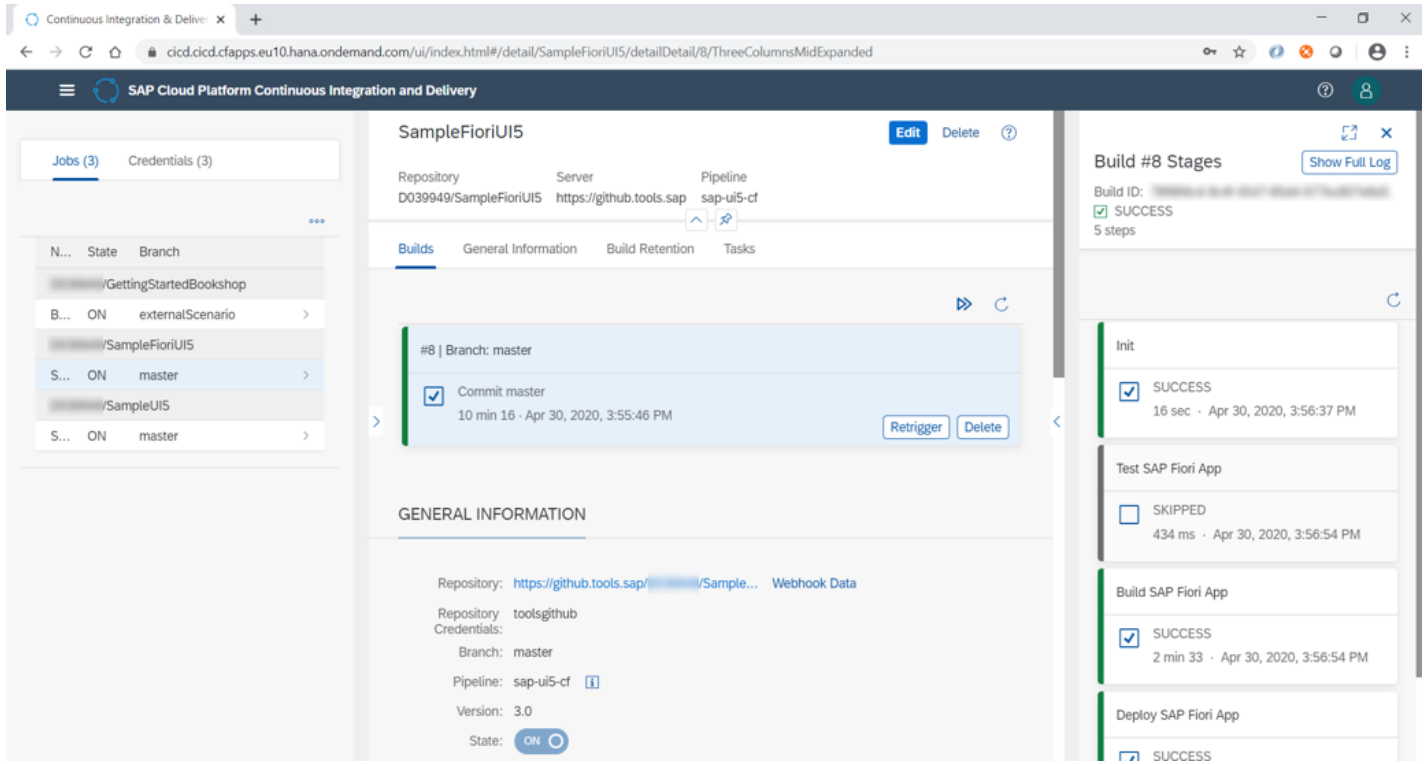
SAP Solutions for Continuous Integration and Delivery

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP Cloud Platform Continuous Integration and Delivery

CI/CD enablement

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



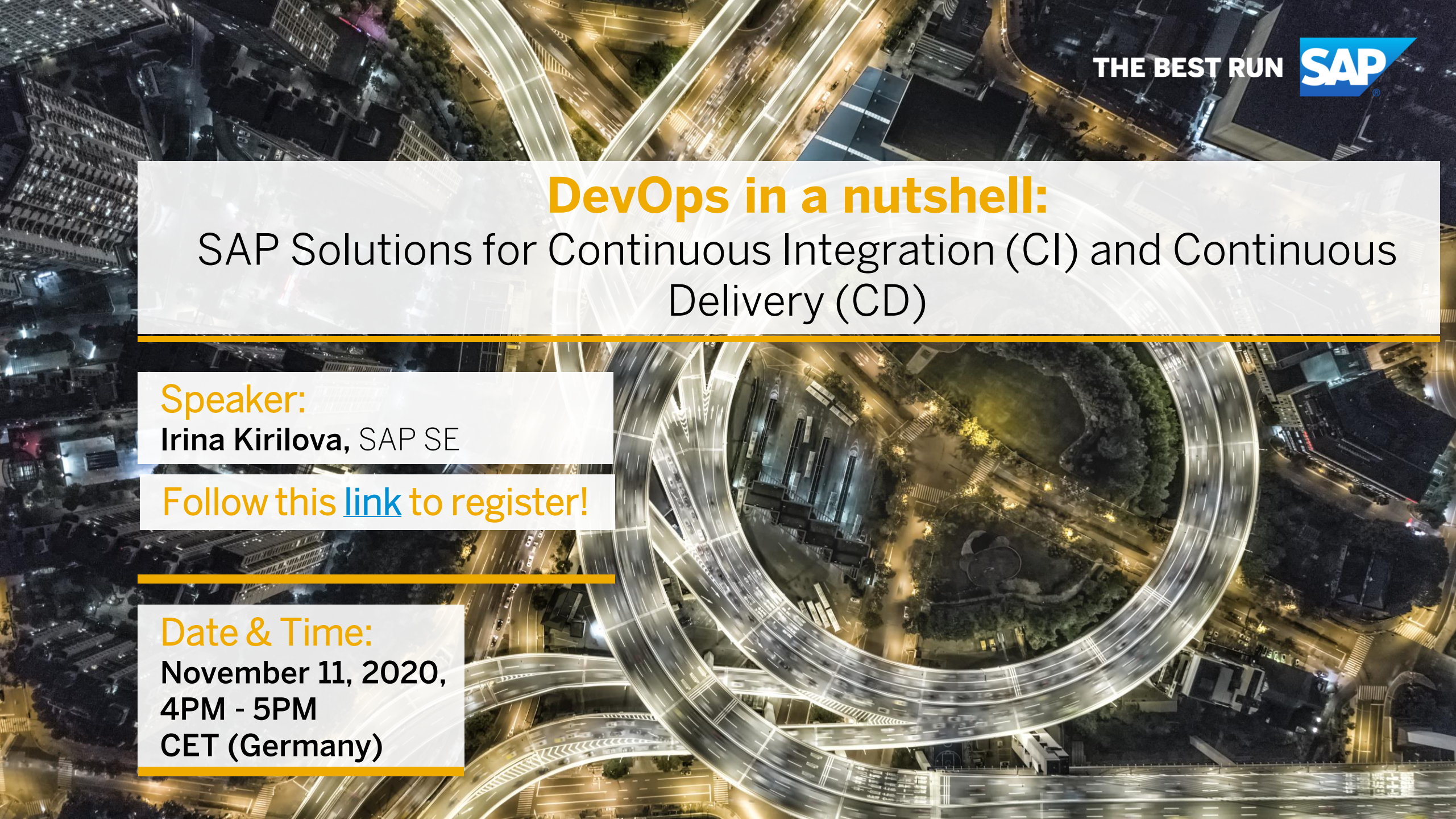
- **Simple onboarding** for SAPUI5 and cloud application programming model (CAP) development projects
- **No customer CI infrastructure** required
- **No in-depth CI/CD knowledge** required
- Well-integrated in tooling ecosystem for SAP Cloud Platform

Documentation

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Deep dive on CI/CD

Irina Kirilova
Development expert at SAP



DevOps in a nutshell:

SAP Solutions for Continuous Integration (CI) and Continuous Delivery (CD)

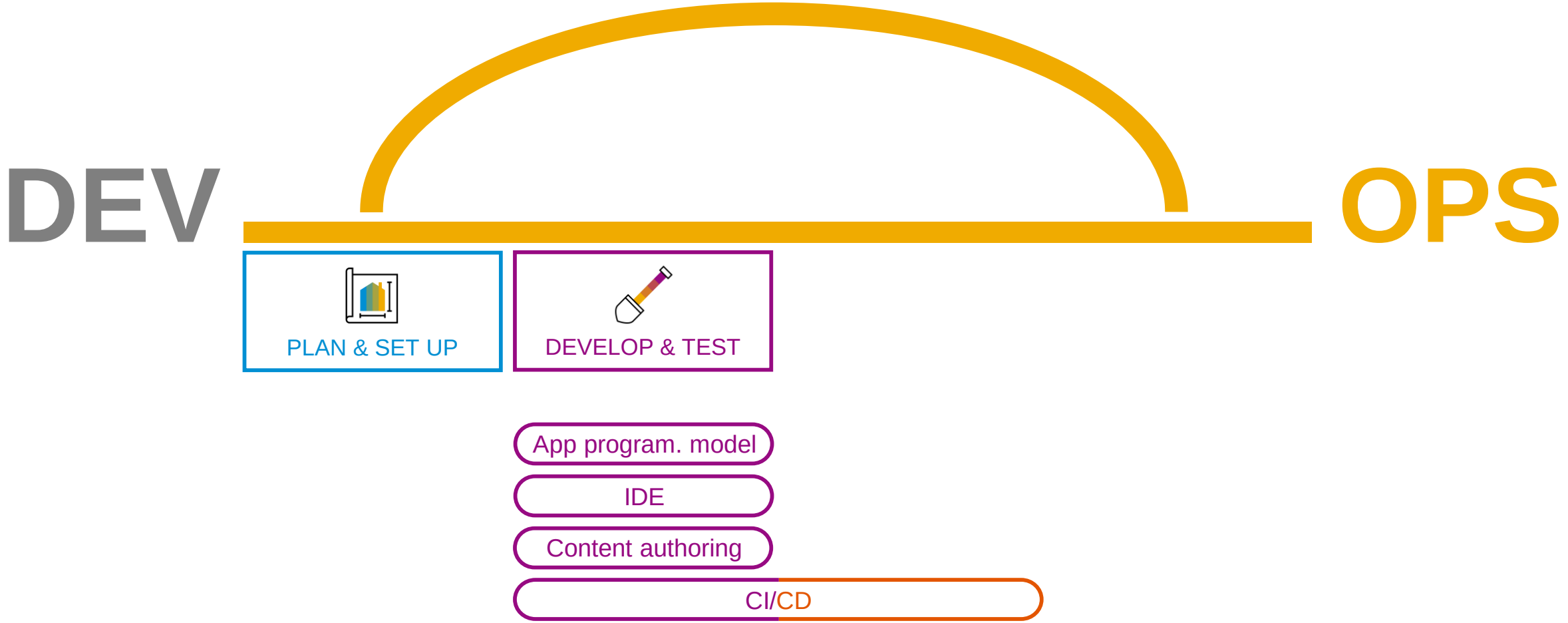
Speaker:
Irina Kirilova, SAP SE

Follow this link to register!

Date & Time:
November 11, 2020,
4PM - 5PM
CET (Germany)

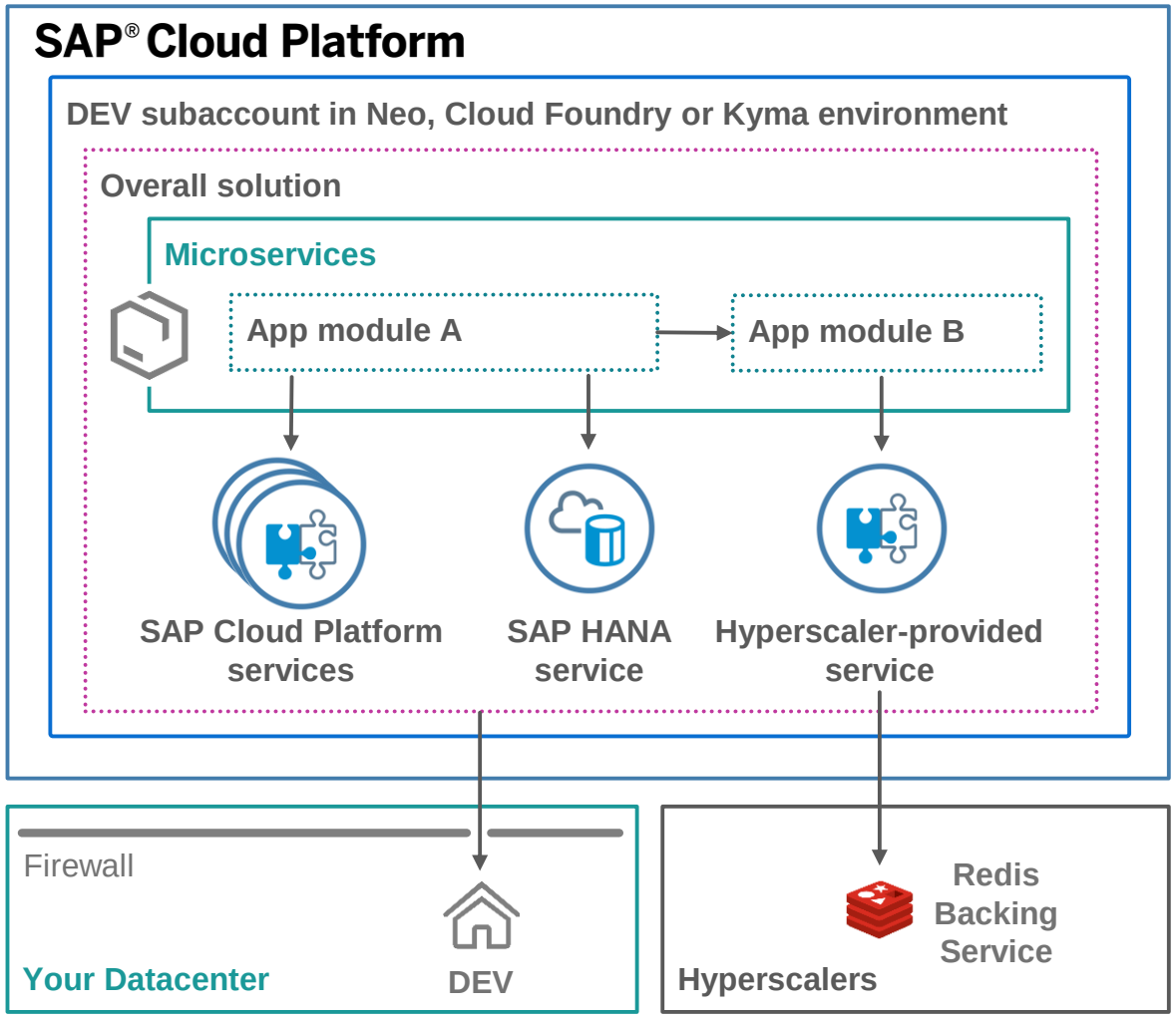
DevOps with SAP Cloud Platform

Develop & test



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Example app



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Develop your application

Development environment

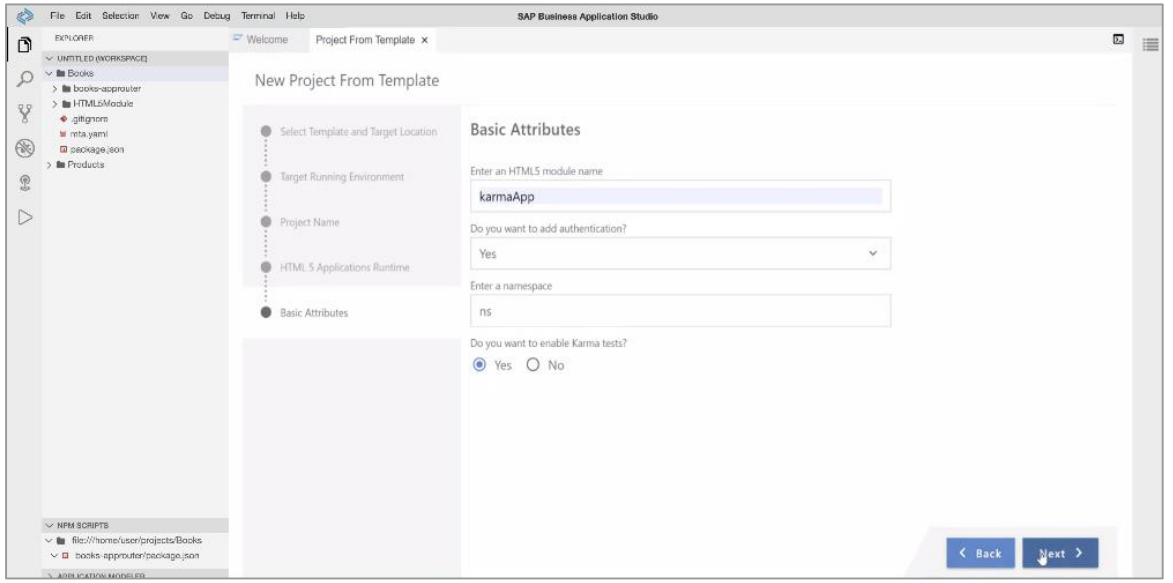
IDE

Use an Integrated Development Environment to create and test your applications:

SAP Business Application Studio:

- Available as cloud service on SAP Cloud Platform, multi-cloud foundation
- Tailored for efficient development of business applications for the Intelligent Enterprise (more information)
- Integrated testing capabilities
- End-to-end CI/CD using

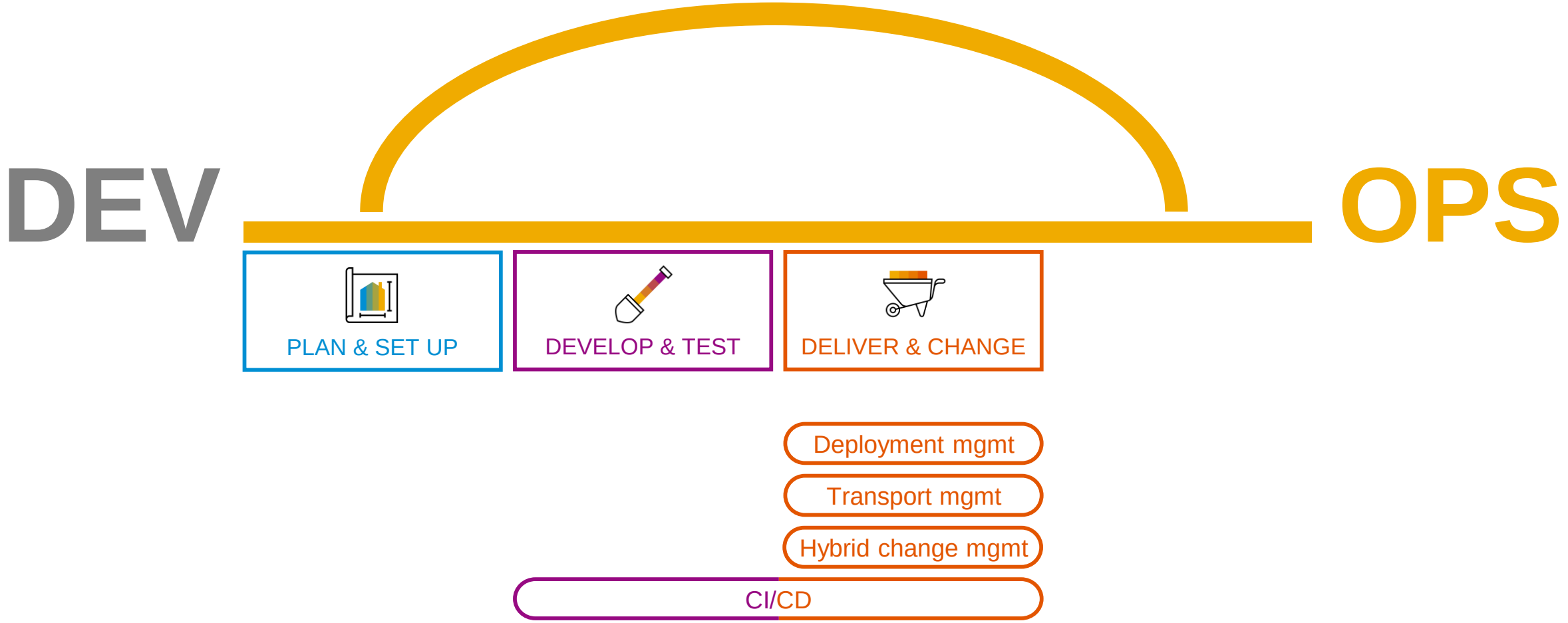
  SAP CP Continuous Integration and Delivery service



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

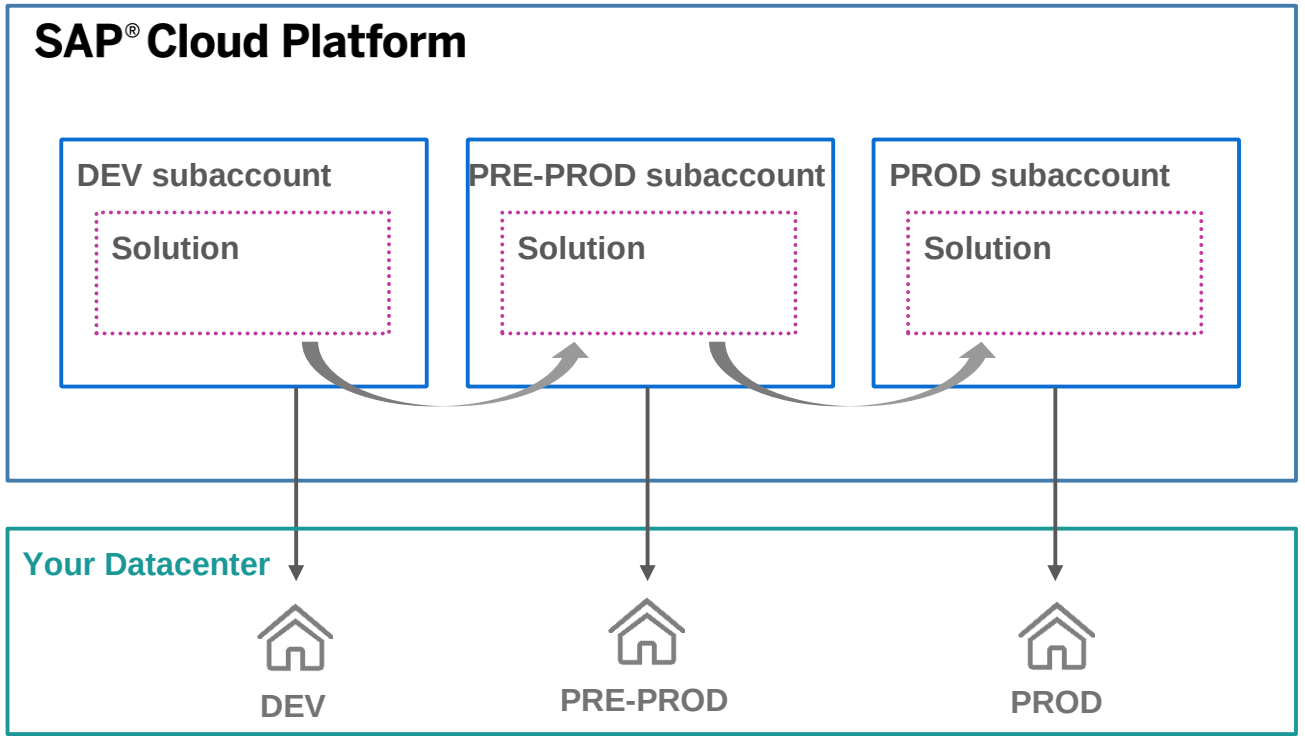
DevOps with SAP Cloud Platform

Delivery & change



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Example app



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

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 **develop-ment** and **application content** (also beyond MTA)

CTS+

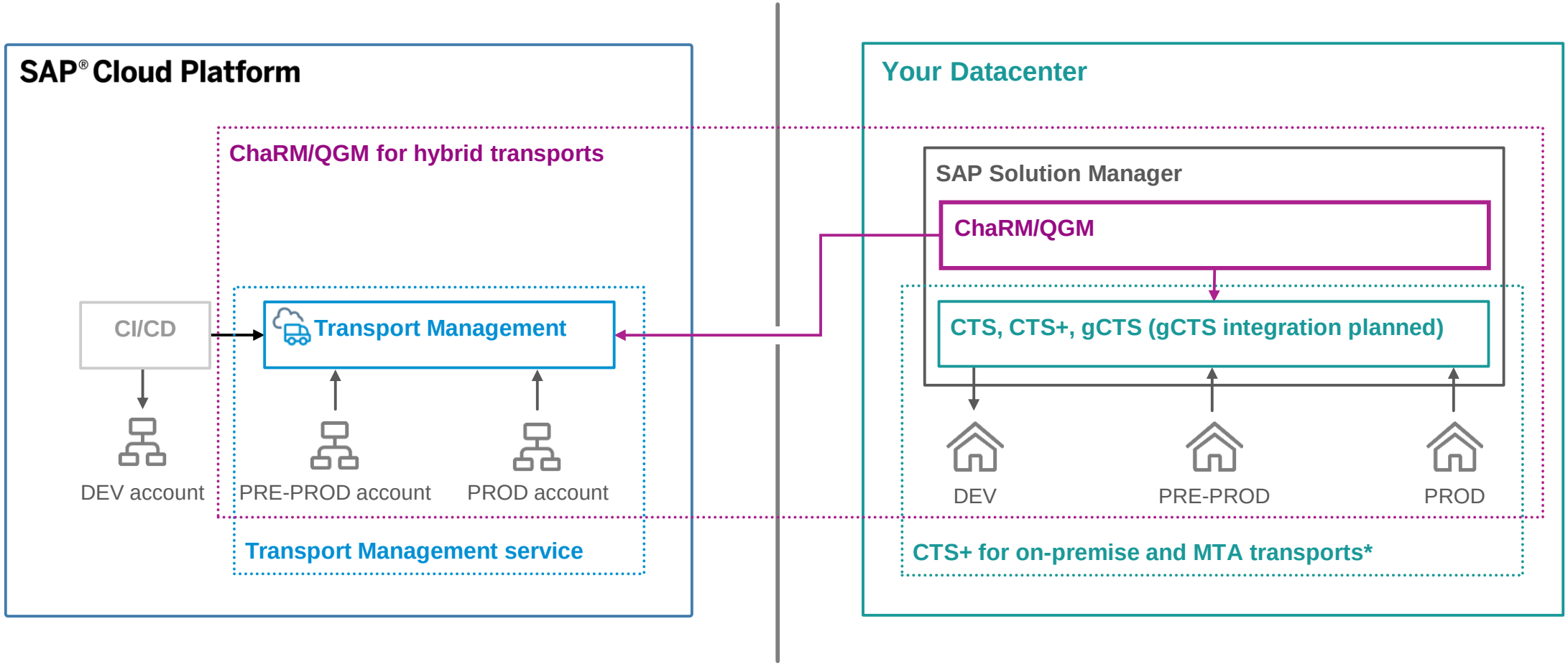
- **ABAP-centric** landscape
- Transport of “Multitarget Application Archive **(MTA)”-based cloud content** **only** (in addition to on-premise content)

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Deliver applications with transport management

Best practice and way forward for hybrid scenarios

Hybrid change mgmt



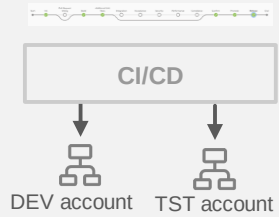
*) CTS+ can also handle MTA-based transports on SAP Cloud Platform (such as for SAP Cloud Platform Integration)

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Deliver your changes toward production

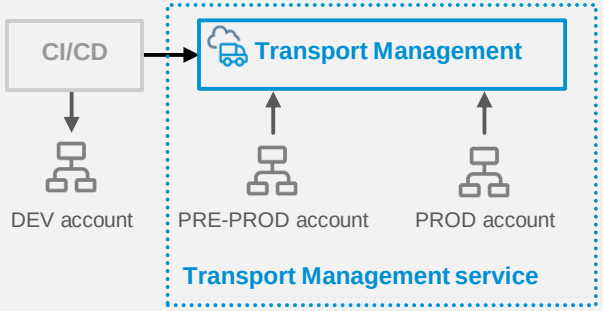
Example for evolution of delivery approaches for a project

1 You start your project with a pipeline



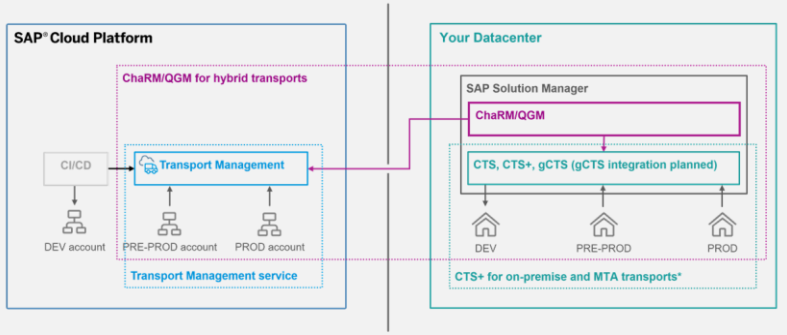
*Consider **project "Piper"** and **Continuous Integration and Delivery service** to set up your environment quickly*

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



*Configure **automated hand-over** of release candidates from pipeline to transport mgmt*

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



*Integrate transport management into **change management***

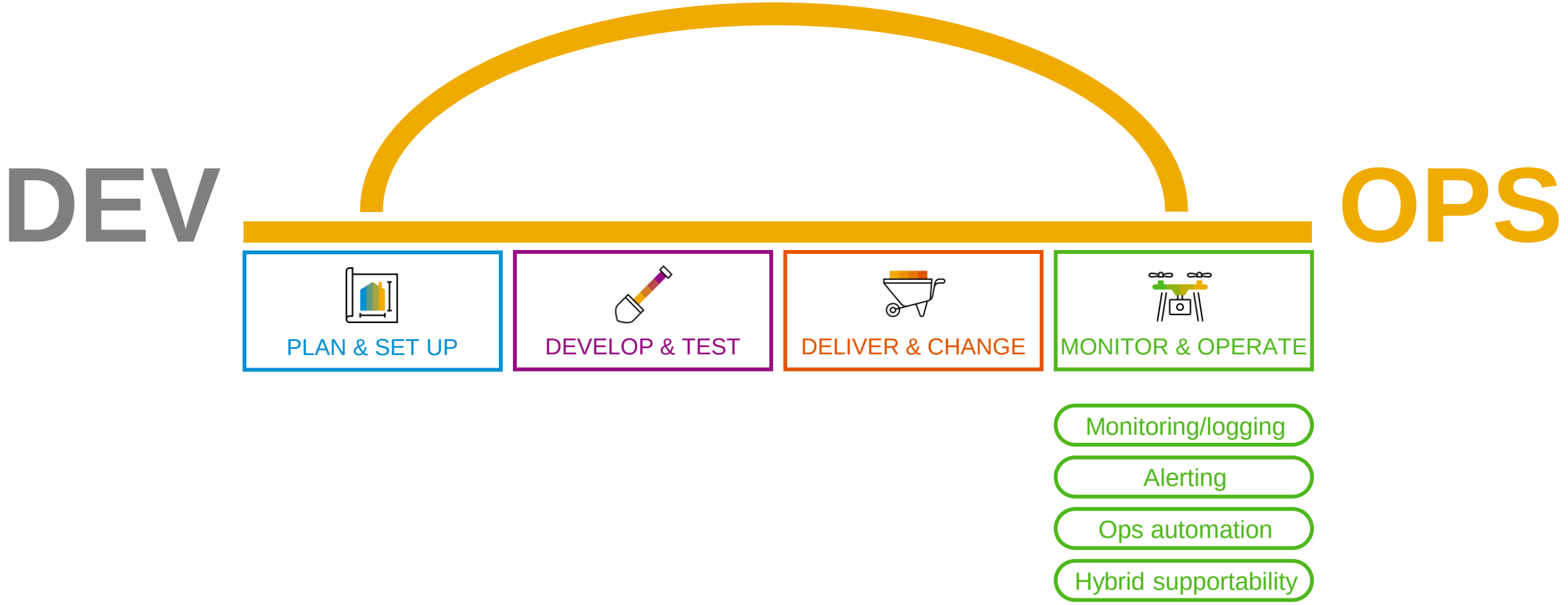
© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Deep dive on integration into transport and change management

Harald Stevens, product expert for transport management solutions in SAP Cloud Platform

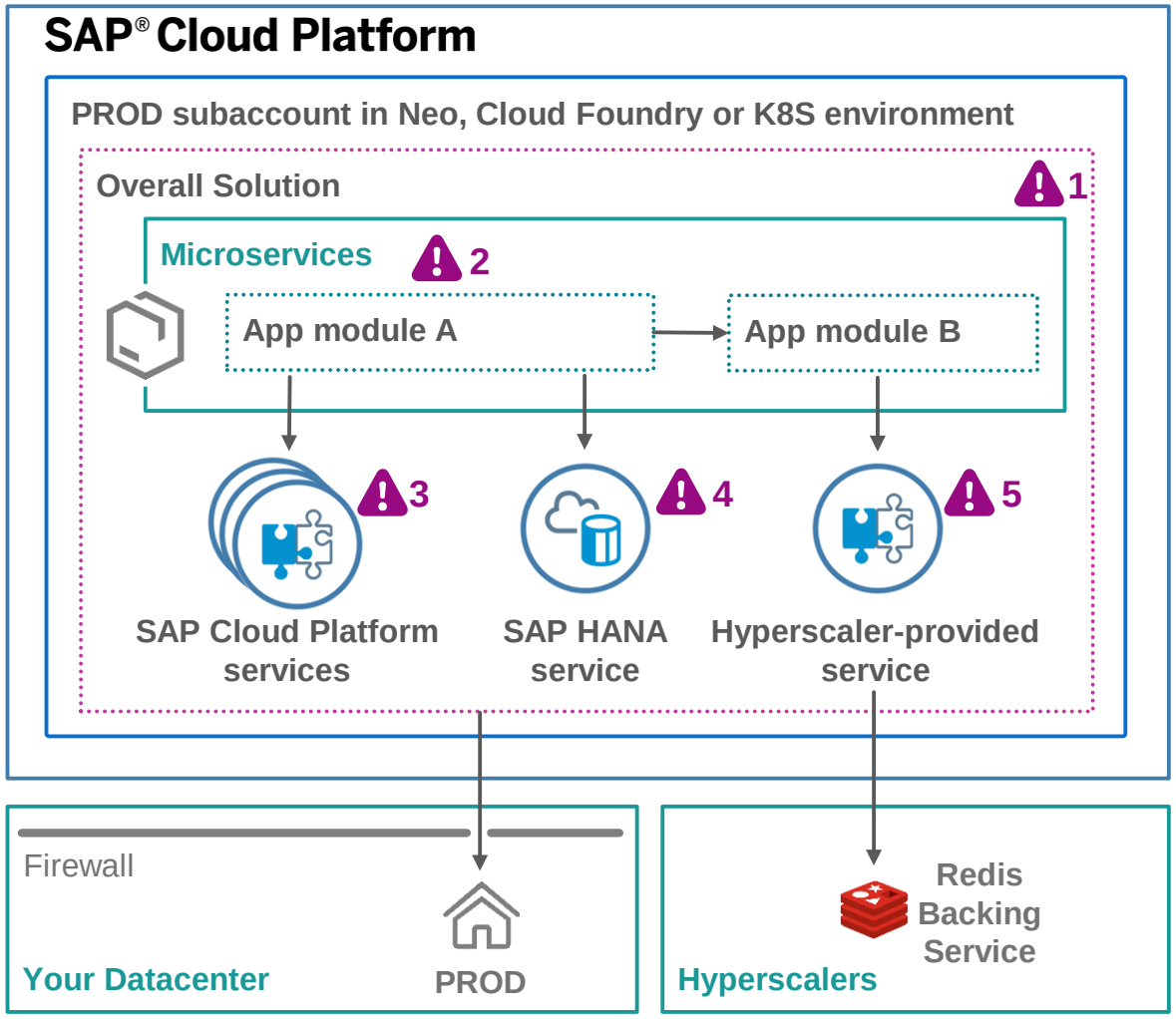
DevOps with SAP Cloud Platform

Monitor & operate



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

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



SRE team responsible for:

1 Keep their solution up 24x7

2 Observe & control microservices

3 Configure & troubleshoot SAP services

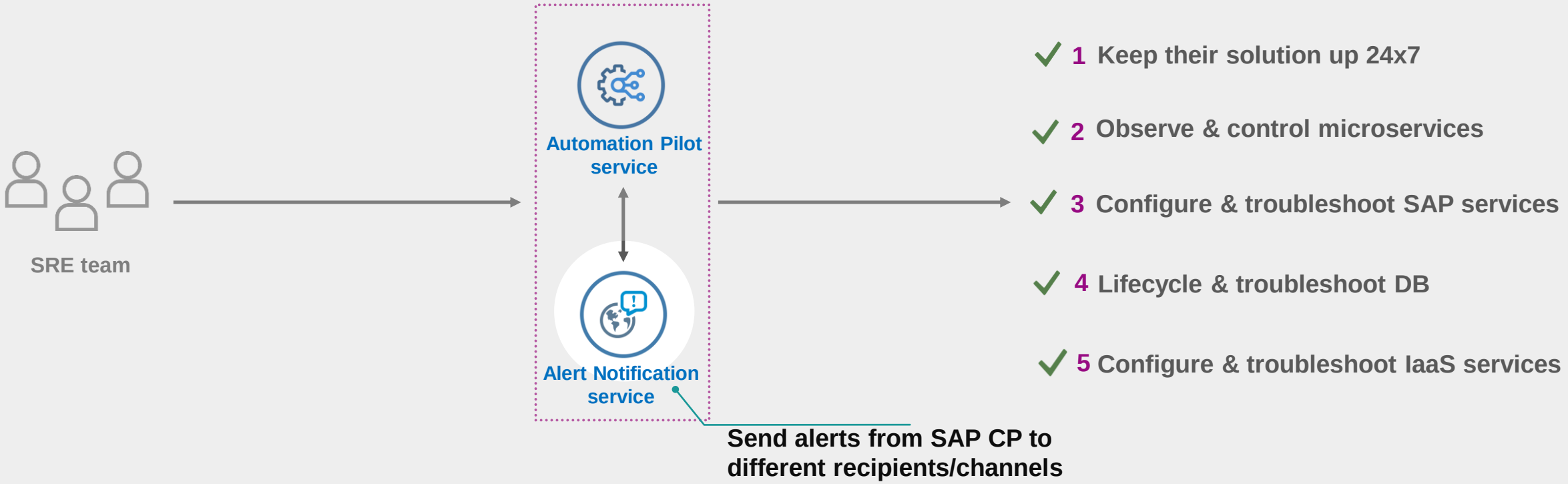
4 Lifecycle & troubleshoot DB

5 Configure & troubleshoot IaaS services

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP Cloud Platform Alert Notification

Alerting

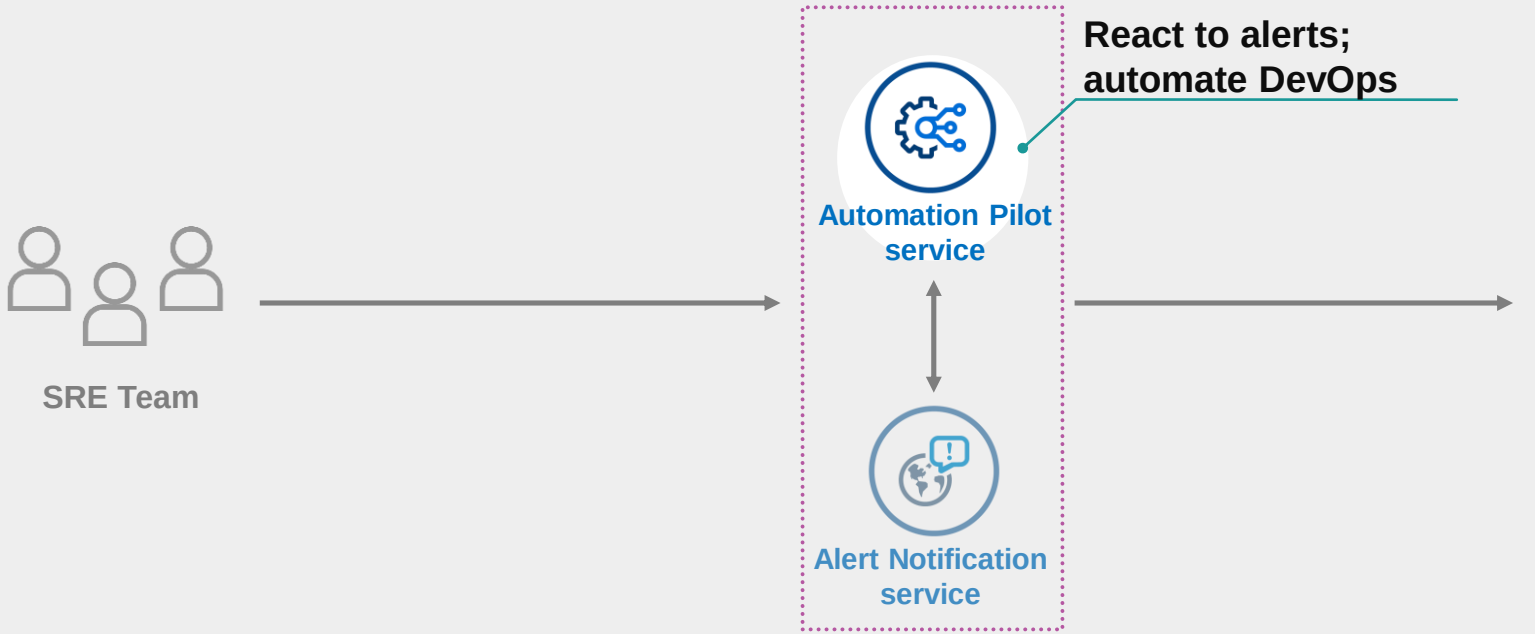


- ✓ 1 Keep their solution up 24x7
- ✓ 2 Observe & control microservices
- ✓ 3 Configure & troubleshoot SAP services
- ✓ 4 Lifecycle & troubleshoot DB
- ✓ 5 Configure & troubleshoot IaaS services

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP Cloud Platform Automation Pilot

Ops automation

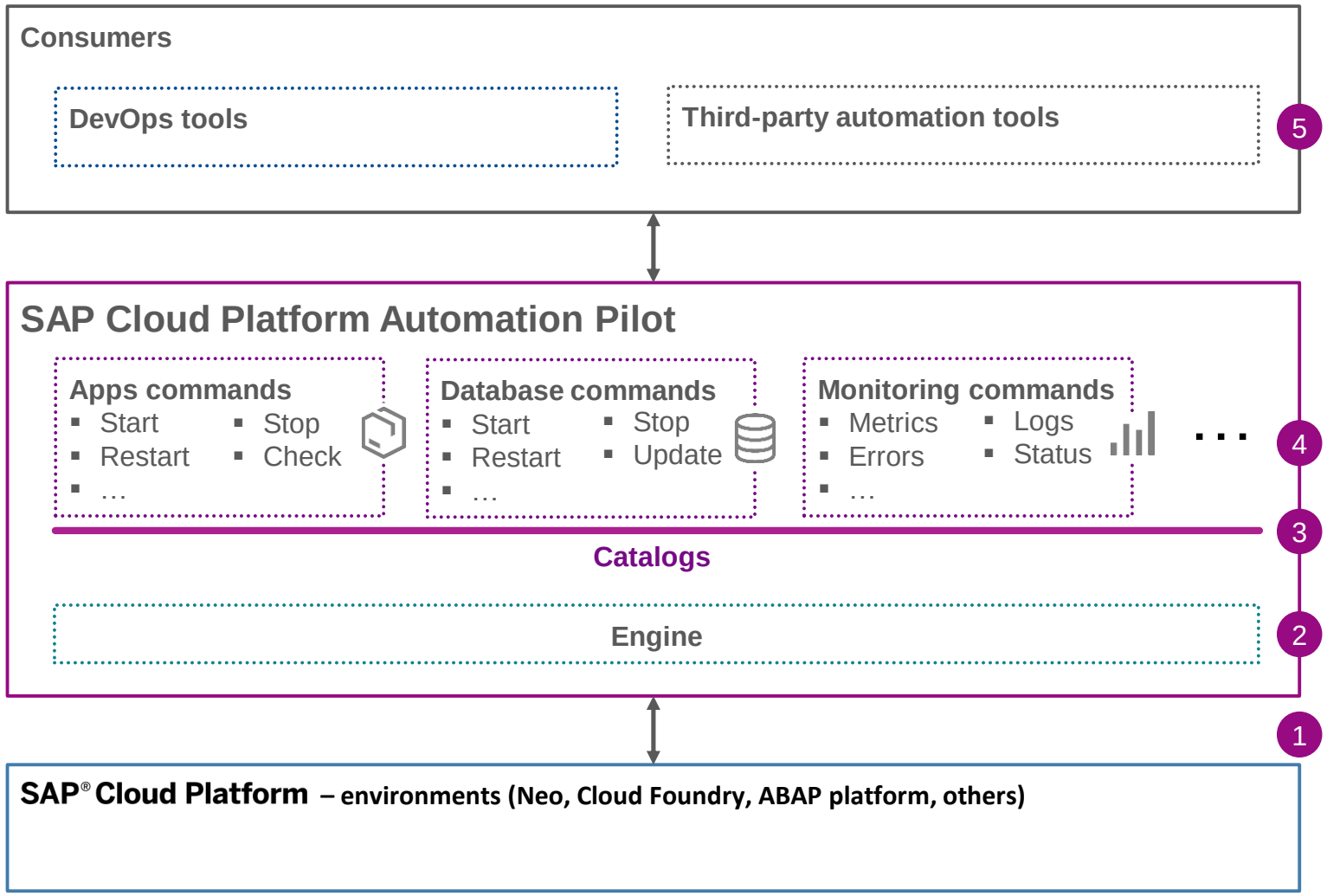


- ✓ 1 Keep their solution up 24x7
- ✓ 2 Observe & control microservices
- ✓ 3 Configure & troubleshoot SAP services
- ✓ 4 Lifecycle & troubleshoot DB
- ✓ 5 Configure & troubleshoot IaaS services

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP Cloud Platform Automation Pilot

Ops automation



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

4 Ability to **extend and share** catalogs

3 **Catalogs** of automated commands

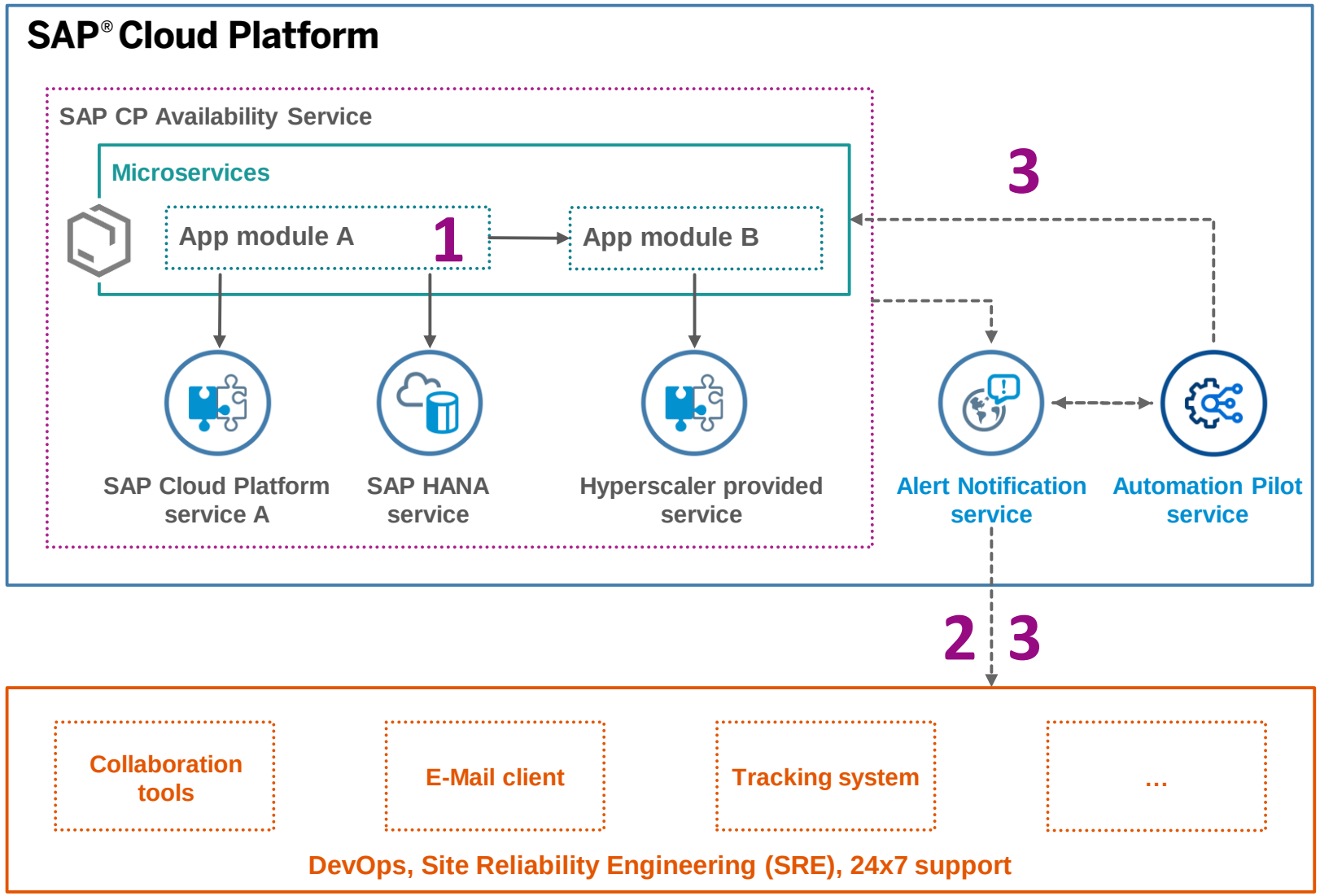
2 Easy automation of commands – **without coding**

1 Raised abstraction level

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Example: complement alerts with automation

Ops automation



1 Event (e.g. service stops working)

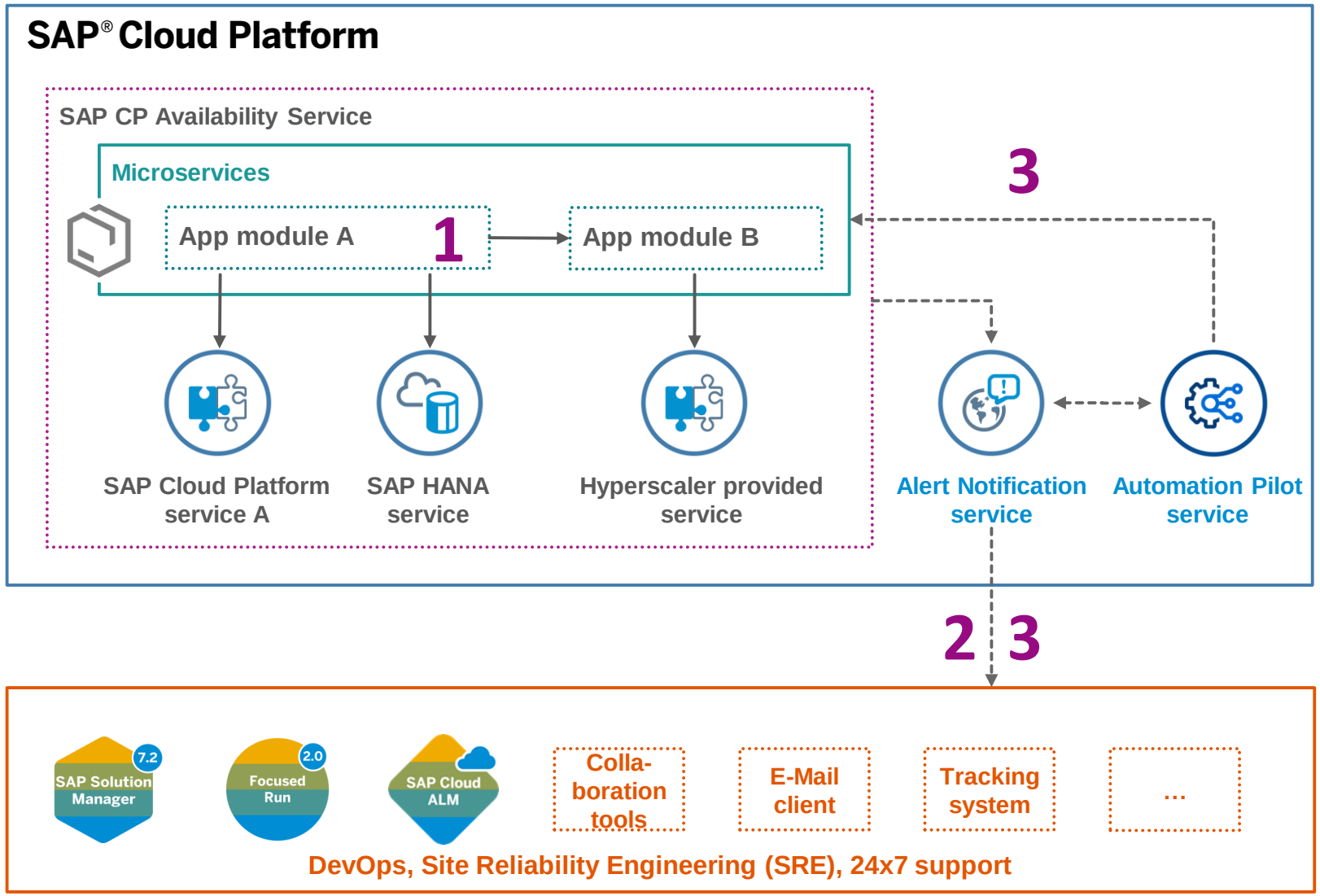
2 Notify + trigger

3 Recover service + notify

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Example: complement alerts with automation

Ops automation



1 Event (e.g. service stops working)

2 Notify + trigger

3 Recover service + notify

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

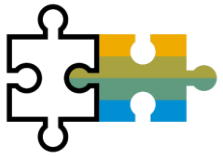
Monitor and operate your hybrid application

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

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP operations

Hybrid supportability

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

Existing on-premise ops

SAP Solution Manager 7.2

Focused Run 2.0

Upcoming cloud scenarios

SAP® Cloud Platform

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP operations

Hybrid supportability

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

Existing on-premise ops

Upcoming cloud scenarios

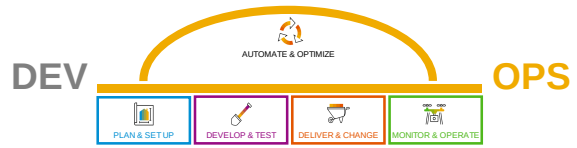
Proposed approach:
Smooth the transition by extending existing on-premise ops processes with cloud aspects

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

SAP Solution Manager 7.2

Focused Run 2.0

SAP® Cloud Platform



"Offers hybrid lifecycle management support"

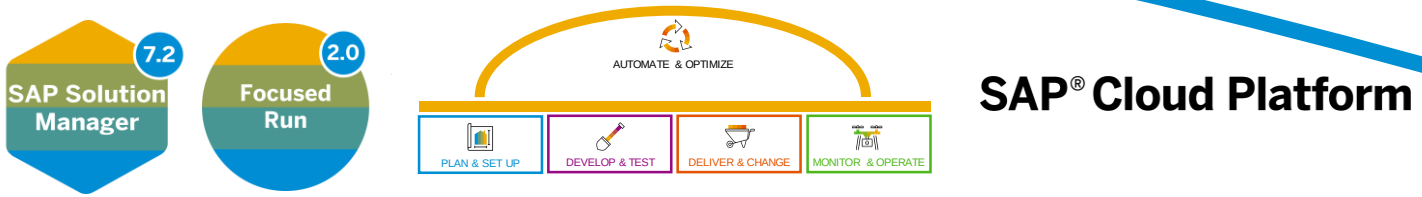
© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP operations

Exemplary options to extend towards hybrid operations

Hybrid supportability

Hybrid operations



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

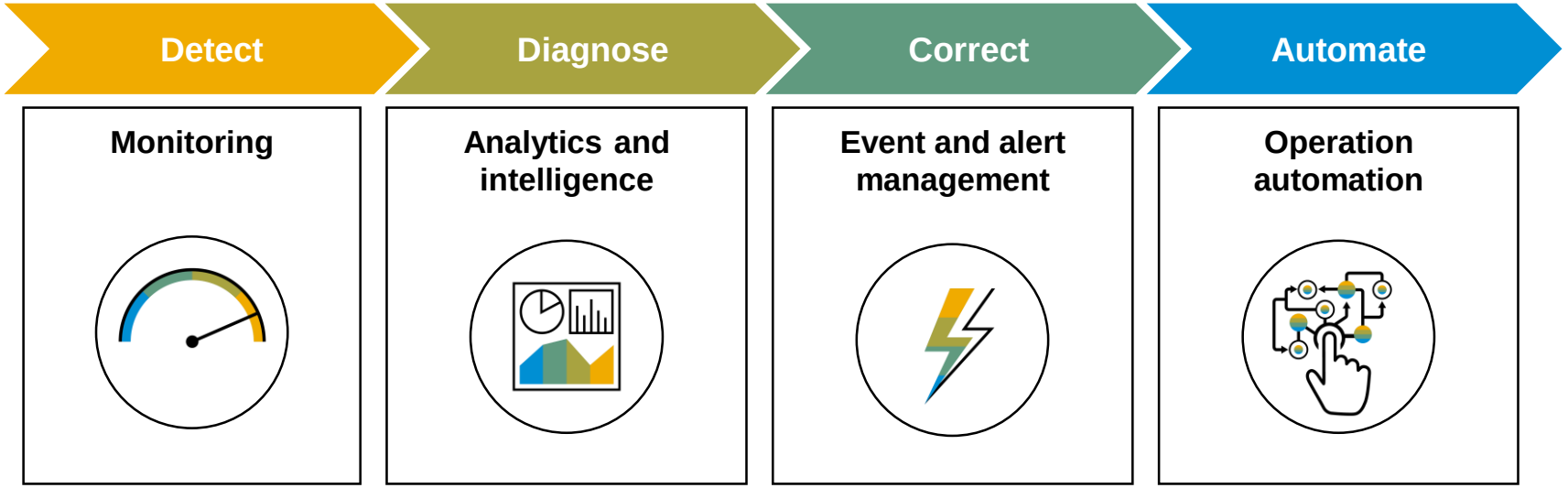
MONITOR & OPERATE

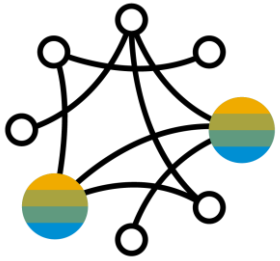
- Forward SAP CP alerts towards SAP Solution Manager
- No-coding approach for technical ops automation
- Hybrid supportability

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

SAP Cloud ALM for operations

Hybrid supportability





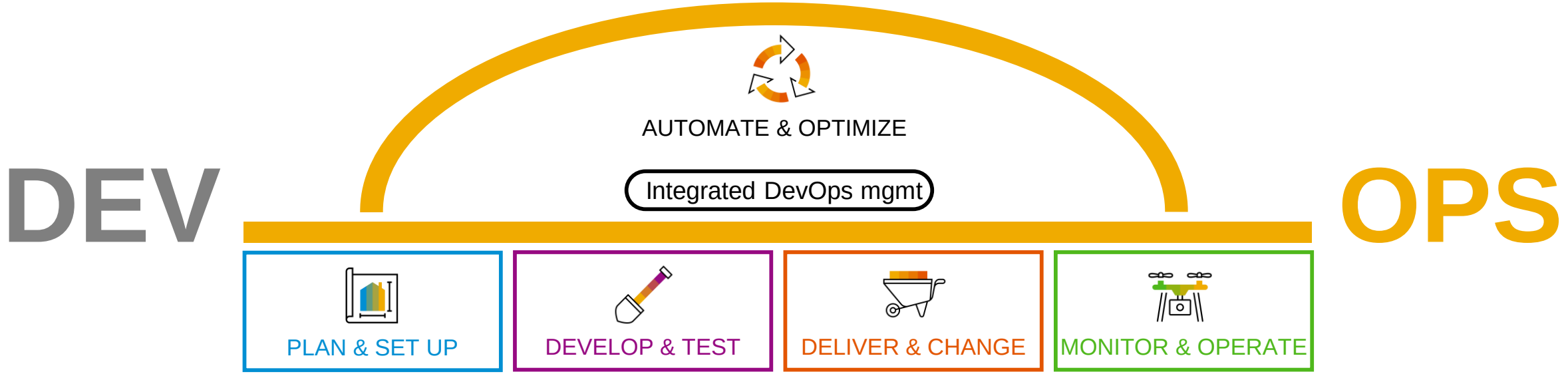
© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

Deep dive on alerting and ops automation

Kiril Gavrailov
Product and development manager
SAP Labs Sofia

DevOps with SAP Cloud Platform

Automate & optimize



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

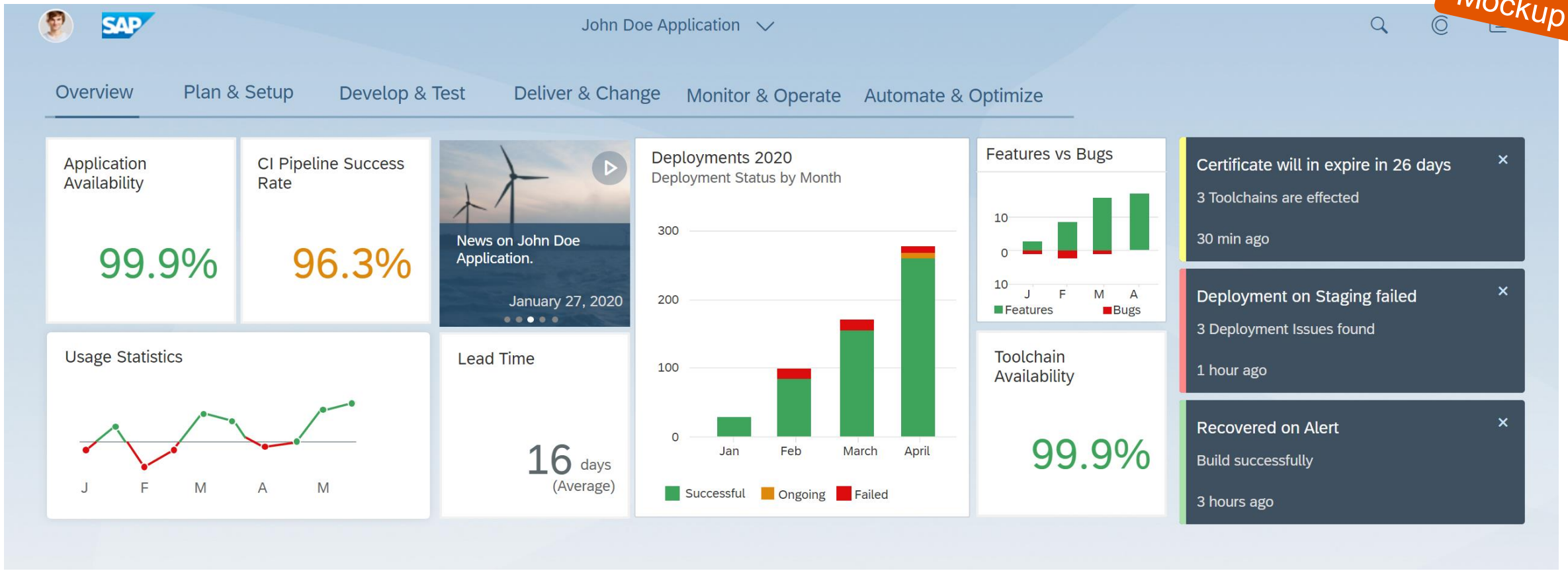
Automate & operate

Preview at planned service for integrated DevOps management

Outlook

Integrated DevOps mgmt

Mockup

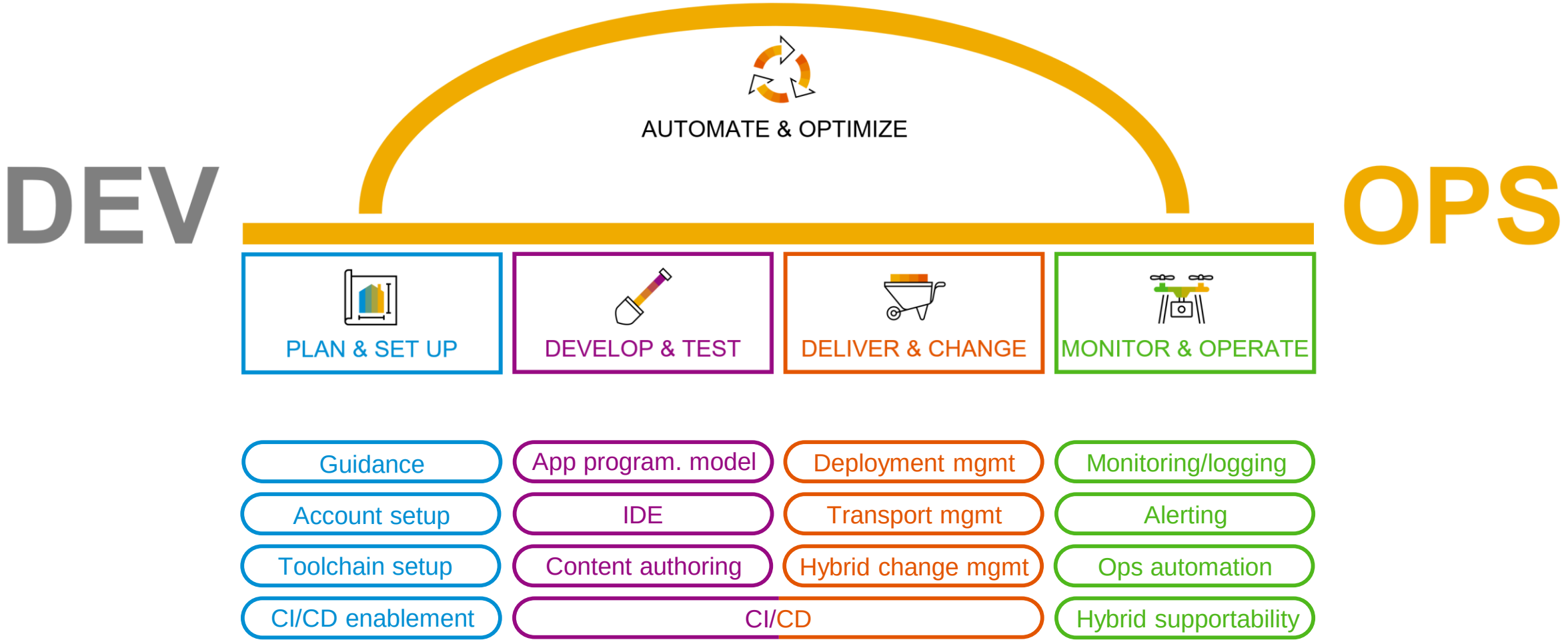


© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

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.

Summary

DevOps with SAP



© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

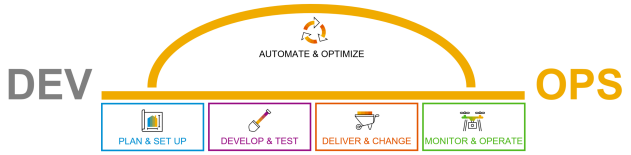
DevOps with SAP Cloud Platform

Corner stones of our offering

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

Guidance, not just tools

NEO
CLOUD FOUNDRY
ABAP
Spans the different SAP Cloud Platform **environments**



Open

Offers **hybrid** lifecycle management support

Multi-cloud enabled

aws Microsoft Azure Google Cloud Alibaba Cloud

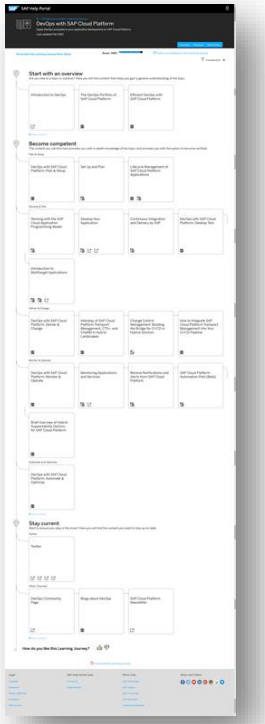
Integrated into SAP Cloud Platform toolset

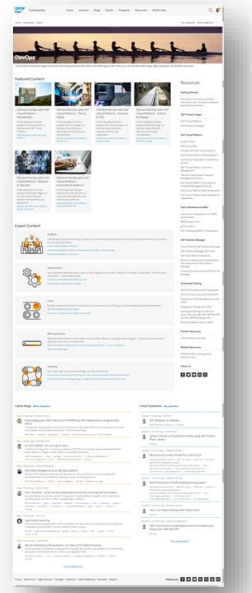
© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

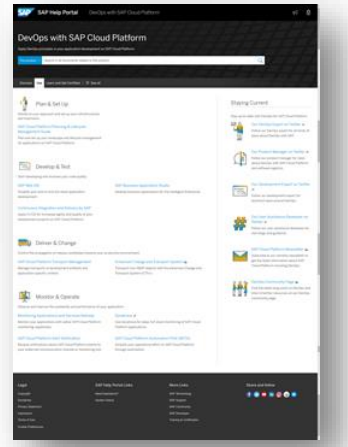
Call to action

Learn more about DevOps with SAP:

- DevOps SAP Community page
- 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

© 2020 SAP SE or an SAP affiliate company. All rights reserved. I PUBLIC

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

© 2020 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

THE BEST RUN SAP®

Follow us

www.sap.com/contactsap

© 2020 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®

SAP folgen auf

www.sap.com/germany/contactsap

© 2020 SAP SE oder ein SAP-Konzernunternehmen. Alle Rechte vorbehalten.

Weitergabe und Vervielfältigung dieser Publikation oder von Teilen daraus sind, zu welchem Zweck und in welcher Form auch immer, ohne die ausdrückliche schriftliche Genehmigung durch SAP SE oder ein SAP-Konzernunternehmen nicht gestattet.

In dieser Publikation enthaltene Informationen können ohne vorherige Ankündigung geändert werden. Die von SAP SE oder deren Vertriebsfirmen angebotenen Softwareprodukte können Softwarekomponenten auch anderer Softwarehersteller enthalten. Produkte können länderspezifische Unterschiede aufweisen.

Die vorliegenden Unterlagen werden von der SAP SE oder einem SAP-Konzernunternehmen bereitgestellt und dienen ausschließlich zu Informationszwecken. Die SAP SE oder ihre Konzernunternehmen übernehmen keinerlei Haftung oder Gewährleistung für Fehler oder Unvollständigkeiten in dieser Publikation. Die SAP SE oder ein SAP-Konzernunternehmen steht lediglich für Produkte und Dienstleistungen nach der Maßgabe ein, die in der Vereinbarung über die jeweiligen Produkte und Dienstleistungen ausdrücklich geregelt ist. Keine der hierin enthaltenen Informationen ist als zusätzliche Garantie zu interpretieren.

Insbesondere sind die SAP SE oder ihre Konzernunternehmen in keiner Weise verpflichtet, in dieser Publikation oder einer zugehörigen Präsentation dargestellte Geschäftsabläufe zu verfolgen oder hierin wiedergegebene Funktionen zu entwickeln oder zu veröffentlichen. Diese Publikation oder eine zugehörige Präsentation, die Strategie und etwaige künftige Entwicklungen, Produkte und/oder Plattformen der SAP SE oder ihrer Konzernunternehmen können von der SAP SE oder ihren Konzernunternehmen jederzeit und ohne Angabe von Gründen unangekündigt geändert werden. Die in dieser Publikation enthaltenen Informationen stellen keine Zusage, kein Versprechen und keine rechtliche Verpflichtung zur Lieferung von Material, Code oder Funktionen dar. Sämtliche vorausschauenden Aussagen unterliegen unterschiedlichen Risiken und Unsicherheiten, durch die die tatsächlichen Ergebnisse von den Erwartungen abweichen können. Dem Leser wird empfohlen, diesen vorausschauenden Aussagen kein übertriebenes Vertrauen zu schenken und sich bei Kaufentscheidungen nicht auf sie zu stützen.

SAP und andere in diesem Dokument erwähnte Produkte und Dienstleistungen von SAP sowie die dazugehörigen Logos sind Marken oder eingetragene Marken der SAP SE (oder von einem SAP-Konzernunternehmen) in Deutschland und verschiedenen anderen Ländern weltweit. Alle anderen Namen von Produkten und Dienstleistungen sind Marken der jeweiligen Firmen.

Zusätzliche Informationen zur Marke und Vermerke finden Sie auf der Seite www.sap.com/corporate/de/legal/copyright.html.

THE BEST RUN SAP®