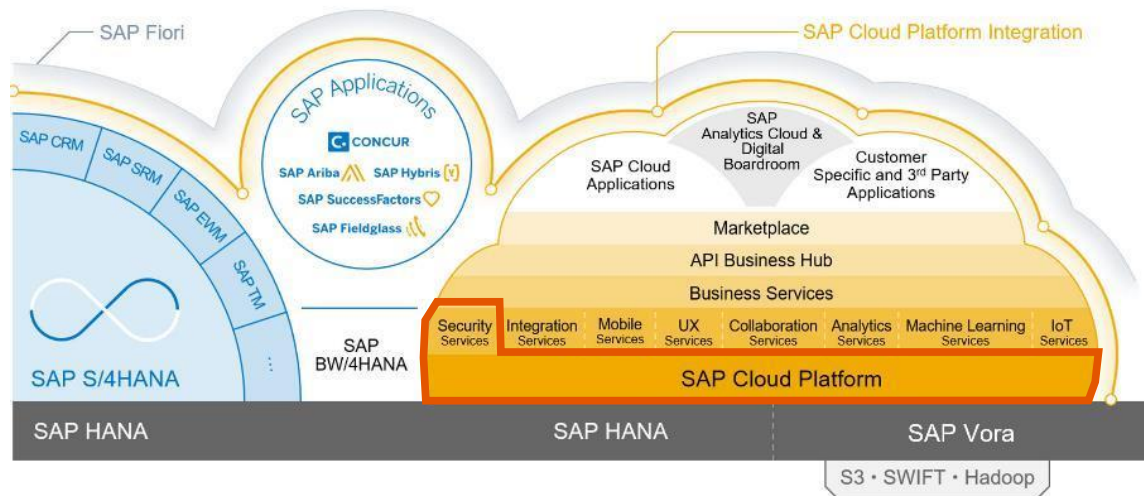Week 6: Additional Topics

**Unit 3: Cloud-Native Operations with SAP Cloud Platform**

# Cloud-Native Operations with SAP Cloud Platform

SAP Cloud Platform Identity Authentication

SAP Cloud Platform offers an end-to-end identity and access management (IAM) solution as a service that helps companies improve the security of their cloud business processes



**SAP Cloud Platform Identity Authentication**
- Simple and secure access to web-based applications
- Enterprise features such as password policies and multi-factor and risk-based authentication
- On-premise user store integration
- Easy consumer and partner on-boarding via self-services

**SAP Cloud Platform core security services**
- Federated authorization & trust management
- Secure password and keystore services
- Application and platform identity provider management
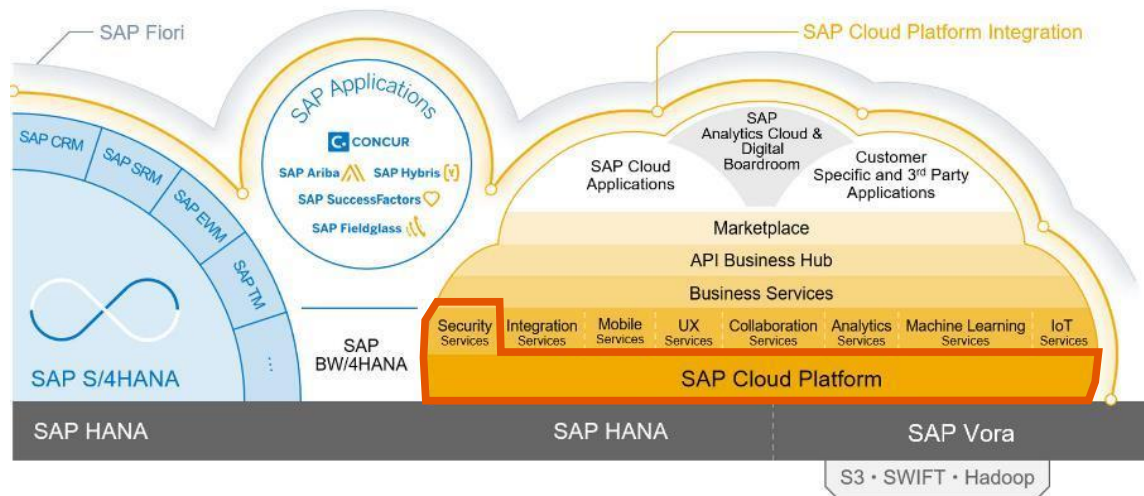- Custom platform roles

**SAP Cloud Platform Identity Provisioning**
- Automatically sets up and manages user accounts and authorizations in an end-to-end identity lifecycle
- Re-uses existing on-premise and cloud user stores
- Integrates with SAP Identity Management

# Cloud-Native Operations with SAP Cloud Platform

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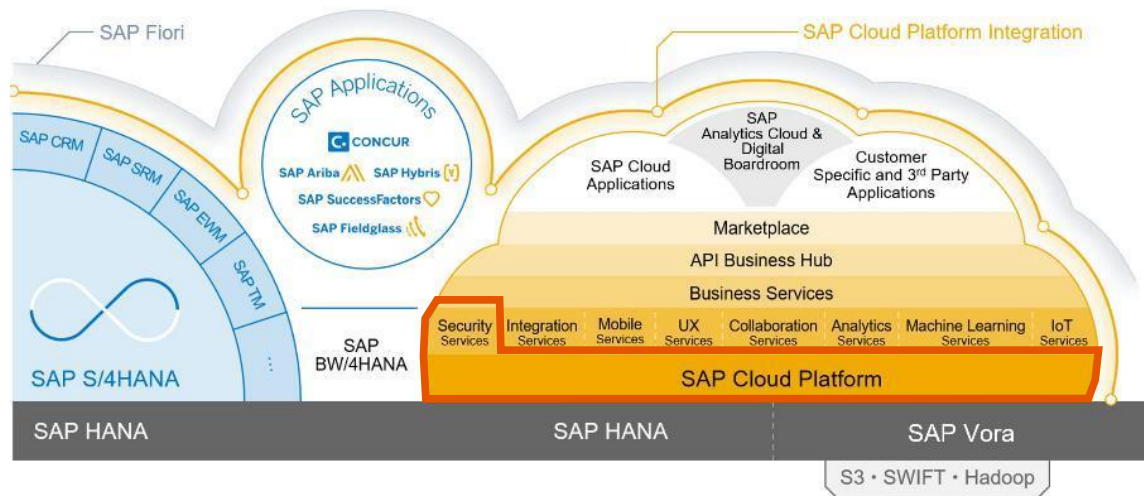- Custom platform roles

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# Cloud-Native Operations with SAP Cloud Platform

Typical lifecycle phases for SAP Cloud Platform applications
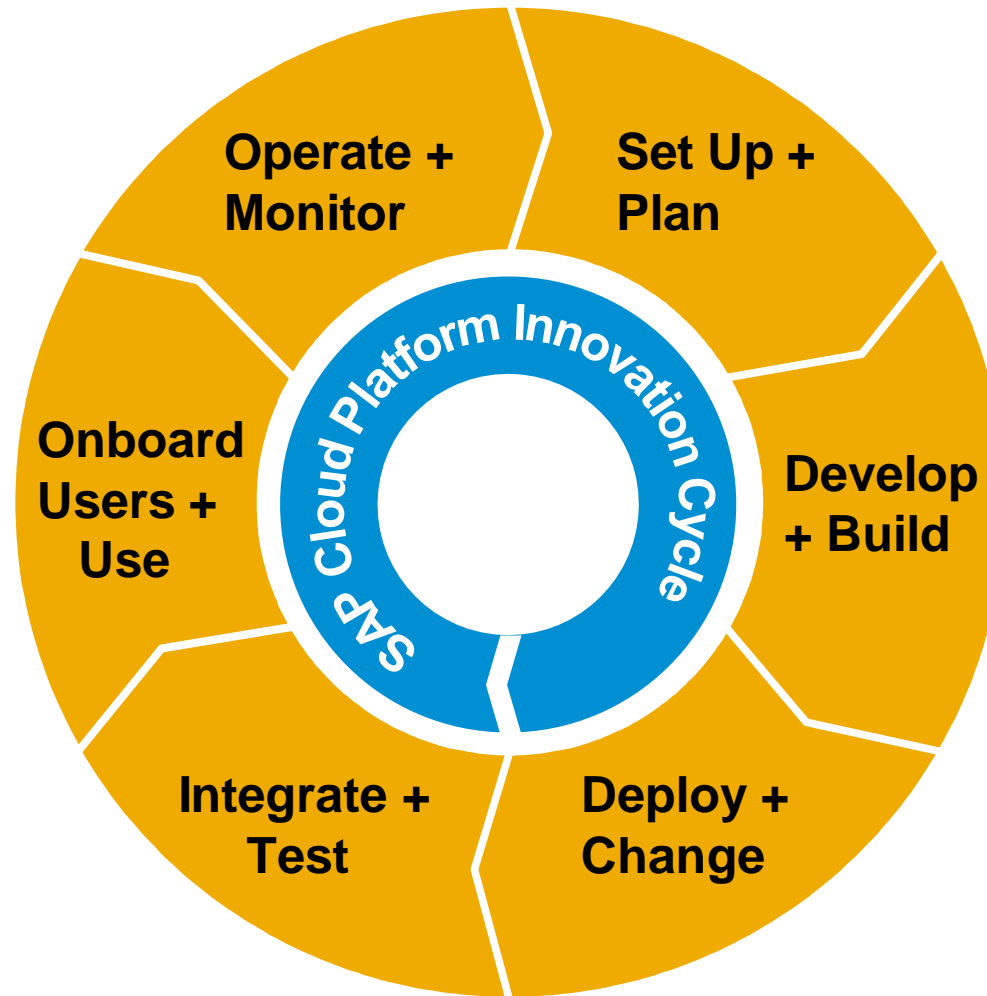
# Cloud-Native Operations with SAP Cloud Platform

Lifecycle Management and Continuous Integration and Delivery topic overview
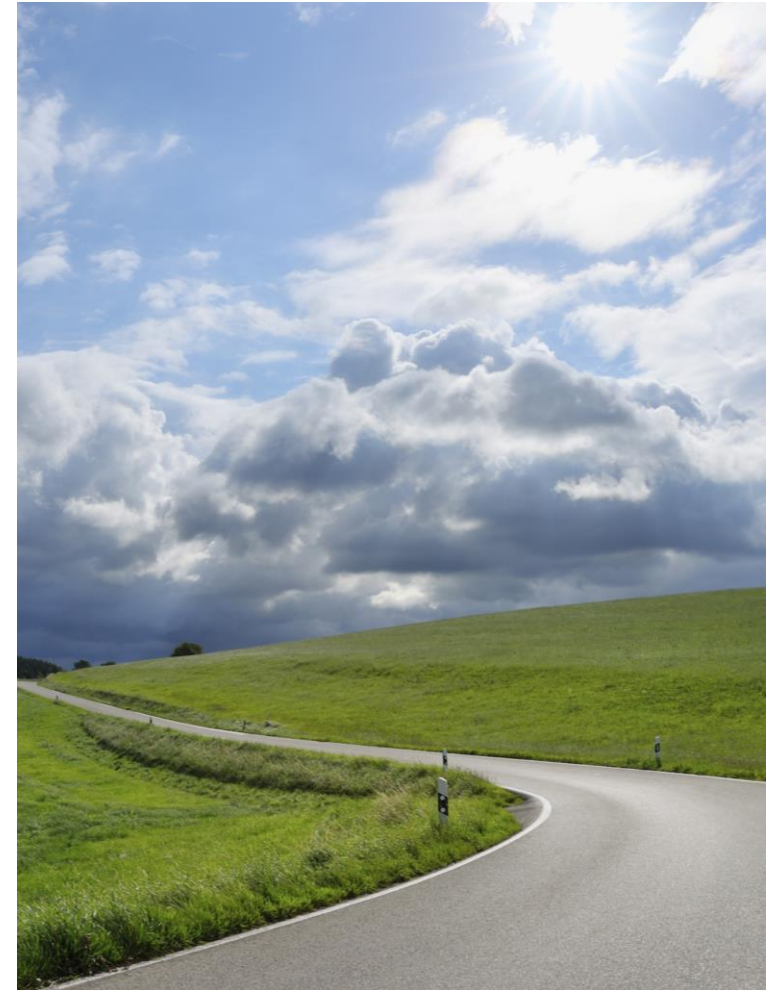
## Lifecycle Management Basics

- Change management options
- Account setup
- Multitarget applications

## Lifecycle Management Hybrid Scenarios

- Enhanced Change and Transport System (CTS+)
- Integration into higher-level change management tools
- Hybrid supportability

## Continuous Integration and Delivery

- CI components
- CI setup
- Combining CI and change management

# Cloud-Native Operations with SAP Cloud Platform

Multitarget application (MTA) concept: motivation – Heterogeneity of cloud software…

Cloud applications often show a high heterogeneity

- consisting of multiple interdependent software "modules"
- written in different languages (polyglot)
- using multiple programming paradigms and development tools
- deployed to multiple target runtimes
- involving different products

As modules provide a single coherent application purpose, shared single lifecycle is desired

- to deploy all parts together, in the right order, automatically
- to manage configuration of complete solution

**SAP Cloud Platform**

Roles

SAP SuccessFactors

JavaScript

Java

HTML5

...

Stored DB procedure

Cloud Integration

SAP HANA

Core Data Services model
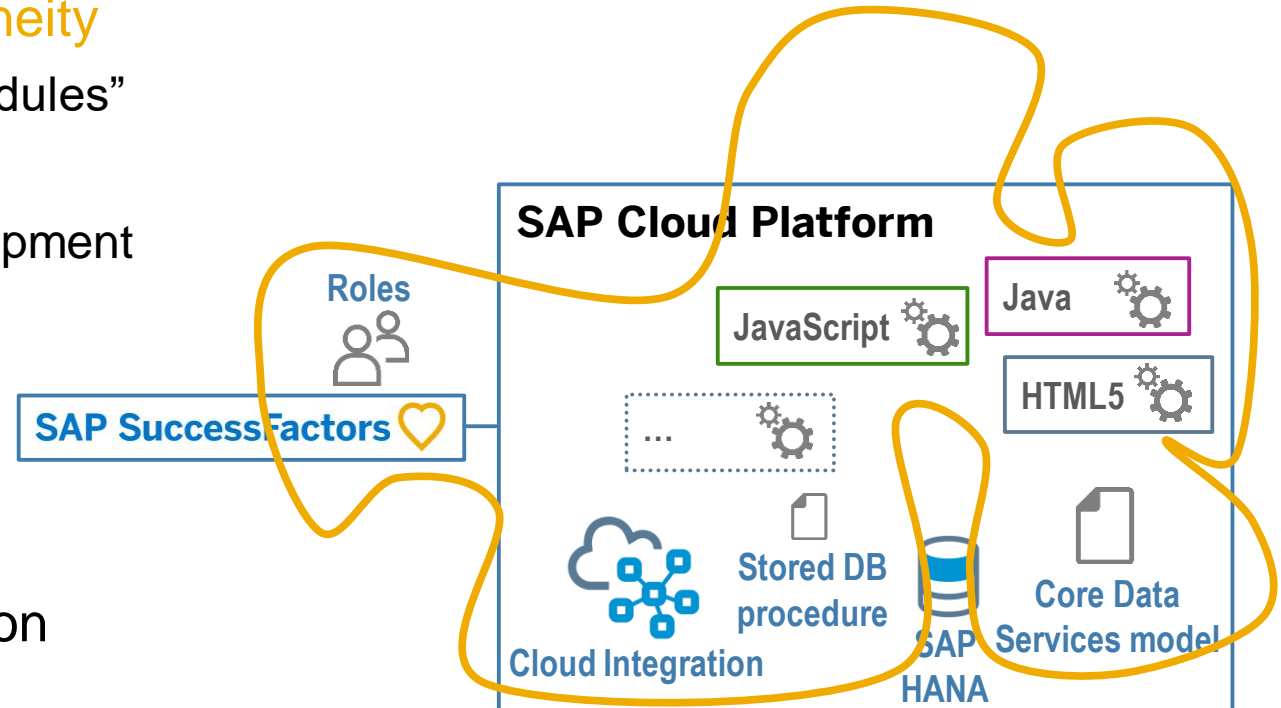
# Cloud-Native Operations with SAP Cloud Platform

Multitarget application (MTA) concept and our approach to tackling it

To ease handling of such a combined single lifecycle, SAP introduced multitarget applications (MTAs)

- Hand-over artifact between development and operation + delivery construct for partners
- Can be delivered, transported, linked to SAP software components, and deployed
- Process can be automated in a *continuous integration* pipeline
- For more information about MTAs, see SAP Help Portal
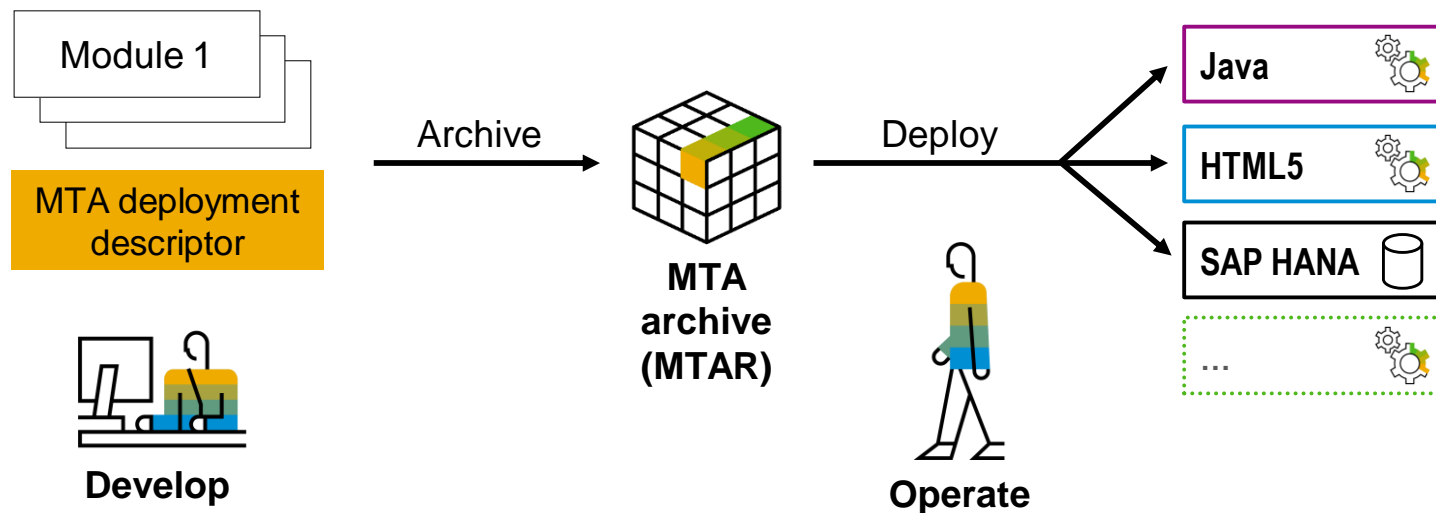
# Cloud-Native Operations with SAP Cloud Platform

Continuous integration and delivery – It's not just a technical transformation

experience

Agile

improve

experience

Continuous
Delivery

improve

experience

DevOps

improve
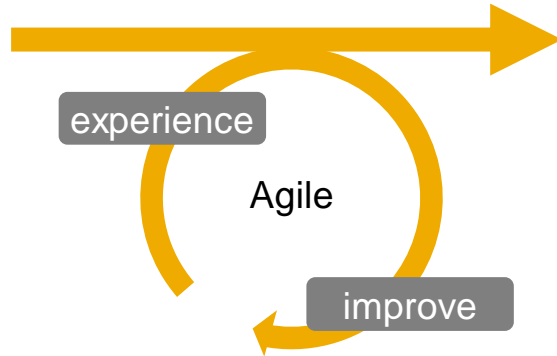
## Foundation
for continuous delivery

Skills and methods to do
the right things
and do things right
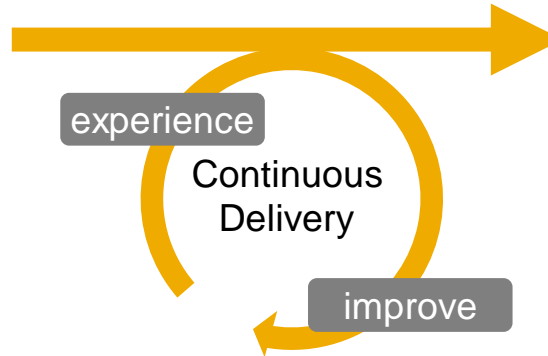
## Process
for continuous delivery

Process to get changes into
production – fast – safely –
sustainably
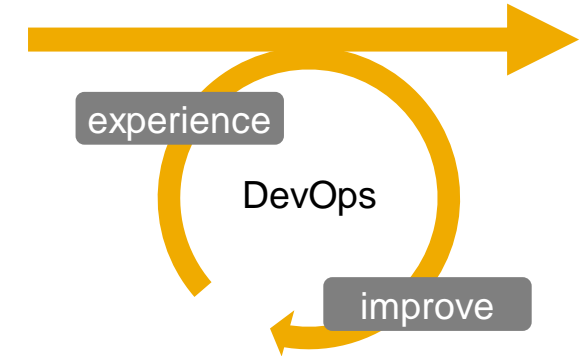
## Accelerator
for continuous delivery

Close cross-function
collaboration
to gain speed

# Cloud-Native Operations with SAP Cloud Platform

Enhanced Change and Transport System (CTS+) basics: sample landscape

**D-System**

**Q-System**

**P-System**

Export Content

Post Import Activities

Post Import Activities
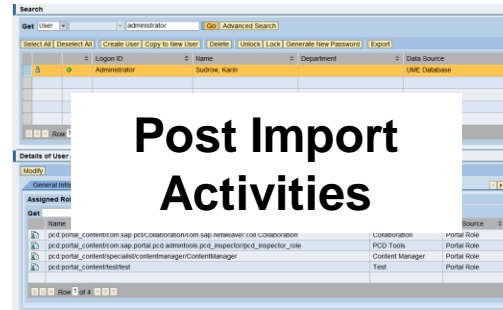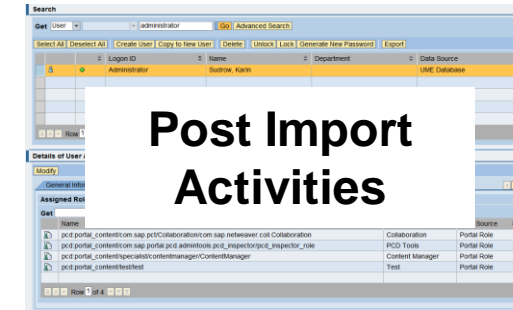
Create trans-port re-quest

Auto-matic import

Auto-matic import

Application Landscape

| Transport Request | Transport | Start Import | Transport | Start Import | CTS+ |

**One central transport tool**

# Cloud-Native Operations with SAP Cloud Platform

Continuous integration and delivery – Necessary steps

If you want to run in DevOps mode, it's advisable to implement a highly-automated agile development process to ensure speed and quality

- Maintain a code repository
- Automate the build (scriptable MTA archive builder available)
- Make the build self-testing
- Every commit (to baseline) should be built
- Everyone can see the results of the latest build
- Automate the deployment
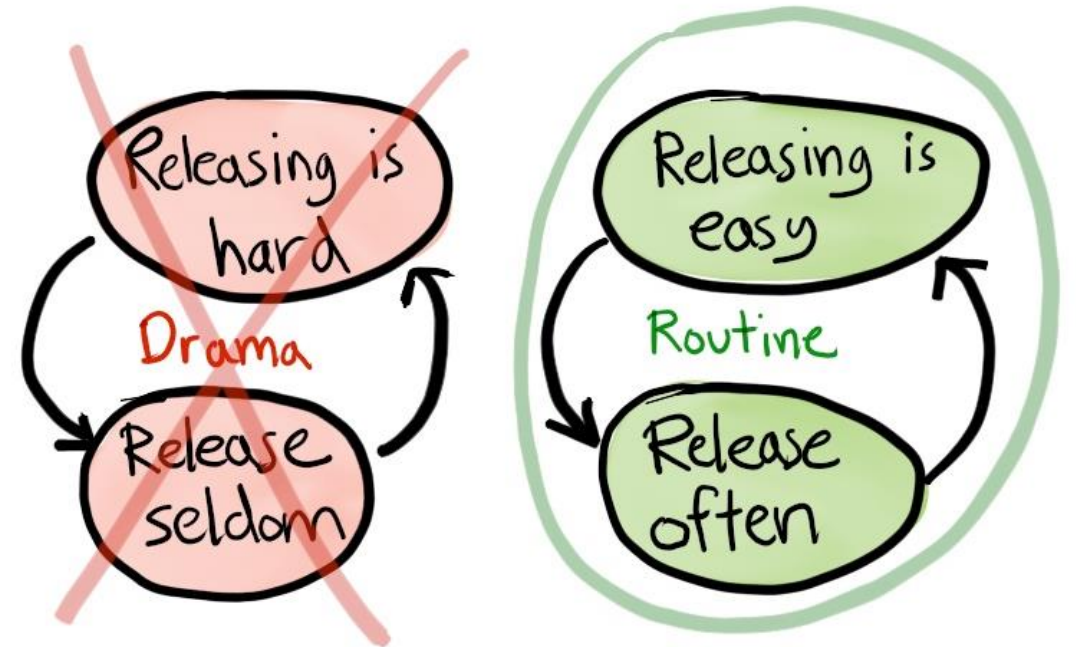
# Cloud-Native Operations with SAP Cloud Platform

Continuous integration: basic flow



**1** Write code

**2** Push to central source code management system

**3** SCM triggers CI server

**4** Automated build & tests

**5** Provide feedback

**SCM**

**CI Server**

Integrate frequently

Automated verification of each change
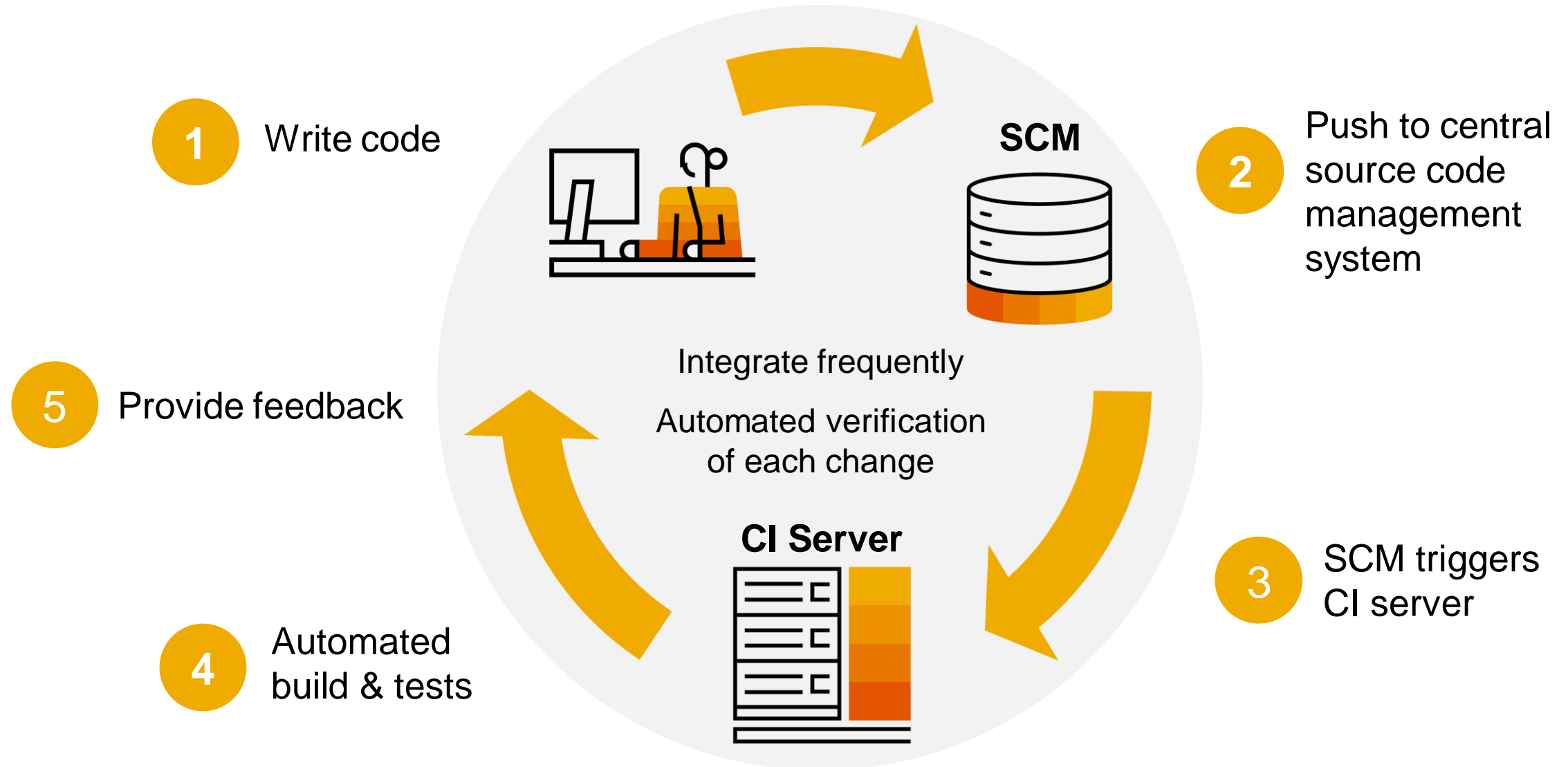
# Cloud-Native Operations with SAP Cloud Platform

Combining continuous integration and change management

## Development

- Based on *continuous integration* principles
- Verification of single developer change
- Typically fully automated (incl. attachment of MTA to transport request)
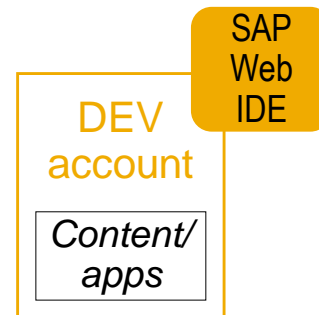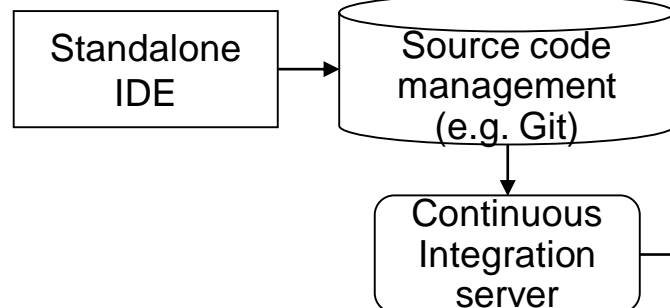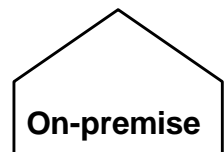
## Production deployment

- Based on strict *change management* rules
- Verification of release candidate version
- Typically done with manual confirmation



SAP Cloud Platform

SAP Web IDE

DEV account
*Content/ apps*

TEST account
*Content/ apps*

PROD account
*Content/ apps*

On-premise

Standalone IDE

Source code management (e.g. Git)

Deployable artifacts repository (e.g. Nexus)

MTA archive

Continuous Integration server

CTS+ / SAP Solution Manager

SAP Solution Manager
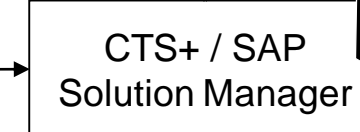
# Cloud-Native Operations with SAP Cloud Platform
Further reading

- openSAP course: Cloud-Native Operations with SAP Cloud Platform
- SAP Cloud Platform Identity Authentication
- SAP Cloud Platform Identity Provisioning
- The Multi-Target Application Model
- Deploying SHINE on the Cloud Foundry Environment within SAP Cloud Platform
- How To… Configure HCP for CTS
- Continuous Integration (CI) Best Practices with SAP – Introduction and Navigator
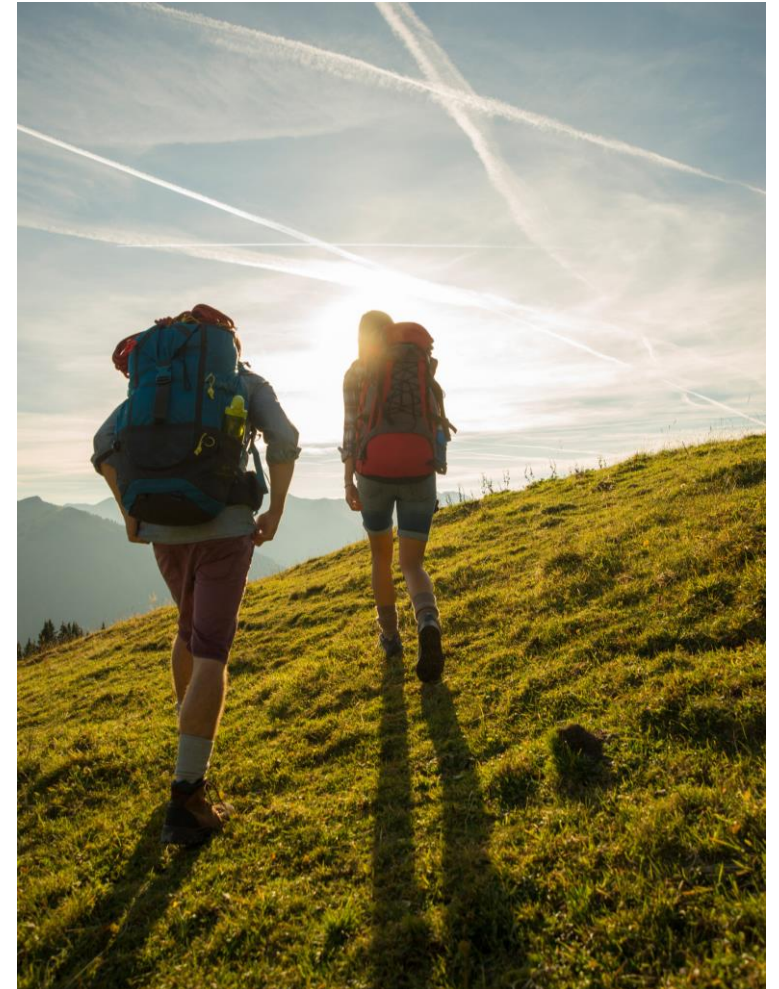
# Cloud-Native Operations with SAP Cloud Platform

What you've learned in this unit

- What the openSAP course Cloud-Native Operations with SAP Cloud Platform is all about
- SAP Cloud Platform identity and access management services
- Typical lifecycle phases for SAP Cloud Platform applications
- Multitarget application (MTA) concept
- Enhanced Change and Transport System (CTS+)
- Continuous integration (CI)
- Combination of CI and CTS+
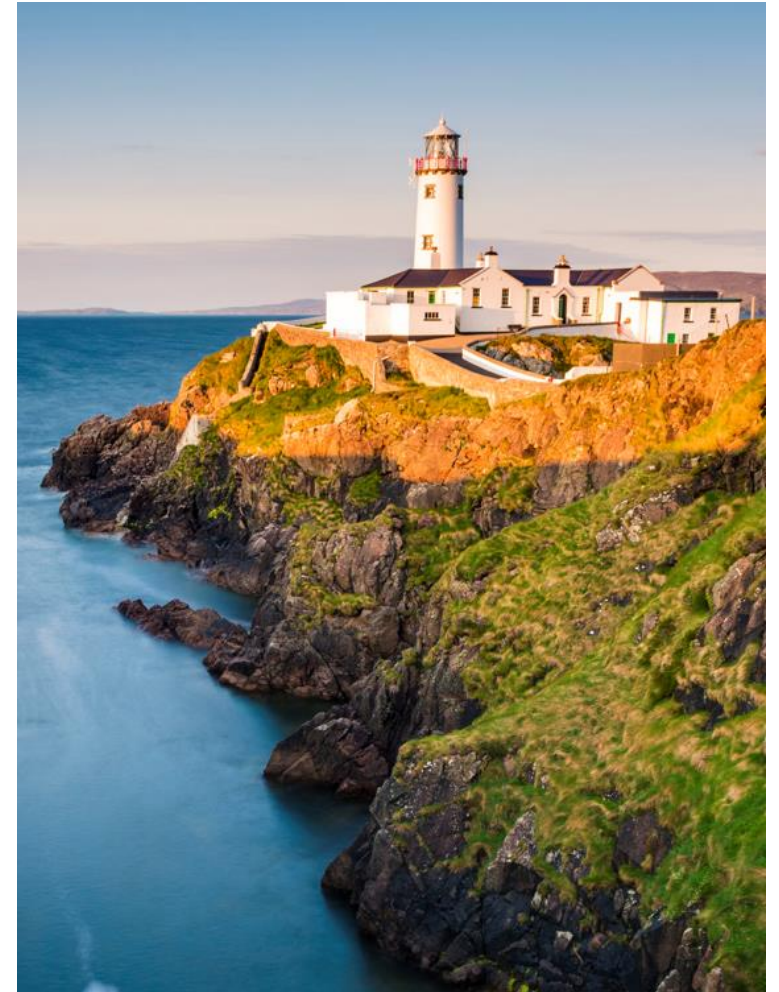
# Thank you.

**Contact information:**

**open@sap.com**

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