



INTERNAL
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Continuous Integration and Delivery by SAP

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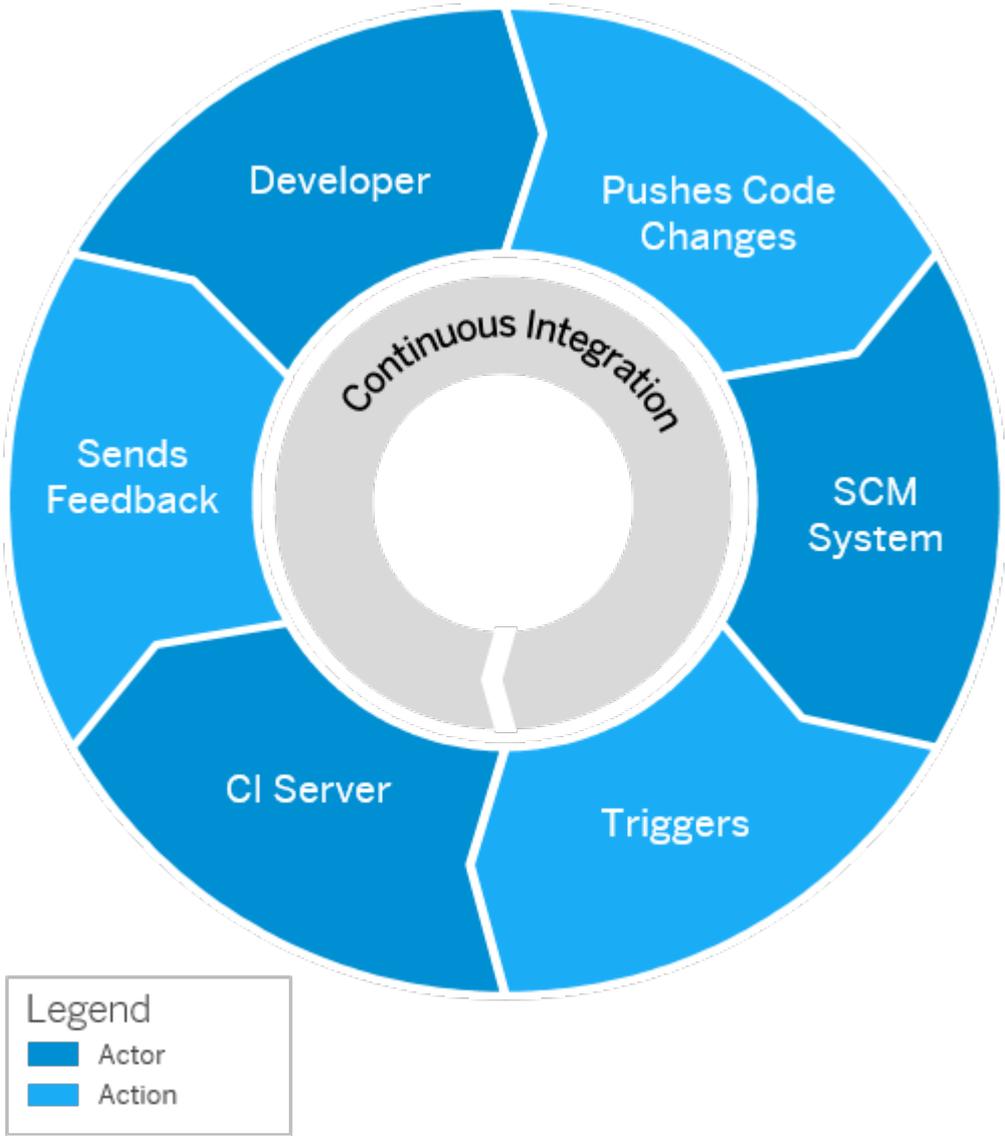
1 What Are Continuous Integration and Continuous Delivery?

Get an overview of the continuous integration and delivery concepts.

Continuous Integration

The term **continuous integration (CI)** describes a software development process, in which various team members integrate their contributions frequently into a single main line. Before each integration, the changes are verified through builds and automated testing. Thereby, you can detect errors as quickly as possible and prevent integration problems before completing the whole development.

This interactive graphic shows the basic flow for continuous integration:



- [#unique_1/unique_1_Connect_42_subsection-im1 \[page 4\]](#)
- [#unique_1/unique_1_Connect_42_subsection-im2 \[page 5\]](#)
- [#unique_1/unique_1_Connect_42_subsection-im3 \[page 5\]](#)

→ Tip

Hover over each actor-action combination for a short description and click on them for more detailed information.

Continuous Integration Basic Flow

The continuous integration basic flow comprises the following steps:

1. **The developer writes code and pushes the code changes into a central source code management system (SCM).**
2. The SCM triggers the continuous integration (CI) server.
3. The CI server runs automated builds and tests and sends feedback about their outcome to the developer.

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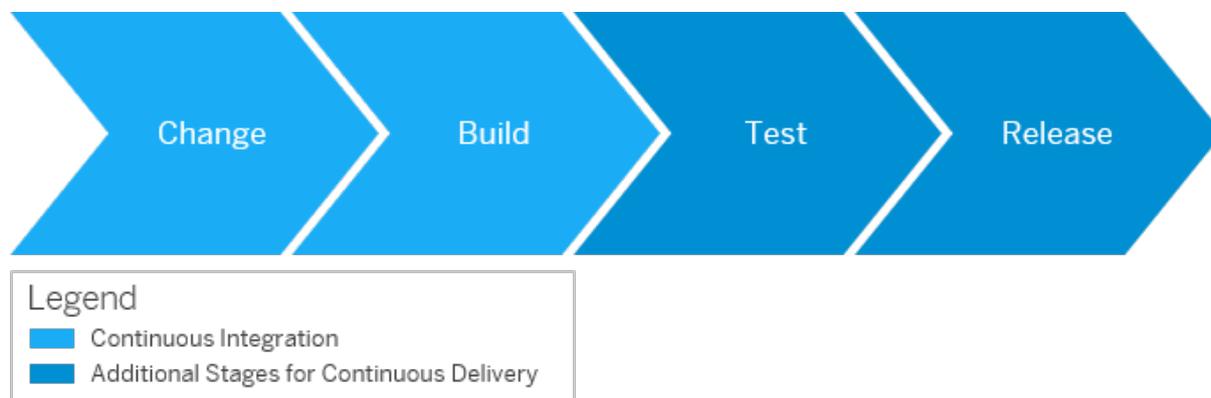
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3. **The CI server runs automated builds and tests and sends feedback about their outcome to the developer.**

As you can see from the graphic, the basic flow for continuous integration is a cycle: As soon as the CI server has sent its feedback to the developer, the flow starts over again. The developer either corrects his or her previous code change, which must then be built and tested again, or starts to create an entirely new one.

Continuous Delivery

The **continuous delivery (CD)** concept expands on the one of continuous integration. It adds the aspect that any change that has successfully passed the tests is immediately ready to be deployed to production, both from a technical and a qualitative point of view.

The following graphic shows the relation between continuous integration and continuous delivery:



Relation Between CI and CD

The continuous delivery process makes sure that the most current version of the software product is successfully built, tested, and provided in a shippable format. Based on the release decision by the development team or delivery manager, it can be shipped to customers or deployed to production at any time.

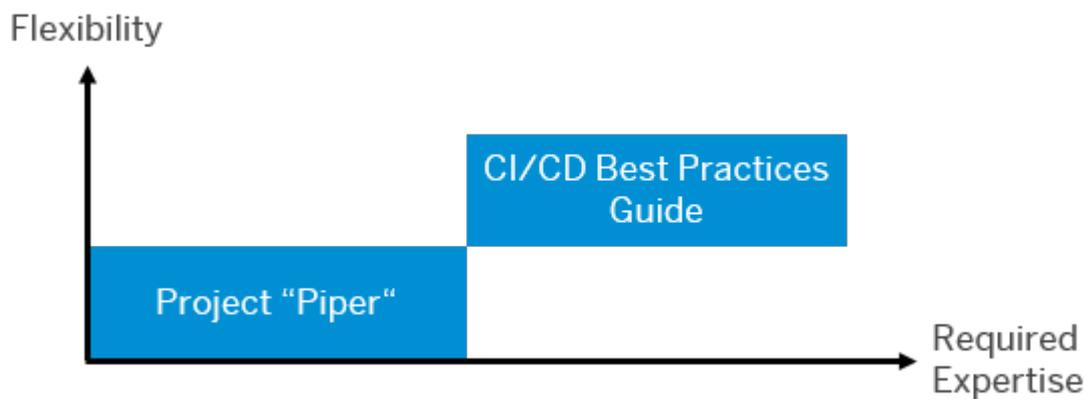
2 SAP Solutions for Continuous Integration and Delivery

Get an overview of the solutions SAP provides for continuous integration and delivery.

At the moment, SAP offers two different solutions that help you apply CI/CD in your software development.

- **Project "Piper"** provides pre-configured Jenkins pipelines, which you can use in your own Jenkins master infrastructure and adapt according to your needs, if necessary. It consists of a [shared library](#) , which contains the description of steps, scenarios, and utilities that are required to use Jenkins pipelines, and a [set of Docker images](#) that can be used to implement best practice processes.
- The [Continuous Integration and Delivery Best Practices Guide](#) provides simple recipes to implement continuous delivery pipelines on any CI/CD stack and demonstrates how to apply the principles of CI/CD to SAP-specific technologies.

Both CI/CD solutions differ in their level of flexibility and expertise required for setup and configuration:



Comparison of CI/CD Solutions by SAP

While the Continuous Integration and Delivery Best Practices Guide offers more flexibility than project "Piper", its usage also requires more expertise in CI/CD. Vice versa, project "Piper" Docker images can be used out-of-the-box, their flexibility, however, is limited.

2.1 Which SAP Solution for CI/CD Meets Your Needs?

Find your appropriate SAP solution for continuous integration and delivery.

The following table shows which development scenarios are covered by which SAP solutions for CI/CD. Look for your specific scenario to get a link to our appropriate solution.

→ Tip

In the table, use the search options to quickly find what you are looking for.

CI/CD Scenarios and Matching Offerings by SAP

Scenario	Environment	Project "Piper"	Continuous Integration and Delivery Best Practices Guide
SAP Fiori applications on SAP Cloud Platform	Neo	See Build and Deploy SAPUI5 or SAP Fiori Applications on SAP Cloud Platform with Jenkins .	See Apply CI/CD to SAP Fiori Development on SAP Cloud Platform .
SAP Fiori applications on ABAP Front-End Server	ABAP	-	See SAPUI5/SAP Fiori on ABAP Front-End Server .
Hybrid SAP Fiori and Android/iOS applications with the SAP Mobile Platform SDK	-	-	See SAP Fiori Hybrid Apps with SAP Mobile Platform .
iOS applications with the SAP Cloud Platform SDK for iOS	Cloud Foundry Neo	-	See SAP Cloud Platform SDK for iOS .
SAP HANA XS Classic applications	SAP HANA	-	See SAP HANA Extended Application Services (XS), classic model .
SAP HANA XS Advanced applications	SAP HANA	-	See SAP HANA Extended Application Services, advanced model (XS advanced) on SAP HANA .
Applications following the SAP Cloud Application Programming Model	Cloud Foundry	See Build and Deploy Applications with Jenkins and the SAP Cloud Application Programming Model .	-
Hybrid applications with Jenkins and SAP Solution Manager	Neo	See Build and Deploy Hybrid Applications with Jenkins and SAP Solution Manager .	-
Development with SAP Cloud Platform Transport Management	Neo	See Integrate SAP Cloud Platform Transport Management Into Your CI/CD Pipeline .	See Integrate SAP Cloud Platform Transport Management Into Your CI/CD Pipeline .

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