

Application Development  
and Automation

## Build SAP Fiori Apps with ABAP Cloud powered by Joule's ABAP developer capabilities

Extended version

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# Agenda

Introduction

Today's scenario – Overview

Today's exercise – Exercises

Wrap up

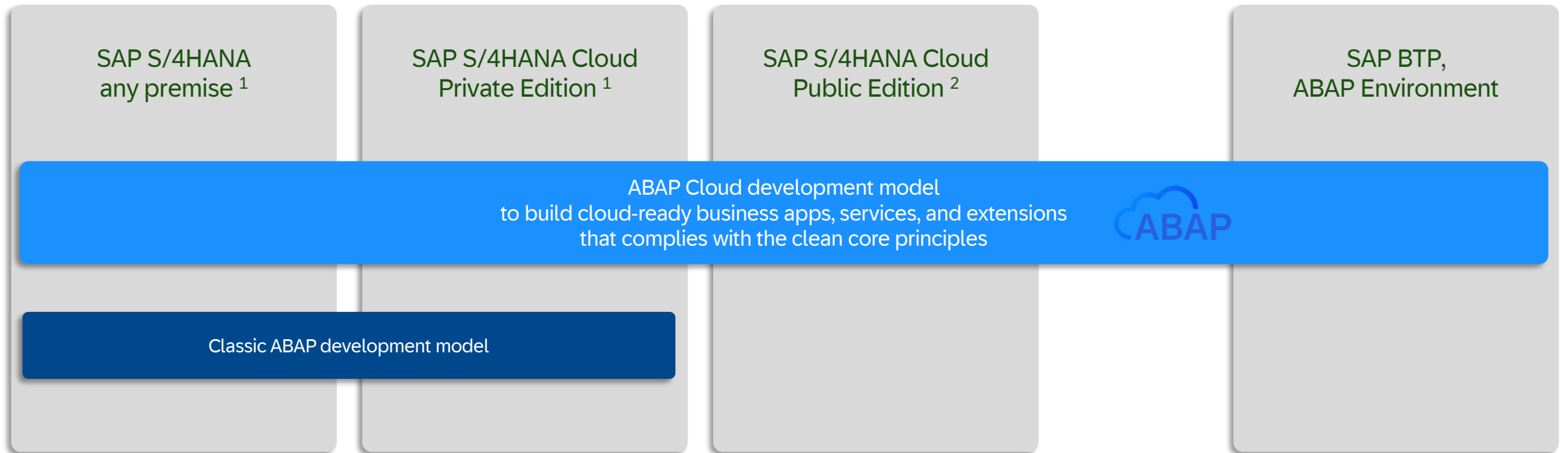
Q&A



# Introduction



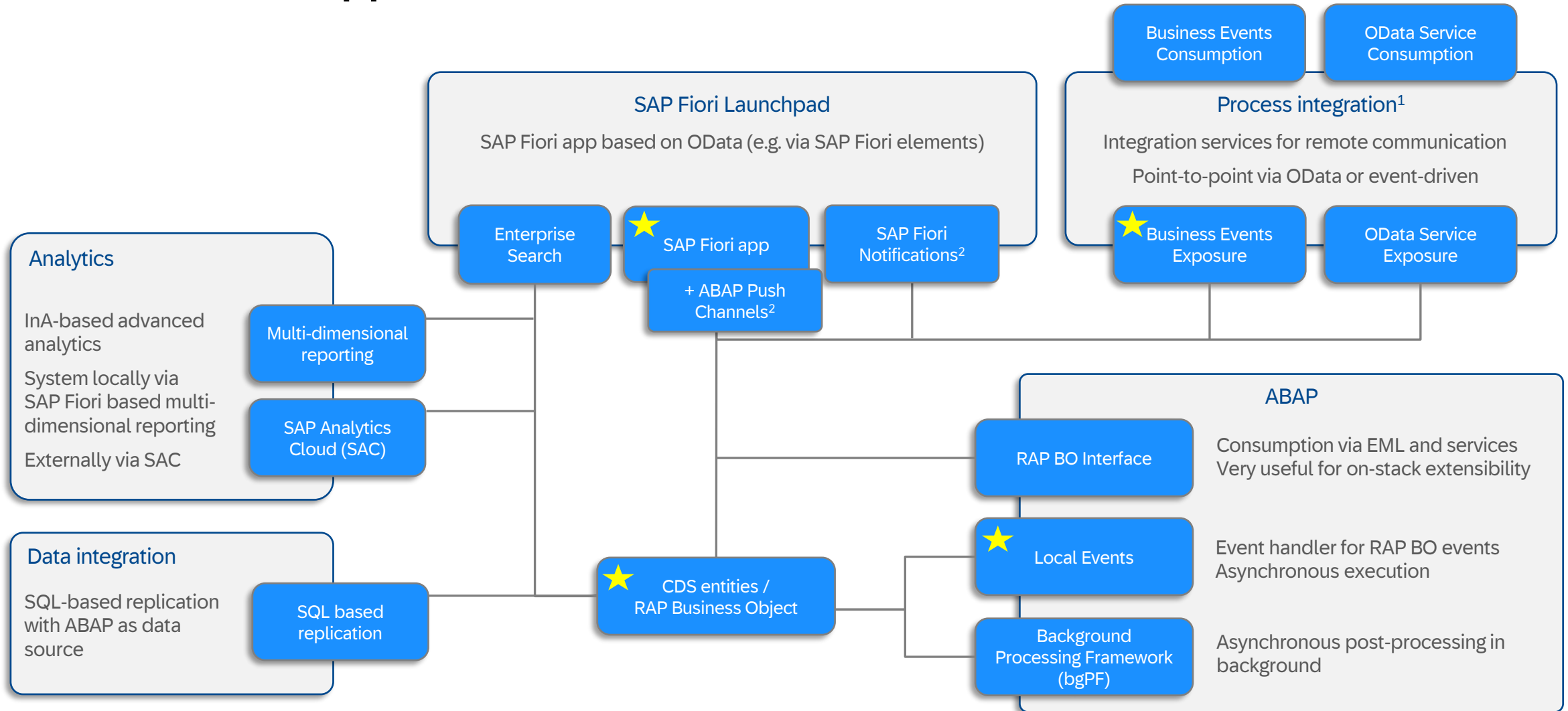
# ABAP Cloud – One development model for SAP S/4HANA and SAP BTP



<sup>1</sup> SAP S/4HANA any premise or SAP S/4HANA Cloud Private Edition release ≥ 2022

<sup>2</sup> SAP S/4HANA Cloud Public Edition release ≥ 2208, 3-system landscape required

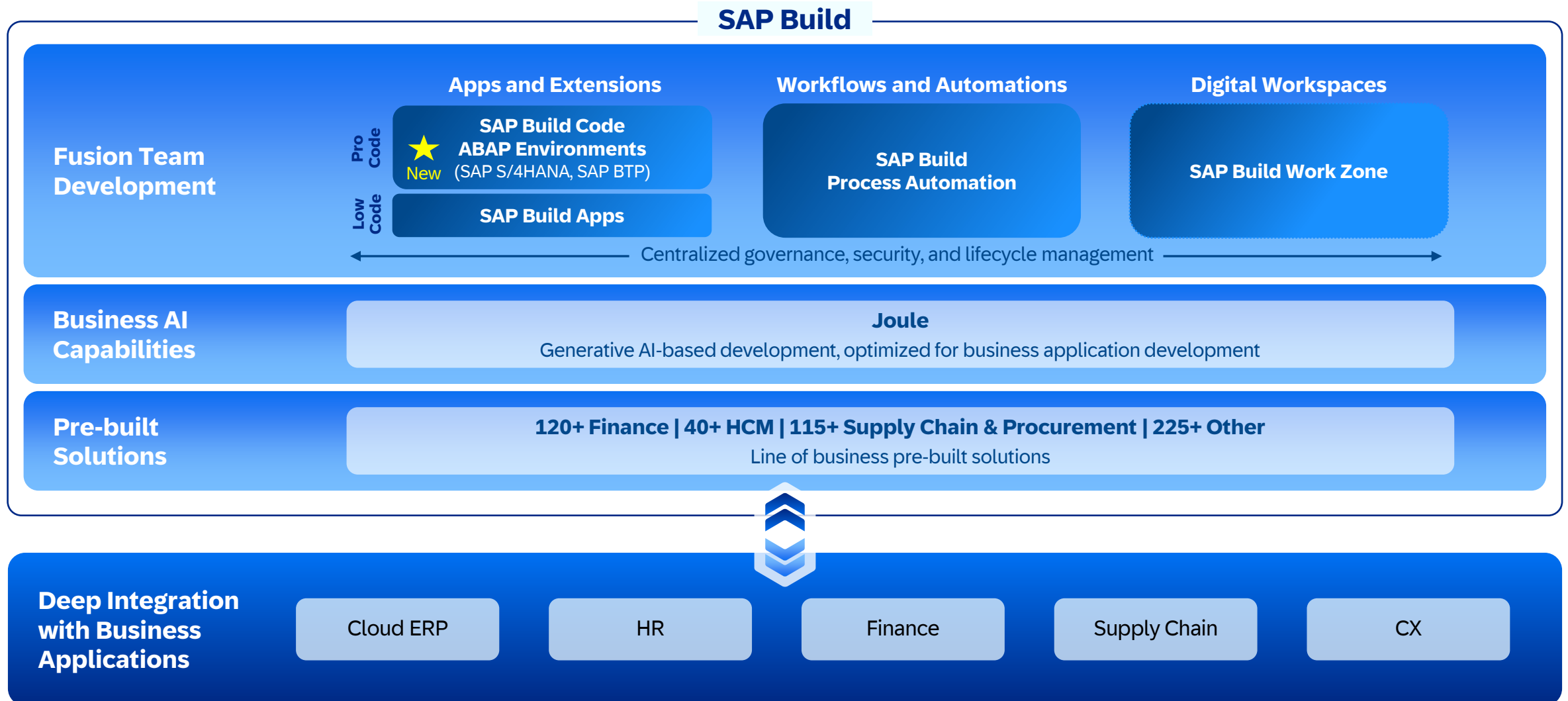
# ABAP Cloud – Supported scenarios



<sup>1</sup> HTTP, SOAP etc. are also part of ABAP Cloud

<sup>2</sup> 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.

# SAP Build: Generative AI-powered business application development & automation on SAP BTP





# Joule copilot's ABAP developer capabilities – Main use cases<sup>1</sup>

## Accelerate

Creation of ABAP Cloud applications and services, including test cases

## Transform

Classic ABAP code into ABAP Cloud

## Empower

Developers to infuse AI into business scenarios



<sup>1</sup> 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.

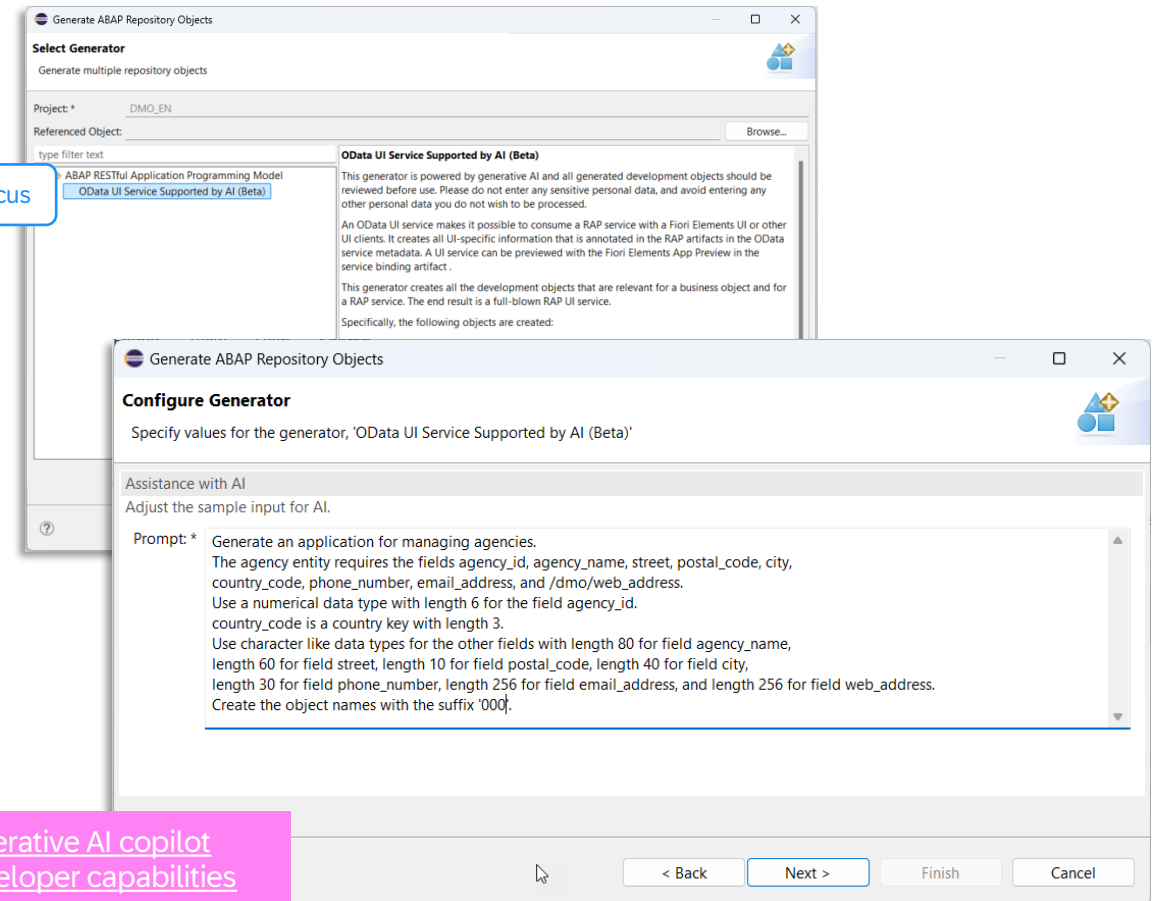
# Accelerate: Joule's ABAP developer capabilities \*

## Increase development efficiency by leveraging GenAI assistance in the ABAP Development Tools

- Generation of RAP business objects and services
- Code prediction
- Code explanation
- Unit test generation for ABAP classes and CDS views

★ Session's focus

## Example: Generation RAP business objects and services

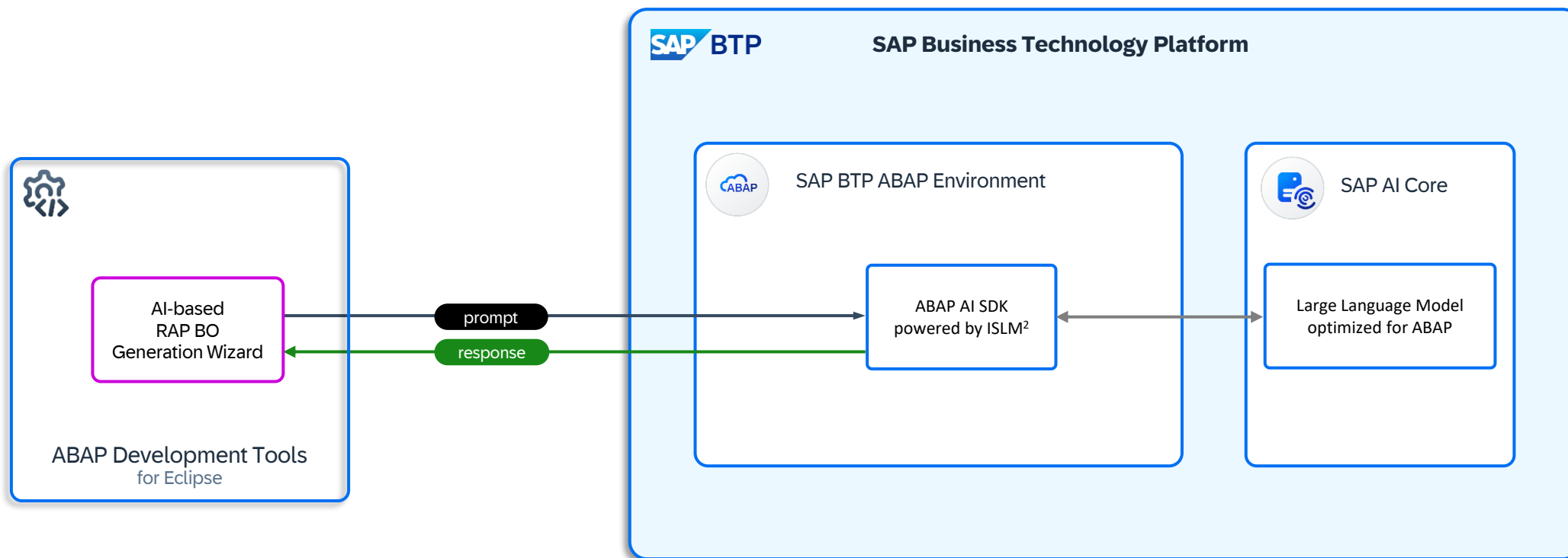


/Watch deep dives

AI104 | Revolutionize ABAP development with Joule, our generative AI copilot  
AD107 | Boost your code efficiency: Explore Joule's ABAP developer capabilities



# Simplified architecture for the AI-based RAP BO Generator <sup>1</sup>



<sup>2</sup> ISLM: Intelligent Scenario Lifecycle Management

/please note

The SAP BTP ABAP Environment trial is only connected to the [SAP AI Core](#) for the SAP TechEd Virtual 2024 from 8 to 11 October 2024.

# Today's scenario – Overview



# Block A – Build a **transactional** SAP Fiori app with RAP

with search, filter and draft capabilities, and business events

LIST REPORT PAGE			
Standard* <span>▼</span>			
1 filter active: Editing Status			
<div>Create Delete <span>⌵</span> <span>⌵</span></div>			
<input type="checkbox"/> Agency Id	Agency Name	City	
<input type="checkbox"/> 70001	Sunshine Travel	Rochester	>
<input type="checkbox"/> 70002	Fly High	Duesseldorf	>
<input type="checkbox"/> 70003	Happy Hopping	Berlin	>
<input type="checkbox"/> 70004	Pink Panther	Frankfurt	>
<input checked="" type="checkbox"/> 70005	Your Choice	Nuernberg	>
<input type="checkbox"/> 70006	Bella Italia	Roma	>
<input type="checkbox"/> 70007	Hot Socks Travel	Sydney	>
<input type="checkbox"/> 70008	Burns Nuclear	Singapore	>
<input type="checkbox"/> 70009	Honauer Reisen GmbH	Neumarkt	>
<input type="checkbox"/> 70010	Travel from Walldorf	Berlin	>
<input type="checkbox"/> 70011	Voyager Enterprises	Stockholm	>
<input type="checkbox"/> 70012	Ben McCloskey Ltd.	Birmingham	>
<input type="checkbox"/> 70013	Pillepalle Trips	Zuerich	>

Navigation  
to object page

**70005**  
Your Choice

**General Information**

Agency Id:

Postal Code:

Phone Number:

Agency Name:

City:

Email Address:

Street:

Country Code:

Web Address:

Draft updated **Create** Discard Draft

Some of the used features:

- ❖ AI-based generation of draft-enabled UI services
- ❖ Freestyle fuzzy search
- ❖ Value helps
- ❖ RAP business events
- ❖ Local event consumption

## Block B – Build a **read-only** SAP Fiori app with **hierarchical treeview**

Freestyle  
fuzzy search

Collapsible  
tree

**LIST REPORT PAGE**

Standard\* ▾

Employee ID	First Name	Last Name	Manager ID	
▼ 1	Friedrich	Meier		>
> 986	Vlora	Leisert	1	>
> 1831	Illya	Marshall	1	>
> 830	Georg	Mustermann	1	>
▼ 3	Lee	Neubasler	1	>
> 798	Anna	Babilon	3	>
> 725	Felix	Benz	3	>
> 787	Georg	Benz	3	>
> 4	Holm	Illner	3	>
▼ 168	Andreas	Martin	3	>
> 440	Johannes	Barth	168	>
> 373	Claire	Buchholm	168	>
> 447	August	Columbo	168	>
> 625	Uli	Deichgraeber	168	>
> 372	Georg	Gutenberg	168	>
> 724	Achim	Gutenberg	168	>
> 449	Annemarie	Heller	168	>

Some of the used features:

- ❖ AI-based generation of read-only UI services
- ❖ Freestyle fuzzy search
- ❖ Filter bar
- ❖ Data hierarchy definition
- ❖ Read-only hierarchical treeview in SAP Fiori app

Navigation  
to object page

# Today's scenario – Exercises



# The **AD180** hands-on exercises

## PREREQUISITES

Create a free SAP BTP ABAP Environment trial user (see [Tutorial](#)) – connected to SAP AI Core **only** during the SAP TechEd Virtual 2024 week

Set up your ABAP Development Tools for Eclipse (see [Tutorial](#))

Create an ABAP cloud project to connect ADT to the ABAP environment (see [Tutorial](#))

**01** Generate a transactional OData UI Service E2E with Joule's ABAP developer capabilities

BLOCK A

**02** Enhance the RAP BO behavior with a business event and consume it locally

**03** Play around with the AI-based ADT Wizard

**04** Generate a read-only OData UI service with Joule's ABAP Developer capabilities

BLOCK B

**05** Implement the read-only treeview for hierarchical data display

**06** Create an SAP Fiori elements app with SAP Business Application Studio and deploy it to the ABAP Environment

OPTIONAL

## ACCESS THE EXERCISES

<https://github.com/SAP-samples/teched2024-AD180> (see [Link](#))



# DEMO



# The AD180 hands-on exercises – Working on GitHub (1)

Follow the step-by-step instructions provided on [GitHub](#).

## Exercise 1: Generate transactional OData UI Service E2E with GenAI and RAP

### Introduction

In this exercise, you will create a transactional UI service along with the underlying RAP business object to manage agencies using the GenAI-based ABAP repository object generator (Beta) provided in the ABAP Development Tools for Eclipse (ADT).

You will create an ABAP package, generate all development artefacts using the GenAI-based ADT wizard and a predefined prompt with a natural description of the application, and then create an ABAP class to populate demo agency data in the generated database table. The generation will create the required database table, the CDS data model, RAP BO behavior definition, service definition, and service binding. At the end, you will publish and preview your *Manage Agencies* application using the *Fiori Elements App Preview* function provided in ADT.

### Exercises

- [1.1 - Create an ABAP Package](#)
- [1.2 - Generate OData UI Service using GenAI](#)
- [1.3 - Adjust the Generated UI Service](#)
- [1.4 - Populate Demo Data](#)
- [1.5 - Preview the Agency App](#)
- [Summary & Next Exercise](#)

#### Reminder:

Don't forget to replace all occurrences of the placeholder `###` with your suffix or Group ID in the exercise steps below.

You can use the ADT function **Replace All** (Ctrl+F) for the purpose.

If you haven't been assigned a Group ID, select a combination of three (3) numbers and/or letters, such as e.g. `000` or `AI1`.

### Exercise 1.1: Create an ABAP Package

[^Top of page](#)

Create your exercise package `###`.

This ABAP package will contain all the artefacts you will be creating in the different exercises of this hands-on session.

► ● Click to expand!

### Exercise 1.2: Generate OData UI Service using GenAI

[^Top of page](#)

Generate an OData UI service using the AI-based RAP BO generator (Beta) provided in ADT.

► ● Click to expand!

### Exercise 1.3: Adjust the Generated UI Service

[^Top of page](#)

# The AD180 hands-on exercises – Working on GitHub (2)



**Use the Outline view** to get a quick overview of the exercises.

**Always click on ► ●**  
to expand the details

Exercise 1.1: Create an ABAP Package

[^Top of page](#)

Create your exercise package 📦.

This ABAP package will contain all the artefacts you will be creating in the different exercises of this hands-on session.

▼ ● Click to expand!

1. In ADT, go to the **Project Explorer**, right-click on your ABAP Cloud Project, select **New > ABAP Package** from the context menu.

Maintain the required information provided below. Replace all occurrences of the placeholder **###** with your chosen or assigned suffix, which should be a combination of three (3) numbers and/or letters, e.g. **476** or **AP3**.

**i** The suffix **000** is used for the screenshots in this exercise. Use a different suffix.

- Name: **ZRAP120\_Agency\_###**
- Description: **Manage Agencies App**
- Select the box **✓ Add to favorites package**
- Superpackage: **ZLOCAL**

Then click **Next >**.

**Eclipse IDE**

**New ABAP Package**

ABAP Package

Create an ABAP package

Project: **DMO\_EN\_1** **Browse...**

Name: **ZRAP120\_AGENCY\_000**

Description: **Manage Agencies App**

# The AD180 hands-on exercises – Working on GitHub (3)



**Make use of Copy raw contents button** to easily copy code snippets

**Always replace all occurrences of ### with your chosen suffix in code snippets**

▼ ● Click to expand the source code!

```
CLASS zgenerate_agency_data_### DEFINITION
PUBLIC
FINAL
CREATE PUBLIC .

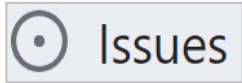
PRIVATE SECTION.
ENDCLASS.

CLASS zgenerate_agency_data_### IMPLEMENTATION.
METHOD if_oo_adt_classrun~main.
    "delete any existing active and draft data, if available
    DELETE FROM zagency_###
```

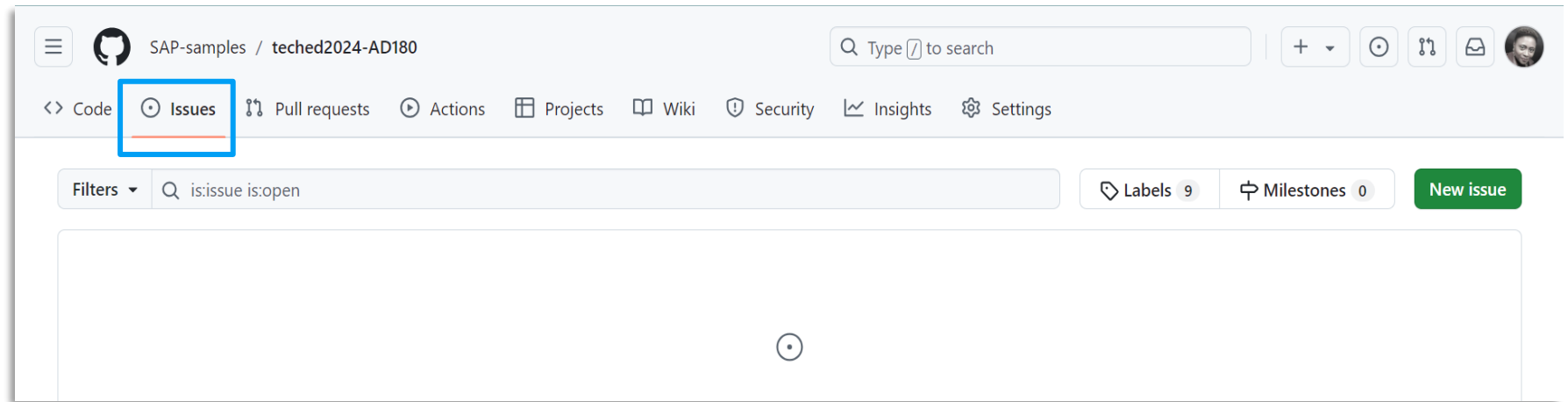
/please note

The names of the generated repository objects and fields in your exercise package may differ from those used in the exercise description, code snippets, and screenshots.

# The AD180 hands-on exercises – Working on GitHub (4)



**Open GitHub Issues** to get help from the SAP experts.



# Wrap up





# Key takeaways

**ABAP Cloud** is the development model provided for building cloud-ready enterprise services, apps, and extensions on SAP BTP ABAP Environment and all editions of SAP S/4HANA<sup>1</sup>, in the cloud and on-premise. Development that is done with ABAP Cloud adheres to the **clean core principles**.

The **ABAP Cloud feature set** is enhanced **quarterly** in SAP BTP ABAP Environment, **twice a year** in SAP S/4HANA Cloud Public Edition, and **every two years** in SAP S/4HANA and SAP S/4HANA Cloud Private Edition<sup>1</sup> as of release 2023.

Check out the [ABAP Cloud Release Notes](#) and the [ABAP Cloud Roadmap Information](#).

The introduction of **generative AI in ABAP**<sup>2</sup> will help **accelerate** the development processes, **improve** the transformation of existing custom code, and **empower** developer to easily infuse AI into ABAP-based business scenarios. Check out the [SAP Road Map Explorer](#) for more details.

<sup>1</sup> SAP S/4HANA any premise or and SAP S/4HANA Cloud Private Edition release ≥ 2022  
SAP S/4HANA Cloud Public Edition release ≥ 2208, 3-system landscape required

<sup>2</sup> 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.

# Further information

## Discover more SAP TechEd Virtual 2024 sessions on ABAP Cloud and ABAP AI

- [AI104 | Revolutionize ABAP development with Joule, our generative AI copilot](#)
- [AD107 | Boost your coding efficiency: Explore Joule's ABAP developer capabilities](#)
- [AD106 | Clean core extension of SAP S/4HANA with the latest ABAP Cloud features](#)
- [AD100 | Unlock SAP Build and ABAP Cloud interoperability to elevate your extensions](#)
- [DT200 | Clean core extensibility for SAP S/4HANA Cloud Private Edition](#)
- [DT201 | Extensibility for SAP S/4HANA Cloud Public Edition](#)
- [DT280 | Build clean core extensions with ABAP Cloud for SAP S/4HANA Cloud](#)
- Find more: [ABAP Cloud sessions at SAP TechEd in 2024](#)

## Documentation & Roadmap

- [ABAP Cloud Development Guide](#) | | [ABAP Cloud Release Notes](#)
- [ABAP Cloud Roadmap Information](#)
- [SAP Road Map Explorer](#)

## SAP Community

- [ABAP Development](#)
- [ABAP RESTful Application Programming Model \(RAP\)](#)
- [SAP BTP ABAP Environment](#)

# Learn more about **ABAP in SAP Build** at SAP TechEd 2024

Check out the Session Catalog:  
[sap.com/events/teched/abap](https://sap.com/events/teched/abap)



Join the ABAP Community:  
[community.sap.com](https://community.sap.com)



/thank you



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Add partner  
logo and alt text