

AD164

Get started with ABAP Cloud for classic ABAP developers

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Agenda

Introduction

Today's scenario – Overview

Today's scenario – Exercises

Wrap up



Introduction



ABAP Cloud in a nutshell



ABAP CLOUD

Development model to build cloud-ready business apps, services, and extensions that adhere with clean core principles by default

Supports key user and developer extensibility scenarios

Available on SAP cloud ERP solutions and SAP BTP

ABAP CLOUD RULES FOR SMOOTH SOFTWARE UPDATES



No modifications to SAP objects allowed

Use of cloud-ready technologies, programming models, and tools

Only stable and released SAP APIs and SAP extension points can be used

Mandatory in public cloud and recommended in private cloud and on-premise

From classic ABAP to ABAP Cloud – Developer perspective

Differences between classic ABAP and ABAP Cloud

Classic ABAP development

~ Not cloud-ready and minimum upgrade stability. ~

Extremely flexible and powerful, but not public cloud-ready and limited to on-premise and private cloud

All SAP objects, APIs, and implicit extensions points can be used in custom code and to extend SAP apps

SAP objects can be modified

No clear separation between SAP code and extension code

Use of proven and mature, but not cloud-ready, server-side UI technologies

SAP software changes lead to high test and adaptation efforts, typically resulting in fewer upgrades

Slow agility and innovation speed

≠

ABAP Cloud development model

~ Cloud-ready, upgrade-stable, future-proof, powered by generative AI*. ~

Powerful for building clean core-compliant apps, services, and extensions both on-stack and side-by-side

Only public SAP objects, APIs, and extension points can be used in custom code and to extend SAP apps

SAP objects cannot be modified

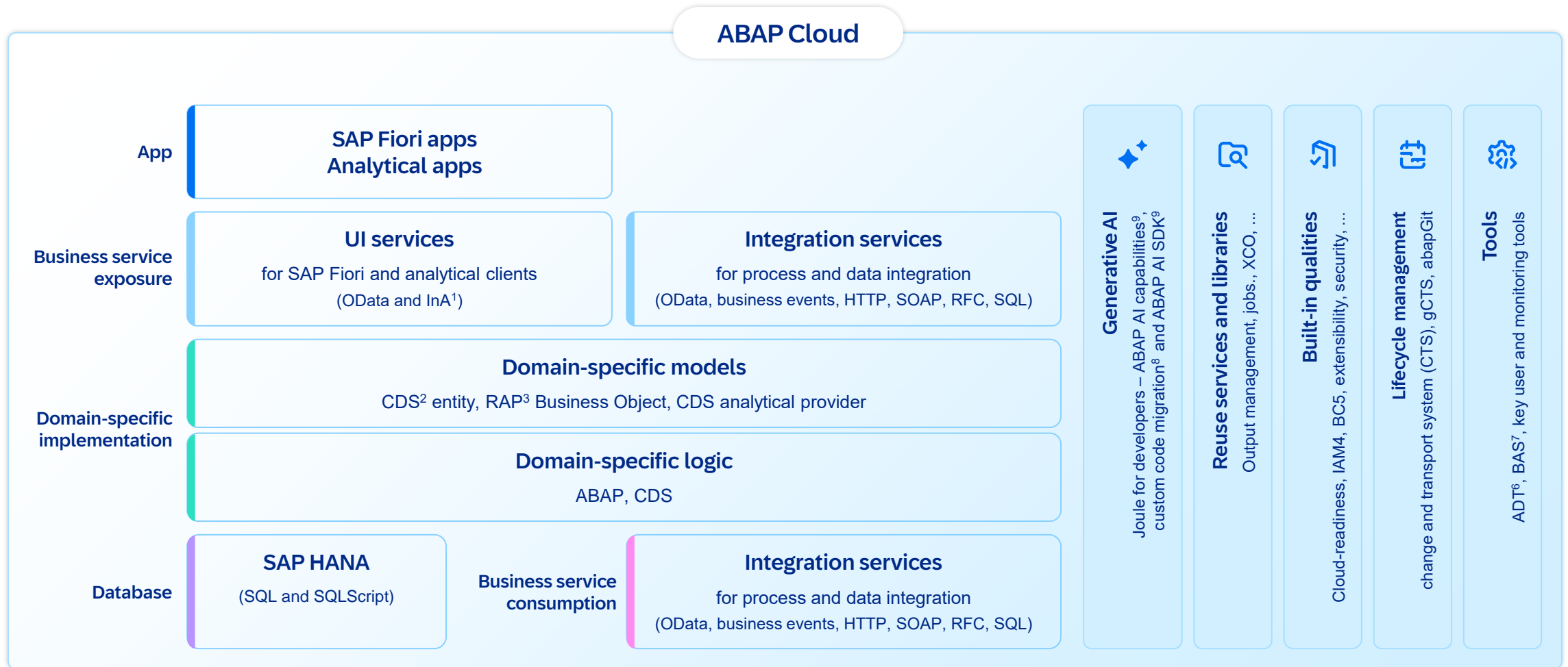
Clear separation between SAP code and extension code checked by the ABAP compiler

Use of proven cloud technologies and client-side UI technologies such as ABAP RAP and SAP Fiori

SAP software changes lead to low test and adaptation efforts, enabling easier, more frequent upgrades

Increased agility and innovation speed

ABAP Cloud map

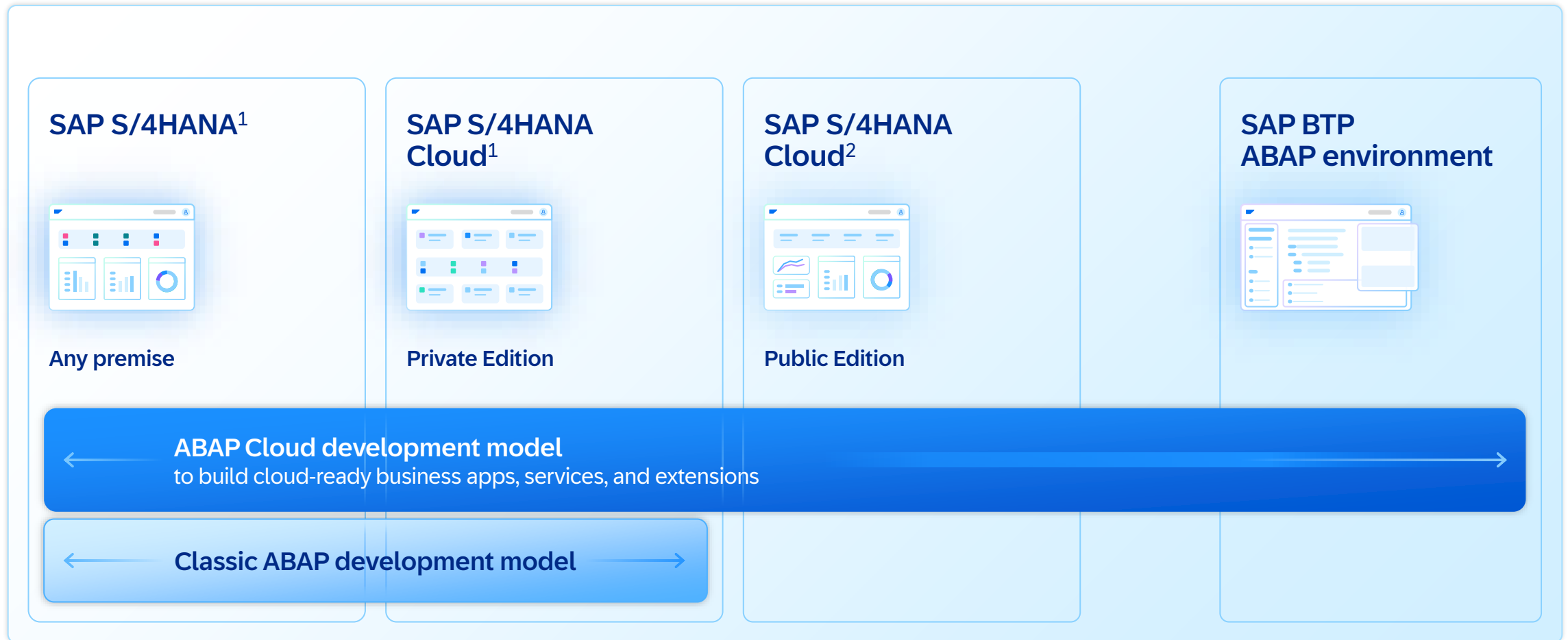


1 Information access / 2 Core Data Services / 3 ABAP RESTful application programming model / 4 Identity & Access Management / 5 Business Configuration / 6 ABAP Development Tools /

7 Business Application Studio / 8 Planned to be available in future releases / 9 Available for SAP S/4HANA Cloud Public Edition and SAP BTP ABAP environment

ABAP Cloud

One development model for S/4HANA and SAP BTP ABAP environment



¹ SAP S/4HANA any premise or SAP S/4HANA Cloud, private edition release ≥ 2022

² SAP S/4HANA Cloud, public edition release ≥ 2208, 3-system landscape required

Today's scenario – Overview



From classic ABAP to ABAP Cloud – Developer perspective

Classic ABAP list viewer (ALV) report

ALV: Manage Travels

Menu

Travels (4136)

Travel ID	Agency ID	Agency Name	Cust. ID	Last Name	Starting Date	End Date	Book. Fee	Price	Currency	Description	Overall St
70041	Maxitrip		594	Ryan	07.06.2025	05.04.2026	40.00	1.889.00	USD	Vacation	Open
70007	Hot Socks Travel		608	Prinz	07.06.2025	07.06.2025	20.00	900.00	USD	Business Trip for Christine, Pier	Accepted
70046	Hendrik's		93	Detemple	07.06.2025	05.04.2026	80.00	4.164.00	USD	Vacation	Open
70042	The Ultimate Answer		665	Madeira	07.06.2025	05.04.2026	40.00	1.871.00	USD	Vacation	Open
70007	Hot Socks Travel		225	Mechler	07.06.2025	07.06.2025	20.00	992.00	USD	Business Trip for Kurt, Ida	Open
70049	Flights and More		72	Neubasler	07.06.2025	05.04.2026	120.00	5.586.00	USD	Vacation	Open
70046	Hendrik's		138	Wohl	07.06.2025	05.04.2026	120.00	5.691.00	USD	Vacation	Open
70012	Ben McCloskey Ltd.		705	Müller	07.06.2025	09.06.2025	60.00	2.777.00	USD	Vacation for Lothar, Ulla, Thilo	Open
70032	Sunny, Sunny, Sun.		115	Benz	07.06.2025	05.04.2026	120.00	5.792.00	USD	Visiting Anna	Accepted
70016	All's Bazar		697	Leisert	07.06.2025	09.06.2025	20.00	959.00	USD	Business Trip to USA	Open
70005	Your Choice		582	Lautenba	07.06.2025	07.06.2025	20.00	959.00	USD	Vacation	Open
70028	Aussie Travel		583	Lautenba	07.06.2025	03.04.2026	90.00	4.304.00	USD	Sightseeing in Miami, Florida	Accepted
70014	Kangeroos		4	Buchholm	07.06.2025	09.06.2025	40.00	2.014.00	USD	Vacation for Thomas, Jasmin	Open
70010	Travel from Walldorf		667	Madeira	07.06.2025	07.06.2025	10.00	544.00	USD	Business Trip for Anna	Open



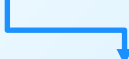
ABAP Cloud – SAP Fiori list report

Standard

Travel ID: Agency ID: Customer ID: Overall Status:

Travels (4,136)

Travel...	Agency ID	Customer ID	Overall Status
<input type="checkbox"/> 4136	Happy Holiday (70025)	Pan (629)	Rejected
<input type="checkbox"/> 4135	Kangeroos (70014)	Gahl (438)	Open
<input type="checkbox"/> 4134	Aussie Travel (70028)	Benz (115)	Rejected
<input type="checkbox"/> 4133	Intertravel (70043)	D'Oultremont (317)	Open
<input checked="" type="checkbox"/> 4132	Hot Socks Travel (70007)	Kramer (394)	Open
<input type="checkbox"/> 4131	Up 'n' Away (70029)	Goelke (185)	Accepted
<input checked="" type="checkbox"/> 4130	Bella Italia (70006)	Henry (272)	Open
<input type="checkbox"/> 4129	Rocky Horror Tours (70048)	Sessler (481)	Open
<input type="checkbox"/> 4128	Honauer Reisen GmbH (70009)	Babilon (369)	Open
<input type="checkbox"/> 4127	Caribbean Dreams (70022)	Columbo (62)	Open
<input type="checkbox"/> 4126	Aussie Travel (70028)	Picard (645)	Accepted
<input type="checkbox"/> 4125	No Return (70020)	D'Oultremont (315)	Open



4130

Travel Booking

Travel ID: 4130
Agency ID: Bella Italia (70006)
Customer ID: Henry (272)
Starting Date: Apr 2, 2026
End Date: Apr 2, 2026
Booking Fee: 30.00 USD
Total Price: 11,008.00 USD
Description: Business Trip for Friedrich, Juan, Pierre
Overall Status: Open

Booking

Bookings (3)

Booking No.	Booking Date	Customer ID	Booking Status
1	Mar 18, 2026	Eikhbaum (549)	New
2	Mar 18, 2026	Hoffen (154)	New
3	Mar 18, 2026	Prinz (609)	New

AD164 – Classic app built with SAP List Viewer

Starting point

The diagram illustrates the SAP ALV: Manage Travels interface. It shows a list of travels and a detailed view of a specific travel.

Travels (4136)

	Travel ID	Agency ID	Agency Name	Cust. ID	Last Name	Starting Date	End Date	Book. Fee	Price	Currency	Description	Overall St
<input type="checkbox"/>	1	70041	Maxitrip	594	Ryan	07.06.2025	05.04.2026	40,00	1.889,0...	USD	Vacation	Open
<input type="checkbox"/>	2	70007	Hot Socks Travel	608	Prinz	07.06.2025	07.06.2025	20,00	900,00	USD	Business Trip for Christine, Pier...	Accepted
<input type="checkbox"/>	3	70046	Hendrik's	93	Detemple	07.06.2025	05.04...					
<input type="checkbox"/>	4	70042	The Ultimate Answer	665	Madeira	07.06.2025	05.04...					
<input type="checkbox"/>	5	70007	Hot Socks Travel	225	Mechler	07.06.2025	07.06...					
<input type="checkbox"/>	6	70049	Flights and More	72	Neubasler	07.06.2025	05.04...					
<input type="checkbox"/>	7	70046	Hendrik's	138	Wohl	07.06.2025	05.04...					
<input type="checkbox"/>	8	70012	Ben McCloskey Ltd.	705	Müller	07.06.2025	09.06...					
<input type="checkbox"/>	9	70032	Sunny, Sunny, Sun...	115	Benz	07.06.2025	05.04...					
<input type="checkbox"/>	10	70016	Ali's Bazar	697	Leisert	07.06.2025	09.06...					
<input type="checkbox"/>	11	70005	Your Choice	582	Lautenba...	07.06.2025	07.06...					
<input type="checkbox"/>	12	70028	Aussie Travel	583	Lautenba...	07.06.2025	03.04...					
<input type="checkbox"/>	13	70014	Kangeroos	4	Buchholm	07.06.2025	09.06...					
<input type="checkbox"/>	14	70010	Travel from Walldorf	667	Madeira	07.06.2025	07.06...					
<input type="checkbox"/>	15	70028	Aussie Travel	466	Miguel	07.06.2025	03.04...					

ALV: Manage Travels

Menu

Travel ID
1

Starting Date
07.06.2025

Total Price
1889.00 USD

Agency ID
Maxitrip - 70041

End Date
05.04.2026

Description
Vacation

Bookings (4)

Book. No.	Booking Date	Cust. ID	Surname	Airline ID	Airline Name	Flight No.	Flight Date	Airfare	Currency	Booking St
1	21.05.2025	594	Ryan	UA	United Airlines, Inc.	1537	07.06.2025	438,0...	USD	New
2	07.06.2025	594	Ryan	AA	American Airlines In...	322	09.06.2025	438,0...	USD	New
3	15.03.2026	594	Ryan	UA	United Airlines, Inc.	1537	03.04.2026	438,0...	USD	New
4	19.03.2026	594	Ryan	AA	American Airlines In...	322	05.04.2026	438,0...	USD	New

AD164 – Build a transactional SAP Fiori app with ABAP Cloud using RAP

Resulting app – with search, filter, quick actions, business events, and more

Standard **LIST REPORT**

Travel ID: Agency ID: Customer ID: Overall Status:

Search

Go Adapt Filters

Travels (4,136)

	Travel...	Agency ID	Customer ID	Overall Status
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<input type="checkbox"/>	4125	No Return (70020)	D' Oultrement (315)	Open

Some of the used ABAP Cloud features:

- Early managed numbering
- Internal update
- Actions
- Side effects
- Business events
- Authorization checks, etc.

4130 **OBJECT PAGE**

Accept Travel Reject Travel

Travel Booking

Travel ID: 4130
Agency ID: Bella Italia (70006)
Customer ID: Henry (272)
Starting Date: Apr 2, 2026

End Date: Apr 2, 2026
Booking Fee: 30.00 USD
Total Price: 11,008.00 USD

Description: Business Trip for Friedrich, Juan, Pierre
Overall Status: Open

Booking

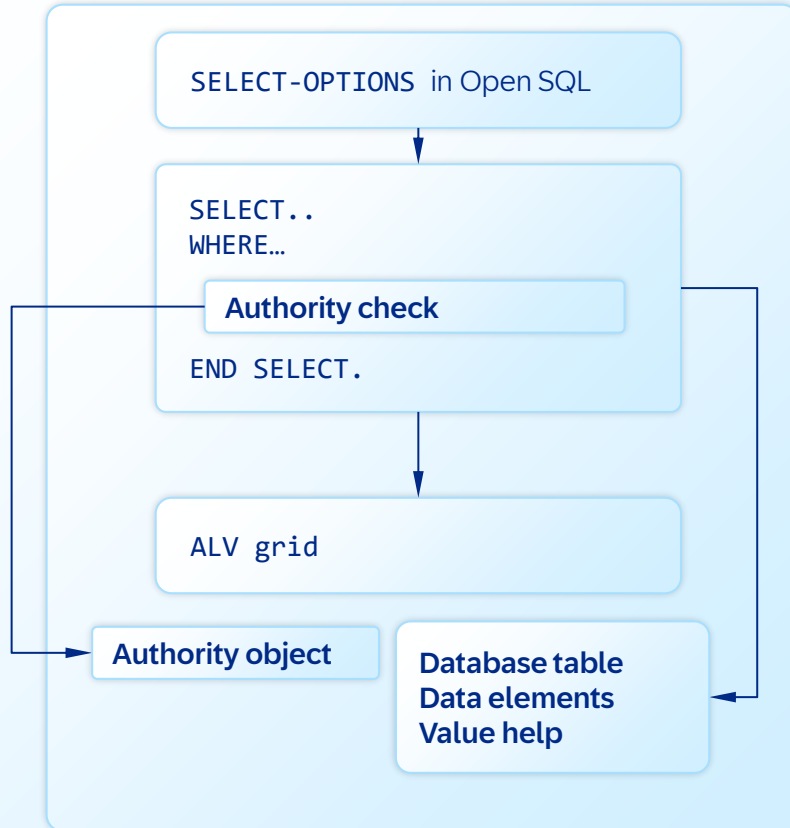
Bookings (3)

Booking Nu...	Booking Date	Customer ID	Booking Status
1	Mar 18, 2026	Eichbaum (549)	New
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3	Mar 18, 2026	Prinz (609)	New

Classic ABAP list viewer (ALV) report

Open SQL queries

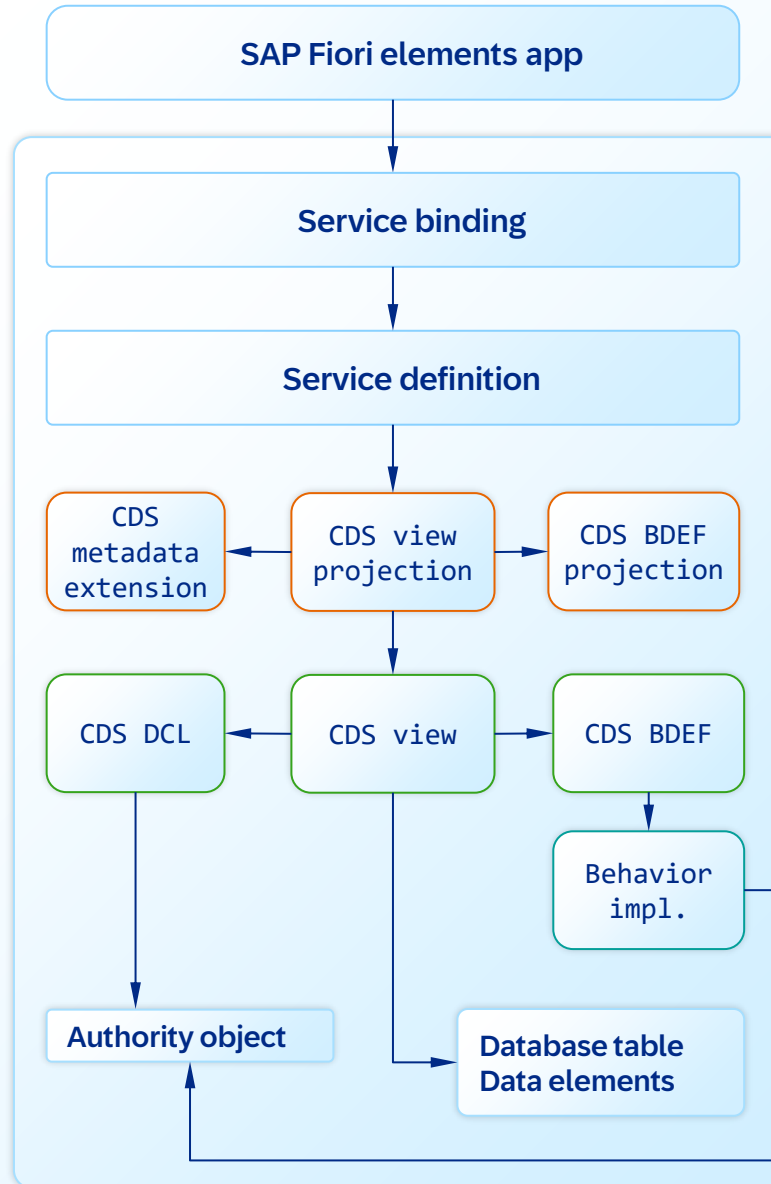
For all supported databases with common feature set
Fetching and processing of all data in the application server
Manual authority check needed for each query



DDIC MODELING

For reuse in multiple places
Including field extensibility

ABAP Cloud – SAP Fiori list report



MODEL-DRIVEN ARCHITECTURE

Advanced data modeling with **ABAP Core Data Services (CDS)**, including DCL for read authorizations

CDS behavior definition (BDEF) represents a transactional business object (BO) declaratively, with implementation hooks in ABAP

Native support in ABAP, with **Entity Manipulation Language (EML)** as a ABAP language extension to invoke RAP BO behavior via standardized, typed APIs

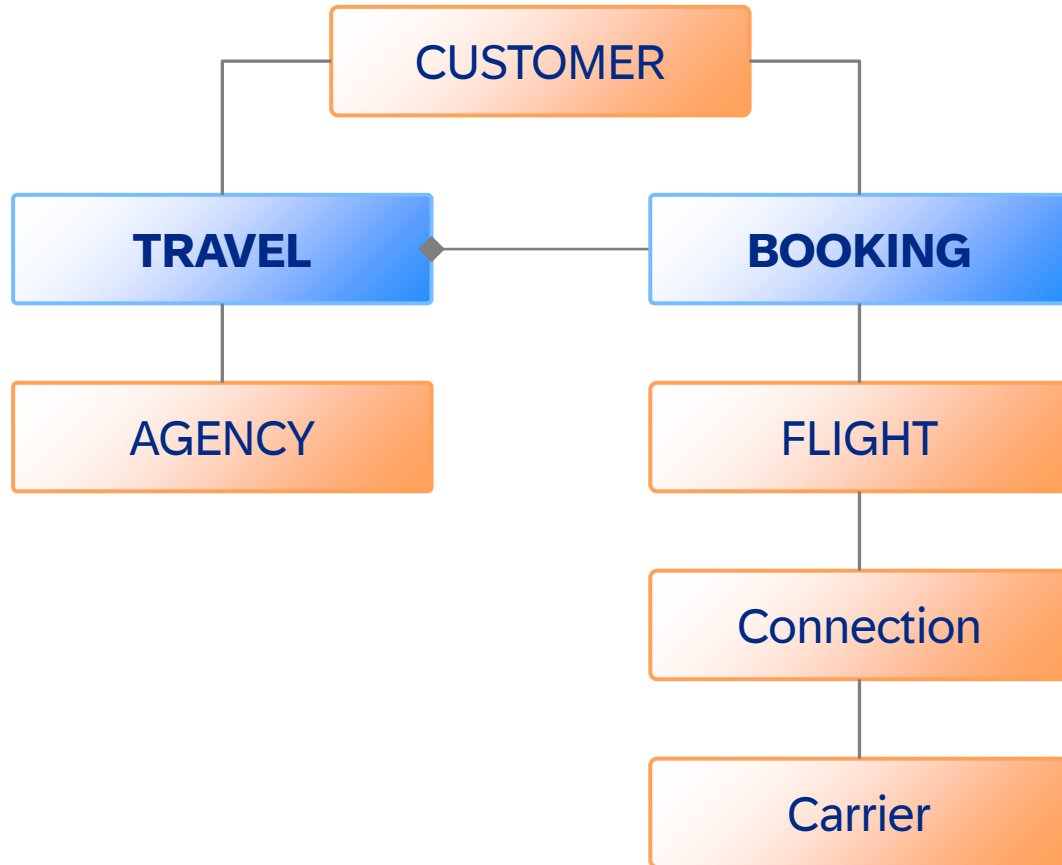
Business services consisting of a service definition and a service binding, used to expose data with specific protocols and scenarios

Extensibility as a first-class citizen for all artifacts

Open SQL evolved into **ABAP SQL**, with extended feature set and optimizations for SAP HANA

AD164 – Building transactional SAP Fiori apps with RAP

Underlying simplified flight data model



A **Travel entity** defines general travel data, such as the agency ID or customer ID, the overall status of the travel booking, and the total price of the travel

A **Booking entity** comprises general flight and booking data, the customer ID for whom the flight is booked as well as the travel ID to which the booking belongs



A **Customer entity** provides a detailed description of a flight customer, or passenger, such as the name, the address, and contact data

An **Agency entity** defines travel agency data, such as the address and contact data

A **Flight entity** defines the general flight data for each connection

A **Connectivity entity** defines general data about flight connections

A **Carrier entity** defines the general data about flight carriers

 Main business entities in current scenario
 Secondary business entities in current scenario

Today's scenario – Exercises



The AD164 hands-on exercises



Getting Started

1 - Define the base BO data model

2 - Define the data model of the BO projection

3 - Create the OData UI service

4 - Define the UI layout of SAP Fiori elements apps

5 - Add read authorization checks

6 - Add quick actions

7 - Add business events

Demos & Optional exercises – about ABAP Cloud generators, modify authorizations, full CRUD enablement, ...

PREREQUISITES*

- ✓ Set up your ABAP Development Tools for Eclipse
- ✓ Access to an appropriate ABAP system (e.g. HE24)

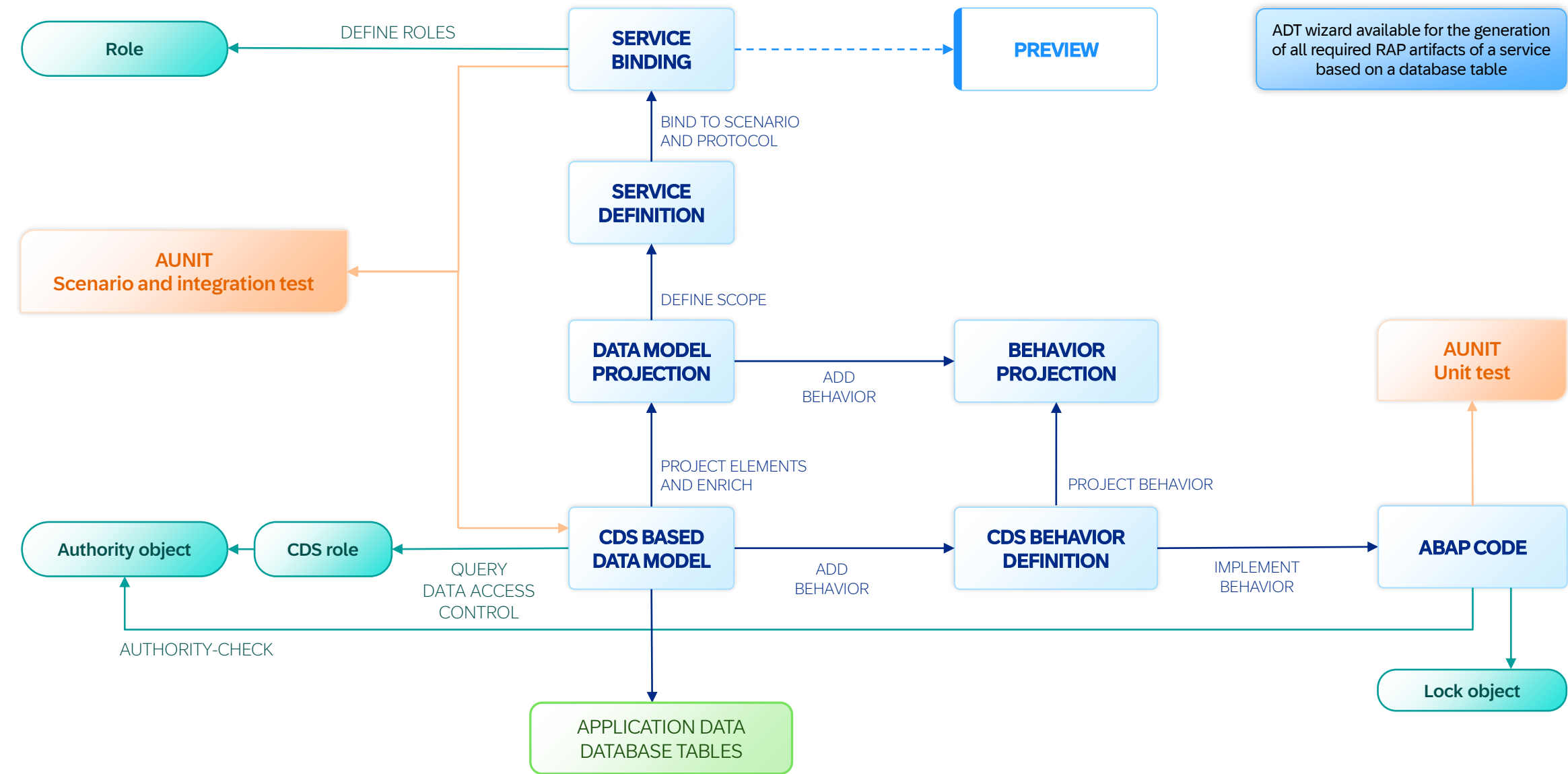
ACCESS THE EXERCISES

<https://github.com/SAP-samples/teched2025-AD164> ([Link](#))

DEMO



Development flow



AD164 hands-on exercises – Working on GitHub

The screenshot shows a GitHub repository page for 'Tched2025_AD164' with the file 'ex01 / README.md' open. The page contains instructions for creating a CDS view entity. Annotations highlight key actions:

- Expand to see details:** A blue box highlights the instruction 'Click to expand!' next to the first step.
- Replace all occurrences of ### with your suffix:** A blue box highlights the instruction 'Replace all occurrences of ### with your personal suffix.'
- Expand the source code:** A blue box highlights the instruction 'Click to expand the source code!' next to the code snippet.
- Copy raw content:** A blue box highlights the 'Raw' button in the top right corner.
- Use outline for a quick overview:** A blue box highlights the 'Outline' panel on the right side of the page.

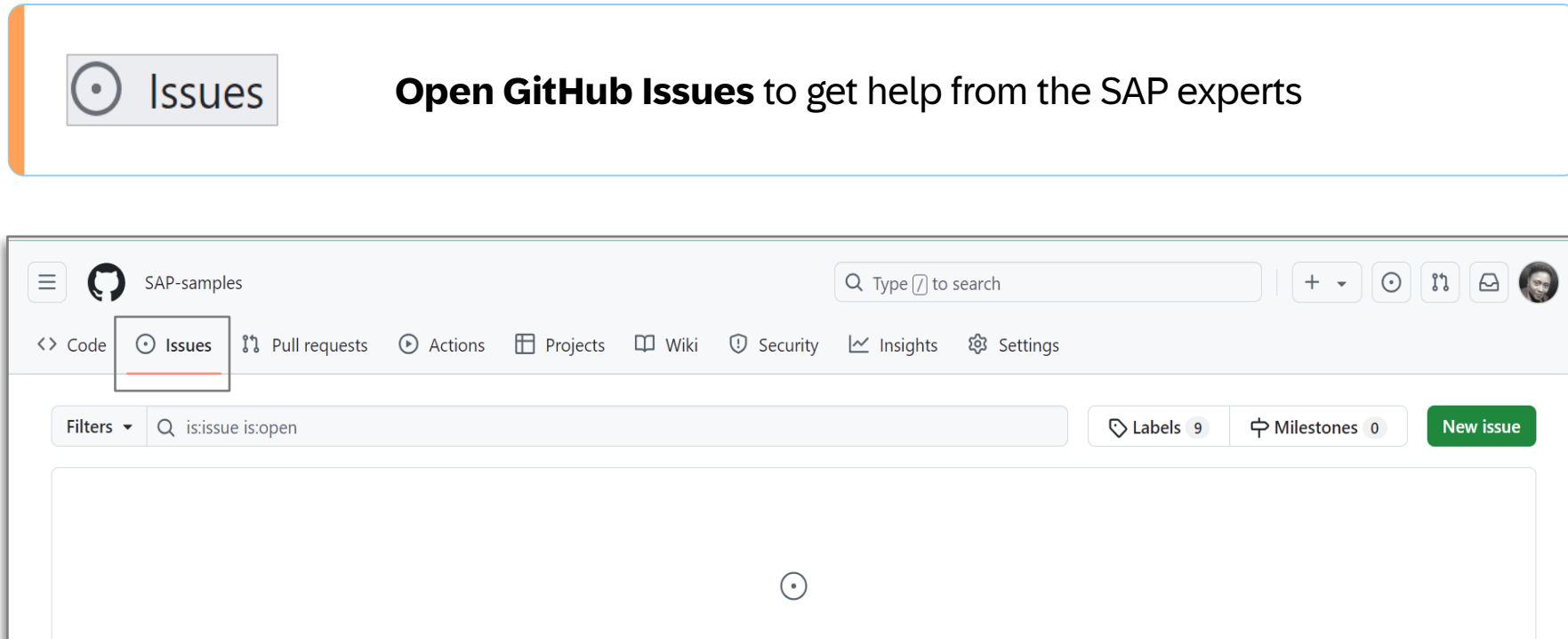
The code snippet provided is as follows:

```
@AbapCatalog.viewEnhancementCategory: [#NONE]
@AccessControl.authorizationCheck: #NOT_REQUIRED
@EndUserText.label: 'Booking Base View'
@Metadata.ignorePropagatedAnnotations: true
define view entity ZAD164_R_Booking_###
as select from zad164_book_### as Booking

association [1..1] to /DMO/I_Customer as _Customer on $projection.CustomerID = _Customer.CustomerID
association [1..1] to /DMO/I_Carrier as _Carrier on $projection.AirlineID = _Carrier.AirlineID
association [1..1] to /DMO/I_Connection as _Connection on $projection.AirlineID = _Connection.AirlineID
and $projection.ConnectionID = _Connection.ConnectionID

association [1..1] to /DMO/I_Booking_Status_VH as _BookingStatus on $projection.BookingStatus = _BookingStatus.Booking
{
  key booking_uuid as BookingUUID,
}
```

The AD164 hands-on exercises – Working on GitHub (2)



LET'S GET STARTED!



Move at your own pace!
Feel free to ask questions!

Wrap up



Key takeaways

ABAP Cloud



Is the ABAP development model to build cloud-ready business apps, services or extensions

Is an integral part of SAP Build

Is compliant with clean core principles

Comes with SAP BTP, SAP S/4HANA Cloud, SAP S/4HANA^{1,2}

Is mandatory in public cloud, and recommended in private cloud and on-premise

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

² SAP S/4HANA Cloud Public Edition, 3-system landscape required

Upskill yourself in ABAP Cloud and Clean core



SAP Learning Offerings

[Acquiring Core ABAP Skills | SAP Learning](#)

[Managing Clean Core for SAP S/4HANA Cloud | SAP Learning](#)

[Practicing Clean Core Extensibility for SAP S/4HANA Cloud](#)

Become an [SAP Certified Associate – ABAP Cloud Back-End Developer](#)

More SAP training and certification opportunities: <https://learning.sap.com/>

SAP Help Portal

[ABAP Cloud development guide](#)

[ABAP RESTful application programming model \(RAP\)](#)

SAP Community

[ABAP Development](#)

[ABAP RESTful Application Programming Model \(RAP\)](#)

[ABAP Testing and Analysis](#)

ABAP Cloud-related sessions at SAP TechEd 2025

AD808 | SAP Build: ABAP Cloud road map

ST109 | SAP Build: ABAP Cloud strategy

AD104 | Boost your ABAP development with SAP Joule for developers

AD162 | Explore Joule for developers, ABAP AI capabilities 🌟

AD201 | Explore ABAP Cloud in SAP Build – what's in for ABAP developers?

AD163 | Fusion Development with ABAP Cloud in SAP Build 🌟

AD105 | Introduction to ABAP Cloud and how to get started

AD164 | Get started with ABAP Cloud for classic ABAP developers 🌟

DT814 | Extensibility innovations road map for SAP Business Suite and cloud ERP

ST113 | Journey to unified extensibility in SAP Business Suite and cloud ERP

DT200 | Unravel the mysteries of Clean Core extensions in Cloud ERP Private

DT260 | Modernize classic extensions to clean core in Cloud ERP Private 🌟

DT201 | Extensibility with ABAP Cloud and AI in SAP Cloud ERP

DT261 | Build on-stack extensions with ABAP Cloud in Cloud ERP Public 🌟

DT266 | Troubleshoot and Optimize ABAP Cloud Extensions in Cloud ERP 🌟

Visit us at the demo stations!

AD900 | Application Development with ABAP Cloud, CAP, SAPUI5 in SAP Build

DT916 | Discover the extensibility options for cloud ERP

See [Blog post](#)

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Volker Drees, SAP
Boris Gebhardt, SAP
Jürgen Reidl, SAP



Thank you!

