

DEV260

# Build SAP Fiori Apps with the ABAP RESTful Application Programming Model

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PUBLIC

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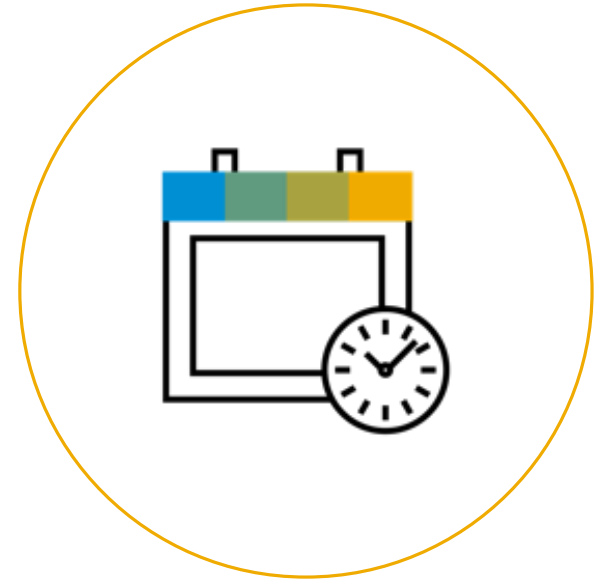
# Agenda

The big picture

Today's end-2-end scenario – Overview

Today's end-2-end scenario – Exercises

Summary



# The big picture



# ABAP RESTful Application Programming Model (RAP) – The mission

Provide a  
programming  
model ...

... As a strategic long-term solution for ABAP development

... For the efficient development of

SAP Fiori apps and Web APIs,  
from scratch or by integrating legacy code

... Offering an end-to-end development experience with

High development **efficiency**

**Standardized** development flow

**Best practices and** development guides

**Focus on business logic**, rather than technical aspects

Native **testability**, **documentability**, and **supportability**

**Code pushdown** to SAP HANA

Comfortable support for **stateless** and **stateful** environments

... Supporting the product qualities

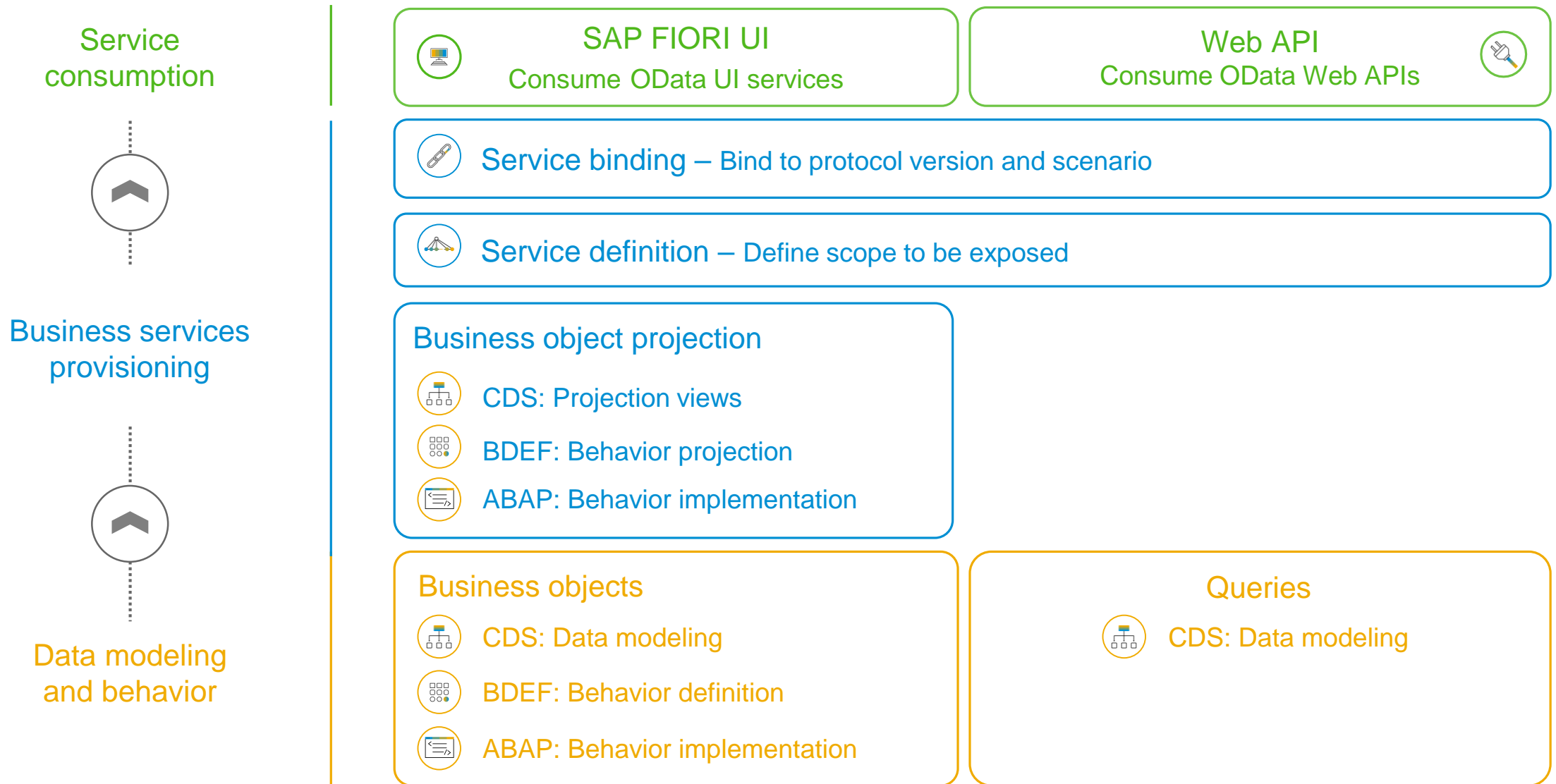
User experience: SAP Fiori and SAP HANA

Cloud: scalability

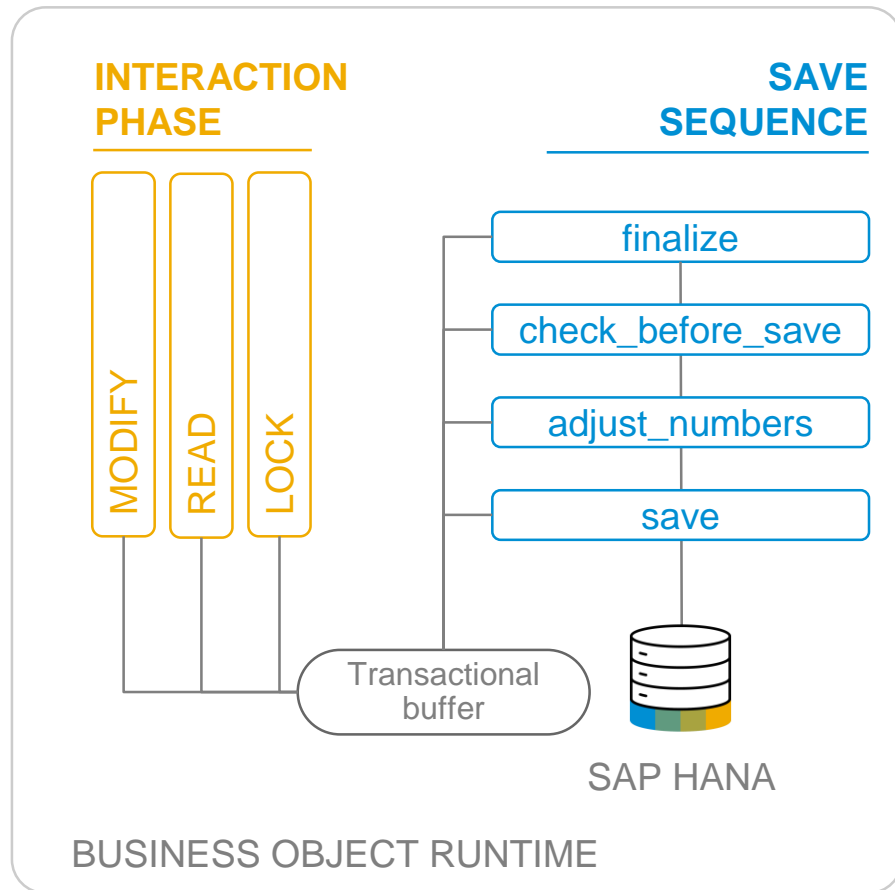
Out-of-the-box extensibility and verticalization

Flexibility: break-outs for nonstandardized implementations

# The big picture



# Business object runtime implementation types



## Unmanaged

For brownfield developments with available application code for interaction phase, transactional buffer, and save sequence

- ➔ Developers in charge of BO runtime: CRUD operations
- ➔ Adapters needed to integrate the existing code

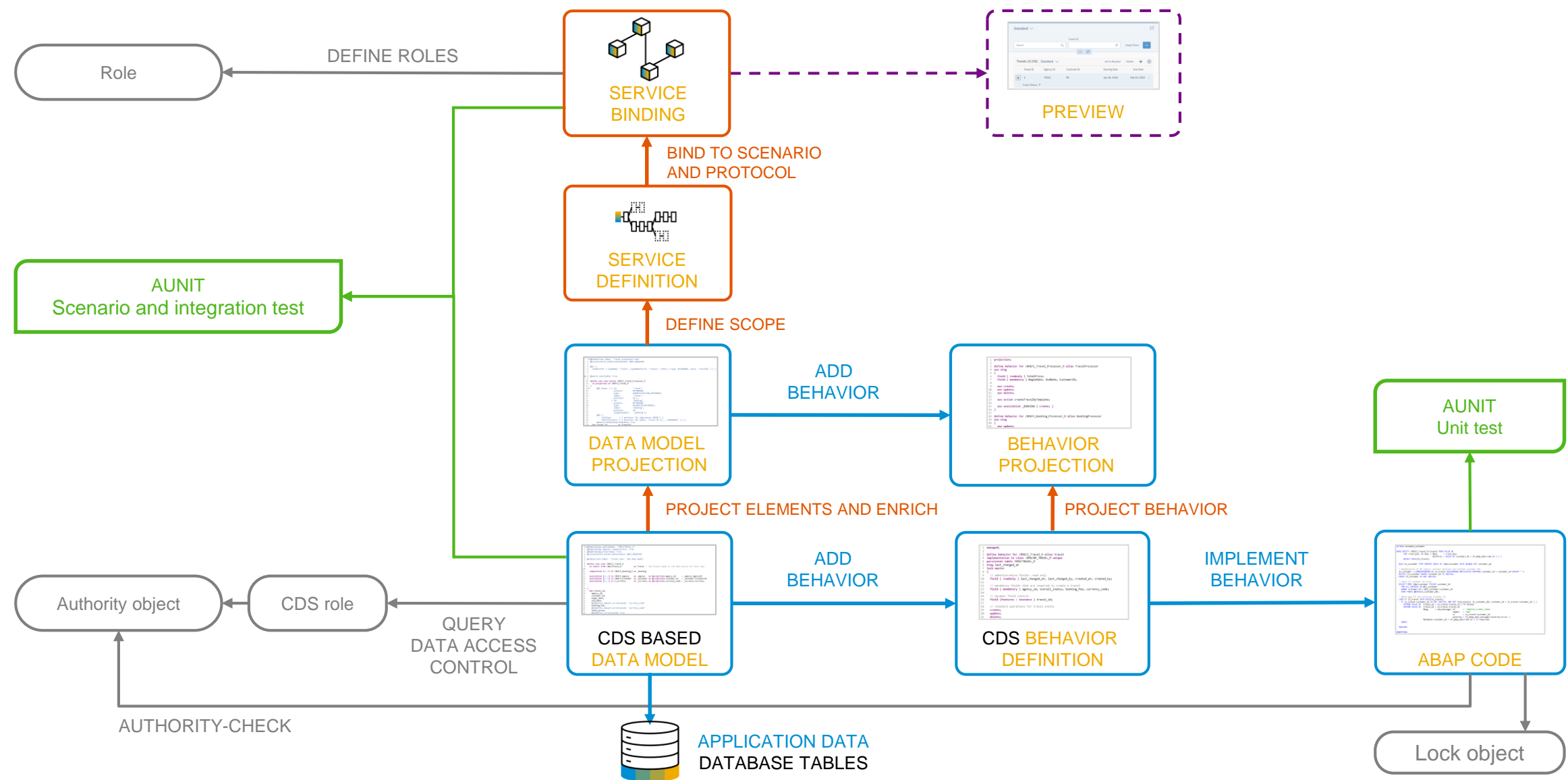
## Managed

For greenfield developments with standard implementation (opt. unmanaged appl. components: DB tables, lock/PFCG object, update task FM)

- ➔ Standard CRUD operations work out of the box
- ➔ Developers add BO-specific business logic

## TODAY'S FOCUS

# The development flow





# Today's end-2-end scenario – Overview



# Build a SAP Fiori app with transactional, filtering and search capabilities

## Resulting app: travel list report app

**LIST REPORT PAGE**

Preview for Fiori Elements App

Freestyle search

Editing Status: All Travel ID: Agency ID: Customer ID: Airline ID: Go

Filters

Draft

Create and Delete operations

Actions

Navigation to details object page

Travels (200)										Reject Travel	Accept Travel	Create	Delete
<input type="checkbox"/>	Travel ID	Agency ID	Customer ID	Starting Date	End Date	Booking Fee	Total Price	Description	Overall Status				
<input checked="" type="checkbox"/>	200 Draft	No Return (70020)	Columbo (66)	Jul 16, 2020	Jul 17, 2020	20.00 SGD	9,385.00 SGD	Business Trip to Singapore	O	>			
<input type="checkbox"/>	199	Super Agency (70017)	Kreiss (345)	Jul 16, 2020	Jul 17, 2020	40.00 SGD	18,742.00 SGD	Business Trip to Singapore	O	>			
<input type="checkbox"/>	198	Real Weird Vacation (70037)	Lautenbach (583)	Jul 16, 2020	May 13, 2021	80.00 SGD	33,575.00 SGD	Business Trip	A	>			
<input type="checkbox"/>	197	Sunshine Travel (70001)	Hoffen (166)	Jul 16, 2020	Jul 16, 2020	20.00 SGD	10,313.00 SGD	Vacation	O	>			
<input type="checkbox"/>	196	No Return (70020)	Barth (108)	Jul 16, 2020	Jul 17, 2020	20.00 SGD	9,096.00 SGD	Business Trip to Singapore	O	>			
<input type="checkbox"/>	195	Everywhere (70024)	Hunter (322)	Jul 16, 2020	May 12, 2021	60.00 SGD	26,416.00 SGD	Vacation to Singapore	O	>			
<input type="checkbox"/>	194	No Return (70020)	Deichgraeber (615)	Jul 16, 2020	Jul 17, 2020	60.00 SGD	27,471.00 SGD	Business Trip to Singapore	O	>			
<input type="checkbox"/>	193	Up 'n' Away (70029)	Dumbach (168)	Jul 16, 2020	May 12, 2021	60.00 SGD	25,860.00 SGD	Sightseeing in Singapore	A	>			
<input type="checkbox"/>	192	Burns Nuclear (70008)	Sisko (656)	Jul 16, 2020	Jul 16, 2020	30.00 SGD	14,279.00 SGD	Business Trip for Andreas, Max, Kurt	O	>			
<input type="checkbox"/>	191	Hot Socks Travel (70007)	Kramer (394)	Jul 16, 2020	Jul 16, 2020	30.00 SGD	14,256.00 SGD	Business Trip for James, Harish, Stephen	O	>			
<input type="checkbox"/>	190	Miles and More (70049)	Sudhoff (568)	Jul 16, 2020	May 13, 2021	40.00 SGD	16,278.00 SGD	Vacation	O	>			
<input type="checkbox"/>	189	All British Air Planes (70047)	Benjamin (454)	Jul 16, 2020	May 13, 2021	40.00 SGD	16,023.00 SGD	Vacation	O	>			
<input type="checkbox"/>	188	Wang Chong (70018)	Kramer (401)	Jul 16, 2020	Jul 17, 2020	40.00 SGD	17,123.00 SGD	Business Trip to Singapore	O	>			

# Build a SAP Fiori app with transactional, filtering and search capabilities

## Resulting app: Travel details object page

Edit mode

Facets

(DETAILS) OBJECT PAGE

200

Accept Travel Reject Travel

Travel Booking

Travel UUID:  
e3ef0520-ae95-6e4c-1700-0c02acb76b09

Travel ID:  
200

Agency ID: \*  
No Return (70020)

Customer ID: \*  
Columbo (66)

Starting Date:  
Jul 16, 2020

End Date:  
Jul 17, 2020

Booking Fee:  
20.00 SGD

Total Price:  
9,350.00 SGD

Description:  
Business Trip to Singapore

Overall Status:  
O

Accept Travel Reject Travel

Booking

Bookings (2)

<input type="checkbox"/>	Booking Number	Booking Date	Customer ID	Airline ID	Flight Number	Flight Date	Flight Price
<input type="checkbox"/>	1	Jul 13, ...	Columbo (66)	Singapore Airlines ...	1	Jul 16, ...	5,138.00 SGD
<input type="checkbox"/>	2	Jul 13, ...	Columbo (66)	Singapore Airlines ...	2	Jul 17, ...	4,192.00 SGD

Draft saved Save Cancel

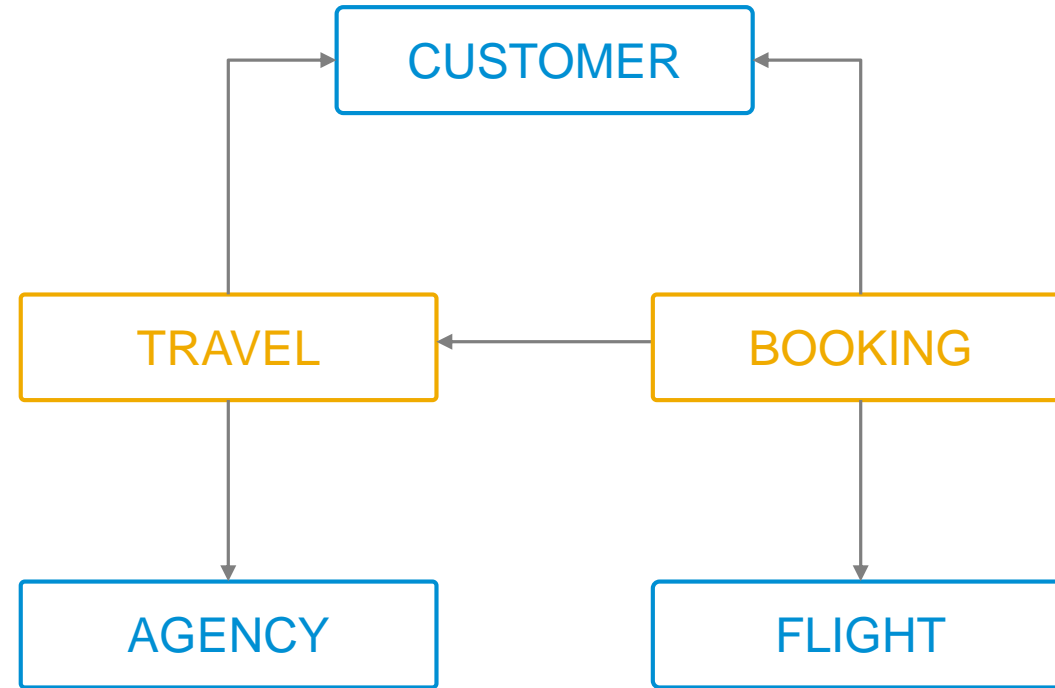
Actions

Value helps

Draft

Save and cancel

# Underlying simplified Flight (reloaded) data model



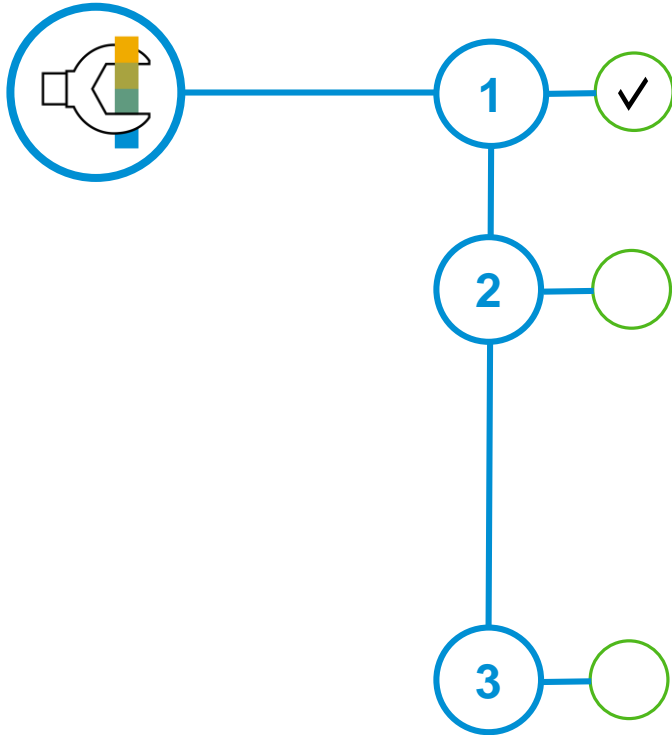
- Main business entities in current scenario
- Secondary business entities in current scenario

# Today's end-2-end scenario – Exercises





# What you have to do



## PREREQUISITES

- Set up and connect your ABAP Development Tools for Eclipse to the trial system

## Create your SAP Fiori elements application

- Database tables
- Core Data Services (CDS) data model
- CDS Metadata extensions
- Business services

## Transactional Enablement

- Business object behavior
- Actions
- Determinations
- Validations
- Authorizations (*optional*)

... 3 ... 2 ... 1 ...

➔ LET'S GET STARTED!



Feel free to ask questions  
and to get support if needed !



Access to the exercises:

<https://github.com/SAP-samples/teched2020-DEV260>

# Summary

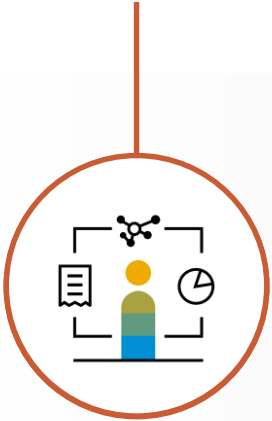




# Major achievements for cloud (2008) and on-premise (2020) shipments

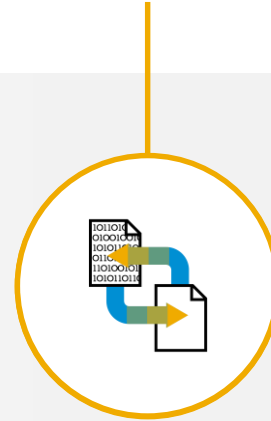
## Managed BOs

External and UUID-based numbering  
Determinations and validations for create, update, delete, and field trigger  
Break-outs: Unmanaged lock/save, additional save, persistence mapping



## BO common

SAVE message mapping  
Instance-based authorization and feature control  
Operation precheck  
BO viewer (relation explorer)  
BO projection layer



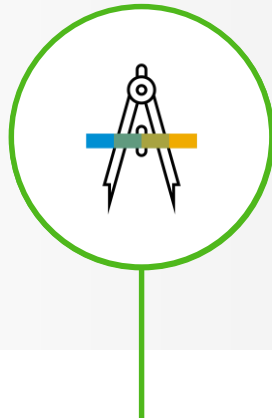
## Documentability

Knowledge transfer documents for behavior definition, CDS, and service binding



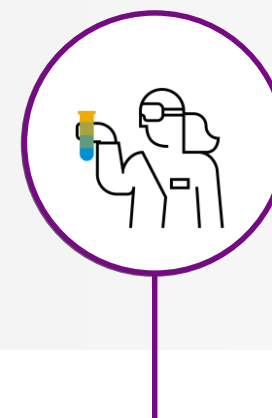
## Draft handling

for managed and unmanaged BOs



## Testability

BO test double framework



# Summary – Key takeaways



The **ABAP RESTful Application Programming Model (RAP)** helps to rapidly build enterprise-grade OData services with intrinsic built-in cloud qualities. It best support SAP HANA and SAP Fiori / SAP Fiori elements.



The **ABAP RESTful Application Programming Model** is available on SAP Cloud Platform ABAP Environment as well as on SAP S/4HANA 1909 and higher releases.



The feature scope of the **ABAP RESTful Application Programming Model** is enhanced on a quarterly basis in SAP Cloud Platform ABAP Environment and on a yearly basis on-premise in SAP S/4HANA.



# FREE openSAP COURSE



## Building Apps with the ABAP RESTful Application Programming Model (RAP)



## Self-paced mode

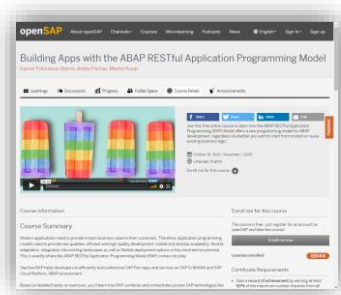


Week 1: Introduction  
Week 2: Developing a Read-Only List Report App  
Week 3: Enabling the Transactional Behavior of an App  
Week 4: Dealing with Existing Code  
Week 5: Service Consumption and Web APIs  
Week 6: Final Exam



**ENROLL NOW!**

<https://open.sap.com/courses/cp13>



# More information



## Further information

[Getting started with the ABAP RESTful application programming model](#)

Major updates in the ABAP RESTful application programming model

[Numbering](#)

[Unmanaged locks](#)

[Unmanaged save](#)

[Additional save](#)

[Draft support](#)

[Feature control](#)

[Precheck](#)

[Relation explorer](#)

[Knowledge transfer document editor](#)

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## Public SAP Web sites

ABAP development community: [www.sap.com/community/topic/abap.html](http://www.sap.com/community/topic/abap.html)

SAP Cloud Platform, ABAP environment community: <https://community.sap.com/topics/cloud-platform-abap-environment>

SAP products: [www.sap.com/products](http://www.sap.com/products)

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[www.sap.com/education](http://www.sap.com/education)

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# Thanks for attending this session.

## Contact for further topic inquiries

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