

# ABAP Cloud: Building Cloud-Ready Applications and Extensions for SAP S/4HANA Cloud, Private Edition

Fabian Fellhauer

Customer Story Lead for RAP, SAP SE

Volker Drees

RAP Product Expert, SAP SE

PUBLIC





Introduction to ABAP Cloud

The 3 Tier Extensibility Model

Demo & Code Walkthrough

# Introduction to ABAP Cloud

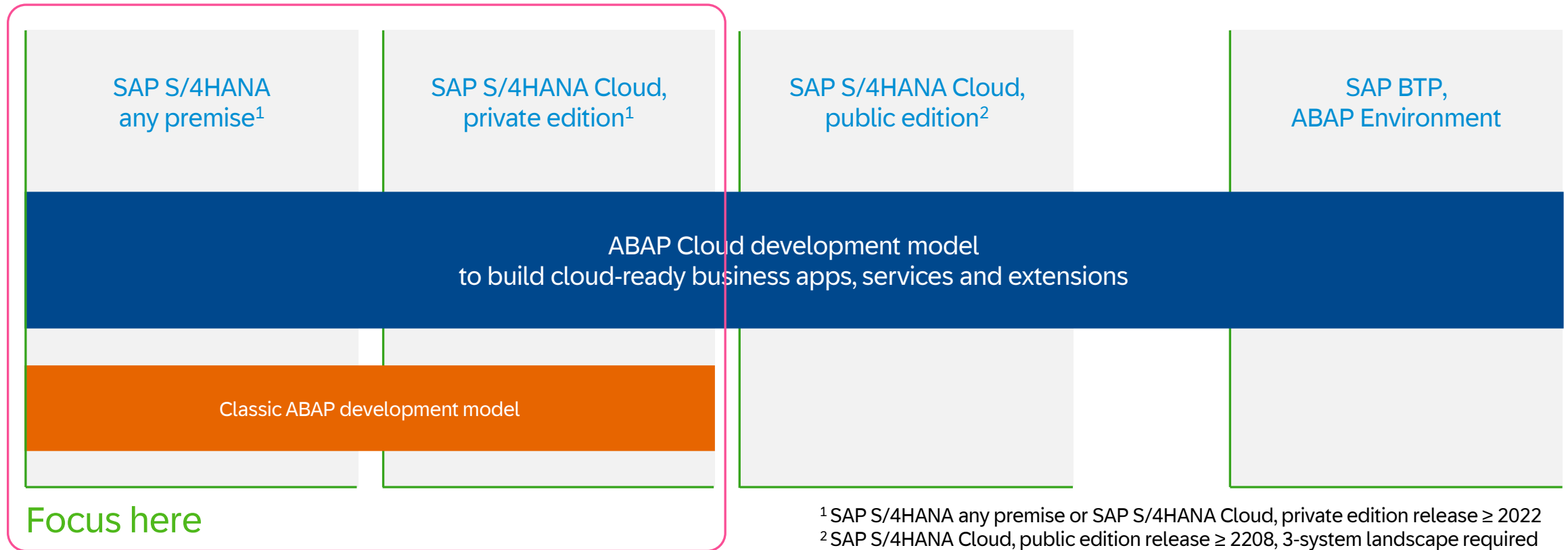




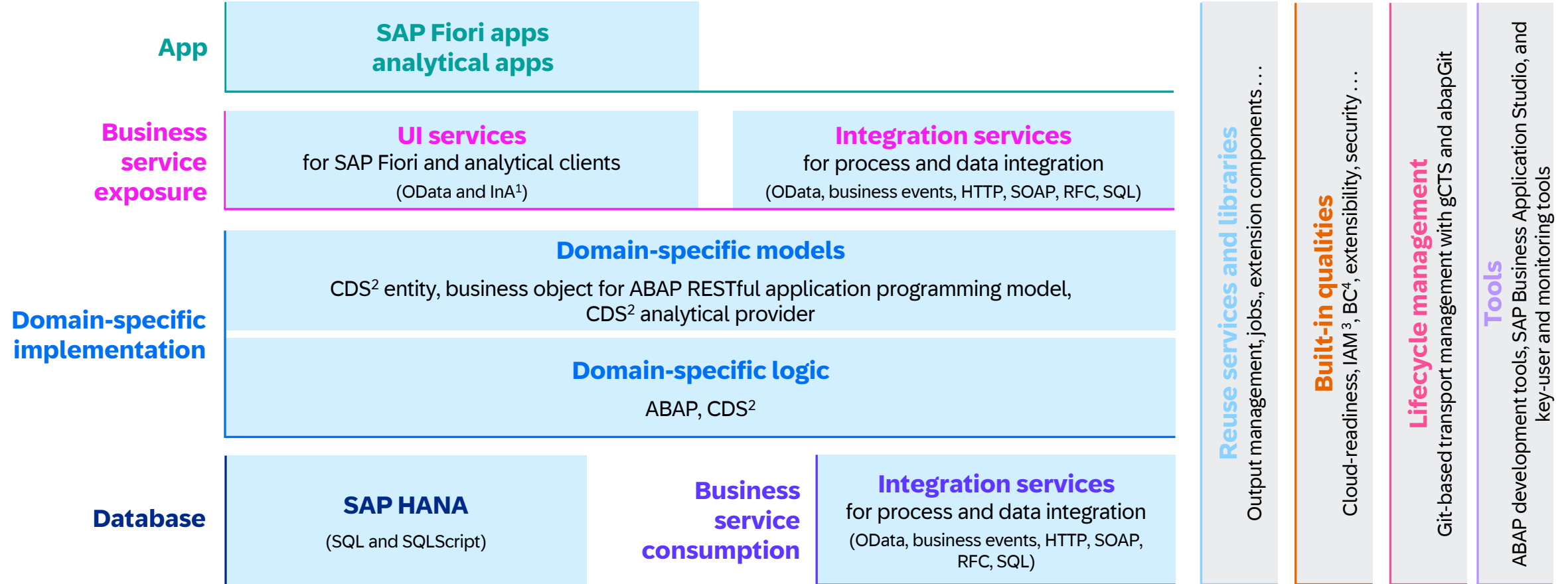
## ABAP Cloud

- ... is the ABAP **development model** to build cloud-ready business apps, services, and extensions
- ... comes with SAP Business Technology Platform (SAP BTP) and SAP S/4HANA
- ... works with public or private cloud, and even on-premise
- ... is **clean core compliant** by definition

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



# ABAP Cloud – High-level abstraction model

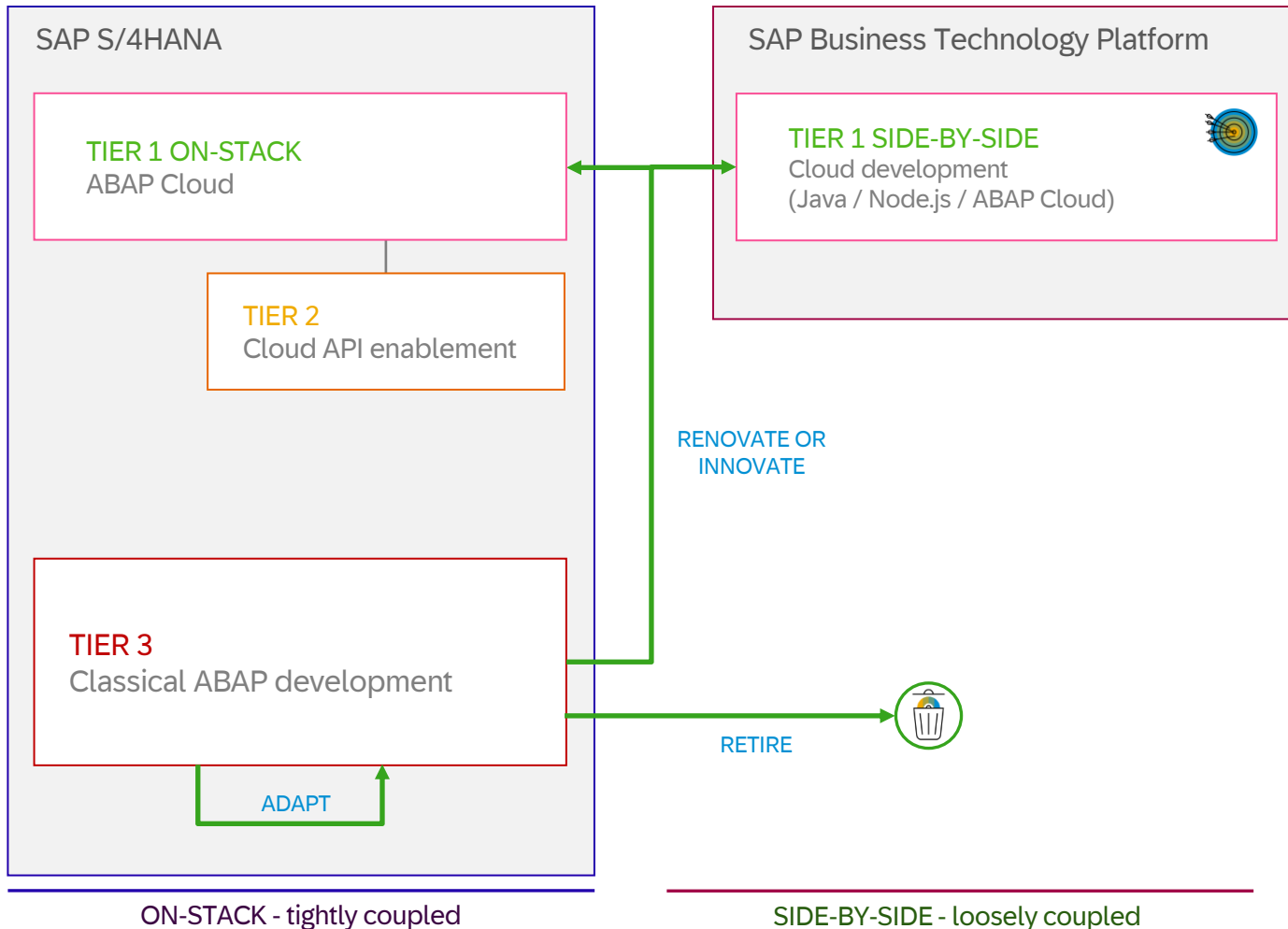


1. Information access, 2. Core data services, 3. Identity and access management, 4. Business configuration

# ABAP Cloud – The 3 Tier Extensibility Model



# 3-tier extensibility model for SAP S/4HANA private cloud and on-premise\*



## TIER 1 – Cloud extensibility model

Cloud-ready and upgrade-stable development of new applications and extensions. ABAP Cloud is mandatory – no classic ABAP in tier 1

Same extensibility model as used in SAP S/4HANA Cloud, public edition

Default for new extensions and custom apps

## TIER 2 – Cloud API enablement

Extends and enables tier 1 for private cloud and on-premise

Mitigates missing public SAP APIs or extension points:

- Develop custom wrapper objects for not released SAP objects to be used in tier 1
- Retire wrapper once a released SAP API is available

## TIER 3 – Classic ABAP extensions

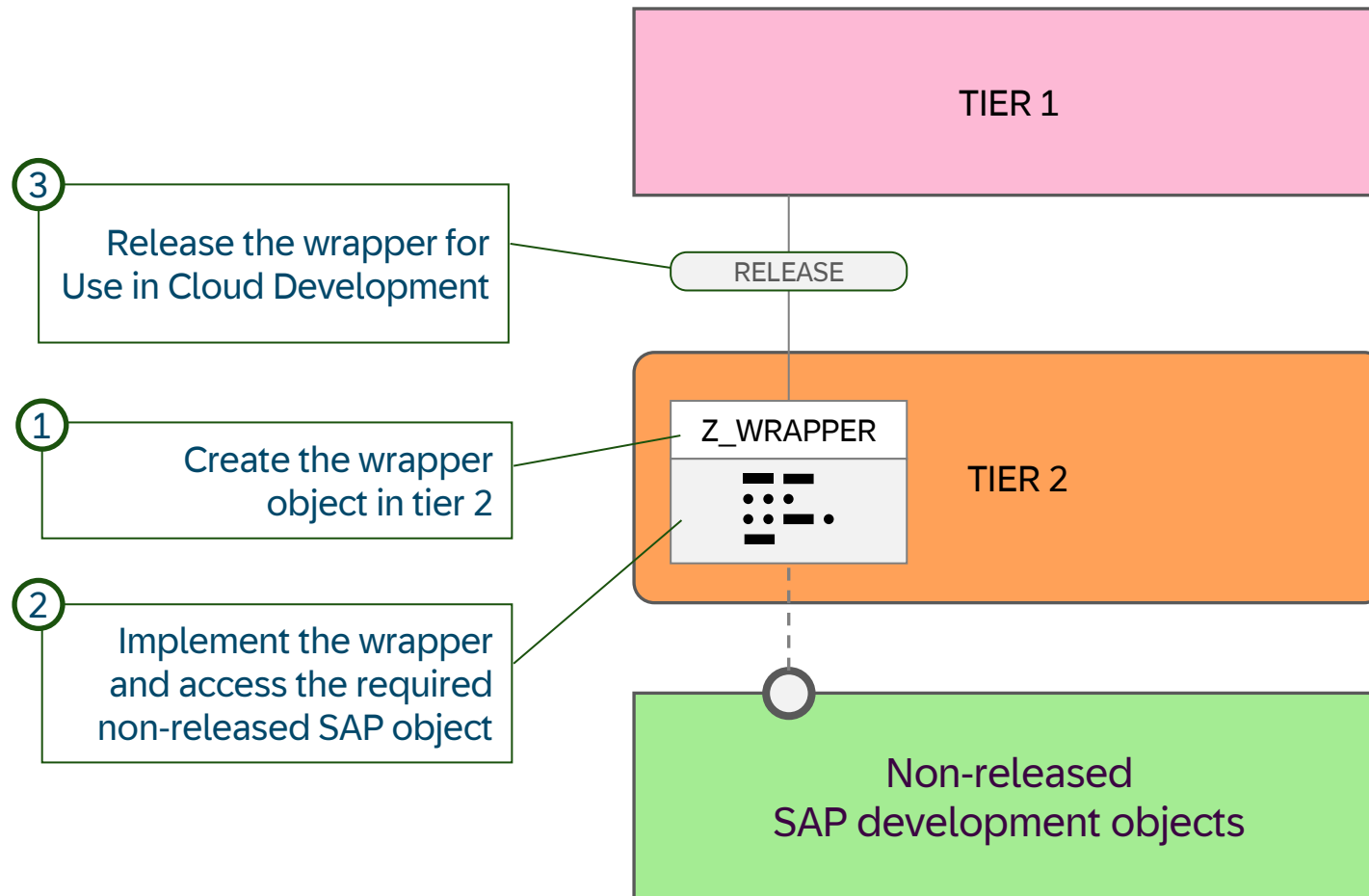
Legacy/existing custom ABAP code or new on-stack extensions code that cannot follow the rules of tier 1 and 2

Avoid and reduce the content in tier 3

\* More information: [Extensibility Guide](#)



# Building wrappers – basic principles



ABAP Cloud rules enforced by ABAP Test Cockpit (ATC)<sup>1</sup>

ATC exemptions for usage of non-released SAP objects → governance

Clear custom interface between SAP code and custom code

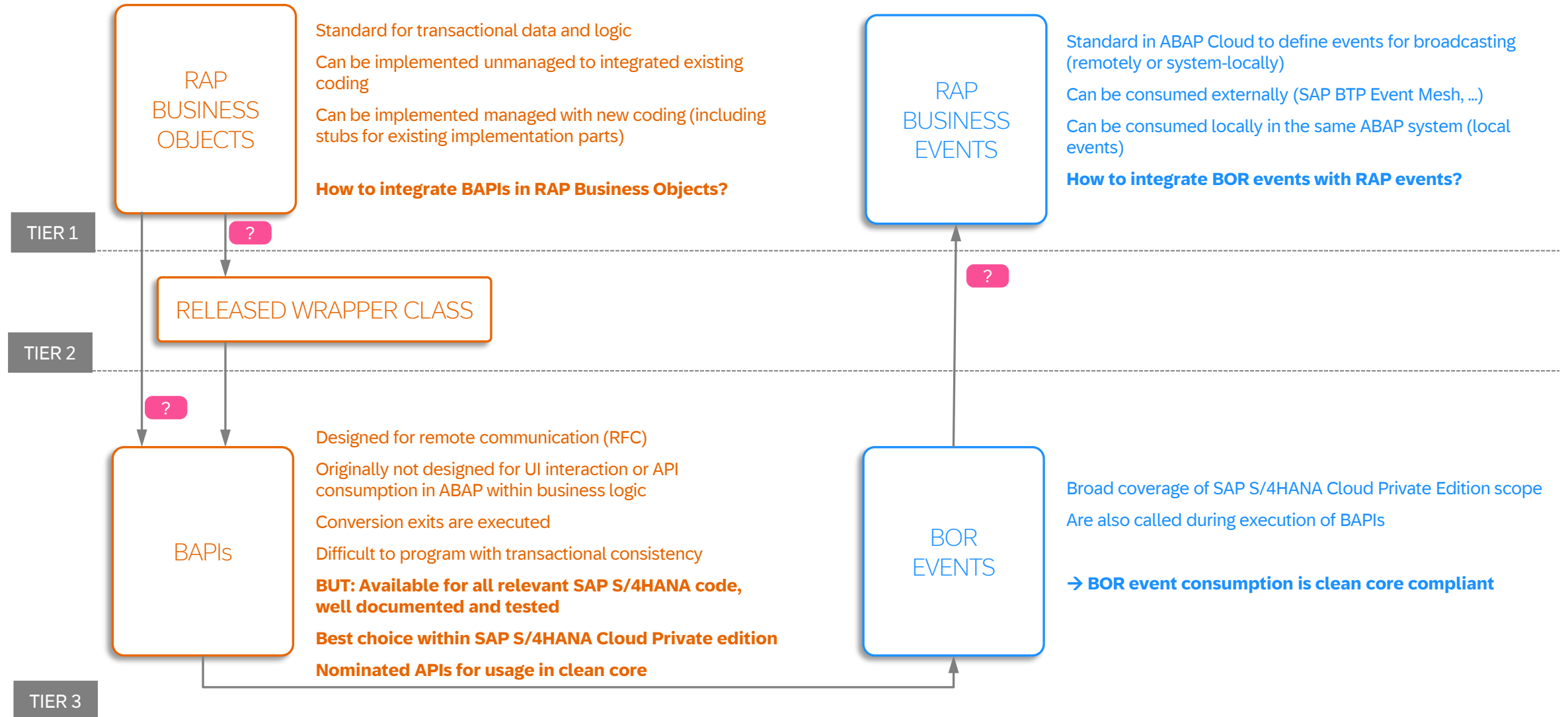
Generation of wrappers supported<sup>2</sup>

More information:

<sup>1</sup> [How the ABAP Test Cockpit supports you to adopt ABAP Cloud](#)

<sup>2</sup> [How to generate a wrapper for function modules in tier 2](#)

# Clean Core - nominated APIs in 3-tier model



# DEMO

## HOW TO EXTEND SAP S/4HANA

Based on Clean Core principles using nominated APIs



# Scenarios

1

Classification creation

2

Assignment of classification to material

# DEMO

## CLASSIFICATION CREATE



# Classification creation - CL01 - Header

**Create Class:**

Change Language

Class: ZDEMO\_01

Class type: 001 Material Class

Change Number:

Valid from: 04.11.2024

Validity:

Basic data | Keywords | Char. | Texts | Document | Std

Basic data

Description: Demo Classification

Status: 1 Released

Class group:

Organizational area:

Valid From: 04.11.2024

Local class: ☐

Valid to: 31.12.9999

DATABASE TABLE	C1 RELEASED - CDS ENTITY
KLAH	I_ClfnClassDEX

# Classification creation - CL01 - Characteristics

**Create Class:**

Change Language

Class: ZDEMO\_01

Class type: 001 Material Class

Change Number:

Valid from: 04.11.2024

Validity:

Basic data Keywords Char. Texts Document Std

Char.	Description	Dat...	N...	D...	Unit	R..	Org. Areas	Std ...	O. I...
ZRM_CHARACTERISTICS_1	Color	CHAR	10	0		<input type="checkbox"/>			<input type="checkbox"/>
ZRM_CHARACTERISTICS_2	Size	CHAR	10	0		<input type="checkbox"/>			<input type="checkbox"/>
						<input type="checkbox"/>			<input type="checkbox"/>
						<input type="checkbox"/>			<input type="checkbox"/>
						<input type="checkbox"/>			<input type="checkbox"/>
						<input type="checkbox"/>			<input type="checkbox"/>

DATABASE TABLE	C1 RELEASED -CDS ENTITY
KSML	I_ClfnClassCharacteristicDEX

# SAP Fiori application

**142**

EditDeleteAssign Classification To Material

Classificationx TypeDescriptionCharacteristics

Classification Type:  
Material Class (001)

Classification Name:  
Demo Classification (ZDEMO\_01)

Classification Status:  
Released (1)

Validity Start Date:  
Nov 4, 2024

Validity End Date:  
Dec 31, 9999

Description

Descriptions (1)

Language KeyDescription

ENDemo Classification

Characteristics

Characteristic Internal IDCharacteristic Description

ZRM\_CHARACTERISTICS\_1 (803)Color

ZRM\_CHARACTERISTICS\_2 (804)Size



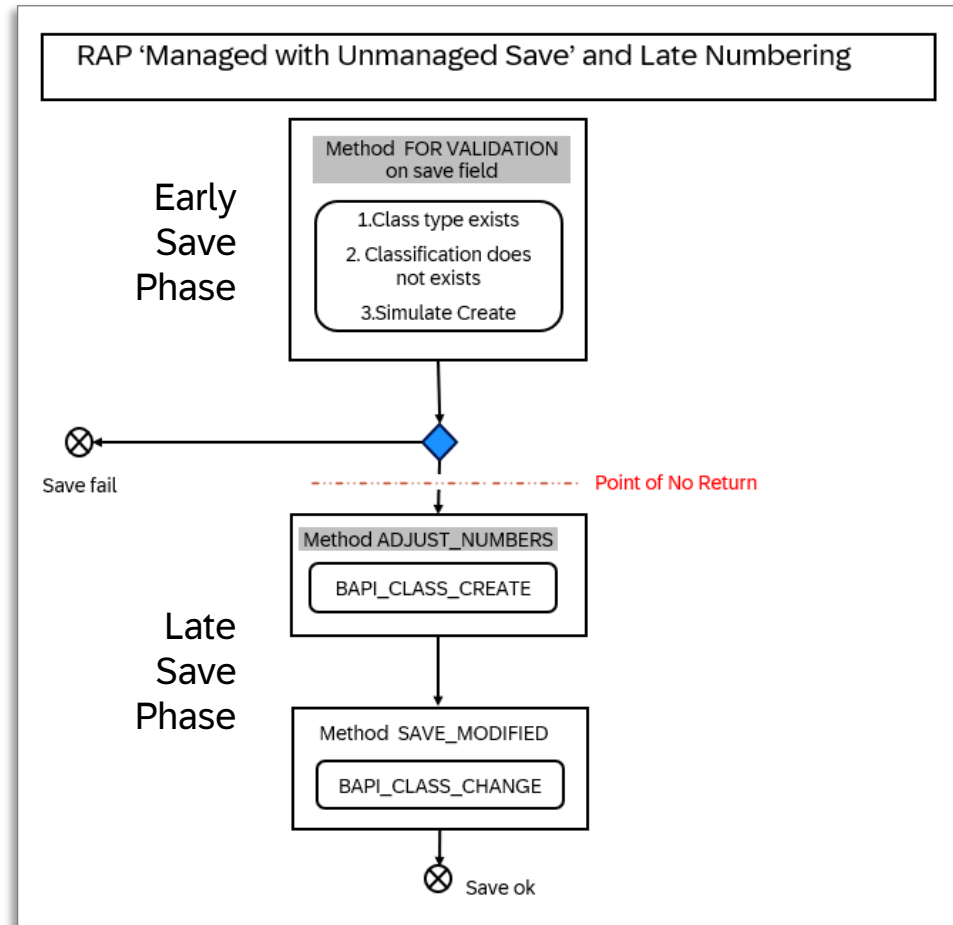
# Code Walkthrough

```

position:absolute;z-index:999; top:
width:0px height:0px #ccc}.gbrtl .gbm{-moz-b
color:#ccc;display:block;position:absolute
line=5);*opacity:1;*top:-2px;*left:-5px;
acity:1\0;/top:-4px\0;/left:-6px\0;/rig
-moz-inline-block;display:inline-block;fo
e. gbmec(display:block;list-style:none;
play:inline-block;line-height:27px; padd
ion:relative;z-index:1000}.gbta{*disp
id}.gbta(padding-right:9px)#gbz .gbzt.t
background:url(

```

# Flow diagram (reduced scope)



# DEMO

ASSIGN CLASSIFICATION TO MATERIAL





# Classification assignment for material master

Transaction MM01 /MM02 /BAPI\_OBJCL\_CREATE

## ***NEW ASSIGNMENT***


**Classification**


Object

Material

Pencil

Class Type   Material Class

Assignments

Class	Description	Standard class	Status	Icon	Pos.	
ZDEMO_01	Demo Classification	<input type="checkbox"/>	1	✓	10	
						^
						v

# Classification assignment for material master

**142**

EditDeleteAssign Classification To Material↗ ▼

Classificationx Type	Description	Characteristics
Classification Type: Material Class (001)	Classification Status: Released (1)	Validity End Date: Dec 31, 9999
Classification Name: Demo Classification (ZDEMO_01)	Validity Start Date: Nov 4, 2024	

# Code Walkthrough

```
.gbm{position:absolute;z-index:999;box-shadow:0 1px 5px #ccc}.gbtl .gbm{-moz-background-color:#ccc;display:block;position:absolute;transform:scale(1);*opacity:1;*top:-2px;*left:-5px;*opacity:1\0/top:-4px\0/left:-6px\0/right:-6px\0;right:-6px\0}.gbmcc{display:inline-block;float:right}.gbmcc{display:block;list-style:none;float:right;play:inline-block;line-height:27px;padding:0 10px}.gbmcc{display:block;text-decoration:underline}.gbmcc{padding-right:9px}#gbz .gbtl .gbmcc{background:url(//...)
```

# DEMO

## BOR EVENTS









# BOR Event

## TRANSACTION SWE2

Create linkage to trigger BOR Event for:  
*New View for Material Created*

**Change View "Event Type Linkages": Details**

60 New Entries      

Object Category	BO BOR Object Type
Object Type	BUS1001
Event	VIEWCREATED
Receiver Type	ZPRODUCT_RECEIVER

Linkage Setting (Event Receiver)

Receiver Call	M Method
Class Name	ZCL_BOR_EVENT_HANDLER_PRODUCT
Interface Name	BI_EVENT_HANDLER_STATIC
Method Name	ON_EVENT
Check Function Module	
Receiver Type Function Module	
Destination of Receiver	

Event delivery Using trFC (Default)



# Code Walkthrough

```

position:absolute;z-index:999; top:
width:0px height:0px #ccc}.gbrtl .gbm{-moz-b
color:#ccc;display:block;position:absolute
line=5);*opacity:1;*top:-2px;*left:-5px;
acity:1\0;/top:-4px\0;/left:-6px\0;/rig
-moz-inline-block;display:inline-block;fo
e. gbmec(display:block;list-style:none;
play:inline-block;line-height:27px; padd
ion:relative;z-index:1000}.gbta{*disp
id}.gbta(padding-right:9px)#gbz .gbzt.t
background:url(//

```

## Take aways

ABAP Cloud is the future for ABAP based development  
SAP S/4HANA is broadly adopting new ABAP cloud innovations  
Many new innovations are planned for the future – stay tuned!

# More information about ABAP Cloud

ABAP Cloud documentation

<https://help.sap.com/docs/abap-cloud>

Why ABAP Cloud?

<https://help.sap.com/docs/abap-cloud/abap-cloud/why-abap-cloud>

ABAP Cloud roadmap

<https://help.sap.com/docs/abap-cross-product/roadmap-info/abap-cloud-roadmap-information>

RAP – What's new?

<https://help.sap.com/docs/abap-cloud/abap-rap/what-s-new>

## Contact information:

[fabian.fellhauer@sap.com](mailto:fabian.fellhauer@sap.com)

[volker.drees@sap.com](mailto:volker.drees@sap.com)

