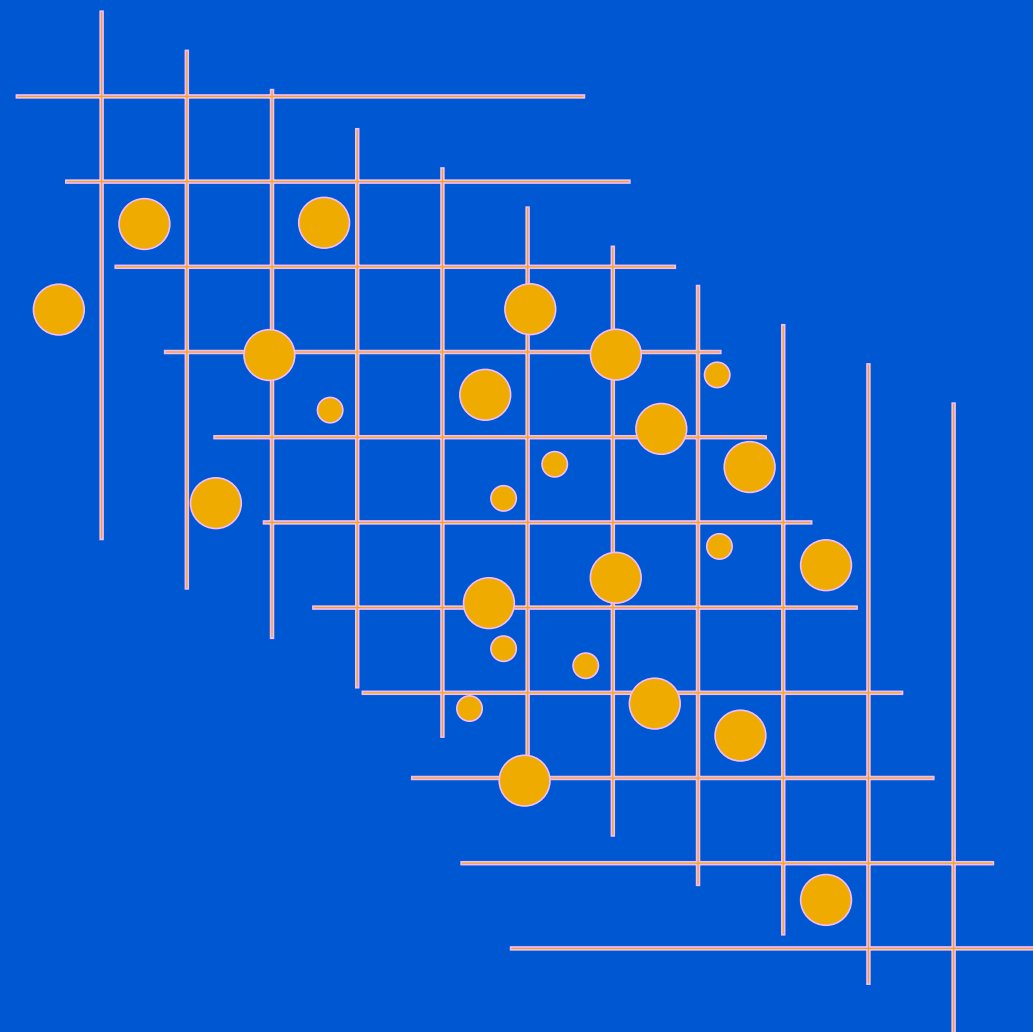


ABAP Cloud Q&A Webinar

Dr. Alexander Rother, Jens Weiler, SAP
26. Januar 2024

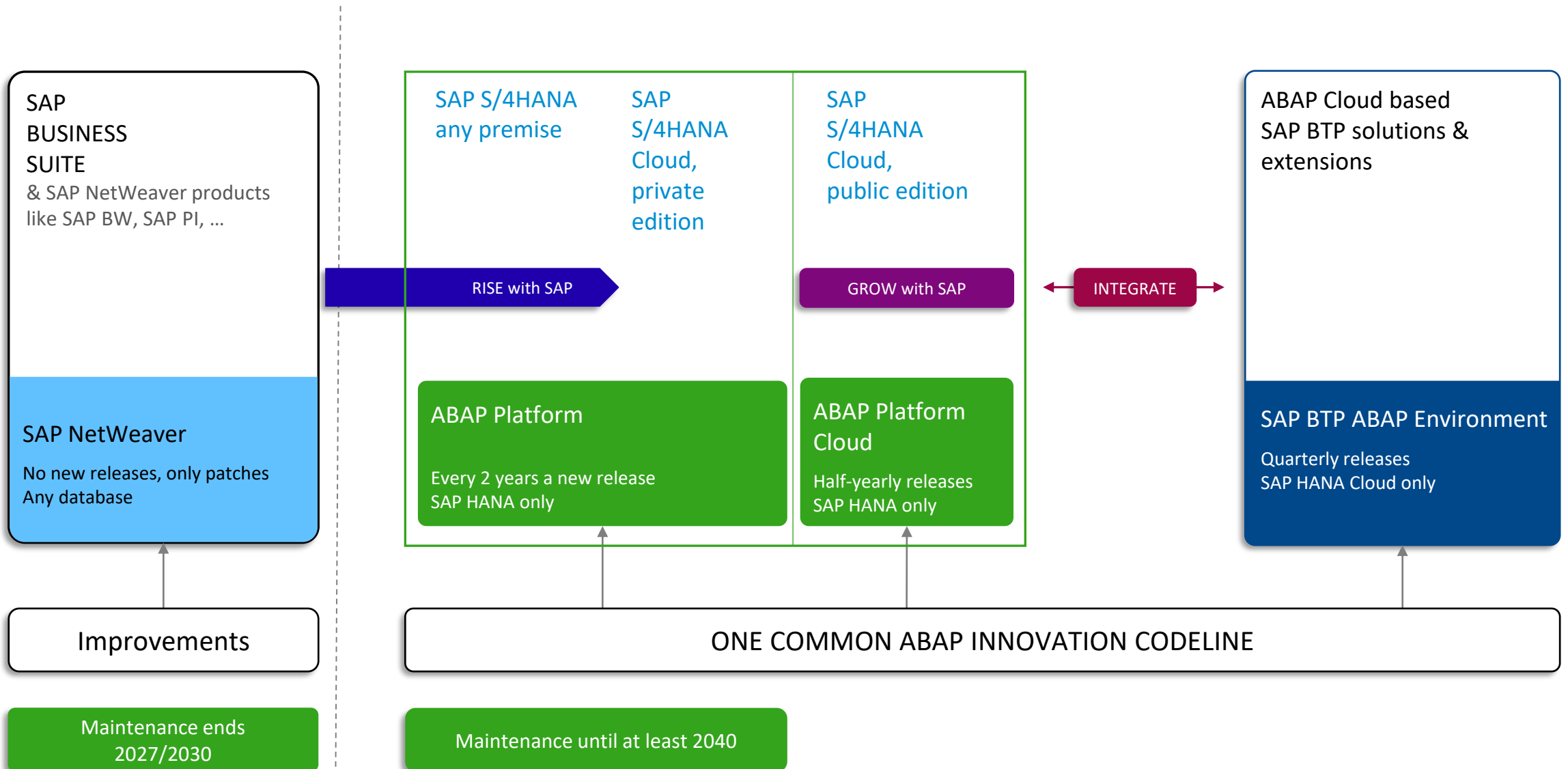
PUBLIC



S/4HANA OnPrem, Public und Private Cloud

– Was ist was?

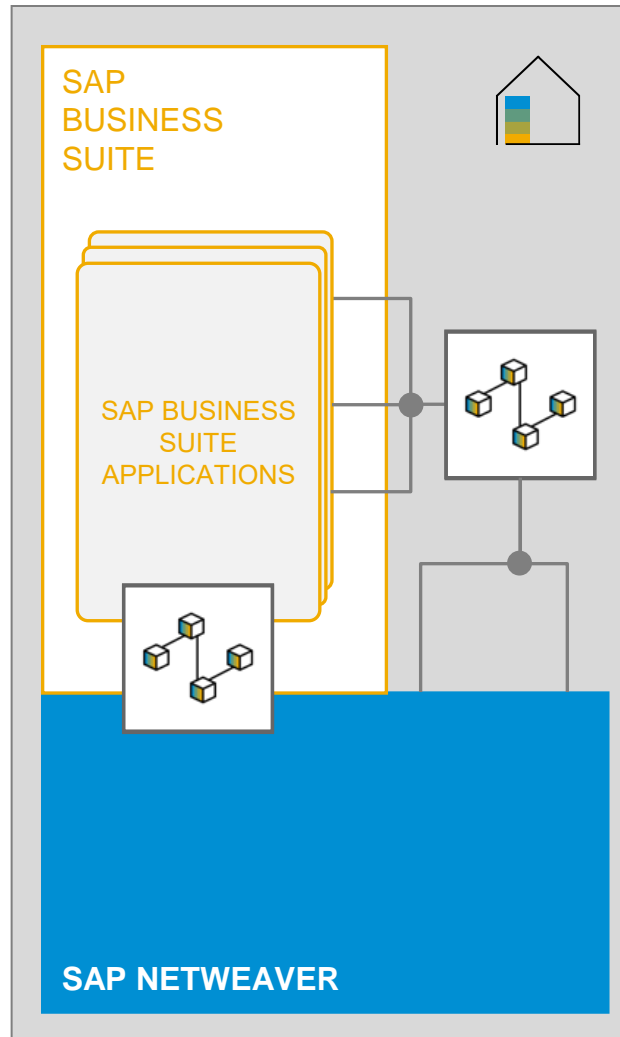
BTP ABAP – Foundation of SAP's ERP applications



Erweitern von SAP S/4HANA Cloud

- Wie geht das?

Classic Extensibility: Classic custom ABAP code in on-premise



CLASSIC CUSTOM ABAP DEVELOPMENT

Use and modify all SAP objects

ALL SAP OBJECTS CAN BE USED IN CUSTOM CODE

```
10 data mdate type mara mdate.  
11  
12 select single mdate from mara into mdate where
```

SAP OBJECTS CAN BE MODIFIED

```
18 *  
19 *      This form is called from form FV45PF0K  
20 *  
21 *-----  
22 FORM USEREXIT_MOVE_FIELD_TO_KOMK.  
23 *{  INSERT      &S&S&S&S  
24 * If...here I modify the SAP code ...*  
25 *}  INSERT  
26  
27 *  KOMK-zzfield = xxxx-zzfield2.  
28  
29 ENDFORM.  
30 *eject  
31
```

PRO

No restriction for extensions ➡ Extremely flexible and powerful

CON

There is no interface between SAP code and the extension
SAP software changes lead to high test and adaptation efforts

➡ SAP upgrade effort increases and agility/innovation speed decreases

New rules for extensions to support smooth SAP software updates

In the **public cloud**, SAP software updates run automated and for all tenants in parallel

THERE IS NO CUSTOMER SPECIFIC UPGRADE PROJECT

RULE for smooth software updates

Extensions must be clearly separated from SAP code

No modifications to SAP objects allowed

Only stable public SAP APIs (local or remote) and SAP extension points can be used

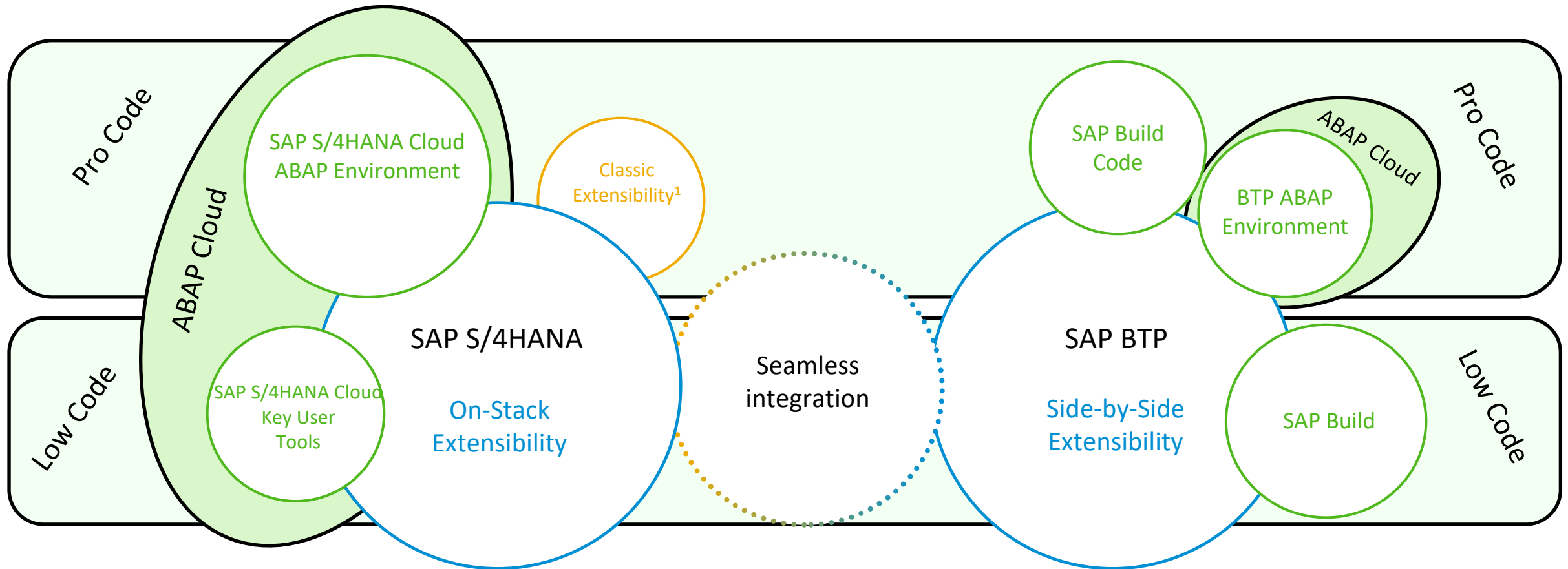
Mandatory in public cloud

Recommended in private cloud and on-premise

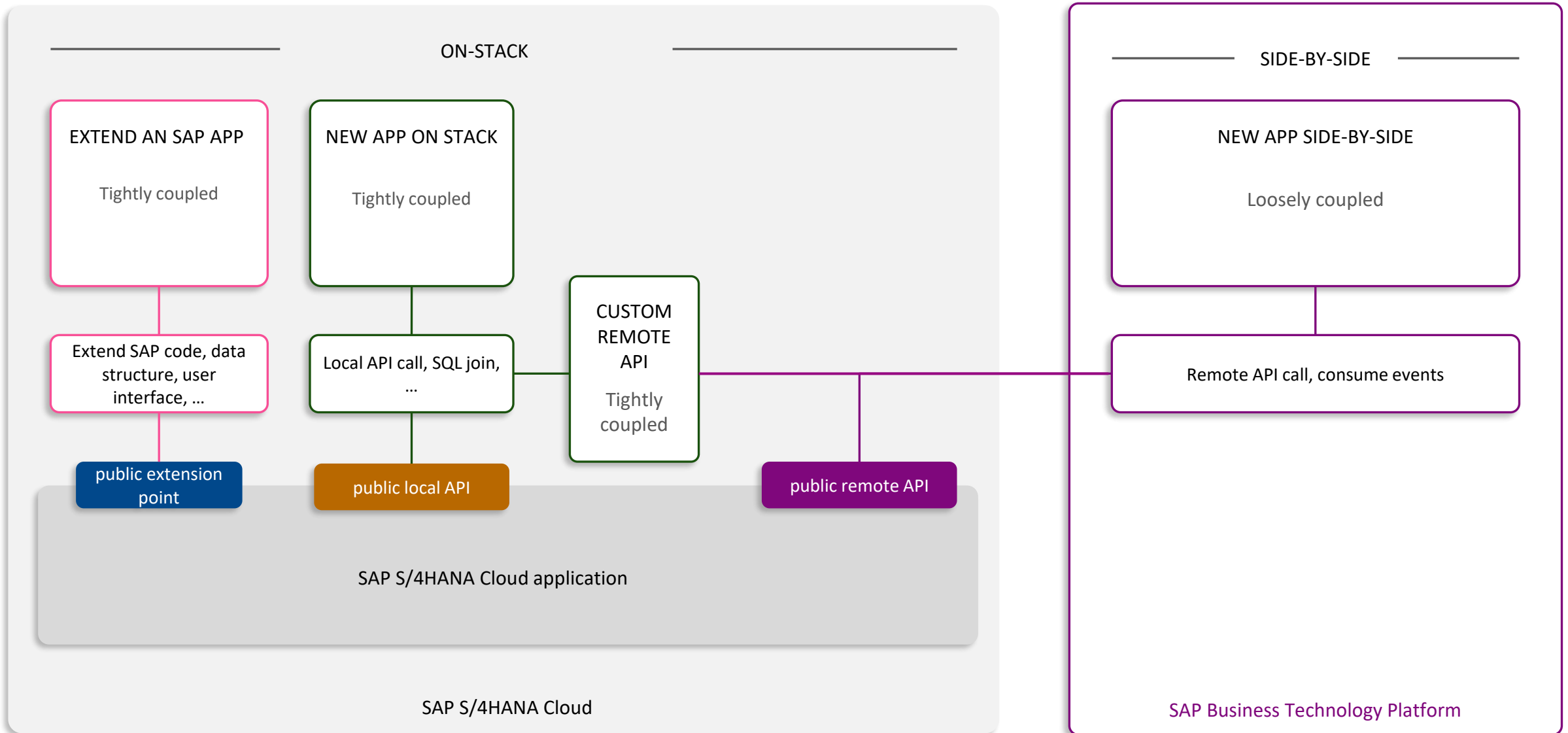
Overview: Extensibility Portfolio SAP S/4HANA Cloud

On-Stack Extensions

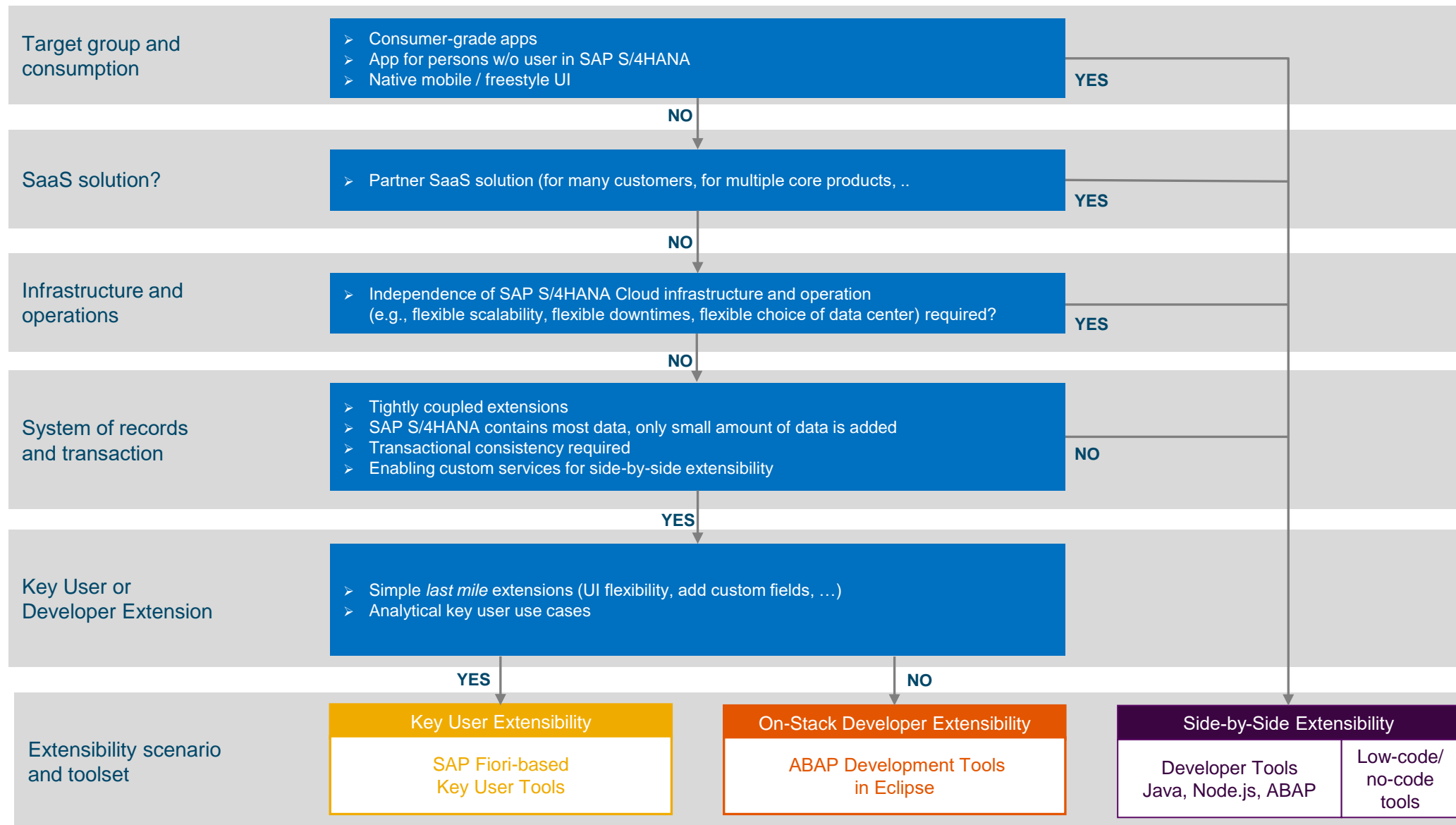
Side-by-Side Extensions



SAP S/4HANA Cloud extensibility patterns



Sequence diagram on how to find the right extensibility options



ABAP Cloud

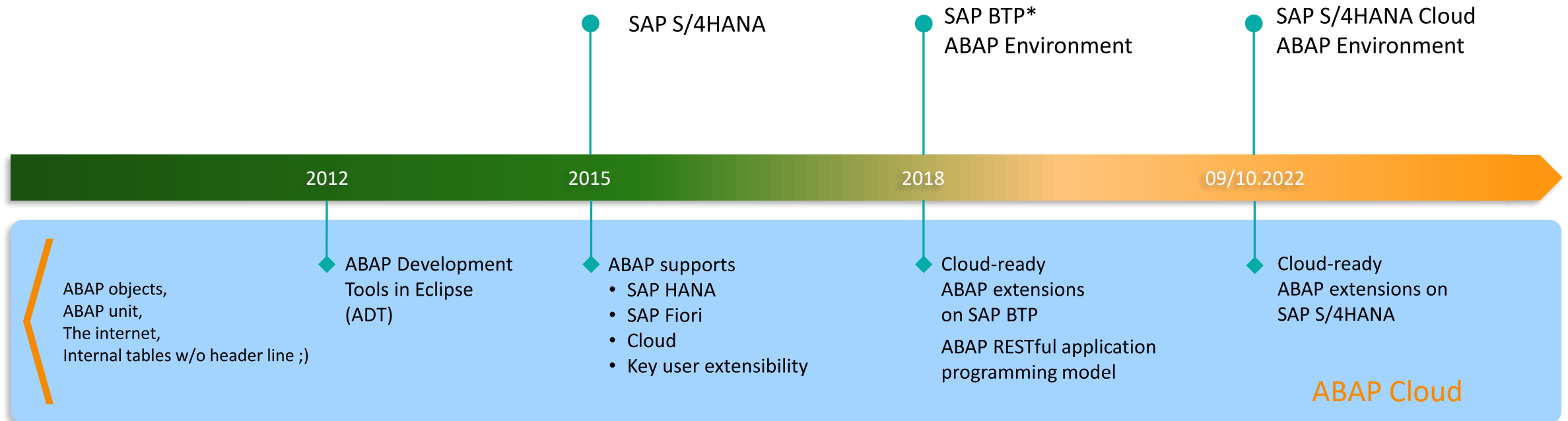
- Und was ist OnPrem?

ABAP Cloud

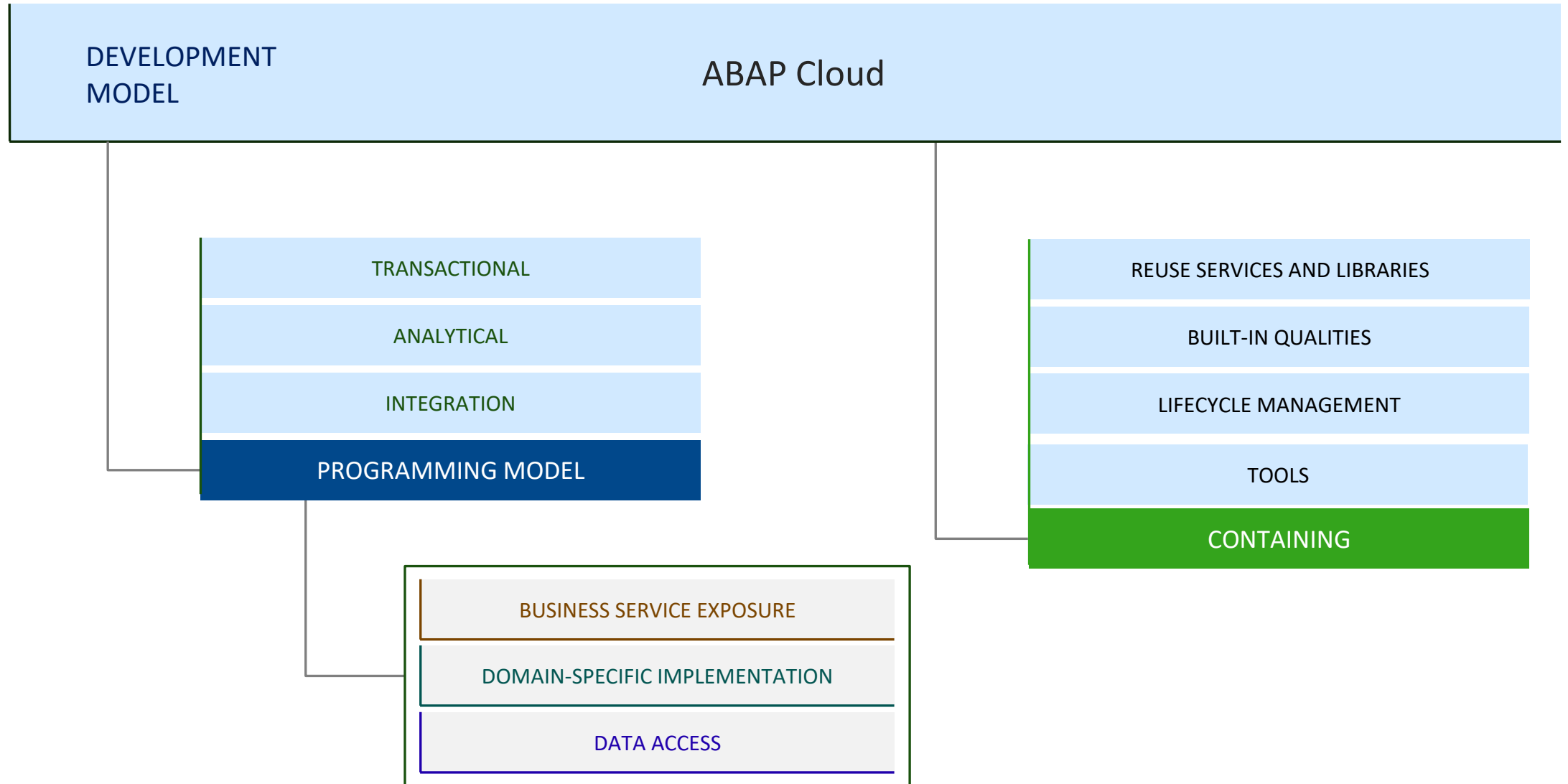


- ... is the ABAP development model to build cloud-ready business apps, services or extensions
- ... compliant with clean core principles
- ... comes with SAP BTP and SAP S/4HANA
- ... works with public or private cloud, and even on-premise

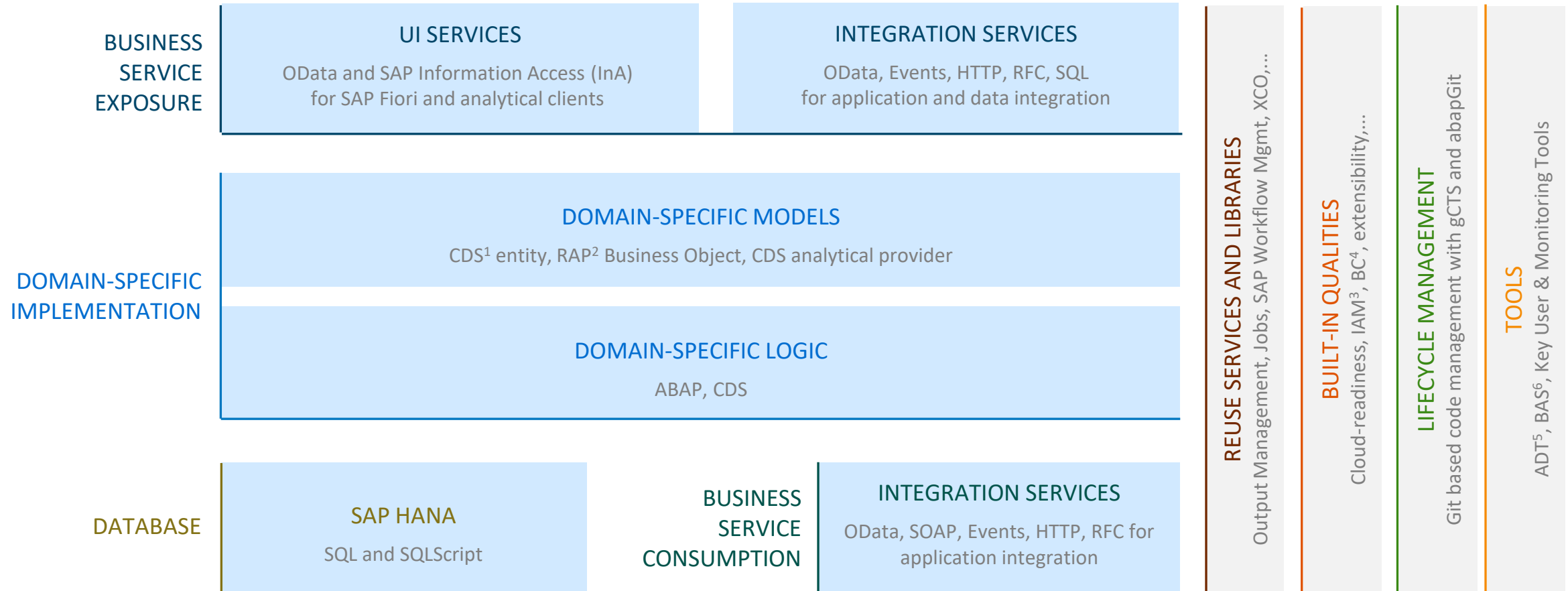
The evolution to ABAP Cloud



ABAP Cloud – What's in it?



ABAP Cloud – High-level abstraction model



¹ Core Data Services

² ABAP RESTful application programming model

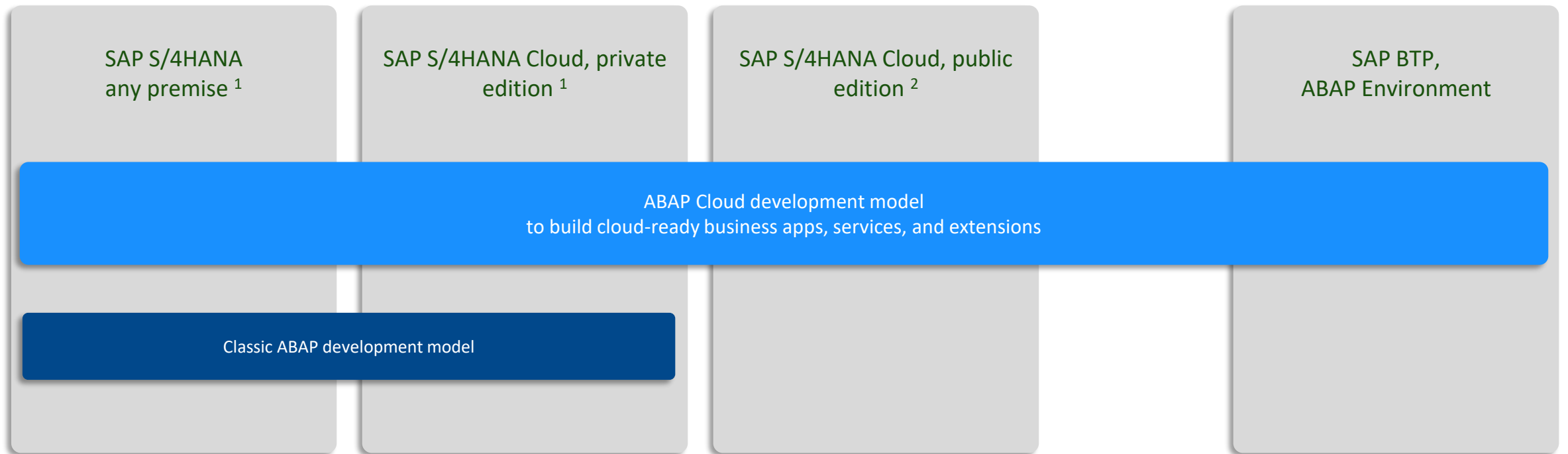
³ Identity & Access Management

⁴ Business Configuration

⁵ ABAP Development Tools

⁶ SAP Business Application Studio

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



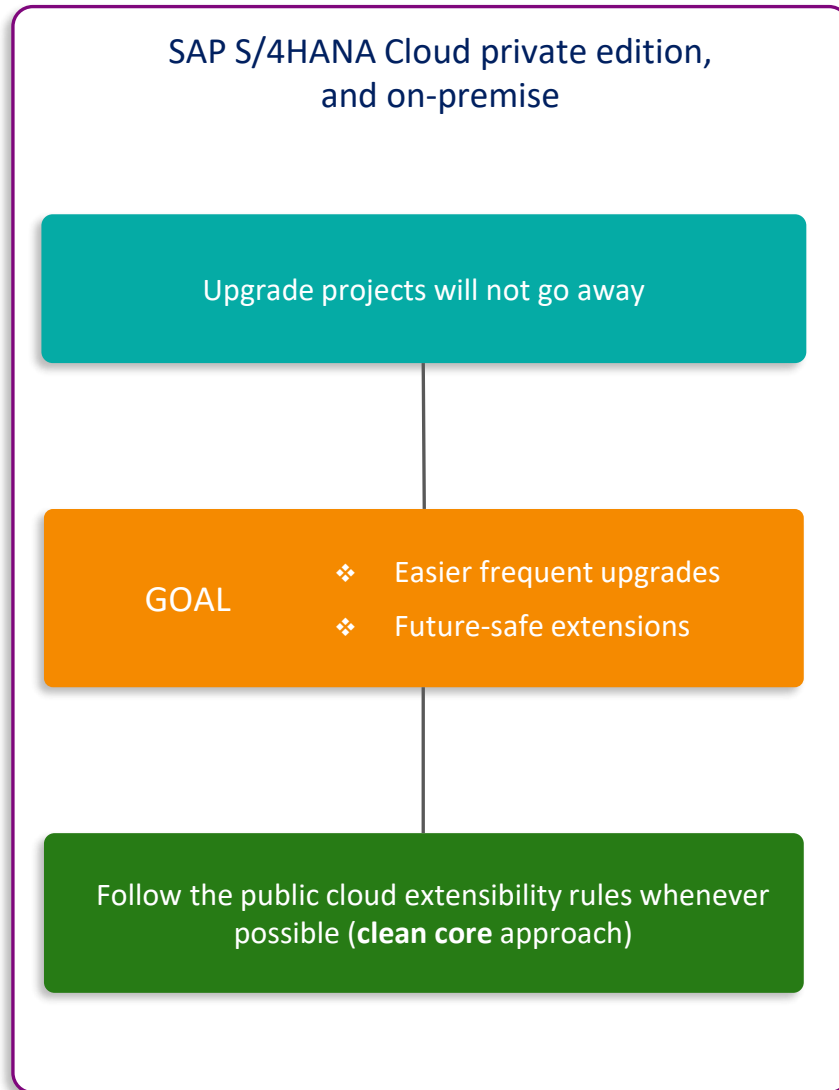
¹SAP S/4HANA any premise or SAP S/4HANA Cloud, private edition release ≥ 2022

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

S/4HANA und ABAP Cloud

- Wie komme ich da hin?

SAP S/4HANA Cloud Private Edition (and on-prem): Clean Core



Expectation management – no magic!
This is not the public cloud



RULE FOR SMOOTH SOFTWARE UPDATES

Extensions must be clearly separated from SAP code

No modifications to SAP objects allowed

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

MANDATORY IN PUBLIC CLOUD

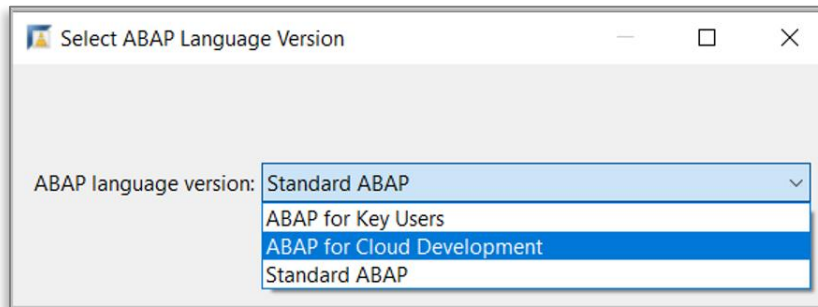
Recommended in private cloud
and on-premise

SAP S/4HANA, private cloud edition and on-premise

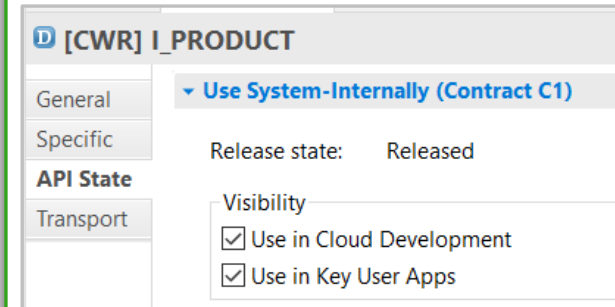
ABAP Cloud development – ABAP language version and public SAP APIs

HOW TO USE ABAP CLOUD IN THE PRIVATE CLOUD AND ON-PREMISE EDITIONS?

Switch on the strict ABAP Cloud syntax check for software component and selected custom ABAP objects

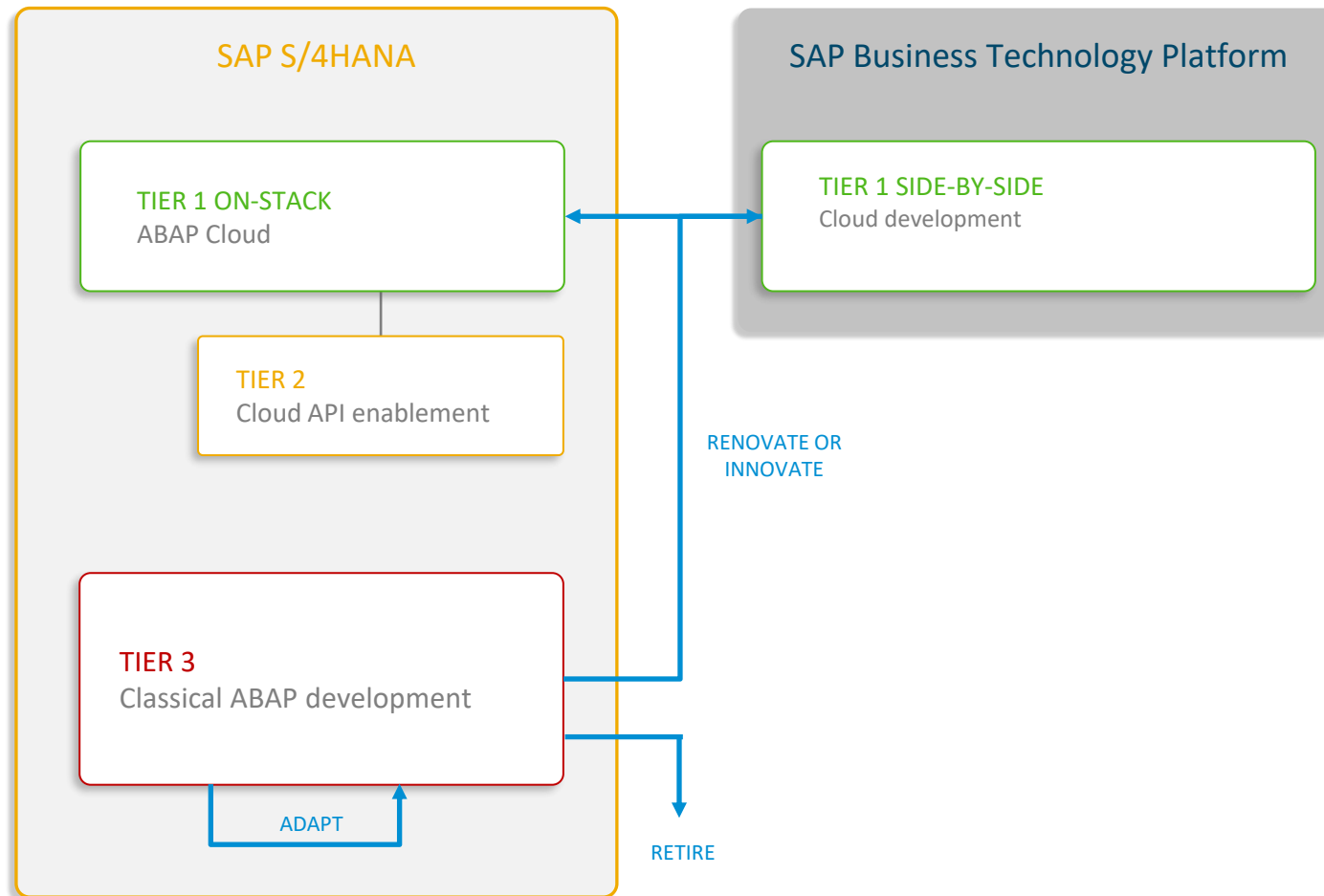


Use public APIs released by SAP for ABAP Cloud development



Check out [ABAP Cloud support in ABAP Development Tools for Eclipse](#)

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

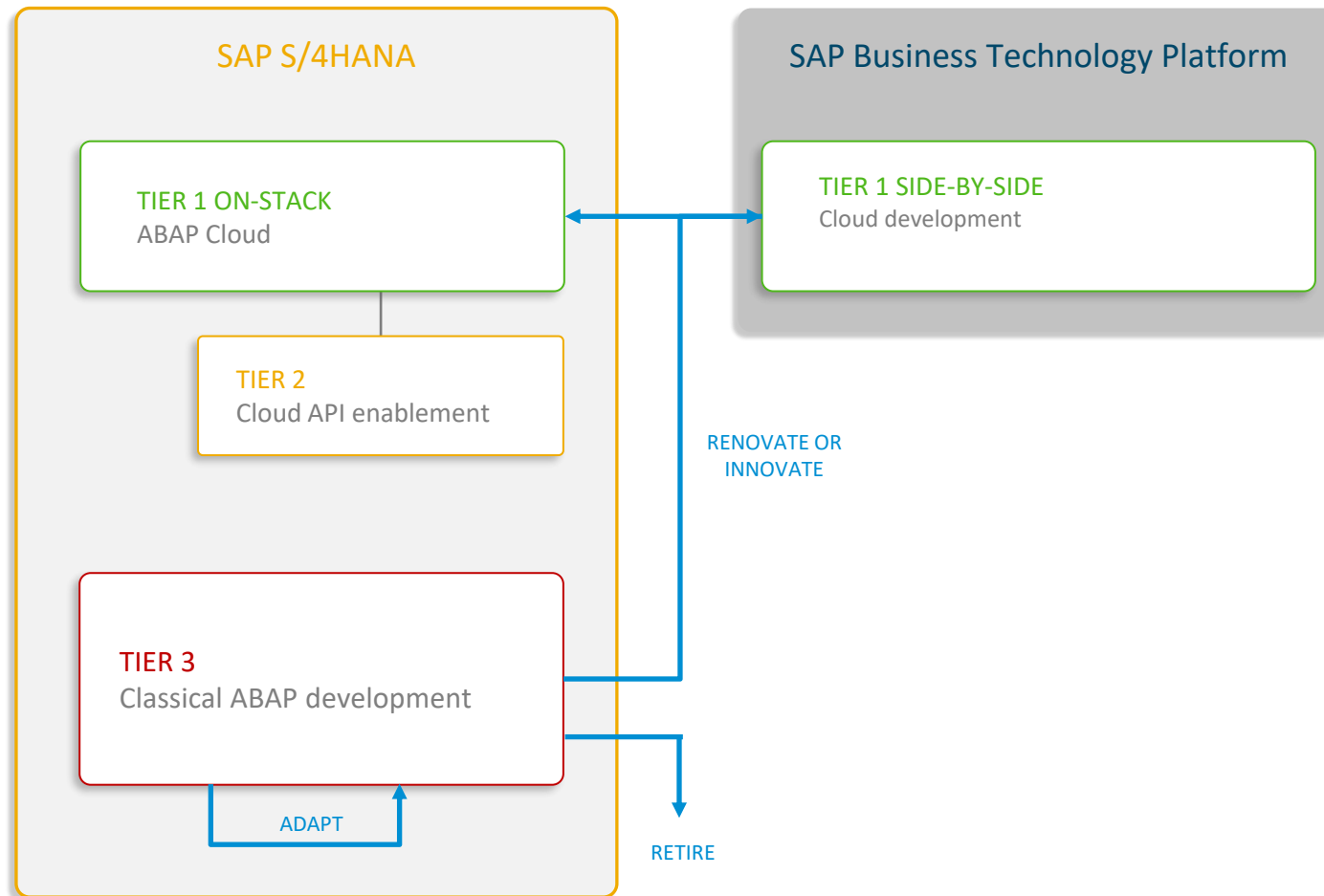
Retire wrapper once a released SAP API is available

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

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



BENEFITS

- ✓ Clean core compliant using tier 1, with clear technical guidance, cloud-ready
- ✓ Upgrade stability for tier 1 extensions
- ✓ Exploit rich functional scope of private cloud and on-premise editions, mitigate missing public APIs
- ✓ Controlled violations of clean core principles: authorizations, ABAP Test Cockpit (ATC)
- ✓ Enablement of stepwise cloud transformation
- ✓ Greenfield: Tier 3 empty, only use tier 1 and 2
- ✓ Brownfield: Legacy in tier 3, new extensions in tier 1 and 2

ON-STACK - tightly coupled

SIDE-BY-SIDE - loosely coupled

Thank you.

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

