DEV102

Major Updates on ABAP RESTful Application Programming Model

Marcel Hermanns, SAP December 2020

PUBLIC





Disclaimer

The information in this presentation is confidential and proprietary to SAP and may not be disclosed without the permission of SAP. Except for your obligation to protect confidential information, this presentation is not subject to your license agreement or any other service or subscription agreement with SAP. SAP has no obligation to pursue any course of business outlined in this presentation or any related document, or to develop or release any functionality mentioned therein.

This presentation, or any related document and SAP's strategy and possible future developments, products and or platforms directions and functionality are all subject to change and may be changed by SAP at any time for any reason without notice. The information in this presentation is not a commitment, promise or legal obligation to deliver any material, code or functionality. This presentation is provided without a warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement. This presentation is for informational purposes and may not be incorporated into a contract. SAP assumes no responsibility for errors or omissions in this presentation, except if such damages were caused by SAP's intentional or gross negligence.

All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of their dates, and they should not be relied upon in making purchasing decisions.

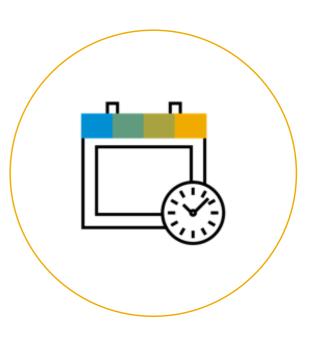
Agenda

Big picture

Draft handling

Demo

Summary



Big picture



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

Service consumption



Business services provisioning



Data modeling and behavior



SAP FIORI UI Consume OData UI services

Web API
Consume OData Web APIs



Service binding – Bind to protocol version and scenario



Service definition — Define scope to be exposed

Business object projection

CDS: Projection views

000

BDEF: Behavior projection

ABAP: Behavior implementation

Business objects



CDS: Data modeling



BDEF: Behavior definition



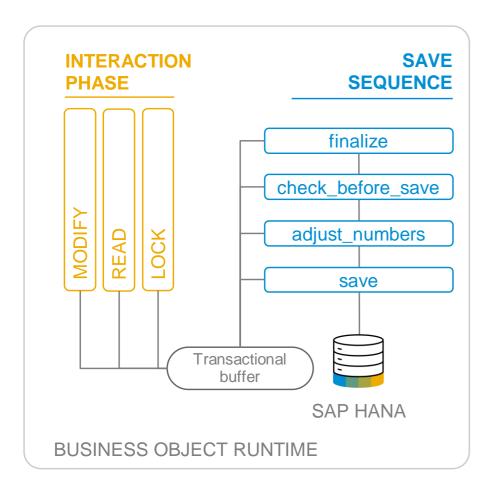
ABAP: Behavior implementation

Queries



CDS: Data modeling

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

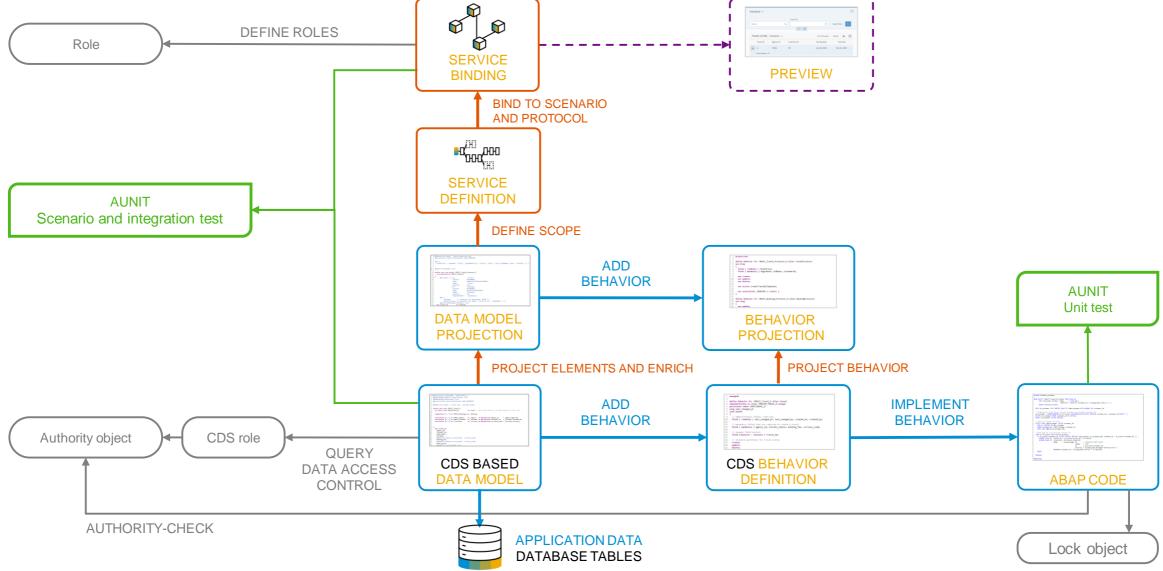
Managed

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

7

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

The development flow



Draft handling



Enabling the draft handling: RESTful architecture and draft handling

Cloud environment expects high availability, continuous delivery, and low TCO

RESTful avoids problematic server stickiness by introducing a stateless communication

Draft fills the gap between stateless communication and stateful application

Enablers for cloud and modern UX

Modern user experience requires multidevice support and data loss prevention without connection timeouts

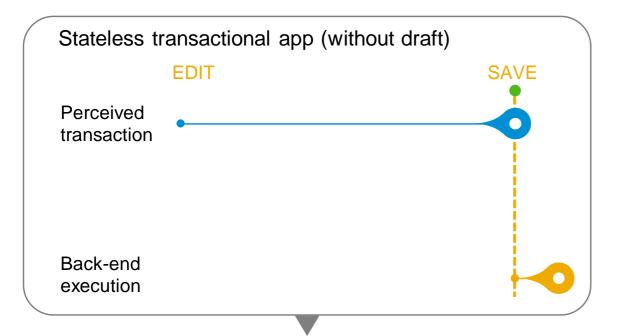
Draft persists the state device independently in a non-process-relevant way

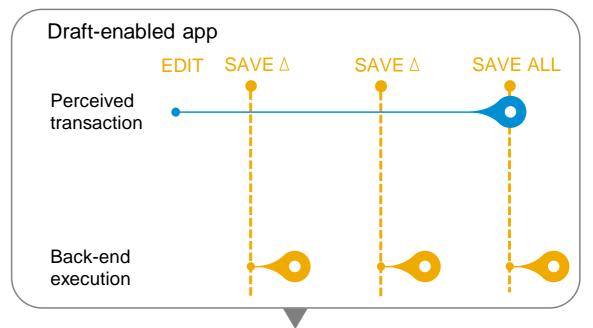
RESTful makes the draft available as an addressable resource

Guiding principle

Draft is the persisted transactional buffer as an addressable resource

Enabling the draft handling: Stateful applications with stateless communication protocol





IMPACT for end user

No feedback (such as messages, feature control) until SAVE is triggered

IMPACT for end user

Early feedback comes from calculations and validations in the back end, including feature control

Draft automatically supports data loss prevention, continuous work, and device switch



Building apps E2E – Current status and lab preview

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

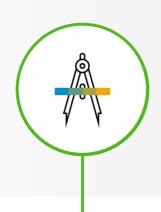
BO viewer (relation explorer)

BO projection layer

Documentability

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











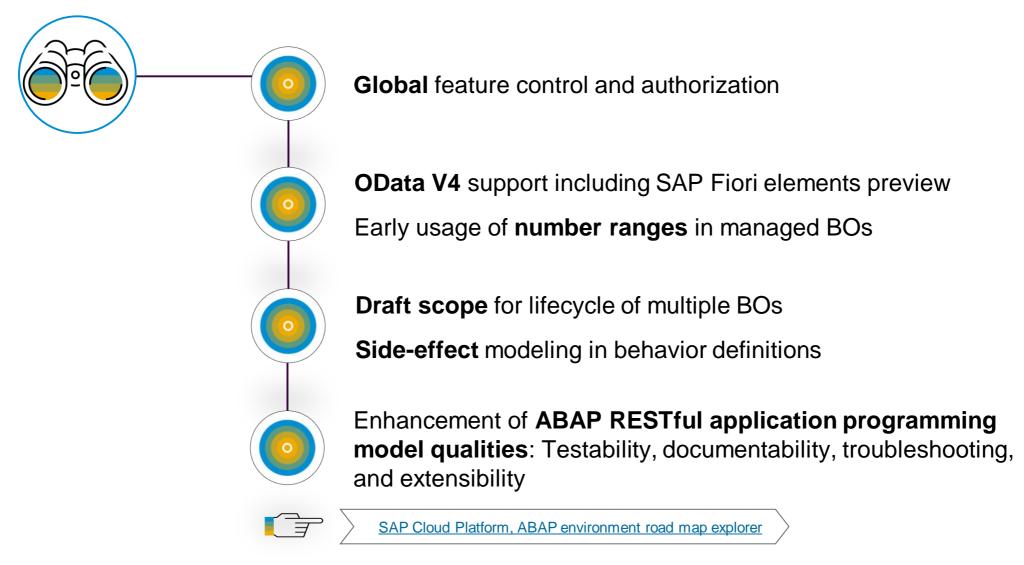
Draft handling

for managed and unmanaged BOs

Testability

BO test double framework

Outlook – Next steps



More information

Further information

Getting started with the ABAP RESTful application programming model

Major updates in the ABAP RESTful application programming model

Numbering

<u>Unmanaged locks</u>

Unmanaged save

Additional save

Draft support

Feature control

Precheck

Relation explorer

Knowledge transfer document editor

Public SAP Web sites

ABAP development community: 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

SAP training and certification opportunities

www.sap.com/education





Continue your learning experience from SAP TechEd in 2020

Your exclusive path to build and maintain SAP solution skills anytime, any place

Get empowered with access to relevant, up-to-date digital learning for SAP TechEd participants through a complete enablement solution that drives adoption and innovation.



Deepen your learning experience from SAP TechEd

Activate your free access to SAP Learning Hub, event edition, for:

- Learning Journey illustrations to guide you through complementary self-paced learning content
- Content specific to SAP TechEd in the online SAP Learning Room for SAP TechEd
- Access to SAP experts in special live sessions



Deepen and validate your SAP solution skills

<u>Subscribe</u> to SAP Learning Hub, solution editions, for:

- Solution-specific Learning Journey guides, content, collaborative learning, and hands-on practice for your role and goals
- Drive performance and business success with validated solution expertise from the SAP Global Certification program

Your benefits

- Gain insight into the latest innovations, and master software proficiency
- Keep skills up-to-date, and enable performance and business success with help from SAP solution experts
- Achieve competitive advantages and digital transformation success with trusted certifications

500,000+

Learners in SAP Learning Hub

100+

Experts getting certified per day

150 +

SAP Global Certifications



Contact for further topic inquiries

Marcel Hermanns
Chief Development Architect
ABAP Platform
marcel.hermanns@sap.com





Follow us









www.sap.com/contactsap

© 2020 SAP SE or an SAP affiliate company. All rights reserved.

No part of this publication may be reproduced or transmitted in any form or for any purpose without the express permission of SAP SE or an SAP affiliate company.

The information contained herein may be changed without prior notice. Some software products marketed by SAP SE and its distributors contain proprietary software components of other software vendors. National product specifications may vary.

These materials are provided by SAP SE or an SAP affiliate company for informational purposes only, without representation or warranty of any kind, and SAP or its affiliated companies shall not be liable for errors or omissions with respect to the materials. The only warranties for SAP or SAP affiliate company products and services are those that are set forth in the express warranty statements accompanying such products and services, if any. Nothing herein should be construed as constituting an additional warranty.

In particular, SAP SE or its affiliated companies have no obligation to pursue any course of business outlined in this document or any related presentation, or to develop or release any functionality mentioned therein. This document, or any related presentation, and SAP SE's or its affiliated companies' strategy and possible future developments, products, and/or platforms, directions, and functionality are all subject to change and may be changed by SAP SE or its affiliated companies at any time for any reason without notice. The information in this document is not a commitment, promise, or legal obligation to deliver any material, code, or functionality. All forward-looking statements are subject to various risks and uncertainties that could cause actual results to differ materially from expectations. Readers are cautioned not to place undue reliance on these forward-looking statements, and they should not be relied upon in making purchasing decisions.

SAP and other SAP products and services mentioned herein as well as their respective logos are trademarks or registered trademarks of SAP SE (or an SAP affiliate company) in Germany and other countries. All other product and service names mentioned are the trademarks of their respective companies.

See www.sap.com/copyright for additional trademark information and notices.

