Week 2: Process Flexibility and Business Rules
Unit 1: Creating a Process Template

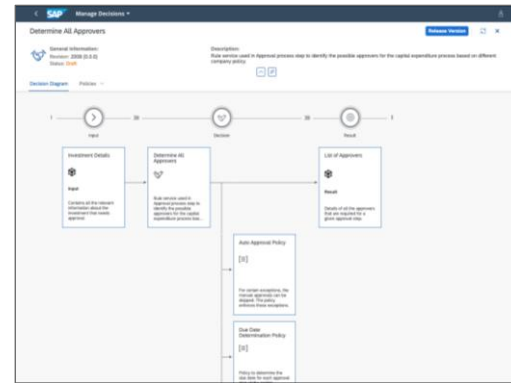openSAP
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Creating a process template
Overview of key capabilities
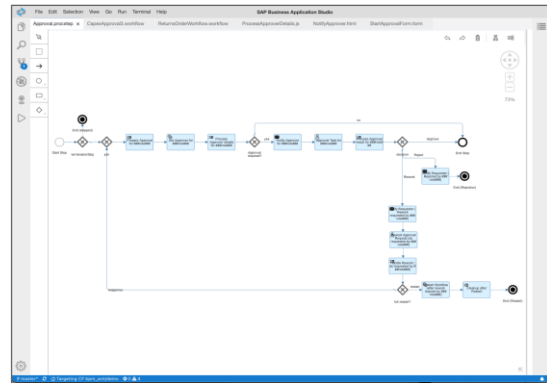
Workflow Editor (Low Code)
Application Workflow

Business Rules (Low Code)
Decision Management and Enterprise Rules Model

Process Variant (No Code)
Configuration UI for Business Experts

Process Visibility Plug & Play
Real-Time Workflow Visibility with XM Integration

Application developer-focused workflow modeling and process automation

Integrated Business Rules Management to deploy into hybrid landscapes

Process flexibility to configure variants of processes with pre-built content

Plug & Play Process Visibility with easy-to-configure dashboards and XM integration

SAP Workflow Management is a coherent cloud service offering combining **workflow, business rules, process visibility, process flexibility,** and **inbox,** complemented by **pre-built content packages**
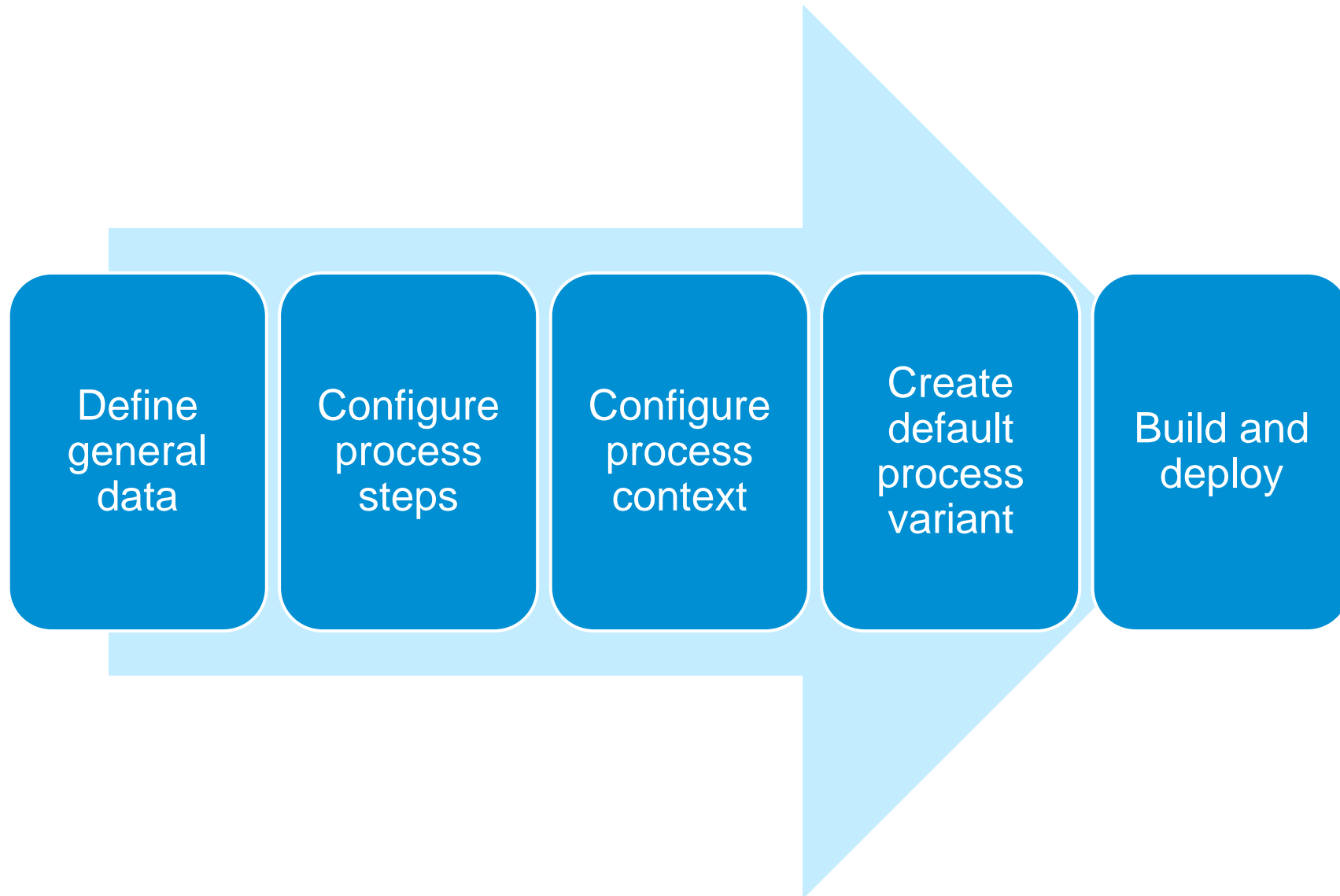
The nature of a process template

A process template contains **process steps** that are **used to configure different process variants**

It also contains

- **process context** for data mapping across process steps
- **process attributes** for identifying the process instance
- **monitoring KPIs**

The steps to create a process template

Define general data → Configure process steps → Configure process context → Create default process variant → Build and deploy

Creating a process template
Key learnings

- What a process template is
- How to create a process template
- How to define step conditions
- How to create a default variant

Creating a process template
What's next?

In the next unit, you'll learn:

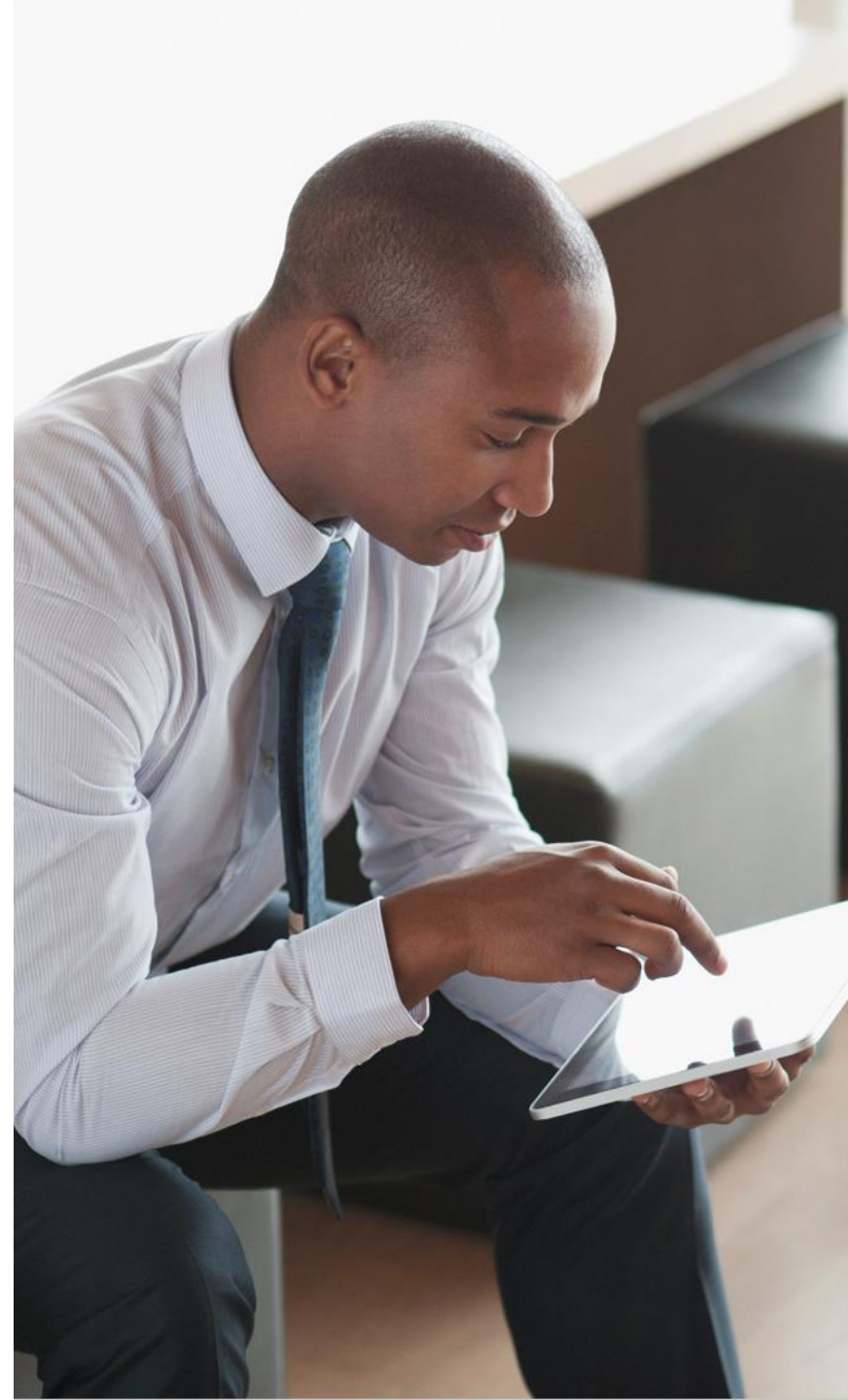- How to manage decisions with business rules

Creating a process template
Further reading

- ➤ [SAP Help Portal: Model Process Templates](#)
- ➤ [SAP Community: SAP Workflow Management](#)

Thank you.

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open@sap.com

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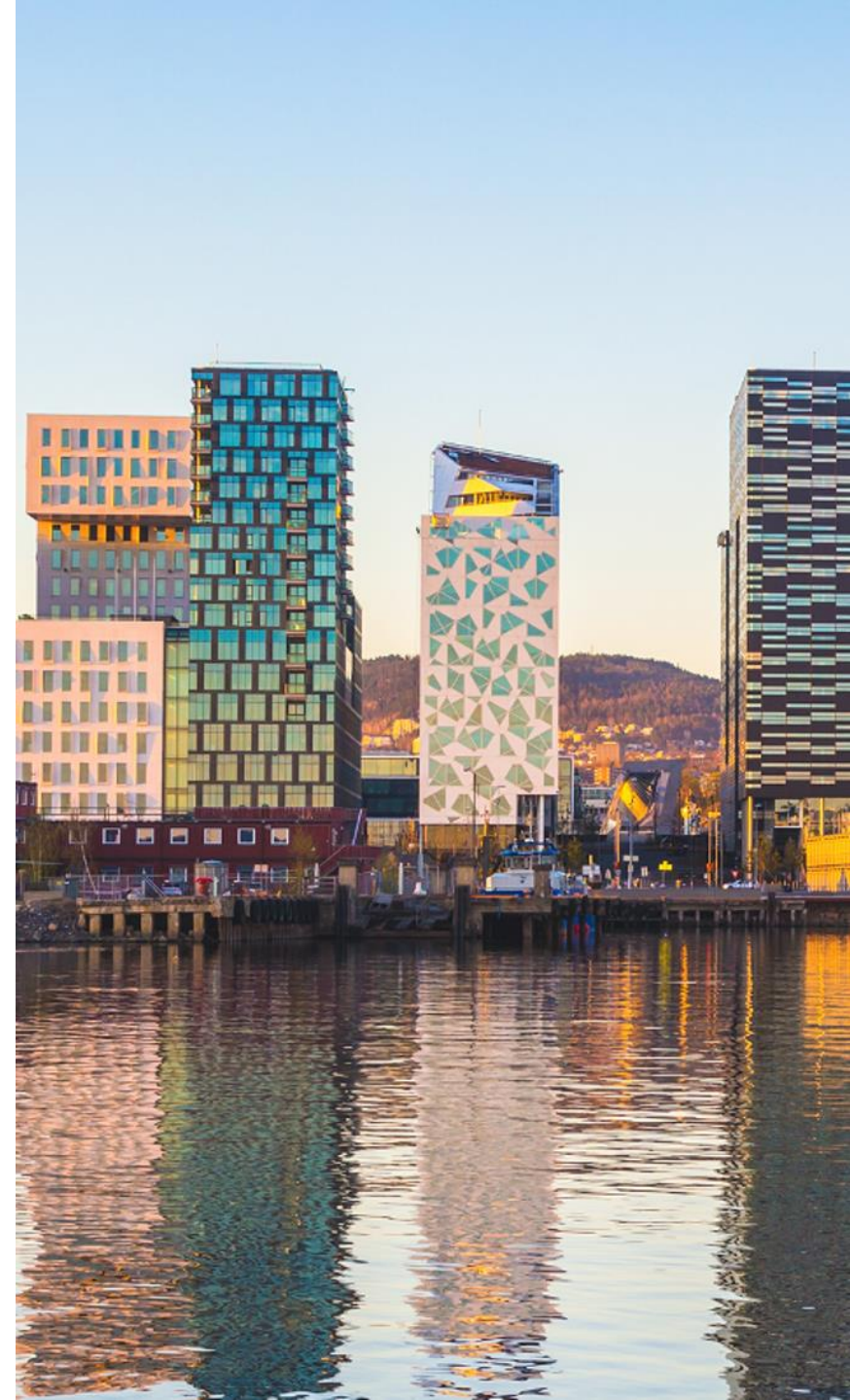Week 2: Process Flexibility and Business Rules

Unit 2: Managing Decisions with Business Rules

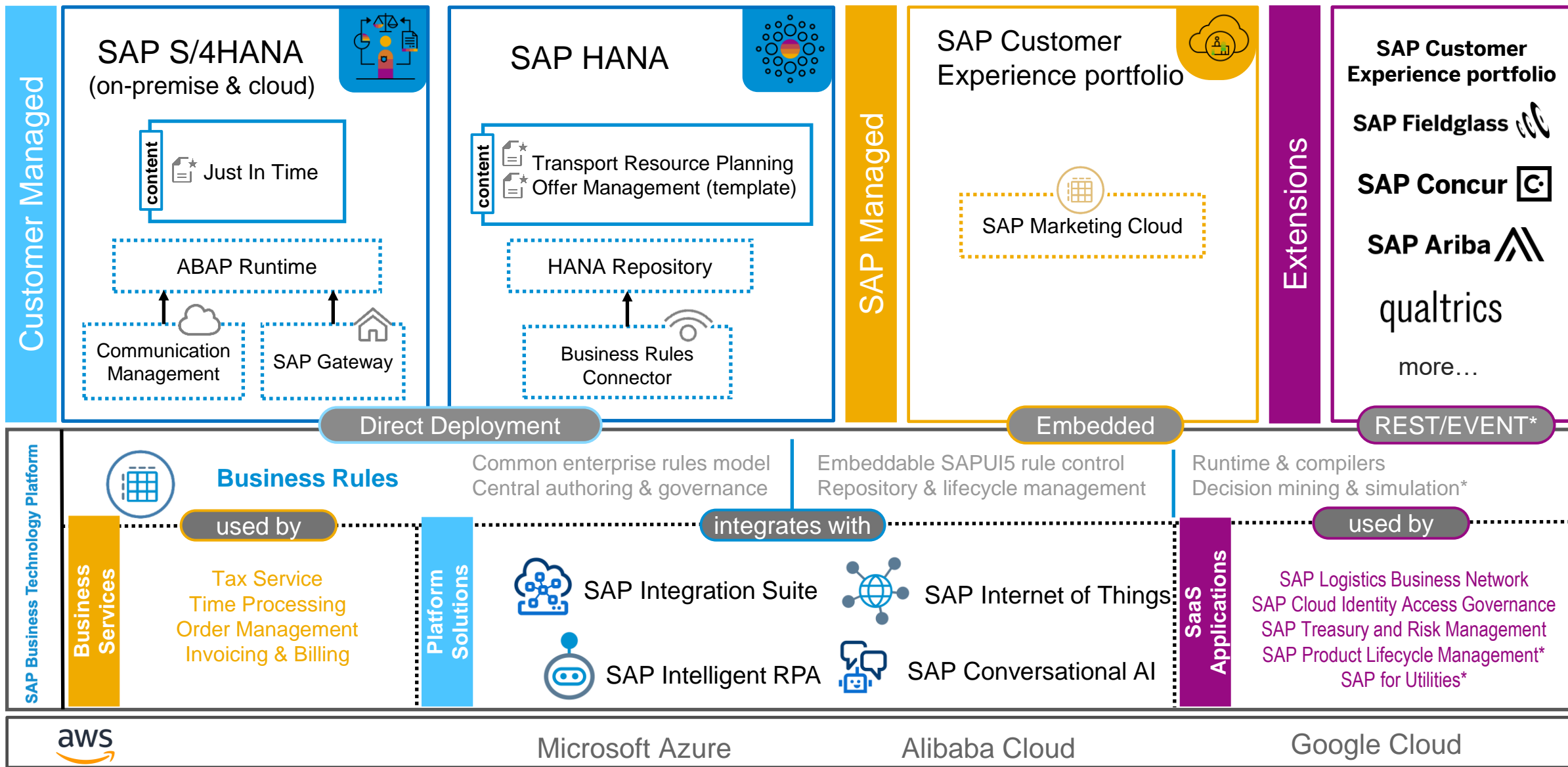**Business rules in SAP Workflow Management**

Encapsulates **"high-change decision logic"** from application logic

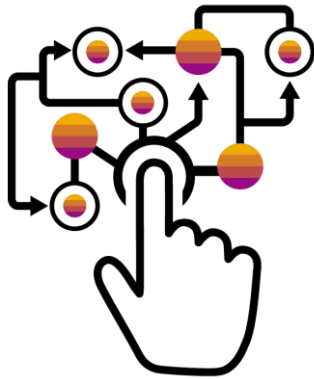**Digitize and automate decision making** with business rules

Enable **centralized decision management** across the intelligent suite

Managing decisions with business rules
The bigger picture

Customer Managed

SAP S/4HANA
(on-premise & cloud)

- content
  - Just In Time
- ABAP Runtime
  - Communication Management
  - SAP Gateway

SAP HANA

- content
  - Transport Resource Planning
  - Offer Management (template)
- HANA Repository
  - Business Rules Connector

SAP Managed

SAP Customer Experience portfolio

- SAP Marketing Cloud

Extensions

SAP Customer Experience portfolio
- SAP Fieldglass
- SAP Concur
- SAP Ariba
- qualtrics

more...

Direct Deployment   **Embedded**   **REST/EVENT***

SAP Business Technology Platform

Business Rules

Common enterprise rules model
Central authoring & governance

Embeddable SAPUI5 rule control
Repository & lifecycle management

Runtime & compilers
Decision mining & simulation*

used by   **integrates with**   **used by**

Business Services
- Tax Service
- Time Processing
- Order Management
- Invoicing & Billing

Platform Solutions
- SAP Integration Suite
- SAP Internet of Things
- SAP Intelligent RPA
- SAP Conversational AI

SaaS Applications
- SAP Logistics Business Network
- SAP Cloud Identity Access Governance
- SAP Treasury and Risk Management
- SAP Product Lifecycle Management*
- SAP for Utilities*

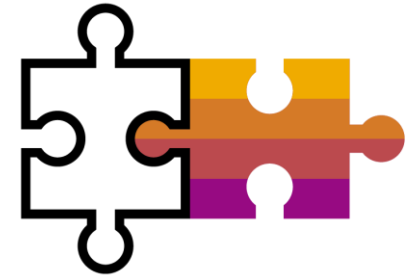aws   Microsoft Azure   Alibaba Cloud   Google Cloud

* Planned

Enabling decision management across the Intelligent Enterprise

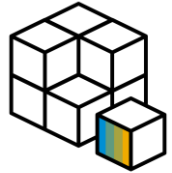Empower users to automate and manage business logic independently from application development
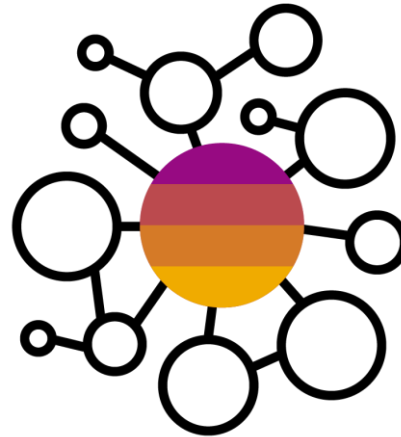
Centrally build and manage decision logic across different solutions and landscapes

Rapidly build and extend decision logic for SAP and non-SAP applications with managed APIs

Business rules usage patterns

Extension applications
that require business logic to vary and remain outside the application lifecycle

- A cloud-native application built side-by-side with an SAP solution, e.g., SAP S/4HANA
- Invokes the rule service via API

Human-centric or system-centric processes
that require decision logic to be isolated from the process flow logic

- A cloud **workflow** or **integration** flow process that extends or integrates an SAP solution
- Workflow or integration flow service task invokes the rule service via API

Core business processes for **in-app extensions**
that require rule-based field calculations and derivations and a controlled environment

- SAP back office core processes like available-to-promise, financial reporting in SAP S/4HANA
- SAP front office customer-facing processes like Marketing Campaign Score Recommendation in SAP CX

Analytical decisions
that require executions on mass data typically stored in an agile data mart

- Agile data mart refers to a repository of data gathered from operational data originating from transactional systems and other sources
- Business rules are pushed down to SAP HANA to leverage faster execution of analytical rules on mass data

Advanced features and recent updates

- Version management

- Project hierarchy

- Decision orchestration

- Globalization

- Geospatial rules

- New expression types: Time & Duration, For Each, Currency Conversions, Update, Append, Select, Is Initial, etc.

- View audit logs in Audit Log Viewer for the Cloud Foundry environment

- New prepackaged content in SAP API Business Hub with standard content publication guidelines

Key learnings

- Empower business policy owners to automate decisions outside any SAP or non-SAP applications using business rules in SAP Workflow Management

- Enterprise rule model and central decision management to manage rules centrally across different platforms, generating low operation and maintenance costs

- Authoring and runtime APIs to integrate and extend business logic with processes across various SAP and non-SAP applications

What's next?

In the next unit, you'll learn:

- How to author and deploy business rules from the Manage Rule Projects application
- How to consume business rules using the runtime API in SAP API Business Hub

Managing decisions with business rules
Further reading

➢ [Learning Journey](#)

➢ [SAP Help](#)

➢ [Solution Brief](#)

➢ [Business Rules API](#)

➢ [Prepackaged Content](#)

Thank you.

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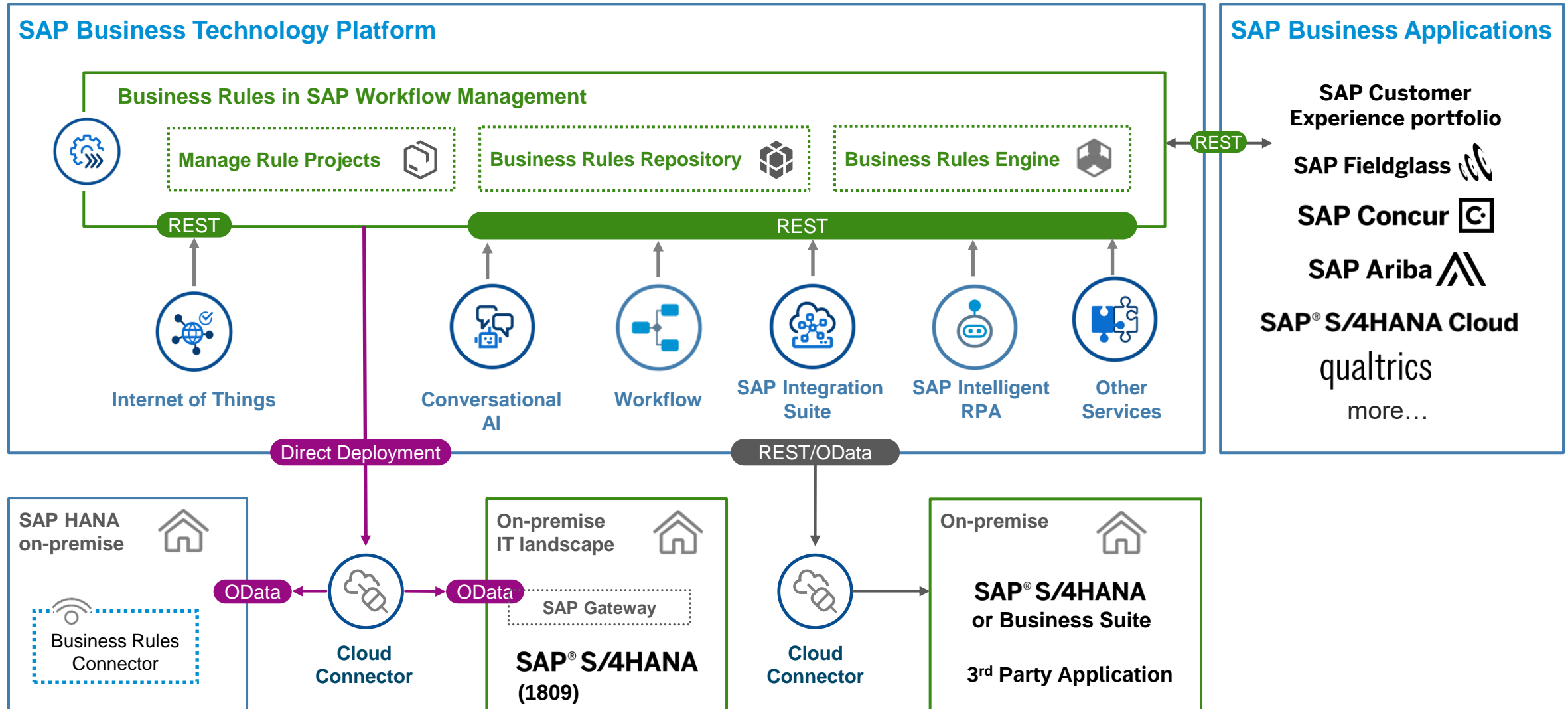THE BEST RUN **SAP**

Follow all of SAP

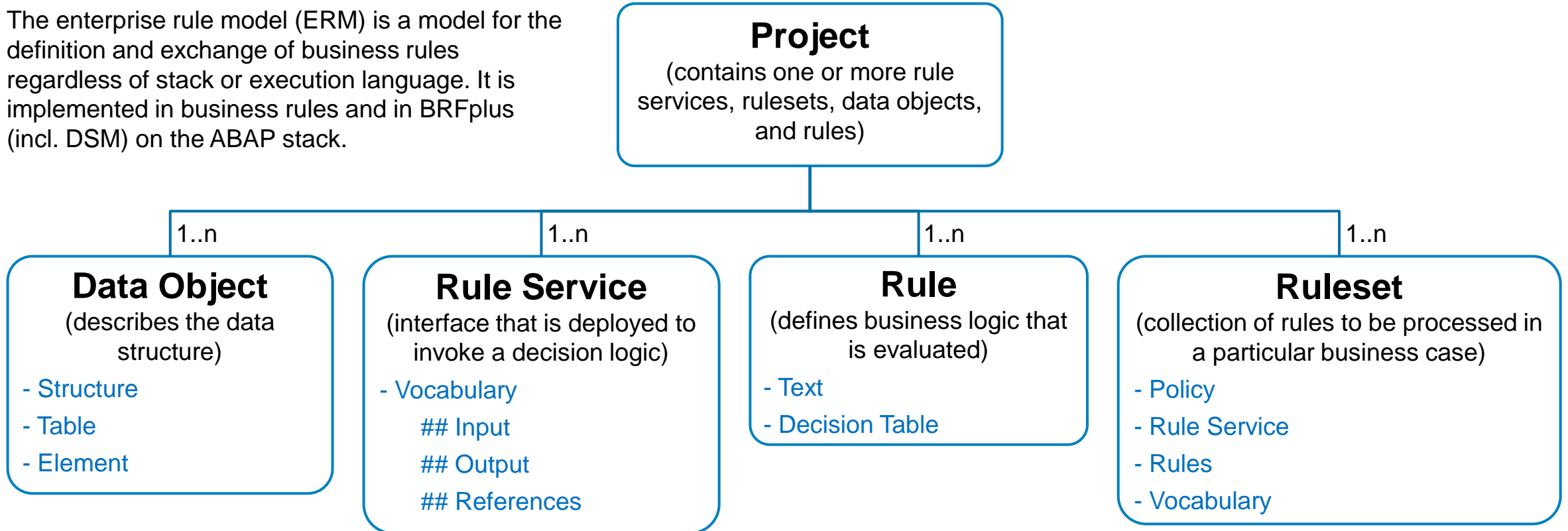THE BEST RUN **SAP**

Week 2: Process Flexibility and Business Rules
Unit 3: Developing Business Rules

Business rules – the bigger picture

Enterprise rule model – overview

The enterprise rule model (ERM) is a model for the definition and exchange of business rules regardless of stack or execution language. It is implemented in business rules and in BRFplus (incl. DSM) on the ABAP stack.

Project
(contains one or more rule services, rulesets, data objects, and rules)

1..n   1..n   1..n   1..n

Data Object
(describes the data structure)
- Structure
- Table
- Element

Rule Service
(interface that is deployed to invoke a decision logic)
- Vocabulary
  - ## Input
  - ## Output
  - ## References

Rule
(defines business logic that is evaluated)
- Text
- Decision Table

Ruleset
(collection of rules to be processed in a particular business case)
- Policy
- Rule Service
- Rules
- Vocabulary

- Vocabulary is defined using data objects
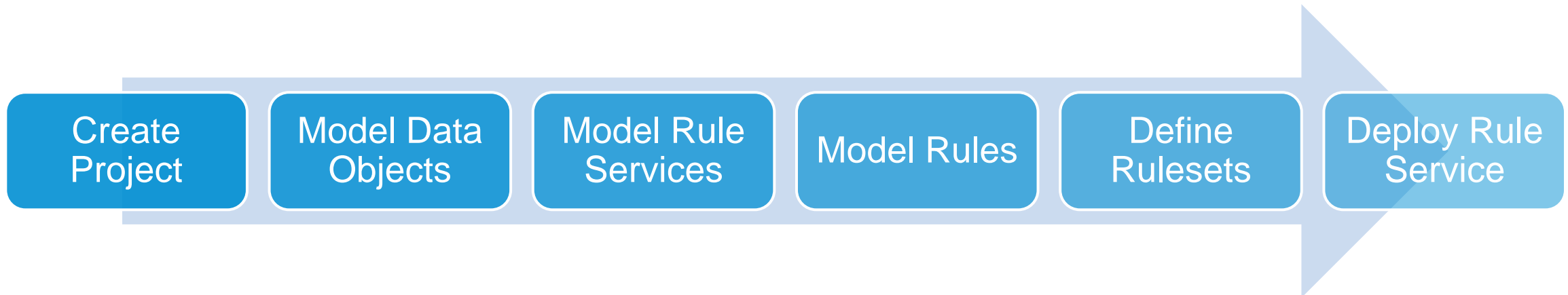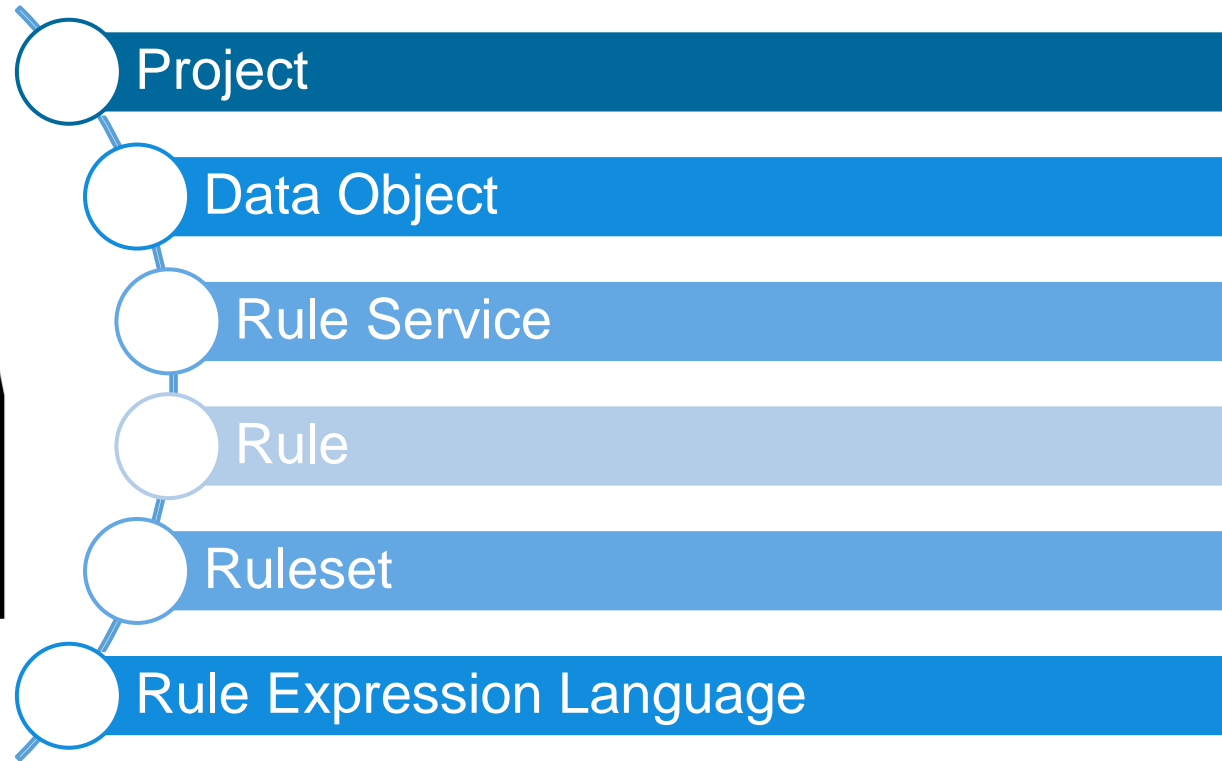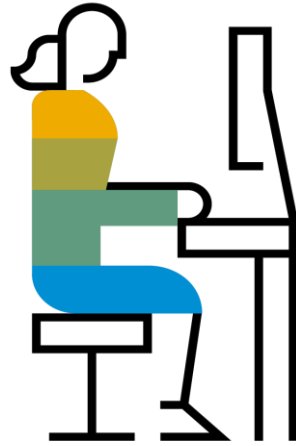- Import the vocabulary from backend SAP S/4HANA systems

- Rule service defines inputs, results and other data objects
- Application calls rule service to invoke business rules

- A rule captures decision or business logic using rule expression language
- Decision table and text rule format is supported

- A ruleset contains one or more rules
- Each ruleset refers to one rule service
- Aggregation and orchestration policy is supported for different needs

Modeling terms and concept

Application Developer

- Project
- Data Object
- Rule Service
- Rule
- Ruleset
- Rule Expression Language

Create Project → Model Data Objects → Model Rule Services → Model Rules → Define Rulesets → Deploy Rule Service

Enabling decision management with centralized rule authoring and governance capabilities

Manage Rules Application
to author and manage your rules

- Author and manage business rules

- Validate and activate rules

- Create and manage versions

- Define and extend vocabulary and project

- Build rules on geospatial data

- Enable rule flow by decision orchestration

- Globalization available in 6 languages

- New expression language with enhanced modeling experience

- Rich expression function library

- Direct deployment of rules service to different runtimes (SAP HANA, SAP S/4HANA)

Business Rules
in SAP API Business Hub

- Business rules runtime and repository APIs can be discovered from SAP API Business Hub

- Consume repository APIs to create and manage enterprise rules models

- Consume runtime APIs to invoke business rules

- Sample and accelerator content

- New guidelines for publishing digital content

Key learnings

- Web-based SAP Fiori application for authoring and managing business rules

- Common enterprise rule model to author business rules across different platforms

- Direct deployment to different systems like SAP BTP, SAP HANA, SAP S/4HANA

- Invoke business rules from application and processes by using APIs

Developing business rules
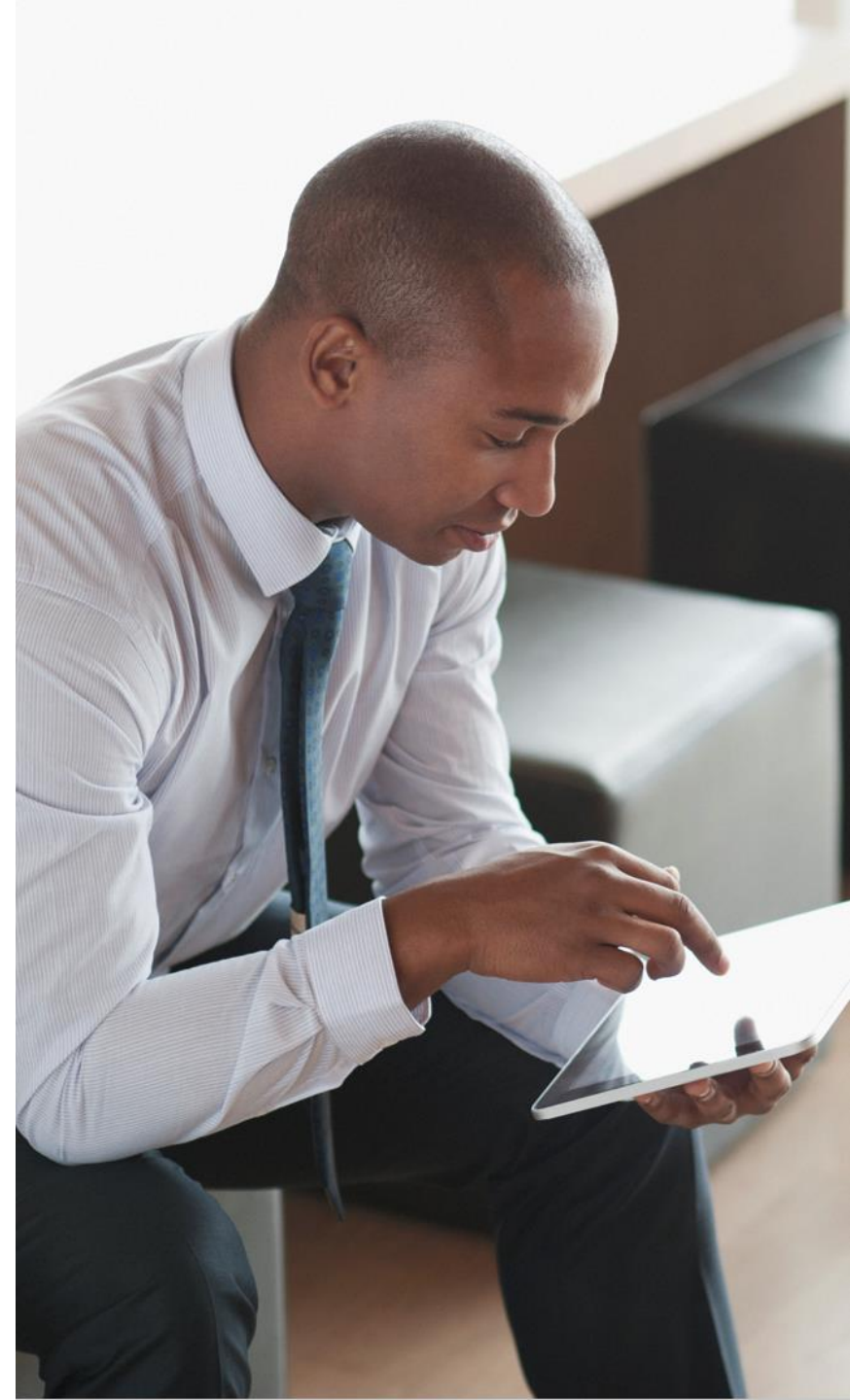# What's next?

In the next unit, you'll learn:

- How to extend business rules in SAP S/4HANA using SAP BTP

Developing business rules
Further reading

➢ [Learning Journey](#)

➢ [SAP Help](#)

➢ [Solution Brief](#)

➢ [Business Rules API](#)

➢ [Prepackaged Content](#)

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Week 2: Process Flexibility and Business Rules

Unit 4: Connecting Your Business Rules with SAP S/4HANA

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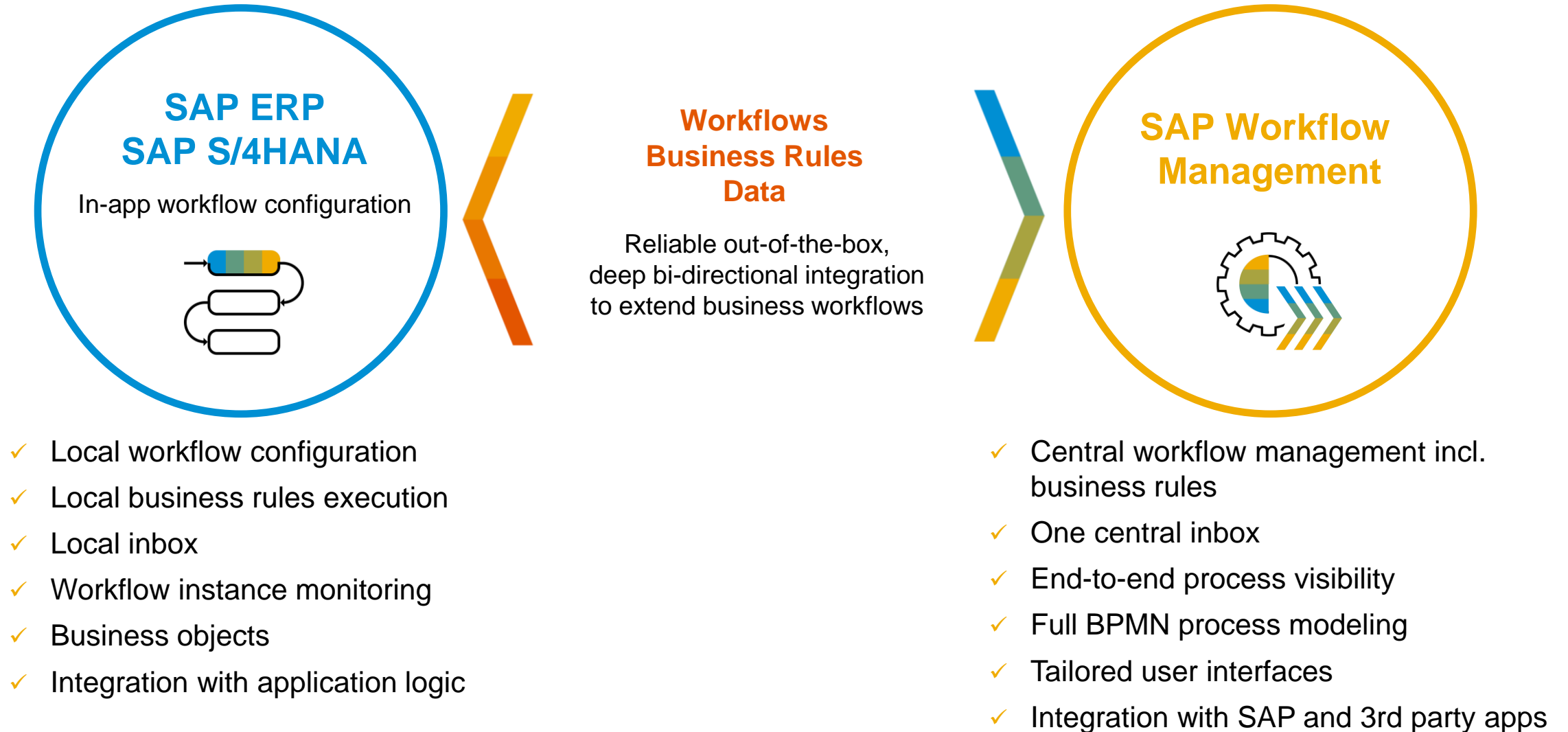
Analytical decisions
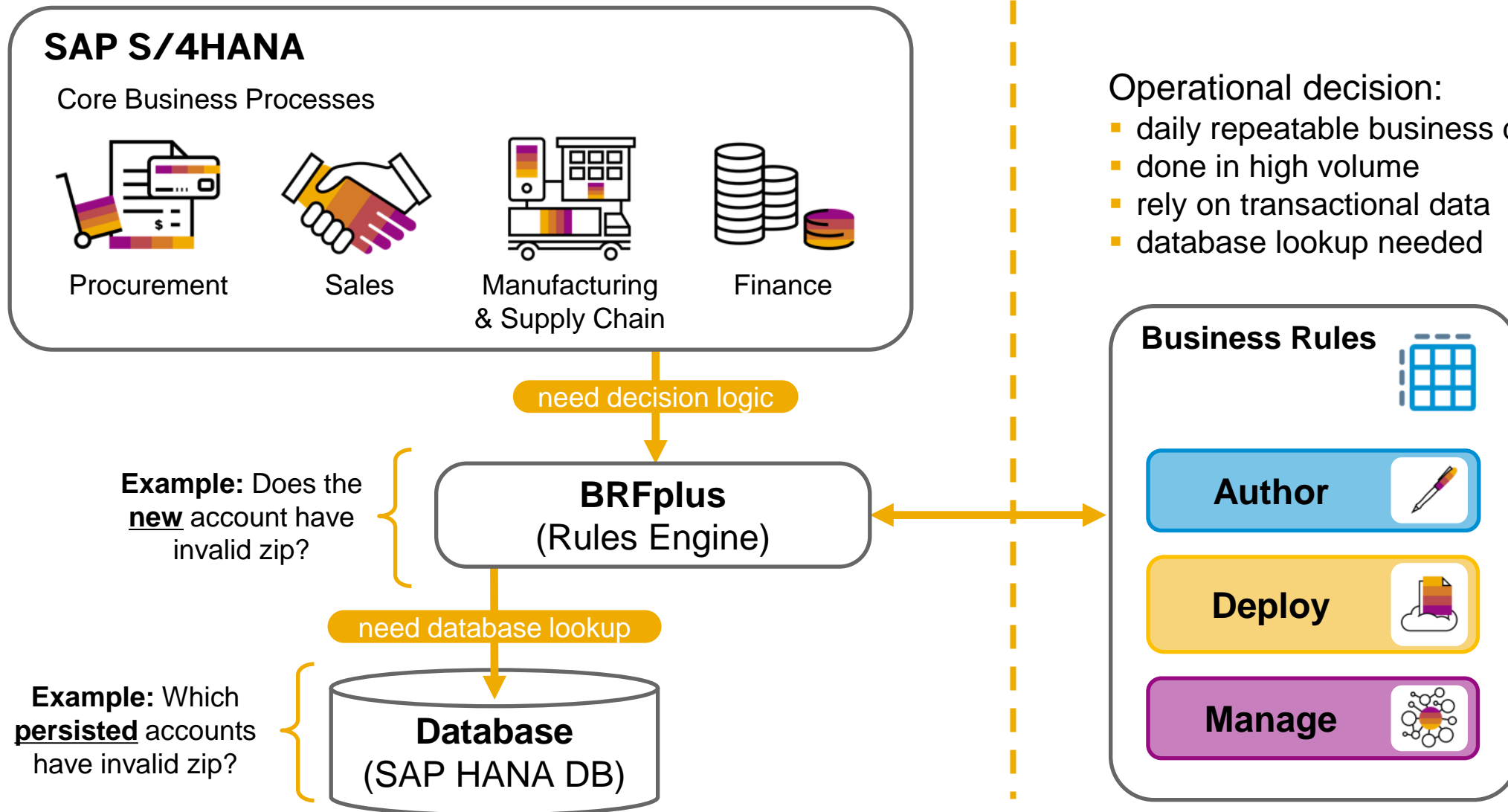that require executions on mass data typically stored in an agile data mart

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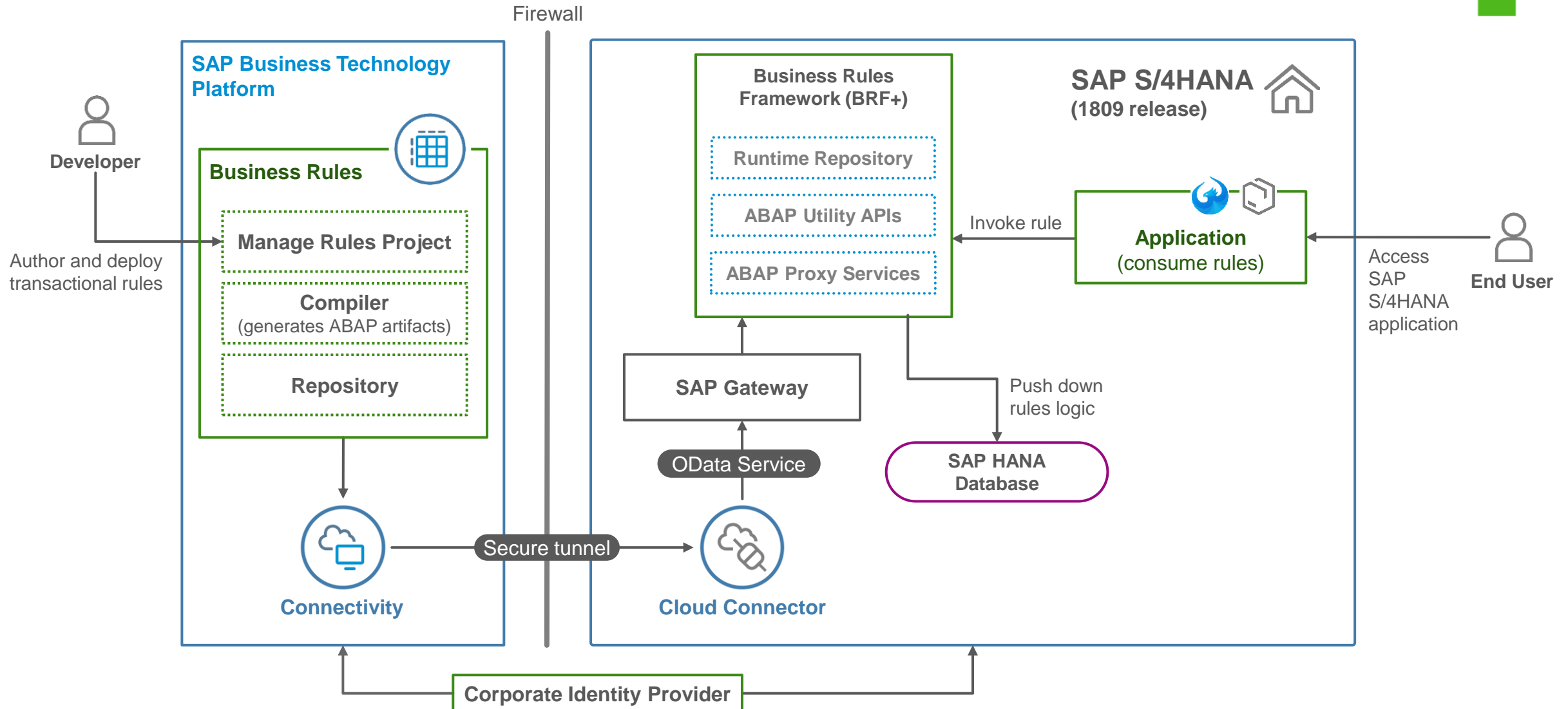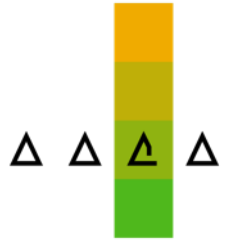
SAP S/4HANA and SAP ERP extensibility – overview

**SAP ERP
SAP S/4HANA**

In-app workflow configuration

**Workflows
Business Rules
Data**

Reliable out-of-the-box,
deep bi-directional integration
to extend business workflows

**SAP Workflow
Management**

✓ Local workflow configuration

✓ Local business rules execution

✓ Local inbox

✓ Workflow instance monitoring

✓ Business objects

✓ Integration with application logic

✓ Central workflow management incl. business rules

✓ One central inbox

✓ End-to-end process visibility

✓ Full BPMN process modeling

✓ Tailored user interfaces

✓ Integration with SAP and 3rd party apps

Recipe 3: Operational decisions in core business processes

SAP S/4HANA

Core Business Processes

| Procurement | Sales | Manufacturing & Supply Chain | Finance |

need decision logic

Example: Does the **new** account have invalid zip?

BRFplus
(Rules Engine)

need database lookup

Example: Which **persisted** accounts have invalid zip?

Database
(SAP HANA DB)

Operational decision:
- daily repeatable business decisions
- done in high volume
- rely on transactional data
- database lookup needed

Business Rules

Author

Deploy

Manage

Connecting your business rules with SAP S/4HANA

Recipe 3: In-app extensibility in SAP S/4HANA

Firewall

SAP Business Technology Platform

Developer

Author and deploy transactional rules

Business Rules

Manage Rules Project

Compiler
(generates ABAP artifacts)

Repository

Connectivity

Secure tunnel

Business Rules Framework (BRF+)

Runtime Repository

ABAP Utility APIs

ABAP Proxy Services

Invoke rule

SAP S/4HANA
(1809 release)

Application
(consume rules)

Access SAP S/4HANA application

End User

SAP Gateway

OData Service

Cloud Connector

Push down rules logic

SAP HANA Database

Corporate Identity Provider

Administrative tasks (1/2)

1 Register the ERM gateway service in SAP S/4HANA system

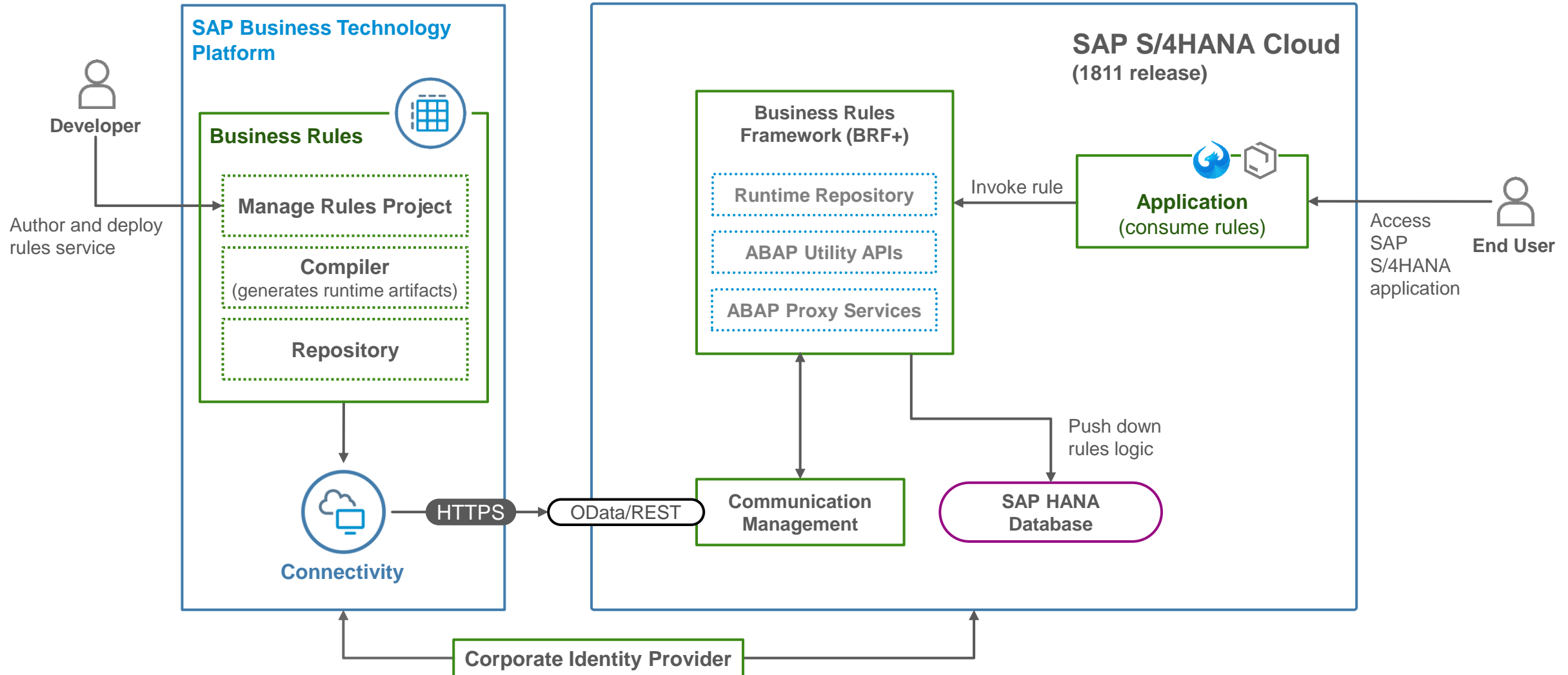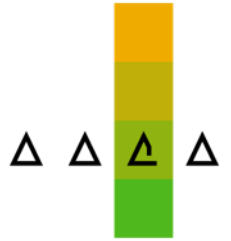**2** Set up cloud connector

Administrative tasks (2/2)

3 Maintain the destination to
SAP S/4HANA system in SAP BTP
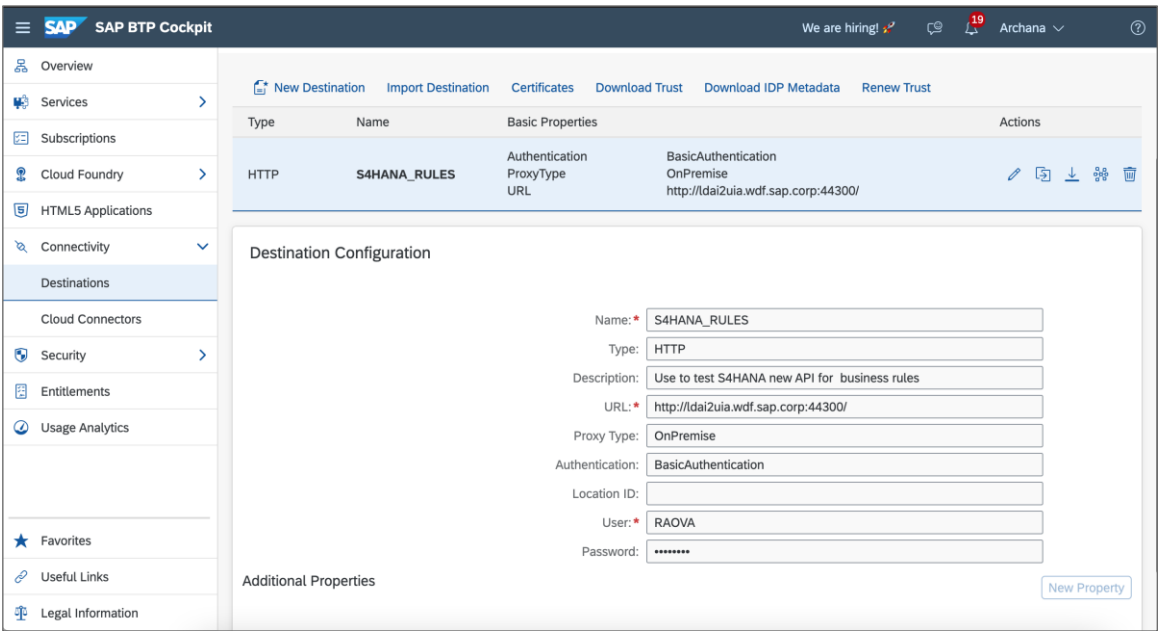
4 Create a managed system in
SAP Business Rules service

7
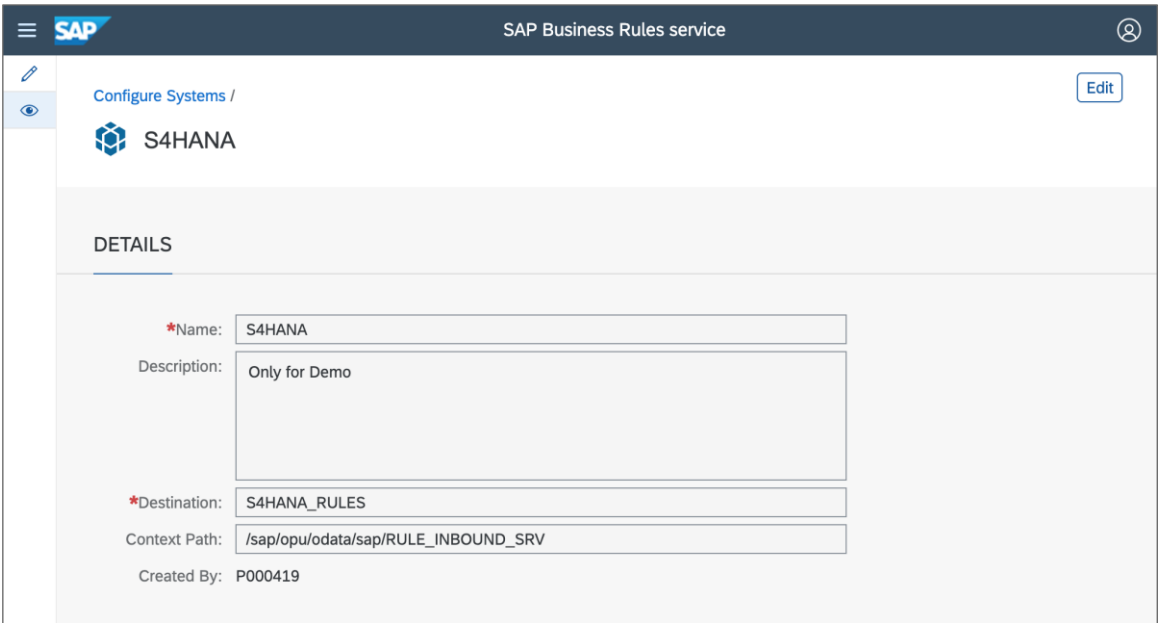
Recipe 3: In-app extensibility with SAP S/4HANA Cloud

Developer

Author and deploy
rules service

SAP Business Technology Platform

Business Rules

Manage Rules Project

Compiler
(generates runtime artifacts)

Repository

Connectivity

HTTPS

OData/REST

SAP S/4HANA Cloud
(1811 release)

Business Rules Framework (BRF+)

Runtime Repository

ABAP Utility APIs

ABAP Proxy Services

Invoke rule

Application
(consume rules)

Access
SAP
S/4HANA
application

End User

Push down
rules logic

Communication Management

SAP HANA Database

Corporate Identity Provider

Key learnings

- Extend business logic in SAP S/4HANA using in-app or side-by-side extensibility options
- Centrally manage all your SAP S/4HANA-based decisions and deploy them directly into the back-end systems
- Local execution of business rules in BRFplus runtimes using ABAP utility APIs

What's next?

In the next unit, you'll learn:

- How to achieve end-to-end process visibility

Connecting your business rules with SAP S/4HANA
Further reading

- ➢ [Learning Journey](#)
- ➢ [SAP Help](#)
- ➢ [Solution Brief](#)
- ➢ [Business Rules API](#)
- ➢ [Prepackaged Content](#)

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