Customer

Webinar Part 5: Building on-premise Extensions on SAP HANA Cloud Platform

Bertram Ganz / SAP SE / P&I Technology, SAP HANA Cloud Platform Product Management

April 12th 2016 | Knowledge for SAP User Groups | Webinar Series on “SAP HANA Cloud Platform”

SAP HANA Cloud Platform – Webinar Series 4 SAP User Groups

Moderator: Jos Houben

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SAP HCP and HEC: How they compare and combine	Uddhav Gupta / Maria Yu	Mar 29
Building new Analytical Solutions on HCP	Jana Richter	Apr 4
Building Cloud extensions with HCP	Filip Misovski	Apr 6
Building on-premise extensions on SAP HANA Cloud Platform	**Bertram Ganz**	**Apr 12**
SAP HCP – Using HCP for Mobile Apps	Holger Gauss/Dirk Olderdissen	Apr 14
SAP HCP – Addressing Security Concerns	Martin Raepple	Apr 19

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Building on-premise Extensions on SAP HANA Cloud Platform

AGENDA

BASIC OVERVIEW

Extending **Reach** and **Scope** of **S/4HANA** on **SAP HANA Cloud Platform**

SOLUTION PATTERNS

How to realize SAP Business Suite & S/4HANA Extension Scenarios on SAP HANA Cloud Platform:
Point-to-Point Connectivity, Data Replication

DEMO

Mobile Extension App running on SAP HANA Cloud Platform with Point-to-Point Connectivity to on-premise SAP Business Suite

RELATED RESOURCES

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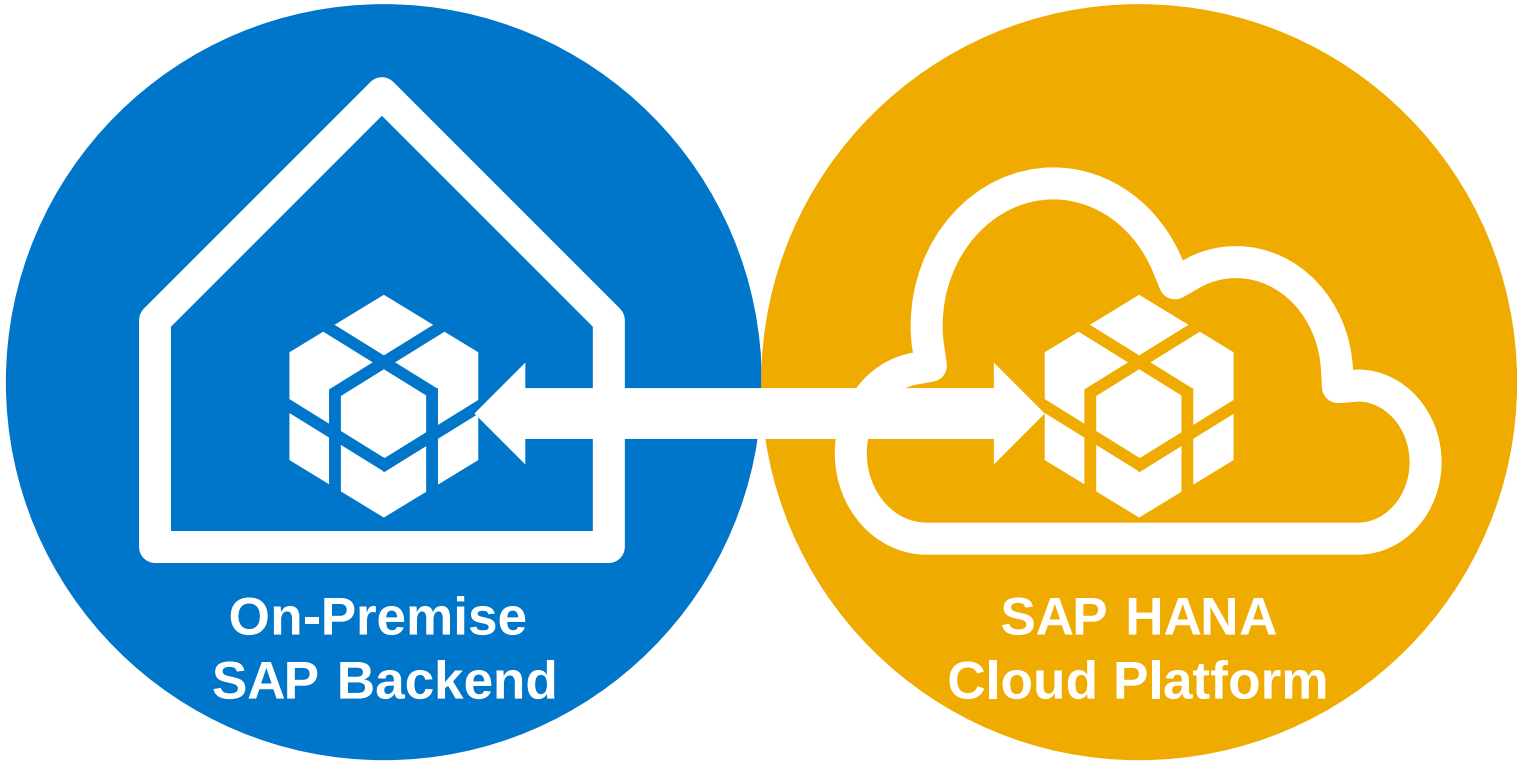
BASIC OVERVIEW

Extending SAP Business Suite and S/4HANA with SAP HANA Cloud Platform

What is an On-Premise Extension on SAP HANA Cloud Platform?



Extensions are apps running on the SAP HANA Cloud Platform that are integrated with apps running on on-premise SAP backends.

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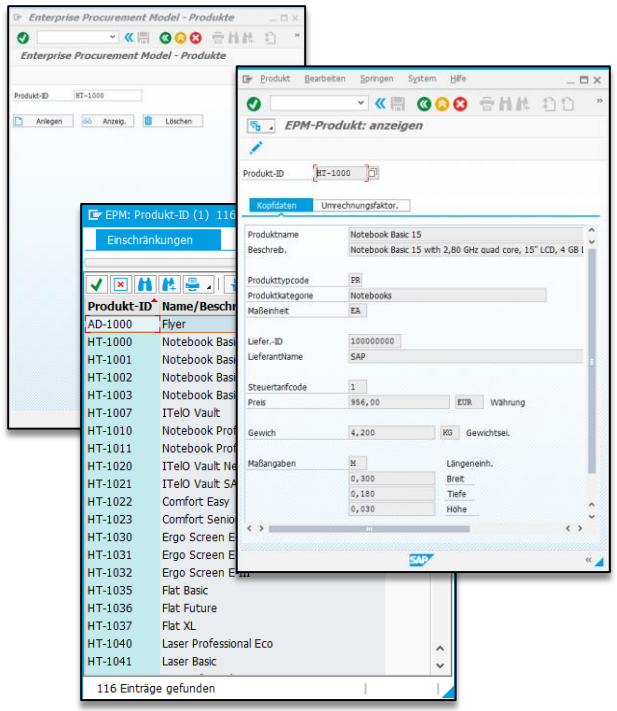
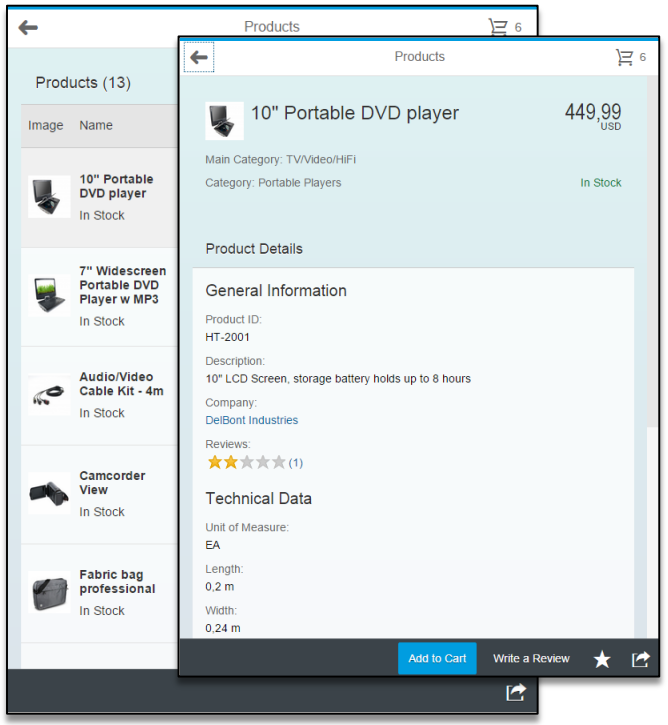
Extending SAP Business Suite with SAP HANA Cloud Platform

From ABAP Dynpros for employees ...

...to mobile apps for employees, partners, consumers.



SAP HANA Cloud Platform



Extend the Reach of the Suite: New Users – New Devices – New Business Models

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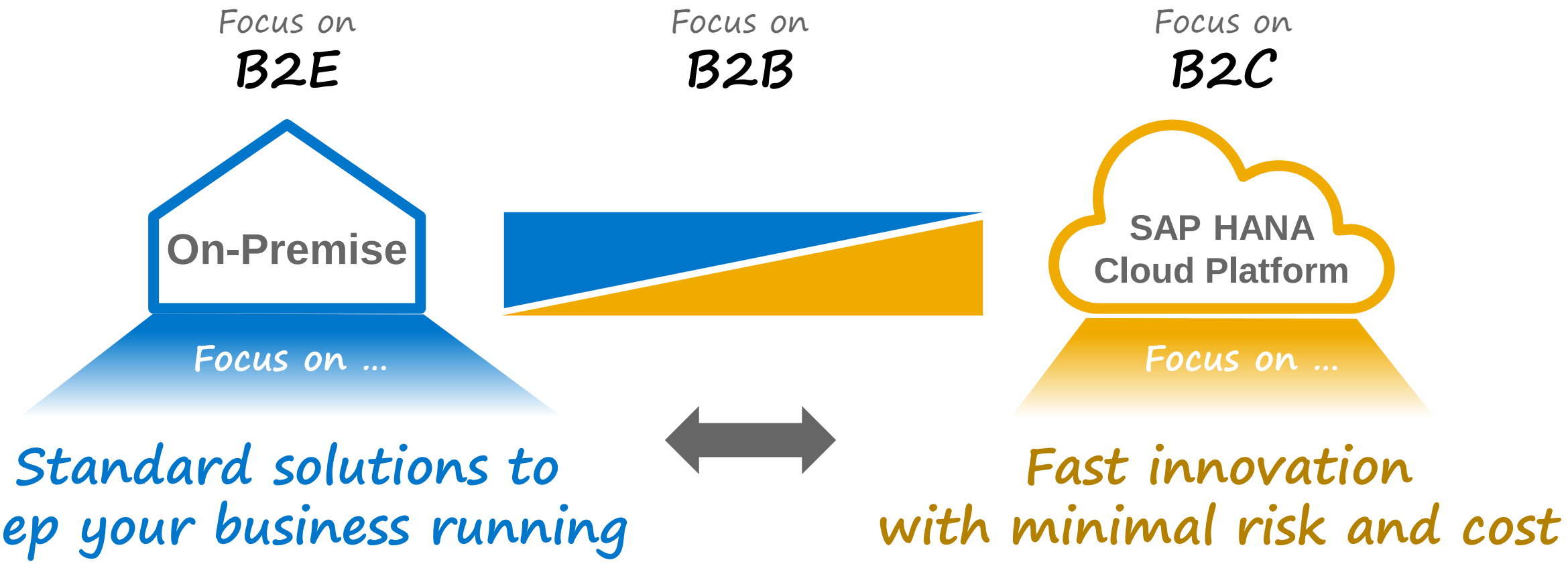
SAP HANA Cloud Platform Helps to Innovate Fast



Read more: SAP News article: SAP S/4HANA: Extensions with SAP HANA Cloud Platform Possible in 2015, (in german), by A.Schmitz, 2015/9

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On-Premise Extensions with SAP HANA CLOUD PLATFORM

Innovation is Extending Reach and Scope

Extend Your **Reach**

Reach more devices

Reach more users

Business around the globe

Business around the clock

Extend Your **Scope**

New user experience

New functionality

New data

New use cases

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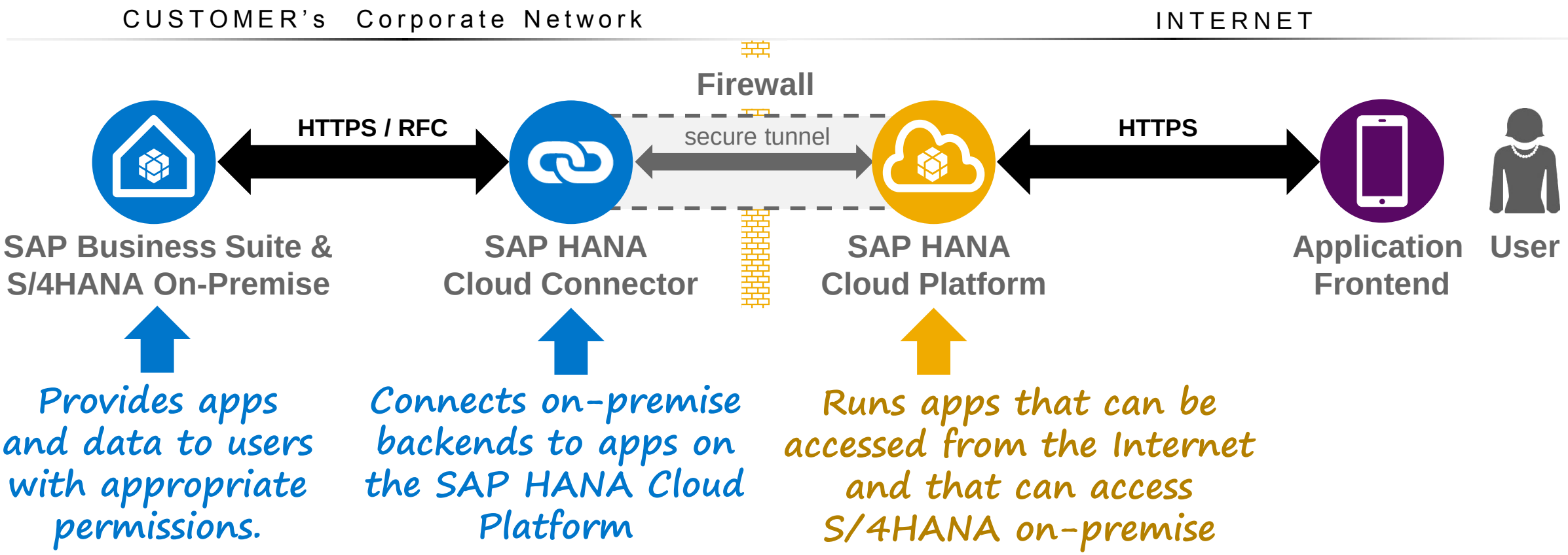
Extending On-Premise Business Suite on SAP HANA Cloud Platform

Basic Overview



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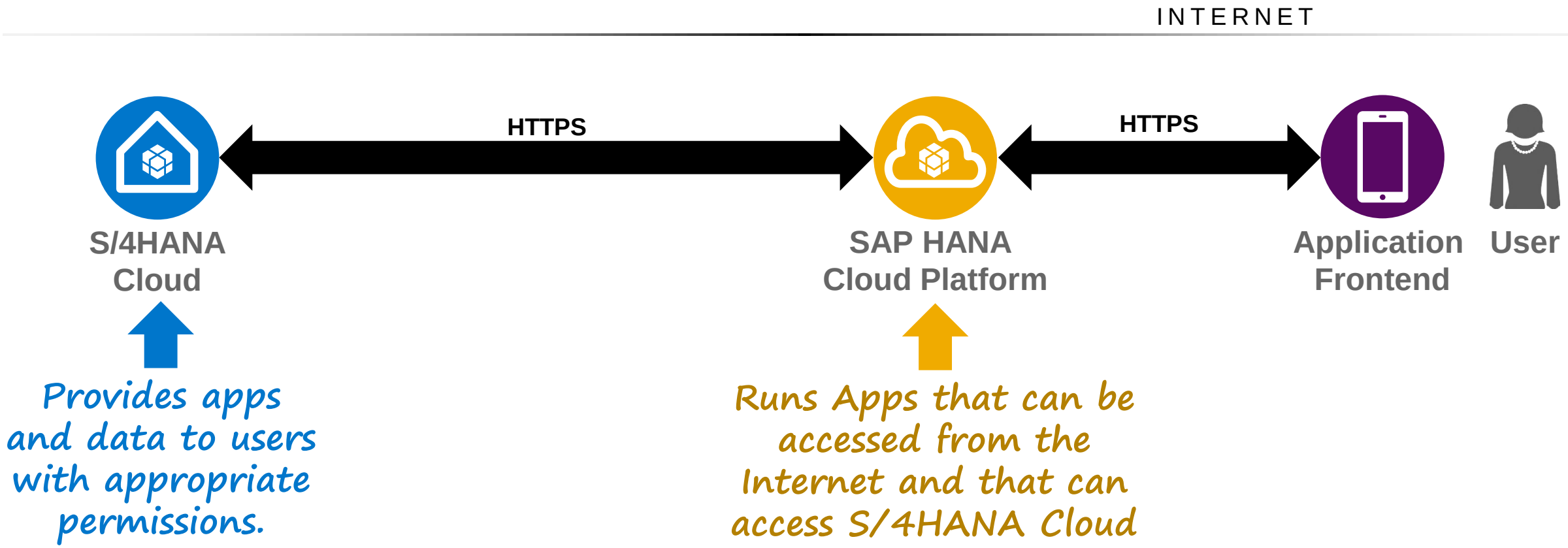
Extending S/4HANA Cloud Edition on SAP HANA Cloud Platform

Basic Overview



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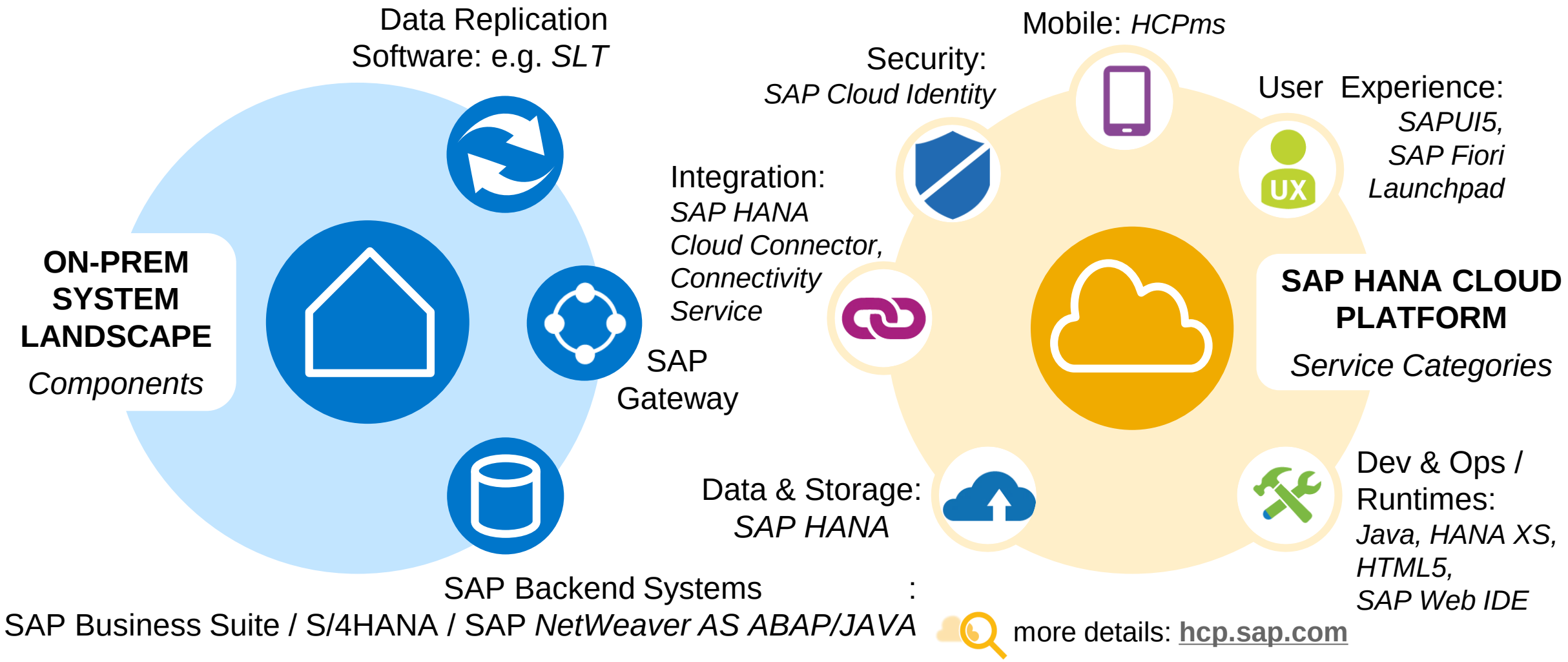
Everything You Need to Build Your Own SAP Business Suite Extensions on SAP HANA Cloud Platform

More: http://service.sap.com/saproadmaps > Database & Technologies > SAP HANA Cloud Platform



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Everything You Need to Build Your Own SAP Business Suite Extensions on SAP HANA Cloud Platform – Service Details

Integration

The **SAP HANA Cloud Connector** and the **Connectivity Service** allows a secure integration with on-premise systems.

Dev & Ops

SAP Web IDE is a web-based tool that simplifies the end-to-end application lifecycle. It enables developers, business experts & designers* to build **Fiori** and **SAPUI5 experiences** for custom apps.

Data Storage

SAP HANA is a modern platform for real-time analytics and applications. It enables organization to analyze business operations based on large volume and variety of detailed data in real-time, as it happens.

Mobile

The **SAP HANA Cloud Platform, mobile services** enable developers build mobile apps for iOS, Android and Windows with a scalable cloud backend.

Security Services

SAP Cloud Identity provides central user authentication, web single sign-on and user management as Software-as-a-Service (with SAML, OAuth protocols). **SAP HANA Cloud Platform Security services** provide delegated authentication and authorization services across applications.

User Experience

SAP HANA Cloud Portal provides an easy way for creating enterprise-grade business sites with authorization management, content development and integration to SAP's cloud, on-premise and third-party solutions. **SAP Fiori launchpad** is a role based, personalized aggregation point for business applications and analytics.

More: SAP HANA Cloud Platform Capabilities, http://hcp.sap.com/capabilities.html

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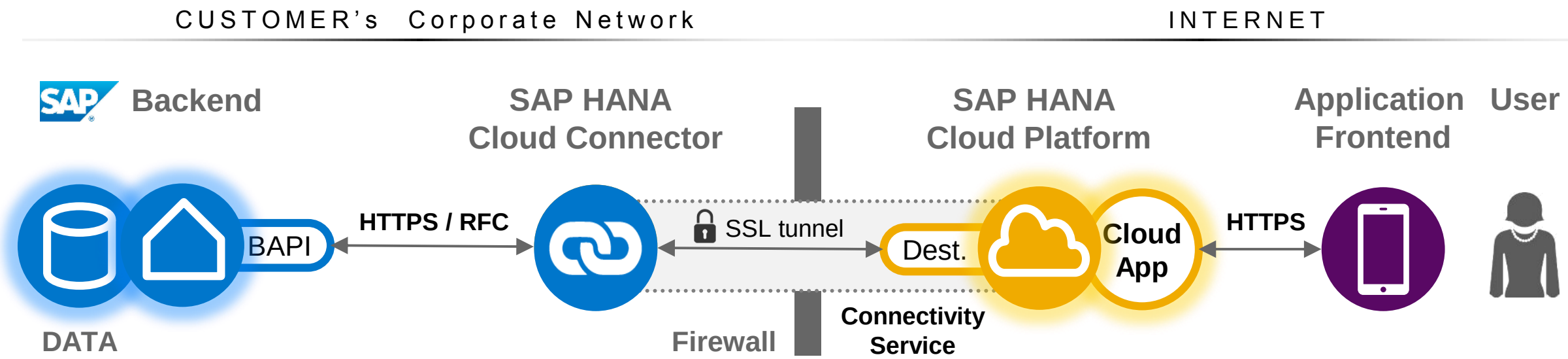
SOLUTION PATTERNS

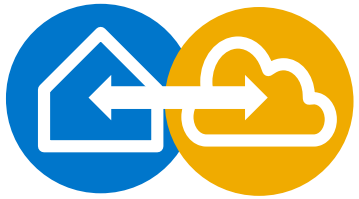
How to realize SAP Business Suite & S/4HANA Extension Scenarios on SAP HANA Cloud Platform

2 Key Scenarios: **1/ Point-to-Point Connectivity**
2/ Data Replication

Integrating with on-prem SAP Backends on SAP HANA Cloud Platf.

The Point to Point Connectivity Scenario – Overview





*Connect the **Cloud App** to on-premise backend APIs.*
*Consume **RFC** directly or use **OData** via **SAP Gateway**.*
The Cloud app operates directly on these APIs.

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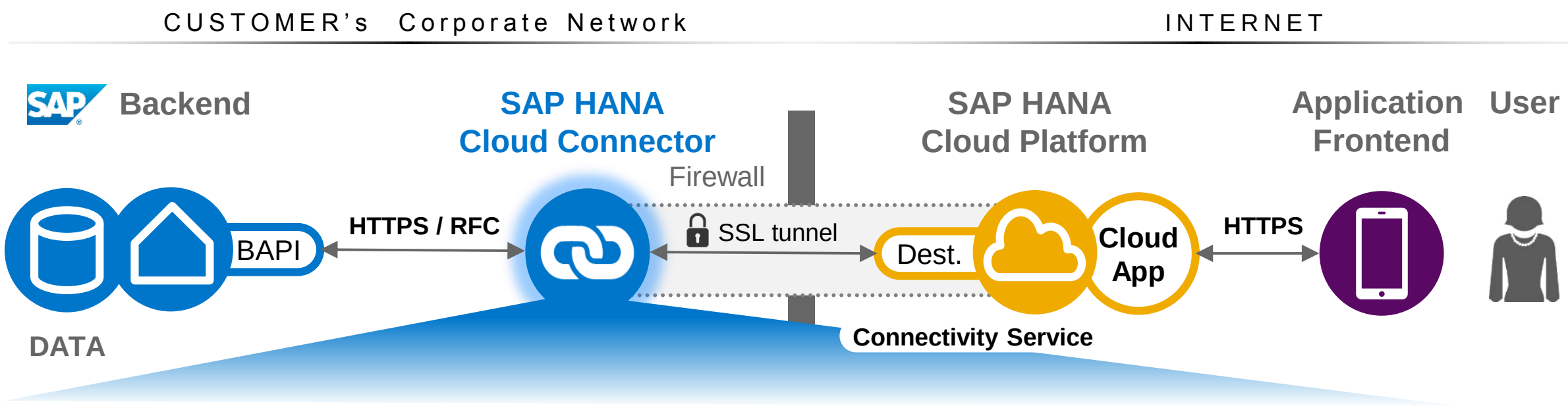
SAP HANA Cloud Connector in a Nutshell

How does it work?

Read more: SCN doc "SAP HANA Cloud Connector Solution Brief", by Timo Lakner, Dec 2014



SAP and non-SAP systems supported

- **no changes required in backend systems** (apart of trust config)

SSL connection established to HCP through reverse-invoke approach

- no changes in corporate firewall needed
- no internet exposure of internal resources/systems

Multiple protocols supported: HTTP, RFC

Two times termination between end user and backend a) on cloud side on the application, b) on SCC side

Enterprise-ready for critical business scenarios (e.g. audit logging, high availability, fine-grained access control on resource level, etc.)

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Platform Services: Integration

SAP HANA Cloud Connector

Source: http://service.sap.com/saproadmaps > Database & Technologies > SAP HANA Cloud Platform

The SAP HANA Cloud Connector allows a secure integration with on-premise systems. This enables easy integration of the on-premise data with the SAP HANA Cloud Platform.

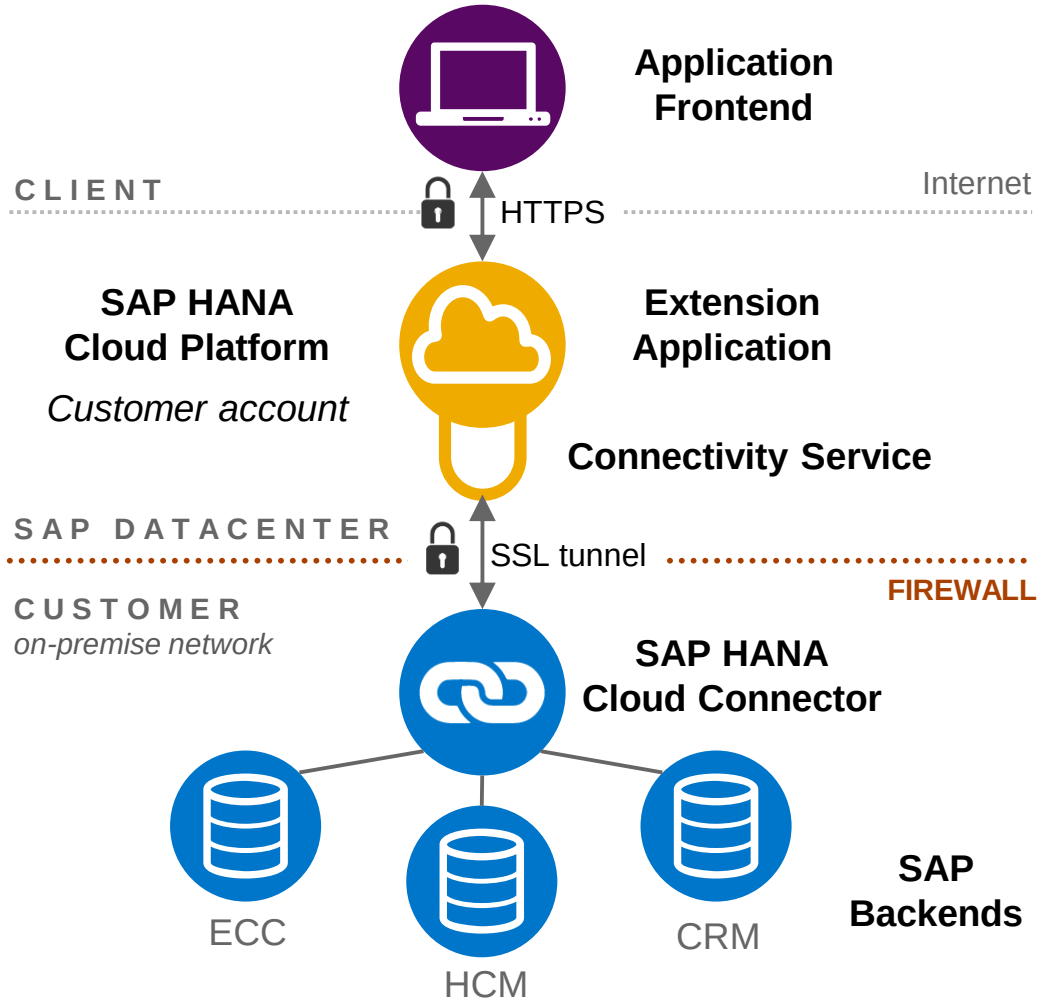
Key capabilities

- On-premise agent establishes secure SSL VPN connection between the SAP HANA Cloud Platform and on-premise systems
- Supports pre-configured “Destination API” and certificate inspection to safeguard against forgeries
- Supports multiple protocols (HTTP, RFC, JDBC), high availability and principal propagation

Benefits

- Complementary to SAP Gateway, HANA Cloud Integration and 3rd party integration suites both on-premise and in the cloud

Read more: SAP HANA Cloud Connector



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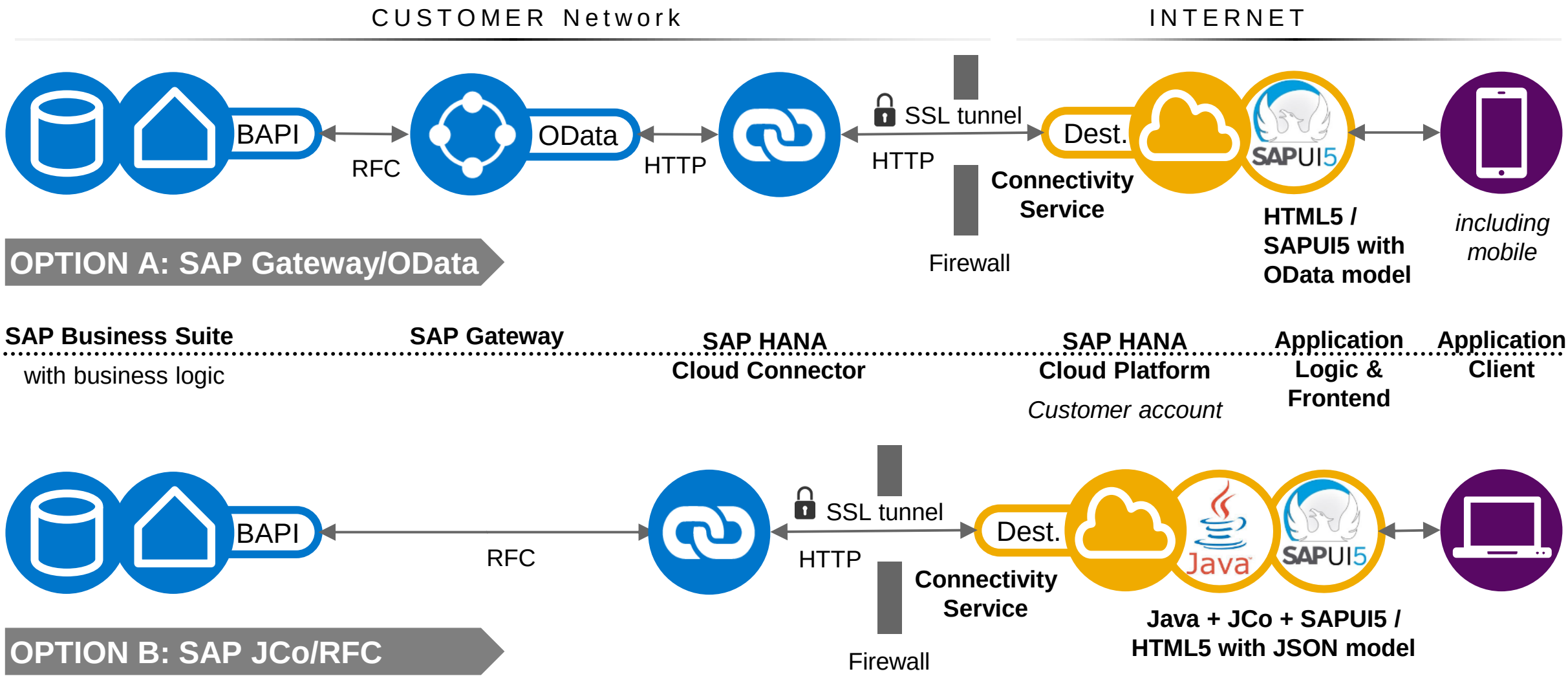
Point-to-Point Connectivity Scenario

Two Scenario OPTIONS: SAP Gateway/OData and SAP JCo/RFC



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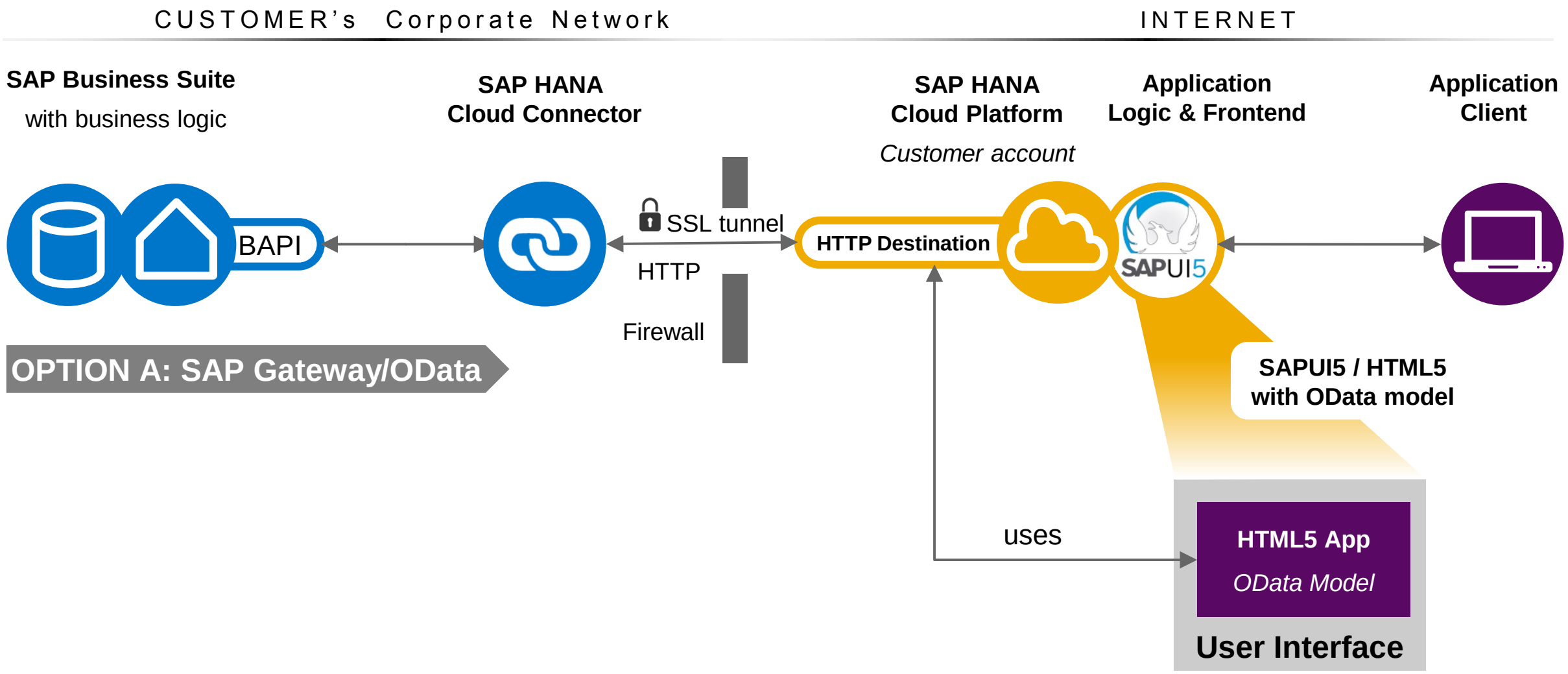
Point-to-Point Connectivity Scenario
OPTION A: SAP Gateway/OData



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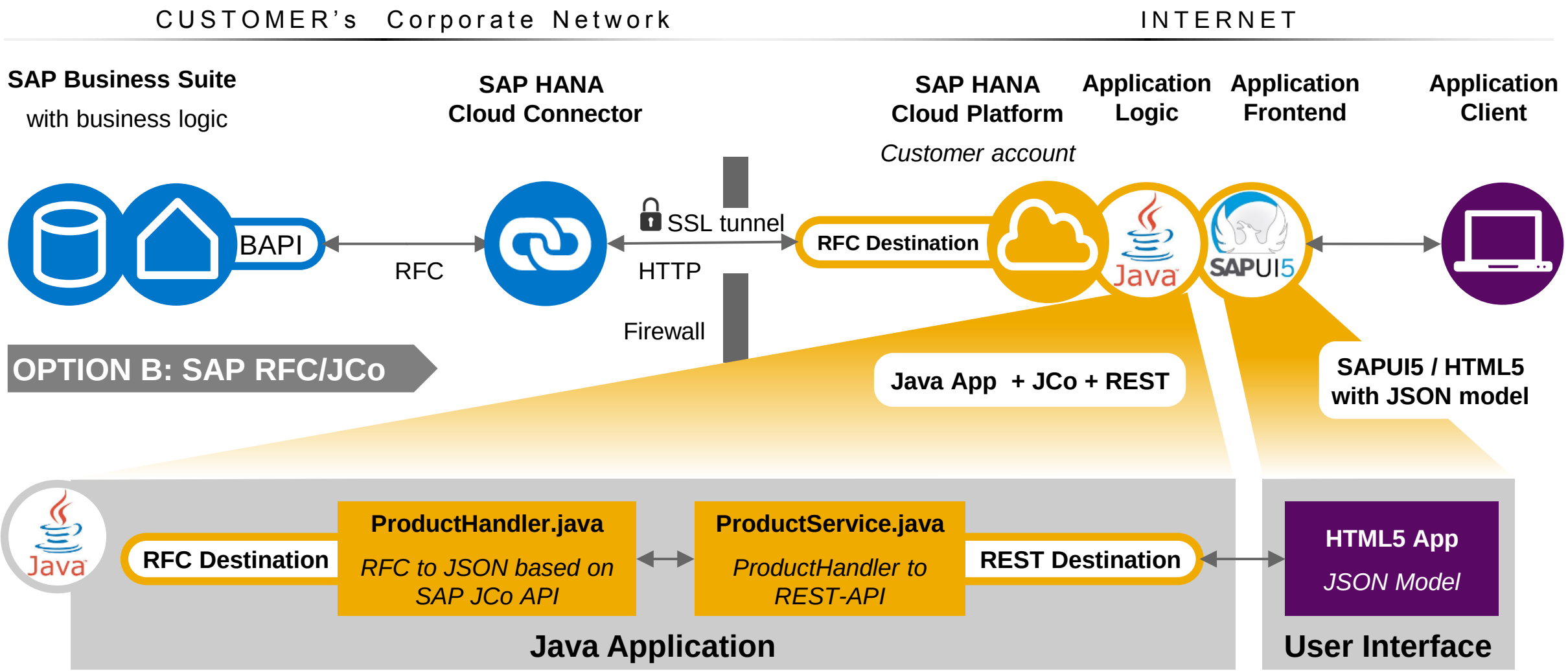
Point-to-Point Connectivity Scenario

OPTION B: JCo/RFC



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DEMO

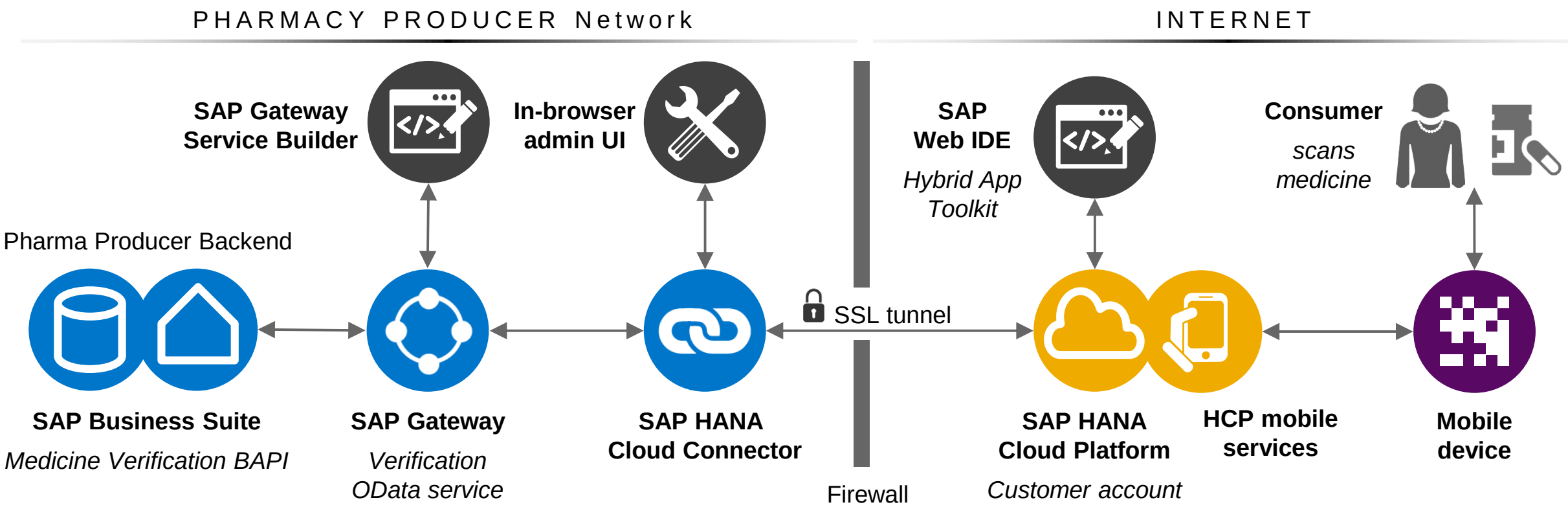
Use Case: Hybrid Mobile App for Counterfeit Medicine Prevention (B2C)

Solution: Mobile Extension App running on **SAP HANA CLOUD PLATFORM** with Point-to-Point Connectivity to on-premise SAP Business Suite

SAP Business Suite Extension on SAP HANA CLOUD PLATFORM

DEMO Use Case: Mobile App for Counterfeit Medicine Prevention (B2C)

End-to-End Architecture



STEP 1 — Expose OData Backend Service

STEP 2 — Establish Service Connection

STEP 3 — Create/Test Hybrid Mobile App

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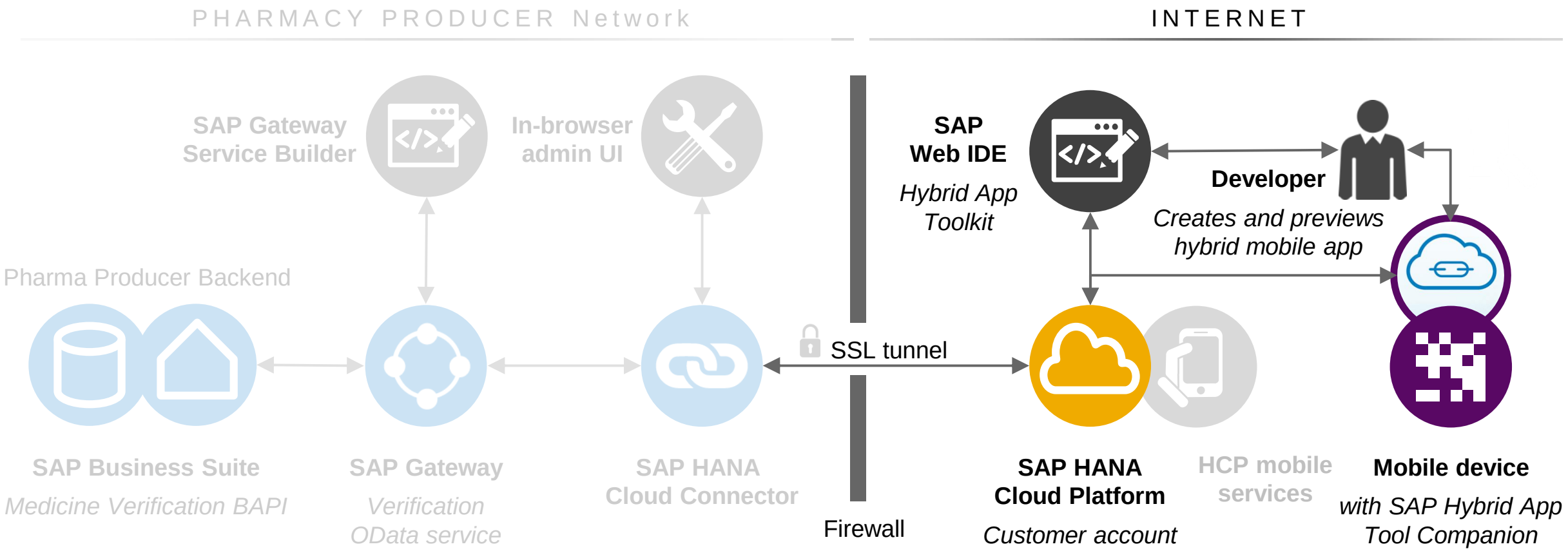
SAP Business Suite Extension on SAP HANA CLOUD PLATFORM
DEMO Use Case: Mobile App for Counterfeit Medicine Prevention (B2C)

STEP 3: Create and Preview Hybrid Mobile App



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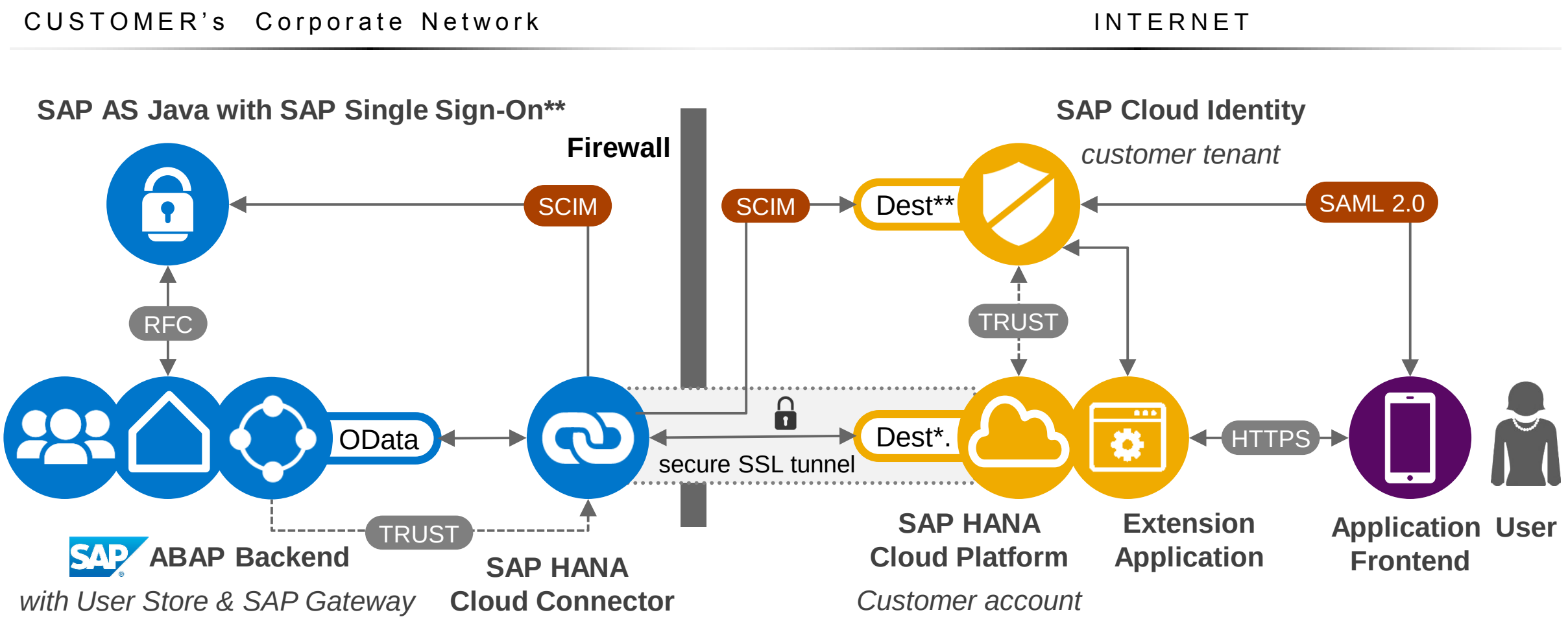
Pattern: Login and Access Backend with ABAP Backend User

Point-to-Point Connectivity Scenario (Authentication & Authorization)



* *Connectivity Destination*

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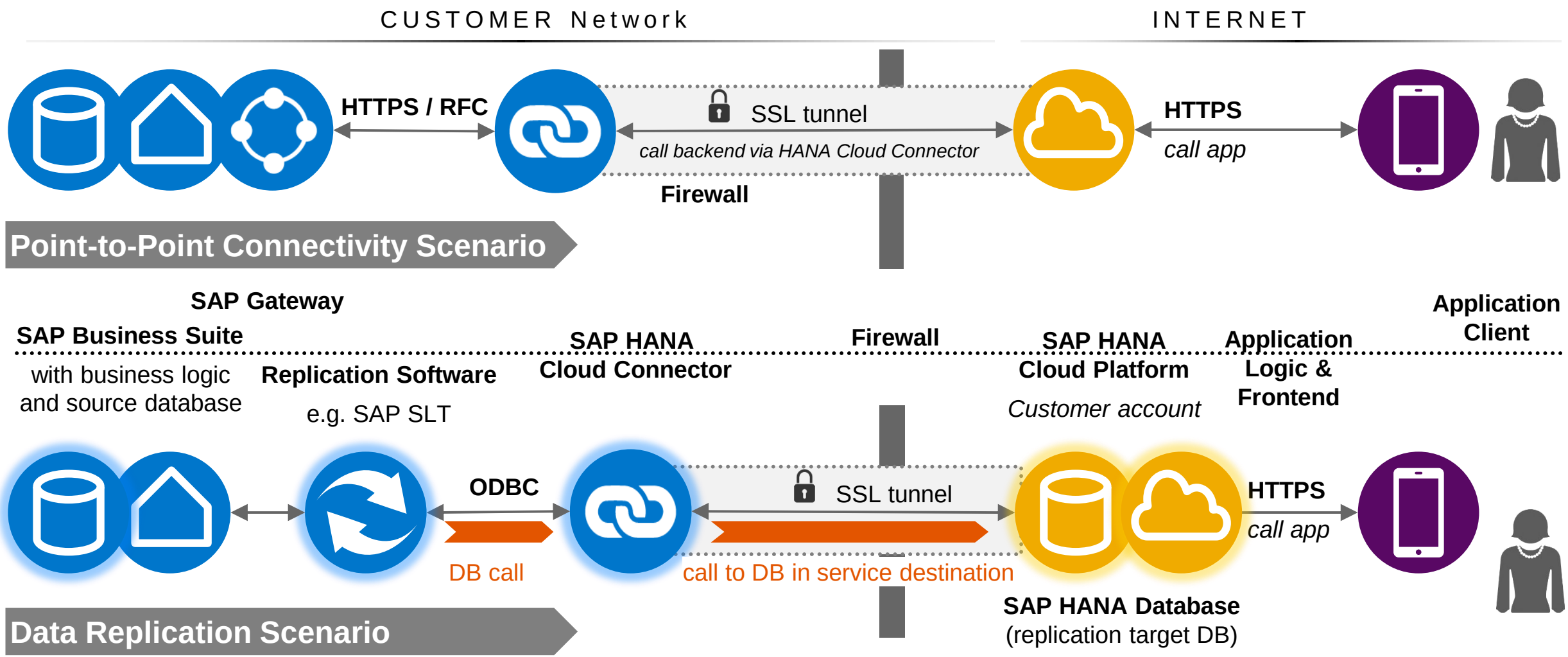
SAP Business Suite Extensions on SAP HANA Cloud Platform

Scenario Overview: Point-to-Point Connectivity and Data Replication



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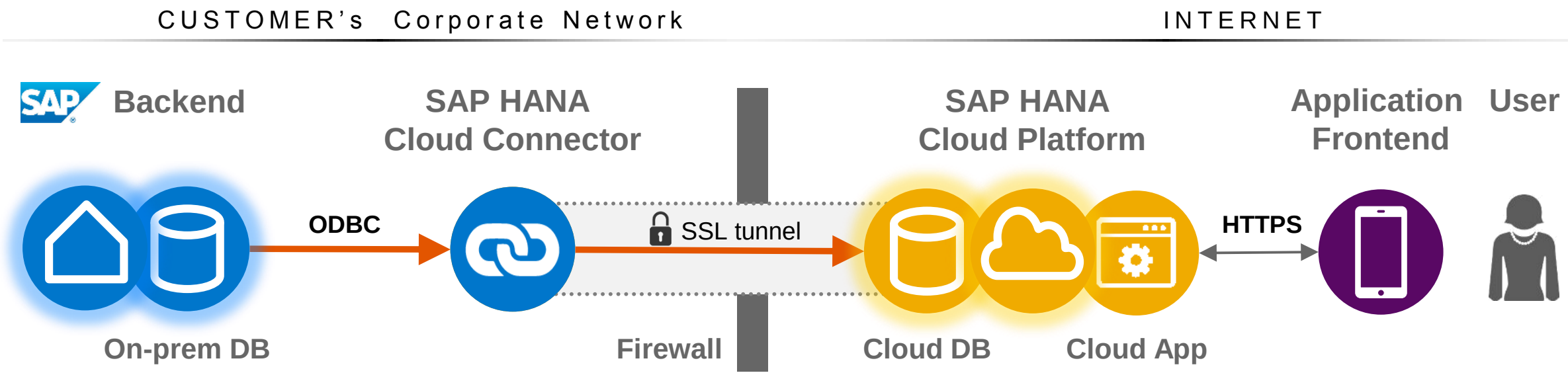
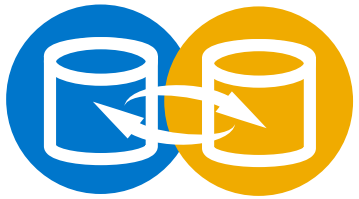
Integrating with on-prem SAP Backends on SAP HANA Cloud Platf.

The Data Replication Scenario – Overview





Replicate the required on-premise backend to the Cloud.
Use an on-premise or cloud-based replication solution.
The Cloud app operates on this data in the Cloud.

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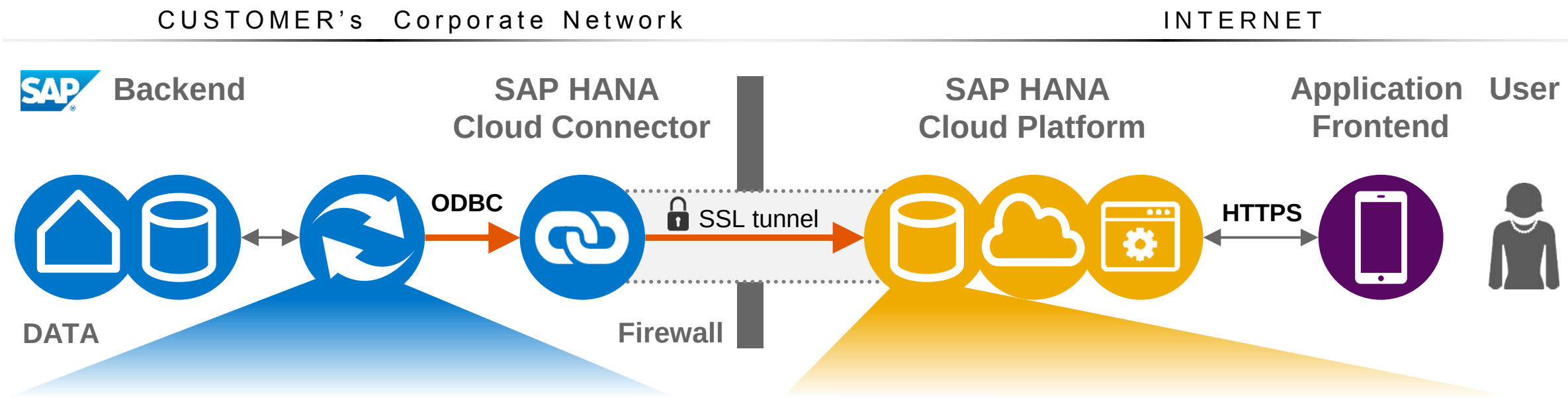
Using On-Premise Replication Solutions
Required Products and Releases



Works with all SAP backends supported by **on-premise replication solutions** like

- **SAP LT Replication Server (SAP SLT)** or
- **SAP Data Services (SAP DS)** or
- other solutions with required DB connectors

NOTE: requires extra database license for replication scenarios

SAP HANA Cloud Platform Services

- Compute Units and/or SAP HANA XS
- Connectivity Service with SAP HANA Cloud Connector, Persistence Service

SAP HANA Cloud Platform DB as a Service

- SAP HANA and/or SAP ASE database*

** SAP Adaptive Server Enterprise: relational database, formerly SAP Sybase ASE*

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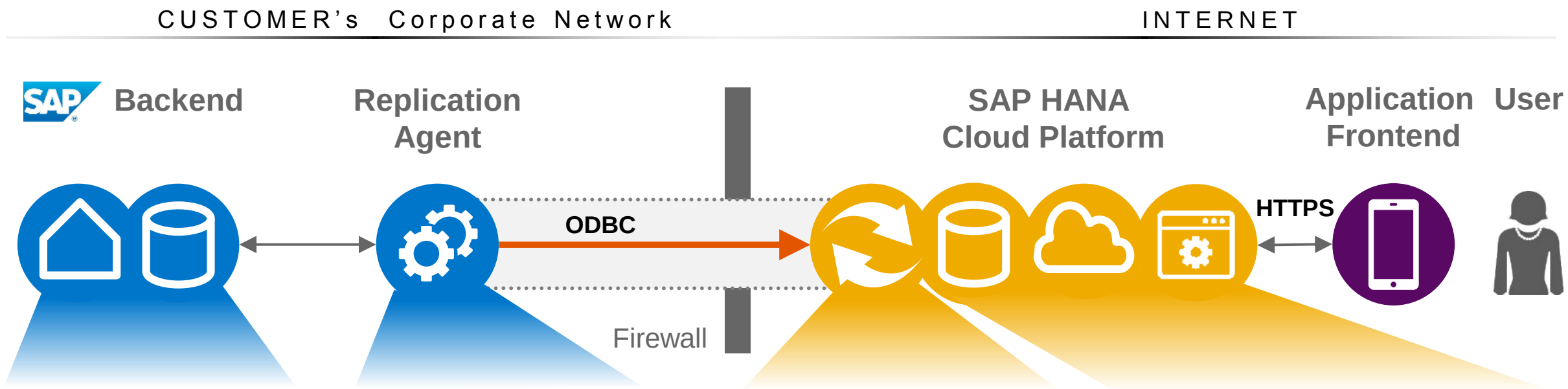
Using Cloud-based Replication Solutions
Required Products and Releases

SAP HANA ACADEMY

Video Series "Live 4 - ERP Agile Solutions in SAP HANA Cloud Platform"



Works with **all SAP backends** supported by cloud-based replication solutions

NOTE:
You need a **database license** for replication scenarios

Cloud-based replication solutions

- SAP HCI data services (with agent) or
- SAP HANA smart data integration (with agent)

- SAP HANA Cloud Platform Services: Compute Units and/or SAP HANA
- SAP HANA Cloud Platform DB as a Service : SAP HANA and/or SAP Adaptive Server Enterprise (ASE) database*

** SAP Adaptive Server Enterprise relational database: formerly SAP Sybase ASE*

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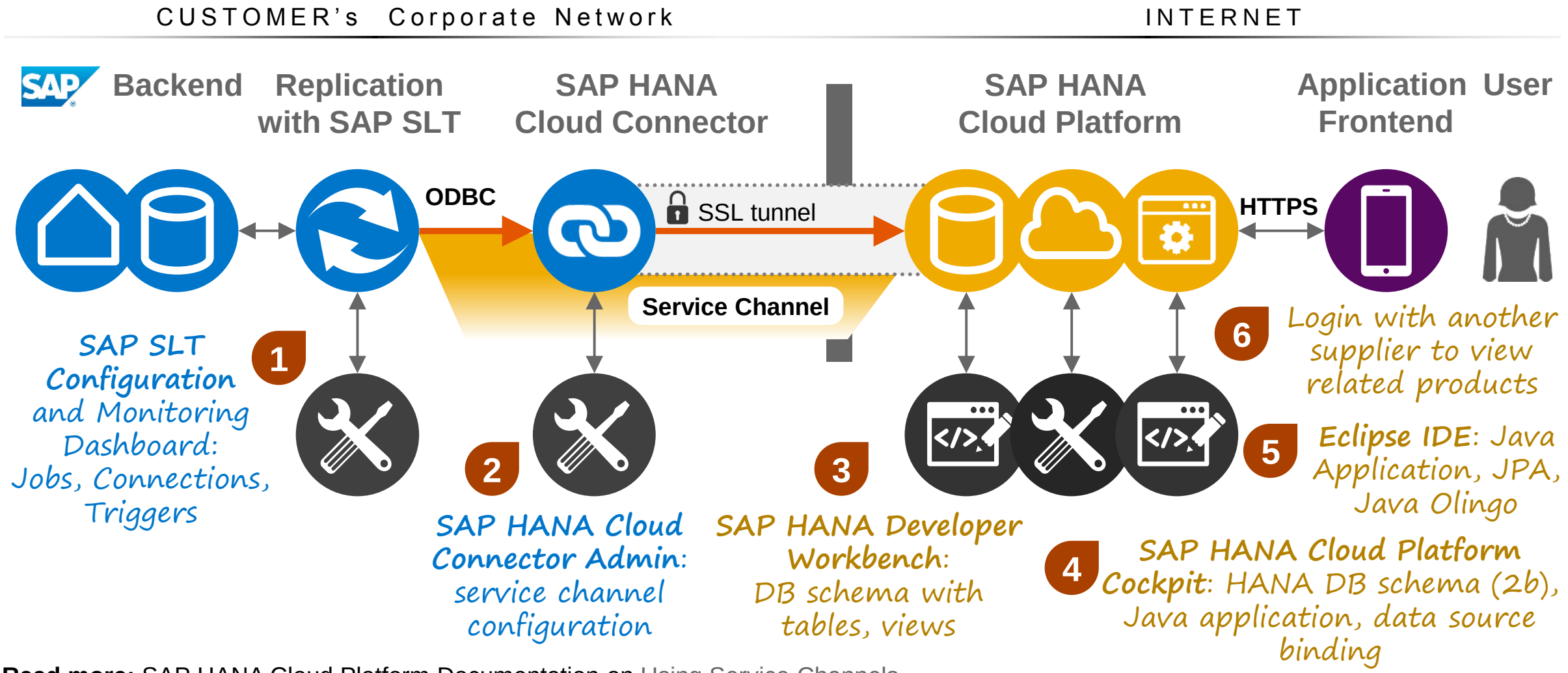
Data Replication Demo (SLT, HANA DB, Java, JPA, Olingo, SAPUI5)

Real-time Replication in Depth – How it Works



Read more: SAP HANA Cloud Platform Documentation on Using Service Channels

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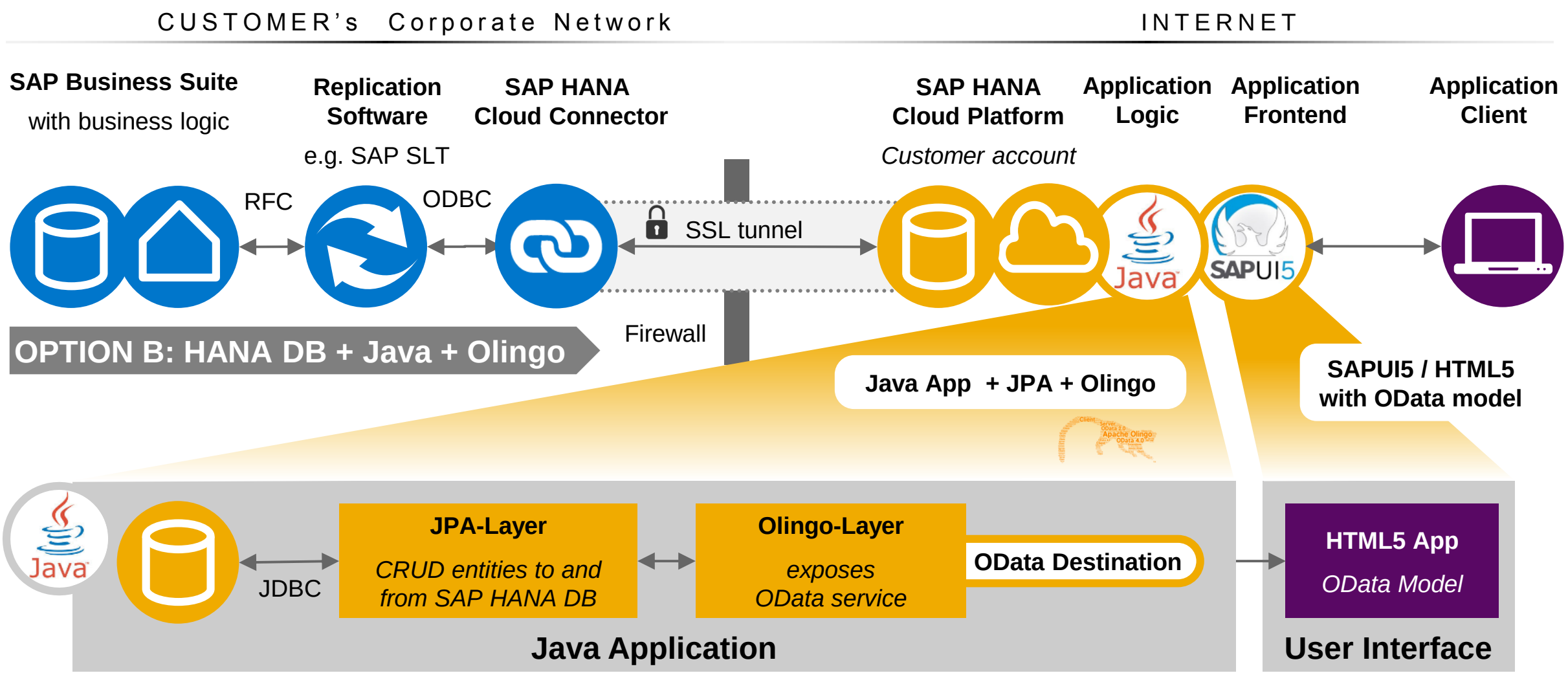
Data Replication Scenario

Sample Application OPTION A: HANA DB + Java/JPA/Apache Olingo



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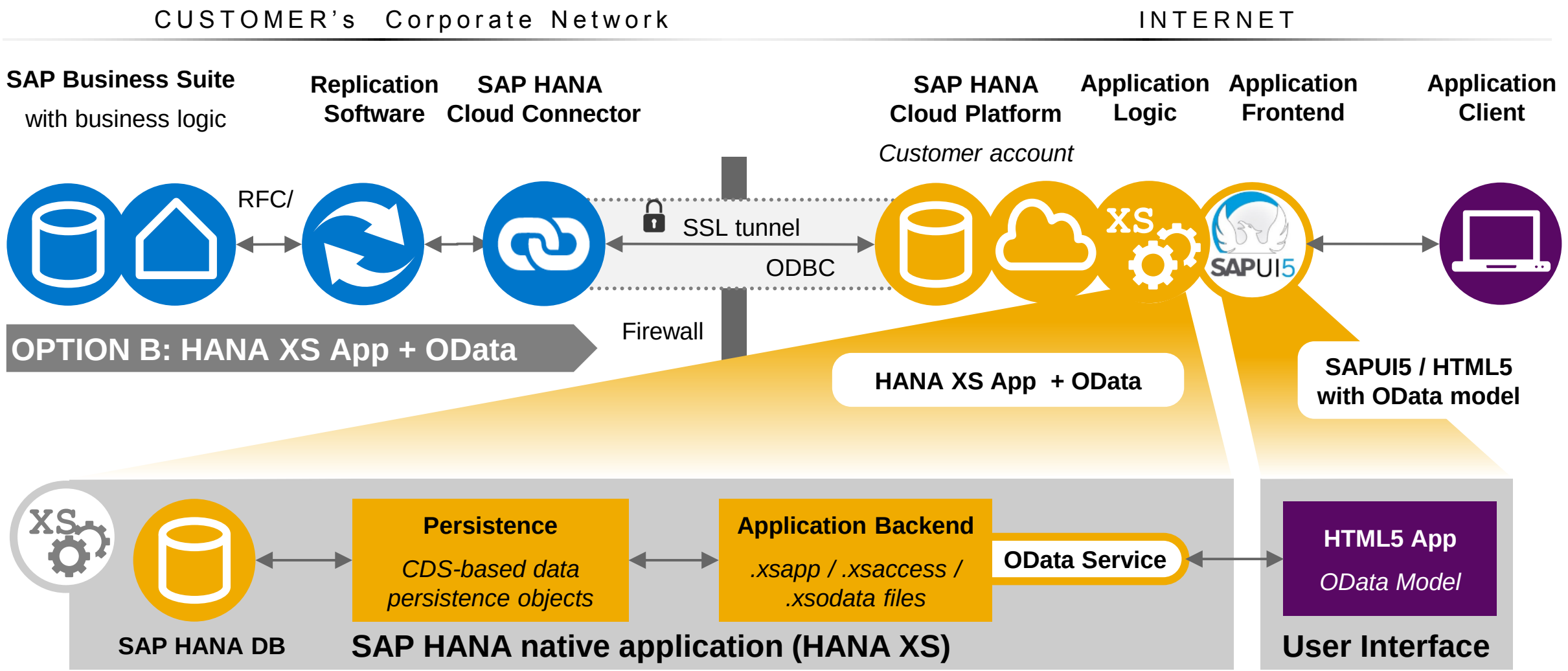
Data Replication Scenario

Sample Application OPTION B: SAP HANA XS App with OData



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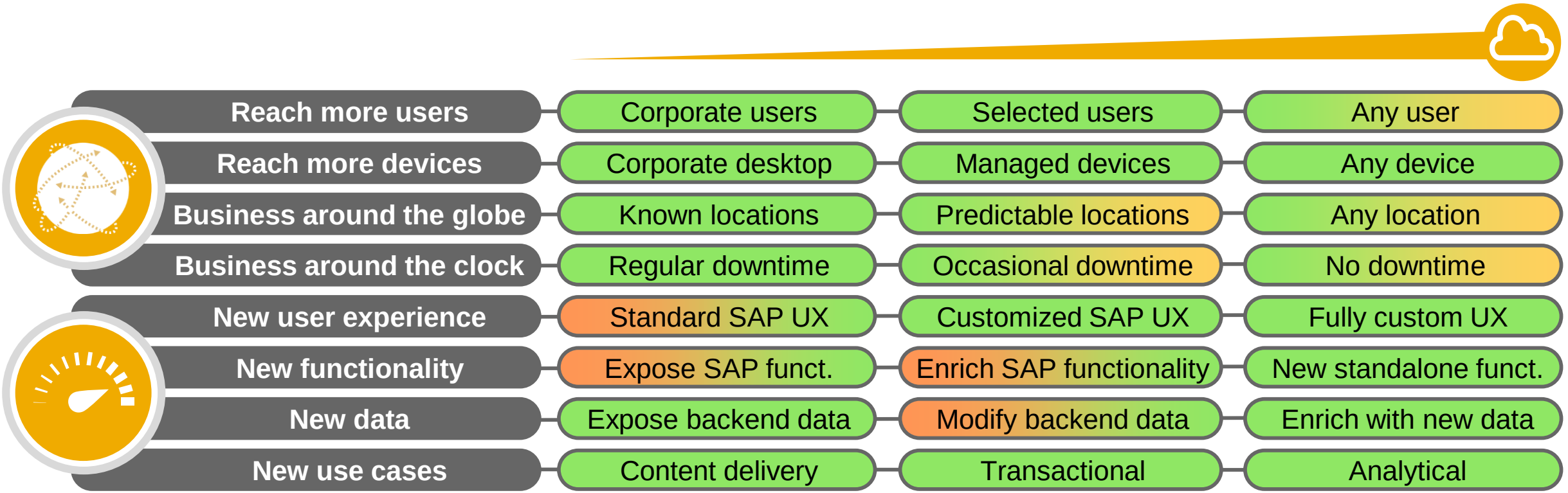
TAKE AWAYS

SAP Business Suite Extension Patterns with SAP HANA Cloud Platf.

When to Use What?

Data Replication | Point-to-Point

recommended | not recommended | not feasible



The **Data Replication Pattern** is well suited to minimize distance to the user, handle flexible workloads, decouple backend and extension.

Both patterns can be combined!

The **Point-to-Point Connectivity Pattern** is well suited to provide standard or custom SAP UX, reuse SAP functionality, implement CRUD operations.

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All SAP Backends since R/3 4.6C up to S/4HANA can be extended with SAP HANA Cloud Platform

Classical R/3

… | 4.6C | Enterprise

Suite on NetWeaver

NW 2004 | NW 7.x | NW 7.4

S/4HANA

On-Premise | Cloud

can be extended with SAP HANA Cloud Platform

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RELATED RESOURCES

SAP Business Suite Extensions on SAP HANA Cloud Platform

Integrating with on-prem SAP Backends on SAP HANA Cloud Platf.
Recommended Resources – Point-to-Point Connectivity Scenario

SAP Business Suite Extension on SAP HCP*

- SAP Webinar (60min): DEV101: Extending SAP Business Suite and SAP S/4HANA with SAP HANA Cloud Platform (see related SCN blog …), by Thomas Bieser, SAP SE, 2015
- SCN blog: Practical Use Cases for SAP HCP: Part 1 - Extending Your On-Premise Landscape, by James Wood, SAP Mentor, Nov 2015

SAP NetWeaver AS ABAP / SAP Gateway

- Article "A Foundation for the Future What's Coming Next with SAP NetWeaver 7.5", by Karl Kessler, SAP SE, SAPinsider, Volume 16, Issue 3, July 14, 2015
- SCN blog: SAP Gateway deployment options in a nutshell, by Andre Fischer, SAP SE, May 2013, explains different/recommended deployment options for SAP Gateway, especially for production systems

**SAP HANA Cloud Platform*

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Integrating with on-prem SAP Backends on SAP HANA Cloud Platf.
Recommended Resources – Security, User & Access Management

SAP HANA Cloud Connector & Connectivity

- SAP HANA Cloud Connector Download
- SCN Doc: SAP HANA Cloud Connector security whitepaper, by Timo Lakner, SAP SE, 2014
- SCN Doc: SAP HANA Cloud Connector Solution Brief, by Timo Lakner, SAP SE, 2014
- SAP HANA Cloud Platform Help: Connectivity Service, SAP HANA Cloud Connector, Configuring Principal Propag. to an ABAP System for HTTPS

SAP Single Sign-On (fka SAP NetWeaver SSO)

- SAP Online Help: http://help.sap.com/nwsso
- SAP Community Network: http://scn.sap.com/community/sso

SAP Cloud Identity

- SAP HANA Cloud Platform Capabilities: Security
- SAP Online Help: SAP Cloud Identity Service
- SAP Community Network: Security Space
- SAP Community Network Documents:
  - SAP Cloud Identity solution brief
  - SAP Cloud Identity overview
  - SAP Cloud Identity how-to guides

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Where to find more Information

Benefit from Developer Edition

- Free unlimited trial of the SAP HANA Cloud Platform at http://hcp.sap.com/developers

Subscribe for openSAP courses

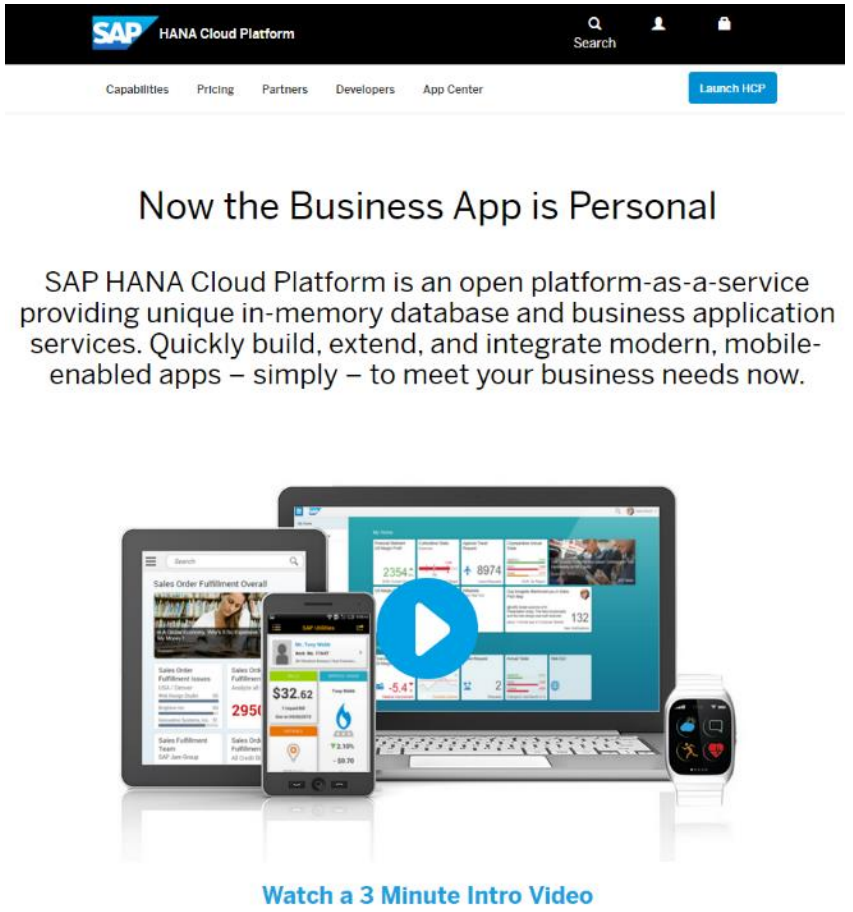
- In-depth courses for SAP HANA Cloud Platform available online free of charge at http://open.sap.com

Participate in SAP Community Network

- Follow the blogs and join the discussions at http://scn.sap.com/community/developer-center/cloud-platform

Explore the free sample code for developers

- Leverage your start on the SAP HANA Cloud Platform with sample code from http://sap.github.io



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http://scn.sap.com/developer-center/cloud-platform

http://twitter.com/saphcp

Thank you

Contact information:

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Product Manager & Contact Customer Engagement
'Side-by-Side Extensions for on-premise Business Suite and S/4HANA with SAP HANA Cloud Platform'

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