

# SAP Fiori - Architecture

August 2014

Customer



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# SAP Fiori - Architecture

## Agenda

### **Overview**

Fiori Technology

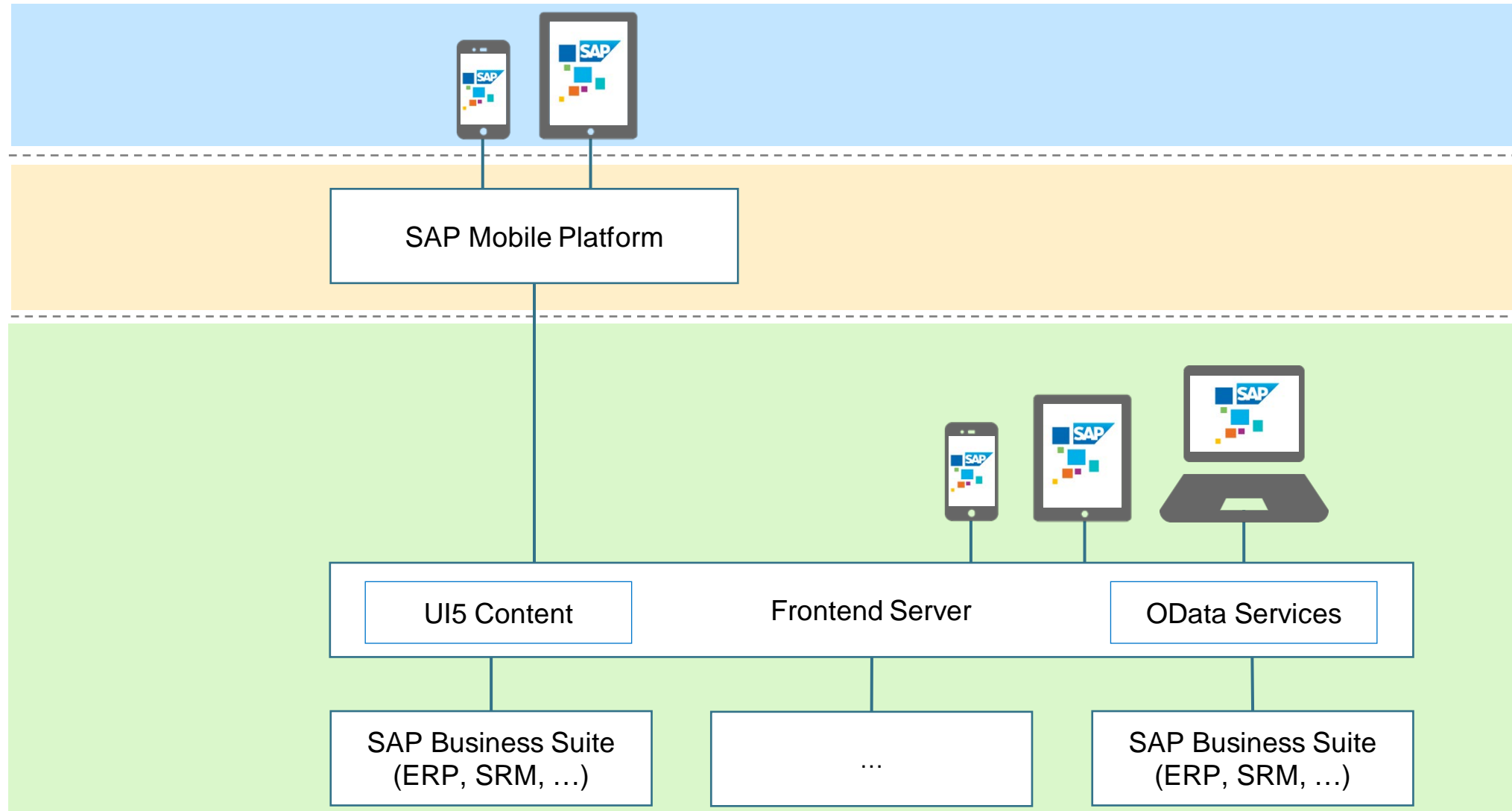
Application Types

Fiori Launchpad

Fiori Client

# SAP Fiori – Architecture

## High-Level Overview



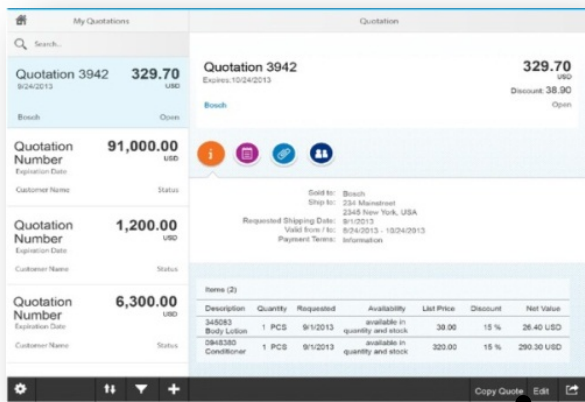
# SAP Fiori – Architecture

## Application Types

### Transactional (AT1)

#### Task-based Access

Access to tasks like change, create, or entire processes with guided navigation

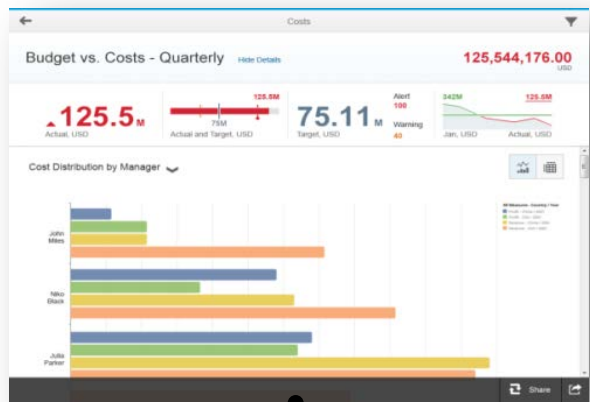


Runs on any DB and HANA

### Analytical incl. Smart Business (AT2)

#### Insight to Action

Visual overview over a complex topic for monitoring or tracking purposes

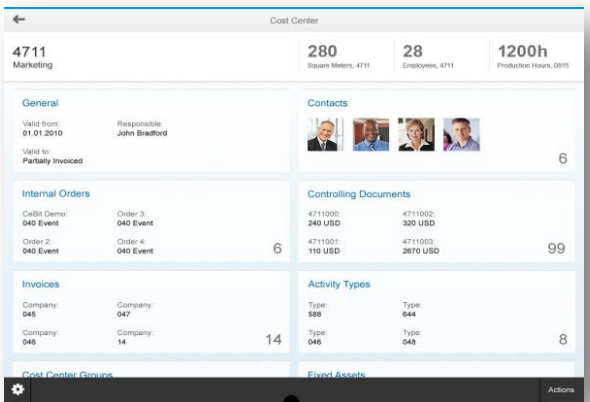


Runs on HANA

### Fact Sheet & Contextual Navigation (AT3)

#### Search and Explore

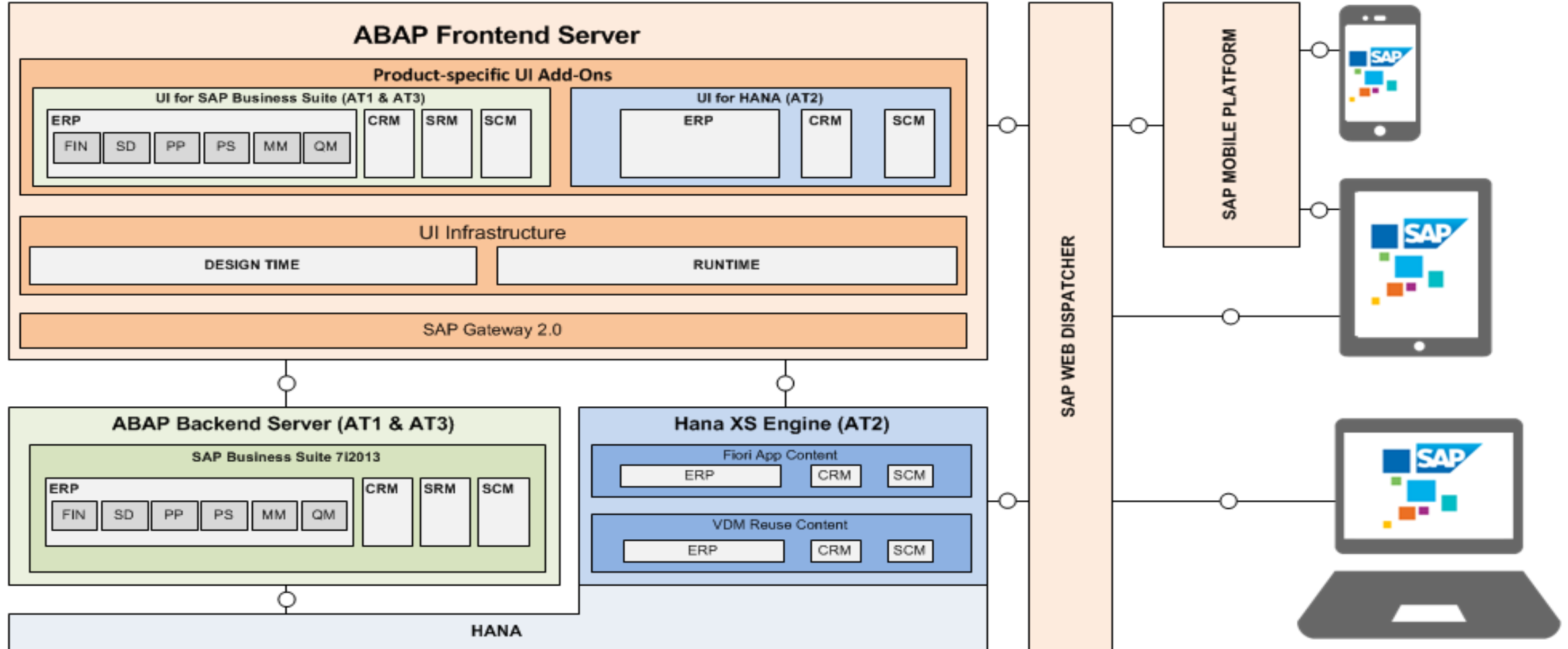
View on essential information about an object and contextual navigation between related objects



\* This is the current state of planning and may be changed by SAP at any time

# SAP Fiori – Architecture

## Mid-Level Overview



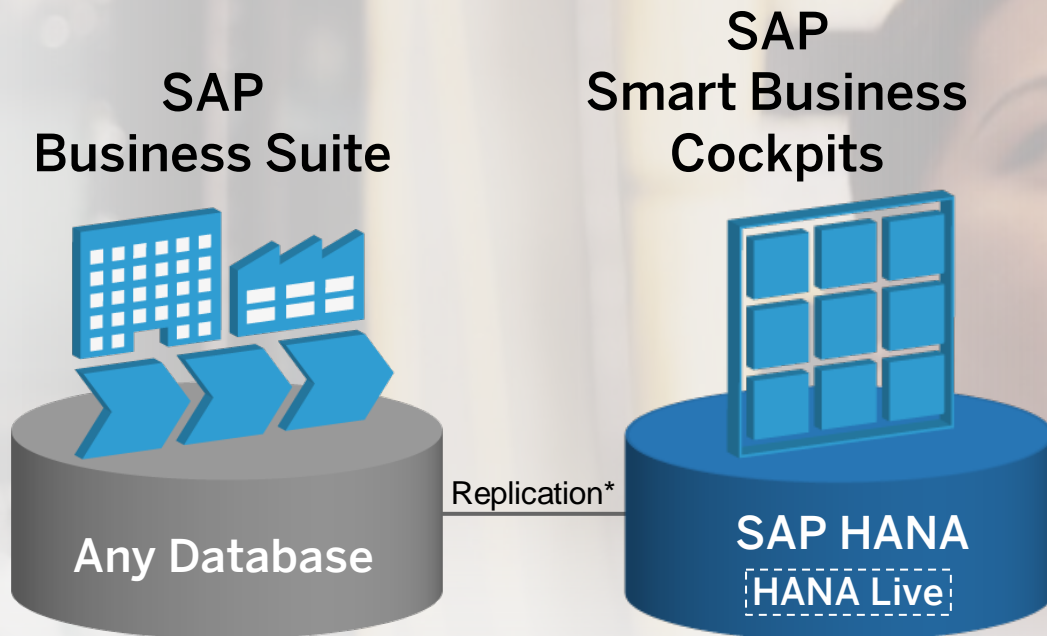


# Multiple deployment options to meet your business needs

## Choose between targeted or full deployment

### Side-by-side Scenario

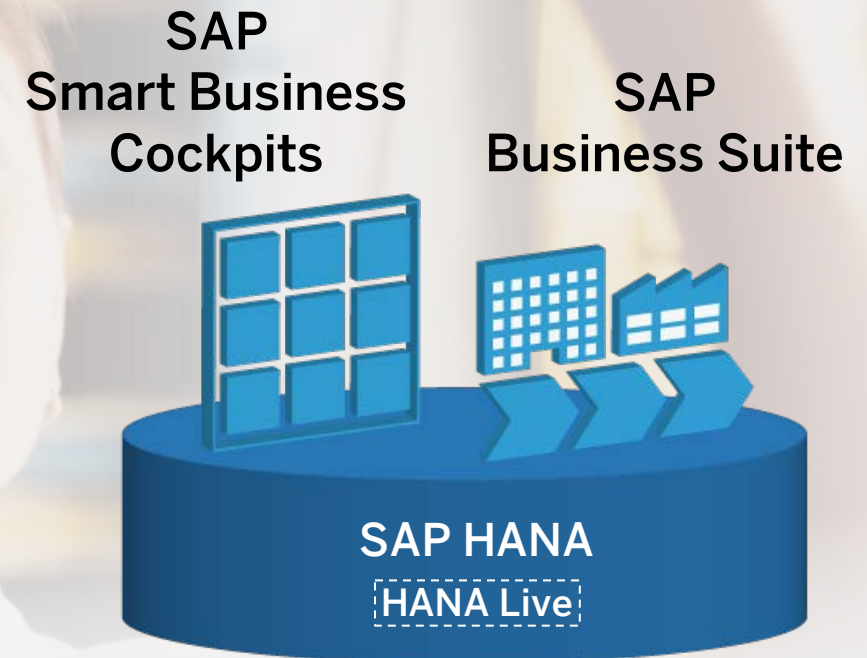
Address specific and targeted business needs with real-time solutions



\* Latency in the range of a few seconds during the replication process might cause brief data inconsistencies in certain cases

### Integrated Scenario

Run your entire business on a single in-memory platform



# SAP Fiori - Architecture

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Overview

**Fiori Technology**

Application Types

Fiori Launchpad

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# SAP Fiori – Architecture

## SAP Business Suite powered by SAP HANA

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- SAP Business Suite powered by HANA including HANA 2-tier stack
- Support of SAP Suite on HANA and HANA XS Engine based on OData protocol
- Support of smartphones, tablets, and desktop applications (responsive design)
- Same apps can be used via the Internet w/o any local installation
- Connectivity via HTTPS including cross-site request forgery protection (CSRF)
- Logon via single sign-on and to logout via single-logout (SAML2, SSO cookie)
- User and role management between ABAP and HANA

# SAP Fiori – Architecture

## Frontend Technology

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- Fiori apps build with SAP UI5 technology (HTML5)
- UI artifacts are deployed with ABAP technology
- Support of smartphones, tablets, and desktop (by responsive design patterns)
- Different form factors and operating systems are supported with single code line
- Fiori Apps are launched and running in the Fiori Launchpad as UI components
- Business data is retrieved through OData services during runtime

# SAP Fiori – Architecture

## ABAP Frontend Server

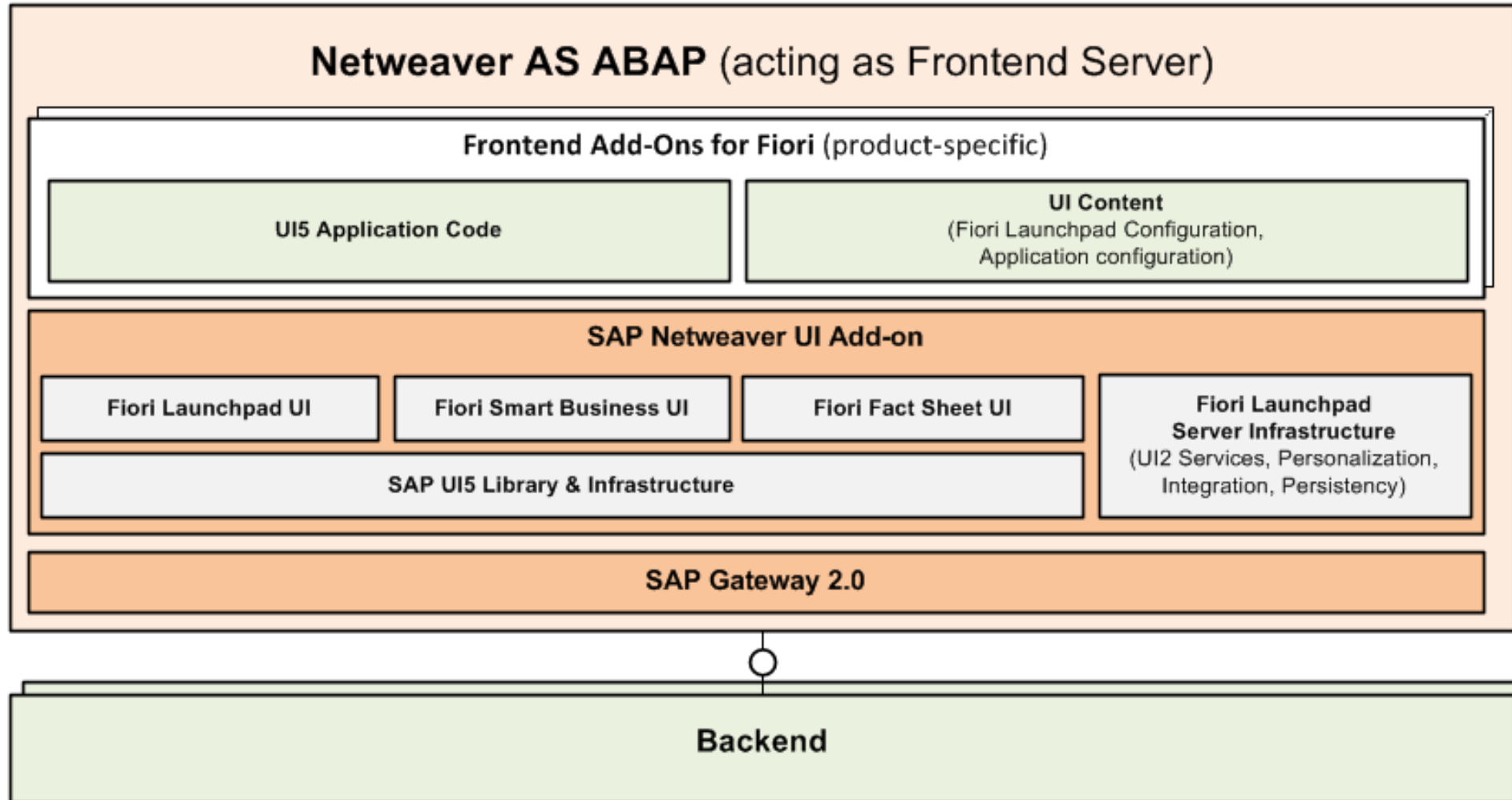
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- Lifecycle decoupling of UI apps from backend
  - Especially for apps that must also run on anyDB
  - Allow faster iterations for the UI apps
  - Allow changes to UI without the need for development privileges in the backend
  - Add-on based delivery enables fast release circles
- Single point of UI maintenance like browser support or UI5 provisioning
- Central place for theming and branding
- Single place for configuration, personalization, and Fiori shell services
- Rule-based dispatching of requests in a multi-system landscape (e.g. for approvals incl. aggregation)
- Security considerations
  - Similar to an application-level gateway (ALG) with protocol switch and whitelisting (excl. search)
  - Admin for UI meta data does not need to have admin rights in backend (data sensitivity)



# SAP Fiori – Architecture

## ABAP Frontend Server



# SAP Fiori - Architecture

## Agenda

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Fiori Technology

**Application Types**

Fiori Launchpad

Fiori Client

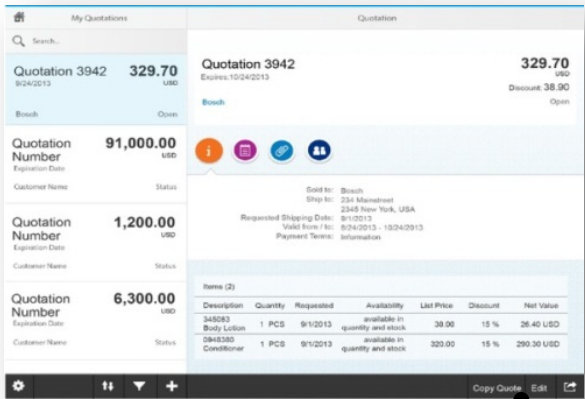
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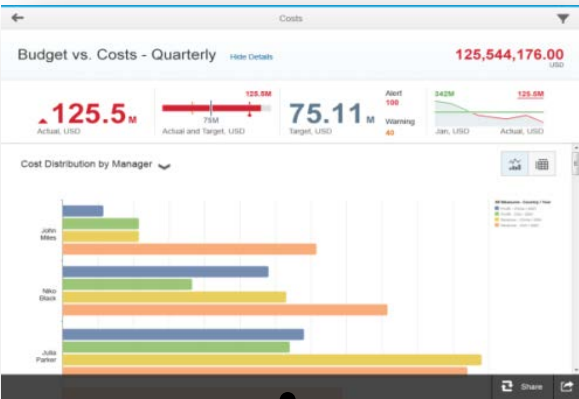


Runs on any  
DB and HANA

### Analytical (AT2)

#### Insight to Action

Visual overview over a complex topic for monitoring or tracking purposes

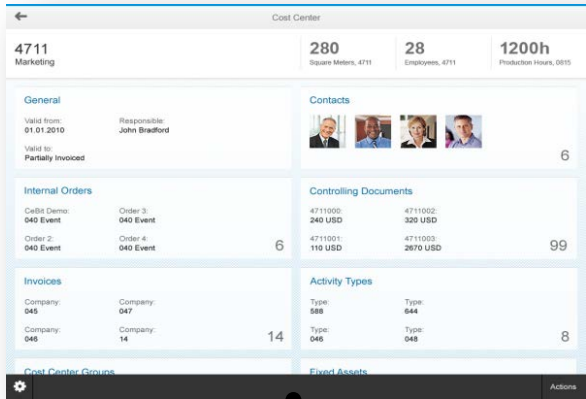


Runs on HANA

### Fact Sheet & Contextual Navigation (AT3)

#### Search and Explore

View on essential information about an object and contextual navigation between related objects

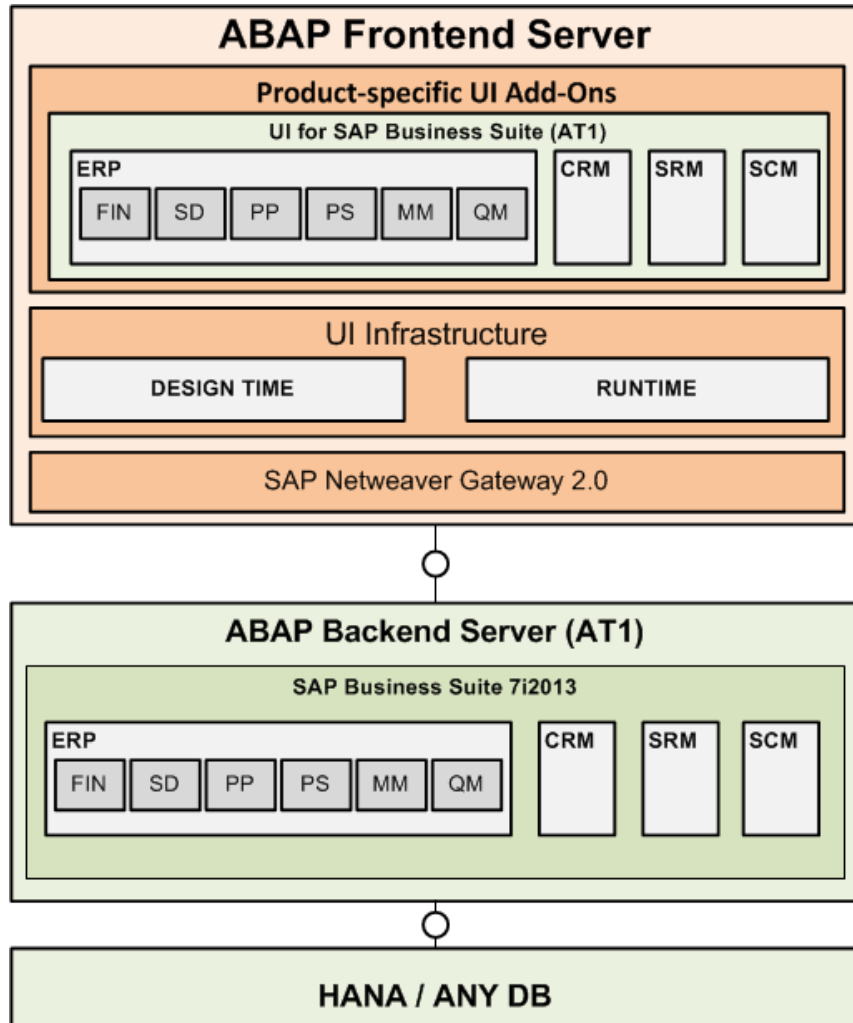


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# SAP Fiori – Architecture

## Transactional Apps (AT1) - Latest Business Suite Version / Enhancement Package

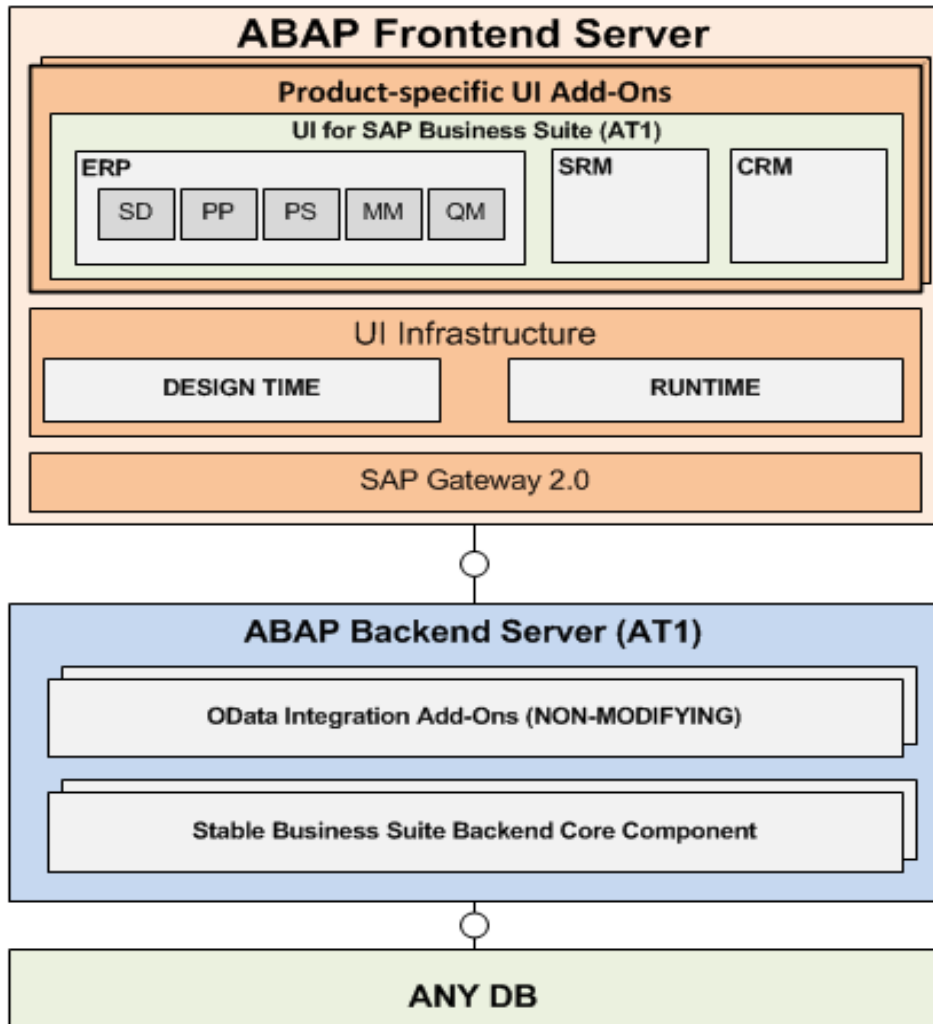


- Focused on transactional scenarios released to run with the latest enhancement package  
e.g. SAP ERP 6.0 EhP 7, SAP CRM 7.0 EhP 3, SAP SRM 7.0 EhP 3 ...
- Apps are deployed by ABAP UI add-ons
- Apps are connected via OData services
- OData services are shipped via ABAP Support Packages on the highest available Business Suite release  
e.g. SAP ERP 6.0 EhP 7, SAP CRM 7.0 EhP 3, SAP SRM 7.0 EhP 3 ...
- HANA and any database\* are supported

\*restrictions for MRP applications

# SAP Fiori – Architecture

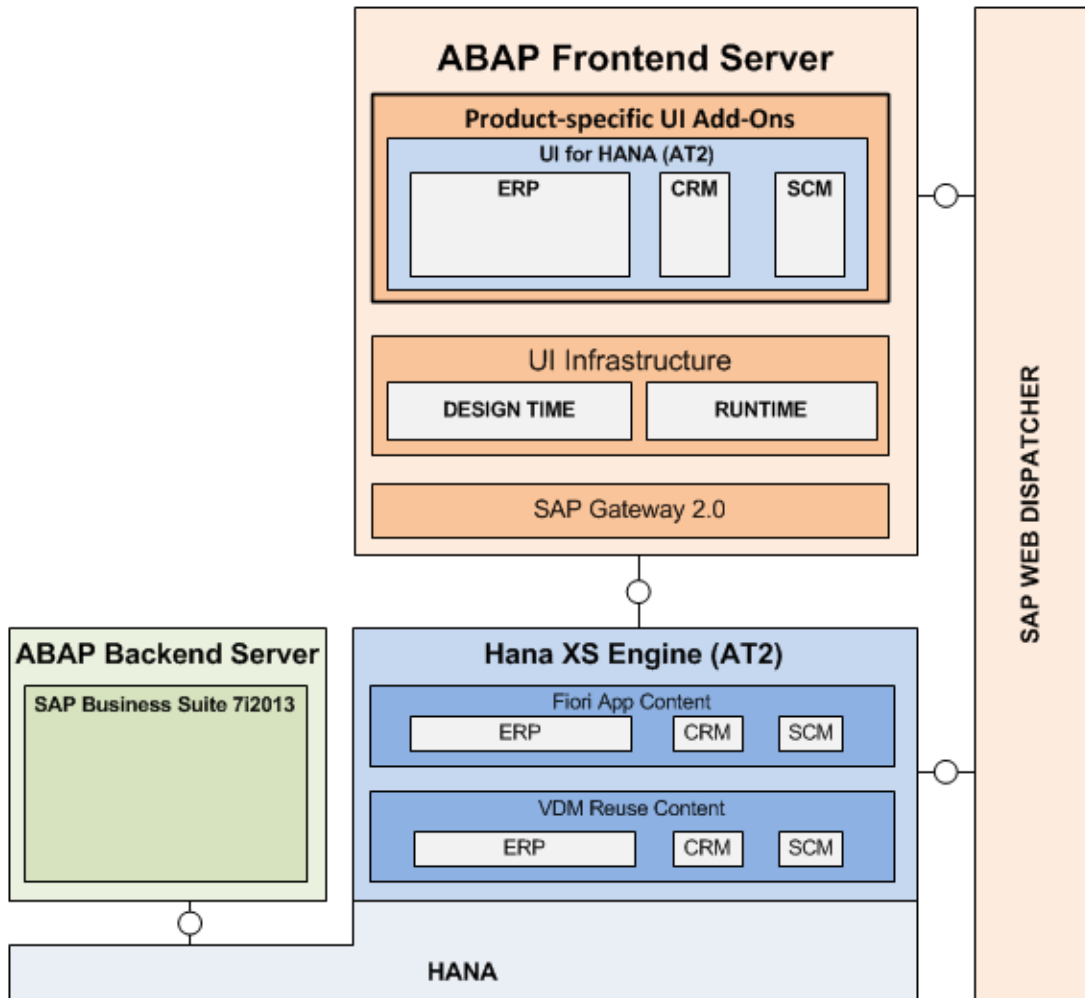
## Transactional Apps (AT1) - Former Business Suite Version / Enhancement Package



- Focused on a bundle of transactional scenarios released to run with former enhancement packages e.g. SAP ERP 6.0 EhP 6 and lower, SAP CRM 7.0 EhP 2 and lower
- Apps are deployed by ABAP UI add-ons
- Apps are connected via OData services
- OData services are shipped via OData integration add-on which is non modifying and available for stable versions of former Business Suite releases
- Any database is supported

# SAP Fiori – Architecture

## Analytical Apps (AT2)



- Purely analytical scenarios
- Runs on HANA, executed in XS Engine
- Connected via OData services
- HANA Live (2-tier) architecture
- Using HANA based virtual data models (VDM)
- Smart Business KPI Framework



# SAP Fiori – Architecture

## Detailed Analytics (AT2)

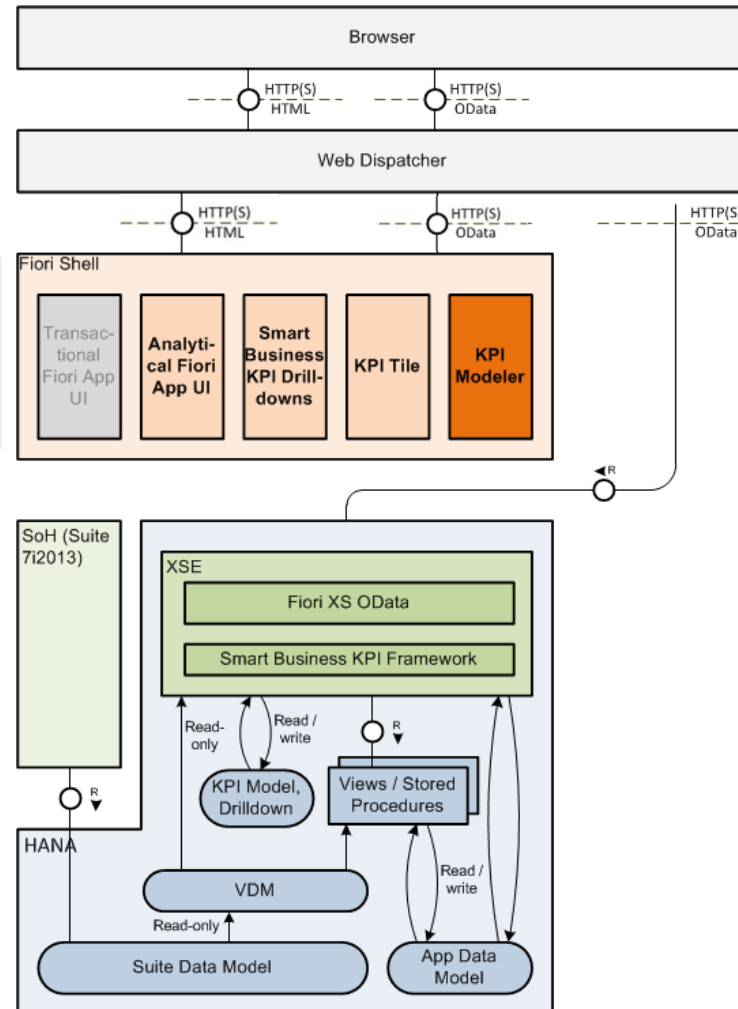
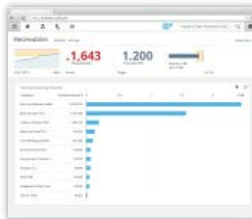
KPI, Report, Top N Tiles



KPI Modeler & Catalog



Drill-Down Applications



**Reverse Proxy/Web Dispatcher required to mitigate Same Origin Policy.**

### Frontend Server

- KPI Tile, KPI Drill Down and KPI Modeler App deployment on Fiori Frontend server.
- Launchpad consumes HANA KPIs via remote catalog integration.
- Semantic Objects for Tile-2-Drill Down and Drill Down-2-App navigation.

### HANA (2-tier) architecture – Maximum code push down

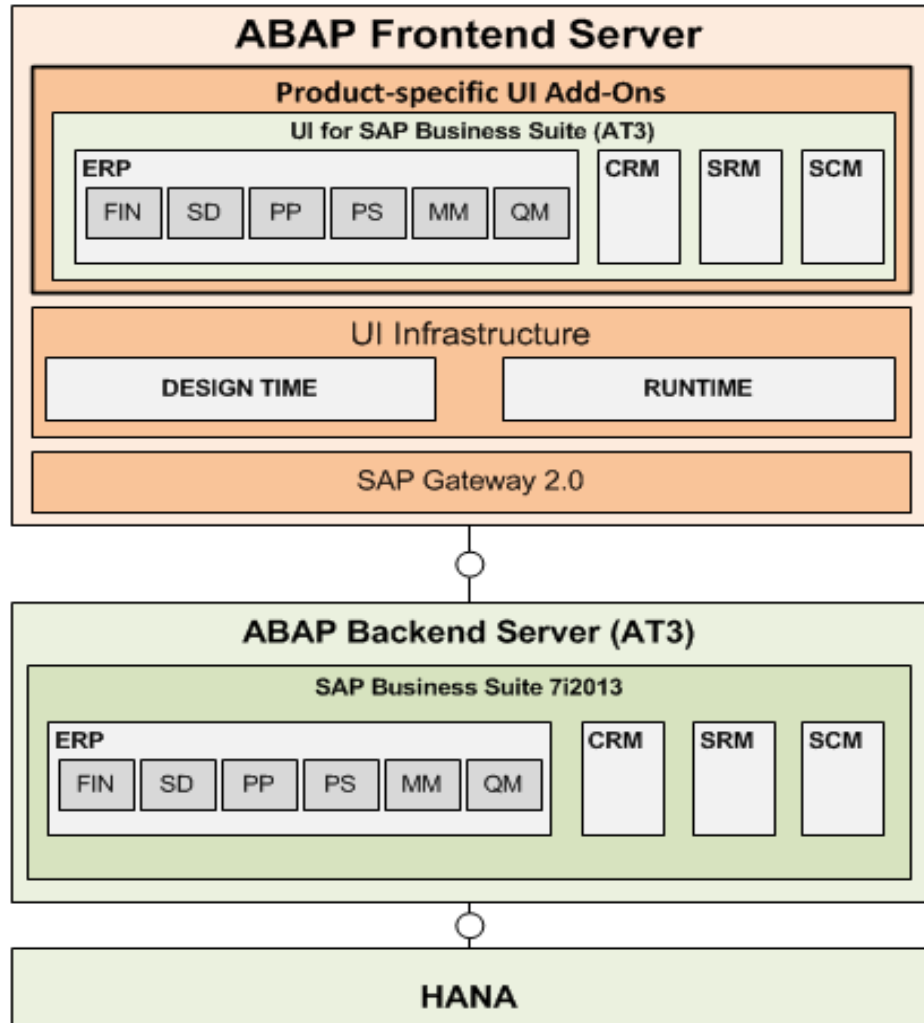
- KPI catalog on HANA
- Additional backend logic implemented in xsjs services for KPI Modeler.
- Analytical business logic encapsulated in virtual data models. Exposure via OData.
- (Named) HANA user access to HANA.
- HANA privileges used for authorization/restriction purposes.
- Shipment via HANA Live

### Support for hybrid scenarios / Insight to action.

- Write-back via OData calls to SAP Gateway possible.

# SAP Fiori – Architecture

## Search, C'est BON Fact Sheets (AT3)



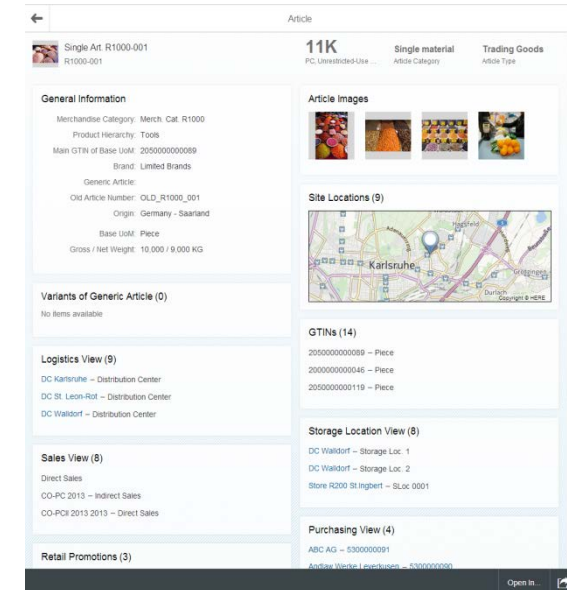
### Search

- State-of-the-art search experience
- Intuitive Business Object overview at a glance
- High-Performance powered by HANA
- Spanning the entire Business Suite



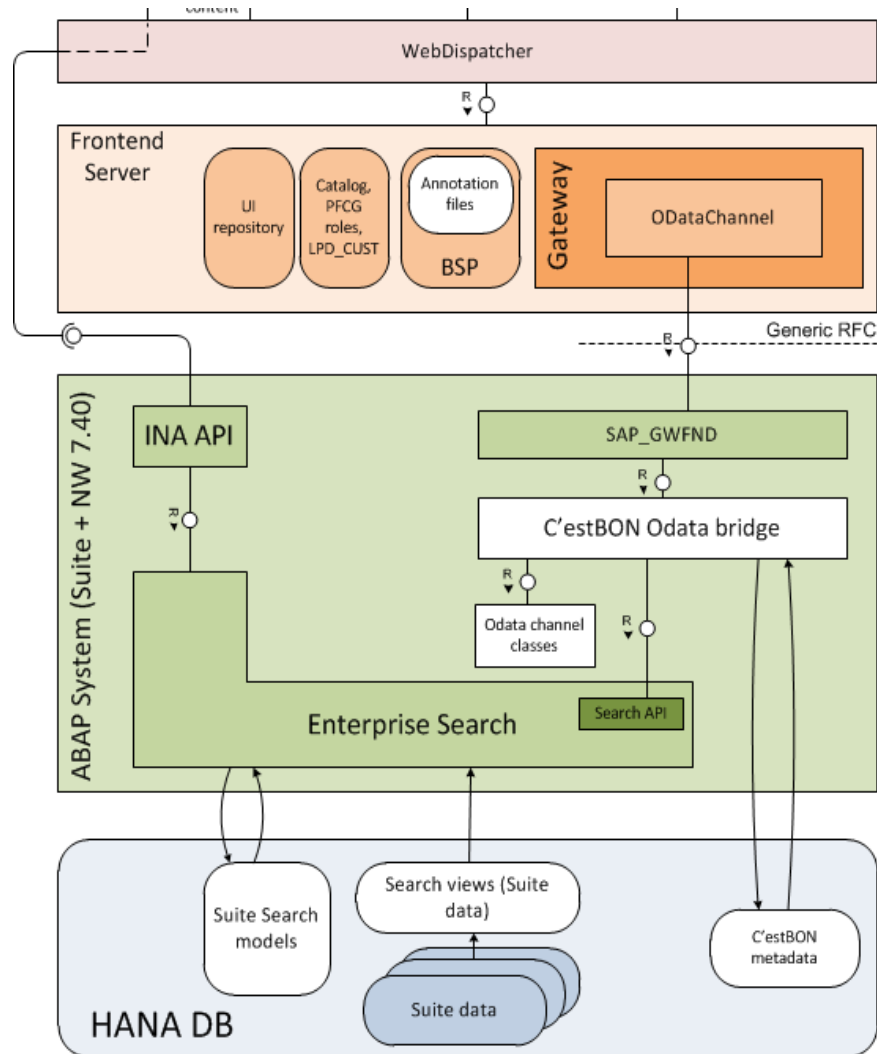
### Fact Sheet Navigation

- Powerful contextual navigation by browsing the related web of business entities
- Comprehensive 360° view on business entities
- ...



# SAP Fiori – Architecture

## Detailed Search and FIORI Fact Sheets(AT3)



### Key Features

- Free text search across Suite Business Objects, all Fiori apps and KPI tiles
- Launch Fiori apps and backend transactions from Fact Sheets

### Model driven development of FIORI Fact Sheets

- Search models are exposed via OData
- Fact Sheets are modeled with own tool as OData annotations
- Generic UI (Thing Inspector) renders Fact Sheet based on annotation file and OData service
- UI5 skills are not required to build Fact Sheets
- ABAP exits available for break-out scenarios

### Runs only on HANA

- Design time ABAP (Enterprise Search); Runtime ABAP/HANA



# SAP Fiori - Architecture

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Fiori Technology

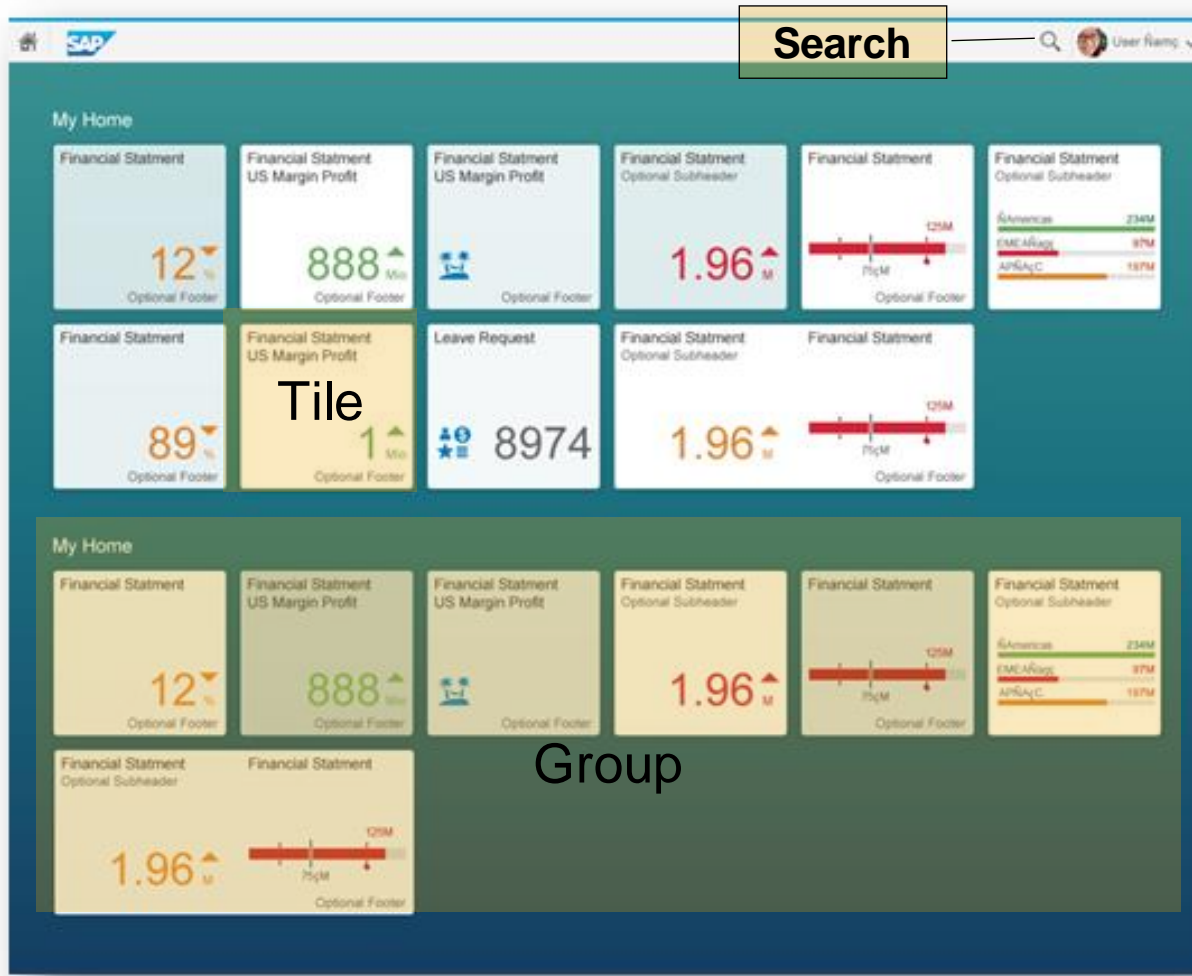
Application Types

**Fiori Launchpad**

Fiori Client

# SAP Fiori – Architecture

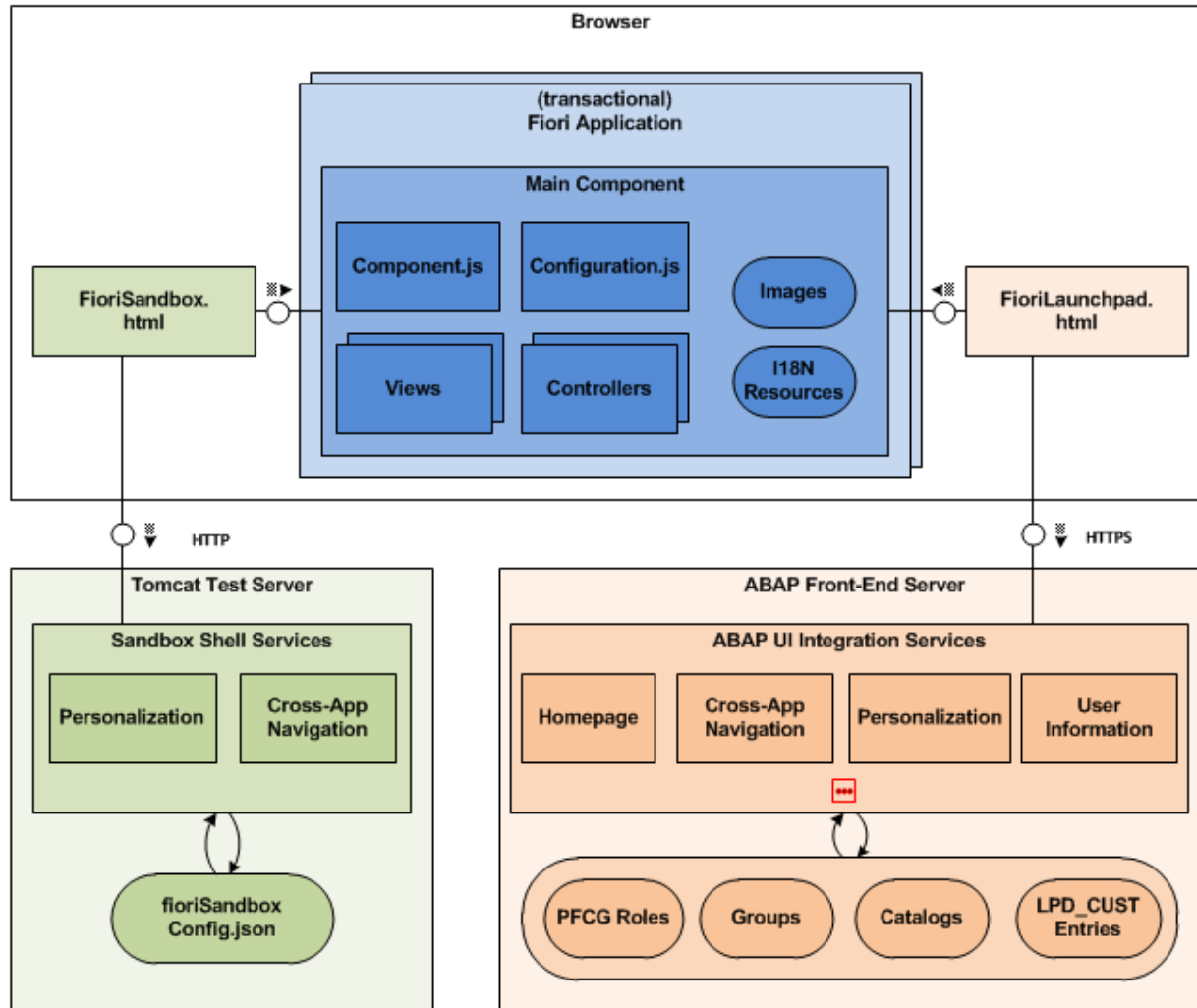
## Fiori Launchpad Overview



- The FIORI Launchpad provides end-users an entry point to Fiori applications in a **role-based**, consistent and user-friendly manner using tiles.
- Tiles show dynamic/live/**real-time** application information (like status, KPIs) on the home page.
- Predefined content and high degree of **personalization**
- Tiles can be selected from **catalogs** and arranged in **groups**.
- **Search** is integrated.

# SAP Fiori – Architecture

## Fiori Launchpad Architecture

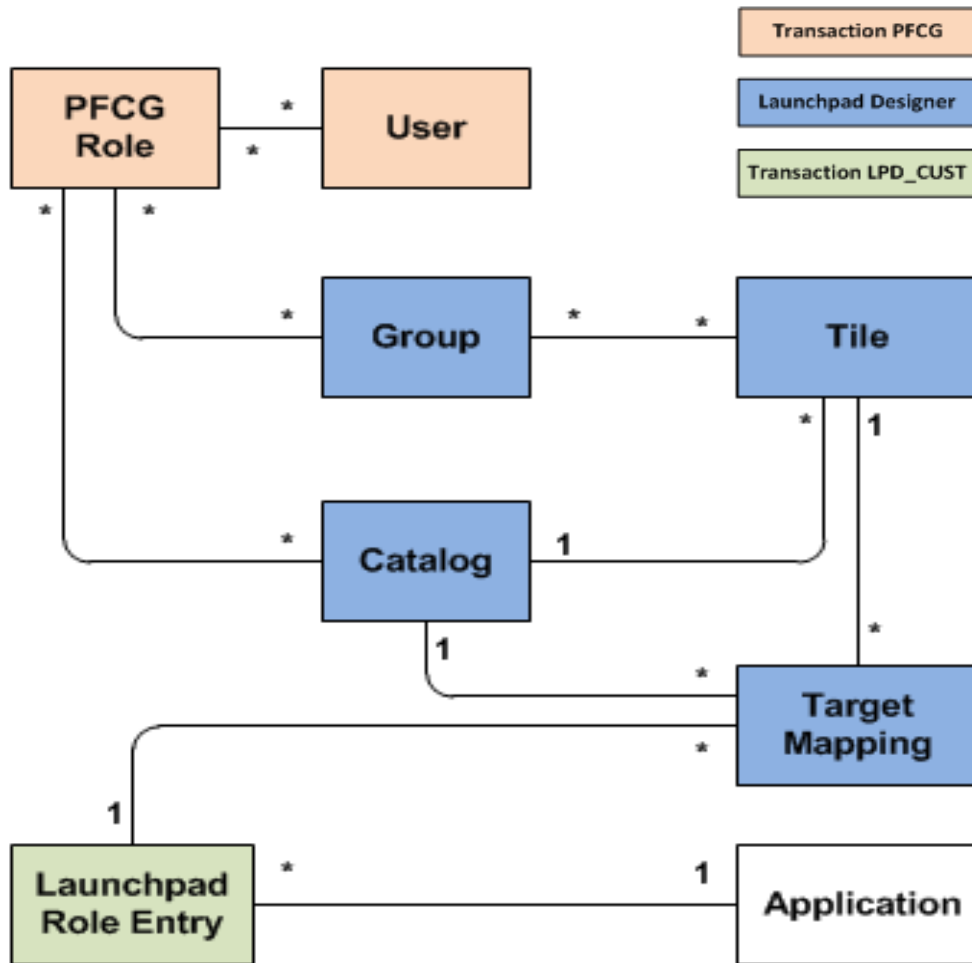


Fiori Applications must be implemented as **self-contained** UI5 Components which can be **embedded** into **different** launchpages

- noShellIndex.html: local, isolated test without shell services
- FioriSandbox.html: local, integrated test with mock shell services
- FioriLaunchpad.html: productive use

# SAP Fiori – Architecture

## Fiori Launchpad Content Model



### Transaction PFCG

- Assign groups and catalogs to roles
- Assign users to roles

### Fiori Launchpad Designer (FLPD)

Content can be configured system wide (configuration) or client specific (customizing):

- Target Mapping: maps navigation intent to concrete (logical application/target)
- Tile: used to launch an application
- Catalog: set of applications a user can use and add to his homepage
- Group: predefined set of tiles a user sees on his homepage

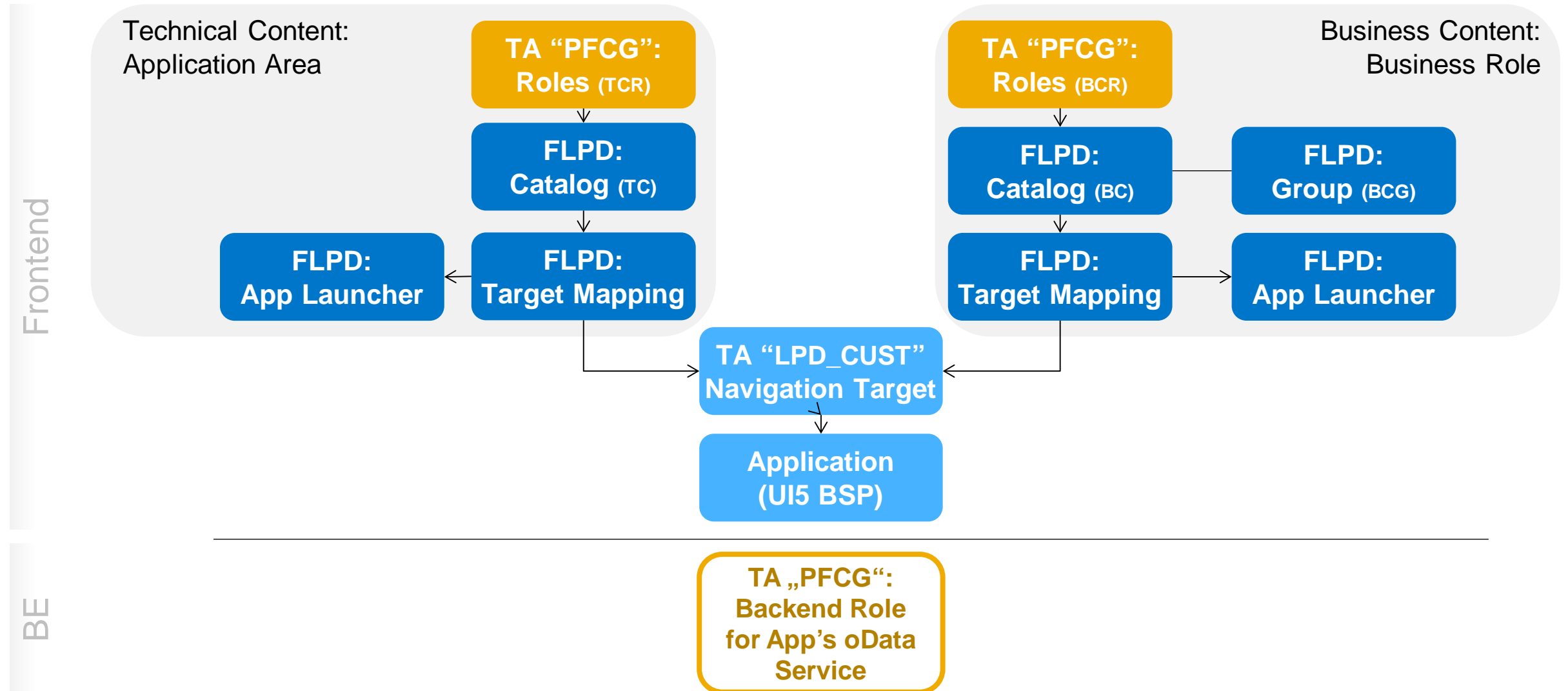
### Transaction LPD\_CUST

- Logical application launch entries decoupled from technical implementation
- Optional: define rename rules for start parameters



# SAP Fiori – Architecture

## Delivered Artifacts in the Content Concept (*Simplified Picture*)



# SAP Fiori - Architecture

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# SAP Fiori – Architecture

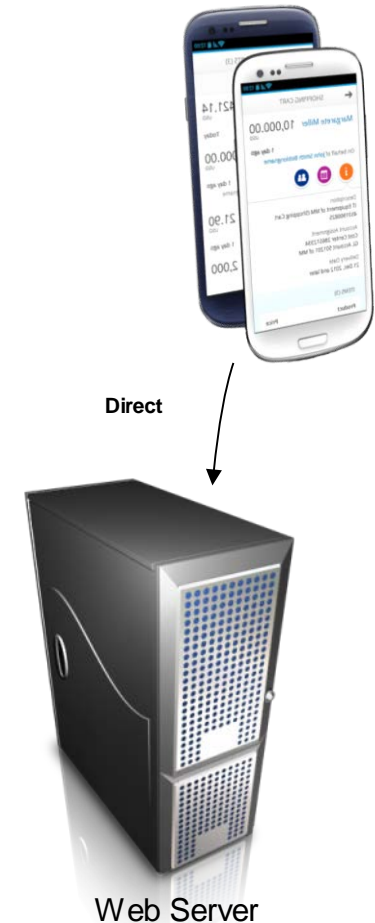
## SAP Fiori Client

### Challenges

- Startup performance
- Attachment handling in full screen mode
- Native device capabilities support
- Advanced security

### Solution (short-term, V1.0)

- Provide HTML5 and CSS 3.0 browser for iOS, Android
- Support of app-specific on-device persistent caching strategy
  - Direct URL download with cache synchronization on app-level via manifest timestamp
  - Optimized URL download with cache synchronization based on manifest content via SMP
- Full-screen mode
- Attachment and document viewer
  - PDF, MS Word, MS Excel, MS PowerPoint, PNG, et cetera
  - Viewer is launched in full-screen mode within the browser frame
  - By an action or by a gesture it is possible for the end user to close the attachment window



# SAP Fiori – Architecture

## SAP Fiori Client - Outlook

**SAP Fiori Client is managed via SAP Mobile Platform and then offers additional qualities**

### **Support for delta updates**

- Only changed content has to be transferred

### **Enhanced Security**

- Additional logon protocols

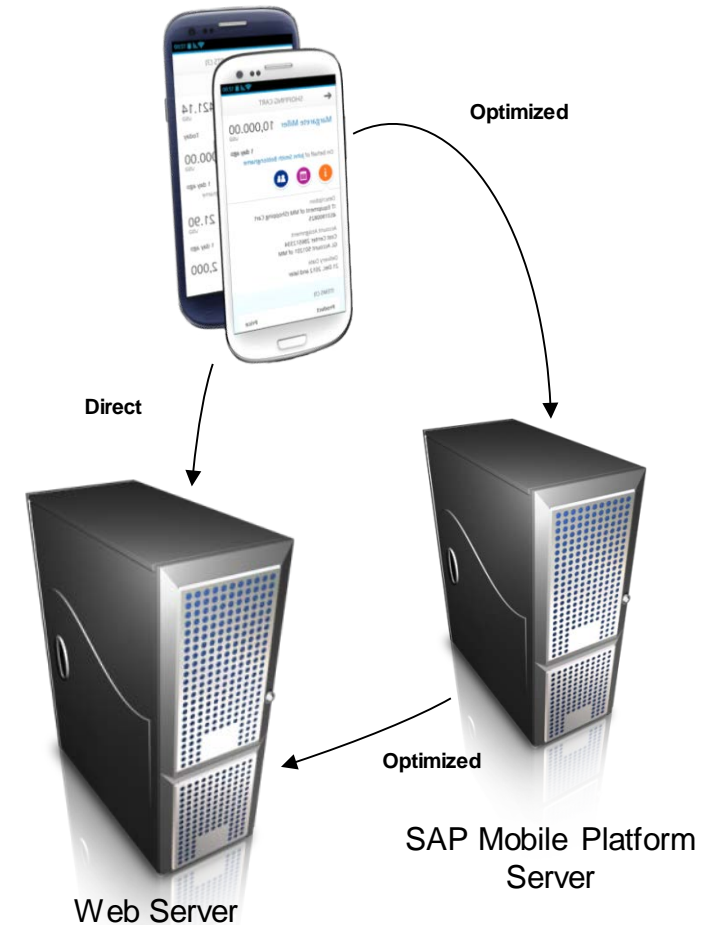
### **Support of Native Device Qualities**

- Contacts, Camera, Scanner, Local Persistency, ...

### **Offline Operation**

- With SMP/Mobilink as middleware, taking OData universe offline for read and write

### **Windows 8.1 support**





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