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SAP Fiori - Architecture

Agenda

Overview
Fiori Technology
Application Types
Fiori Launchpad
Fiori Client
SAP Fiori – Architecture
High-Level Overview

SAP Mobile Platform

UI5 Content

SAP Business Suite (ERP, SRM, …)

Frontend Server

…

OData Services

SAP Business Suite (ERP, SRM, …)
SAP Fiori – Architecture
Application Types

Transactional (AT1)
Task-based Access
Access to tasks like change, create, or entire processes with guided navigation

Analytical incl. Smart Business (AT2)
Insight to Action
Visual overview over a complex topic for monitoring or tracking purposes

Fact Sheet & Contextual Navigation (AT3)
Search and Explore
View on essential information about an object and contextual navigation between related objects

Runs on any DB and HANA
** Runs on HANA

* 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

Integrated Scenario
Run your entire business on a single in-memory platform

SAP Business Suite
Any Database

SAP Smart Business Cockpits
SAP HANA
HANA Live

Replication*

*SAP HANA* Latency in the range of a few seconds during the replication process might cause brief data inconsistencies in certain cases
SAP Fiori - Architecture

Agenda
- Overview
- Fiori Technology
- Application Types
- Fiori Launchpad
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SAP Fiori – Architecture
SAP Business Suite powered by SAP HANA

- 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

- 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

- 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

Netweaver AS ABAP (acting as Frontend Server)

Frontend Add-Ons for Fiori (product-specific)
- UI5 Application Code
- UI Content
  (Fiori Launchpad Configuration, Application configuration)

SAP Netweaver UI Add-on
- Fiori Launchpad UI
- Fiori Smart Business UI
- Fiori Fact Sheet UI
- Fiori Launchpad Server Infrastructure
  (UI2 Services, Personalization, Integration, Persistency)

SAP UI5 Library & Infrastructure

SAP Gateway 2.0

Backend
SAP Fiori - Architecture

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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)

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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Overview
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Fiori Launchpad
Fiori Client
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.
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)*

**TA “PFCG”**: Roles (TCR)
- FLPD: Catalog (TC)
- FLPD: Target Mapping

**TA “PFCG”**: Roles (BCR)
- FLPD: Catalog (BC)
- FLPD: Target Mapping

**FLPD**: App Launcher
- Business Content: Business Role
  - FLPD: Group (BCG)
- Technical Content: Application Area
  - TA “LPD_CUST” Navigation Target

**TA „PFCG“**: Backend Role for App’s oData Service

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SAP Fiori - Architecture

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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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