



SAP Fiori on Mobile Devices

Maximizing Fiori user experience and security leveraging SAP Mobile Platform, SAP HANA Cloud Platform mobile services and SAP Mobile Secure

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INTRODUCTION

SAP Fiori is a collection of web applications designed for multi-channel access with a consistent user experience in modern web browsers on any desktop or device. This article describes how SAP Mobile Platform (SMP) or SAP HANA Cloud Platform mobile services (HCPms) add value to SAP Fiori running on mobile devices.

Mobile web experience

Mobile web and desktop browsers have several things in common—primarily their ubiquitous support for modern web technologies that enable today's responsive web applications such as SAP Fiori. One may wonder, therefore, why mobile web applications have seen limited adoption by enterprises and end users. The answer lies in the realities of the mobile web user experience. Applications running in a mobile web browser can experience crippling performance and usability issues stemming from limited processor power, constrained resources and lack of access to device features. These issues can be a source of frustration to users and an impediment to adoption.

Native application experience

Native applications, on the other hand, utilize the device capabilities and resources more efficiently, resulting in a more responsive user experience and improved performance. As a result, mobile users overwhelmingly prefer the native application experience. Developing separate native applications for every platform, however, is usually not a viable option. Hybrid applications solve this problem by providing the best of both worlds—cross-platform mobile web content running in a native application. SAP has introduced the SAP Fiori Client and the SAP Mobile Platform Hybrid SDK, leveraging the de-facto industry standard Apache Cordova, to deliver a native experience to Fiori applications.

Enterprise qualities

As the number of applications, devices and channels grow, IT organizations that want to deliver mobile solutions to their business face daunting complexity. SAP Mobile Platform (on-premise) and SAP HANA Cloud Platform mobile services (cloud) simplify mobile application management, security and supportability at an enterprise scale. The SAP Mobile Platform SDK provides developers a simple, robust API for building enterprise-ready applications which could be deployed on both on-premise SMP and on-demand HCPms.

Options for mobilizing SAP Fiori

The following sections describe the key benefits users, administrators and developers can achieve with Fiori applications on SMP. Table 1, at the conclusion of this document, presents a detailed cross-reference comparing Fiori mobile deployment options and corresponding capabilities.

ENHANCED MOBILE USER EXPERIENCE

The Fiori Mobile UX is enhanced by the SAP Mobile platform. This is accomplished through capabilities available from the Mobile Platform Server and SDK.

Deployment options

The SAP Mobile Platform SDK allows Fiori applications to run natively in two ways: using the SAP Fiori Client or running one or more Fiori applications as pre-packaged applications on the device. The SAP Fiori Client is a native mobile application runtime for SAP Fiori available in the public app stores for Android and iOS devices. It provides a predetermined set of native device capabilities such as camera and barcode scanning support and allows users to access SAP Fiori in online mode. Some of these capabilities (e.g. VPN-less access) require the SAP Mobile Platform. Customers can use the SAP Mobile Platform SDK to build a custom version of the SAP Fiori Client as well. Here developers can adjust branding and add additional SAP, partner or open source plug-ins. Some customers prefer to run Fiori applications packaged into individual native applications using Apache Cordova and the SAP Mobile Platform Hybrid SDK which enables an experience close to native apps.

Improved performance and UX

The SAP Fiori Client enhances performance by more effectively managing the cache of Fiori application assets and providing in-app viewing of file attachments.

Application Passcode

Fiori running in the mobile browser takes advantage of the security and Single Sign On (SSO) capabilities exposed by the traditional browser. For customers with more sophisticated requirements, the SAP Fiori Client adds application passcode protection for the application. For a lost or stolen device, even if the device is unlocked, the application would not be accessible without first providing the correct application passcode.

Access to native device features

Running in a mobile web browser, SAP Fiori doesn't have direct access to many device-specific capabilities such as the camera or the contacts application. With the SAP Fiori Client, Fiori applications can take full advantage of these mobile-specific features.

As an important added benefit, SMP administrators can configure per-application access policies for these capabilities, which combines the flexibility of leveraging hundreds of open source plug-ins with the enterprise level requirements around security and manageability.

Streamlining Application Updates.

When running a Fiori application as pre-packaged application using Apache Cordova and the SMP Hybrid SDK (Kapsel), when a new version of the application becomes available, companies won't need to deploy a new version of the native application, they can instead utilize the application update capabilities of the SMP server to deliver web application content updates to an existing application over the air. Automating and simplifying the update process and not involving the user.

Offline data access

Desktop and laptop users typically don't expect that their web applications will continue to work when they've disconnected from the network. To mobile users, however, offline productivity has become a basic necessity. Applications built on the SAP Mobile Platform SDK can be configured to transparently and securely access application data online or offline. Pre-packaged Fiori applications running on SMP will be able to take full advantage of the mobile paradigm with offline data access and efficient synchronization. At this time, this requires the Fiori applications be modified to take advantage of this capability.

Push notifications

Push capabilities are not available to mobile browsers. To get around this, SAP Fiori has the ability to 'pull' notifications into the Launchpad for displaying on the different Fiori tiles. These notifications, however, only appear after the application is opened. With SAP Fiori Client or a pre-packaged Fiori application running on SMP, the application can register for push notifications and have them delivered as native push notifications, even when the application isn't currently running. At this time, this requires the Fiori applications be modified to take advantage of this capability.

SAP Mobile Place

SAP Mobile Place provides end users an enterprise app store for easily discovering and downloading relevant applications and enables administrators to provision services such as network access, email, identity and more. Fiori applications running in the SAP Fiori Client can take advantage of these features.

ENTERPRISE QUALITIES / ADMINISTRATOR EXPERIENCE

SMP has become a leading Mobile Enterprise Application Platform by simplifying the delivery of mobility services at enterprise scale. With SMP, developers and IT staff can focus on delivering Fiori solutions to the business rather than building infrastructure. Enterprise requirements addressed by SMP include:

- Enterprise authentication (single- or multi-factor), single sign on, network edge security, SSL, reverse proxy, remote access
- Secure data at rest and data in motion, encryption
- User/device registration, onboarding, managed rollout
- Application lifecycle management
- Offline Data, Mobile Database Integration and data composition for SAP and 3rd party back-end systems and databases
- Central administration, Tracing and logging for end-user supportability
- Horizontal scalability, high availability
- Usage statistics

Additional enterprise capabilities will be provided through SMP integration with SAP Mobile Secure including:

- SAP Mobile Place Enterprise App store for app discovery and deployment
- Mobile App protection, wrapping
- Mobile Device Management (Device Provisioning & Settings Configuration, Jail break detection, etc.)

DEVELOPER EXPERIENCE

SAP Web IDE

SAP Web IDE is an extensible development environment with a growing set of embedded tools covering the end-to-end development process. It lets you rapidly design, build, configure and deploy desktop and mobile web applications based on Fiori and SAPUI5.

SAP Web IDE includes an add-on toolkit – the Hybrid application toolkit - that enables developers to create hybrid applications and easily deploy them to SMP. Together, SAP Web IDE and the hybrid toolkit improve developer productivity with a cohesive tool for delivering Fiori applications on SMP. Features include:

- Wizard templates for creating simple and complex Fiori / SAPUI5 applications
- Extend SAP Fiori applications without changing the original
- Use visual extensibility tool and code editor to extend SAP Fiori applications
- Deploy to ABAP, SAP HANA Cloud Platform, or as a hybrid application on SMP
- Live app preview of native device APIs
- Code editor with SAPUI5 and Kapsel SDK-specific code completion
- Seamlessly deploy to run on any device – automatically renders for phone, tablet, desktop
- Instantly preview your application with real or mock data in the browser at different resolutions and in different languages
- Use QR code or URL to quickly send the application to others to view or test

Planned: Cloud Build Service

The planned Cloud Build Service will be invoked from within the SAP Web IDE to convert SAP Fiori tiles directly into native mobile apps on SMP and deploy those apps to SAP Mobile Place for distribution, improving developer productivity and simplifying administrative governance in SMP landscapes. Cloud Build Service will be the simplest way to quickly deploy enterprise-ready Fiori applications on-premise (SMP) or in the cloud (HCPms). Several options are available to support Fiori and SAPUI5 applications with various configurations including:

- Simple customization (icon, graphics) of off-the-shelf Fiori applications
- Customized Fiori applications
- Convert Fiori tiles to native applications
- Package multiple Fiori applications with the Fiori Launchpad to a native application
- SAPUI5+Kapsel applications

Table 1 - SAP Fiori Mobile Deployment Options

	Mobile Browser	SAP Fiori Client standalone	SAP Fiori Client with SMP/HCPms	Pre-packaged app with SMP/HCPms
Container				
Mobile browser	◆			
Native mobile app		◆	◆	◆
Usability				
Cross-device UX	◆	◆	◆	◆
Full screen mode		◆	◆	◆
Native performance		◆	◆	◆
Offline web assets				◆
Mobile-optimized cache		◆	◆	◆
App Features				
Attachment viewing		◆	◆	◆
Push notifications				◆
Offline application data				◆
Native device features		◆	◆	◆
Encrypted storage		◆	◆	◆
App Access				
Web URL	◆			
Vendor app store		◆		
SAP Mobile Place Configuration		◆	◆	◆
Other enterprise app store			◆	◆
Customization				
Icon, splash & title			◆	◆
Fully custom client			◆	◆
Enterprise Qualities				
App management			◆	◆
Advanced enterprise security			◆	◆
LCM with delta updates			◆	◆
Usage statistics			◆	◆
Advanced supportability			◆	◆
SAP Mobile Secure app wrapping		◆	◆	◆
Development				
SAP Web IDE	◆	◆	◆	◆
Cloud build service		◆	◆	◆
Kapsel CLI		◆	◆	◆
One SDK for online & offline data access		◆	◆	◆

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