SAP Fiori Deployment Options and System Landscape Recommendations

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INTRODUCTION AND SUMMARY

Introducing SAP Fiori, there are several deployment options available. In the following document, you can find the main SAP Fiori scenarios, the recommended system landscape setup, and the SAP Front-end server deployment options. This document also includes insights into SAP Front-end server hub and embedded deployment and what aspects to consider. The FAQ section provides answers to common questions regarding the SAP Fiori deployment options.

In summary, for SAP S/4HANA the embedded SAP Front-end server (FES) deployment is recommended. Using the SAP FES as a central hub is still a recommended option for SAP Business Suite scenarios. You can also combine both options in a mixed scenario: an SAP Front-end server hub with a central launchpad and central services such as My Inbox, combined with system-specific local launchpads.

Following SAP’s strategic directions towards the Intelligent Enterprise and SAP Cloud Platform on multi-cloud, SAP is investing in a central entry point on SAP Cloud Platform based on the SAP Cloud Platform Portal service. This central entry point then should act as UX integrator for all SAP and non-SAP solutions, for on-premise and cloud products.

DEPLOYMENT OPTIONS OVERVIEW

The following graph shows the main SAP Fiori deployment options with an on-premise SAP backend:
- On-premise: SAP Fiori Front-end server embedded deployment
- On-premise: SAP Fiori Front-end server hub deployment
- Hybrid: SAP Fiori launchpad and Fiori UIs on SAP Cloud Platform

All the mentioned deployment options consume business data from an on-premise SAP backend system. The main difference of the deployment options is the location, where the SAP Fiori launchpad (FLP), the SAP or custom Fiori UIs and FLP content are deployed.
SAP FIORI FOR S/4HANA DEPLOYMENT OPTIONS

Based on the technical deployment options described in the previous section, the following graph shows the deployment options when focusing on an SAP S/4HANA implementation.

The on-premise deployment SAP Fiori for S/4HANA with an embedded SAP Fiori Front-end server is the recommended setup. To simplify the activation of SAP Fiori for S/4HANA there are tasklists to automate the setup of SAP Fiori launchpad, Fiori Apps and business roles, etc. See SAP Note 2695653 and 2704570.

An SAP S/4HANA system with a dedicated SAP Fiori Front-end server hub (for each SAP S/4HANA system) might be an option for certain use cases. For more details, please refer to section FES Embedded OR Hub deployment – Pros and Cons.

SAP Fiori Cloud was introduced in 2015 to offer an alternative hybrid deployment option for SAP Fiori for SAP S/4HANA with the standard content packages and SAP Fiori apps on SAP Cloud Platform. The content fits for SAP S/4HANA release 1610 (Finance) and 1709. Please note, that additional content packages for SAP Fiori Cloud will not be delivered. This is aligned with SAP’s future direction to offer UX integration including a central entry point on SAP Cloud Platform multi-cloud, while SAP Fiori content and apps are consumed from self-contained on-premise and cloud products. See also section SAP’s Central Entry Point - Future Direction.

SAP S/4HANA Cloud offers a pure cloud-based solution. See product SAP S/4HANA Cloud.
SAP FIORI SCENARIOS AND THE RECOMMENDED FRONT-END SERVER DEPLOYMENT

In the following sections, you get more details on the different SAP Fiori landscape scenarios, details on the deployment options and the aspects to consider, when choosing one of the options for your use case.

1) SAP Business Suite system landscape
   For multi-system SAP Business Suite scenarios, the SAP Front-end server hub deployment is the recommended setup. The Fiori UI components, the SAP Fiori launchpad content and the SAP Gateway server are bundled on a central Front-end server, while the classical UIs and the business logic remains on the backend system. This setup allows one central entry point (SAP Fiori launchpad) to business applications from multiple systems.

   As the Fiori UI components of SAP Business Suite systems are compatible with several backend versions, it is also possible to connect backend systems from different releases to a central SAP Fiori Front-end server. For more details, see Setup of SAP Fiori System Landscape for SAP Business Suite.

2) One single SAP S/4HANA system within an existing SAP Business Suite landscape
   For multi-system scenarios with only one single SAP S/4HANA system in combination with an existing SAP Business Suite landscape, a central SAP Front-end server as hub is still a possible option.
In addition to the Fiori UIs of SAP Business Suite systems, the Fiori UIs of the SAP S/4HANA system are also deployed on the central SAP Front-end server. This setup requires, that the SAP Front-end server is upgraded to an appropriate version, which is required by the SAP S/4HANA product, e.g. SAP FES 3.0 for S/4HANA 1610, SAP FES 4.0 is for S/4HANA 1709 and SAP FES 5.0 for S/4HANA 1809. For more details refer to the notes in section SAP Fiori Technology SAP HANA is the recommended database system for the SAP FES.

The SAP Front-end server hub offers one central entry point (SAP Fiori launchpad) to business applications from multiple systems. For further benefits of the central hub deployment, refer to section FES Embedded OR Hub deployment – Pros and Cons.

For further information regarding the release of Fiori Product Versions for SAP Fiori Front-End Server, see SAP Notes 2506466 / 2310351 / 2669049.

3) Additional SAP S/4HANA systems within an existing system landscape
In this mixed scenario, one or several SAP S/4HANA systems are added to an existing system landscape where a central SAP Front-end server as hub is already in place. For the newly added SAP S/4HANA system the embedded FES is the recommended approach. The Fiori UIs, the SAP Fiori launchpad content and the SAP Gateway server are deployed on the same server as the backend components. In consequence, there is a dedicated SAP Fiori launchpad for each additional SAP S/4HANA system. To connect the central SAP Fiori launchpad with the system-local SAP S/4HANA launchpad, a URL tile can be defined, which launches the local launchpad or an app. The benefit of this setup is, that the existing SAP Fiori Front-end server hub deployment is not impacted.

This is a frequent scenario, when single SAP Business Suite systems, which are part of a complex system landscape, are upgraded to SAP S/4HANA, while other systems stay as they are.
4) Multiple SAP S/4HANA systems

For scenarios with several SAP S/4HANA systems the **embedded deployment** is the recommended setup. The Fiori UIs, the SAP Fiori launchpad content and the SAP Gateway Server are deployed with the backend components on the same server.

In this setup, every system has its own SAP Fiori launchpad. Content configuration is done on each system with local scope. An optimized runtime performance, a simplified software lifecycle and user/authorization management are all benefits of the embedded deployment.

A single access point to multiple SAP S/4HANA systems can currently be realized with a central SAP Fiori launchpad on a dedicated SAP Fiori Front-end server which contains custom tiles to launch the system-specific local launchpads via URL integration in a separate browser tab/window. In addition, release-independent UIs, such as the My Inbox app or custom apps can be deployed centrally.

In the future SAP Cloud Platform Portal is aimed to offer a central entry point to multiple systems and product versions which also covers integration capabilities like central search, notifications, etc. For more information, refer to section SAP’s Central Entry Point - Future Direction.
5) SAP Fiori on SAP Cloud Platform
Customers can to run, extend and develop Fiori apps in the cloud while connecting to on-premise backend systems. In this case the Fiori UIs and FLP content are available on SAP Cloud Platform – either via subscription to a central SAP provider account or manually deployed custom apps. The business data can be consumed from on-premise SAP backend systems via SAP Gateway (embedded or hub deployment). For SAP Business Suite backends the OData provisioning service on SAP Cloud Platform can be used as lightweight alternative. See also section SAP Fiori Deployment - OData Provider Options.
Regarding the integration of multiple SAP backend systems and regarding hub or embedded deployment of SAP Gateway the same recommendations and restrictions apply as described for the on-premise scenarios before.

FES EMBEDDED OR HUB DEPLOYMENT – PROS AND CONS
The SAP Front-end server components for SAP S/4HANA products and SAP Business Suite systems can be deployed separately as a hub or embedded. The following table gives an overview on the different aspects to consider.

<table>
<thead>
<tr>
<th></th>
<th>One physical FES</th>
<th>Embedded FES (per system)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADMINISTRATION</td>
<td>+ Central administration (one system to configure the apps for the complete landscape)</td>
<td>- Central administration (high complexity for lifecycle / upgrade operations)</td>
</tr>
<tr>
<td></td>
<td>+ Administration per system by the system owner</td>
<td>- Multiple embedded FES to be administered, operated, updated</td>
</tr>
<tr>
<td>AVAILABILITY</td>
<td>- High Availability setup is needed (additional costs)</td>
<td>+ Availability according to backend</td>
</tr>
<tr>
<td>CENTRAL FUNCTIONALITIES</td>
<td>- One single place to serve central functionality like Inbox, search, notification, etc.</td>
<td>- Local and scoped FLP requires an additional approach to support central functionalities like Inbox, search, notification, etc.</td>
</tr>
<tr>
<td>CONTENT (FLP/APPS)</td>
<td>- Supports composition scenarios across multiple backend systems (Single Point of entry)</td>
<td>- Complexity, size and dimensions of managed applications and launchpad content</td>
</tr>
<tr>
<td></td>
<td>- Content scope is limited per system</td>
<td>- Content maintenance per system</td>
</tr>
<tr>
<td>INTEROPERABILITY</td>
<td>- S/4H systems must be in product version sync to realize one physical central FES</td>
<td>- S/4H &amp; Suite systems are independent (one FLP per backend system)</td>
</tr>
<tr>
<td>LANDSCAPE DISTRIBUTION</td>
<td>Performance impact in global distributed environments due to latency</td>
<td>Access to FLP where backend is situated for optimized performance</td>
</tr>
<tr>
<td>MAINTENANCE</td>
<td>Central management of required UI patches and upgrades for UI frameworks and applications</td>
<td>Changes are scoped to the global environment</td>
</tr>
<tr>
<td>OWNERSHIP</td>
<td>FES ownership and product content (App &amp; FLP content) ownership is potentially distributed (1 FES and 1 for each connected backend)</td>
<td>FES ownership and product content (App &amp; FLP content) ownership is under one responsibility</td>
</tr>
<tr>
<td>ROLES AND AUTHORIZATION</td>
<td>Roles &amp; authorization maintenance is decoupled from backend (two places)</td>
<td>Roles and authorization maintenance is in one place</td>
</tr>
<tr>
<td>SCALABILITY</td>
<td>Dedicated resources for UI requests on FES</td>
<td>Potential resizing of backend system necessary</td>
</tr>
<tr>
<td>SECURITY</td>
<td>FES is physically decoupled from backend system</td>
<td>Coupled environment (in internet scenarios)</td>
</tr>
<tr>
<td>SYSTEM LANDSCAPE</td>
<td>Separated system landscape is required (e.g. DEV, TEST, PROD)</td>
<td>Existing system landscape is re-used</td>
</tr>
</tbody>
</table>
SAP FIORI DEPLOYMENT - ODATA PROVIDER OPTIONS

The following graph shows the different options to consume backend data within SAP Fiori apps.

When SAP Fiori apps are deployed on-premise, the UI components are installed on the SAP Fiori Front-end server (hub or embedded deployment). To access business data from the backend, OData service calls are handled by the SAP Gateway component on the SAP Front-end server, which calls the OData service implementation, which is done in the backend system leveraging the Gateway backend components.

When deploying Fiori apps on SAP Cloud Platform, the Fiori UI components are installed on SAP Cloud Platform while connecting to the respective backend system via the SAP Cloud Connector. The OData request is then handled by SAP Gateway in the same way as for the on-premise setup. With an SAP Business Suite system as backend, there is the OData Provisioning service on SAP Cloud Platform as an alternative data access method. This lightweight service manages the OData communication. Please note the restricted scope compared to a full SAP Gateway Server (SAP Note 1830712).

SAP Cloud Platform Integration service (CPI) is the recommended option to connect any kind of data sources, if not all data sources are based on OData. For further information, please refer to SAP Help Portal - SAP Cloud Platform Integration and this blog.
SAP’S CENTRAL ENTRY POINT - FUTURE DIRECTION

In future, SAP’s central entry point on SAP Cloud Platform is planned to act as UX integrator to SAP and non-SAP solutions for on-premise and cloud products.

The integrated products will serve as content provider for the central entry point. They expose their FLP content according to a contract defined by the central Fiori launchpad. The Common Data Model (CDM) as content data exchange format is a key aspect of this contract.

Individual solutions and systems remain self-contained entities regarding software lifecycle and SAP Fiori launchpad content delivery. The individual systems are set up in a regular way, following the embedded deployment recommendation for SAP S/4HANA systems, for example. As such, they still provide optional local entry points – independent from a central entry point in the cloud.

The central entry point on SAP Cloud Platform is expected to offer enhanced integration capabilities, that are typically desired from an end user perspective, such as a seamless cross-products app-to-app navigation, one central inbox and notification channel, a central search and digital assistance.

The central Fiori launchpad on SAP Cloud Platform will also be able to integrate multiple SAP S/4HANA systems of different versions.

Today SAP Cloud Platform Portal offers SAP Fiori launchpad sites and freestyle sites as access point for business users with certain integration capabilities. This cloud service will evolve further and will be enriched by the various integration capabilities step-by-step.

In parallel, the different SAP products are enhanced to serve as content provider for the central entry point to be part of the integration story.

To ensure a harmonized user experience across all products, SAP establishes common UX integration guidelines and qualities for all products to be integrated in a central entry point, while enabling the integration of central services such as MyInbox, Notifications, CoPilot, Enterprise Search.

For further information, please refer to the SAP Product Roadmaps of SAP Fiori, SAP Cloud Platform Portal, and SAP User Interface technologies.
QUESTION & ANSWERS

1) **What is the recommended SAP Front-end server deployment option for a system landscape with multiple SAP S/4HANA systems of different releases?**

For SAP S/4HANA systems, the **embedded deployment** is the general recommended deployment option, because of:

- strong dependencies between UI and backend software components and a missing version interoperability
- an optimized runtime performance (no remote calls, caching of meta / business data)

It is not possible to use a FES as hub for multiple SAP S/4HANA systems of different versions, because it is not possible to install several versions of the same software component on one server.

2) **In which case is the SAP Front-end server hub deployment still a valid option?**

For a SAP Business Suite system landscape, the **FES hub deployment** is still a recommended option. For pros and cons regarding hub or embedded deployment, refer to section FES Embedded OR Hub deployment – Pros and Cons.

For a single SAP S/4HANA system scenario, the hub deployment is still a possible option. If internet access is an important use case and the backend should not be exposed, the hub deployment might be preferable. But in this case software lifecycle and maintenance is more complex due to dependencies of the software components. See also section SAP Fiori scenarios and the recommended Front-end server deployment.

3) **Is it possible to connect several SAP S/4HANA systems from the same release to a central FES – what problems should be considered?**

Theoretically, several SAP S/4HANA systems from the same release can be deployed with a central SAP Fiori Front-end server. In practice, it is not recommended because:

- it is hard to keep all system versions in sync: the upgrade of an SAP S/4HANA system to another release means that the FES must be upgraded or the system must be connected to another FES which has the required version (S/4HANA 1610 with FES 3.0, S/4HANA 1709 with FES 4.0 and S/4HANA 1809 with FES 5.0).
- all SAP S/4HANA systems expose the backend app descriptors with the same system alias. Currently there is no tool to find and replace the system aliases.

4) **Using an embedded FES, the backend is exposed directly to the internet, making it vulnerable for cyber-attacks?**

Of course, if a customer wants an SAP Front-End server implementation in a separate network zone, like a DMZ, then a specific FES system is the choice. See also blog: Consideration and Recommendations for Internet Facing Fiori Apps.

5) **Could an on-premise Portal be used to solve these integration needs?**

SAP Enterprise Portal solves certain integration aspects for on-premise customers. Especially the integration of several SAP S/4HANA backend systems is not supported. Also, in this scenario, the Fiori UIs are deployed on an ABAP FES, the same compatibility problems for software versions apply.

6) **What are advantages of hub vs embedded deployment regarding load and scalability?**

See section FES Embedded OR Hub deployment – Pros and Cons.

7) **Is FES Hub mode still recommended if transitioning from one or more ERP systems to a single consolidated SAP S/4HANA system?**

This heavily depends on the customer strategy and roadmap/timeline. There is no need to be afraid of a FES Hub deployment, if suitable.
8) **Can you explain in detail the technical dependencies limitation which is causing this additional recommendation?**

It’s not possible to install several versions of the same software component on one FES. In addition, the system alias routing is not in place (this makes it even hard to connect multiple S/4HANA systems with the same release). See also SAP Note 2590653.

9) **What is the strategic direction to integrate different systems/products in a single point of entry?**

In the future, SAP Cloud Platform Portal is intended to offer one central entry point to multiple systems and products. It should act as a UX integrator with defined capabilities to launch apps or launchpads, which are deployed on-premise or in the cloud.

To ensure a decoupled product lifecycle for each system/product to be integrated, the UIs and FLP content are deployed on the same server as the backend products (SAP S/4HANA, SAP SuccessFactors, SAP Ariba) and then can be exposed to the SAP Cloud Platform Portal as a UX integrator.

10) **Are we going to offer a solution for this integration scenario where the customer is not willing to invest in SAP Cloud Platform?**

Currently the integration of multiple SAP S/4HANA systems into a single access point is planned to be solved with the SAP Cloud Platform Portal as the integrator.

For pure on-premise scenarios, it is not planned to offer a central entry point (cross-S/4HANA systems) with integration capabilities, as e.g. common search, notifications, etc.

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**FURTHER INFORMATION**

**SAP Fiori Technology**

SAP Community Wiki: [https://wiki.scn.sap.com/wiki/display/Fiori/SAP+Fiori+Front-end+Server](https://wiki.scn.sap.com/wiki/display/Fiori/SAP+Fiori+Front-end+Server)

Document: [Landscape Deployments Recommendations for SAP Fiori Front-End Server](https://wiki.scn.sap.com/wiki/display/Fiori/Landscape+Deployments+Recommendations+for+SAP+Fiori+Front-End+Server)


Notes:

- [2217489](https://help.sap.com/hyphenation/fiori/technical-guides#2217489) - Maintenance and Update Strategy for SAP UI in SAP Fiori Front-End Server
- [2618605](https://help.sap.com/hyphenation/fiori/technical-guides#2618605) - SAP Fiori Front-End Server 5.0 – General Information
- [2484979](https://help.sap.com/hyphenation/fiori/technical-guides#2484979) - SAP Fiori Front-End Server 4.0 – General Information
- [2355644](https://help.sap.com/hyphenation/fiori/technical-guides#2355644) - SAP Fiori Front-End Server 3.0 – General Information

- [2662732](https://help.sap.com/hyphenation/fiori/technical-guides#2662732) - Fiori UI Infrastructure Components for products on SAP Frontend Server 5.0
- [2524632](https://help.sap.com/hyphenation/fiori/technical-guides#2524632) - Fiori UI Infrastructure Components for products on SAP Frontend Server 4.0
- [2356936](https://help.sap.com/hyphenation/fiori/technical-guides#2356936) - Fiori UI Infrastructure Components for products on SAP Frontend Server 3.0

- [2669049](https://help.sap.com/hyphenation/fiori/technical-guides#2669049) - Release of Fiori Product Versions for SAP Fiori Front-End Server 5.0
- [2506466](https://help.sap.com/hyphenation/fiori/technical-guides#2506466) - Release of Fiori Product Versions for SAP Fiori Front-End Server 4.0
- [2310351](https://help.sap.com/hyphenation/fiori/technical-guides#2310351) - Release of Fiori Product Versions for SAP Fiori Front-End Server 3.0
- [2200415](https://help.sap.com/hyphenation/fiori/technical-guides#2200415) - Release of Fiori Product Versions for SAP UI AddOn 2.0 / SAP_UI 7.50

SAP S/4HANA

SAP Help Portal:
- SAP Fiori for SAP S/4HANA - Landscape Configuration Guide

Notes:
- 2590653 - SAP Fiori front-end server deployment for SAP S/4HANA
- 2667191 - SAP FIORI FOR SAP S/4HANA 1809: Release Information Note
- 2482461 - SAP FIORI FOR SAP S/4HANA 1709: Release Information Note
- 2356208 - SAP FIORI FOR SAP S/4HANA 1610: Release Information Note
- 2221151 - Release Information note for SAP Fiori My Inbox 2.0
- 2695653 – Rapid Activation of Fiori in S/4HANA 1709
- 2704570 – Rapid Activation of Fiori in S/4HANA 1809

Blog: A single SAP S/4HANA deployment scenario for SAP Fiori?
- SAP Fiori apps reference library

SAP Business Suite

SAP Help Portal: SAP Fiori for SAP Business Suite
- SAP Fiori apps reference library - Fiori apps for SAP Business Suite

SAP Fiori Cloud

- Solution Overview

SAP Product Roadmaps

- SAP Fiori
- SAP Cloud Platform Portal
- SAP User Interface Technologies

VERSION HISTORY

The main changes for the different versions of this document:

Version 2.0
- Updated graphics with newer SAP Fiori Front-end server and SAP S/4HANA versions.
- Section SAP Fiori Deployment - OData Provider Options updated (graphic and text).
- Section Further Information updated

Version 3.0
- Smaller updates in the sections Introduction and Summary and Deployment Options Overview
- New section SAP Fiori for S/4HANA Deployment Options added.
- Section SAP Fiori Cloud renamed to 5) SAP Fiori on SAP Cloud Platform and updated content.
- Additional foot note on graphic and smaller text changes in section SAP Fiori Deployment - OData Provider Options
- Graphic in section SAP's Central Entry Point - Future Direction updated
- Section Further Information updated