

Citrix Delivery of SAP Fiori

Guidance for our
customers delivering
SAP Fiori using Citrix
technologies



Citrix Delivery of SAP Fiori

Citrix has been a preferred Enterprise delivery model for SAP client applications for many years. As organizations begin providing access to SAP systems via a SAP Fiori web-based front end, delivering this access via Citrix, continues to provide additional security, performance and management benefits. This Citrix and SAP white paper provides insight and guidance for our joint customers on how to successfully deliver a great SAP Fiori experience with Citrix.

The Citrix & SAP Alliance

A long-standing strategic global partnership

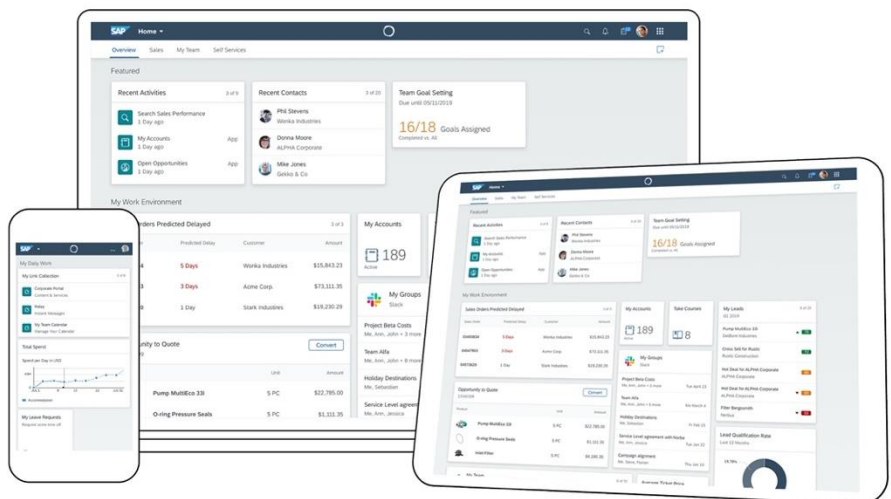
Citrix and SAP have collaborated for nearly twenty years and continue to work together to build solutions that allow our customers to transform and run their businesses. In fact, more than 40% of SAP customers, including SAP, use Citrix solutions to improve their application environments and accelerate time to value of their SAP investment.

SAP and Citrix technologies enable choice, security and a great user experience. With flexible solutions, SAP empowers people to work together more efficiently and use business insight more effectively to stay ahead of the competition.

SAP Fiori

The enterprise user experience, reimagined

Today's users have high expectations when it comes to user experience. They expect a delightful experience across all the business systems they need to get their work done. SAP Fiori is a design system that provides a consistent user experience for SAP software across platforms and devices. SAP Fiori follows a modular design approach based on business roles, moving away from traditional monolithic transactions, focusing on user tasks and workflows.



SAP Fiori has evolved out of a small initiative into an industry-scale design system for all SAP products. In its latest evolution of SAP Fiori the design team has been focusing on consistency, integration and intelligence to ensure that SAP Fiori can be used to integrate all products into one intelligent enterprise suite.

The following sap.com landing page gives you some more details about SAP Fiori: <https://www.sap.com/products/fiori.html>

SAPUI5 the browser-based client front end

Previous SAP clients like SAP GUI were traditional Win32 client/server applications. The client was light-weight and all the data processing happened on the back-end servers. SAP Fiori applications are developed using the SAPUI5 framework and delivered to users via an HTML5 capable web browser. These applications offer much better role-based workflows, aggregating and processing content from various data sources, but depending on the development techniques used, they can also be more compute intense.

With a web browser as the client, and the intensity of the workload based upon the customer's application development techniques; it is critical that real-world load testing forms part of any Citrix delivery platform.

Why deliver SAP Fiori via Citrix?

Citrix powers a better way to work

Citrix is focused on the future of work providing technologies to power a better way to work by providing organizations with greater choice, improved security and a better experience.

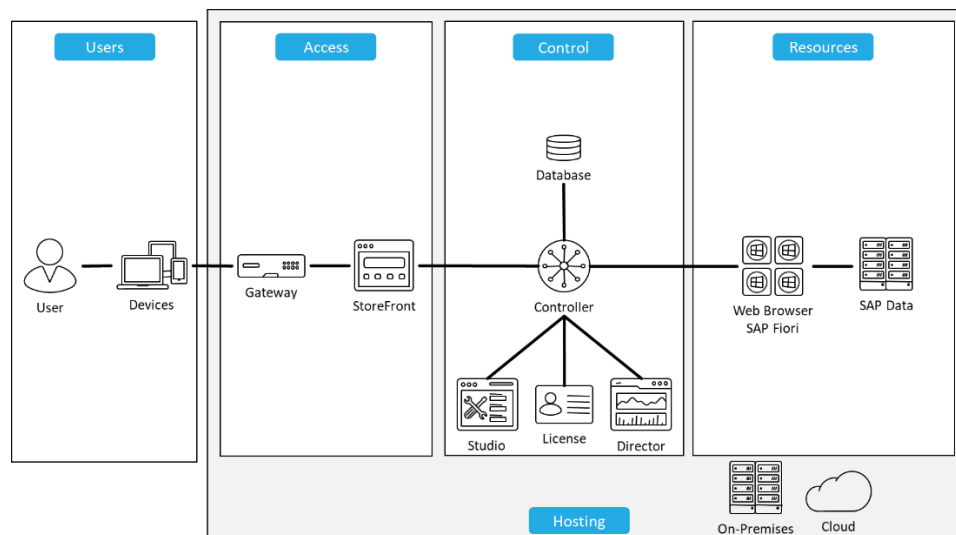
Citrix Virtual Apps & Desktops is the market leading virtualization solution that gives organizations control of virtual desktops, applications, licensing and security whilst providing anywhere access for any device.

Citrix Value

Hosting the web browser for SAP Fiori within your preferred datacenter or public cloud location allows compute to be scaled on-demand.

Attempting to add more compute to 1000s of endpoints would be a costly and very time-consuming project.

Add in the cost of endpoint device encryption, backup, DLP and then the associated helpdesk costs for managing issues on thousands of slightly different endpoints and the value of a Citrix delivery platform becomes clear.



Choice

Citrix provides choice for end users and IT.

Connecting to Citrix Virtual Apps & Desktops simply requires [Citrix Workspace app](#) on the endpoint device. Citrix provides Workspace app for Windows, Mac, Linux, iOS, Chrome and Android as well as an HTML5 app when only a web browser is available.

The wide range of supported platforms allows employees to choose which endpoint device is the most appropriate for them wherever they need to work at any time with a consistent user experience. Smartphone, tablet or laptop when on the move and desktop, laptop or a thin client when at home or in the office.

For organizations that already have thin clients or older operating system devices rolled out, using these to connect to Citrix Virtual Apps & Desktops can mitigate the immediate need to upgrade, and allow the devices to be run for longer in the workplace without impacting the experience.

By separating the execution of the business application from the endpoint, Citrix allows organizations to host the application in whichever resource location makes the most sense. Hosting the web browser executing your SAP Fiori apps closer to the SAP backend can improve performance by avoiding unnecessary latency and minimizing transfer of data down to the endpoints.

The Citrix Virtual Apps & Desktops Service in Citrix Cloud supports multiple resource locations across the globe, as well as multiple leading hypervisors and public cloud platforms for hosting workloads - providing IT with the choice to host their workloads wherever they are needed.

The benefits of Citrix Virtual Apps and Desktops Service provides customers the ability to deploy virtual apps and desktops without having to deploy & maintain various Citrix components, such as Citrix Delivery Controller, Citrix Studio & Director, Citrix Licensing Server and Citrix Databases.

Security

A centrally managed Citrix platform provides numerous security benefits.

SAP applications are where much of your organization's data resides. Limiting the scope of where your data resides greatly improves the ability to enforce security. A limited number of enterprise grade datacenters and/or public cloud locations are easier to physically and logically secure than thousands of business provided and user owned endpoint devices running multiple operating systems spread across the globe.

Policy based security controls are a fundamental benefit of delivering via Citrix Virtual Apps & Desktops. User features such as clipboard redirection (cut, copy & paste) and local drive redirection (file transfer) can be restricted, meaning that even unmanaged endpoint devices that might be malware infected, can be safely used to interact with SAP Fiori applications.

This means that endpoint security investments can be minimized. With no organizational data and apps residing on the endpoint, there is no longer a need to provide the licensing and operational overhead for malware protection, data backup, data leakage prevention or endpoint encryption software.

The web browser is a common attack vector and a security risk that needs to be managed. By delivering a centrally managed web browser for SAP Fiori usage, organizations can be confident of the security posture, proxy controls and other browser configurations like plugins or extensions.

Some of the data being provided by SAP Fiori applications requires additional helper applications e.g. PDF viewers. The same centralized security benefits for the web browser can be extended to all the helper applications. This helps ensure that all users have up-to-date secured versions of applications when accessing

Citrix Security

Limiting where your organization's SAP data resides is fundamental to apply appropriate security controls.

With Citrix you can centrally manage and audit all access to SAP Fiori applications and help ensure the data never leaves your corporate environment.

organizational data. Organizations can also be confident that all the needed helper applications are in place, without having to deploy them to endpoints.

Citrix also provides additional security controls which many organizations add to their Citrix Virtual Apps & Desktops platform.

[Citrix Gateway](#) and Citrix Workspace offer granular and customizable authentication options, to help ensure that all users that access SAP Fiori via Citrix are strongly authenticated.

[Session Recording](#) is a premium feature that allows you to record the on-screen activity of any session (subject to corporate policy and regulatory compliance) and then catalog and archive sessions for retrieval and playback. A common use-case is to monitor USB-redirectation and file transfer to the client for sessions where the user has access to confidential data.

The [Citrix Analytics for Security](#) service in Citrix Cloud continuously assesses the behavior of Citrix Virtual Apps and Desktops users and applies actions to protect sensitive corporate information. The aggregation and correlation of data across networks, virtualized applications and desktops, and content collaboration tools enables the generation of valuable insights and more focused actions to address user security threats.

Experience

Empowering Users

By providing users with a consistent yet secure SAP Fiori Apps experience no matter the device or location, Citrix enables employees to get work done whenever and wherever they need.

A better employee experience means a happier, engaged & productive workforce from anywhere on any device.

Secure and flexible remote access is an inherent part of Citrix Virtual Apps & Desktops and allows employees to work remotely from anywhere with the same great experience they have in the central office. Employees are free to choose the personal device type that suits their needs and they can roam sessions between devices with a consistent and seamless experience whenever needed.

The compute requirements of your SAP Fiori applications will vary over time as new applications are developed and new use cases emerge. For organizations that have older endpoints this could potentially mean upgrading or replacing thousands of PCs and older client devices; whereas using Citrix solutions to access a centralized virtualization platform, allows organizations to easily monitor and scale compute on-demand.

Deploying a browser and a set of helper applications into a 'gold build' and then easily provisioning pools of identical VMs to meet capacity requirements, ensures that every user, no matter when they launch, will always get a consistent experience.

That consistency of image means reduced helpdesk calls for missing software or poorly configured web browsers. This increases productivity of the users and allows the helpdesk to focus on more important issues.

When migrating from SAP R/3 to SAP Fiori, having both applications available side-by-side in Citrix sessions provides flexibility for users and IT. Migrations can be phased based on user groups, without the need to target specific endpoints.

Often the introduction of SAP Fiori apps happens alongside other changes to the end user experience. With Citrix it becomes easy to quickly rollout the latest versions of Microsoft Windows, Microsoft Office or other client application software.

The [Citrix Analytics for Performance](#) service in Citrix Cloud enables you to track, aggregate, and visualize key performance indicators for Citrix Virtual Apps & Desktops. Performance Analytics quantifies the user performance factors and classifies the users based on these factors. It provides actionable insights to troubleshoot failures, screen lags, delayed session logons, and other performance indicators.

Citrix HDX (High Definition Experience) technologies ensure a rich, fast and consistent user experience with the delivery of centralized virtual applications.

[Adaptive Transport](#) improves application interactivity especially on challenging long-haul WAN and internet connections. In addition, [Citrix SD-WAN](#) provides link aggregation, sub-second failover and HDX optimization capabilities that help ensure your users get the best connection possible.

Citrix SD-WAN interoperates with Multi-Stream ICA, so that each ICA stream goes over the most appropriate link at that moment in time. Citrix SD-WAN takes a unique look at the HDX protocol's sub-channels and prioritizes them automatically to ensure quality of service. Citrix SD-WAN's built-in intelligence actively seeks the best link for each ICA data stream.

Considerations for existing Citrix deployments

Assess, Design, Deploy

Plan Implement Monitor Optimize

Existing Citrix sites delivering SAPGUI for R/3 will likely require additional compute to service the same number of users accessing SAP Fiori applications that provide new functionality.

Every customer is unique. Citrix & SAP strongly recommend a consultative approach to monitoring and sizing environments to support users and provide an excellent user experience.

When transitioning your existing Citrix user base to SAP Fiori from older platforms like SAP Business Suite we recommend a methodical consultative approach

to ensure that any performance impact to the existing Citrix site is identified and addressed prior to it affecting users.

SAP Fiori leverages SAPUI5 which is technology based on front-end rendering of data. This approach inevitably shifts some of the compute from the SAP backend into the Fiori application which will be running in the web browser inside the users Citrix session.

The amount of additional compute required will vary dramatically based on the type and usage of the Fiori applications each organization develops and deploys. Citrix and SAP have seen some customers with large scale deployments requiring more computing to host the same number of users when moving to newly developed SAP Fiori applications.

SAP is a platform provider, as such every customer and their specific sizing requirements will be unique. By carefully monitoring resource requirements as applications are tested and rolled out, organizations can accurately predict any gaps in capacity and proactively provision and scale to ensure users continue to receive an excellent user experience.

Optimizing the SAP workload delivered via Citrix remains important and this whitepaper highlights some of the most important areas to consider.

SAP Fiori Developer Guidance

Techniques which reduce the compute requirements for SAP Fiori applications running within a web browser will help increase single server scalability (session density) within a Citrix deployment.

SAP offers a robust set of developer enablement collateral including online training, design guidelines, reference applications and developer communities.

The following SAP wiki page provides several performance & troubleshooting references for developers.

<https://wiki.scn.sap.com/wiki/pages/viewpage.action?pageId=481240403>

Web Browser Configuration Guidance

General web browser optimization techniques help improve the stability and performance of the web browser used within a Citrix session. Some techniques are particularly important for SAP Fiori.

GPU or hardware acceleration can often be enabled within the web browser settings. This should only be enabled if your platform provides GPU hardware; otherwise GPU emulation is used which would consume additional CPU

Cache is one of the most important elements of SAP Fiori performance. When you run a SAP Fiori application, resources are loaded into cache. When you run the application next time, resources will be called from cache and performance will be improved.

Resources in the cache are only reloaded when a new version is available. Rather than simply limiting the time a resource may remain in the browser cache, the system invalidates the cache only when resources are updated on the server.

SAP recommends:

- Do not run the SAP Fiori launchpad in private mode
- Select a sufficient cache size limit
- Do not clear the cache history automatically when the browser closes
- Enable browser caching
- Do not disable the browser cache in the browser developer tools
- Enable HTTP compression.

Citrix has a number of technologies that can assist with implementing these configurations, including [Citrix Workspace Environment Management](#) and [Citrix Profile Management](#). The Citrix Customer Success teams can also help by providing further assistance with workload optimization techniques.

The Future of Work

The ongoing commitment to our partnership

This whitepaper has focused on the delivery of SAP Fiori using Citrix Virtual Apps & Desktops and the associated choice, security and experience benefits.

The Citrix & SAP partnership covers much more.

“Citrix is transforming how people work, reimagining the employee experience. Helping employees stay engaged and productive, whether in the office or working remotely.”

“At SAP, our purpose is to help the world run better and improve people’s lives. We deliver the right technology to help our customers run at their best and achieve their vision.”

To provide the highest level of service to our joint customers, it’s vital to have tight integrations with the entire suite of SAP applications, from SAP Ariba to SAP Sales Cloud. SAP and Citrix are two of the largest workloads deployed by enterprises and are increasingly being hosted in hybrid-cloud and public-cloud deployments. With SAP apps being mission critical for most organizations and Citrix Workspace powering the majority of virtualized SAP workloads in the enterprise, the possibilities present exciting opportunities for our customers, service providers, and partners across the globe.

The intelligent capabilities of Citrix Workspace offer the potential to greatly enhance Citrix integrations with SAP solutions such as Ariba, Concur, and SuccessFactors. Additional microapp integrations with leading SAP apps continue to be developed for customers. That’s great news for developers, solution architects, and organizations of all sizes, providing the opportunity to simplify IT while further enhancing the employee experience.



Enterprise Sales

North America | 800-424-8749

Worldwide | +1 408-790-8000

Locations

Corporate Headquarters | 851 Cypress Creek Road Fort Lauderdale, FL 33309, United States

Silicon Valley | 4988 Great America Parkway Santa Clara, CA 95054, United States

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