The cloud without compromise
SAP HANA Cloud Platform, extension package for SuccessFactors demystified
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As enterprises strive to become more innovative and competitive, they are exploring the pros and cons of cloud computing for essential business operations, such as their human capital management (HCM) systems. As they do so, they are discovering inherent tradeoffs that must be overcome to achieve a strategic balance between new, innovative cloud technologies and their deep investment in existing on-premise solutions.

The benefits of cloud computing are numerous, including the speed of innovation, rapid application deployment, extensive support for mobile devices, and a high degree of scalability. And with no need for a costly infrastructure, companies can greatly reduce their operating expenses and carbon footprint. However, most cloud providers offer a “one-size-fits-all” model that offers various degrees of these benefits, but doesn’t provide the flexibility needed to adapt the cloud application to an organization’s business needs. This considerably hinders companies because their on-premise applications – including their HCM systems – are customized to run core operational processes that are unique and vital to their business.

On-premise solutions, alternatively, enable operational control and flexibility, however, they are tedious, time-consuming, and costly to maintain and update. This is especially true when there is little in-house knowledge regarding the application’s technology or resources to retrofit the customizations with the updated code in new releases, which can result in companies bypassing critical upgrades.

As talent management becomes more of a competitive advantage, companies are looking for the perfect balance between the cloud and their on-premise solutions. They want the speed of innovation as well as the flexibility to adapt their applications to fit their business needs; they want operational control, scalability and agility, as well as a simpler approach to developing, maintaining and updating their applications.

For many companies, the answer is a Platform-as-a-Service (PaaS) solution, such as the SAP HANA Cloud Platform, extension package for SuccessFactors. This white paper will explore the benefits of the PaaS solution and how SAP delivers the perfect balance between the innovation of the cloud and the control of on-premise solutions.
The struggle for a balanced cloud and on-premise solution

Historically, companies have subscribed to a cloud-based pre-built solution from a Software-as-a-Service (SaaS) provider. However, although SaaS applications can provide enterprises with the agility, cost benefits and rapid innovation that come with the cloud, they don’t always provide the flexibility and control needed for application customization. One option is to develop the key functionality in-house as application extensions; however, it would require building a full development infrastructure, which would be costly, highly complex and time-consuming. Beyond the time and cost-inefficiencies of this option, there most likely will be drawbacks in how well these extensions work. Cloud applications are constantly evolving, so even if the extensions were integrated well initially, it would be nearly impossible for in-house developers to keep the extensions up to speed. Asking the SaaS provider to create a bridge between the cloud and on-premise applications is another option, but the process can be lengthy and costly – or not possible if the requested changes are unique to a specific company.

The solution: PaaS – the next generation cloud

The PaaS solution provides extension capabilities for the SaaS applications, and is the link that bridges cloud technologies and on-premise applications. What SaaS brought for applications, PaaS brings to the software development world – it is a set of tools and services designed to make building and deploying SaaS applications quick and efficient.

When combined with SaaS applications, a PaaS environment gives enterprises the ability to create easier-to-maintain software applications and extensions in the cloud. This powerful combination enables companies to preserve their unique, differentiated business processes and experience the benefits of the cloud – all without the need to compromise.
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PaaS from SAP: Cloud without compromise
SAP and SuccessFactors, an SAP company, now offer customers the benefits of a PaaS environment with the SAP HANA® Cloud Platform, extension package for SuccessFactors. The platform allows customers to adapt and integrate SuccessFactors cloud applications to existing business processes so they can maintain their competitive advantage, better engage their workforce, and improve their bottom line.

This cloud without compromise brings customers the speed of innovation, reduced complexity, and low cost-of-ownership that the cloud provides while still providing the benefits of traditional on-premise applications – flexibility, custom control, and process extensions within existing applications. And they can do so without the inherent drawbacks of customizing an on-premise application.

PaaS: Extend the power of SaaS applications
The SAP HANA® Cloud Platform, extension package for SuccessFactors, facilitates the entire extension application lifecycle by providing extensive capabilities for customers, developers, and partners.

For Developers and Partners
- A flexible, scalable, and highly adaptable platform that makes it easier to meet business demand
- Comprehensive, built-in services to quickly create new applications or adapt existing applications into either custom or generic extension applications
- Functionality that allows for the building of feature-rich mobile and social media apps
- Marketplace to publicize and monetize applications
- Access to continuous innovation and latest technologies to expand markets and scope
- Framework that standardizes development workflows for increased developer productivity and better quality
- Ability to align with business needs

For Customers and Business Users
- Functionality that extends the SuccessFactors cloud applications to better fit business needs
- Bundled services that allows for easy and quick deployment of extension applications and the leveraging of the same harmonized end-user experience across the entire SuccessFactors landscape
- Increased solution reach and enhanced solution attractiveness
- Access to partner-built marketplace solutions
- Big Data collection and processing capabilities
- Minimized risk exposure through SAP as trusted gatekeeper to ecosystem
- Increased ability to implement country-specific, regulatory and company-specific features
PaaS powered by SAP: More than a typical cloud offering

A PaaS environment powered by SAP supports globalization, mobility, collaboration, integration, and analytics. These capabilities are embedded as fundamental building blocks in the infrastructure so companies don’t have to add them later on. Some of the core capabilities and attributes include:

- **Big Data analytics.** Large volumes of data can be processed for innovative insights. Whereas in other environments, data is input and decisions are made in near real-time, but with a PaaS solution from SAP, data input, analysis, and decision making can happen all at the same time.

- **Cross-company benchmarking.** With SaaS applications in the SAP PaaS environment, data from a single cloud application that is used by thousands of customers can be cross-pollinated in the cloud, resulting in more advanced analysis and diagnosis of issues and trends.

- **Shared benefits.** When a SaaS application is released within the SAP PaaS environment for a particular customer, every other customer has the potential to benefit. The resulting software can be made available to all customers through a marketplace, thus providing an infrastructure for both hosting and monetizing.

- **Shared services.** SaaS applications within the SAP PaaS environment share the core cloud application, as well as the architecture and other important services, such as identity management, security, mobility, collaboration, and portal functionality. These services are essential for building application extensions and they can save a development team significant time and expense.

- **Open standards.** A next generation PaaS environment should be open and standards based, so customers and partners will not need proprietary tools or languages to build extensions. The SAP PaaS environment supports Java, HTML5, and the Open Data protocol (OData), allowing companies to easily build extensions and leverage the shared services, without the need for special skills or resources.

- **Extended ecosystem.** Open standards also encourage greater sharing between developers and partners—who can contribute not only their technical capability, but also their domain expertise to HCM solutions. This is particularly helpful from a country- and vertical-industry perspective when building the extensions.

**About SAP HANA® Cloud Platform, extension package for SuccessFactors**

The extension package for SuccessFactors delivers the in-memory computing speed of the SAP HANA and includes capabilities from the SuccessFactors Metadata Framework (MDF) and the SAP HANA Cloud Platform for extension development. This combination of technology makes it easier for SuccessFactors customers, partners, and developers to extend cloud or on-premises applications, build entirely new cloud applications, and enable new processes that meet unique business needs.

The extension package for SuccessFactors is designed specifically with ready-to-use functionality for advancing the scope and reach of SuccessFactors applications. Customers can now easily extend the core functionality of SuccessFactors HCM suite and integrate it with other SuccessFactors applications at the data, security and user-interface levels to provide a consistent, beautiful user experience.
The extension package includes:

- Functionality for building a harmonized end-user experience across the standard SuccessFactors modules and new platform extensions
- Administrative capabilities to manage the full lifecycle of the extensions from discovery and trial to authoring and publishing from within SuccessFactors solutions
- Development services for building extensions that are tightly connected and integrated to SuccessFactors applications
- A framework that allows users, such as business analysts, to build application extensions from inside SuccessFactors user interface
- Partners solutions and extension applications that are available contextually inside SuccessFactors to try and buy
- Technology for creating HTML5 rich user interfaces for mobile and social media apps

The SAP HANA Cloud Platform

The foundation of the extension package is the SAP HANA Cloud Platform. It is an open, standards-based PaaS environment that allows customers, developers, and partners to build, customize, deploy, and manage cloud-based applications in SAP data centers around the world.

Built on the SAP HANA database, this platform is the industry's only PaaS environment that comes with the power of in-memory computing. It also has comprehensive application and database services, including built-in functionality for today's always-on, mobile, social, and data-driven world.

Comprehensive multilevel security measures are built into SAP HANA Cloud Platform to meet industry-standard compliance certifications and protect mission-critical business data and assets. This built-in protection extends from maintaining strong physical security at the data center level to safeguarding customer data and enabling full service reliability.
The next generation cloud: SAP HANA® Cloud Platform

With the SAP HANA® Cloud Platform, enterprises can:

- Leverage the game-changing speed of the SAP HANA database in applications
- Rapidly innovate with comprehensive mobile, collaboration, Big Data, and analytic services
- Easily extend business processes to the cloud with native integration to on-premise systems
- Dramatically increase developer productivity with an easy-to-use development and runtime environment
- Drive adoption and maximize revenue potential with the SAP Marketplace

Technology beyond a typical cloud

Applications developed on the SAP HANA Cloud Platform run in a modular and lightweight runtime container (lean Java server) on a virtual machine. They typically consume services that are centrally provided and logically shared across the platform to reduce overhead and maximize performance.

The open standards-based development languages and tools in this platform don’t require propriety knowledge. Developers can build extensions using languages they are comfortable with and that compile to Java such as JRuby, Clojure, Scala, Groovy and node.js. Additionally, the open nature of the platform allows developers to work with Spring Roo and other third-party frameworks.

SAP HANA Cloud Platform facilitates secure integration with on-premise systems running software from SAP and other vendors. Using SAP HANA Cloud Platform services, such as the connectivity service, applications can establish secure point-to-point connections to SAP HANA, SAP NetWeaver® Gateway technology, and other on-premise middleware solutions, enabling integration scenarios among the applications in the Enterprise ecosystem. Applications built with SAP HANA Cloud Platform support representation state transfer (REST) services and Web services interfaces to further enable integration with other cloud-based or on-premise applications.
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Customers and business partners alike are quickly adapting the SAP HANA® Cloud Platform, extension package for SuccessFactors, to meet ongoing HCM challenges. Legislative compliance demands greater transparency of enterprise HCM and financial data. Accenture Software, an arm of the global management consulting, technology services, and outsourcing company, has used the extension package to provide a new HR auditing and compliance service for SuccessFactors Employee Central customers.

The Accenture HR Audit and Compliance Tool helps HR and IT departments enhance their HR systems by enabling them to maintain personnel data at a consistently high quality across cloud and on-premise deployments. Using proactive reporting capabilities, the solution automatically checks data in SuccessFactors Employee Central or SAP® ERP Human Capital Management (SAP ERP HCM) against predefined and customized criteria and rules. It simplifies exception checking, reduces the effort and thereby the cost of managing quality assurance. This means organizations can gain quick and agile operational compliance, and audit reporting that is designed to identify inconsistencies in vital HR data before they create significant issues for the business. And it helps both HR and IT departments manage personnel demands while maintaining consistently high data quality, helping to lower operating costs. Ultimately, it helps organizations achieve high performance.

Offered as a service, Accenture HR Audit and Compliance Tool complements and extends the capabilities of SuccessFactors Employee Central and SAP ERP HCM. It seamlessly integrates with these applications using the SAP Cloud Connector and it integrates at various levels such as data, home screen, theming, and navigation.

Accenture HR Audit and Compliance as-a-service is designed to help manage the HR compliance needs of companies operating across a range of industry verticals. It uses the strong security mechanisms and compliance measures of the SAP HANA Cloud Platform to deliver a robust application extension that is hosted in the SAP data center. The extension is available via the SAP Store.

The SuccessFactors Metadata Framework
The Metadata Framework (MDF) is built into SuccessFactors solutions and offered as a key part of the SAP HANA® Cloud Platform, extension package for SuccessFactors. This framework is designed to make it easier for customers to quickly create application extensions without any coding or customization of the base application objects.

MDF advances the art of extending cloud applications, as every part of the SuccessFactors HCM suite is aware of the extensibility layer and reacts to the data in that layer. With MDF there is just one generic object that is completely defined in the metadata, so no part of any application is hard coded.
For instance, the metadata contains the logic, behavior, fields, and UI common to all SuccessFactors applications. This makes building customized extensions easier as existing application functions, such as permissions, workflows, APIs and analytics, are reused. There is no replication or data duplication issue as the extensions are part of the SuccessFactors applications. This also helps maintain a consistent look-and-feel across all SuccessFactors solutions. Users can maintain control of their extensions and developers are free to focus on more challenging innovations.

Because no new code is required, SuccessFactors can deliver features and functions much faster. And customers can add significant additions, extensions, and configure the SuccessFactors HCM suite without coding or customization.

There is also a clear separation of ownership of the metadata, with one set solely for SuccessFactors, and one for customers. The SuccessFactors metadata can never be overwritten by a customer, and conversely, the customer metadata can be added to or modified only by customers and never be overwritten by SuccessFactors. This protects both the core SuccessFactors functionality, as well as the customer’s customizations, particularly during upgrades.

Application flexibility and agility

Offering flexibility without risk, MDF allows business users to define objects, fields, behaviors, business logic, and the look and feel of the application through a Web-based user interface.

Using MDF, customers can develop custom objects, automatically expose them to the SAP HANA Cloud Platform, and enable them for social media and mobile apps. This allows customers to quickly define the data layer inside the SuccessFactors HCM suite. They can then access that data layer and build on top of it by defining complex application logic and creating a feature-rich user interface in the SAP HANA Cloud Platform.

With MDF as part of the extension package for SuccessFactors, companies can create the precise functionality needed to meet their unique business requirements. And they can easily maintain and update them as needed throughout the application lifecycle. Companies can also integrate changes into their existing business processes, since every MDF object comes ready with an OData API that can both read and write data.
Discovery Consulting: Building mobile apps efficiently and quickly

Another company that has taken advantage of the SAP HANA® Cloud Platform, extension package for SuccessFactors is Discovery Consulting, an SAP and SuccessFactors partner based in Australia. The company developed a SuccessFactors timesheet mobile app as a front-end to SuccessFactors applications using the functionality of the extension package for SuccessFactors.

The company used the security functionality provided by the SAP HANA Cloud Platform and the data in SuccessFactors to provide a practical tool for people to log their time into SuccessFactors applications. Employees can now view and update their own information securely from their mobile devices as they easily and securely record their time on client projects.

Using MDF, the consulting organization developed simple SuccessFactors workflows with time sheet data and views that were a natural extension of SuccessFactors Employee Central – all without the need for "real development."

The company used capabilities it developed for Android and iOS devices to ensure highly secure connections to the SAP HANA Cloud Platform. The application ensures secure communication with the SAP HANA Cloud Platform by pairing the mobile device with the extension using a QR code, which transfers a unique token to the device and provides a simple self-service device management tool for administrators and employees.

By taking advantage of the extensive security work in the SAP HANA Cloud Platform, the app only allows access by authorized employees. And because the mobile app is running in the SAP cloud, the company’s concerns about integration issues were minimized.
SAP IT

SAP is well known for delivering best-practice HCM solutions across 25 industries, both on premise and in the cloud. Many customers have adopted these solutions and turned them into their own as they customize, implement, and rollout the solutions. Oftentimes, customers develop significant innovations as they customize their HCM solutions to their own unique business requirements.

Like its customers, SAP uses solutions such as the SAP Business Suite software and SuccessFactors applications to meet business objectives. And, like its customers, the SAP IT department customized its applications with extensions running on the SAP HANA Cloud Platform. Here are a few examples of how SAP is using the SAP HANA Cloud Platform to enable its HCM organization and empower employees:

- The Social MeetUp application by SAP is known internally as “Networking Lunch.” The software, using HR data from SuccessFactors applications, provides employees with an opportunity to meet new people in the company with similar interests. Like other large companies, SAP has natural silos within its different organizations and departments. People that work together tend to socialize together, minimizing the intermingling with other employees in the company. SAP introduced Social MeetUp so employees throughout the company can connect with others for lunch based on their shared interests. It has become one of the most frequently used self-service applications in both the desktop and mobile versions.

- The SAP Labs offices in Bulgaria and Israel are using a rewards application to help managers engage with and motivate their employees. Managers can grant incentives and rewards to employees for their performance, giving the employees access to local offers and special employee discounts in the rewards application.

- SAP IT built a recruiting compliance extension that allows the organization to fulfill German legal requirements regarding the hiring of new employees. When a person is brought on board at SAP in Germany, the works council (a committee of employees within the company) must be informed. The council reviews the profile of the accepted applicant, as well as those that did not get hired. The application extension provides critical information to council members, and addresses the calculation of timelines for approval and rejection of prospective employees.
Conclusion

In today’s competitive business environment, companies are exploring how to obtain the benefits of cloud technologies – such as rapid innovation and application deployment, scalability, and reduced operating expenses – while preserving the control and flexibility of their on-premise applications. They want the unique capabilities of the cloud to complement their existing systems and enhance the performance of their business processes. Different approaches, such as SaaS, provide many of the capabilities, but are missing the ability to facilitate extensions in existing applications.

A PaaS solution, such as the SAP HANA Cloud Platform, extension package for SuccessFactors provides the missing link. The extension package for SuccessFactors is helping companies around the world find the right balance between the cloud and the on-premise world. It is helping them drive innovation while managing their on-premise investments. And with this next generation foundation, from which they continue to strengthen their business operations, they can reinforce their competitive edge, meet critical business objectives, and achieve significant results.

For more information about PaaS and the SAP HANA Cloud Platform, extension package for SuccessFactors, visit Introducing SAP HANA Cloud Platform.

SuccessFactors, an SAP Company

SuccessFactors is the leading provider of cloud-based HCM software, which delivers business results through solutions that are complete, beautiful, and flexible enough to start anywhere and go everywhere. SuccessFactors’ customers represent organizations of all sizes across a wide range of industries. With more than 20 million subscribers globally, we strive to delight our customers by delivering innovative solutions, content and analytics, process expertise, and best practices insights from across our broad and diverse customer base. SuccessFactors solutions are supported by a global partner ecosystem and the experience and commitment of SAP.