

INTEGRATING IFS AND SAP:
BEYOND PLUG-AND-PLAY

WHITE
PAPER

Integrating IFS and SAP: How To Maximize the Benefits

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Enterprise software integrations are often considered a necessary evil. Certainly usability, enterprise agility and cost of ownership of enterprise software can all be adversely affected to some extent when disparate enterprise software packages are linked together.

Sometimes, however, the benefits of integration outweigh the drawbacks. We have found that some IFS customers opt to integrate IFS Applications with solutions from SAP under three unique sets of circumstances:

- IFS Applications enterprise asset management (EAM) functionality is integrated with SAP as a best-in-breed solution for maintenance, logistics or other functionality.
- IFS Applications is implemented as the overall enterprise application at mid-market-sized locations of large corporations that use SAP at its headquarters location.
- IFS Applications is implemented within a company that has an older implementation of SAP that they do not want to upgrade but are not ready to entirely abandon.

In this whitepaper, we will explore what is involved with integrating IFS Applications and SAP -- at a level suitable for senior managers preparing to make decisions about technology purchases and integration. We will also offer up practical advice for how to prepare for and plan such an integration project, and how to get the most out of your IFS-SAP integration.

SOA and integration

IFS has long been committed to helping customers manage multi-platform environments, and to this end has always supported multiple integration technologies and multiple middleware environments. In recent years, the integration process itself has become easier as IFS Applications, followed by other vendors like SAP, has moved towards a service-oriented architecture (SOA) that allows the use of web services, business process execution language (BPEL) and other integration tools. IFS has also developed a tool called IFS Financial Connector, which is designed as a “plug and play” tool to tie IFS Applications in with the financial management functions of other enterprise applications, including SAP.

One thing that definitely facilitates integration is a common technology direction between the two software vendors involved. And today, IFS and SAP look at integration in very similar ways. There are, of course, differences in the underlying technology. Historically, SAP has made extensive use of very proprietary technology – integrations involved BAPI and IDOCs, remote procedure calls and various other technologies that are specific to SAP. In its early days, IFS allowed for integration using methodology similar to electronic data interchange (EDI). But by the start of the 21st Century, IFS had begun providing for integration using Web services, and by 2003, IFS allowed integration with the full functional stack of IFS Applications using Web services.

Subsequently, SAP has taken a similar approach with Netweaver Exchange Infrastructure (XI), abandoning harder, remote function calls in favor of Web services designed to open up the monolithic application through web services that can serve as integration points at the middleware level.

Also – IFS and SAP are using a lot of the same technologies and have a similar view of the platforms their products run on. Both products support multiple platforms, operating systems, and integration solutions, and both employ similar document centric representations of the data exchanged. Both IFS Applications and SAP ERP are built on Java Enterprise Edition standards. IFS' middle tier is Java EE based – as is Netweaver. These similarities are key to making integrations come together smoothly because the basic compatibility of the underlying technology is probably the single most relevant factor in facilitating integrations.

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There are of course differences between IFS Applications and products offered by SAP. IFS Applications is based on a very granularly-constructed, component-based SOA. This allows pre-packaged, standard web services to easily be complemented through creation of additional web services for literally any part of the application, depending on customer needs. Meanwhile, SAP provides integration at the middleware level through a specially-created library of Web services. While this difference means that some nonstandard and unique integrations are probably easier to facilitate with IFS Applications than with SAP, these underlying system details are not relevant in the integration itself. The beauty of SOA, after all, is that web services offer up information in a well-defined fashion, hiding underlying details

from the system that is consuming the information provided by the web service while hiding the underlying system details. In fact, because IFS uses web services extensively to integrate functionality throughout the application suite, IFS Applications treats a web service connection to SAP just like a web service connection to another component within IFS Applications!

Complicating factors

While SOA has greatly simplified enterprise integration – including integrations between IFS Applications and SAP – it is by no means a perfect world. Even a “plug and play” tool like IFS Financial Connector can be thwarted if it is asked to integrate with older SAP technology. In several instances, IFS customers have integrated IFS Applications with instances of SAP that had been in place for a few years, and these instances dated back to the days before SAP opened up its software monolith through Netweaver. In these instances, it becomes necessary to revert to older-school methods of integration like sending flat files or connecting directly with an iDOC. Therefore, in determining the project scope for an IFS-SAP integration, it is important to consider the vintage of the SAP implementation in question. An SAP system that is only five years old might not have the technology in place to handle integrations in the streamlined, modern fashion.

Another factor that can prevent the use of “plug and play” integration tools like IFS Financial Connector is depth and breadth of the integration. This is one area that can present serious problems when integrating with SAP some best-of-breed solutions that are not based on a granular, component-based SOA. After all, a best-of-breed solution that promotes “plug and play” integration with SAP might not offer out-of-the-box support for a more esoteric or unanticipated type of functional integration. While IFS Financial Connector is designed to allow for most commonly-required integration points with financials functionality in SAP, it is certainly true that in some cases a customer may want to integrate with SAP functions apart from finance. In cases like these, new web services can be created using the very granular, component-based nature of IFS Applications’ SOA. This is not a difficult task in IFS Applications because right out of the box all IFS functionality can be easily exposed as a web service, but this does add one more step to the integration process. However, in these scenarios where the specific integration points diverge from pre-packaged integration technology, integrating a more rigid best-of-breed technology will be much more difficult and would almost certainly entail an expensive, time-consuming development project than will be the case with IFS Applications.

Planning the process

When it comes to technology, IFS is designed to be easily integrated with SAP. Even though integration technology has improved, eliminating a lot of the hands-on work and cost, forethought, planning and a thorough analysis of the business processes affected by the integration are essential to assure success.

So while IFS Applications’ technology platform is designed to integrate in a “plug and play” fashion with SAP NetWeaver, it is important to first of all determine what processes are to be integrated and what information should be passed

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back and forth between the two systems. If IFS Applications is to be integrated primarily with SAP financials, IFS Financial Connector can be employed, given that the version of SAP is not too old to support Web services. But even in this situation, integrating IFS Applications with SAP is relatively easy because in IFS Applications, all financial data throughout its suite of functionality passes through a single junction. This means that regardless of whether the integration involves financial data related to maintenance, manufacturing, purchasing or other functionality, it is easy to connect IFS Applications to an external financial system like SAP.

With much of the technical work of integration eliminated, integration will still involve some work in the area of business process engineering. In planning to integrate IFS with SAP, it will be important to decide a number of things early on:

- On a very precise level, what processes are to be integrated?
- Which system will be responsible for what part of each process, and at what point will data and processes be handed off between the two?
- How will information flow between the two systems? In many cases there might be existing out-of-the-box services that can be used to accomplish the desired work flow, but in other cases it might be necessary to develop additional services or resort to other, older integration methods.
- What is the common data that each system needs to assume is available locally? How will that information get into each system? It might be necessary for instance to assign one system as the master for the chart of accounts, and another the master for the maintenance parts database. But even in situations when data will not be acted on by IFS, for instance, that data may need to remain visible to IFS Applications. That means there is often a need for some type of real-time replication or some form of scheduled update between the systems. IFS Applications offers two key capabilities to handle master data. IFS's technology platform includes IFS Replication—a solution to continuously replicate data in near real time. IFS Replication handles the situation where IFS Applications is the master continuously transmitting data updates to other systems, as well as when IFS is the slave or receiver of data updates. It is even possible for IFS Applications to act as master and slave at the same time, for example being the master chart of accounts for one company whilst simultaneously receiving updates to the chart of accounts for another company. Where IFS Replication handles each update to data individually in a continuous replication stream, IFS Data Migration is the tool used to bulk or batch load large data sets. Depending on which strategy for master data replication is employed, one or both of these tools may be used.

- Is this an integration that will be in place and in a static condition for a number of years, or are the integrated processes likely to change? If this is to be a stable, long-standing integration, it will be best to use data technologies built into the two applications to set up that integration. However, if it is likely that processes will be changed or reconfigured from time to time, it will be beneficial to consider using a more flexible integration platform like Oracle BPEL Process Manager, Microsoft BizTalk or a similar tool. This will allow you to change process definitions to reconfigure the integration as needed.
- How can the goals of the integration be achieved with the smallest number of integration points? The smaller number of integration points, the more existing functionality of both enterprise applications will be preserved.

Good fences make good neighbors

As in life, in integrations, good fences make good neighbors. This is probably the single most critical concept in planning your IFS-SAP integration. In planning a quality integration, identifying a well-defined point at which information, processes and responsibilities are passed between the two systems will go a long way towards assuring success.

In managing transactions in an IFS and SAP integration, there is usually a logical delineating point where it makes sense to hand the process off from one system to the next. A work order, for instance, is usually only sent from IFS into SAP when that work order is released. The same concept would apply with a purchase requisition. When purchase requisition is released, the purchasing department receives that data and begins the purchasing process. After a work order or purchase requisition is released and passed from IFS to SAP, people working in IFS should not be allowed to continue amending that requisition.

In other processes, there is more flexibility as to when data passes from one system to the next. In time reporting for instance, the process can be integrated as soon as someone reports an hour on the work order or when the time reports are authorized. Regardless of where you decide to place that integration point, you want a very fixed point that defines who is responsible for the data -- a clear integration point that identifies when something should happen.

But the need to identify a well-defined boundary extends beyond the enterprise applications themselves. The groups of people using the two systems should also be separate and distinct. The best results come from structuring integrated processes so that one team of employees or department works entirely in IFS while another team or department works entirely in SAP. This will minimize some of the usability issues that can result from integrating two enterprise applications.

Conclusion

Integrating IFS Applications with products from SAP is easy and cost effective, particularly when using “plug and play” tools like IFS Financial Connector. But even when integration needs outstrip the scope of IFS Financial Connector or the SAP functionality in question is too old to support Web services, IFS Applications is structured to allow for a very cost-effective integration – much easier than would be the case with other applications that claim “plug and play” integration with SAP.

As a result of IFS Applications’ granular SOA and the availability of web services, much of the real work involved in integrating these two systems consists of a thorough analysis of business processes involved so that the resulting integration meets the business needs of the organization.

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About IFS

IFS, the global enterprise applications company, provides solutions that enable organizations to respond quickly to market changes, allowing resources to be used in a more agile way to achieve better business performance and competitive advantage.

IFS was founded in 1983 and now has 2,600 employees worldwide. IFS has pioneered component-based enterprise resources planning (ERP) software with IFS Applications™, now in its seventh generation. IFS' component architecture provides solutions that are easier to implement, run, and upgrade. IFS Applications is available in 54 countries, in 20 languages.

IFS Applications provides extended ERP functionality, including supply chain management (SCM); enterprise asset management (EAM); maintenance, repair, and overhaul (MRO); product lifecycle management (PLM); customer relationship management (CRM); and corporate performance management (CPM) capabilities.

IFS has over 500,000 users across seven key vertical sectors: aerospace & defense, automotive, high-tech, industrial manufacturing, process industries, construction & facilities management, and utilities & telecom. IFS also provides a cross-industry solution for retail & wholesale distribution.

More details can be found at www.ifsworld.com. For further information e-mail info@IFSWORLD.com

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