Integration Appliances and On-Demand Software

August 2006

Introduction

Over the past forty years, IT has seen a slow, but steady evolution from custom systems toward standardization. Servers, networks, tools and operating systems have largely made the change. Applications are now transitioning from individual installations to on-demand services. On-demand application suites are rapidly capturing market share and growing in sophistication. They offer ease of use, simplicity, rapid provisioning and low cost. In order to provide customers with seamless automated systems, however, the new must be integrated with the old.

Legacy systems are at once the most troublesome and the most valuable of assets: On the one hand, they often represent man-centuries of business knowledge and operational tuning. On the other hand, their value to the business makes them resistant to change, and their use of bygone technologies makes them difficult to integrate.

One thing is certain about legacy systems. They will not be moving out of the operations center and on to the Internet anytime soon. This begs the question as to how the enormous quantity of valuable data and business process information within them can be smoothly integrated with newer, more cost-effective on-demand approaches.

Benefits of On-Demand Applications

The on-demand wave is being driven by an attractive array of advantages for the customer. Moving to it can eliminate much of the pain of “owned and operated” applications.

1. Rapid provisioning – On-demand computing is utility computing. Adding or removing users is as simple as setting up a new account and paying the monthly fees.

2. Quick access to the latest feature sets – Because your application infrastructure is maintained at the provider’s site, compatibility issues (does this database work with the application, do I have the correct version of the web server, is the OS patch level correct) are minimized for the user. Also, the user has no need to modify the core application, relying instead on configuration interfaces. This means that upgrades are painless, swift and do not require your IT resources to be involved. As long as the interfaces to which you connect are maintained, everything continues to operate, and new features simply appear.

3. Minimal IT overhead – This is the most obvious benefit of on-demand software, but may not be as economically important as you might think. Although on-demand applications may be simple within themselves, their integration with the rest of the company’s process may be more complex and reduce expected savings.

Limits of On-Demand

Today, most of the successful implementations of on-demand software have been for small or medium-sized companies. One need only to divide the number of total users for some popular package by the total number of customers to see that the average number of users per implementation is significantly less than one hundred.

For very small organizations where most or all data can reside in a single on-demand suite, complexity reduction is a very attractive benefit. As companies grow though, systems may be added in-house and other on-demand packages and services may be employed. At a fairly early stage, growth in application complexity is overwhelmed by growth in integration complexity. To date, this has been the Achilles heel of on-demand software.

As a company grows, the number of systems it uses will increase. Whether they are implemented as on-demand, in-house, service bureau, packaged or custom-built applications, they must be connected if the company's business process is to be automated. Integration is likely to be the key challenge facing on-demand software as it attempts to grow into the mainstream.

EAI: A Poor Fit for On-Demand

EAI suites can perform very sophisticated integration tasks, but conceptually, they share much with custom-built applications. EAI products are server-centric: They take possession of your data and business processes, operate on them and return results. They make the assumption that your systems are close by and always available.

This works well when all the systems to be integrated are under your control and in your network operating center, but it is difficult to see how tight integration and distributed business process can be made to work smoothly over a set of distributed applications. In the new world, some are local, and some reside with one or more on-demand provider. One thing is certain: If it can be made to work at all, it won't be simple.

Another key weakness of the EAI approach is its reliance on adapters at the endpoints. The adapter strategy evolved in the early 90's, when there was little standardization of application connectivity. Although it has largely outlived its usefulness, every conventional EAI suite on the market today requires adapters at the endpoints. This is extremely problematic for the integration of on-demand applications, as not all the endpoints are in one place. This can blur the distinction between the on-demand application, and the user's application infrastructure. The maintenance and governance difficulties that result dramatically reduce the value of hosted applications.

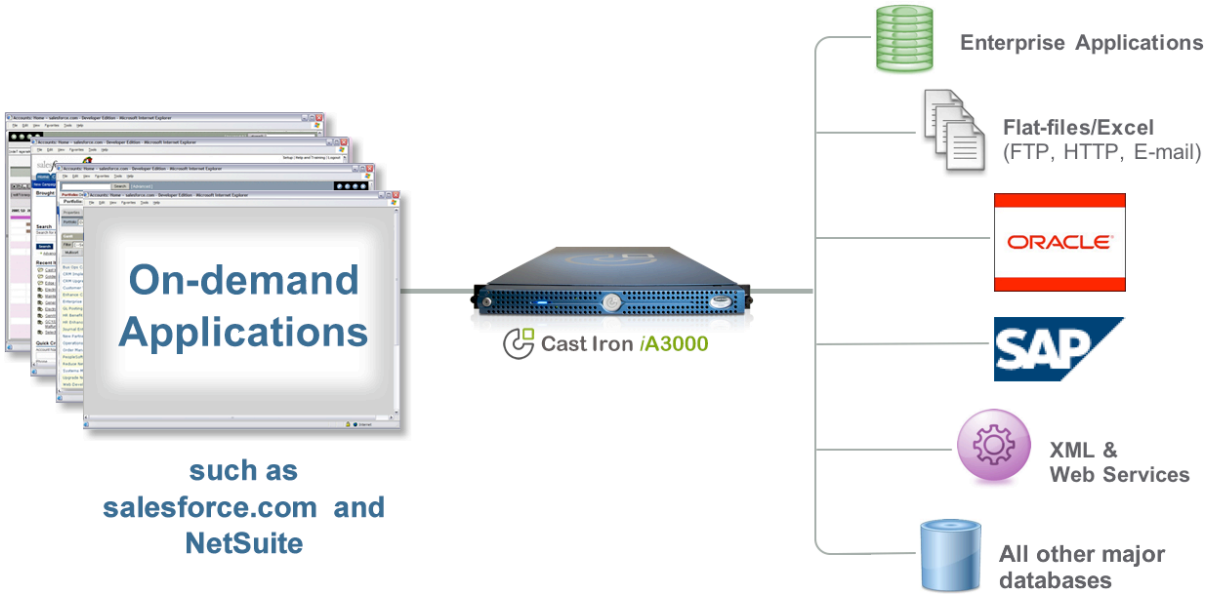
Integration Appliances: A Perfect Fit for On-Demand

As pointed out in the introduction, the history of IT systems is one of increasing standardization and modularity. This same approach provides a way out of the integration dilemma outlined above. The key to integrating on-demand with legacy, or multiple on-demand systems in a peer-to-peer topology, is to rethink the integration problem. Integration appliances take a new and revolutionary approach to the integration problem. They maintain the benefits of on-demand applications, while allowing the integration required by larger organizations to take place.

Integration Appliances: Not EAI in a Can

Integration appliances, like the Cast Iron *i*A3000™, are a second-generation integration tool. As the name suggests, it is designed to connect applications and route data between them. In order to do this, the integration appliance connects, transforms data and implements data processing

rules. It can do this either transactionally or reliably, depending on application requirements. In mission-critical situations, integration appliances can be combined in High Availability pairs. A complete reporting and management console is available via a web interface.



Unlike EAI solutions, the integration appliance does not see itself as the hub of your business process, and makes no locality assumptions. It is designed to connect one or more applications anywhere on the network. It makes no distinction between local and remote applications.

In order to eliminate the distinction between local and remote applications, the integration appliance connects via native application protocols. This means that no adapters are required.

The integration appliance, like an on-demand application, is completely standardized. There is no code to be written, only configurations to be generated via a graphical user interface. The simplicity and ease of use of on-demand applications is thus matched by the simplicity and ease of use of the integration appliance. Installations are typically completed in hours or days, rather than weeks or months.

Benefits of Integration Appliances and On-Demand Applications

Because the integration appliance is a complete, sealed unit with nothing else for the user to add or buy, it is a perfect way to integrate on-demand applications. In fact, the advantages of integration appliances match those of on-demand application suites:

1. Rapid provisioning – Integration appliances require configuration, not coding. Provisioning time is typically hours or days, not weeks or months. No special coding skills are required. Additionally, users can share a bank of appliances to do multiple integrations. This allows pre-staging of integration appliances for extremely rapid provisioning.

2. Quick access to the latest feature sets – The integration appliance is a fully integrated, tightly coupled, blend of hardware and software, not a set of software components.

Upgrades are applied to the entire appliance. There are no compatibility headaches, worries about what order to apply the patches, etc., for the user.

3. Minimal IT overhead – All-important configuration and operating information is available via the web console. No special expertise is required to monitor or manage an appliance.

Even more important, the integration appliance connects equally well to local and remote applications. This means that the appliance need not be located near the application. In addition, integration appliances are remotely configurable. Many customers use a single monitoring and management site to remotely monitor, maintain and upgrade integration appliances located around the world.

The Evolution of On-Demand Computing

As on-demand computing becomes more popular, the scope and number of implementations will grow rapidly. No one provider will have all the necessary functionality for a medium or large corporation any time soon, however. The on-demand revolution will result in a true peer-to-peer computing environment. Server-centric integration solutions with adapters at the endpoints cannot support this kind of distributed environment without massive customization.

The natural complement of on-demand applications is on-demand integration. Transformation, routing and business rules will need to be implemented in the fabric of these distributed systems, not at the endpoints. This requires a complete rethinking of integration practices as we know them today.

Conclusion

On-demand computing offers tremendous benefits. Ease of provisioning, low cost and simplicity are driving the on-demand wave. As on-demand takes off, connections between on-demand applications, and between on-demand applications and legacy applications, will become more numerous and complex.

To realize the full benefit of the on-demand revolution, integration practice must be dramatically simplified. Users require a solution that can be rapidly provisioned, that can run anywhere, connect applications anywhere, and be managed from anywhere. No special skills or IT infrastructure should be required. It must be configurable. Coding is out. It must be able to connect to any system remotely, without requiring adapters or complex endpoint configuration.

Fortunately, integration appliances provide these benefits today. They provide on-demand integration to support any combination of on-demand and legacy applications. By taking advantage of the simplicity of integration appliances, users can scale the benefits of on-demand applications across their organizations, regardless of where they may be in the world.

About the Author

Fred Meyer is a strategic advisor to Cast Iron Systems and a recognized expert in the integration industry. Before coming to Cast Iron, Fred spent seven years at TIBCO building it from an early concept to the leading Enterprise Application Integration (EAI) vendor. Fred's most recent role was Chief Strategy Officer and prior to that, he served as TIBCO's Chief Marketing Officer for three years pioneering the concept of Service-Oriented Architectures. Fred also managed the Advanced Technology team which prototyped market leading products including the TIBCO

Message Broker and TIBCO's first Business Process Management (BPM) tool, TIB/Integration Manager. Prior to joining TIBCO, Fred spent ten years developing real time manufacturing management solutions for clients in the automotive, process and pharmaceutical industries. Fred has a BS degree in Chemical Engineering from the University of Minnesota, Minneapolis.

Contact Us

To learn more about the Cast Iron Integration Appliances please call us at 650.230.0658 or visit us online at www.castironsys.com