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www.nwc.com | 7.8.2004

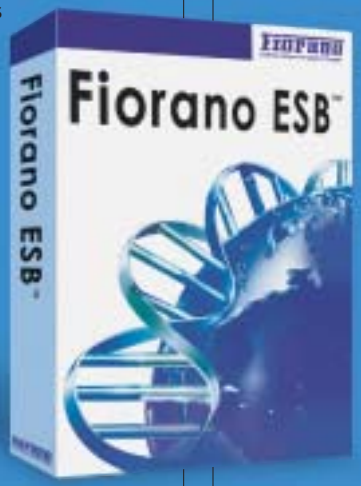
KEEPING INTEGRATION SIMPLE

We put four midtier EAI products to work in our NWC Inc. labs, seeking a pain-free application work zone. Fiorano delivered without breaking a sweat

BY DON MACVITTIE

Enterprise application integration. Its mere mention strikes fear into the hearts of even veteran IT pros, as they recall long nights agonizing over massive, complex systems. Business analysts, too, cringe when they remember promised savings devoured by project-cost overruns.

But EAI is really nothing to be afraid of—that is, if you make it work for you.



EAI can range from complex integration of disparate systems to simple data transfers and updates between two databases. Last year, we reviewed high-end EAI suites. This time around, we sought EAI products suitable for departments and small and midsize businesses. These we defined as simple, database-driven integration tools that deliver results without weeks of training and months of consulting support. But they couldn't be lightweight: Entries had to offer GUI tools for creating transactions and transformations; support for XML, multiple operating systems and databases; robust management interfaces; and support for multiple sources and/or destinations for updates. We asked for a bus, hub-and-spoke or equivalent architecture, and rated cost at 20 percent of each product's score based on our test scenario.

We not only found products that provide these features, we were also pleasantly surprised by the level of ease of use some supplied. If you need straightforward application integration—to connect PeopleSoft or SAP applications, for instance, to other systems, or want to integrate systems running on SQL Server with those on Oracle—these products will fill the bill handily. If your goal is enterprise integration, you may need one of the higher-end systems. But read on, because some of this crop of products could have held their own in that review as well.

We asked Cast Iron Systems, Creative Science, Fiorano Software, Intalio, Iona, KnowNow, Microsoft, Orion, Sonic

Software and WDI to send their midtier EAI products to our NWC Inc. business applications lab in Green Bay, Wis. We received entries from Cast Iron, Fiorano, Orion and WDI. KnowNow's product didn't meet our requirements because it's more of a transaction aggregator than an EAI tool. Microsoft's BizTalk server, aimed at the high end, does not have a drag-and-drop integration GUI. Creative Science, Intalio, Iona and Sonic Software declined to participate.

After installing the products—Cast Iron Application Router, Fiorano Business Integration Suite, Orion's Rhapsody Integration Engine and WDI's Business Integration Engine (BIE)—in our test bed (see "How We Tested," we found them as easy to use as we had hoped, with some notable exceptions. Although our focus was on low-investment projects, some products are viable for a large enterprise.

Complexity Concealed

We use the term *integration*, whereas some vendors use *orchestration* and others use *routes*. They all have the same meaning: the transfer or update of data from a source system to a destination system.

All the products we tested concealed some of EAI's complexity. But there are differences in how each product insulates you from the fray. Fiorano and Cast Iron provide preconfigured "drivers" to connect with many different systems, and both also offer tools to connect with data sources they don't support. Rhapsody requires the creation of an XML file to define JDBC data sources, and BIE provides a browser-based wizard to create connections to JDBC-compliant data sources.

Each product also provides a different amount of management information. And though all let us look at the logs descriping each integration production, each vendor defines *production* differently. For our purposes, we expected the basic unit of work—a single integration—to be viewable.

EAI Pricing

We based our price score on our testing environment, wherein one integration developer and one systems manager have access to a dual-processor EAI server, and Oracle, SQL Server, DB2 and MySQL clients are required. As always, pricing schemes varied: Cast Iron Systems charges a flat fee per application router; Orion will site-license; WDI is open-source, and Fiorano is priced using the "what you use" EAI cost model.

Based on our scenario, Fiorano cost $70,000, Orion's Rhapsody Integration Engine cost $85,000 (site license), and Cast Iron cost $75,000. Cast Iron also offers a smaller version, the Application Router 250, for $15,000. For WDI's open-source BIE, there's no charge for downloading the software. WDI distributes the source code under a GNU General Public License and provides documentation, technical support and professional services on a fee basis. The company also offers exclusive-use commercial licenses.

Having put the systems through their paces, we gave our Editor's Choice award to Fiorano Business Integration Suite. It doesn't work without SQL, but Fiorano has stripped all other programming elements from the average EAI project. Using its drag-and-drop interface, we created, deployed and managed our applications without the coding expertise normally required to get the EAI job done. Add in Fiorano's expandability and support for most major queuing systems and all databases with JDBC-compliant drivers, and it finishes a razor-thin 0.3 points ahead of its nearest competitor, Cast Iron Systems, which we also liked immensely. Shops with more chops than cash will want to check out WDI's open-source offering. And if you're concerned about complying with HIPAA (Health Insurance Portability and Accountability Act), Orion's Rhapsody might strike the right chord.

Fiorano Business Integration Suite 3.5 **Fiorano is the next logical step for EAI.** Experienced EAI users will find it intuitive, and EAI newbies will find the tools they need to do simple database and application integrations. Fiorano has relatively complex pricing, based on which portions of the product are used and how many CPUs (core product) or instances (some adapters), but after pricing it out for our test scenario, we found it competitive with the other commercial offerings.

Fiorano's database support is matched only by that of Cast Iron. The suite comes with Oracle, Sybase, UDB and SQL Server preconfigured and requires only

Executive Summary

EAI

Pay no attention to the complexity behind the application: The four EAI products we tested in our NWC Inc. business applications lab, in Green Bay, Wis., were tasked with making what's difficult—enterprise application integration—simple, using graphical tools and a comprehensive management interface, while still supplying a range of bells and whistles, including support for XML and multiple sources and/or destinations.

We tested commercial EAI software from Fiorano Software and Orion; an appliance from Cast Iron Systems; and an open-source product from WDI. You can't go wrong with any of these products, but Fiorano's Business Integration Suite took our Editor's Choice award because it outdid its rivals in meeting our key criterion—simplicity without being light on features.

that you supply a host name, instance name, user name and password. Support for other databases comes from the "New Database Adapter" tool, which let us provide the JDBC class name and URL for any database for which we had JDBC drivers. You must install the drivers.

Of the systems we tested, Fiorano let us do cross-data source joins most easily (in contrast, WDI's BIE made it difficult). Most of the other systems allow cross-platform joins on disparate databases, but only Fiorano has a tool, called a join, that takes input from two data sources and performs the join. This was the most intuitive solution to the "data in different databases" problem, letting us easily merge data from SQL Server with Oracle in our inventory-updating application.

Fiorano, like Orion's Rhapsody and BIE, let us deploy and undeploy individual integrations—again, the basic unit of work—without interfering with other, unrelated integrations. This is one area where Fiorano pushed past Cast Iron, which requires you to check out and work on all integrations deployed on the server as a single unit.

Fiorano's weaknesses revolve around its complexity. Fiorano competes well for small deployments, and it can stand toe-to-toe with the big guns of EAI. But at times, the level of complexity and the number of options required by high-end EAI customers make any integrations hard to manage. With 10 separate applications in the suite, it was sometimes difficult to determine which application we should use. And we discovered problems with error reporting on incorrectly configured services—once, the error logs showed no errors, and the system said the services were started, but they weren't. Only by a subtle visual indication, the change of a word's color, could we tell the services weren't running. And only through experimentation did we resolve the conflicts.

Fiorano Business Integration Suite 3.5. Fiorano Software, (800) 663-3621, (408) 354-3210. *www.fiorano.com*

Cast Iron Application Router **The Cast Iron Application Router 1000 was the simplest to use of all of the products we tested.** But its lack of support for some key technologies, including JMS (Java Message Service), and its inability to add new "non-database adapters," kept it from finishing first.

B+

Cast Iron was the only appliance we tested. Other vendors have tried using an appliance for data integration, but Cast Iron is the first device we've seen that lives up to its promises. With a separate management NIC, you don't have to worry about data-intensive integrations limiting your access to the box. What's more, Cast Iron provides a wealth of easy-to-use management and development tools.

The largest negative was the way the Cast Iron han-

REAL-WORLD LABS® REPORT CARD EAI Products

	Fiorano Business Integration Suite	Cast Iron Application Router 1000	WDI Business Integration Engine	Orion Rhapsody Integration Engine 1.3
CONFIGURATION				
Graphic flow-control interface (10%)	5	5	4	5
Drag and drop plus SQL integration (5%)	5	5	4	4
Drivers for new input and output sources (5%)	5	3	4	3
Preconfigured drivers (5%)	5	5	1	3
COST (20%)	3	4	5	2
DATABASE SUPPORT				
DB2 (5%)	5	5	3	2
Microsoft (5%)	5	5	3	2
Oracle (5%)	5	5	3	2
Others (5%)	4	5	3	3
MANAGEMENT				
Individual application deployment (10%)	5	2	5	5
Management tool (10%)	3	4	3	5
OTHER TRANSPORT/PROTOCOL SUPPORT				
MQ (5%)	5	5	0	5
JMS (5%)	5	0	5	5
Web services (5%)	5	5	5	5
TOTAL SCORE (100%)	4.35	4.05	3.75	3.60
	A−	B+	B	B−

A≥4.3, B≥3.5, C≥2.5, D≥1.5, F<1.5 A-C GRADES INCLUDE + OR - IN THEIR RANGES. TOTAL SCORES AND WEIGHTED SCORES ARE BASED ON A SCALE OF 0-5.

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dles projects. Everything we created was a subproject under a single project. In other words, we had to upload every single integration we had deployed any time we changed any one of them. Cast Iron says it has resolved this problem in the version shipping today, but it wasn't available during our tests.

Cast Iron comes with a Web management interface and a Java development and deployment GUI, called Cast Iron Studio, which we installed on our development machine. All the products we tested have a Web management interface, and BIE also has a Web development tool. Cast Iron Studio implements near-perfect drag, drop and write SQL integration, and we got our integrations up and running quickly. Deploying applications was a snap, too, with the caveat that you redeploy all integrations on the router at once. The management console let us drill down into our deployed integration (called an *orchestration*, in Cast Iron's lingo) and look at messages relevant to it.

If you like the idea of an appliance, have few staffers working on integration and don't need JMS support, Cast Iron will suit your needs. It's a solid, easy-to-use product.

Application Router 1000. Cast Iron Systems, (650) 230-0621. *www.castironsystems.com*

WDI Business Integration Engine (BIE) 5.7.3

BIE is the only open-source product we tested. It was developed for use within the Brunswick family of companies, of which WDI is a member. This is the first open-source EAI tool we've seen, and it stacks up well against competitors with hefty price tags.

BIE isn't as polished as its competitors. We had to find and install our own JDBC drivers, and its flow-control interface isn't intuitive. But if you're looking for a thin-client development and management environment, you'll like BIE. All integration development, deployment and management is done using a Web browser. If the Web interface were as intuitive and easy to use as the thick clients other vendors provide, we would have preferred not having clients to deploy. But because the Web interface is less intuitive and less functional, we didn't like this model as much.

We also were a disappointed with the built-in database support (only MySQL out of the box), but downloading and installing the free JDBC drivers from the database vendors' sites wasn't too painful. Like the Fiorano and Cast Iron, BIE detects the database layout for you, but it does this differently than its competitors. We entered a query (we were given *select * from* as a starting point), and it queried the table and built an XML representation of the schema from the result set. We thought that was a cool way to go about it—until we hit a table with too much data, which seems to be any table with more than 100 rows. We were given an "out of memory" error and a Java stack trace—not something you want to see when you're looking for ease of use. It took a call to WDI to get this resolved, but the company's solution—limiting the number of rows returned by the query—worked fine.

Developing an integration in BIE is simple, but the product's Web nature makes the process a little disjointed. For example, with the other products we grabbed an icon and dragged it; but with BIE, we had to click on a link, which took us to a list of items from which to choose. Usable, but not as intuitive as other products.

HOW WE TESTED EAI PRODUCTS

Our Green Bay, Wis., NWC Inc. business applications lab is a production environment simulating a small industrial corporation. NWC Inc. is in the business of creating widgets for sale on the Internet. Orders are taken online at our Web site, and the widgets are produced at our Syracuse, N.Y., manufacturing facility. The finished product is stored in a Green Bay warehouse until it is shipped to customers.

Our SQL Server runs on a Dell 2650 dual-CPU PC with 512 MB of RAM; it houses a purchased package that tracks customer orders. Our Oracle system runs on a similar server and is our core customer and order-entry and fulfillment system. When a sale is shipped, we need our inventory updated to show what's on hand in the warehouse. When a customer completes an online order form, order information is entered into the Oracle database by the order-entry system. Finally, when an order is shipped to a customer, the shipping information is updated in SQL Server.

We defined the interactions between systems as follows:

1. When an order is entered over the Web, order information should be propagated to the shipping database.

2. When an order is shipped, information that it has been shipped should be propagated to the main order system.

To ensure the integrity of our tests, each product was placed on exactly the same system—a Dell 2650 dual-Xeon machine with 1 GB of RAM, running Windows 2000 SP3.

WebLinks

- **"Naval Facilities Engineering Command Integrates Legacy Apps,"** *www.serverpipeline.com/showArticle.jhtml?articleID=20301196*
- **"A Full House of Data,"** *www.wallstreetandtech.com/showArticle.jhtml?articleID=17603499*
- **"Microsoft Halts Planned Server Suite,"** *www.serverpipeline.com/showArticle.jhtml?articleID=17700346*

Management of deployed integrations is straightforward, with searchable transaction and system logs all accessible from the same interface from which we developed and deployed applications. This is in line with other offerings.

Overall, BIE is highly expandable. If your organization is comfortable with open source and you don't need MQ Series support, you can get started with BIE for nothing, which is astounding in the EAI market. If you do need assistance, WDI provides consulting services for your BIE installation.

Business Integration Engine. WDI, the development division of Brunswick New Technologies, (847) 970-6845. *www.brunswickwdi.com*

Orion Systems Rhapsody Integration Engine 1.3 SP8 **Rhapsody is a full-blown integration engine that, like Fiorano's product, can be deployed in a large-enterprise environment**. But there is much more to Rhapsody than we needed. That complexity and some design choices hurt the product in our review. One example: Rhapsody doesn't include drivers for databases, Orion believing many of its customers have their own JDBC drivers. Although the vendor's assumption generally holds true for large enterprises, it doesn't for our target market.

B-

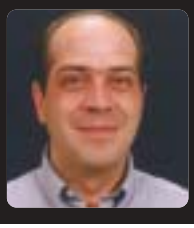
Once we downloaded and installed the drivers, we had to make them work with the product. Rhapsody attempted to remove some of the pain of JDBC configuration and database access by putting connection and query information into XML files. Unlike the other products we tested, it didn't give us a user interface to generate those files; we had to write them by hand. Given the focus of our tests, this requirement was a bit much, though not enough of a negative to disqualify the product from consideration.

Once the connection information and any queries were entered, we could manipulate the objects in a GUI to design an orchestration in much the same way we could in the other products. As with Fiorano's product, there's probably a lot more here than you need—like encryption and compression—but the product works well, outside of the handwritten configuration files.

Rhapsody's Symphonia mapping tool is excellent, on par with the other products we tested. Rhapsody's Web-based management is well done, with a concise style that delivers a wealth of information. Troubleshooting was a little easier with both Communication points (drivers) and routes (Rhapsody's name for an integration) listed on the main page along with their status. This beats the other vendors, most of which don't offer separate logging for drivers. None of them lists the "routes" on the main page.

Rhapsody's forte is in HIPAA compliance, and it shows. Although we didn't test HIPAA compliance, if you have a highly sensitive integration that requires strict compliance, Rhapsody is worth checking out. And if Orion offered a way to create a usable interface for defining drivers and database accesses, it would have been a challenger in this review.

Rhapsody Integration Engine 1.3. Orion Systems International, (800) 905-9151. *www.orion.co.nz* NWC



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EAI Product Features

	Cast Iron Application Router 1000	Fiorano Business Integration Suite	Orion Rhapsody Integration Engine 1.3	WDI Business Integration Engine
XML support	Y	Y	Y	Y
EDI support	Y	Y	Y	Y
XSLT and Xpath support	Y	Y	Y	Y
Web services consume/produce	Y/Y	Y/N	Y/Y	Y/Y
Transaction support	Y	Y	Y	Y
BPEL suppport	Y	Y	Y	N
J2EE support	Y	Y	Y	Y
Databases supported	IBM DB2, Microsoft SQL Server, MySQL, Oracle	IBM DB2, Microsoft SQL Server, MySQL, Oracle	IBM DB2, Microsoft SQL Server, MySQL, Oracle	IBM DB2, Microsoft SQL Server, MySQL, Oracle
Directory integration	Internal	ADS, LDAP	Internal	LDAP
E-mail notification support	Y	Y	Y	Y
Queue and message	MQ	JMS, MQ	JMS, MQ	JMS
Management console	Y	Y	Y	Y
Point-and-click integration	Y	Y	Y	Y

Y=Yes, N=No