



++++tightly coupled+++++

Code comfort

Tightly integrated programming tools from Microsoft and F5 are helping developers create application-aware networks more easily than ever before.

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Photograph by Amanda Koster

WRITING GREAT

software is hard enough. Shouldn't deploying it, at least, be easy?

Perhaps it should be, but for most companies, rolling out code across the network is an arduous, hands-on process involving dozens of cryptic command-line instructions and hours of tedium. "It's really mind-numbing work," observes Jeff Browning, director of product management for integration tools at F5. It's also time-consuming. "I've heard of network engineers spending five to 30 hours a week doing this kind of stuff," Browning says. In fact, F5 has a customer that used to pay three employees more than \$300,000 a year to do nothing all day but load new programming onto 250 Web servers.

Code deployment, though, is just one facet of a larger problem: For developers and IT professionals alike, pretty much everything that happens when applications meet networks is harder than it ought to be. That's because makers of development platforms and network devices have historically paid little attention to integration issues.

A product from Microsoft

and technology from F5, however, is changing that. Visual Studio is Microsoft's sophisticated and hugely popular development environment. iControl represents an application program interface from F5 that lets software freely exchange information and instructions with network resources. Put the two together and you have a powerful tool for enabling applications to work as one with the network that delivers them.

How powerful? In a mere three days, staff at the aforementioned company wrote an application with Visual Studio and iControl that deploys new code automatically in just 40 minutes a day, freeing up three people for more productive, strategic work. According to Browning, Visual Studio and iControl are delivering similar results for many other companies, too: "We know empirically that our customers are achieving the highest levels of success doing exactly these types of solutions, because of the richness of the Visual Studio toolset."

A new level of fluency

The chasm that has traditionally separated applications

from networks is all too familiar to most IT managers. For example, network roadblocks can cripple even the best-written application. Yet in years past, the most that applications could do to maintain performance and availability was periodically check the status of servers and other network devices. "The bigger the gap [between inquiries], the better the chance that something might go down without your knowing about it," says Browning. Checking status more frequently, however, could itself produce a performance slowdown, by bombarding the network with traffic. Meanwhile, once an application discovered a problem on the network, it rarely had the ability to diagnose the issue precisely or to do much about it.

All that changed with F5's introduction of iControl in 2001. Using iControl, developers can create what Browning calls "connective tissue" between applications and infrastructure components, enabling them to interact dynamically in real time. Instead of waiting to be asked about its status, for example, a server can proactively inform



an application that it's experiencing errors. The application, in turn, can instruct an F5 BIG-IP device to route traffic around that server until it's back in peak condition. The result is an application that essentially heals itself, freeing administrators to spend less time reacting to problems and more time advancing strategic initiatives.

"The ability of an application to tell the network how best to support its needs is really a huge, huge transformation in the way people think about building applications," observes Browning. "It brings the network up to a new level of fluency in terms of how it



Bringing the network to a new level of fluency. From left: Jeff Browning, director of product management for integration tools, F5; Joe Pruitt, senior strategic architect, F5; and Joe Marini, group product manager for the VSIP program, Microsoft.

can interoperate and understand what applications need at any given time.”

To tap into iControl’s power, however, programmers need a robust development environment. That’s where Visual Studio comes in. Developers have long enjoyed Visual Studio’s rich coding, debugging, and testing features. Thanks to the integration between Visual Studio and iControl, programmers can now draw on those same features when writing network monitoring and remote management code. “It’s the same experience as building a regular desktop application,” says Joe Marini,

group product manager for the Visual Studio Industry Partners (VSIP) program at Microsoft. That, he adds, makes for happier and more productive developers.

Moreover, writing network interfaces into applications has traditionally required specialized coding skills that few system administrators possess. But Visual Studio has more than 3 million users worldwide, and most IT professionals are somewhat familiar with at least one of the common programming languages that Visual Studio supports. “Being able to work with Visual Studio opens up a whole new pool of develop-

ers that [IT departments] can make use of to develop these kinds of applications,” says Joe Pruitt, a senior strategic architect at F5.

Futuristic opportunity

The secret behind Visual Studio’s integration with iControl is no secret at all: Both prod-

ucts support the same Web standards. That Microsoft and F5 each decided independently to embrace standards reflects a shared commitment to Web services and service-oriented architectures. It also reflects the broader like-mindedness underlying their close working relationship. F5, Marini observes, is a Premier-level member of the VSIP program. “To my knowledge, [they] are the only hardware platform that we have at that level,” he adds.

Microsoft’s domain-specific language (DSL) initiative stands to deepen and extend its partnership with F5. DSLs are point-and-click software design tools that streamline specific labor-intensive development chores. An application/network integration DSL, for example, might empower network administrators with limited programming skills to generate iControl code automatically by simply dragging an icon representing a BIG-IP device onto another icon representing an application.

It’s a futuristic vision that Microsoft is rapidly bringing to life. “And it’s stuff that we [at F5] are actually working on even as we speak,” adds Browning. That comes as no surprise to Marini. After all, he sees DSL support as a logical addition to F5’s existing array of developer-friendly products. “It’s a great opportunity,” he says—for both companies. ✪

Rich Freeman is a Seattle, Wash.-based freelance writer.

Additional resources

F5 white paper on Visual Studio and iControl (www.f5.com/solutions/applications/pdfs/msnet_ab.pdf)

Microsoft Visual Studio Industry Partner program home page (<http://msdn.microsoft.com/vstudio/partners/>)

Microsoft domain-specific language home page (<http://msdn.microsoft.com/vstudio/DSLTools/>)