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Editor's View

DNA-Road to the Future

Microsoft's latest vision provides a solid base for application development.

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This month, I'm turning most of my usual space over to Contributing Editor Drew Speedie, who lives a little closer to the leading edge of development than I do.

Are you creating Windows DNA architecture applications? If you believe what you hear lately from Microsoft, you should be.

What is Windows DNA architecture? The DNA stands for Distributed interNet Applications. The Windows DNA framework is a 3-tier architecture where the elements in each tier can be distributed across a network or global enterprise. Each of the typical 3 tiers can further be separated into additional tiers (hence "n-tier") and the components distributed to different servers.

The data tier typically consists of a remote database, although other data storage mechanisms can be accommodated, including a Visual FoxPro database. Multiple databases from different manufacturers on different servers are supported. Since stored procedures must run on the same machine as the database, the database is rather "thin" and does not contain the business rules.

The middle tier is more complex because that's where the action is. Middle tier components process the business rules and communicate with the database. The main players are COM, DCOM, MTS, MSMQ, UDA (primarily ADO), and IIS. (See Gary DeWitt's April '98 article for translations of most of those acronyms.) Components can be created from any combination of the tools in Visual Studio 6.0. MTS (Microsoft Transaction Server) and MSMQ (Microsoft Messaging Queue Server) coordinate transactions that span multiple components, even though the components might be written in a heterogeneous mix of Visual Studio tools—some in VFP, some in VB, and so forth.

The presentation tier is typically not as "fat" as the typical Visual FoxPro interfaces. Business logic is implemented by calls to middle-tier components. Microsoft promotes Visual Basic 6.0 as the prime front end tool for Windows DNA applications run on a Win32 platform, but you and I know that VFP can do the job, too.

However, the Windows DNA architecture mostly emphasizes a browser-based presentation layer. Since HTML and DHTML interfaces have a crude object/event model when compared to a Windows 32 interface, business rule logic clearly has to be handled in the middle tier. And, of course, a browser-based interface depends entirely on having all transaction and data-management handled on a remote server or servers. The business logic that is ultimately at the core of a data-management application is more readily available without modification to any front end in a Windows DNA architecture.

Windows DNA holds a lot of promise. The current suite of Microsoft products makes it possible to get build an enterprise-wide mission-critical application on the Windows DNA architecture. However, this is still a very new technology and getting all the pieces to fit just right is no mean feat, requiring an unprecedented multiplicity of talents on the development team. Microsoft seems completely committed to Windows DNA, so look for the difficulty-of-development-and-deployment bar to be lowered in future revisions of Microsoft front end, back end, and middle tier software tools.

With regard to VFP specifically, Microsoft has given its official blessing to using VFP for middle-tier COM components in the Windows DNA architecture. The official training material for their recent "Mastering Distributed Application Design and Development Using Microsoft Visual Studio 6.0" course mentions Visual FoxPro where appropriate in the middle-tier discussions, including exercises in building VFP components. Visual FoxPro is always listed along with the rest of the Visual Studio tools when the entire suite is mentioned.

Of course, you can use VFP for the presentation tier, too, if you're so inclined. VFP will probably never be endowed with all the Windows DNA technology bestowed on its Visual Studio brethren (for example, you can't bind an ADO recordset directly to a VFP grid) if for no other reason than Microsoft has targeted VFP primarily as a tool for creating powerful data-crunching COM components. But given the rich feature set already in VFP, if you are willing to write your own workarounds or share them with others, you can leverage your VFP skills to do more than Microsoft may have anticipated. For example Ken Levy has created utilities to convert ADO recordsets (and XML strings/objects) to and from VFP cursors and tables, and has posted them for free download at his web site, www.classx.com.

What about the 1- and 2-tier local data and client-server applications that currently comprise the vast majority of VFP application development projects? While mainstream advertising and public presentations mostly focus on internet and/or Windows DNA development, when pressed, Microsoft officials readily endorse the continued development of 1- and 2-tier applications in the Visual Studio tool of your choice. It will be quite some time before Windows DNA apps supplant the more typical applications for which we continue to develop successful VFP projects.

What's the bottom line? Keep on developing cool VFP data-management applications, which will be in demand for years to come. But keep your eyes open to progress in Windows DNA architecture, learn as much as you can about its core technologies, and prepare yourself for the day you want to (or have to) develop in that arena.

Drew's right that we all need to be actively learning about Windows DNA and the technologies that comprise it. Fortunately, one of your best opportunities to do so is coming up soon.

This year's Visual FoxPro DevCon (June 6-10) has a number of sessions focused on the latest ways to create applications for the enterprise. They range from fundamentals to expert-level advice with plenty for those just getting their feet wet. The highlight of the DNA sessions is likely to be Y. Alan Griver's attempt to build a multi-tier app in one day.

Of course, DevCon still has lots to offer for developers of desktop and client-server applications who want to polish their skills. You can enhance your current skills and come home with a head start on new ones. New this year is an "Ask the Experts" session devoted entirely to answering questions from attendees.

For all the details on this year's DevCon, check out www.advisor.com.