

JOHN OLSON, EDITOR-IN-CHIEF

Moving to a Distributed Architecture



Refreshing – that's how it feels when I see a company easily moving portions of its client/server software to a component server. They've designed right and built right, and now they'll reap the rewards. For developers who spent a little extra time designing, the transition isn't too costly or painful. They create whole new Web interfaces for their programs, but only have to program the GUI. The business logic and processing are already stored as components in their Jaguar server. Hopefully this pertains to you!

Unfortunately, most PB shops are experiencing difficulties moving portions of their code to a middle tier. Most programs weren't written with the business logic separated from the GUI. Proper design was often sacrificed due to short-term and high-pressure scheduling. Now what? Getting there is still possible, but it'll be more time-consuming and costly than for heavily OO, service-based and partitioned programs. Here's a rough guide for moving to a distributed architecture.

1. Identify the logic to be shared. Determine which parts of your code you want to share with the Web interface you're going to build. If you're not building one, proceed as if you were. GUI pieces probably won't be reusable in your application, though some DataWindows might be. Thus your focus will be on business logic and data processing. You should move all the code that processes data into components, but you may want to leave some bits of business logic behind – for example, edit masks, computed columns, validations and other business logic built into your DataWindows. You could move some of the bits to your nonvisual objects (e.g., DW column validations could be put in your `nvo.itemchanged` event, which is delegated to by the DW `itemchanged`), but most are okay where they are. The perfect solution is to reuse your DataWindows and deploy them as Web DataWindows (HTMLDW), which would result in your validations being delivered as JavaScript to the end user's browser. Reusable or not, you have to be sure to duplicate that logic in your new interface.

2. Design a method for transitioning the code. Review each code area and design method to move the code to nonvisual objects – a difficult task. If the existing code is spaghetti-ish, you'll probably end up rewriting it. If it was written in a structured fashion, moving it to nonvisual objects should be easy. Objects originally containing the code would become requestors and delegate control to the nonvisuals rather than doing the work themselves.

3. Test in a client/server environment. Once the code is moved to nonvisuals, test your software. If it behaves the way it did before, you've successfully partitioned your business logic from your GUI. This is where you managers and developers kick yourselves for not having designed and coded it this way in the first place. Don't kick yourself too hard. Design and development methodologies considered "best practices" have changed dramatically over the years. By the time large systems are put into production, the design methodologies originally chosen have usually been relegated to museums.

4. Complete and deploy your components. The nonvisual objects containing the real logic of your system are distributed as Jaguar components. For them to be used by a different interface (e.g., a Web app), you probably need to tweak their public interfaces and internal code and make them into self-contained objects. Deploying these objects in PB7 is a piece of cake – set up some parameters and let PB do the work.

5. Test your n-tier application. Now that your components are distributed, you have a true multitier application. Again, test it until you're satisfied it's ready for production. You should find that your clients run faster because they're smaller and because much of the work is done on the transaction/component server rather than the workstation – one of many benefits to distributing your application. Others are batch processing, asynchronous communications, data sharing, scalability, transaction pooling and easier deployments.

Of course, some features may have driven you to partition your business logic, such as multiple interfaces/front ends that can reuse the business components and can be built using a variety of development tools and languages. Regardless of the language used to build the interfaces, new development can focus on the GUI and business logic doesn't have to be rewritten. This also results in consistent business logic across all interfaces because the same components are used to deliver that logic.

Whether or not you plan on going to a distributed architecture, leave your options open by designing for it now. It won't cost you much extra to do so. If you then choose to build other interfaces or decide you need the performance increases or other benefits of a distributed architecture, the costs and pain of transition will be minimized. ☺

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