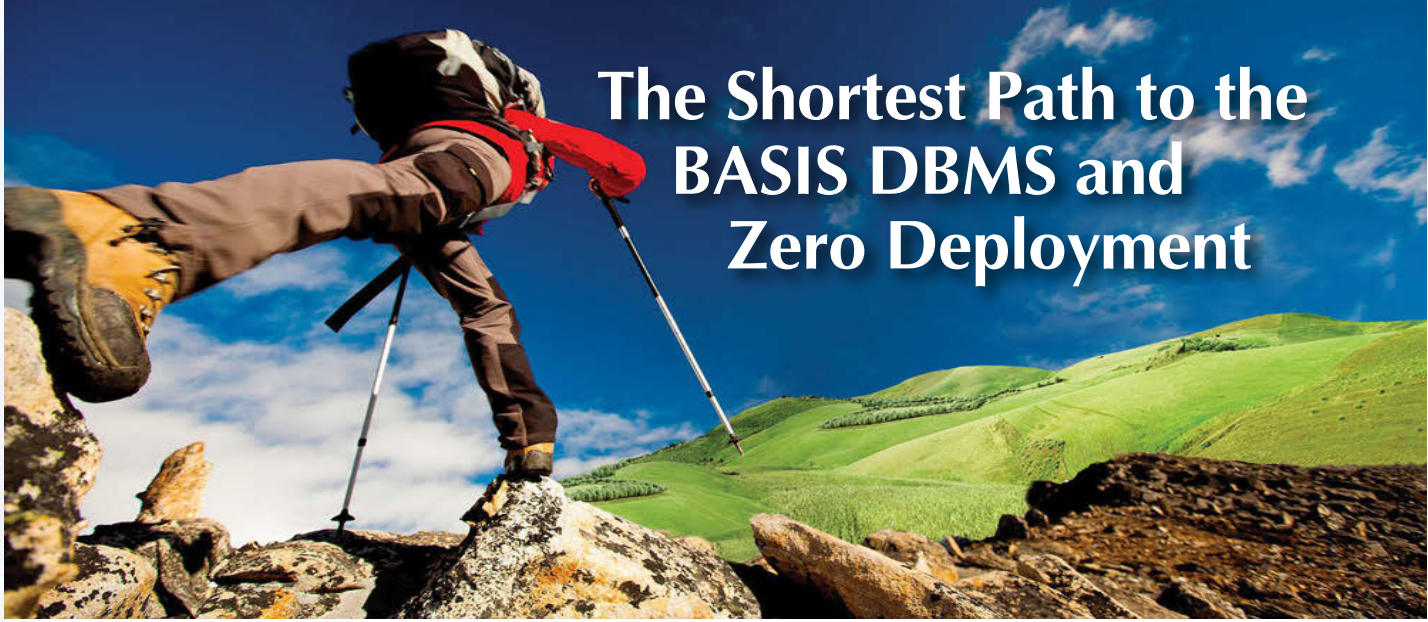# The Shortest Path to the BASIS DBMS and Zero Deployment

In my daily interactions with customers, I see deployments in desperate need of modernization. A monolithic PRO/5® deployment limps along as users are added to an aging UNIX server. A Visual PRO/5®-mapped drive deployment struggles with poor performance and the convolutions of Universal Access Control as the administrator adds new Windows 8 clients. Knowing how easily BBj® eliminates such problems, I have to ask, "Have you considered moving to BBj"? BBj makes it possible to deploy thin clients to desktops without manually installing a terminal emulator or interpreter. With BBj, deploying a thin client is as easy as clicking on a URL that arrived via email. BBj also makes it possible to expand from a simple single-server deployment to a heterogeneous set of multiple servers, distributing the load and providing redundancy.

Triggers, stored procedures, scheduled tasks, data replication, data change auditing, etc. are many of the excellent reasons to upgrade to BBj but, for some, the idea of making the transition from Visual PRO/5 or PRO/5 to BBj can seem as daunting as scaling the sheer face of a cliff. The good news is that the imagined cliff is really just a series of gentle slopes consisting of only three logical steps; each of which will bring real benefits to your deployment.

Step 1. Introduce a networking layer into your configuration

The first step to a BBj deployment doesn't involve BBj at all: Access all data via the PRO/5 Data Server®. While the PRO/5 Data Server is a common element in most Visual PRO/5 deployments, it's not one we often see in typical monolithic PRO/5 deployments.

Adding a data server to your deployment introduces the networking layer into your configuration, which is the key to the flexibility and scalability of enterprise-level deployments. Now it's possible to turn that monolithic PRO/5 deployment into a two-tier deployment; distributing the database management portion of the load onto a database management server (DBMS).

Enable data server access on the PRO/5 or Visual PRO/5 interpreter by setting setopts byte 4 bit 20:

```
setopts $00000020$
```

The code syntax for opening files directly via the data server is:

```
open(1)"/<server,port=1100>/path/to/filename"
```

Or you could allow the prefix in the config.bbx to locate the file on the database machine:

```
PREFIX </server,port=1100>/path/to/
open(1)"filename"
```

Port 1100 is the default port for the PRO/5 Data Server. For optimal performance, BASIS recommends one data server prefix for data on the interpreter with canonical paths to the data directories specified in the PRO/5 Data Server prefix. For example:

PRO/5 prefix:
```
</server,port=1100>
```

PRO/5 Data Server prefix:
```
/usr/local/path/to/data/dir/1/, /usr/local/path/to/data/dir,2/ …(etc.)
```

This ensures only one connection is made to the PRO/5 Data Server for any given file.

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With the introduction of an additional network layer, latency becomes a consideration. While the latency is unlikely to be felt by individual clients, it might be noticeable in batch jobs. This is a good time to run your batch jobs with SETTRACE enabled, evaluate the results in Performance Analyzer, and modify the code to achieve the requisite batch job performance.

Step 2. Switch to the BBj PRO/5 Data Server

If you're looking to retain your PRO/5 or Visual PRO/5 interpreters and just take advantage of all that the BASIS DBMS has to offer over the PRO/5 filesystem, or if you're needing to introduce multi-tier architecture to your application deployment, you will need to introduce a networking layer to your configuration. Once all data is accessed via the PRO/5 Data Server, it's a simple matter of flipping the switch to BBj: Install BBj on the server, enable the BBj PRO/5 Data Server (shown in **Figure 1)**, then change the port in your interpreter prefix to the BBj PRO/5 Data Server port: 2100*.

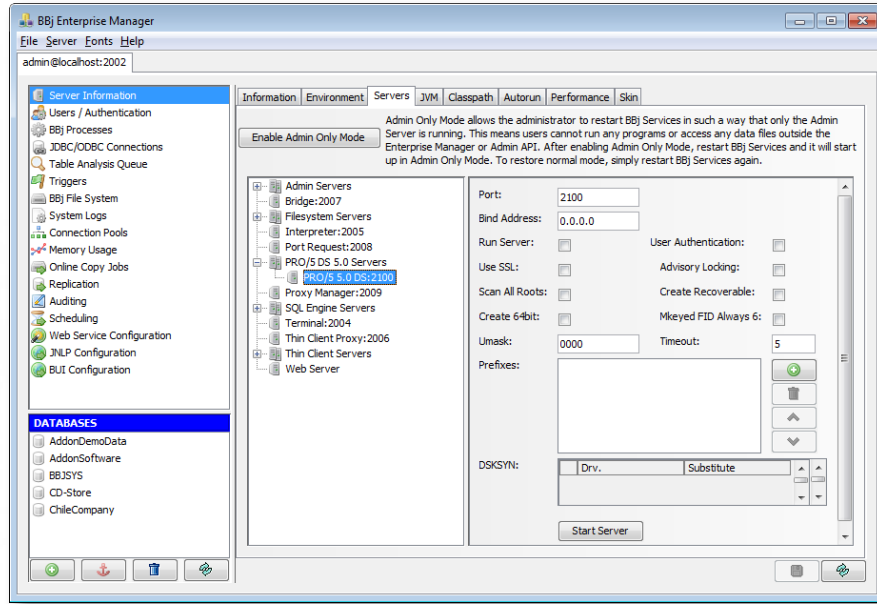*You may also leave the prefix port the same and change the BBj PRO/5 Data Server to use port 1100.*

Figure 1. The BBj PRO/5 Data Server configuration module in Enterprise Manager

Placing control of your data in the hands of BBj enables you to take advantage of several powerful BBj features, including stored procedures, triggers, SQL table analysis, task scheduler, access to additional enhanced BASIS file types, data change auditing, and data replication.

As with the PRO/5 Data Server, the BBj PRO/5 Data Server has server-side prefixing to optimize file OPENs.

Step 3. Switch to BBj

Change the deployment to launch applications with **bbj** instead of **pro5**. With BBj's embedded Jetty Web Server, it is possible to deploy your applications via Java Web Start or the browser user interface (BUI). You don't have to fuss with mapped drive shortcuts when a new Windows 8 client arrives; just send an email with a URL to the user and you're done.

Unlike Visual PRO/5, BBj's interpreter runs on the application server, not the client. This means less back-and-forth processing traffic over the network with only the results presented to the client. The scalability and flexibility of BBj means a deployment can be as small as a single-server or one with many servers. One can swap out or upgrade servers to cloud servers with relative ease. Unlike the PRO/5 Data Server, file I/O via the BBj Filesystem Server scales with additional CPUs, so performance will generally be better in BBj, especially with larger user counts.

Summary

The path from PRO/5 to a modern BBj deployment is not an imposing cliff but a perfectly manageable slope with three logical steps. Each step adds power, flexibility, and scalability to your deployment. Your final BBj destination will bring the ever-growing array of BBj features to your fingertips, allowing you to move your deployment in any direction you like. From the standpoint of the end-users looking in, this translates into a tighter, more simplified user experience. I predict you won't look back! ■

For more information, refer to *Converting to BBj From Earlier Versions of BASIS Products* in the online documentation at links.basis.com/convertingtobbj