



# INSTALLING AND CONFIGURING

*By John Schroeder*



In this issue's Tech Resource Zone, BASIS Chief Technical Officer John Schroeder begins a two-part series. In this first article, he explains how the various BBJ™ Editions and their components are installed and configured, and how installation is similar and different from typical installations of our Visual PRO/5® and PRO/5® products. In the second article, in our next issue, John will explore remote processing considerations with BBJ.

BBj will be available in three product configurations, the Enterprise Edition, the Standard Edition and the Single-User/Educational Edition, which is a Standard Edition with a user constraint of one. The installation process is the same for all the editions. The BASIS license file determines the functionality of the product.

Essentially, the Standard Edition is similar to a PRO/5® multiuser system in that it is a single hardware/operating system (OS) platform supporting dumb terminals as well as BBJ ODBC and JDBC drivers.

The Enterprise Edition includes everything in the Standard Edition and adds networking capability. It is a client/server product with a thin client. With the Enterprise Edition, the various components of BBJ-the BBJ Data Server™, BBJ AppServer™, BBJ Interpreter and BBJ Thin Client™-can be deployed in a networked client/server system across many hardware and OS configurations.

## Installing the Java Runtime Environment

Each installation of a BBJ edition or component on an individual machine requires a Java Runtime Environment (JRE) version 1.3 or higher. The JRE is the operating environment for Java, and hence for BBJ. It provides a common virtual machine environment for all Java applications, making Java applications portable across all operating systems supporting that level of JRE.

The JRE is available from your OS supplier as a free download from the supplier's Web site. Because there may be OS upgrades or patches required to support the JRE 1.3, check with your supplier for the latest information on your OS version. The JRE installation is straightforward, involving a script on UNIX systems and a setup executable on Microsoft Windows systems. Typically, you are asked to enter a directory or accept the default. Once you tell the install program where you want the JRE installed, it expands and copies the necessary files to your hard disk drive. You must install the JRE first and then run the BBJ installation routine.

## Installing BBJ

After installing the JRE, you can start the BBJ installation routine. It prompts you for an installation directory. On GUI systems, when you click OK on this dialog, the install routine expands and copies the BBJ components, utilities, etc., to the hard disk drive. A program group is then created, enabling easy access to the components that have been installed. On character UNIX systems, the install script copies the product files to the specified directory. When the files have all been installed, you proceed to the licensing function. The installation procedure installs the necessary files for BBJ to run, including the BASIS License Manager (BLM), which is required in all BBJ installations.

## Licensing

The next step in the installation procedure is to request and install your license file. The BBJ license request and installation is similar to its PRO/5 counterpart. In this phase, you are prompted for the serial number and authorization code for the license. The serial number and authorization code determine if you are installing a Standard Edition or an Enterprise Edition. Enter this information and send the license request to the BASIS License Server, through the Internet, by e-mail or phone. When you receive your license file back, use the License Installation program to install the permanent license file for your system. Once you have installed the BLM and license file on your license server, you have to tell the BBJ Data Server where the BLM is located, and that's it. Because all licensing in BBJ is done through the BBJ Data Server, no further license registration or installation is required for any BBJ edition. The only time you will need to install another license file is when you upgrade your software or add users.

## Configuration

PRO/5 and Visual PRO/5 clients at revision 2.10 and higher use TCP/IP to communicate with the license server as well as with PRO/5 Data Servers. Like PRO/5 and Visual PRO/5 2.10 and higher, TCP/IP is required for all installations of BBJ. But BBJ's component architecture requires a different type of configuration than PRO/5. The BBJ Data Server, which is the file system for BBJ, runs as a separate process and services the file access needs of every BBJ component from that process. Communication with the BBJ Data Server takes place via TCP/IP, just as with a PRO/5 Data Server. In the past, using a multiuser PRO/5 system, a separate data server was not a necessity; the file system was part of the PRO/5 executable. A separate data server was only required when another (client) machine needed access to the PRO/5 files. In BBJ, all file access and license validation is done through the data server component, and so the BBJ Data Server must be running in order for a BBJ process to run. The installation routines for WIN32 ensure that the BBJ Data Server process is started up when the system is started. On UNIX systems, as with a PRO/5 Data Server, you must enter the BBJ Data Server as a cron task to ensure that it starts up with the system.

## Configuring the Standard Edition

The configuration of the BBJ Standard Edition is similar to a multiuser PRO/5 configuration without a PRO/5 Data Server. Once the product is installed, the various devices-terminals, printers, etc.-must be defined in the configuration file, config.bbx. One noticeable difference between PRO/5 configurations and BBJ configurations is that all allocations in BBJ are dynamic. Therefore, you do not need to designate parameters like ALIASES, FCBs, CIBs, etc., in the configuration file. If these keywords are found, they are ignored. BBJ will dynamically allocate the appropriate resources as they are required by an application. This is also true of memory. START commands now only reset the workspace, and any included memory parameters are ignored. Memory is allocated to the task as needed. So, while you will no longer encounter ERR=31, you may encounter ERR=33 if you run out of system memory.

## Configuring the Enterprise Edition

The configuration of the Enterprise Edition is like the Visual PRO/5 and PRO/5 Data Server client/server configuration. The BBJ Thin Client, BBJ AppServer and BBJ Data Server can all run on separate machines with different operating systems. All require a JRE to run; therefore, the proper JRE must be installed on the machines running these components.

As the name Thin Client implies, the client is strictly a display processor, handling updates to a GUI or character display on the client, very much like a character terminal does today. All processing, including licensing, is handled on the server. In the thin client environment, the BBJ AppServer, running on the server, provides the communication interface between the client and the BBJ Interpreter.

The thin client must know the IP address of the machine running the BBJ AppServer in order to communicate with it. Security on a remote wide area network (WAN) is an important factor. The thin client should communicate over a secure connection, such as a Virtual Private Network (VPN), if it is being run over a WAN.

If the BBJ Data Server is running on a different machine from the AppServer, then the AppServer must know where that Data Server is. This configuration is also done at the time of installation.

## Using the Thin Client in a Browser

One of the most important benefits of BBJ is that the thin client can run in any JRE, including the JRE found in most Web browsers. No changes to your BBJ application code are required, unless the program allows the user to drop to console mode or uses platform-specific code such as SCALL(). This can provide a standard user interface for all your systems. In addition, with the BBJ Thin Client, the Internet can become your WAN.

Security is a very important factor when running remotely, particularly across a public network like the Internet. The BBJ Thin Client can run across a standard Secure Socket Layer (SSL) connection or across any other secure encrypted connection. The important point here is that the server must be configured to use such a connection for remote access. Protection of your business data transmissions is paramount.

In addition to providing a secure connection for thin clients, once you open your system up for remote access via a public network such as the Internet, you must secure your server using firewall and router technology appropriate to your system needs. If you are unfamiliar with this type of environment, you should think of joining forces with a good network security consultant for your WAN installations.

We'll talk more about remote processing with BBJ and network security in our next issue.