



Team Development With JBuilder and Borland Enterprise Server

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Version History

1.0	March 13, 2003	Initial Release
2.0	February 14, 2005	Revised for JBuilder 2005 and Borland Enterprise Server 6.5

Team Development with JBuilder and Borland Enterprise Server

Introduction

One of the challenges faced by project teams targeting Borland Enterprise Server is the VisiBroker Smart Agent's auto-discovery of other Smart Agents running on the same subnet. When multiple Smart Agents are available on the same port on the same subnet, a client application (e.g. a command-line tool or a Swing GUI) could bind to any one of the Smart Agents and use the services (including EJB's) of any of the servers running on the network.

In development, a client should always bind to a local server, most often because the local server has new code that is being tested by the developer before being committed to the central repository. Unless the local VisiBroker Smart Agent has a unique port, the client is not guaranteed to connect to the local server each and every time.

The recommended approach is to assign unique Smart Agent ports to each installation of Borland Enterprise Server in the development subnet. Furthermore, each application runtime configuration in the project has to be given the VM parameter `"-Dvbroker.agent.port=${SmartAgentPort}"` to point the client to the correct server:

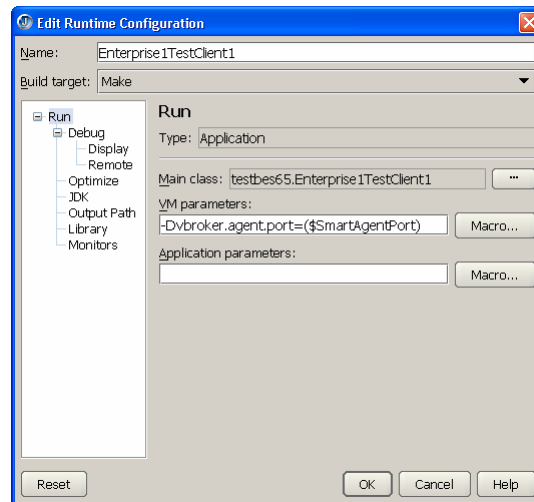


Figure 1 - Runtime configuration with local Smart Agent port

Runtime configurations are stored in the project file and with the addition of the *SmartAgentPort* macro in JBuilder 2005 the project file will not get rewritten as it is moved from workstation to workstation.



This whitepaper proposes a development environment architecture that eliminates conflict between multiple Smart Agents in the development environment. The examples presented here were developed with Borland Enterprise Server 6.5 and Borland JBuilder 2005 Enterprise.

Borland Enterprise Server installation and configuration

The first thing to do is ensure that all Borland Enterprise Server installations are as similar as possible without being so similar that they collide with each other on the network. Before installing any software, decide on a range of port numbers for the user and management ports for the development team. If necessary, coordinate the port selection with your network administrators or other development teams to ensure that there will be no collisions anywhere on the network. The recommended approach for port assignment is to keep the first two numbers the same but to vary the last three numbers. In the example presented here, the development group has chosen the range of 201-220 for its ports; the screen shots below are for the first installation, using ports 14201 (Smart Agent) and 42201 (Management).

If you have already installed Borland Enterprise Server, it is strongly recommended that you remove it first. While it is possible to modify an existing installation to conform to these standards, the installation procedure litters the Smart Agent port in too many places (environment, registry, property files, application configuration files, XML files) for such modification to be practical or reliable.

During the installation, you are prompted to choose the installation directory, feature set, and install type. When you get to the install type, choose **Custom** as shown below.

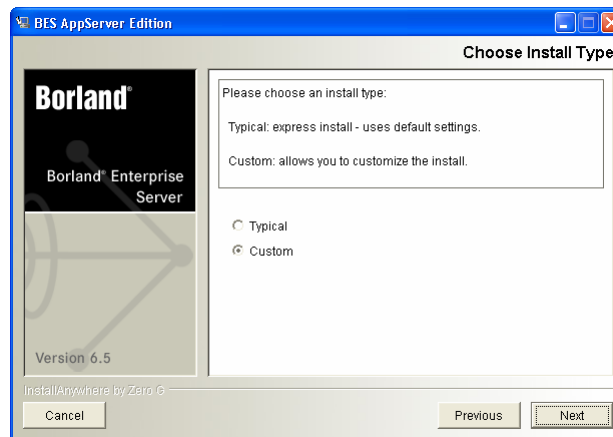


Figure 2 – Choose install type



The next screen prompts you for basic configuration settings: the Smart Agent port (default 14000), the Management port (default 42424), and the server name (default workstation name). Change the port values to those selected for this workstation and choose a server name that readily identifies the server and will be used by all developers; in this example, the ports are 14201 and 42201 and the server name chosen to be shared by the entire development team is “localdev”:

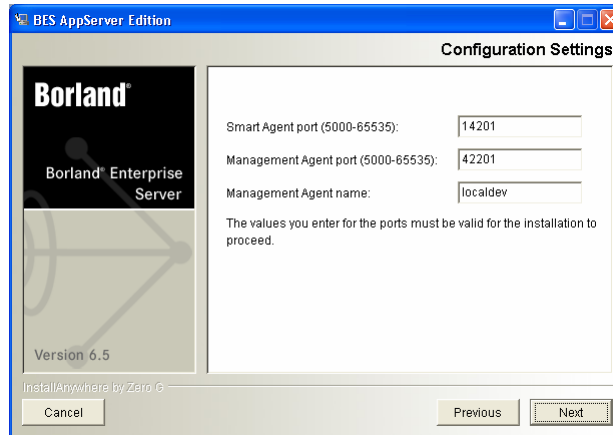


Figure 3 – Configuration settings

Accept the rest of the installation settings and complete the installation.

Patch installation

In order to use Borland Enterprise Server 6.5 with JBuilder 2005, you need to install patch 4 for BES 6.5. This patch is available on the JBuilder 2005 registered users download page at http://www.borland.com/products/downloads/registered/download_jbuilder.html.



Borland JBuilder Configuration

Before configuring JBuilder to use Borland Enterprise Server 6.5, be sure to download all available updates from

http://www.borland.com/products/downloads/registered/download_jbuilder.html. Borland Enterprise Server 6.5 will not work with a default JBuilder 2005 installation.

After installing JBuilder and applying all available updates, start JBuilder and configure Borland Enterprise Server as follows:

1. Select **Enterprise | Configure Servers...** from the menu;
2. Select **Borland Enterprise Server AppServer Edition 6.0**;
3. Press **Copy...**;
4. Set the server name to **Borland Enterprise Server AppServer Edition** and the server version to **6.5**;

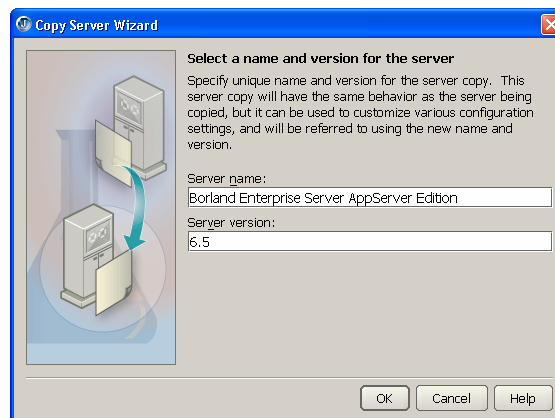


Figure 4 - Copy server wizard

5. Press **OK**;
6. Check **Enable server**;
7. On the *General* tab, select the Borland Enterprise Server installation directory if different from the default;
8. Configure any other general or custom options necessary for your installation (by default none will be required as JBuilder will detect all the necessary options except the user password); and
9. Press **OK**.



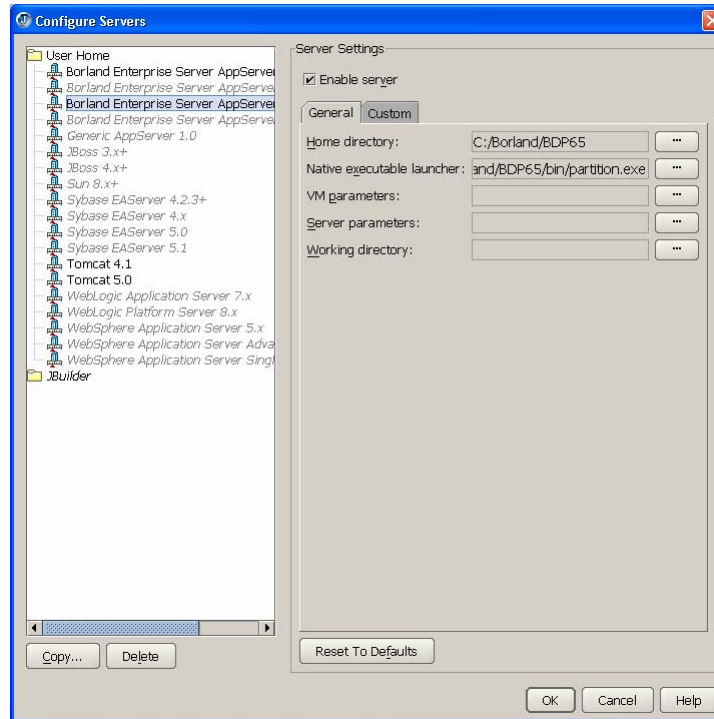


Figure 5 – Completed general configuration

Runtime configurations

There are two runtime configuration types to consider: application and test. Application and test runtime configurations are treated the same way so the examples below refer only to applications, not test suites.

Application and test runtime configurations that need to communicate with the server need to include the Smart Agent port parameter. To do this, simply add “-Dvbroker.agent.port=(\$SmartAgentPort)” to the VM parameters (see *Figure 1 – Runtime configuration with local Smart Agent port*).

To understand what this parameter does, you need to understand the mechanism by which EJB’s are located:

- a. The client locates the VisiBroker Smart Agent through a UDP broadcast on a specified port (default 14000);
- b. The client establishes a TCP connection to the Smart Agent;



- c. The client asks the Smart Agent for the reference to the Naming Service;
- d. The client establishes a TCP connection to the Naming Service; and
- e. The client asks the Naming Service for the reference to the required EJB.

If the Smart Agent is running on a port other than the default (and it will be for workstations setup using this guide), the client won't find the server. Explicitly selecting the port using the *SmartAgentPort* macro allows the client to find the server.

Automatically generated runtime configurations

JBuilder will occasionally generate runtime configurations automatically, such as when creating an EJB test client. JBuilder does not set the Smart Agent port using the macro in the VM parameters; it sets it explicitly according to the value on the local workstation. In any circumstance under which JBuilder creates a runtime configuration, you should review the configuration and change the Smart Agent VM parameter to the macro version before continuing.

