BaanERP

BaanERP Internet Server Installation and Configuration Guide

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Baan Development B.V.
P.O.Box 143
3770 AC Barneveld
The Netherlands

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About this document

This guide describes how you can install and configure the BaanERP Internet Server on both UNIX system and Microsoft Windows NT systems. In addition, this guide describes how you can install the BaanERP Internet Server client system.

This guide is intended for BaanERP installers and system administrators. The reader is assumed to be familiar with the system administration of UNIX and Microsoft Windows NT systems.

The guide is divided into four chapters.

Chapter 1 introduces the concept of the BaanERP Internet Server.

Chapter 2 describes how you can install the BaanERP Internet Server.

Chapter 3 describes how you can configure the BaanERP Internet Server.

Chapter 4 discusses issues concerning the BaanERP Internet client system.

1 Introduction

The BaanERP Internet server application (BiServer) is used as a gateway between the BaanERP Internet client (BI) and the Baan application server (Bshell) in order to expose the BaanERP functionality to the Internet domain.

Architecture

The architecture of the BiServer is shown in the figure below:

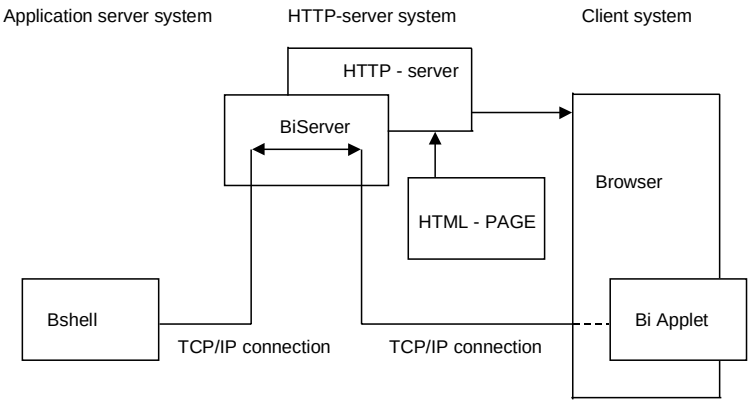

Figure 1 The BiServer architecture

The following components are included in the architecture:

- A Bshell that runs on an application server system. This system is a normal BaanERP application server to which both Baan Windows (BW) clients and BI applets can connect. For each client (BI or BW), there is always one connection with a Bshell.
- An HTTP-server system, on which an HTTP-server application runs, and one or more BiServer applications. This system is used as a gateway between the Baan applications and Internet browsers. BI applets always connect to the Bshell through the BiServer. There will never be a direct connection between the Bshell and the BI applet. The HTML pages are managed by the HTTP server, and one of these pages contains a reference to the BI applet. When a browser performs a **GET** for this page, the BI applet is downloaded to the requesting browser. The HTTP-server system and the application-server system may be one system or may be two distinct systems.

- A client system running a Java-enabled HTML browser. The BI applet is running within this browser. The BI applet establishes a direct TCP/IP connection with the BiServer running on the HTTP-server system or on another system.

The figure below is a timing diagram for setting up the connection between a BI applet and a Bshell that uses the BiServer.

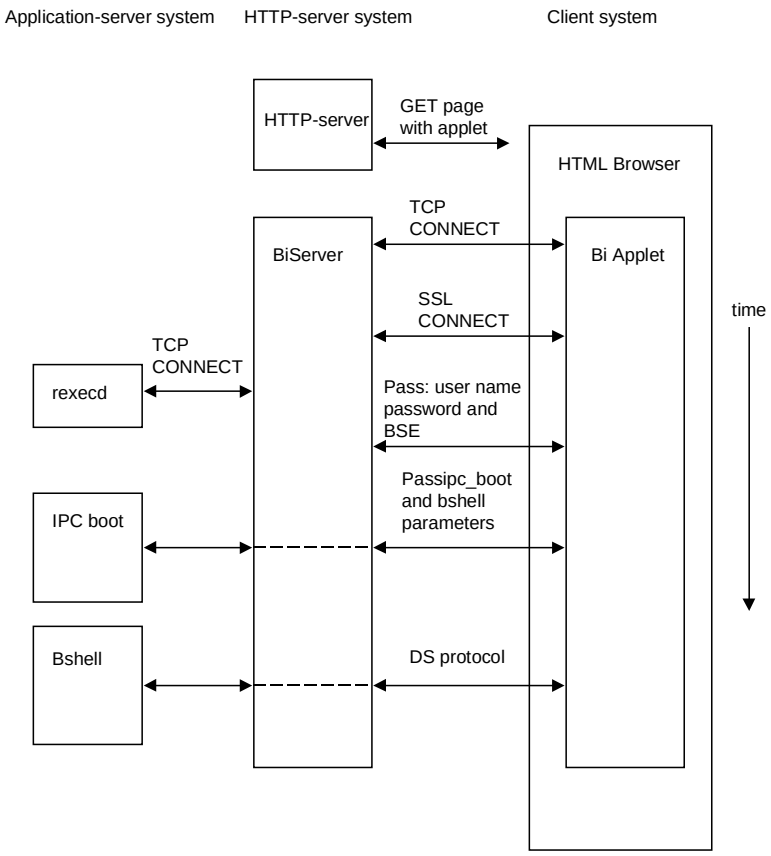

Figure 2 The connection sequence in the BaanERP Internet server

Secure communication

Security is an important issue when application functionality is offered over the Internet. Security provisions will be available at three levels:

- The HTTP-server security mechanisms can be used to offer secure access to the HTML-page that contains the BI applet.
- The Secure Sockets Layer (SSL) v3.0 protocol secure communication between the BiServer and the BI applet.
- Authentication through the application-server system.

HTTP-server security can be used to restrict access to the BI applet to a set of registered users. This feature is completely HTTP-server dependent, so it will not be further described here.

The Secure Sockets Layer (SSL) v3.0 protocol offers secure communication between the BiServer and the BI applet. At this level, the SSL protocol will be supported. The SSL protocol will provide connection security that has three basic properties:

- The connection is private. Encryption is used after an initial handshake to define a secret key. Symmetric cryptography is used for data encryption.
- The peer's identity can be authenticated using asymmetric cryptography or public key cryptography.
- The connection is reliable. Message transport includes a message integrity check that uses a message authentication code (MAC).

The BiServer will use a CipherSuite that offers neither server-side certification nor client-side authentication. Furthermore, the BiServer uses exportable versions of the cryptographic algorithms so that the software can be delivered to all countries.

Note that SSL client-side certification will not be used because this certification would require each client to get and store a certificate from a certification authority. Instead, client authentication will rely on the username/password validation used to connect to the application server system. The user name and password are encrypted when they are being transmitted from the BI applet to the BiServer via the SSL connection. In addition, access to the HTML-page that contains the BI applet can be restricted using the HTTP Server security mechanisms, which might also require client authentication.

The BiServer can be configured to use or not use SSL security.

Authentication through the application server system means that each BI user provides a user name and password to log on to the application server system.

Configuration

The BiServer allows the system administrator to configure important communication parameters, including:

- Listener port.
- Enable/disable SSL security.
- Application server system name or IP address.
- Enable/disable the logging of access history and errors.
- The log file name, but only when logging is enabled.

2 To install the BiServer

This chapter describes the installation of the BiServer and covers both the requirements for the installation and the actual installation.

Requirements

Before you start the installation, you must note the following requirements:

- Required related products
- Performance requirements
- Installation requirements

These requirements are explained in the following sections.

Required related products

The following related products that must be installed on the HTTP-server system:

- A Java run-time environment that conforms to the JDK 1.1.
- An HTTP server capable of downloading Java applets to a browser.

Performance requirements

The number of clients that can be supported by one BiServer application is not restricted by the BiServer. However, specific implementations of the Java virtual machine and/or underlying operating system can limit the number of simultaneous clients supported by one instantiation of the BiServer.

Installation requirements

Before installing the BI components on the HTTP-server system, the following third-party products must be installed and configured:

- An HTTP server. It depends on the operating system of the HTTP-server system which HTTP server you must install. When you want to run the HTTP server on an Windows NT Server, you must install Microsoft Internet Information Server (IIS). If you run a UNIX system, you could, for example, choose to install Netscape Enterprise servers or Apache.
- A Java 1.1 compatible virtual machine. Which Java virtual machine to install depends on the operating system of the HTTP-server system. Contact the supplier of your operating system to get a Java virtual machine implementation.

To install the BiServer

After preparing the HTTP-server system in the manner described in the *Installation requirements* section above, you must take the following steps to install the BI components on the HTTP-server system.

NOTE Both the HTTP-server system and the BaanERP-application server can be UNIX systems or Windows NT systems. The example installation below assumes you are installing on a UNIX platform.

1. Copy the BI installation file *$BSE*/**internet/bisetup.class** from the BaanERP server to the HTTP-server system.
2. Start the BI installation program by entering the following command at the command line:

   <*java*> **bisetup**

   The <java> string is the name of the Java interpreter. This name is supplier dependent (for example, **jview** for the Microsoft Java virtual machine).

3 Enter the destination directory for the BI components. This directory must be located in the HTTP server (a directory below the document root directory of the HTTP server). If this directory does not yet exist, BaanERP automatically creates it. After completing the installation program, the directory structure on the target system will look as follows:

```
$PUBLIC_HTML/$TARGETDIR/client/ie4/bi.cab
                                  /grid.cab
                                  /ssl.cab
                           /netscape/bi.jar
                           /bi.html
                           /readme.txt
                           /images/logo.jpg
                    /server/*.class
```

In this structure, **$PUBLIC_HTML** is a directory in the HTML tree that is accessible in the HTTP server.

$TARGET_DIR is a directory below **$PUBLIC_HTML** where the BI package has been installed.

4 Determine on which TCP port the BiServer will be listening. Select a port that is currently free.

5 Edit the HTML file that you can find at $PUBLIC_HTML/$TARGETDIR/client/bi.html. All parameters mentioned in the section “To adjust the BI HTML-page” in Chapter 3 must be filled in according to the actual configuration.

6 Start the BiServer program. See the section “To start the BiServer” in Chapter 3 for details. Arguments should correspond with the values entered in the HTML file. You can find the **BiServer.class** program in the directory **$PUBLIC_HTML/$TARGETDIR**/server (note that the execution of the **BiServer.class** program is case sensitive). With Windows NT, you can run **biserver.exe** instead of starting BiServer from a Java virtual machine.

To move the BiServer to another system

Some firewall configurations require the BiServer to run on a system other than the HTTP-server system. In this case, you must perform the following steps after you have performed the steps 1-3 described in *To install the BiServer*.

1. Install a Java 1.1 compatible virtual machine on the system where you want to run the BiServer.
2. Copy the BiServer class files from the HTTP-server system to the system where you want to run the BiServer. These class files can be found on the HTTP-server system at: **$PUBLIC_HTML/$TARGETDIR/server**. This complete directory tree must be copied, which preserves the directory structure.
3. Determine on which TCP port the BiServer will be listening. Select a port that is currently free.
4. Edit the HTML file on the HTTP-server system, which you can find at **$PUBLIC_HTML/$TARGETDIR/client/bi.html**. All parameters mentioned in the section “To adjust the BI HTML-page” in Chapter 3 must be filled in according to the actual configuration.
5. Start the BiServer program. See the section “To start the BiServer” in Chapter 3 for details. The arguments must correspond with the values entered in the HTML file.

3 To configure the BiServer

This chapter describes the additional steps that you must take to configure the BiServer after the installation, and contains the following sections:

- To start the BiServer
- To adjust the BI HTML page

To start the BiServer

The command shown below starts the BiServer, which is listening on one TCP/IP port. The BiServer forwards incoming connections to the Application Server System *appserver*. The < *java*> string is the name of the Java interpreter. This name is supplier dependent (for example, **jview** for the Microsoft Java virtual machine).

<*java*> **BiServer** [**-s**] [**-l** *logfile*] [**-c**] [**-t** *level*] [**-n** *port*] **-p** *port* **–a** *appserver*

OPTIONS

-s
When this option is specified, SSL is enabled. When this option is not specified, security is disabled. When security is enabled, the BI applet must also use SSL for communication with the BiServer. The BI applet gets this information through the applet parameters in the HTML page. See the parameter SECURITY in the section “To adjust the BI HTML-page” later in this chapter.

-l *logfile*
When this option is specified, logging of access history and errors is redirected to the file defined by *logfile*. When this option is omitted, logging information will be sent to the standard output (Java console). The level of logging detail is set with the **–t** option.

-c
When this option is specified, the logging file indicated with the option **–l** is first cleared (truncated). When this option is not specified and the logging file specified with the **–l** option already existed, all logging information will be appended to this file.

-t *level*
If this option is specified, the level of detail for logging can be specified. A higher level gives more detail. Level 0 disables logging. The default for this parameter is level 1. The maximum level is 3.

-n *port*
If this option is specified, the BaanLogon protocol is used (instead of the rexec protocol) to connect to the application server system. The specified port number must be the port on which the BaanLogon daemon is listening on the server.

-p *port*
This mandatory parameter is used to specify the port number on which this BiServer will be listening for incoming BI applet connections. As a rule, you must choose a number higher than 1024 because lower numbers are reserved for system services. The BI applet must also use this port number when it connects to the BiServer. The BI applets get this port number through the applet parameters in the HTML page. See the parameter PORT in the section “To adjust the BI HTML-page” later in this chapter.

-a *appserver*
This mandatory parameter specifies the application server system. The *appserver* can be the host name of the application server system or its IP address.

To install the BiServer as a Windows NT Service

When you are running the BiServer on a Windows NT system, you can install the BiServer as a Windows NT Service. Before you perform this installation, you must manually start the BiServer to see whether it can be started in your environment. Take the following steps to install the BiServer as an NT Service:

1. Install the Windows NT Resource Kit. For the remainder of this section, assume that this kit will be installed at **c:\ntres**.
2. Install, from the Windows NT Resource Kit, the executable **SRVANY.EXE** as an NT Service. You can perform this function by entering the following commands at the DOS command prompt:

```
C:\>cd \ntres
C:\ntres>INSTSRV BiService1 c:\ntres\srvany.exe
```

3 Open the Control Panel and select the Services applet. Now perform the following steps:

- Select **BiService1**. in the Services applet.
- Click **Startup** button.
- Select **Startup Type Automatic** in the **Startup** dialog box.
- Log on as System Account.
- Make sure this service does not interact with Desktop.
- Close the Control Panel.

4 Start a registry editor (for example, **regedt32**) and take the following steps:

- Lookup HKEY_LOCAL_MACHINE\SYSTEM\ CurrentControlSet\Services\BiService1.
- Add another key named Parameters.
- Add the values to this key that are listed in the following table.
- Close the registry editor.

Registry values

Value name	Value type	Value string
Application	REG_SZ	C:\winnt\jview.exe
AppParameters	REG_SZ	/cp . BiServer -l <logfile> -c -a <hostname> -p <portnum>
AppDirectory	REG_SZ	$PUBLIC_HTML\$TARGETDIR\server

5 When you restart your Windows NT system, the service will be started automatically.

When you want more than one BiServer to be started as a Windows NT Service, you must repeat steps 1-5 above, using another name for BiService1.

To adjust the BI HTML page

The following example shows the content of an HTML page that loads the BI applet in a browser.

```
<applet
archive="netscape/bi.jar"
code=BiLogon
width=559
height=360>
<param name=cabinets value="ie4/bi.cab, ie4/grid.cab, ie4/ssl.cab">
<param name=HOSTNAME value="”>
<param name=PORT value=2000>
<param name=SECURITY value=NONE>
<param name=BSE value=/usr/bse>
<param name=BSHELL value=bshell>
<param name=COMMAND value="">
<param name=”AUTOMATION” value=”true”>
<param name=CONFIG value=”BI”>
<param name=”ENVIRONMENT” value="corelli">
</applet>
```

The parameters that must be passed to this applet are explained below:

- HOSTNAME
  The value of this parameter is the TCP/IP host name or IP address of the system on which a BiServer application is running. When this parameter is omitted or set to an empty string, the BI applet will connect to the server, from which the HTML page that contains the applet code was running. This value is the default. However, some firewall configurations require that the BiServer runs on another system than the HTTP-server system (see the section “To move the BiServer to another system” in Chapter 2).
- PORT
  The value of this parameter is the port number on the HTTP Server System on which a BiServer application is listening. This value must correspond with the port number passed to the BiServer with the **-p** option. The BI applet will always connect to the server from which the HTML page that contains the applet code was running. The default value is 2000.

- SECURITY
  The value of this parameter is used to determine the security mode of the connection between the BI applet and the BiServer. When this value is SSL, the BI applet will start an SSL connection with the BiServer (the BiServer must have been started with the **-s** option for the related port). When this value is NONE or when this parameter is omitted, the BI applet will start a normal TCP/IP connection with the BiServer (the BiServer must have been started without the **-s** option for the related port). The default value is NONE.
- BSE
  The value of this parameter is the BSE directory path on the Application Server System. This value is used to set the correct Bshell Environment. Default: **/usr/bse**.
- BSHELL
  The value of this parameter is the Bshell name on the Application Server System. This value is used to indicate which Bshell must be started (tag in **$BSE/lib/ipc_info**). The default is bshell.
- COMMAND
  The value of this parameter is the command string that is passed to the Bshell. This value can be an environment setting for the Bshell and the name of the first session to be started. The default is empty.
- AUTOMATION
  When the value of this parameter is **True**, Baan Automation is enabled; otherwise Automation is disabled.
- CONFIG
  The value of this parameter indicates the last part of the progid used for Baan Automation. If the value of this parameter is “BI”, the complete progid is: “Baan Application BI”
- ENVIRONMENT
  The value of this parameter can be used to define the name you choose to use for the client software.

4 Client issues

BI is only supported for Microsoft Internet Explorer version 4 or later and the Microsoft Java Virtual Machine, build 4.79.2613 or higher. You can get the latest virtual machine from: http://www.microsoft.com/java/download/32updates.htm.