

# PointBase



**Console Guide**

**Version 4.8**

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# Preface

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Thank you for using PointBase Console, a Graphical User Interface (GUI) tool designed to help administer your PointBase Relational Database Management System (RDBMS). The PointBase Console allows you to perform SQL operations without typing the SQL commands or statements at a command line. The PointBase Console is an alternative to the PointBase Commander, which is a command-line tool. This guide contains instructions for using PointBase Console.

## Who Should Use This Guide

This guide is intended for developers, application programmers, and administrators. This guide assumes that you:

- Understand terminology such as RDBMS, Java, SQL and classes.
- Understand the fundamentals of a relational database system and how tables and indexes are created.
- Have a basic knowledge of the SQL language.
- Are familiar with your operating system

## How This Guide is Organized

This guide provides information necessary to first start the PointBase Console and continues to explain how to use it. Additionally, this guide explains PointBase Console's toolbar and window options and menus.

## Document Feedback

Please send comments or suggestions for all PointBase Documentation to the following email address.

[pbdocfeedback@pointbase.com](mailto:pbdocfeedback@pointbase.com)

## Document Conventions Used in This Guide

The following table describes the document conventions used in this guide.

<b>Convention</b>	<b>Identifies</b>	<b>Examples</b>
ALL UPPERCASE LETTERS	<ul style="list-style-type: none"> <li>Environment variables</li> <li>Database table names</li> <li>SQL Keywords</li> </ul>	<ul style="list-style-type: none"> <li>PATH</li> <li>S_LST_OF_VAL</li> <li>CREATE TABLE</li> </ul>
Courier New font	<ul style="list-style-type: none"> <li>Directory, file, folder, and path names</li> <li>Code</li> <li>Data you need to type</li> </ul>	<ul style="list-style-type: none"> <li>c:\pointbase\img.bmp</li> <li>Set PointBase =</li> <li>Type Your Company Name Here</li> </ul>
Initial Uppercase Letters	PointBase names, objects, properties, windows, screens, dialog boxes, menus, buttons, tabs, applets, fields, and icons	PointBase Embedded, Business Component object, List Editor window, Main menu, and Cancel button
<i>Italics</i>	<ul style="list-style-type: none"> <li>Book titles</li> <li>Cross references in an index or glossary</li> <li>Variables</li> <li>Arguments to statements of functions</li> <li>First appearance of a new word or phrase</li> <li>Emphasis</li> </ul>	<ul style="list-style-type: none"> <li><i>User's Guide</i></li> <li><i>see also</i> or <i>see</i></li> <li><i>APPSRVR_4X_ROOT</i></li> <li><i>variable, rate, prompt\$</i></li> <li><i>new word</i> or <i>phrase</i></li> <li>Do not do this <i>before</i> you do that.</li> </ul>
[ ]	Optional italicized arguments or characters inside angle brackets	[ <i>caption</i> ]
{   }	Choice from listed arguments; use OR operator ( ) to separate	{Goto <i>label</i>   Resume Next   Goto 0}

# Connecting to the Database

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This chapter explains how to connect to a database using the PointBase Console. Before you begin using the PointBase Console to access and manage data in the database, you must get a connection to the database through the PointBase Console. The following sections explain how to get a database connection using the initial PointBase Console window, **Connect To Database**, which appears after you launch the PointBase Console.

If you have already launched the PointBase Console and want to connect to a different database, go to the *DBA* menu and select the option to connect to a database. This option also displays the **Connect To Database** window.

## Specifying the Database Driver

In the initial console window, **Connect To Database**, specify a database driver in the *Driver* field. It defaults to the PointBase JDBC driver, “com.pointbase.jdbc.jdbcUniversalDriver.”

Every time you try to connect to a database using the PointBase Console after you have closed your first connection, the PointBase Console picks up the defaults from the properties file that it created while exiting. That is, the new defaults when you connect again will be the driver, the user name, and the URL which you last used.

## Specifying the Database URL

Specify the database URL in the *URL* field. It defines the protocol, subprotocol, and the subname as defined in the book, *JDBC API Tutorial and Reference, Second Edition* (Sun Microsystems). The subprotocol may define the database port number, where it listens for client connections, if you are trying to connect to a PointBase Embedded. It defaults to “jdbc:pointbase:embedded:sample,” where *jdbc* is the protocol, *pointbase:embedded* is the subprotocol, and *sample* is the subname.

If you are using PointBase Embedded - Server Option, the URL should look like the following: “jdbc:pointbase:server://<machine\_name><:port>/sample,” where *pointbase:server*” is the subprotocol, <machine\_name> is the machine name where the database is running, and <:port> is the port number where PointBase is listening for client connections. You do not have to specify the port number if you are using the default port number for PointBase, which is 9092. (This only applies when using the Server Option. When not using the Server Option, PointBase Embedded does not use tcp/ip for connectivity and hence a port is not relevant.

**NOTE:** PointBase supports all URLs from earlier PointBase versions.

## Specifying the User

Specify the name of the user connecting to the database in the *User* field. The user name is not case-sensitive, and you may enter any alphanumeric characters or the equivalent in a language other than English. It defaults to *PBPUBLIC*.

## Specifying the Password

Specify the password to connect to the database in the *Password* field. The password is not case-sensitive, and you may enter any alphanumeric characters or the equivalent in a language other than English. It defaults to *PBPUBLIC*.

## Creating the Database

This section explains how to create a new database, connect to an existing database, or drop an existing database and re-create it. When you connect to a database, you specify the database name in the URL. If the database name you specify is new or existing, you must select the appropriate radio button on the **Connect To Database** window. The same is true if you want to drop an existing database and re-create it with the same name—overwriting the database.

### Opening an Existing Database

Select the radio button, *Open Specified Database*, to open an existing database. If the database you specified does not exist, PointBase Console throws an error.

### Creating a New Database

Select the radio button, *Create New Database*, to create a new database. If you try to create a database that already exists, PointBase will simply connect to the existing database.

### Overwriting a Database

Select the radio button, *Drop Specified Database and Recreate*, to completely overwrite an existing database. If you specify a database that does not exist, PointBase Console will create a new database with the name you specified.

# The PointBase Console Interface



This chapter describes the graphical user interface of the PointBase Console. It allows you to perform SQL commands at a click of a button, or you can enter SQL commands in an SQL Input field. The PointBase Console also allows you to explore your database by simply clicking icons to view entire database schemas or table structures. The following sections describe the different areas in the console interface.

## PointBase Console Menus

The PointBase Console menus are located at the top of the PointBase Console interface. Each menu contains several different sub-menus and options from which you can select. The following list identifies the PointBase Console menus.

- File
- Edit
- SQL
- DBA
- Result
- Windows
- Favorites
- Help

## Shortcut Buttons

The PointBase Console shortcut buttons provide fast access to common database tasks for example, opening and saving a file, executing SQL commands, and committing or rolling back SQL commands. The shortcuts are just below the PointBase Console menus.



## Navigation Tree

The PointBase navigation tree allows you to browse your database by simply clicking on icons to extend a tree structure of your database. The navigation tree is located in the left frame of the PointBase Console, just below the shortcut buttons. If you are using a mouse with the right-click functionality, you may right-click on icons in the navigation tree to display added functionality.

## SQL Input Frame

The PointBase Console SQL input frame is a field where you can enter SQL commands like a command line. The SQL input frame is located on the right side of the PointBase Console window, just below the shortcut buttons.

Make sure to enter a semi-colon (;) to end each of your statements. To execute an SQL command, simply place the cursor after the semi-colon and click the *Execute* shortcut button. When you click *Execute*, you have the option to display read only output or updateable output. If you select to display updateable output, you may change data directly in the field that the *Execute* tab displays. To execute multiple SQL commands, click the *Execute All* shortcut button. PointBase Console executes all the SQL commands from that point and before it. You cannot update the SQL output if you choose *Execute All*.

## Execute and Execute All Tabs

In the frame below the SQL input frame, there are *Execute* and *Execute All* tabs. The fields that these tabs display contain the SQL output from an SQL command you executed. You may toggle between *Execute* and *Execute All*; however, when you click the *Execute* shortcut button to execute an SQL command, PointBase Console automatically puts your results in the field that the *Execute* tab displays. If you click the *Execute All* shortcut button to execute an SQL command(s), PointBase Console puts your results in the field that the *Execute All* tab displays.

### Execute Tab Functionality

Unlike the *Execute All* tab, which only displays SQL output, the *Execute* tab displays additional PointBase Console features. For example, if you selected to display updateable output, you have the option to change data directly in the SQL output field. After you have completed any changes to the output, click the appropriate button just below the SQL output field to execute your changes.

#### *SQL Output Buttons*

Click the buttons just below the SQL output field to execute any changes you make to updateable output. The following buttons are displayed:

- Delete Row
- Insert New Empty Row
- Update Row

***Max Rows***

Also below the SQL output field, is the *Max Rows* field. It defines the maximum amount of rows to display in the SQL output frame. You may change this number by editing the field directly.

***SQL Execution Timer***

The field next to the SQL output buttons calculates the number of seconds that the database needed to execute and display the most recent SQL command. To disable this feature, go to the *SQL* menu and un-check the option, *Timer Mode*.

***Row and Column Counter***

The field next to the SQL performance timer displays the number of rows and columns in the SQL output field. The first number is the number of rows followed by the number of columns.

## Message Frame

At the bottom of the PointBase Console, the message frame displays PointBase Console messages. These messages range from the status of SQL commands which you executed, to the current connection status of the database. You may also clear the message frame by clicking the *Clear History* button just below the frame.

## Re-sizable Frames

PointBase Console also provides the added functionality of re-sizeable frames, which you can use to resize the PointBase Console frames. Locate the arrows between the console frames, and click an arrow to automatically maximize or minimize a particular frame. You may also click and hold a frame border to manually resize it yourself.

# Managing the Database

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This chapter explains how to manage your database using the PointBase Console. Managing database can range from creating tables, users, and schemas, to inserting, deleting, and querying the database. PointBase Console provides the capability to perform several database operations. **In addition to using the SQL input frame, where you can manually enter SQL commands to manage your database**, PointBase Console provides menus and other options, which you can use. The following sections explain the database operations that you may perform using the additional menus and options.

## Creating Database Objects

The following table describes database objects and the different options to create them using the PointBase Console:

<b>Database Object</b>	<b>Using the DBA Menu</b>	<b>Right-clicking the Navigation Tree</b>	<b>Where to Right-click</b>
Triggers	yes	yes	Right-click the name of the table
Roles	yes	yes	Right-click <i>Roles</i>
Tables	yes	yes	Right-click the name of the table or the name of the schema
Routines	yes	no	
Indexes	yes	yes	Right-click the name of the table
Users	yes	yes	Right-click <i>Users</i>
Schemas	yes	yes	Right-click the database icon above the schemas icon
Databases	yes	no	

## Dropping Database Objects

The following table describes database objects and the different options to drop them using the PointBase Console.

<b>Database Object</b>	<b>Using the DBA Menu</b>	<b>Right-clicking the Navigation Tree</b>	<b>Where to Right-click</b>
Triggers	yes	yes	Right-click the name of the trigger
Roles	yes	yes	Right-click the name of the role
Tables	yes	yes	Right-click the name of the table
Routines	yes		
Users	yes	yes	Right-click the name of the user
Indexes	yes		

## Altering Database Objects

The following table describes database objects and the different options to alter them using the PointBase Console.

<b>Database Object</b>	<b>Using the DBA Menu</b>	<b>Right-clicking the Navigation Tree</b>	<b>Where to Right-click</b>
Users	yes	yes	Right-click the name of the user
Tables	yes	yes	Right-click the name of the table

## Granting and Revoking

The following table describes database objects and the different options to grant or revoke them using the PointBase Console.

<b>Database Object</b>	<b>Using the DBA Menu</b>	<b>Right-clicking the Navigation Tree</b>	<b>Where to Right-click</b>
Roles	yes	yes	Right-click the name of the role
Privileges	yes	yes	Right-click the name of the table

## Querying Database Tables

You may query an entire table by right-clicking the desired table in the navigation tree of the PointBase Console. In addition to selecting an entire table by choosing the “SELECT \* FROM *<table\_name>*”, you have several other options from which you may choose to select. You may also add a SELECT statement to the *Favorites* menu, if you plan to use that particular SQL statement repeatedly and would like to store that statement for future use. See “Using Additional Features” for more information about using the *Favorites* menu.

## Returning Updateable SQL Output

Using the PointBase Console, you may only return updateable output in the SQL output field if you enter a query in the SQL input frame. After entering a query, select *Updateable Output* from the *Execute* shortcut button or from the *Execute* option in the the *SQL* menu.

## Inserting Rows

To insert a row into a table, simply execute a query in the SQL input frame that returns the desired table into which you want to insert. Make sure to select the *Updateable Output* option when you execute the query.

After PointBase returns the updateable output, click the *Insert New Empty Row* button below the updateable output, and insert the appropriate data directly into the new empty row. When you are finished inserting data, click the *Insert Row* button to validate your new row. Note that, if autocommit is on, clicking the *Insert Row* button commits your new row to the database. If autocommit is off, you must execute the COMMIT statement to make your new row permanent to the database.

## Deleting Rows

To delete a row, simply execute a query in the SQL input frame that returns the desired table into which you want to delete. Make sure to select the *Updateable Output* option when you execute the query. Click on the row you want to delete in the SQL output field and, click the *Delete Row* button.

Note that, if autocommit is on, clicking the *Delete Row* button commits your new row to the database. If autocommit is off, you must execute the COMMIT statement to make your new row permanent to the database.

## Updating Rows

To update a row, simply execute a query in the SQL input frame that returns the desired table into which you want to update. Make sure to select the *Updateable Output* option when you execute the query. After you make changes to a value, click the *Update Row* button to validate your changes.

Note that, if autocommit is on, clicking the *Update Row* button commits your new row to the database. If autocommit is off, you must execute the COMMIT statement to make your new row permanent to the database.

## Configuring Database Properties

The *DBA* menu has the option, *Database Properties*, which you may select to configure the database properties. Please refer to the *PointBase System Guide* for information about the PointBase database properties.

## Unloading the Database

The *DBA* menu has the option, *Unload Database*, which can unload the current database to a “.sql” file on your machine. Select *Unload Database* and follow the prompts to complete the process. Make sure to specify the file extension, when you are prompted for a destination file.

## Using Autocommit

By default, the PointBase Console enables autocommit. To disable autocommit, go to the *SQL* menu and un-check the *Autocommit* option.

## Displaying the Optimizer Plan

The *SQL* menu has the capability to display the optimizer plan for every query. To display optimizer plans for you queries, check the *Optimizer Analysis Mode* option.

## Importing and Exporting Data

The following sections describe how to import data into the database or export data to a file.

## Importing Data

To import data from a file or database into a table, go to the *File* menu. Select *Import*, and complete the wizard which guides you through this process.

When you import data, note that the transfer of data is faster when selecting Bulk Mode. Select *Quote String Data* if your data contains any quoted Strings. Choices of delimiters are: comma, space, tab, bar, and SQL. A delimiter is a character or String that you use to separate or mark the start and end of each value in the data. Choose the delimiter SQL if you want to import data from another database.

If you choose SQL for a delimiter, the PointBase Console displays a database URL for the field, *Source URL*. Make sure the database URL specifies the database from which you want to import data. After you click *OK*, an additional *Import from Database* window appears. Make sure to enter the required information for the database from which you are importing data. The required information is as follows:

- Source Database Driver: Make sure the driver is in the classpath when you launched PointBase Console. See “<install\_directory>/tools/embedded/startconsole.bat” for an example classpath. You must add the database driver to this classpath.
- Source Database User
- Source Database Password
- Query: Specifies the query you want to perform on the database, from which you are importing data.

## Exporting Data

To export results from a query to a file, go the *File* menu. Select *Export* and complete the wizard which guides you through this process.

When you export data, note that the transfer of data is faster when selecting Bulk Mode. Select *Quote String Data* if your data contains any spaces. Choices of delimiters are: comma, space, tab, and bar. A delimiter is a character or String that you use to separate or mark the start and end of each value in the data.

## Spooling Output

You can spool the output to a file generated by Execute all button. To enable this option, please select "Save results in File" from the DBA menu. Output will be appended if an existing file is selected. You can turn off this option by unchecking "Save results in File."

You can also turn on Spooling using the command line. For example:

```
C:>java com.pointbase.tools.toolsConsole -driver
com.pointbase.jdbc.jdbcUniversalDriver -url
jdbc:pointbase:embedded:sample -user PBPUBLIC -password
PBPUBLIC -spoolfile \<user_home>\example.spl
```

# Using Additional Features



This chapter explains how to use the additional features that the PointBase Console offers. You may use these features to customize the look of your PointBase Console and to perform other common tasks. Each of the following sections explain how to use a PointBase Console feature.

## Using the Window Menu

The *Window* menu has the capability to customize the look of your PointBase Console and to clear the SQL input frame and the SQL output field. To choose different themes for the PointBase Console, select from one of the following options in the *Window* menu:

- Metal
- CDE/Motif
- Windows

You may also hide the shortcut buttons on the PointBase Console, by de-selecting the *ToolBar* option from the *Window* menu.

## Clearing SQL Input and Output

To clear the SQL input frame or the SQL output field, simply select the *Clear Output* or *Clear Input* options from the *Window* menu.

## Using the Favorites Menu

The *Favorites* menu has the capability to store, manage, and execute SQL commands. You can use this feature to store SQL commands that you plan to use more than once. If you need to change your favorites, you can update or delete them as well.



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## Adding Favorites

There are two ways to store a favorite SQL command using the PointBase Console. Enter the command in the SQL input field, put the cursor after the semi-colon, which ends your statement, then select the option, *Add to Favorites*. **You may only add one statement at a time.** Additionally, you may add SQL commands by selecting the *Organize Favorites* option from the *Favorites* menu and entering the command in the provided field. In this particular field, **do not** enter a semi-colon at the end of the statement. After entering the command or statement, click the *Add* button.

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**NOTE:** If you add a favorite command via the SQL input frame, you must include the semi-colon at the end of the statement. If you use the *Organize Favorites* option to add a favorite, do not enter a semi-colon at the end of the statement.

## Updating and Deleting Favorites

To update a favorite SQL command, select *Organize Favorites*, select the command you want to update, change it in the provided field, then click *Update*.

In the same window, *Organize Favorites*, delete a favorite command by selecting the command and clicking *Delete*.

## Executing Favorites

Simply select the desired SQL command from the *Get Favorite* option to automatically execute it.

## Viewing the History

The *History* option displays a list of the last 10 SQL commands, which you have executed.

## Copying SQL Output to Another Application

You can copy SQL output and paste it to another application, for example, an Microsoft Excel worksheet, using the PointBase Console. The *Result* menu has the capability to copy the entire SQL output or only specified rows in the SQL output. Select the SQL output that you want to copy, and click *Copy* from the *Result* menu. To copy the entire SQL output, click *Select All* from the *Result* menu and then click *Copy*. Note that the copied SQL output is tab separated.

## Saving SQL Output or Input to a File

The *Save As* option from the *File* menu has the capability to save the **SQL output** to an HTML file, an ASCII file, or a log file. You can also save the the **SQL input** to an “.sql” file. Select this option and follow the prompts to complete the process. Make sure to enter the file extension name when you are specifying the file to which you are saving SQL output or input, for example, “.sql,” for saving SQL input. For saving SQL output within the *Execute* tab, specify the file extensions, “.html” or “.dat.” Within the *Execute All* tab, specify the file extension, “.log.”

## Using the Help Menu

The Help topics will launch the help system for Console. The Show System option in the help menu you determine the following:

1. PointBase Version and Build number
2. Operating System
3. Java System
4. Driver
5. Database
6. Username