

Daffodil DB

Getting Started Guide

Version 4.1

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Preface

Purpose

This guide briefly describes the following:

- Installing and Uninstalling Daffodil DB
- Daffodil DB Editions
- Daffodil DB Tools
- How to start and stop Daffodil DB
- Understanding key variables used by Daffodil DB
- User documentation bundled with Daffodil DB

Audience

This Getting Started Guide is intended to act as a ready reference tool for new and intermediate Daffodil DB users navigate and perform common tasks listed above.

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Installation of Daffodil DB

Hardware, Software and Memory Requirements

The following table describes the hardware, software and memory requirements for Daffodil DB and Daffodil DB tools.

Processor	Intel or compatible Pentium 266 MHz or higher.
Software	Any Operating system with a Java 2 Runtime Environment – 1.3 or higher.
Memory (RAM)	<i>Embedded Edition:</i> 32 MB minimum <i>Client/Server Edition:</i> 64 MB minimum
Hard Disk Space	<i>Embedded Edition:</i> 20 MB (Including Daffodil DB Embedded, Daffodil DB Browser, help files, sample database and batch files) <i>Client/Server Edition:</i> At Server Side: 20 MB (Including Daffodil DB Server, Daffodil DB Browser, help files, sample database and batch files) Client Side: 300 KB for Daffodil DB Browser and 5 MB for help files and batch files.
Monitor	800x600 or higher resolution required for the Daffodil DB Browser

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Installation Steps

This section describes the steps involved in the installation of Daffodil DB Professional/Standard (One\$DB).

Before starting off with Daffodil DB installation, make sure that JRE (Java Runtime Environment) 1.3 or above is installed on your system. If you don't have JRE, download from <http://java.sun.com/j2se/1.4.2/download.html>

1. Go to <http://www.dafodildb.com> and click on the Download button.
2. You will be prompted to enter your email address and other details.
3. In the download page, you have various options to download like:
 - Daffodil DB v 3.4 Beta (trial version for 45 days)
 - Daffodil DB v 3.4 Beta - Command Line Installer (trial version for 45 days)
 - Daffodil DB v 3.4 Beta - Without Documentation (trial version for 45 days)
 - One\$DB 3.4 Beta (Free)
 - One\$DB 3.4 Beta - Command Line Installer (Free)
4. To buy Daffodil DB Professional, go to <http://www.daffodildb.com/buy.html>. After filling up the registration form, you will get a mail with the license key and a link to download the software, to the email id specified by you during registration.
5. Extract the corresponding zip file (For example, DaffodilDB3_4_Beta.zip, if you have downloaded Daffodil DB v 3.4 Beta), to an appropriate folder.
6. After extraction, you will find two files, a jar file and a ReadMe.txt file. In our example the jar file is DaffodilDB3_4_Beta.jar. It is a self executable file which will install Daffodil DB in your system.
7. Either Double click on DaffodilDB3_4_Beta.jar or run the following command to initiate the installation process (It may take few seconds to start).

```
java -jar \path\DaffodilDB3_4_Beta.jar
```

(Path is the absolute path where you have extracted DaffodilDB3_4_Beta.zip)
8. The installation wizard will guide you through the rest of the process
9. During the installation, you have the option of selecting the components (embedded, server, client, documentation), specifying the installation directory, choosing Java Virtual Machines etc.

Extra step for Macintosh users

10. You have to explicitly change the mode of all **.command** files located under the directory **<installation path>/Tools** using the command **chmod** as follows:

```
chmod 777 *.command
```

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Daffodil DB Editions

Daffodil DB is available in two editions – Daffodil DB Embedded Edition and Daffodil DB Networked Edition (also referred to as Daffodil DB Client/Server Edition).

Daffodil DB Embedded Edition

Daffodil DB Embedded Edition is a 100% Java Relational Database Management System suitable for multi-threaded applications requiring an embedded database. Daffodil DB Embedded Edition is a multiple connection RDBMS designed specifically for embedding it inside Java based applications. Daffodil DB fully supports multiple connections within the same Java virtual machine (JVM) as well as multiple threads performing operations concurrently in each connection. Embedded in a single-user Java application, Daffodil DB can be practically made invisible to the user, since it requires no administration and runs on the same JVM as does the application.

Daffodil DB Networked Edition

Daffodil DB Networked Edition, built on Internet standards is a 100% Java Relational Database Management System (RDBMS) that provides robust relational data management for networked applications. Networked applications can use Daffodil DB Server Edition to provide ubiquitous data access from anywhere using standard Structured Query Language (SQL) and Java Database Connectivity (JDBC) interfaces. Daffodil DB Server can be placed on an Intranet with clients connecting to it via TCP/IP connections. Daffodil DB Server can also be integrated with an Application Server, or a Web Server, to provide database connectivity over the Internet.

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Daffodil DB Tools

Daffodil DB comes bundled with the following tools and utilities:

- Daffodil DB Browser
- Daffodil DB Shell

Daffodil DB Browser

Daffodil DB Browser is a GUI based database management tool. It can be used to carry out all database operations on Daffodil DB such as creating a database, creating database objects, executing SQL statements, manipulating data, browsing database objects etc.

Daffodil DB Shell

Daffodil DB Shell is a command line tool which facilitates user to run SQL statement from SQL command prompt. It also provides the facility to execute SQL Script (a file containing multiple SQL Statements separated by a semi colon).

Note: - Please refer “[Daffodil DB Tools Guide](#)” for more information about Daffodil DB Browser and Daffodil DB Shell.

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Understanding DAFFODIL_HOME, DAFFODILDB_HOME and DAFFODILDB_PORT

DAFFODIL_HOME specifies the path, where Daffodil DB and its tools are installed which can be specified during Daffodil DB installation.

A Daffodil DB instance is associated with a physical directory, **DAFFODILDB_HOME**, which contains zero or more databases. **DAFFODILDB_HOME** contains one subdirectory for each Daffodil DB database, which has same name as that of the database. **DAFFODILDB_HOME** for a Daffodil DB instance determines the available databases in the system and the path where new databases are created. By default **DAFFODILDB_HOME** is set to **<DAFFODIL_HOME> /databases** directory.

A Daffodil DB instance can be associated with one and only one **DAFFODILDB_HOME**. Hence, a Daffodil DB instance can not have databases with subdirectories under different **DAFFODILDB_HOME** directories.

DAFFODILDB_HOME can be defined by any “one” of the following:

- **DaffodilDB_home** (JVM property)
- **DaffodilDB_home** (environment variable)
- **<user.Home>/DaffodilDB** (system property)

Only one of the above variable/property is used to define **DAFFODILDB_HOME**. They are checked for definition in the order in which they are mentioned above i.e. if one variable/property is defined, then the others are ignored. For example, if **DaffodilDB_home** system property has been defined, then **DaffodilDB_home** environment variable and **user.Home** system property are not used.

If neither of **DaffodilDB_home** system property or **DaffodilDB_home** environment variable is defined, then **user.Home/DaffodilDB** is used as **DAFFODILDB_HOME**. If **DaffodilDB** folder does not exist in **user.Home**, then a folder with the name **DaffodilDB** is created in **user.Home** and used as **DAFFODILDB_HOME** by Daffodil DB instance.

If you specify **DAFFODILDB_HOME** that does not exist, Daffodil DB automatically creates a new directory without databases.

DAFFODILDB_PORT is a JVM property (applicable only in case of Daffodil DB - Networked Edition), which specifies the port at which Daffodil DB server can run. If the JVM property is not set, then Daffodil DB server uses the default port setting of 3456.

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Directory Structure created during Daffodil DB Installation

Directory Structure containing all necessary libraries are mentioned in the path specified by DAFFODIL_HOME environment variable.

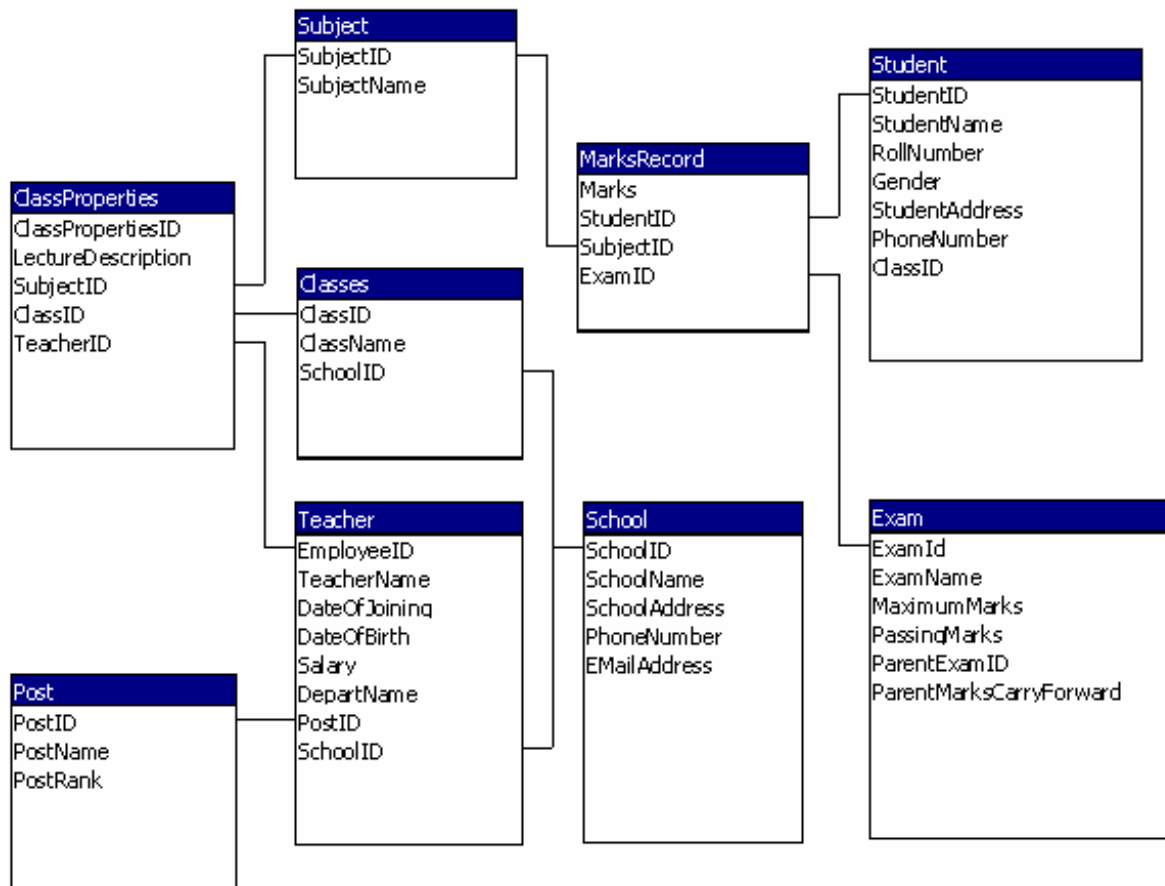
Directory Name	Description
<DAFFODIL_HOME>/lib	Contains all necessary jar files of Daffodil DB.
<DAFFODIL_HOME>/tools	Contains all batch files/script files for starting and stopping daffodil database server and Daffodil DB browser.
<DAFFODIL_HOME>/docs	Documentation directory
<DAFFODIL_HOME>/docs/PDF	Documentation of Daffodil DB in PDF format. It contains Daffodil DB Getting Started Guide, Daffodil DB Tools Guide, Daffodil DB System Guide, Daffodil DB JDBC Reference Guide and Daffodil DB SQL Reference Guide.
<DAFFODIL_HOME>/samples	Sample codes for demonstrating the use of some basic JDBC statements.
<DAFFODIL_HOME>/license.html	Contains the Licensing information of Daffodil DB.
<DAFFODIL_HOME>/readme.html	Contains General Information on the product.
<DAFFODIL_HOME>/databases	This directory contains the database that is shipped along with Daffodil DB. This sample database contains tables that match the examples given throughout the documentation to help users in getting familiar with Daffodil DB.

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Sample Database

A sample database is bundled with Daffodil DB software kit. All the examples mentioned in Daffodil DB documentation are taken from this sample database. The sample database is titled “**School**”. Username as well as password for the sample database is “**daffodil**”.

Schema for “School” database



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Starting and Stopping Daffodil DB

Starting Daffodil DB Server

To start Daffodil DB server, use the batch file (for Windows) or the shell script (for Unix/Linux) installed during Daffodil DB installation in the tools folder.

Command Prompt > [StartServer](#)

In order to see the logs printed by Daffodil DB Server, use **verbose** option while starting Daffodil DB server:

Command Prompt > [StartServer verbose](#)

Stopping Daffodil DB Server

To stop Daffodil DB server, use the batch file (for Windows) or the shell script (for Unix/Linux) installed during Daffodil DB installation in the tools folder.

Command Prompt > [StopServer](#)

Running Daffodil DB server on a specific port

The default port number at which Daffodil DB server runs is 3456. If due to some reason, you want to change the port settings for Daffodil DB server, edit the batch file or shell script first ([StartServer.bat/StartServer.sh](#) and [StopServer.bat/StopServer.sh](#)) and replace 3456 in the batch file with the port number at which you want Daffodil DB server to run and use the modified file for starting as well as stopping Daffodil DB server.

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How to start and stop Daffodil DB Embedded

Daffodil DB embedded does not run as a separate process. You don't need to start and stop Daffodil DB Embedded explicitly. Since, it is embedded in an application; it starts automatically at the time when the application tries to connect using the JDBC driver and stops when the application exits or the application unloads the database.

Changing Database path for Daffodil DB Server

To change the database path for Daffodil DB server, edit [StartServer.bat/StartServer.sh](#) and [StopServer.bat/StopServer.sh](#) files and modify the value of DAFFODILDB_HOME in the file to the path where you want to maintain your database and use the modified file for starting as well as stopping Daffodil DB server.

Changing Database path for Daffodil DB Embedded

To change databases path for Daffodil DB embedded, modify the value for first argument in the java command in [BrowserEmbedded.bat/BrowserEmbedded.sh](#) file to the path where you want to maintain your database.

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Starting Daffodil DB as an NT Service

There are several freely available tools on the internet that allows setting up a Java application as an NT service.

Following tools can be used to start Daffodil DB as an NT Service:

- JavaServ - <http://www.kcmultimedia.com/javaserv/>
- Jsrvany - <http://sourceforge.net/projects/jsrvany/>

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Working with Daffodil DB

Working with Daffodil DB Embedded

You can work with Daffodil DB embedded in the following ways:

Through JDBC Interface

Daffodil DB JDBC Driver class for Daffodil DB Embedded is

`in.co.daffodil.db.jdbc.DaffodilDBDriver`

The connection URL format for Daffodil DB Embedded is:

**`jdbc:daffodilDB_embedded:< database
name>;property1=value1;property2=value2;
propertyn=valuen","<username>","<password>"`**

The following sample class connects to an embedded Daffodil DB database named "School".

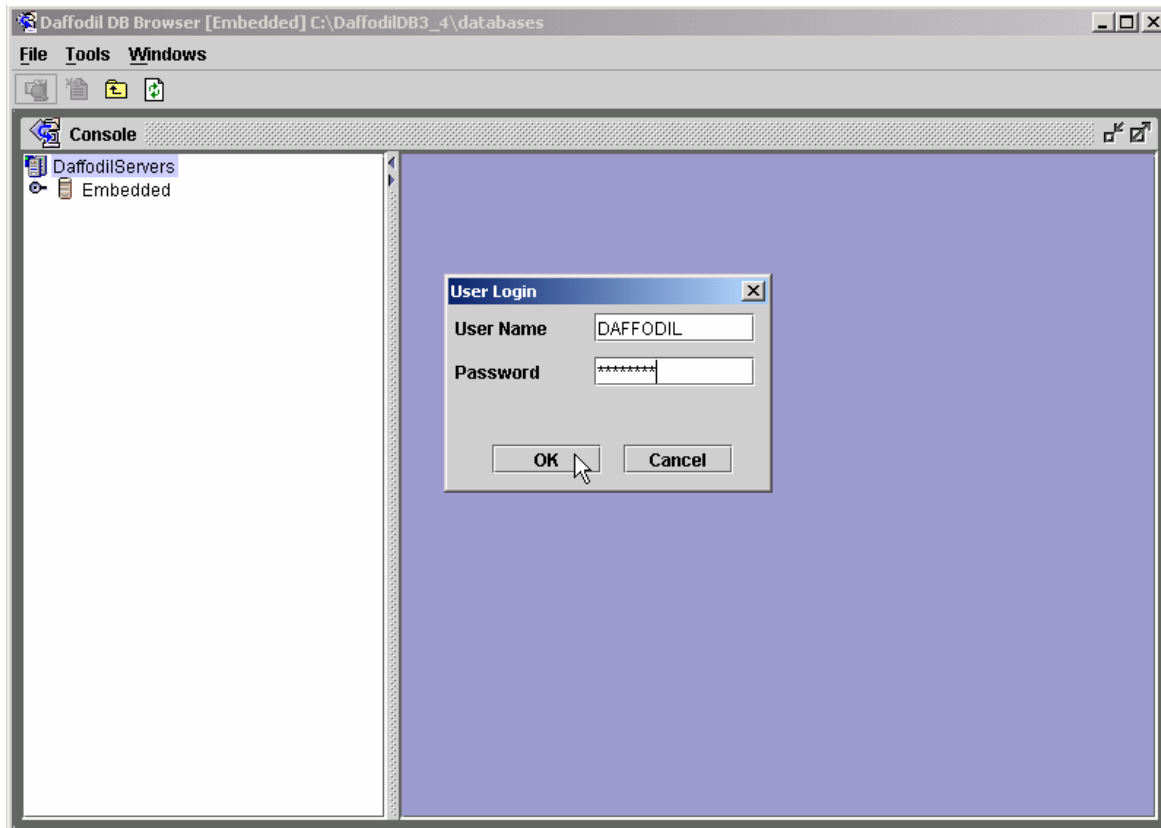
```
//import jdbc classes
import java.sql.*;
public class sample {
    public static void main (String[] args) {
        try {
            //register the driver
            Class.forName("in.co.daffodil.db.jdbc.DaffodilDBDriver ");
            System.out.println("Daffodil DB started!");
            //Connect to the database
            Connection con = DriverManager.getConnection
            ("jdbc:daffodilDB_embedded:School;create=true","","");
        } catch (Throwable e) {
            System.out.println("exception thrown:"+e);
        }
    }
}
```

Note: - For more information on how to interact with Daffodil DB through JDBC interface, refer "[Daffodil DB JDBC Reference Guide](#)".

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Through Daffodil DB Browser

To connect to a Daffodil DB embedded database on the local machine using Daffodil DB Browser, start [BrowserEmbedded.bat](#) file installed during Daffodil DB installation in the tools folder. You will be prompted to enter username and password as shown in the following screen shot.



Now click on the embedded node. This shows you a list of databases in the current *DAFFODILDB_HOME* used by Daffodil DB instance, which in turn depends on the value of *DaffodilDB_home* environment variable.

If you haven't changed *DaffodilDB_home* environment variable and not deleted "School" database after installing Daffodil DB, it should show one of the databases as "School", which is a sample database installed with Daffodil DB.

Note: - For more information on how to interact with Daffodil DB using Daffodil DB Browser, refer "[Daffodil DB Tools Guide](#)".

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Through Daffodil DB Shell

Daffodil DB Shell can be started in Embedded mode by double clicking on [ShellEmbedded.bat](#) file installed during Daffodil DB installation in the tools folder or by executing the following command from Command Prompt:

Command Prompt > **ShellEmbedded**

Following properties will be prompted for:

- Username - Username is required to access Daffodil DB database.
- Password – Specify the password for the above user.
- DaffodilDBHOME (Database Path) – Specify the path to the folder where you want the databases to be created/connected.
- ReadOnlyMode – If set to true, the users cannot manipulate with the database.
- Database Name – Specify the name of the database to which you want to establish a connection.
- StackTrace – If set to true, will display traces of exceptions generated by SQL queries.
- Database Option – Here you can customize your database properties like Initial File Size, Multi File Support and Increment Factor.

After Daffodil DB Shell starts, you can fire 'n' number of SQL queries.

Note: - For more information on how to interact with Daffodil DB using Daffodil DB Shell, refer "[Daffodil DB Tools Guide](#)".

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Working with Daffodil DB server

You can work with Daffodil DB server in the following ways.

(Note: -Make sure that Daffodil DB server runs either on the local machine or some remote machine).

Through JDBC Interface

Daffodil DB JDBC Driver class for Daffodil DB in remote mode is:

[in.co.daffodil.db.rmi.RmiDaffodilDBDriver](#)

The connection URL format for Daffodil DB in remote mode is:

[jdbc:daffodilDB://<hostname>:<port>/<databasename>;property1=value1;property2=value2;propertyn=valuen","<username>","<password>"](#)

The following class named "sample" connects to database "School" from Daffodil DB database server running on a remote host "host1" at port "3456", as user "user1".

//import jdbc classes

import java.sql.*;

public class sample {

public static void main (String [] args) {

try {

//register the driver

Class.forName("in.co.daffodil.db.rmi.RmiDaffodilDBDriver ");

System.out.println("Daffodil DB started!");

//Connect to the database

Connection con = DriverManager.getConnection

("jdbc:daffodilDB://host1:3456/School","user1","password");

} catch (Throwable e) {

System.out.println("exception thrown:"+e);

}

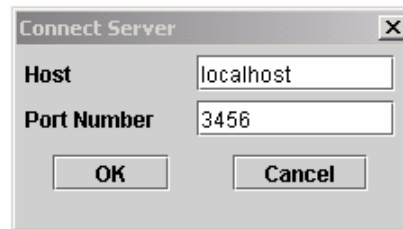
}

Note: -For more information on how to interact with Daffodil DB through JDBC interface, refer [Daffodil DB JDBC Reference Guide](#).

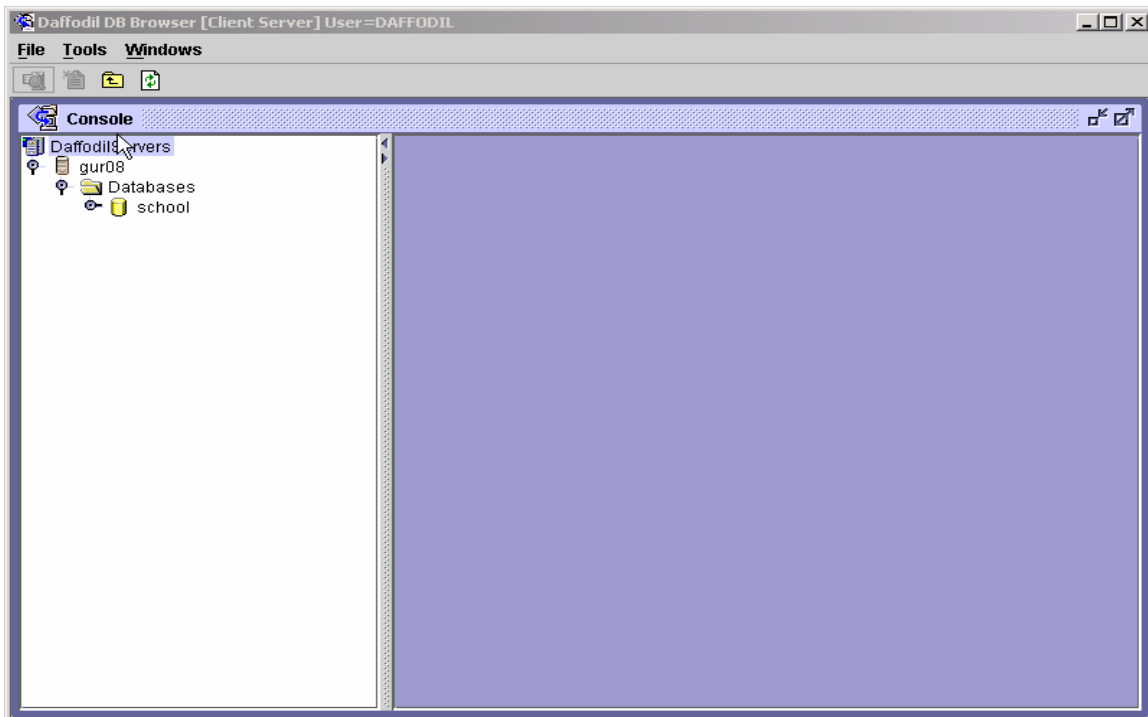
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Through Daffodil DB Browser

To connect to a Daffodil DB client-server database running on the local machine using Daffodil DB Browser, start Daffodil DB Browser by executing the [BrowserServer.bat/BrowserServer.sh](#) file. The following dialog box appears.



Click **OK**. Now Daffodil DB Browser window appears and will automatically connect to Daffodil DB server running on the local machine. Fill up the username and password. Now, click on the “**DaffodilServer**” node.



This shows you a list of databases in the current *DAFFODILDB_HOME* used by Daffodil DB server instance, which in turn depends on the value of *DaffodilDB_home* environment variable.

If you haven't changed *DaffodilDB_home* environment variable and not deleted "School" database after installing Daffodil DB, it should show one of the databases as "School" which is a sample database installed with Daffodil DB.

Note: - For more information on how to interact with Daffodil DB using Daffodil DB Browser, refer ["Daffodil DB Tools Guide"](#).

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Through Daffodil DB Shell

To use Daffodil DB Shell for running SQL queries on Daffodil DB server, the server must be started before. Daffodil DB Shell can be started in Server mode by double clicking on [ShellServer.bat](#) file installed during Daffodil DB installation in the tools folder or by executing the following command from command prompt:

Command Prompt > **ShellServer**

Following properties will be prompted for:

- Username - Username is required to access Daffodil DB database.
- Password – Specify the Password for the above user.
- Host - Name or IP address of host on which Daffodil DB server is running.
- Port - Port number on which Daffodil DB server is running.
- Database Name – Specify the name of the database to which you want to establish a connection.
- StackTrace – If set to true, will display traces of exceptions generated by SQL queries
- DatabaseOption – Here you can customize your database properties like Initial File Size, Multi File Support and Increment Factor.

After Daffodil DB Shell starts, you can fire 'n' number of SQL queries against Daffodil DB Server.

Note: - For more information on how to interact with Daffodil DB using Daffodil DB Shell, refer "[Daffodil DB Tools Guide](#)".

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Uninstalling Daffodil DB

To uninstall Daffodil DB, double click on the uninstall *batch/shell* file generated at the time of installation in *DAFFODIL_HOME* directory. Now the wizard will guide you through the entire process of uninstallation.

For Example: If u have installed Daffodil DB 3.4 version, then the file name will be '*[uninstall Daffodil DB_3.4.bat](#)*' or '*[uninstall Daffodil DB_3.4.sh](#)*'.

In Windows operating System, you can also uninstall Daffodil DB from the add/remove programs utility under control panel.

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End Note

Although this manual reflects the most current information possible, you should read the ***Daffodil DB Release Notes*** from time to time for latest information and updates on Daffodil DB/One\$DB

Release Notes are available at: <http://www.daffodildb.com/daffodil-release-notes.html>

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Related Documentation

This Getting Started Guide for Daffodil DB gave a straight-line introduction to Daffodil DB Embedded and Server editions. For advanced topics, please see our related documentation set listed below.

[Daffodil DB Tools Guide](#)

Explains how to use Daffodil DB Browser with Embedded as well as Server versions of Daffodil DB. Describes how to perform various database operations on Daffodil DB using Daffodil DB Browser such as creating a database, creating database objects, manipulating data, creating triggers etc.

[Daffodil DB System Guide](#)

Describes the architecture of Daffodil DB and provides the information that the server administrator might need to keep Daffodil DB running with high performance and reliability in a server framework or a multi-user application server. Also describes the standards on which Daffodil DB had been built, transaction capabilities and some of the unique features supported by Daffodil DB.

[Daffodil DB SQL Reference Guide](#)

Covers all the SQL-99 features supported by Daffodil DB. This ready reference tool describes in detail the syntax and semantics of SQL language statements and elements for Daffodil DB. It explains how to use SQL with Daffodil DB and how to perform various database operations on Daffodil DB such as creating tables or indexes, managing transactions and sessions, Daffodil DB security features etc.

[Daffodil DB JDBC Reference Guide](#)

Explains how to use Daffodil DB and JDBC technology to develop applications. It describes the basic Daffodil DB and JDBC concepts like JDBC 3.0 features supported by Daffodil DB, how to create and access Daffodil DB databases through JDBC API, Daffodil DB support for JDBC and JTA and how to use Daffodil DB in a Distributed Transaction Processing environment.

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Sign Up for Support

If you have successfully installed and started working with Daffodil DB/One\$DB, please remember to sign up for the benefits you are entitled to as a Daffodil DB customer.

For free support, be a part of our online developer community at [Daffodil Developer Forum](#)

For buying support packages, please visit: <http://www.daffodildb.com/support-overview.html>

For more information regarding support, write to us at: support@daffodildb.com

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We Need Feedback!

If you spot a typographical error in the *Daffodil DB Getting Started Guide*, or if you have thought of a way to make this manual better, we would love to hear from you!

Please submit a report in Bugzilla <http://www.daffodildb.com/bugzilla/index.cgi> OR write to us at: feedback@daffodildb.com

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