

Java Development

Environment Setup

Contents

Installing the Java Development Kit (JDK)	3
Installing an IDE (Eclipse)	6
Installing an Application Server (WildFly)	7
Integrating Your Application Server with Your IDE (JBoss Tools)	8
Installing a Database (PostgreSQL)	12

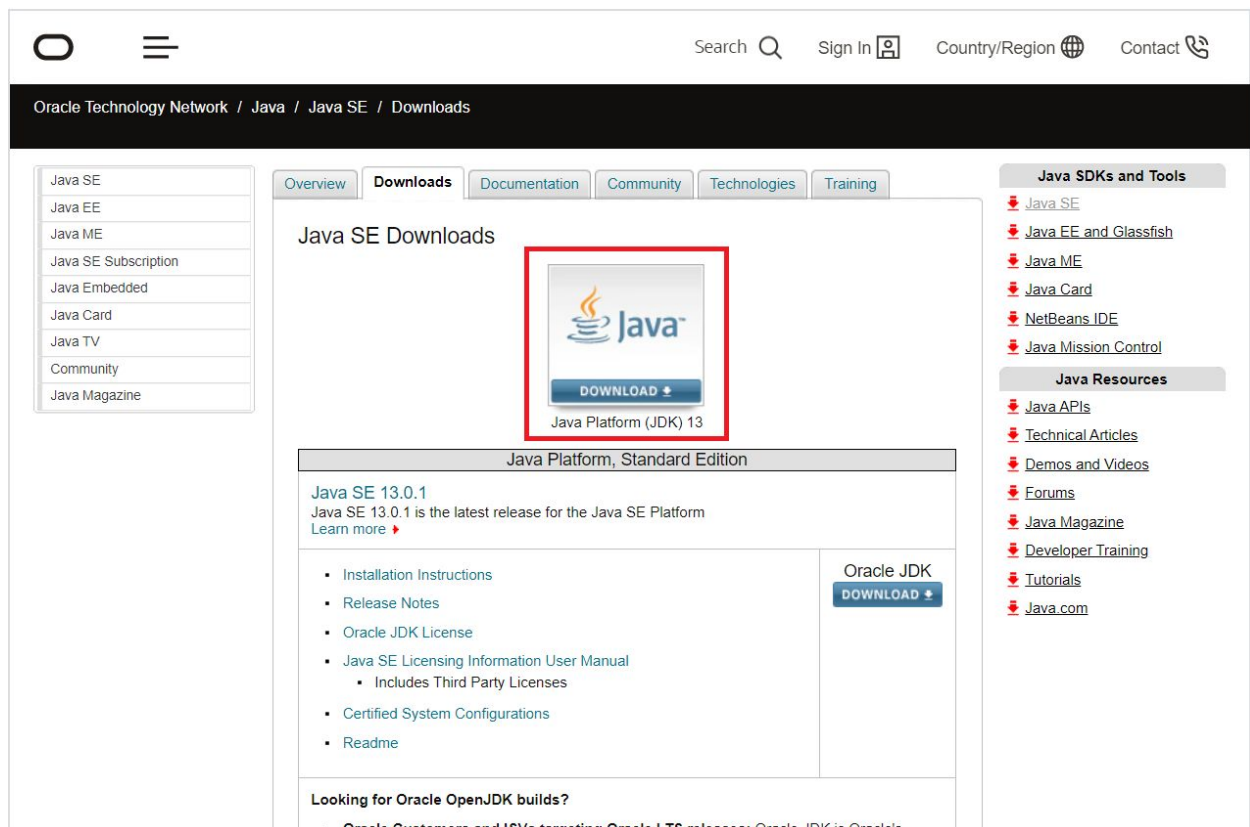
Installing the Java Development Kit (JDK)

Before we can get started, we will need to download and install some necessary software, so that we can design and build full Java applications. The first thing you will need to download is the Java Development Kit, or JDK. You can find the download link in the Reference URL section of the “Environment Setup” task, or here:

- [Java Development Kit Download](#)

On the download page...

1. Click a link to download the JDK. The latest version might be different than what is shown here:



The screenshot displays the Oracle Technology Network page for Java SE Downloads. The navigation bar at the top includes the Oracle logo, a search icon, and links for Sign In, Country/Region, and Contact. The breadcrumb trail indicates the path: Oracle Technology Network / Java / Java SE / Downloads. The main content area is titled 'Java SE Downloads' and features a 'DOWNLOAD' button for 'Java Platform (JDK) 13', which is highlighted with a red box. Below this, the 'Java Platform, Standard Edition' section shows 'Java SE 13.0.1' as the latest release. A list of links for installation instructions, release notes, and licenses is provided. The right sidebar contains links for Java SDKs and Tools, and Java Resources.

2. Java versions are given as <Major Version><'u' for “update”><Minor Version> as shown below. Find the latest version, accept the license agreement, and then download the version appropriate to your operating system.

Java SE

Java EE

Java ME

Java SE Subscription

Java Embedded

Java Card

Java TV

Community

Java Magazine

Overview

Downloads

Documentation

Community

Technologies

Training

Java SE Development Kit 13 Downloads

Thank you for downloading this release of the Java™ Platform, Standard Edition Development Kit (JDK™). The JDK is a development environment for building applications, and components using the Java programming language.

The JDK includes tools useful for developing and testing programs written in the Java programming language and running on the Java platform.

Important Oracle JDK License Update

The Oracle JDK License has changed for releases starting April 16, 2019.

The new Oracle Technology Network License Agreement for Oracle Java SE is substantially different from prior Oracle JDK licenses. The new license permits certain uses, such as personal use and development use, at no cost -- but other uses authorized under prior Oracle JDK licenses may no longer be available. Please review the terms carefully before downloading and using this product. An FAQ is available [here](#).

Commercial license and support is available with a low cost Java SE Subscription.

Oracle also provides the latest OpenJDK release under the open source GPL License at [jdk.java.net](#).

See also:

Java Developer Newsletter: From your Oracle account, select **Subscriptions**, expand **Technology**, and subscribe to **Java**.

Java Developer Day hands-on workshops (free) and other events

Java Magazine

JDK 13.0.1 checksum

Java SE Development Kit 13.0.1

You must accept the Oracle Technology Network License Agreement for Oracle Java SE to download this software.

☒ Accept License Agreement ☐ Decline License Agreement

Product / File Description	File Size	Download
Linux	155.88 MB	jdk-13.0.1_linux-x64_bin.deb
Linux	163.17 MB	jdk-13.0.1_linux-x64_bin.rpm
Linux	180 MB	jdk-13.0.1_linux-x64_bin.tar.gz
macOS	172.78 MB	jdk-13.0.1_osx-x64_bin.dmg
macOS	173.11 MB	jdk-13.0.1_osx-x64_bin.tar.gz
Windows	159.84 MB	jdk-13.0.1_windows-x64_bin.exe
Windows	178.99 MB	jdk-13.0.1_windows-x64_bin.zip

Java SDKs and Tools

[Java SE](#)

[Java EE and Glassfish](#)

[Java ME](#)

[Java Card](#)

[NetBeans IDE](#)

[Java Mission Control](#)

Java Resources

[Java APIs](#)

[Technical Articles](#)

[Demos and Videos](#)

[Forums](#)

[Java Magazine](#)

[Developer Training](#)

[Tutorials](#)

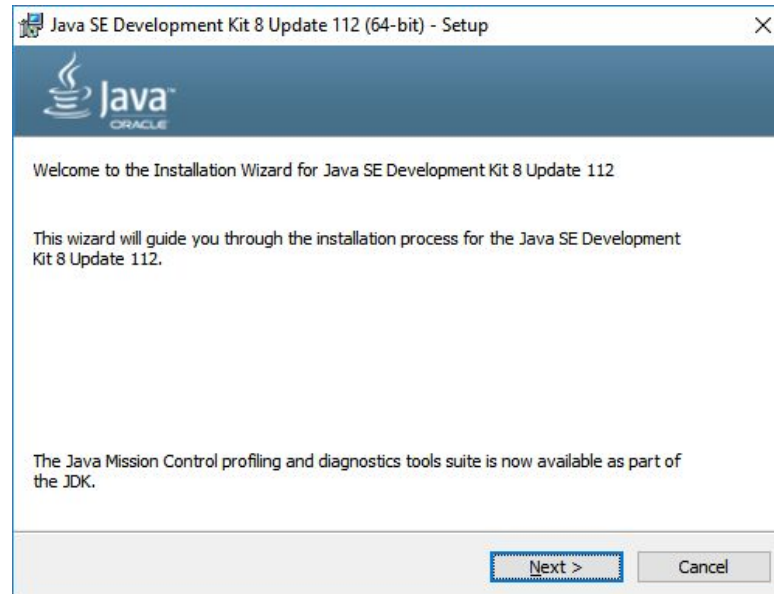
[Java.com](#)

E-mail this page

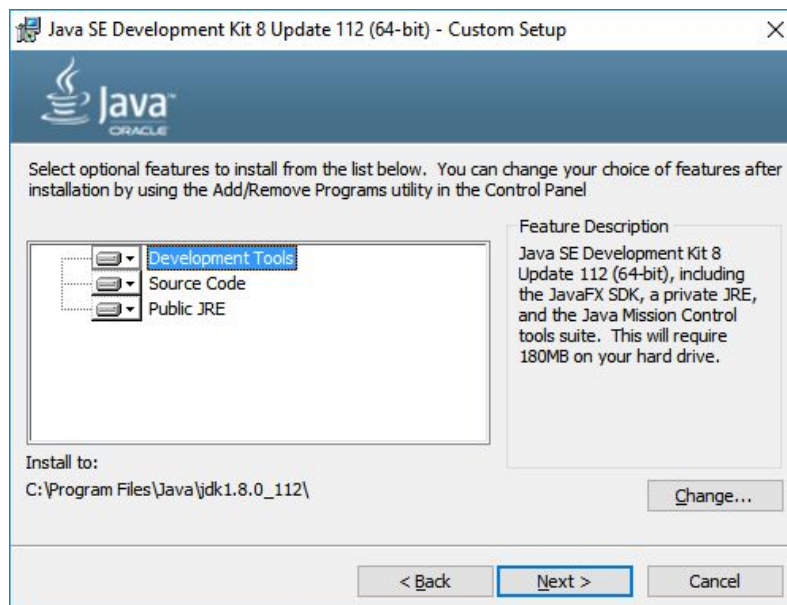
Printer View

Now, from your download directory...

1. Run the installer you just downloaded. Click "Next >" at the first window (Setup):

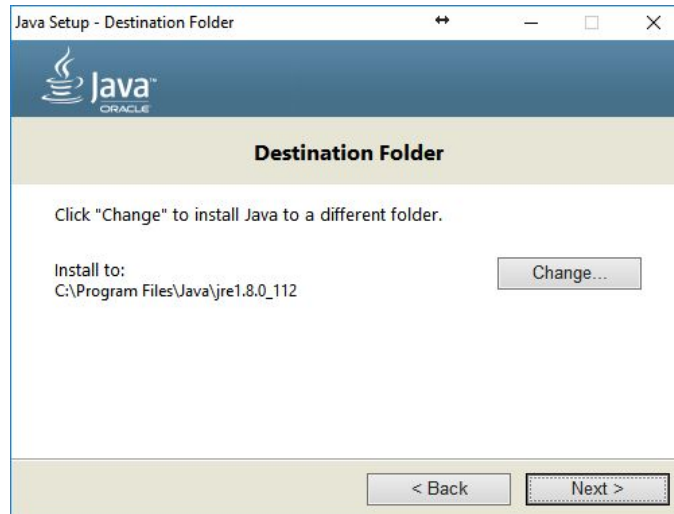


2. Click "Next >" at the second window (Custom Setup):



- 3.

Let the extraction run. On the next window (Destination Folder), click next:



4. Java will now be installed to the previously indicated destination. When the process is complete, click close.

Installing an IDE (Eclipse)

Now that we have Java installed, we will need to download Eclipse. Eclipse is an IDE, or Integrated Development Environment. This is where you will write, deploy and test your code. A good IDE brings many features to the table to make your life easier, like error checking, warnings about dangerous code, and management of any 3rd-party libraries or tools you might be using. You can get the latest version of Eclipse from the download link provided in the reference section, or from here:

- [Eclipse Download](#)

On the download page...

1. Click the link appropriate to your computer under the **“Eclipse IDE for Enterprise Java Developers”** section:

The screenshot shows the Eclipse Foundation website's download page for Eclipse IDE 2019-12 R. The page has a dark header with the Eclipse Foundation logo and navigation links: Members, Working Groups, Projects, More, and a prominent orange Download button. Below the header, a breadcrumb trail reads: Home / Downloads / Packages / Release / Eclipse IDE 2019-12 / R. The main content area is divided into two columns. The left column features a large blue banner for 'Try the Eclipse Installer 2019-12 R', describing it as the easiest way to install and update the IDE, with a 'Find out more' link and a download count of 517,891. Below this banner is a section titled 'Eclipse IDE 2019-12 R Packages'. Within this section, the 'Eclipse IDE for Enterprise Java Developers' package is highlighted with a red border. This package is 353 MB, has 135,193 downloads, and is available for Windows 64-bit, Mac Cocoa 64-bit, and Linux 64-bit. The right column contains a sidebar with a 'CRYSTAL REPORTS FOR ECLIPSE' advertisement and a 'Get Eclipse IDE 2019-12' section with a 'Download 64 bit' button.

2. You'll be navigated to a download page to download Eclipse.

ECLIPSE FOUNDATION

Members Working Groups Projects More

Home / Downloads / Eclipse downloads - Select a mirror

All downloads are provided under the terms and conditions of the Eclipse Foundation Software User Agreement unless otherwise specified.

[Download](#)

Download from: United States - Indiana University (http)

File: `eclipse-inst-win64.exe` SHA-512

>> Select Another Mirror

OR Get It Faster from our Members

IBM
Blazingly fast downloads hosted by IBM Cloud.

BLU AGE
Free and fast direct Eclipse downloads. Get more BLU AG...

Genuitec
Native installers for all OS platforms, lightning fast ...

Sirius
The Easiest Way to Get Your Own Modeling Tool
[DOWNLOAD NOW](#)

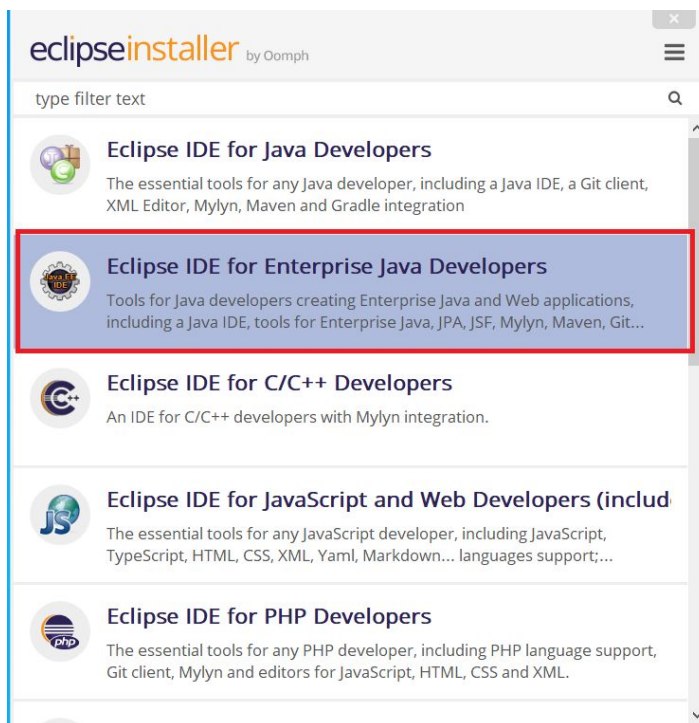
Other options for this file

- All mirrors (xml)
- Direct link to file (download starts immediately from best mirror)

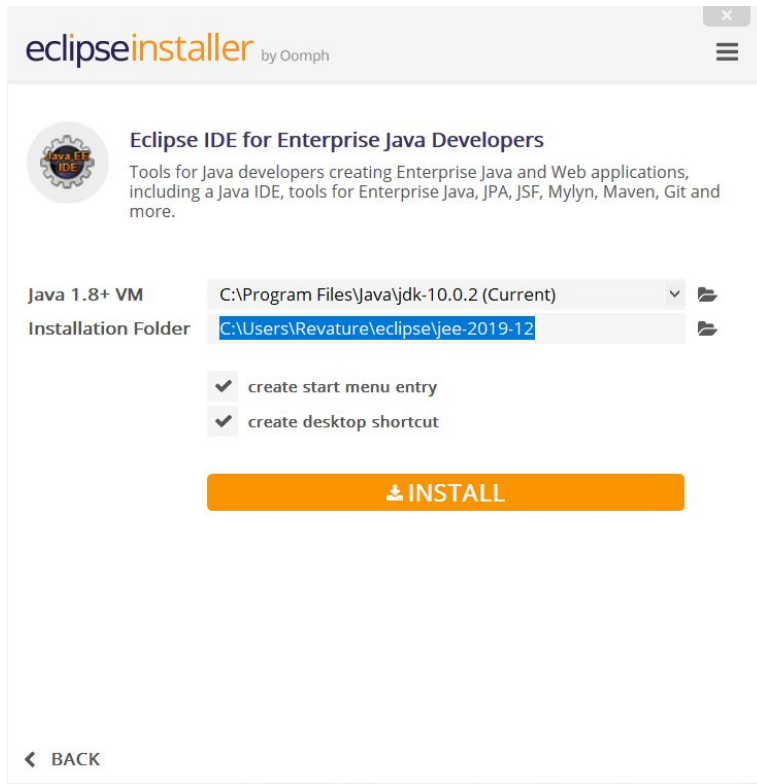
Related Links

- Donate
- Becoming a mirror site
- Updating and installing Eclipse components

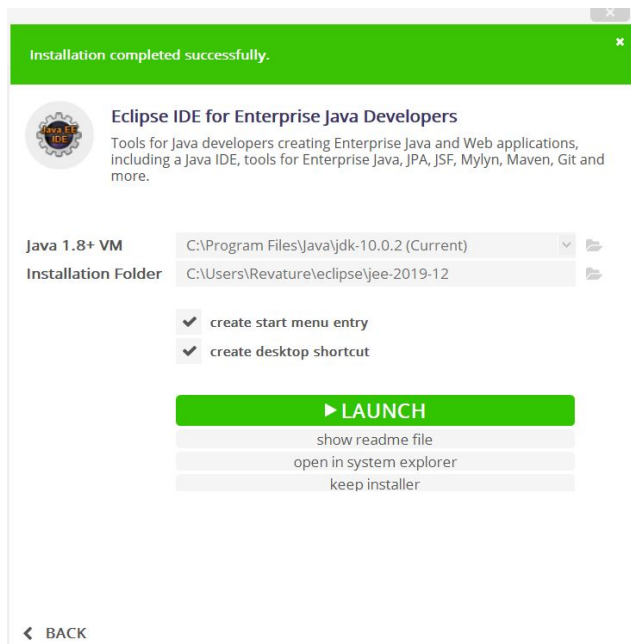
3. Open the installer that you downloaded and select Eclipse



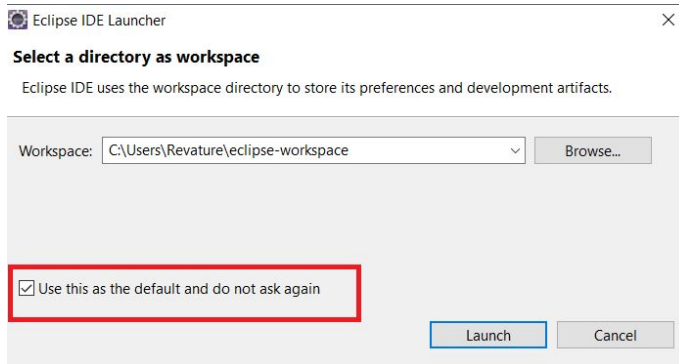
4. Once you choose the appropriate installer, then you'll be able to select the installation directory and the path for the JDK. Leave the default settings. Click the **INSTALL** button and accept any license agreements.



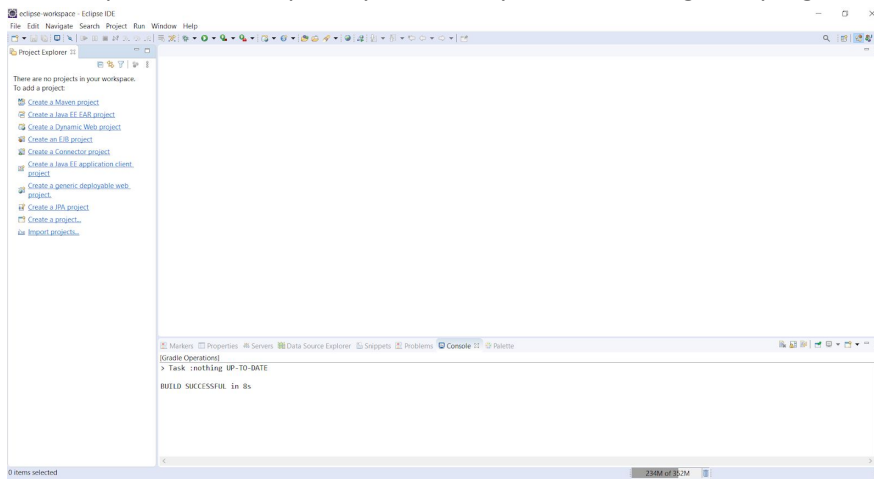
5. Once the installer completes, click the **LAUNCH** button.



6. Once Eclipse opens, it will ask about the default location for a *workspace*. This is where you project files will be stored. Feel free to keep the default location. Check the box to save the location and click **Launch**.



7. Your Eclipse is now setup and you're ready to start writing Java programs.












Installing an Application Server (WildFly)

Now that you have Java and Eclipse, let's get your application server installed. The application server is a type of web server that is capable of hosting and running Java applications. With this software running on your machine, you can write web applications. and test them locally. The application we will be using is called WildFly, and setup is pretty simple. Use the download link in the reference section to get started. That link is also here:

- [WildFly Download](#)

On the download page...

1. Select the ZIP download for the latest version of the **“Java EEx Full & Web Distribution.”** The latest version might be different than what is shown here:

Version	Date	Description	License	Size	Format
10.1.0.Final	2016-08-19	Java EE7 Full & Web Distribution	LGPL	134 MB	 ZIP
				133 MB	 TGZ
		Update Existing 10.0.0.Final Install	LGPL	94 MB	 ZIP
		Servlet-Only Distribution	LGPL	28 MB	 ZIP
				28 MB	 TGZ
		Application Server Source Code	LGPL	27 MB	 ZIP
				15 MB	 TGZ
		Quick Start Source Code	AL		 Source
		Release Notes			 Notes

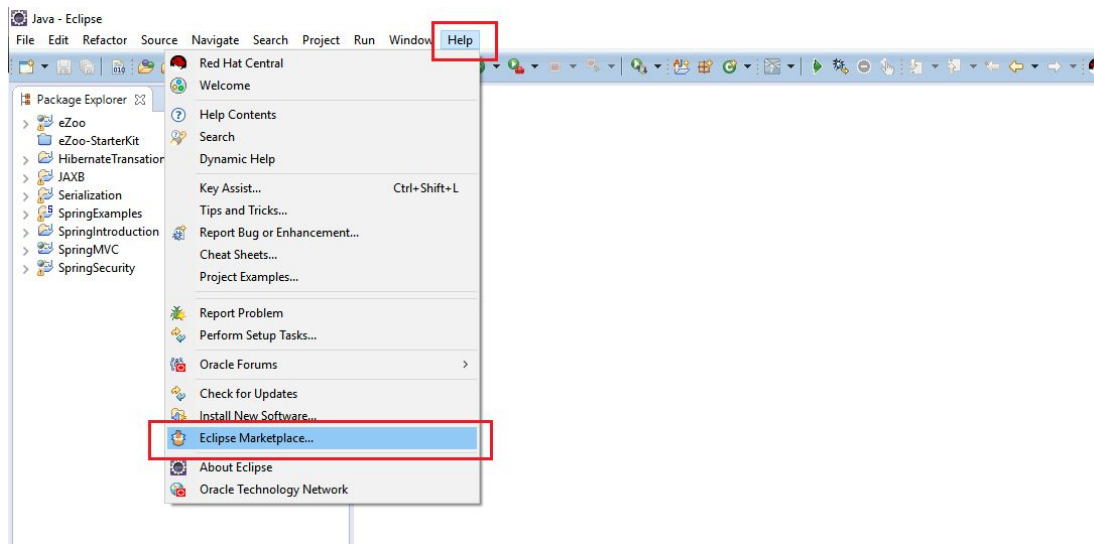
Now, from your download directory...

1. Like Eclipse, WildFly requires no installation - it's nicely self-contained inside a ZIP archive. Unzip it to a location of your choosing.
2. You will be controlling WildFly from within Eclipse, so there is no need to create a shortcut.

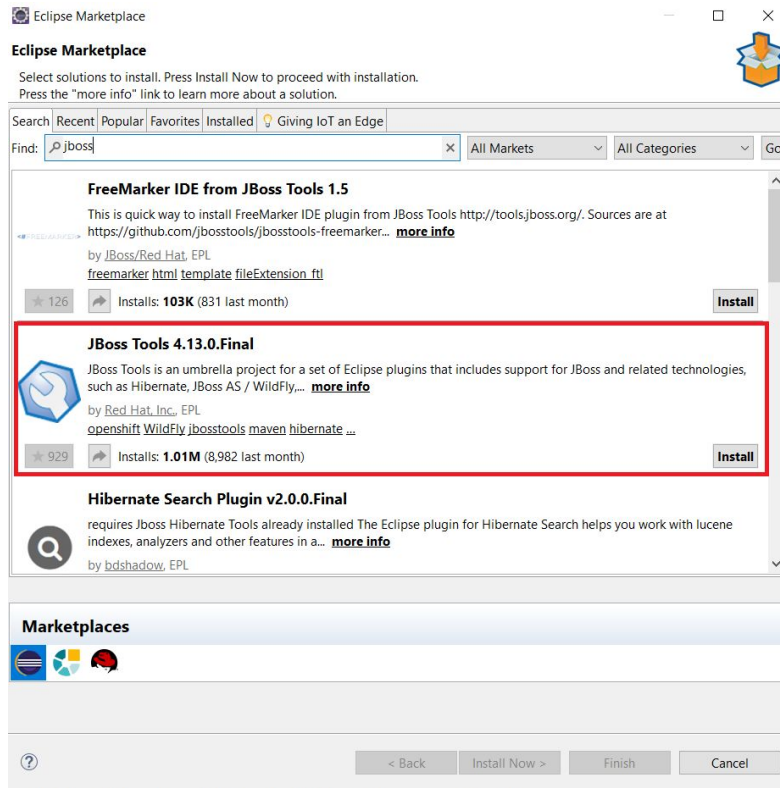
Integrating Your Application Server with Your IDE (JBoss Tools)

Now that we have WildFly and Eclipse, we will install a utility that will let us deploy our Java web applications to our WildFly application server from directly inside Eclipse.

1. Open up Eclipse
2. Open the "Help" file menu, and then select "Eclipse Marketplace...":



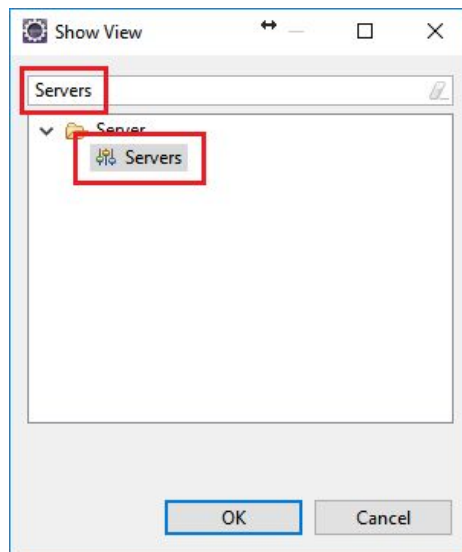
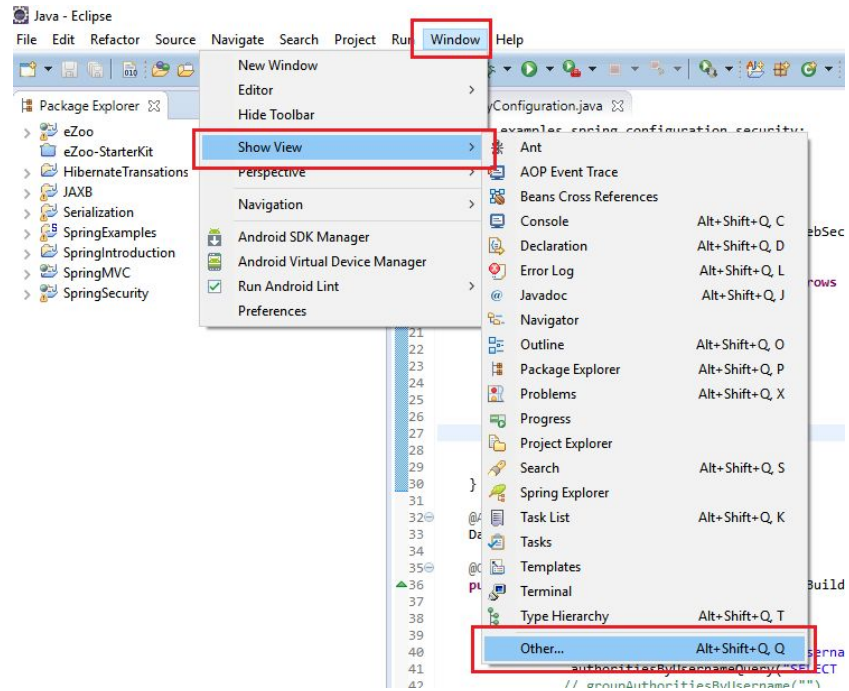
3. In the search window that pops up, search for "JBoss Tools" and hit enter. JBoss Tools should be in the first page of results. Click the "Install" button:



4. Leave all of the options selected, and click "confirm."
5. Accept the license agreement, and click "Finish."

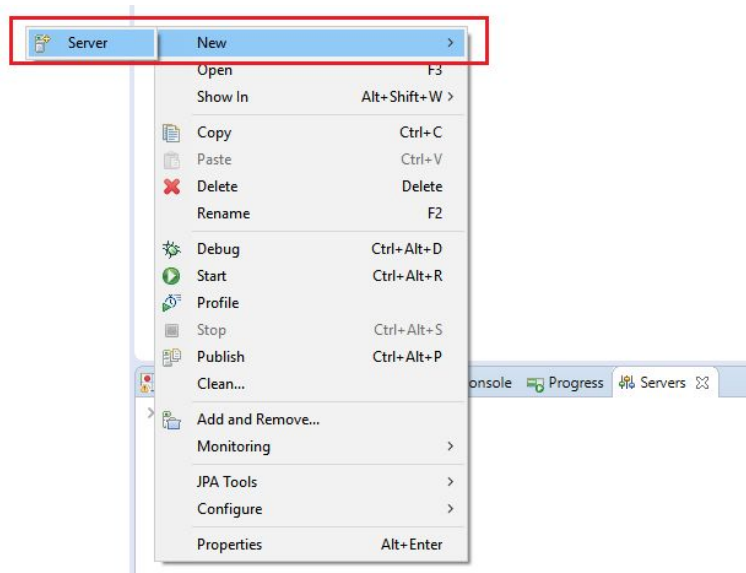
Now that we have WildFly and Eclipse integrated, let's get a WildFly virtual server created in Eclipse.

1. Now, at the bottom of the screen, you may have a view tab labeled "Servers." If you do not, go to Window -> Show View -> Other..., search for 'Servers,' and click add.

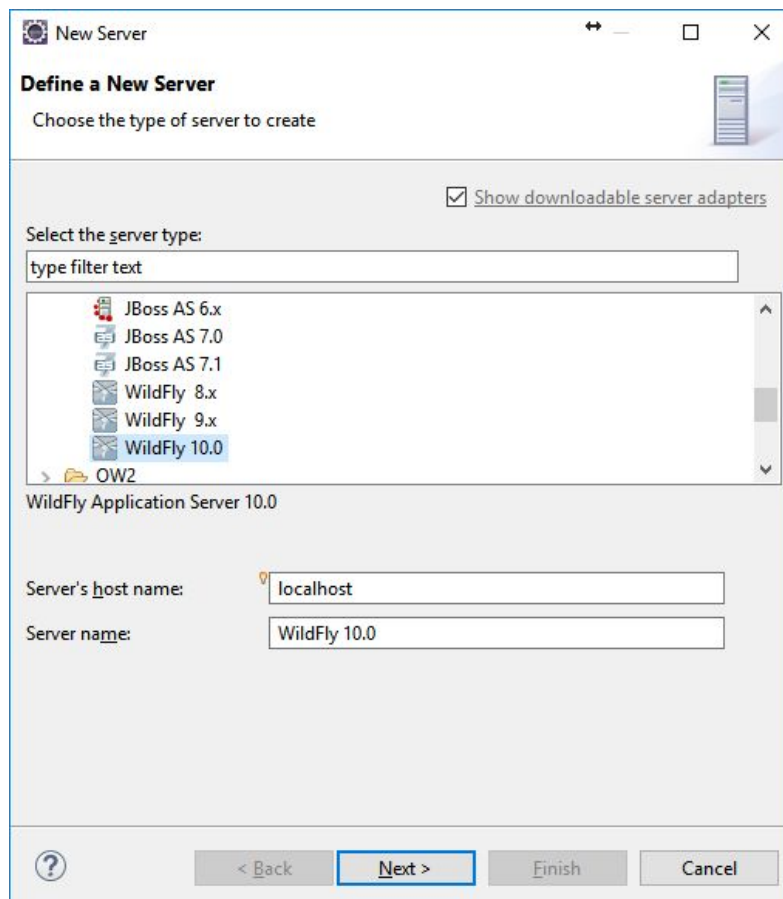


2.

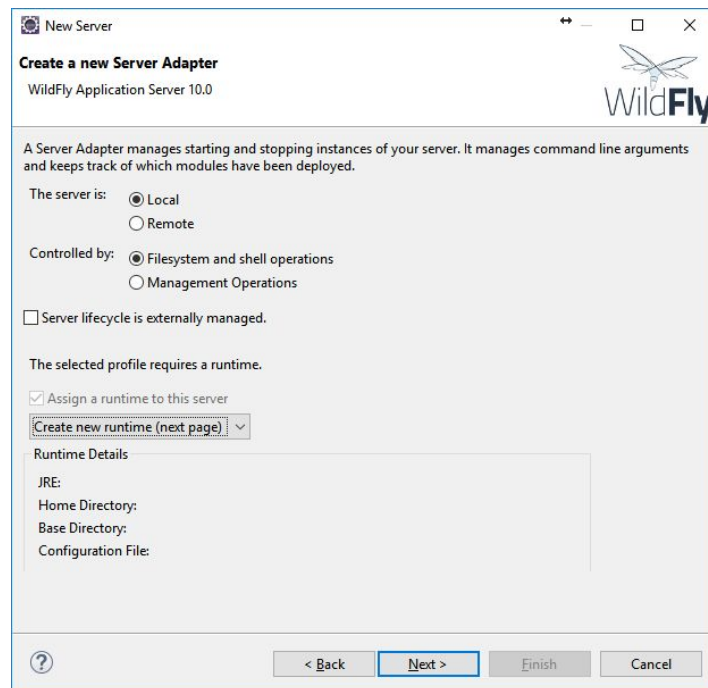
In the "Servers" view, right-click anywhere, and select New -> Server.



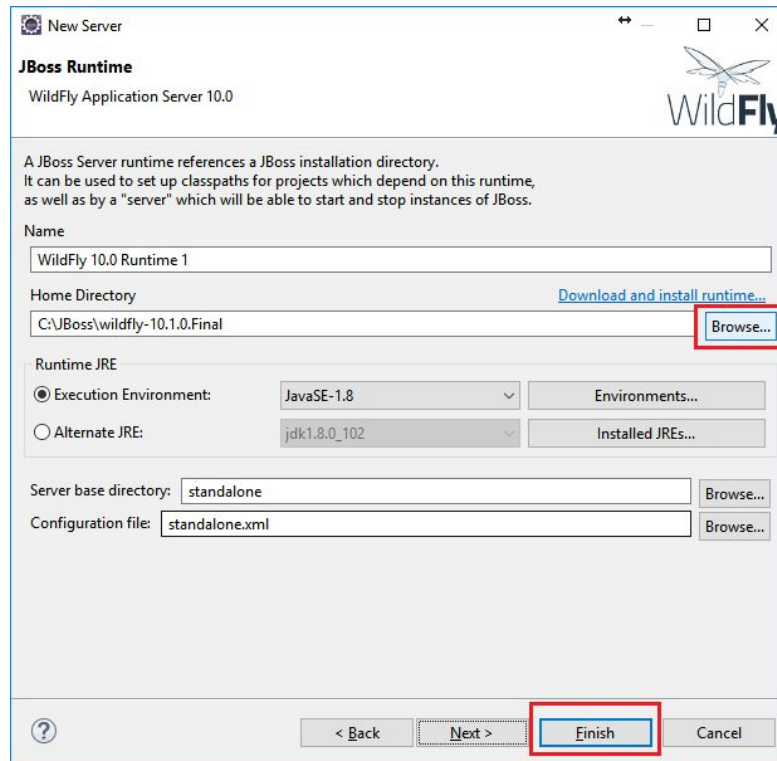
3. In the "Define a new server" window, search for the latest version of WildFly (in the JBoss Community folder). Select your version, and click next:



4. Go ahead and click next again:



5. Now, you will need to define a runtime. All you need to do is select the folder where you installed the WildFly server. Then click finish:



Installing a Database (PostgreSQL)

Finally, we will need to install PostgreSQL Database. This is the database we will be using for our applications to store information. PostgreSQL is the largest, most widely-used open source database, and is widely used in the Software Development industry. You can find a download link in the Reference URL section of the “Environment Setup” task, or below:

- [PostgreSQL Download](#)

On the download page...

1. Select the latest version for your operating system. The latest version may be different than shown here:



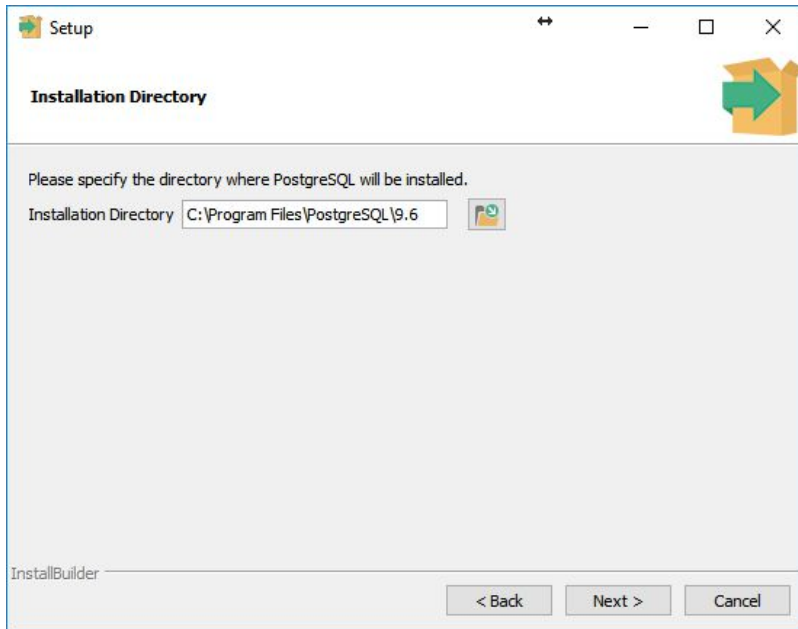
Now, from your download directory...

1. Run the downloaded installer. On the first window, click “Next”:

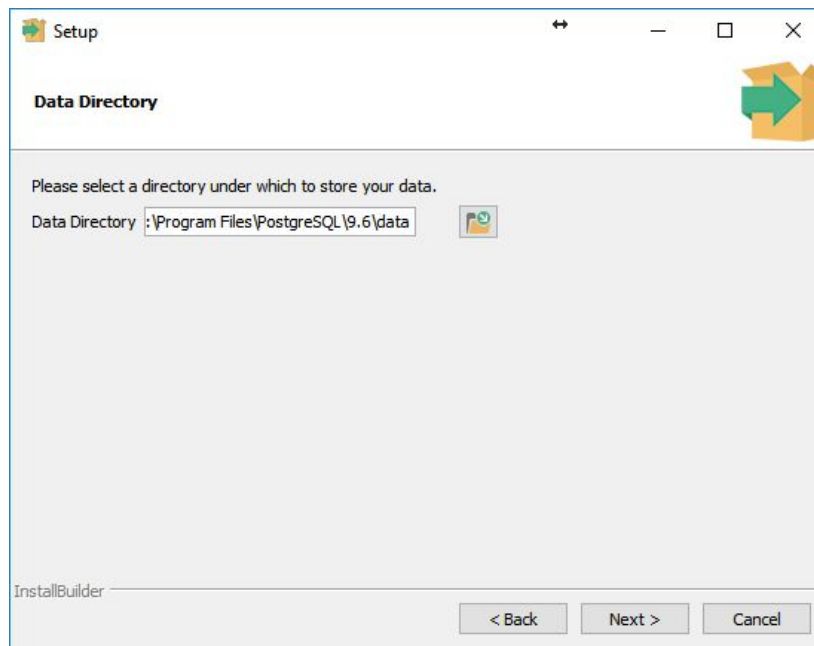


2.

Select an installation directory, and click “Next”:

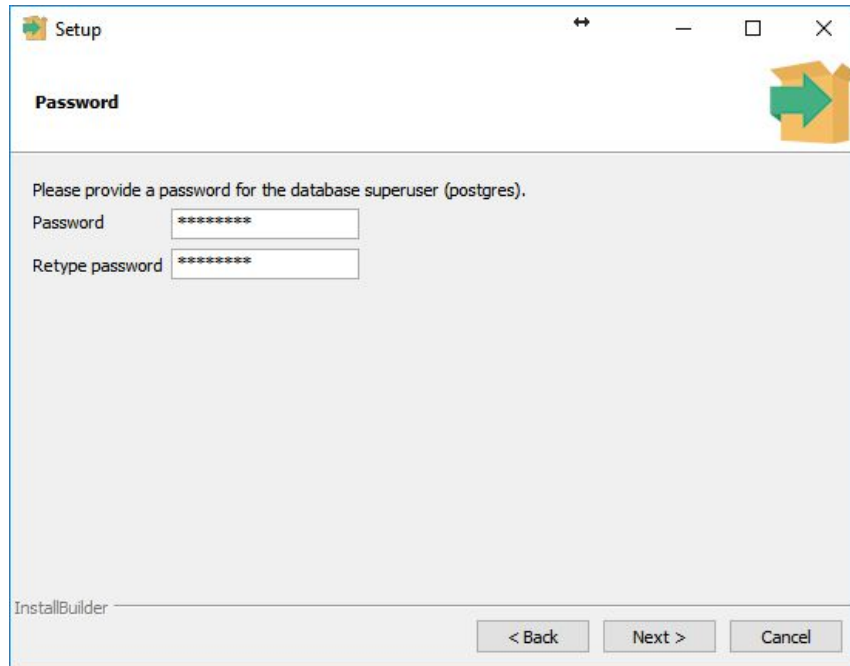


3. Select a data directory, where your database’s data files will be stored, and click “Next”:



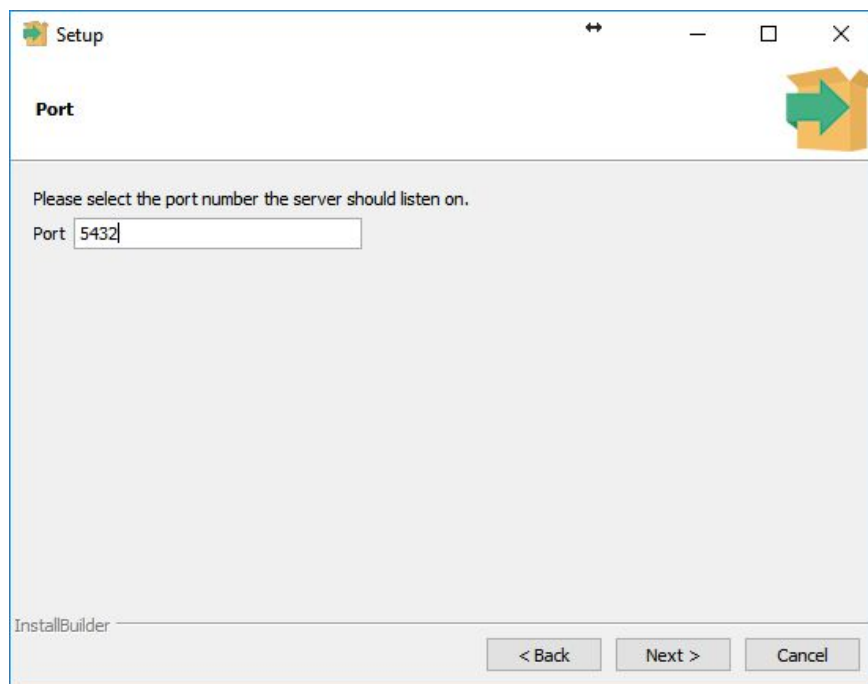
4.

Enter a password for the default “postgres” account. You MUST remember this password! Click “Next” when done:



The screenshot shows a window titled "Setup" with a standard Windows title bar (minimize, maximize, close buttons). In the top right corner, there is a green arrow pointing right inside a yellow box. The main content area has the heading "Password" and the instruction "Please provide a password for the database superuser (postgres)." Below this, there are two text input fields: "Password" and "Retype password", both containing seven asterisks (*****). At the bottom left, the text "InstallBuilder" is visible. At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

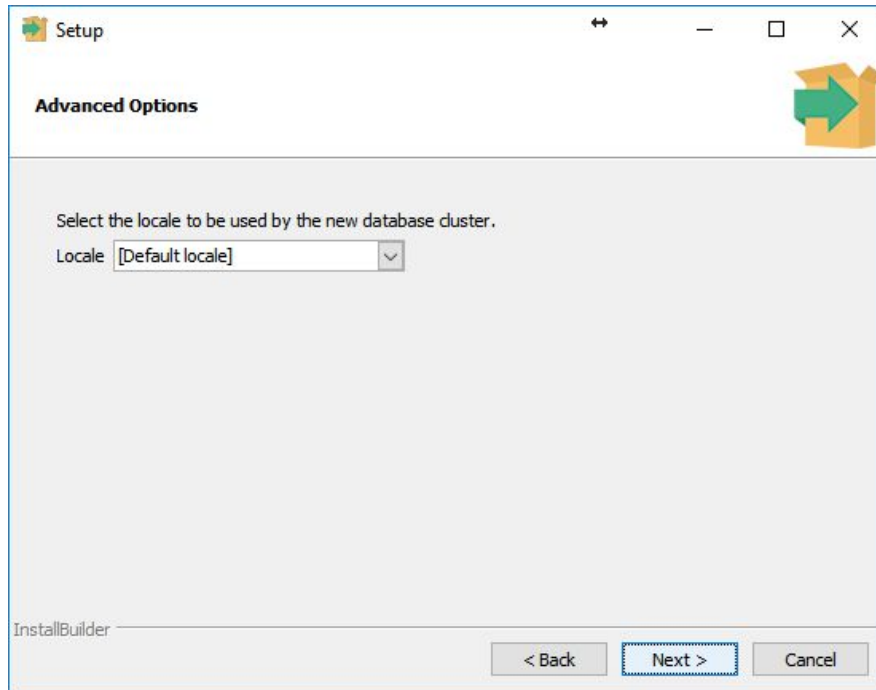
5. Select a port. The default is acceptable, and you should not change this unless you understand what you are doing. Click “Next” when done:



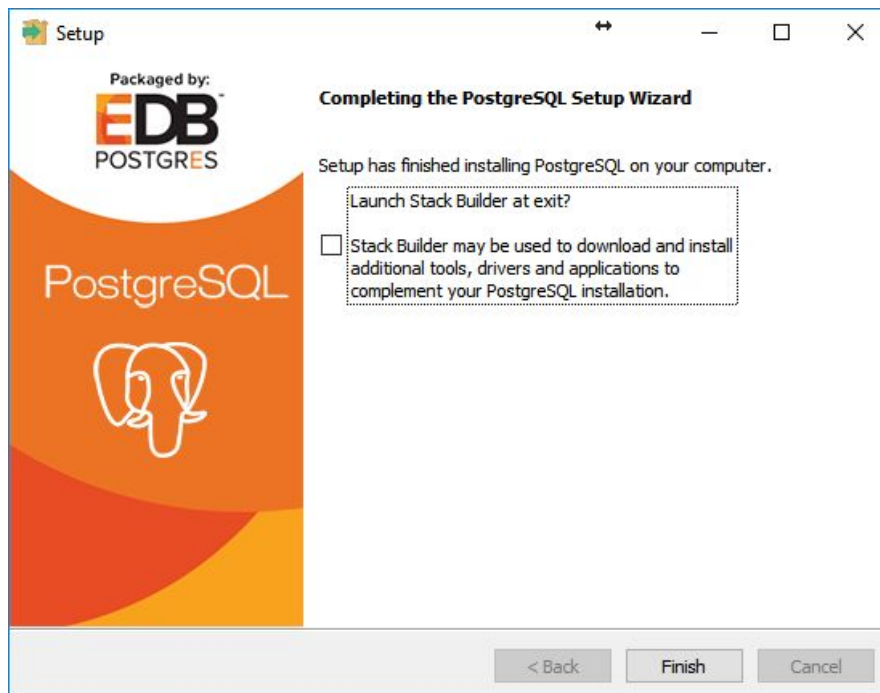
The screenshot shows a window titled "Setup" with a standard Windows title bar (minimize, maximize, close buttons). In the top right corner, there is a green arrow pointing right inside a yellow box. The main content area has the heading "Port" and the instruction "Please select the port number the server should listen on." Below this, there is a text input field labeled "Port" containing the value "5432". At the bottom left, the text "InstallBuilder" is visible. At the bottom right, there are three buttons: "< Back", "Next >", and "Cancel".

- 6.

Select a locale – again, the default is fine. Click “Next” when done:

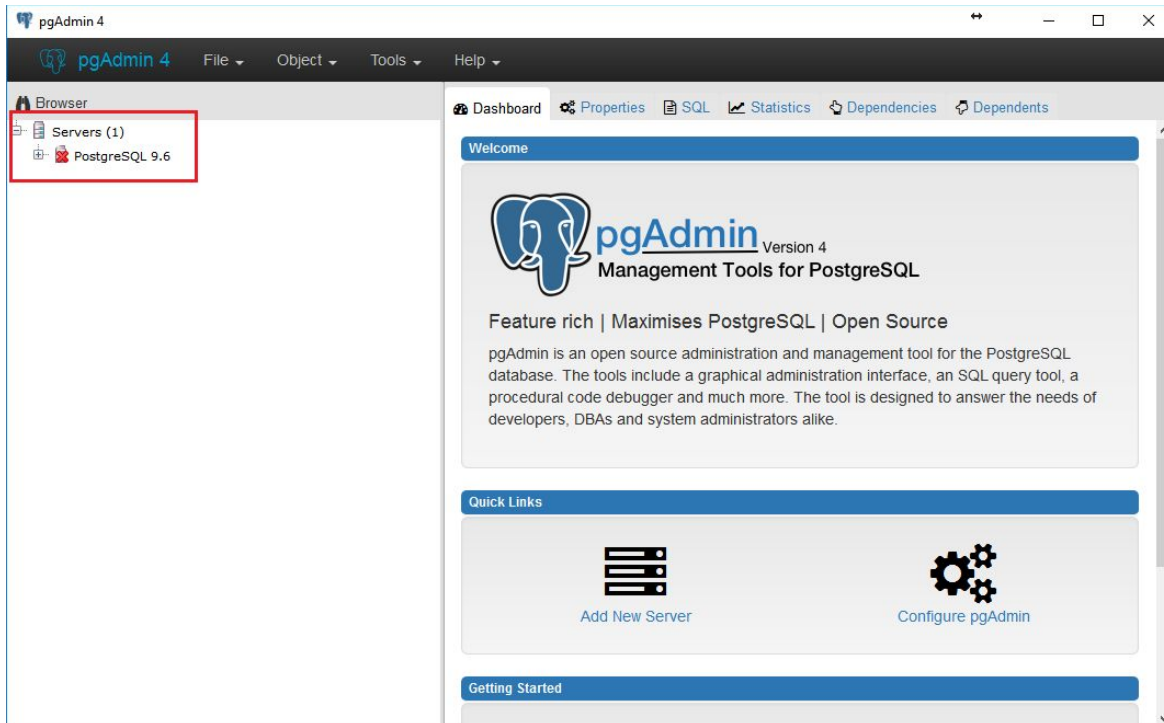


- Click “Next” again to begin installation. When installation has completed, you will be prompted to continue installing Stack Builder. **Uncheck the box, and click Finish. Do not install Stack Builder**, unless of course you know what you are doing:

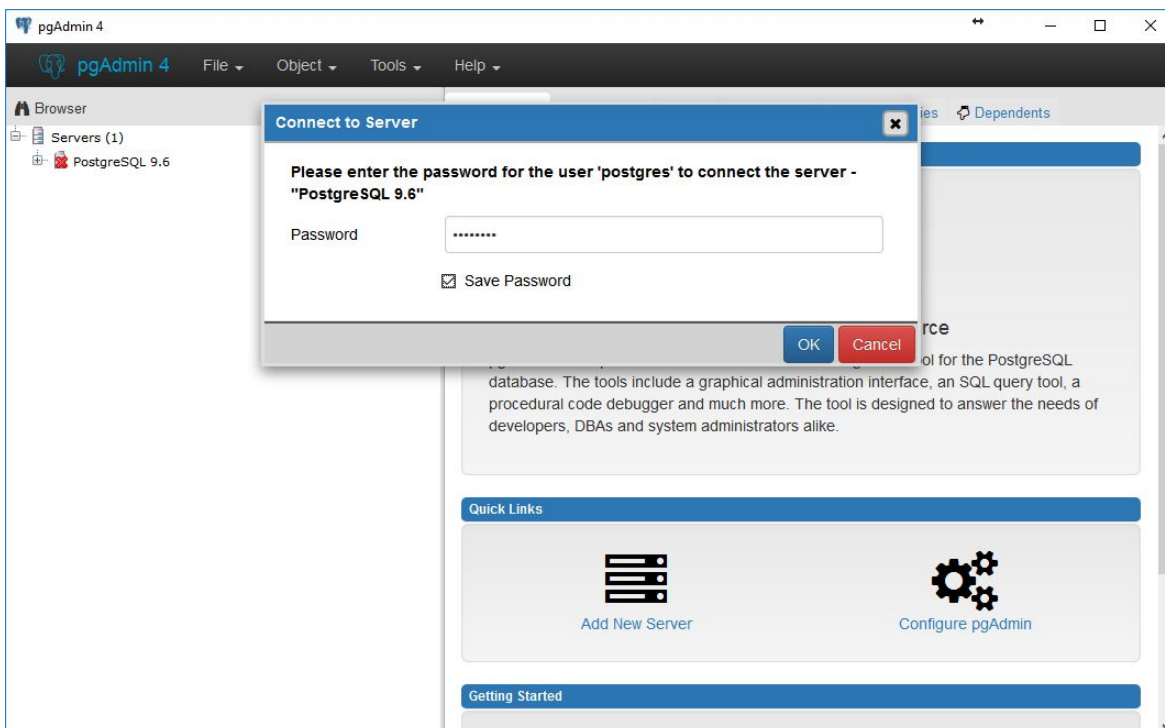


8.

Installing PostgreSQL Database will also have installed the PgAdmin utility. Open PgAdmin and try to expand the server list on the left:



9. This will prompt you for the password for the user “postgres” that you created in Step 4. Enter that password, and check the box to remember it:



10. Now you will be able to explore PostgreSQL Database fully. We'll play around with these tools more in the future, but for now, you have all the tools needed to proceed:

