

Chapter

4

SECTION I: INTRODUCTION TO JAVA EE

Setting Up The Development Environment

Before getting started with Java EE 6 development, the development environment needs to be set up. There are several ways in which a complete development environment for Java EE can be setup:

- Java EE SDK
- Integrated Development Environment:
 - NetBeans IDE
 - Eclipse IDE
 - IntelliJ IDE

An IDE is considered the easiest method of setting up the Java EE development environment.

Amongst the IDEs available, NetBeans IDE 6.8 claims to be the first IDE to offer complete support for the entire **Java EE 6 spec** with improved support for JSF 2.0/Facelets, Java Persistence 2.0, EJB 3.1 including using EJBs in web applications, RESTful web services and **GlassFish v3**.

This book demonstrates Java EE Development using the NetBeans IDE 6.8.

What Is NetBeans?

NetBeans refers to both a platform for the development of Java applications and an IDE developed using the NetBeans Platform.

The NetBeans IDE is open source and is written in the Java programming language. It provides the services common to creating desktop applications such as window and menu management, settings storage and fully supports JDK 6.0 features.

The NetBeans platform and IDE are free for commercial and non-commercial use and they are supported by Sun Microsystems.

The two base products are NetBeans IDE and NetBeans Platform. Both products are free for commercial and non-commercial use. The source code to both is available to anyone to reuse as they see fit within the terms of use.

The NetBeans Development Platform

The NetBeans development platform comes bundled with the following based on the download option that is chosen:

- ❑ **Technologies**
 - Java SE
 - Java FX
 - Java ME
 - Java Web and EE
- ❑ **Web Servers**
 - GlassFish v3
 - Apache Tomcat 6.0.20

Installation Of NetBeans IDE

Prior installing the IDE, the **Java SE Development Kit [JDK] 6 must be installed** on the system.

If this is not available on the machine, NetBeans cannot be installed.

Installing Java Development Kit

Visit <http://java.sun.com/javase/downloads/index.jsp> to download the latest version of the Java SE Development Kit. At the time of writing this book, the latest version was JDK 6 Update 17 [Available in the Book CDROM].

Download the latest version and install it.

HINT



Sometimes java.sun.com may provide a link to a **bundled version** of the JDK and NetBeans, which, if available, can be used to install both at the same time.

Otherwise install the JDK and then download and install NetBeans IDE 6.8, which can be downloaded from www.netbeans.org.

This book uses an independent JDK with a bundled download of NetBeans.

To ensure that Java is already installed or to determine the Java version, issue the following command at the command prompt:

```
<System Prompt>java -version
```

Output:

```
java version "1.6.0_17"
Java(TM) SE Runtime Environment (build 1.6.0_17-b04)
Java HotSpot(TM) Client VM (build 14.3-b01, mixed mode, sharing)
```

If running this command does not show an appropriate output, **JDK needs to be installed** on the machine prior installing NetBeans IDE.

Download NetBeans

Download and install the 6.8 version of NetBeans IDE from:

<http://www.netbeans.com/downloads/index.html>

NetBeans 6.8 supports following technologies and servers:

Java SE

Essential tools for programming in Java including an editor, debugger, profiler, refactoring support and award winning drag-and-drop GUI design tool.

JavaFX

Tools for building, previewing and debugging JavaFX applications.

Java Web And EE

Tools for creating Java web and enterprise applications compatible with Java EE 6, Java EE 5 and J2EE 1.4 specifications. Includes support for Servlets, JSPs, tag libraries, JavaServer Faces, Java Persistence API, Enterprise JavaBeans, JAX-WS and RESTful web services, Spring and Struts.

Java ME

Comprehensive tool set for creating Java Micro Edition applications for cell phones and portable devices. Includes visual designer, web services connection wizard and tools for handling device fragmentation problems.

Ruby

Complete tool set for creating Ruby and Ruby on Rails applications. Includes JRuby interpreter, Ruby on Rails framework, powerful editor, debugger, gem manager and interactive Ruby shell. Supports easily creating, modifying and running Ruby on Rails applications.

C/C++

Tools for developing C/C++ applications. Includes project templates, support for existing projects, advanced editor, debug support and makefile wizard for configuration management.

Groovy

Provides support for the Groovy language and the Grails framework.

PHP

Tools for developing PHP applications including PHP editor and debugger, project management, integration with Apache server, support for MySQL and other databases, FTP upload and download, JavaScript support and other features.

Sun GlassFish Enterprise Server v3

GlassFish v3 is the next major release of the GlassFish Application Server and is currently under development by the GlassFish Community. GlassFish v3 has a modular, lightweight, extensible architecture.

Apache Tomcat 6.0.20

Open source web container for Java Servlet and JSP specifications.

At the time of writing this book the NetBeans IDE 6.8 version was used and the kind of download that was chosen is All [Available in the Book CDROM].

In the upper right area of the download page, select the platform from the drop down list box, click the **Download** button for the desired download option and save the setup file to the machine.

After the download completes, run the setup file.

Installation Of NetBeans IDE

To install NetBeans on a **Windows** based operating system simply initiate the installer by double clicking the setup file named **netbeans-6.8-ml-windows.exe**.

REMINDER



If the complete NetBeans installer i.e. **All** is downloaded, choose exactly what tools and runtimes to install. Click **Customize** at the Welcome page and select the desired features.

After the setup file is executed, the screen as shown in diagram 4.1 appears.



Diagram 4.1: Netbeans IDE Installer

Just after the **configuration** is complete, the **Welcome page** of the installation wizard appears as shown in diagram 4.2.

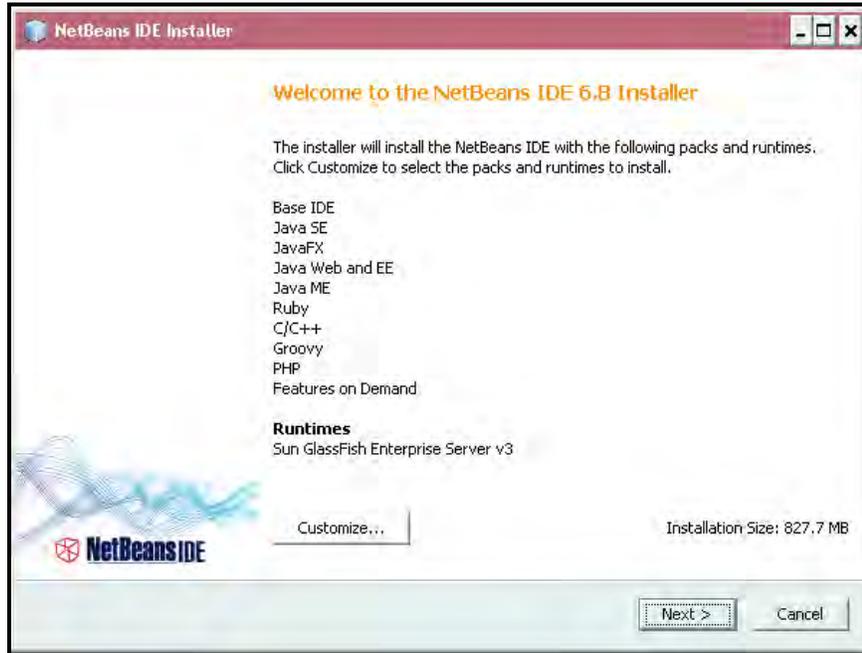


Diagram 4.2: Welcome screen

Click . This shows the **License agreement** screen as shown in diagram 4.3, to review the license agreement.

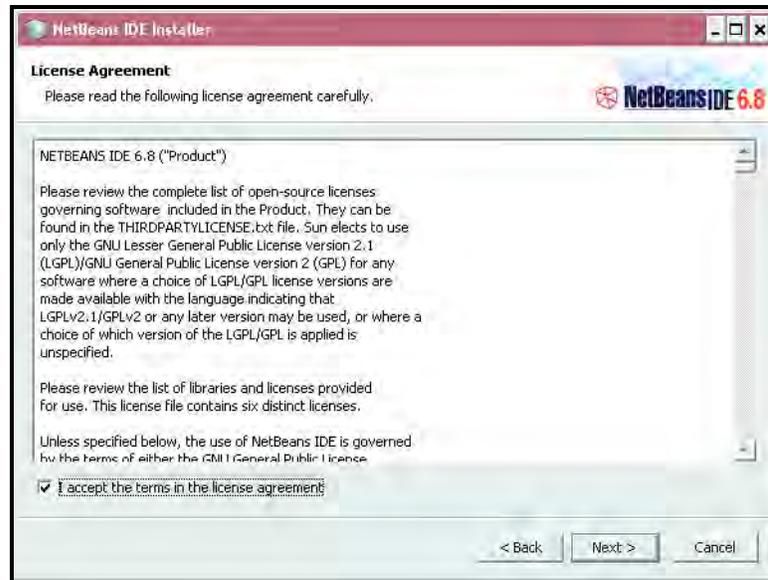


Diagram 4.3: License Agreement screen

Select the acceptance checkbox and click . This shows the **Installation** screen as shown in diagram 4.4.



Diagram 4.4: Installation screen

At the NetBeans IDE installation screen, do the following:

Accept the **default installation directory** for the **NetBeans IDE** or specify another directory.

REMINDER



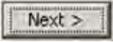
The installation directory must be empty and the user profile in use must have **read/write** permissions for this directory.

Accept the default JDK installation to use with the NetBeans IDE or select a different installation from the drop-down list.

WARNING



If the installation wizard does not detect a compatible JDK installation to use with the NetBeans IDE, it means that the JDK is not installed in the default location. In this case, specify the path to an installed JDK or cancel the current installation, install the required JDK version and restart this installation.

Click .

The **installation page for the Sun GlassFish Enterprise Server v3** appears as shown in diagram 4.5. Accept the **default installation directory** for the server or specify another installation directory. Click .

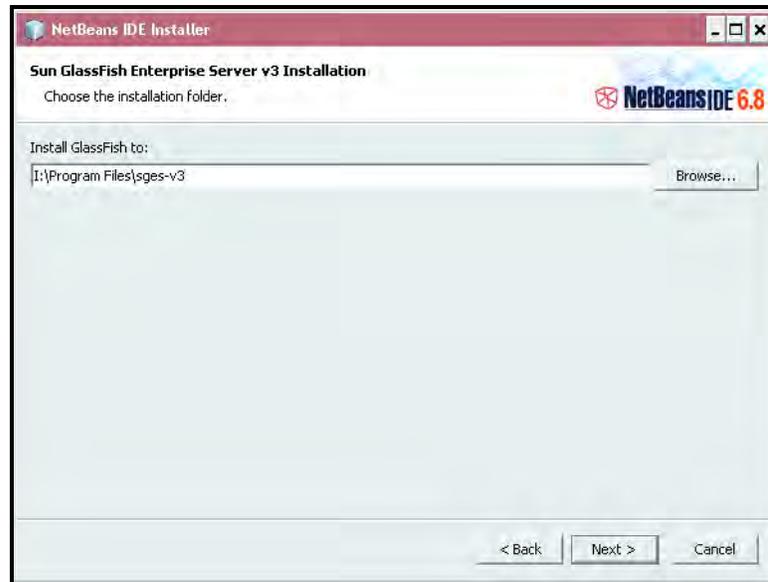
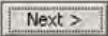


Diagram 4.5: Sun GlassFish Enterprise Server v3

Click . This brings up the **Summary** screen as shown in diagram 4.6.

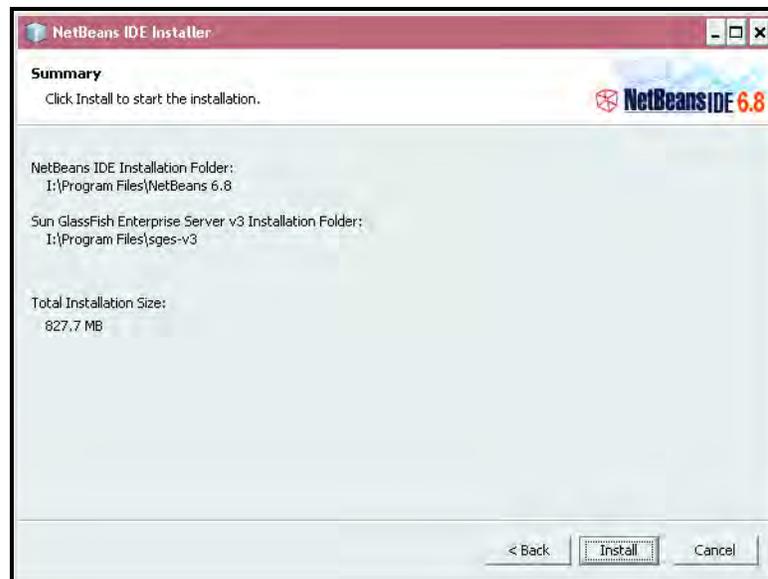


Diagram 4.6: Summary screen

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Here, verify the components and the installation paths and ensure that adequate hard disk space is available on the system.

Click  to begin the installation as shown in diagram 4.7.

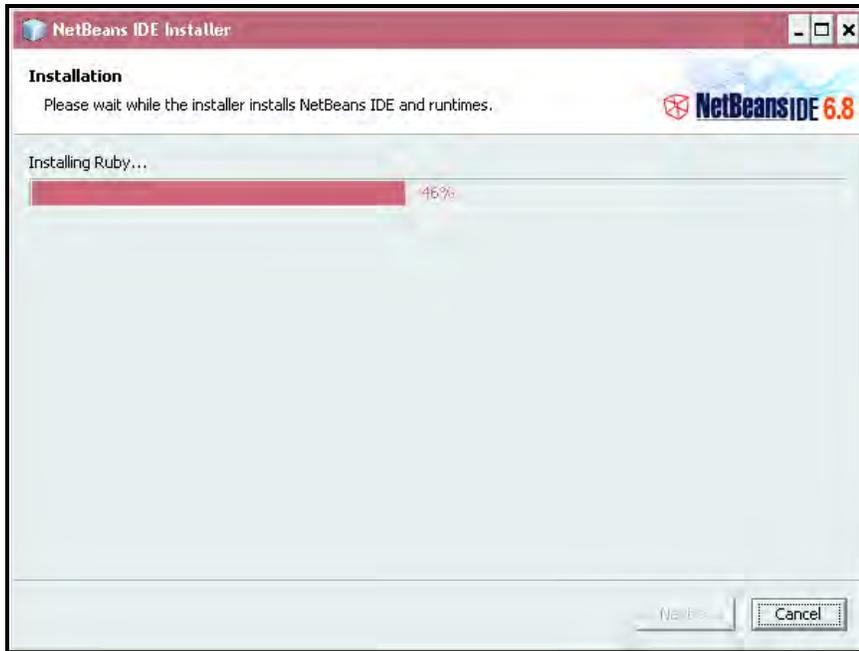


Diagram 4.7: Installation Progress

After the installation completes, the installer displays the **installation completed successfully screen** as shown in diagram 4.8.

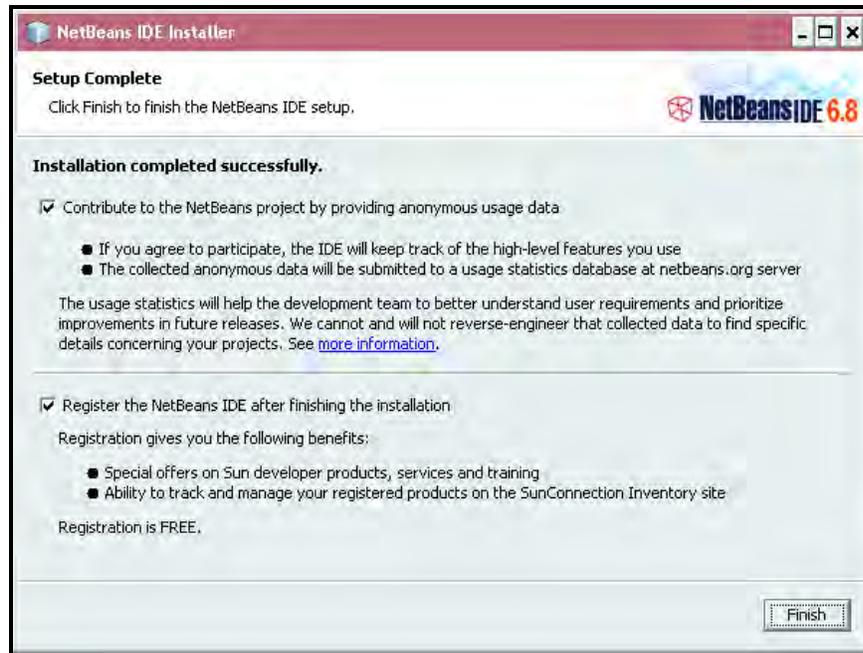


Diagram 4.8: Installation completed successfully screen

This completes setting up the Development Environment.

All the Best!

