

Reactive Java Programming

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Table of Contents

Introduction

1. [Vert.x Reactive Programming for Java](#)
2. [Downloading and installing Vert.x](#)
3. [Using Vert.x for Servlet Development](#)

Reactive Java Programming

This books covers new ways to write Java services.

About the Author

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Rick started writing books about Java in 2007 when he worked as a research engineer at Intel focusing on Java middleware. He contributed to five books.

About this book

This book uses [Gitbook](#).

Vert.x Reactive Programming for Java

Vert.x Reactive Programming for Java

Vert.x is a non-blocking, event-driven Java framework.

[Vert.x](#) supports *Java*, *JavaScript*, Groovy, and Python. Vert.x is a polyglot framework for developing Java web applications and Java services.

[Reactive Programming](#) is oriented around data flows and the propagation of change. Reactive programming is very popular for interactive user interfaces. JavaScript event based programming has become very mainstream due to JavaScript dominance as a web development platform on the client.

[Node.js](#) has made this programming model a force to deal with for server-side development. Node.js provides a paradigm that JavaScript developers are familiar with and allows them to quickly develop backend service development.

Like Node.js, Vert.x uses an **event-driven, non-blocking I/O model**. Like Node.js, Vert.x is *lightweight and efficient*. Vert.x is the perfect environment for developing services that are data-intensive, real-time applications, across distributed devices.

Downloading and installing Vert.x

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Vert.x requires JDK 1.7.0 or later. Make sure that the JDK is installed and on the `PATH`.

If you are using an OSX, you can install vert.x with `brew` as follows:

```
$ brew install vert.x
```

You can download brew from brew.sh.

If you are not using OSX, then download the distribution and follow the [examples here](#).

Unzip the distribution. Then add the Vert.x `bin` directory to your `PATH`.

```
$ tar -zxf ~/Downloads/vert.x-2.0.0-final.tar.gz
```

or

```
$ unzip ~/Downloads/vert.x-2.0.0-final.tar.gz
```

Using Vert.x for Servlet Development

Using Vert.x for Servlet Development

Java Servlets are components that run in a servlet container, and are frequently featured in Java Application Servers and are a cornerstone of Java EE. Java Servlets handle request coming from a Web browser and typically talk to a database to create interactive web application. As web application become richer and richer, the traditional web applicaiton are going to the wayside.

Java Servlets replaced Common Gateway Interface (CGI) dominance. Reactive programmign frameworks like Vert.x, Node.js, and their ilk are replacing Java Servlets and **Java EE**.

Reactive frameworks are to Java EE what NoSQL is to RDBMS and SQL.

First Java Example

```
public class Example extends Verticle {

    public void start() {

        HttpServer server = vertx.createHttpServer();

        server.requestHandler(new Handler<HttpServerRequest>() {
            public void handle(final HttpServerRequest request) {
                doGet(request);
            }
        });
        server.listen(8080);

    }

    void doGet(HttpServerRequest request) {

        request.response().headers().add("Content-Type", "text/html; charset=UTF-8");
        request.response().setStatusCode(200).end(

            "\n<html><body>Hi Mom!</body></html>\n"

        );

    }

}
```

Running the first example

```
$ vertx run Example.java
```

The full example is on [github](#) in all its glory with a full metric ton of imports.

Testing our first example

Open up a new terminal and run:

```
$ curl localhost:8080

<html><body>Hi Mom!</body></html>
```