



Getting Started

symfony 1.4

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Chapter 1

Introduction

The symfony framework is a full-stack MVC framework that helps you develop websites faster. It also establishes a set of best practices that will help you to develop maintainable and secure websites. And advocating best practices starts as soon as you want to install the framework itself.

Installing symfony is not very much different to installing any other PHP software but, to make your installation secure from the start, you should not just put all the files under your web root directory as many other installation guides may prescribe. Although it will take slightly more time to install symfony our way, a little extra effort at the beginning is really worth it in the long run. Also, as with any other PHP software installation, there are a lot of small traps that you can fall into that can make your experience harder than it needs to be, so we will try to help you avoid them.

This tutorial teaches you everything you need to get started with a new symfony project. From the web server configuration, installation of symfony itself, to the creation of an application; at the end of the tutorial, you will have a fully-working symfony application, ready to be used for your next project.

Chapter 2

Prerequisites

Before installing symfony, you need to check that your computer has everything installed and configured correctly. Take the time to conscientiously read this chapter and follow all the steps required to check your configuration, as it may save your day further down the road.

Third-Party Software

First of all, you need to check that your computer has a friendly working environment for web development. At a minimum, you need a web server (Apache, for instance), a database engine (MySQL, PostgreSQL, SQLite, or any PDO¹-compatible database engine), and PHP 5.2.4 or later.

Command Line Interface

The symfony framework comes bundled with a command line tool that automates a lot of work for you. If you are a Unix-like OS user, you will feel right at home. If you run a Windows system, it will also work fine, but you will just have to type a few commands at the cmd prompt.



Unix shell commands can come in handy in a Windows environment. If you would like to use tools like `tar`, `gzip` or `grep` on Windows, you can install Cygwin². The adventurous may also like to try Microsoft's Windows Services for Unix³.

PHP Configuration

As PHP configurations can vary a lot from one OS to another, or even between different Linux distributions, you need to check that your PHP configuration meets the symfony minimum requirements.

First, ensure that you have PHP 5.2.4 at a minimum installed by using the `phpinfo()` built-in function or by running `php -v` on the command line. Be aware that on some configurations, you might have two different PHP versions installed: one for the command line, and another for the web.

Then, download the symfony configuration checker script at the following URL:

-
1. <http://www.php.net/PDO>
 2. <http://cygwin.com/>
 3. <http://technet.microsoft.com/en-gb/interopmigration/bb380242.aspx>

`http://sf-to.org/1.4/check.php`

*Listing
2-1*

Save the script somewhere under your current web root directory.

Launch the configuration checker script from the command line:

```
$ php check_configuration.php
```

*Listing
2-2*

If there is a problem with your PHP configuration, the output of the command will give you hints on what to fix and how to fix it.

You should also execute the checker from a browser and fix the issues it might discover. That's because PHP can have a distinct `php.ini` configuration file for these two environments, with different settings.



Don't forget to remove the file from your web root directory afterwards.



If your goal is to give symfony a try for a few hours, you can install the symfony sandbox as described in Appendix A⁴. If you want to bootstrap a real world project or want to learn more about symfony, keep reading.

Chapter 3

Symfony Installation

Initializing the Project Directory

Before installing symfony, you first need to create a directory that will host all the files related to your project:

Listing 3-1

```
$ mkdir -p /home/sfproject
$ cd /home/sfproject
```

Or on Windows:

Listing 3-2

```
c:\> mkdir c:\dev\sfproject
c:\> cd c:\dev\sfproject
```



Windows users are advised to run symfony and to setup their new project in a path which contains no spaces. Avoid using the Documents and Settings directory, including anywhere under My Documents.



If you create the symfony project directory under the web root directory, you won't need to configure your web server. Of course, for production environments, we strongly advise you to configure your web server as explained in the web server configuration section.

Choosing the Symfony Version

Now, you need to install symfony. As the symfony framework has several stable versions, you need to choose the one you want to install by reading the installation page⁵ on the symfony website.

This tutorial assumes you want to install symfony 1.4.

Choosing the Symfony Installation Location

You can install symfony globally on your machine, or embed it into each of your project. The latter is the recommended one as projects will then be totally independent from each others. Upgrading your locally installed symfony won't break some of your projects unexpectedly. It

5. <http://www.symfony-project.org/installation>

means you will be able to have projects on different versions of symfony, and upgrade them one at a time as you see fit.

As a best practice, many people install the symfony framework files in the `lib/vendor` project directory. So, first, create this directory:

```
$ mkdir -p lib/vendor
```

*Listing
3-3*

Installing Symfony

Installing from an archive

The easiest way to install symfony is to download the archive for the version you choose from the symfony website. Go to the installation page for the version you have just chosen, symfony 1.4⁶ for instance.

Under the “**Download as an Archive**” section, you will find the archive in `.tgz` or in `.zip` format. Download the archive, put it under the freshly created `lib/vendor/` directory, unarchive it, and rename the directory to `symfony`:

```
$ cd lib/vendor
$ tar xzpf symfony-1.4.8.tgz
$ mv symfony-1.4.8 symfony
$ rm symfony-1.4.8.tgz
```

*Listing
3-4*

Under Windows, unzipping the zip file can be achieved using Windows Explorer. After you rename the directory to `symfony`, there should be a directory structure similar to `c:\dev\sproject\lib\vendor\symfony`.

Installing from Subversion (recommended)

If you use Subversion, it is even better to use the `svn:externals` property to embed symfony into your project in the `lib/vendor/` directory:

```
$ svn pe svn:externals lib/vendor/
```

*Listing
3-5*

If everything goes well, this command will run your favorite editor to give you the opportunity to configure the external Subversion sources.



On Windows, you can use tools like TortoiseSVN⁷ to do everything without the need to use the console.

If you are conservative, tie your project to a specific release (a subversion tag):

```
svn checkout http://svn.symfony-project.com/tags/RELEASE_1_4_8 symfony
```

*Listing
3-6*

Whenever a new release comes out (as announced on the symfony blog⁸), you will need to change the URL to the new version.

If you want to go the bleeding-edge route, use the 1.4 branch:

6. http://www.symfony-project.org/installation/1_4

7. <http://tortoisesvn.net/>

8. <http://www.symfony-project.org/blog/>

Listing 3-7 `svn checkout http://svn.symfony-project.com/branches/1.4/ symfony`

Using the branch makes your project benefits from the bug fixes automatically whenever you run a `svn update`.

Chapter 4

Project Setup

In symfony, **applications** sharing the same data model are regrouped into **projects**. For most projects, you will have two different applications: a frontend and a backend.

Project Creation

From the `sfproject/` directory, run the symfony `generate:project` task to actually create the symfony project:

```
$ php lib/vendor/symfony/data/bin/symfony generate:project PROJECT_NAME
```

*Listing
4-1*

On Windows:

```
c:\> php lib\vendor\symfony\data\bin\symfony generate:project PROJECT_NAME
```

*Listing
4-2*

The `generate:project` task generates the default structure of directories and files needed for a symfony project:

Directory	Description
<code>apps/</code>	Hosts all project applications
<code>cache/</code>	The files cached by the framework
<code>config/</code>	The project configuration files
<code>data/</code>	Data files like initial fixtures
<code>lib/</code>	The project libraries and classes
<code>log/</code>	The framework log files
<code>plugins/</code>	The installed plugins
<code>test/</code>	The unit and functional test files
<code>web/</code>	The web root directory (see below)



Why does symfony generate so many files? One of the main benefits of using a full-stack framework is to standardize your developments. Thanks to symfony's default structure of files and directories, any developer with some symfony knowledge can take over the maintenance of any symfony project. In a matter of minutes, he will be able to dive into the code, fix bugs, and add new features.

The `generate:project` task has also created a `symfony` shortcut in the project root directory to shorten the number of characters you have to write when running a task.

So, from now on, instead of using the fully qualified path to the symfony program, you can use the symfony shortcut.

Installation Verification

Now that symfony is installed, check that everything is working by using the symfony command line to display the symfony version (note the capital V):

Listing 4-3

```
$ cd ../../
$ php lib/vendor/symfony/data/bin/symfony -V
```

On Windows:

Listing 4-4

```
c:\> cd ../../
c:\> php lib\vendor\symfony\data\bin\symfony -V
```

The -V option also displays the path to the symfony installation directory, which is stored in `config/ProjectConfiguration.class.php`.

If the path to symfony is an absolute one (which should not be by default if you follow the above instructions), change it so it reads like follows for better portability:

Listing 4-5

```
// config/ProjectConfiguration.class.php
require_once dirname(__FILE__).'/../lib/vendor/symfony/lib/autoload/
sfCoreAutoload.class.php';
```

That way, you can move the project directory anywhere on your machine or another one, and it will just work.



If you are curious about what this command line tool can do for you, type `symfony` to list the available options and tasks:

Listing 4-6

```
$ php lib/vendor/symfony/data/bin/symfony
```

On Windows:

Listing 4-7

```
c:\> php lib\vendor\symfony\data\bin\symfony
```

The symfony command line is the developer's best friend. It provides a lot of utilities that improve your productivity for day-to-day activities like cleaning the cache, generating code, and much more.

Configuring the Database

The symfony framework supports all PDO⁹-supported databases (MySQL, PostgreSQL, SQLite, Oracle, MSSQL, ...) out of the box. On top of PDO, symfony comes bundled with two ORM tools: Propel and Doctrine.

When creating a new project, Doctrine is enabled by default. Configuring the database used by Doctrine is as simple as using the `configure:database` task:

Listing 4-8

```
$ php symfony configure:database "mysql:host=localhost;dbname=dbname" root
mYsEcret
```

9. <http://www.php.net/PDO>

The `configure:database` task takes three arguments: the PDO DSN¹⁰, the username, and the password to access the database. If you don't need a password to access your database on the development server, just omit the third argument.



If you want to use Propel instead of Doctrine, add `--orm=Propel` when creating the project with the `generate:project` task. And if you don't want to use an ORM, just pass `--orm=none`.

Application Creation

Now, create the frontend application by running the `generate:app` task:

```
$ php symfony generate:app frontend
```

Listing
4-9



Because the `symfony` shortcut file is executable, Unix users can replace all occurrences of `'php symfony'` by `'./symfony'` from now on.

On Windows you can copy the `'symfony.bat'` file to your project and use `'symfony'` instead of `'php symfony'`:

```
c:\> copy lib\vendor\symfony\data\bin\symfony.bat .
```

Listing
4-10

Based on the application name given as an *argument*, the `generate:app` task creates the default directory structure needed for the application under the `apps/frontend/` directory:

Directory	Description
<code>config/</code>	The application configuration files
<code>lib/</code>	The application libraries and classes
<code>modules/</code>	The application code (MVC)
<code>templates/</code>	The global template files

Security

By default, the `generate:app` task has secured our application from the two most widespread vulnerabilities found on the web. That's right, `symfony` automatically takes security measures on our behalf.

To prevent XSS attacks, output escaping has been enabled; and to prevent CSRF attacks, a random CSRF secret has been generated.

Of course, you can tweak these settings thanks to the following *options*:

- `--escaping-strategy`: Enables or disables output escaping
- `--csrf-secret`: Enables session tokens in forms

If you know nothing about XSS¹¹ or CSRF¹², take the time to learn more these security vulnerabilities.

10. <http://www.php.net/manual/en/pdo.drivers.php>

11. http://en.wikipedia.org/wiki/Cross-site_scripting

12. <http://en.wikipedia.org/wiki/CSRF>

Directory Structure Rights

Before trying to access your newly created project, you need to set the write permissions on the `cache/` and `log/` directories to the appropriate levels, so that your web server can write to them:

Listing 4-11 \$ `chmod 777 cache/ log/`

Tips for People using a SCM Tool

symfony only ever writes in two directories of a symfony project, `cache/` and `log/`. The content of these directories should be ignored by your SCM (by editing the `svn:ignore` property if you use Subversion for instance).

Chapter 5

Web Server Configuration

The ugly Way

In the previous chapters, you have created a directory that hosts the project. If you have created it somewhere under the web root directory of your web server, you can already access the project in a web browser.

Of course, as there is no configuration, it is very fast to set up, but try to access the `config/databases.yml` file in your browser to understand the bad consequences of such a lazy attitude. If the user knows that your website is developed with symfony, he will have access to a lot of sensitive files.

Never ever use this setup on a production server, and read the next section to learn how to configure your web server properly.

The secure Way

A good web practice is to put under the web root directory only the files that need to be accessed by a web browser, like stylesheets, JavaScripts and images. By default, we recommend to store these files under the `web/` sub-directory of a symfony project.

If you have a look at this directory, you will find some sub-directories for web assets (`css/` and `images/`) and the two front controller files. The front controllers are the only PHP files that need to be under the web root directory. All other PHP files can be hidden from the browser, which is a good idea as far as security is concerned.

Web Server Configuration

Now it is time to change your Apache configuration, to make the new project accessible to the world.

Locate and open the `httpd.conf` configuration file and add the following configuration at the end:

```
# Be sure to only have this line once in your configuration
NameVirtualHost 127.0.0.1:8080

# This is the configuration for your project
Listen 127.0.0.1:8080

<VirtualHost 127.0.0.1:8080>
```

*Listing
5-1*

```

DocumentRoot "/home/sfproject/web"
DirectoryIndex index.php
<Directory "/home/sfproject/web">
    AllowOverride All
    Allow from All
</Directory>

Alias /sf /home/sfproject/lib/vendor/symfony/data/web/sf
<Directory "/home/sfproject/lib/vendor/symfony/data/web/sf">
    AllowOverride All
    Allow from All
</Directory>
</VirtualHost>

```



The /sf alias gives you access to images and javascript files needed to properly display default symfony pages and the web debug toolbar.

On Windows, you need to replace the Alias line with something like:

Listing 5-2 Alias /sf "c:\dev\sproject\lib\vendor\symfony\data\web\sf"

And /home/sfproject/web should be replaced with:

Listing 5-3 c:\dev\sproject\web

This configuration makes Apache listen to port 8080 on your machine, so the website will be accessible at the following URL:

Listing 5-4 http://localhost:8080/

You can change 8080 to any number, but favour numbers greater than 1024 as they do not require administrator rights.

Configure a dedicated Domain Name

If you are an administrator on your machine, it is better to setup virtual hosts instead of adding a new port each time you start a new project. Instead of choosing a port and add a Listen statement, choose a domain name (for instance the real domain name with .localhost added at the end) and add a ServerName statement:

Listing 5-5 # This is the configuration for your project

```

<VirtualHost 127.0.0.1:80>
    ServerName www.myproject.com.localhost
    <!-- same configuration as before -->
</VirtualHost>

```

The domain name www.myproject.com.localhost used in the Apache configuration has to be declared locally. If you run a Linux system, it has to be done in the /etc/hosts file. If you run Windows XP, this file is located in the C:\WINDOWS\system32\drivers\etc\ directory.

Add in the following line:

Listing 5-6 127.0.0.1 www.myproject.com.localhost

Test the New Configuration

Restart Apache, and check that you now have access to the new application by opening a browser and typing `http://localhost:8080/index.php/`, or `http://www.myproject.com.localhost/index.php/` depending on the Apache configuration you chose in the previous section.



If you have the Apache `mod_rewrite` module installed, you can remove the `index.php/` part of the URL. This is possible thanks to the rewriting rules configured in the `web/.htaccess` file.

You should also try to access the application in the development environment (see the next section for more information about environments). Type in the following URL:

`http://www.myproject.com.localhost/frontend_dev.php/`

*Listing
5-7*

The web debug toolbar should show in the top right corner, including small icons proving that your `sf/` alias configuration is correct.



The setup is a little different if you want to run symfony on an IIS server in a Windows environment. Find how to configure it in the related tutorial¹³.

13. http://www.symfony-project.com/cookbook/10/web_server_iis

Chapter 6

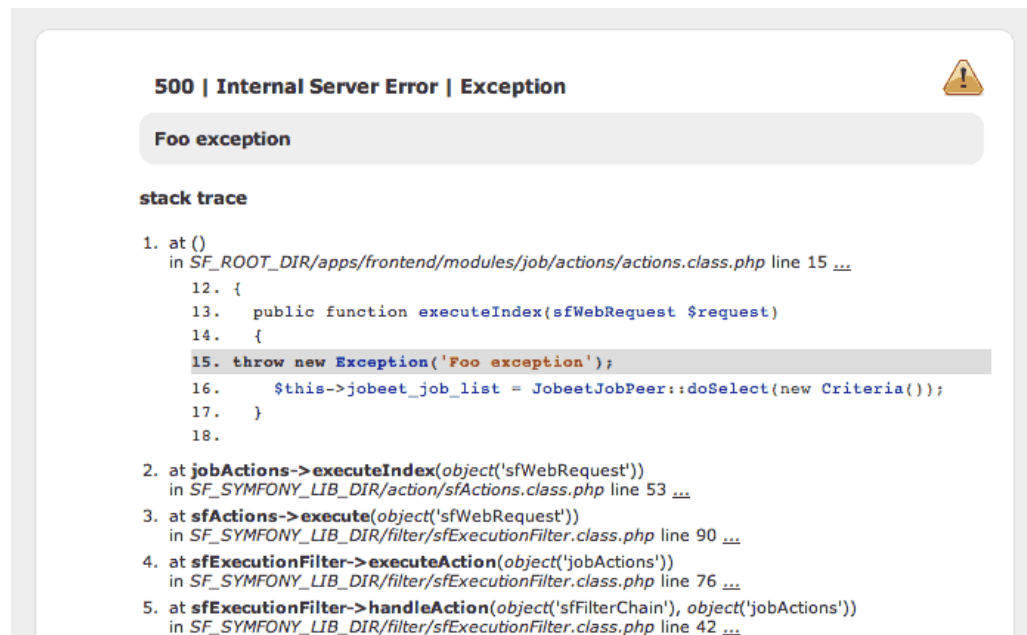
The Environments

If you have a look at the `web/` directory, you will find two PHP files: `index.php` and `frontend_dev.php`. These files are called **front controllers**; all requests to the application are made through them. But why do we have two front controllers for each application?

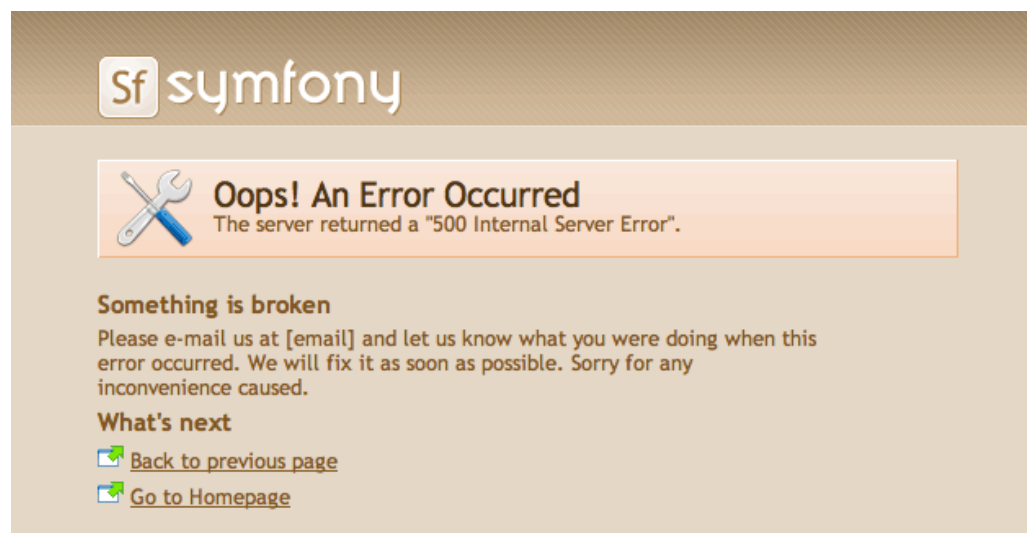
Both files point to the same application but for different **environments**. When you develop an application, except if you develop directly on the production server, you need several environments:

- The **development environment**: This is the environment used by **web developers** when they work on the application to add new features, fix bugs, ...
- The **test environment**: This environment is used to automatically test the application.
- The **staging environment**: This environment is used by the **customer** to test the application and report bugs or missing features.
- The **production environment**: This is the environment **end users** interact with.

What makes an environment unique? In the development environment for instance, the application needs to log all the details of a request to ease debugging, but the cache system must be disabled as all changes made to the code must be taken into account right away. So, the development environment must be optimized for the developer. The best example is certainly when an exception occurs. To help the developer debug the issue faster, symfony displays the exception with all the information it has about the current request right into the browser:



But on the production environment, the cache layer must be activated and, of course, the application must display customized error messages instead of raw exceptions. So, the production environment must be optimized for performance and the user experience.



If you open the front controller files, you will see that their content is the same except for the environment setting:

Listing
6-1

```
// web/index.php
<?php

require_once(dirname(__FILE__).'/../config/
ProjectConfiguration.class.php');

$configuration =
ProjectConfiguration::getApplicationConfiguration('frontend', 'prod',
false);
sfContext::createInstance($configuration)->dispatch();
```

The web debug toolbar is also a great example of the usage of environment. It is present on all pages in the development environment and gives you access to a lot of information by clicking on the different tabs: the current application configuration, the logs for the current request, the SQL statements executed on the database engine, memory information, and time information.

Chapter 7

What's next?

If you have followed the instructions from the previous chapters, you should now have a fully-functional symfony project, and are ready to experiment with symfony.

You can start reading more documentation on the main documentation page¹⁴ of your version.

On the documentation page, you will find the Jobeet¹⁵ tutorial, which is probably the best way to learn symfony. It explains in great detail the development of a web application from start to finish, and also teaches you the best practices of a web development. You can also buy it as a printed book¹⁶.

You can also browse the symfony reference¹⁷ guide and dive into the symfony framework configuration. This book is an invaluable resource when you need to find something quickly. As any other piece of symfony documentation, it is also available as a printed book¹⁸.

The symfony framework has a lot of great features and a lot of free documentation. That said, one of the most valuable assets an Open-Source project can have is its community, and symfony has one of the most active and friendly communities around. If you start using symfony for your projects, consider joining the symfony community:

- Subscribe to the user mailing-list¹⁹
- Subscribe to the official blog feed²⁰
- Subscribe to the symfony planet feed²¹
- Come and chat on the #symfony IRC²² channel on freenode

14. http://www.symfony-project.org/doc/1_4/

15. http://www.symfony-project.org/jobee/1_4/Doctrine/en/

16. <http://www.amazon.com/gp/product/2918390062?ie=UTF8&tag=symfonyprojec-20&linkCode=as2&camp=1789&creative=390957&crea>

17. http://www.symfony-project.org/reference/1_4/en/

18. <http://www.amazon.com/gp/product/2918390054?ie=UTF8&tag=symfonyprojec-20&linkCode=as2&camp=1789&creative=9325&crea>

19. <http://groups.google.com/group/symfony-users>

20. <http://feeds.feedburner.com/symfony/blog>

21. <http://feeds.feedburner.com/symfony/planet>

22. <irc://irc.freenode.net/symfony>

Appendices

Appendix A

The Sandbox

If your goal is to give symfony a try for a few hours, keep reading this chapter as we will show you the fastest way to get you started. If you want to bootstrap a real world project, you should jump to installation²³ chapter.

The fastest way to experiment with symfony is to install the symfony sandbox. The sandbox is a dead-easy-to-install pre-packaged symfony project, already configured with some sensible defaults. It is a great way to practice using symfony without the hassle of a proper installation that respects the web best practices.



As the sandbox is pre-configured to use SQLite as a database engine, you need to check that your PHP supports SQLite (see the Prerequisites²⁴ chapter). You can also read the Configuring the Database²⁵ section to learn how to change the database used by the sandbox.

You can download the symfony sandbox in .tgz or .zip format from the symfony installation page²⁶ or at the following URLs:

Listing
A-1

http://www.symfony-project.org/get/sf_sandbox_1_4.tgz

http://www.symfony-project.org/get/sf_sandbox_1_4.zip

Un-archive the files somewhere under your web root directory, and you are done. Your symfony project is now accessible by requesting the `web/index.php` script from a browser.



Having all the symfony files under the web root directory is fine for testing symfony on your local computer, but is a really bad idea for a production server as it potentially makes all the internals of your application visible to end users.

You can now finish your installation by reading the Web Server Configuration²⁷ and the Environments²⁸ chapters.



As a sandbox is just a normal symfony project where some tasks have been executed for you and some configuration changed, it is quite easy to use it as a starting point for a new project. However, keep in mind that you will probably need to adapt the configuration; for

23. 03-Symfony-Installation#chapter_03

24. 02-Prerequisites#chapter_02

25. 04-Project-Setup#chapter_04 configuring the database

26. http://www.symfony-project.org/installation/1_4

27. 05-Web-Server-Configuration#chapter_05

28. 06-Environments#chapter_06

instance changing the security related settings (see the configuration of XSS and CSRF in this tutorial).

Appendix B

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