

**Comprehensive Symfony**

**Course Number:** SYM-104  
**Duration:** 4 days

**Overview**

This Comprehensive Web Development with Symfony training course teaches attendees the fundamental concepts and most advanced tools of Symfony 6.  Students build their projects from scratch, starting with the basics and then incorporating advanced features, including injection, components, and more.  By the end of this course, attendees will have hands-on experience with the full range of the Symfony framework.

**Note:** This course is capped at 8 attendees, overriding Accelebrate’s standard 15-attendee cap.

**Prerequisites**

All Symfony training students must know the basics of PHP and object-oriented programming. If attendees don’t have prior PHP experience, please let us know and we will add a PHP primer to the class (extend it by up to a day).

**Materials**

All students receive comprehensive courseware.

**Software Needed on Each Student PC**

* Windows PCs or Macs with local administrator rights
* PHP 8 or later
* The following PHP extensions installed: ctype, filter, iconv, intl, json, mbstring, openssl, pdo, pdo\_sqlite, session, simplexml sodium, tokenizer, xml, xmlwriter, and xsl
* SQLite3, MariaDB, or MySQL
* Composer 2.x or later
* Symfony and Symfony CLI
* Npm or Yarn
* GitHub account for each participant, or a private repository + GIT account provided by your organization to our instructor
* Git

**Objectives**

* Become familiar with the Symfony framework
* Create a Symfony project from scratch
* Discover the structure and organization of project directories and files
* Apply the MVC pattern to properly separate concerns in your Symfony applications
* Build your web application’s interface using Twig templates and the Webpack Encore asset manager
* Work with Symfony forms and object persistence via Doctrine
* Apply Symfony best practices
* Understand dependency injection
* Use the service registry appropriately and effectively
* Build event-driven Symfony applications
* Configure authentication and authorization for Symfony applications

**Outline**

* Introduction
  + Overview of the Symfony project, including license, releases, roadmap, guidelines with Symfony framework, and useful components
  + Work environment and Symfony command-line tool
  + Installation of a Symfony project
* First Steps with Symfony
  + How to handle a Request-Response flow
  + Creating your first web page
  + Fine-tuning your application routes with parameters and requirements
  + Best practices when using controllers and their helpers
* Introduction to Functional Tests
  + Explanations about automated tests and functional tests
  + Get ready with PHPUnit to run automated tests
  + Writing your first test to check a status code over a web page
  + Using a data provider to provide URLs to be checked
* Templating with Twig
  + Introduction to Twig
  + Twig’s basic syntax
  + Using the Dot syntax helper in your templates
  + Using Twig to loop over data from a controller and test some conditions to design your web page
  + Using layout techniques with inheritance and template inclusions to reduce your template
  + Best solutions to get help with the Symfony console and the web profiler
  + Creating dynamic URLs in templates to access another web page or link an asset
* Web Assets with Webpack Encore
  + Introduction to Webpack Encore and Yarn
  + Installation and configuration of the required bundle
  + Optimizing assets with Webpack Encore
* Introduction to Doctrine
  + The Doctrine ORM and configuration of your project to access the database
  + Entities and their mapping with the Symfony maker
  + Migrations to manage the state of your database at anytime
  + Handling relations between 2 entities
  + Storing data in the database by using a controller
  + Retrieving data from the database by using built-in or custom queries
* Forms
  + Introduction to Symfony forms
  + Custom types
  + Handling submitted data
  + Using Symfony built-in constraints to get validated data
* Services
  + Introduction to dependency injection and Symfony services
  + The best way to get the list of available services
  + Using auto-wiring to inject dependencies on a constructor, a setter, or a property
  + Checking the custom configuration of your services
  + Services and environment variables
* Console
  + Console commands: creating interactive commands and batch commands
  + Writing your own commands
  + Using helpers from SymfonyStyle to make life easier
  + Declaring and handling new options and arguments in your command
* Security
  + Introduction to Authentication and Authorization in a Symfony project
  + Creating your own authenticator with Security
  + Checking the users’ roles to let them access a given resource
  + Creating custom voters to handle rare situations requiring a PHP check
* Events
  + Introduction to events and how to dispatch them in a Symfony project
  + Creating subscribers to declare listeners
  + Important built-in events
* Conclusion