Exponential for CMS developers

For CMS developers meeting Exponential for the first time, what the system is, where it comes from, how an installation is laid out, what happens during a request, what ships in the box, and how site projects are…

Source file: `doc/eng-us/help/cms-developers/exponential-for-cms-developers.md` Last changed 2026-11-04
https://doc.exponential.earth/learninminutes/exphelp/viewer/help/cms-developers/exponential-for-cms-developers.md

This page is for developers who build sites and are new to Exponential. It gives the system in overview: what it is, how an installation is organized, what a request goes through, and how a site project is usually structured. The following pages go deep on each part.

Contents

1. What Exponential is
2. Where it comes from
3. An installation on disk
4. A request, step by step
5. What ships in the box
6. How a site project is built
7. What you will learn first

What Exponential is

Exponential 6 is a content management system written in PHP, for PHP 8.0 to 8.5 (PHP 7.4 usable without support), licensed GPL 2.0 or later (root `composer.json`). Its core ideas:

- a **content model you define**: classes with typed attributes; every item is an object with versions and translations, placed in one content tree (The content model);
- **templates chosen by rules**, in its own template language, inside designs that fall back in a chain (Templates and overrides for CMS developers);
- **siteaccesses**: many sites, languages and interfaces from one installation and database (Siteaccesses and multisite);
- **extensions** for everything a project adds, so the kernel stays untouched (Extensions you will write);
- **Exponential Layouts** for pages editors compose from blocks (Layouts for CMS developers).

Where it comes from

Exponential continues the code base of a CMS that its creator discontinued after almost 18 years. 7x, the company that leads Exponential, has published the 6.0.x releases since the start of 2024, and the Exponential Foundation is the nonprofit behind the project; neither is associated with eZ Systems or Ibexa (Who is 7x?, Who is the Exponential Foundation?).

Developers who know eZ Platform or Ibexa will recognize the content model: Coming from eZ Platform or Ibexa.

An installation on disk

```
index.php                the front controller
kernel/                  the kernel: content, user, shop, workflow, setup ... modules and classe
s
lib/                     libraries: template engine, database, INI, utilities
design/                  shipped designs (standard, admin designs)
settings/                shipped default settings; never edited
  override/              this machine's settings (database, mail, hosts); never committed
  siteaccess/<name>/     settings of one siteaccess
extension/               every extension: shipped ones from Composer, and yours
var/                     storage (uploaded files), caches, logs
bin/php/                 command line scripts; bin/php/console is the console
```

The map with every directory and its purpose: The developer's map and Directories under var.

A request, step by step

1. The web server (Velocity, FrankenPHP, or Apache or nginx with PHP-FPM) hands the request to Exponential.
2. The **siteaccess** is chosen from the host, port or first path element; its settings apply from now on.
3. The **URL alias** is translated to a module and view, for content `content/view/full/<node id>`.
4. The view checks **permissions**, then renders: for content, the node's view template chosen by **override rules**, or the stored copy from the **view cache**.
5. The result is placed in the **pagelayout**, which may draw a **layout** of Exponential Layouts around it.
6. The answer goes out, possibly kept by the HTTP cache or Velocity's response cache for the next visitor.

Each step has its page: URL aliases and routing, Sections, roles and policies, Caching for CMS developers.

What ships in the box

Area	Built in or in the default distribution
Content	35 kernel datatypes, versions, translations, relations, object states, trash, rich text with the Online Editor
Site building	designs and override rules, view modes, Exponential Layouts, site packages with demo sites
Users	user accounts as content, groups, roles and policies, registration, two-factor sign-in
Processes	workflows (approval, dated publishing), cronjobs, notifications, information collection, a shop
Delivery	the REST interface (`ezprestapi`), `expservices`, RSS, sitemaps, search (built in, or Solr through eZ Find)

Area	Built in or in the default distribution
Operation	the console (`./console`), Velocity, caches at several layers, audit trail, maintenance mode
Databases	SQLite 3, PostgreSQL, MongoDB, MariaDB, Oracle and MySQL (Database support)

The list of every feature of the 6.0 line: Features of 6.0.

How a site project is built

Step	Page
Set up a development installation	Development environment
Design the content model, then create the classes	Designing a content model, Creating a content class
Build the design and templates in your extension	Templates and overrides for CMS developers
Decide which pages editors compose with Layouts	Layouts for CMS developers
Configure roles, languages and siteaccesses	Sections, roles and policies, Translations and languages
Import content	Importing content
Deploy and launch	Deploying a site, Project launch checklist

Two ways of building meet in every project: templates in a design extension, and the Layouts editor without code (Two ways to build).

What you will learn first

Three habits make everything else easier: think in classes and nodes, never edit shipped files, and know which cache follows which change. The Reading paths page orders the rest by the time you have.

Related pages

- CMS developers: start here
- The template language: what it is
- Getting started
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