

The Practical Guide for Faster E-Commerce Shops



Shop Performance in 30 Days

Mehmet Gökçe

MEMOTECH

Shop Performance in 30 Days

Mehmet Gökçe

This book is available at <https://leanpub.com/shopware-performance-en>

This version was published on 2026-09-26



This is a [Leanpub](#) book. Leanpub empowers authors and publishers with the Lean Publishing process. [Lean Publishing](#) is the act of publishing an in-progress ebook using lightweight tools and many iterations to get reader feedback, pivot until you have the right book and build traction once you do.

© 2026 Mehmet Gökçe

Contents

Foreword	1
August 1999: When E-Commerce Was Uncharted Territory	1
2010: Back to Deutsche Telekom	1
From Pioneers to Enterprise Standard	2
Why This Book?	2
Who Is This Book For?	3
What to Expect	3
After 30 Days	4
How to Use This Book	5
The 30-Day Structure	5
How to Proceed	5
Code Examples	5
Symbols and Conventions	6
Target Versions	6
Companion Resources	7
Feedback	8
Chapter 1: The Performance Imperative	9
Introduction	9
The Business Case for Performance	10
The Hidden Costs of Slow Stores	12
Core Web Vitals: The New Rules of the Game	13
The Performance Pyramid	16
Case Study: Enterprise E-Commerce – Surviving Peak Traffic	18
Checklist: Before You Start	19
Summary	19
References	20
Chapter 2: Performance Audit – Where Do You Stand?	22
Introduction	22

CONTENTS

The 7 Performance Dimensions	23
Tools for Your Audit	27
Establishing a Baseline: The Audit Record	33
Identifying Performance Killers	35
Practice: Running an Audit	40
Example Audit: A Swiss Fashion Shop (fictional)	42
Summary	44
References	45
Chapter 3: Measuring and Optimizing Core Web Vitals	47
Introduction	47
The Three Core Web Vitals	48
Step 1: Collecting Field Data	50
Step 2: Lab Data with Chrome DevTools	52
Step 3: Implementing Quick Wins	54
Step 4: Documenting Your Results	60
Advanced: Automated Monitoring	61
Checklist Days 1-2	63
Summary	63
References	64
Chapter 4: Image Optimization	66
Introduction	66
4.1 The Shopware 6 Thumbnail System	66
4.2 The sw_thumbnails Tag	67
4.3 Using Lazy Loading Correctly	67
4.4 Enabling WebP and AVIF	68
4.5 Optimizing the Thumbnail Configuration	68
4.6 Optimizing Images Before Upload	69
4.7 Performance Measurement	69
Checklist: Days 3-4	70
Advanced Tips	70
Summary	71
Chapter 5: Optimizing CSS and JavaScript	73
Introduction	73
5.1 Understanding the Problem	73
5.2 CSS Optimization	74
5.3 JavaScript Optimization	74

CONTENTS

5.4 Controlling Third-Party Scripts	75
5.5 Theme Compilation	76
5.6 Performance Measurement	76
Checklist: Days 5–7	76
Summary	77
Sources	77
Chapter 6: HTTP Caching – The Fastest Request Is the One That Never Happens	78
Introduction	78
6.1 Understanding HTTP Caching	80
6.2 Checking Shopware’s HTTP Cache	82
6.3 Cache Strategies for Different Page Types	86
6.4 Stale-While-Revalidate: Where It Works – and Where It Does Not	90
6.5 Varnish: The Reverse Proxy in Front of Shopware	91
6.6 Edge Side Includes (ESI)	100
6.7 Cache Invalidation	104
6.8 Cache Debugging	106
6.9 Performance Measurement	109
Checklist: Days 8-10	110
Summary	112
References	113
Chapter 7: Mastering Shopware’s Application Cache	115
Introduction	115
7.1 Understanding the Cache Architecture	115
7.2 Understanding the Default Configuration	116
7.3 Redis as Cache Backend	116
7.4 Sessions in Redis	117
7.5 Cache Invalidation	118
7.6 Cache Warming	118
7.7 Troubleshooting	119
7.8 Performance Measurement	120
Checklist: Days 11-12	120
Summary	121
Sources	121
Chapter 8: Database Optimization for Shopware	122
Introduction	122

CONTENTS

8.1 Shopware's Database Architecture	122
8.2 MySQL/MariaDB Configuration	123
8.3 Slow Query Analysis	123
8.4 Index Optimization	124
8.5 Optimizing the Shopware DAL	125
8.6 Caching Your Own Queries	126
8.7 Shopware Storage Optimization	126
8.8 Database Maintenance	126
8.9 Replication and Read Replicas	127
8.10 Troubleshooting	127
Checklist: Day 13-14	128
Summary	129
References	129
Chapter 9: Optimizing PHP Performance	130
Introduction	130
Goal of This Chapter	130
Prerequisites	130
Step 1: Check and Update PHP Version	131
Step 2: Configure OPcache	131
Step 2.5: Enable OPcache Preloading	132
Step 3: Evaluate the JIT Compiler	133
Step 4: Size PHP-FPM	134
Step 5: Optimize php.ini for Shopware	135
Step 6: Connect Nginx with PHP-FPM	135
Step 7: FrankenPHP Outlook	136
Troubleshooting	137
Checklist: Day 15-16	137
Summary	137
More Complex Scenario?	138
References	138
Chapter 10: Redis for High Availability	139
Introduction	139
Goals for This Chapter	139
Prerequisites	139
Step 1: Understanding the Problem – Single Point of Failure	140
Step 2: Choosing the Right Solution – Sentinel vs. Cluster	140
Step 3: Building the Redis Sentinel Architecture	141

CONTENTS

On success ckquorum returns a status line that begins with OK. In scripts, check for that OK only and not for the full text – the rest of the line is not a guaranteed format.	142
Step 4: Testing Failover	142
Step 5: Configuring Shopware for Sentinel	143
Step 6: Setting Up Monitoring and Alerting	143
Troubleshooting	144
Checklist: Day 17-18	144
Summary	145
Redis is highly available. In the next chapter (Chapter 11) we integrate a CDN: distribute static assets globally, reduce latency, and take load off the origin server. Because the fastest response is the one that never reaches your server at all.	146
More Complex Scenarios?	146
References	146
Chapter 11: CDN Integration for Global Performance	147
Introduction	147
Prerequisites	147
11.1 How a CDN works	147
11.2 CDN Provider Comparison	148
11.3 Setting up Cloudflare (Recommended)	148
11.4 Configuring Shopware for CDN	149
11.5 Setting Cache Headers Correctly	150
11.6 Cache Invalidation	151
11.7 CDN for Dynamic Content	152
11.8 Image Optimization at the Edge	152
11.9 Security: DDoS and WAF	153
11.10 Measuring Performance	153
11.11 Optimizing Costs	154
11.12 Troubleshooting	154
Checklist: Day 19-21	155
Summary	156
References	157
Chapter 12: Real User Monitoring (RUM)	158
Introduction	158
Prerequisites	158
12.1 RUM vs. Synthetic Monitoring	158

CONTENTS

12.2 Core Web Vitals	159
12.3 The web-vitals Library	159
12.4 Collecting RUM Data	160
12.5 Evaluating RUM Data	161
12.6 Setting Up Alerting	161
12.7 Interpreting RUM Data	162
12.8 Practical Checklist	162
Summary	163
References	163
Chapter 13: Continuous Performance Testing	164
Introduction	164
Prerequisites	164
13.1 Why Automated Performance Tests?	164
13.2 Lighthouse CI Setup	165
13.3 Defining Performance Budgets	165
13.4 GitHub Actions Integration	166
13.5 GitLab CI Integration	166
13.6 LHCI Server for Trend Analysis	166
13.7 Shopware-Specific Tests	167
13.8 Alerting on Regression	168
13.9 Practical Checklist	168
13.10 Load Testing: k6 and Locust	169
Summary	169
Sources	169
Chapter 14: Establishing a Performance Culture in Your Team	170
Introduction	170
Prerequisites	170
1. Performance as Shared Responsibility	170
2. Establishing Performance Champions	171
3. Code Reviews with a Performance Focus	172
4. Blameless Postmortems	172
5. Continuous Feedback Culture	173
6. Sharing Performance Knowledge	174
7. Organizational Anchoring	174
8. Common Culture Problems and Solutions	175
Summary: Week 4, Day 26-27	176
References	176

Chapter 15: The Long-Term Performance Plan 177

 Introduction 177

 Prerequisites 177

 1. The 12-Month Roadmap 177

 2. Quarterly OKRs for Performance 178

 3. Managing Technical Debt 178

 4. Performance Budgets Long-Term 179

 5. Establishing a Maintenance Rhythm 180

 6. Scaling Performance Work 180

 7. Measuring Success: KPIs for the Full Year 180

 8. Avoiding Common Long-Term Mistakes 181

 Checklist: Day 28-30 182

 Summary: Day 28-30 182

 References 183

Chapter 16: Shopware 6 Themes - Performance Optimization 184

 Introduction 184

 Prerequisites 184

 Companion Repository 184

 Where the Theme Ends Up 184

 Understanding and Optimizing theme.json 184

 SCSS Variables and Bootstrap Overrides 185

 JavaScript Optimization 186

 Optimizing Twig Templates 186

 Implementing Critical CSS 187

 ESI for Header and Footer (Shopware 6.7) 187

 Build Tools: Webpack, in 6.7 as Well 187

 Measuring Theme Performance 188

 Checklist: Theme Performance 188

 Avoiding Common Mistakes 189

 Summary 190

 References 190

Chapter 17: Shopware 6 Plugins - Performance Optimization 191

 Introduction 191

 Prerequisites 191

 Companion Repository 191

 Using the DAL Efficiently 191

 Optimizing Event Subscribers 192

CONTENTS

Message Queue for Asynchronous Processing	193
Controlling Cache Invalidation	193
Optimizing Entity Indexers	194
Analyzing Plugin Performance	194
Performance Checklist for Plugins	195
Summary	196
Sources	196
Chapter 18: Shopware 6 Elasticsearch	197
Introduction	197
Companion Repository	197
18.1 Elasticsearch vs. MySQL: When Does the Switch Pay Off?	197
18.2 Elasticsearch vs. OpenSearch: Which One to Use?	198
18.3 Heap Configuration: The Most Important Setting	199
18.4 Shopware ES Configuration	199
18.5 Optimizing for the German Language	200
18.6 Customizing Index Mapping	201
18.7 Optimizing Indexing	202
18.8 Query Optimization	203
18.9 Monitoring and Troubleshooting	203
18.10 Migration: From MySQL to Elasticsearch	204
18.11 Advanced: Multi-Index Strategies	205
18.12 Vector & Hybrid Search (ES 8.x forward look)	206
Summary	207
References	207
Chapter 19: Mobile Performance	208
Introduction	208
Companion Repository	208
19.1 Understanding the Mobile Performance Gap	208
19.2 Google Mobile-First Indexing	209
19.3 Mobile Core Web Vitals	210
19.4 Touch Optimization	210
19.5 Responsive Images	211
19.6 Service Worker & Offline Performance	212
19.7 Mobile Checkout Optimization	212
19.8 PWA for Shopware	213
19.9 Network-Aware Loading	214
19.10 Mobile Performance Testing	214

CONTENTS

Summary	215
Sources	215
Chapter 20: A/B Testing & Performance Experiments	216
Goal of This Chapter	216
Prerequisites	216
Step 1: Define Hypothesis and Metric	216
Step 2: Calculate the Sample Size	217
Step 3: Assign Visitors Cache-Safely	217
Step 4: One Cache Key per Variant	218
Step 5: Measurements per Variant from RUM	219
Step 6: Analyze Once, at the End	220
Practical Example: Load the First Listing Images Immediately	220
Common Mistakes in Shopware A/B Tests	221
Troubleshooting	221
Build vs. Buy: A/B Testing Platforms	222
Summary	222
Sources	222
Chapter 21: Third-Party Scripts & Tag Management	223
Goal of This Chapter	223
Prerequisites	223
Step 1: Audit Third-Party Scripts	223
Step 2: Load Google Tag Manager After Consent	224
Step 3: Clean Up the GTM Container	224
Step 4: Consent Mode and Your Own Scripts	225
Step 5: Use Partytown for Web Workers	225
Step 6: Load Widgets Only on the Pages That Need Them	226
Step 7: Monitor the Budget in CI	227
Step 8: Check Payment Provider Scripts	227
Step 9: Server-Side Tagging with GTM	228
Troubleshooting	229
Checklist: Third-Party Audit	229
Summary	229
Sources	230
Chapter 22: The 20 Most Common Performance Problems	231
Overview	231
Problem 1: Slow Database Queries	231

CONTENTS

Problem 2: HTTP Cache Not Active	231
Problem 3: Oversized JavaScript Bundles	231
Problem 4: Unoptimized Images	231
Problem 5: Missing Preconnects	231
Problem 6: Render-Blocking CSS	232
Problem 7: N+1 Query Problem	232
Problem 8: Session Lock Blocking	232
Problem 9: Heavy Cart Calculations	232
Problem 10: Too Many Plugins	232
Problem 11: Elasticsearch Not Configured	232
Problem 12: OPcache Not Enabled	232
Problem 13: Debug Mode in Production	233
Problem 14: Missing Gzip Compression	233
Problem 15: Background Processes That Pile Up	233
Problem 16: Theme Leftovers	233
Problem 17: Large Log Files	233
Problem 18: CDN Not Configured	233
Problem 19: Synchronous API Calls	233
Problem 20: Missing Browser Cache Headers	234
Quick Reference: Diagnostic Commands	234
Checklist: Performance Troubleshooting	234
Summary	234
Chapter 23: Five Performance Transformation Scenarios	236
Introduction	236
Case Study 1: Enterprise Telecommunications – Managing a Launch Meltdown	236
Case Study 2: Swiss Fashion Shop – Mobile-First Optimization	237
Case Study 3: B2B Industrial Supplies – Scaling Search	238
Case Study 4: Black Friday Survival – The Night Everything Fell Apart	239
Case Study 5: International Marketplace – Scaling Multi-Tenant	240
Summary: Patterns Across All Case Studies	240
References	241
Chapter 24: Outlook – New Technologies and Trends	242
Introduction	242
Core Web Vitals Evolution: INP Replaces FID	242
HTTP/3 and QUIC: The New Transport Protocol	243
Edge Computing: Running Code Closer to the User	243

CONTENTS

Shopware Roadmap: What Is Coming?	244
AI-Assisted Performance Optimization	244
Composable Commerce: The Future of Architecture	245
Green IT: Performance as a Sustainability Factor	246
Checklist: Future-Proofing	247
Summary	247
Appendix A: Glossary	249
A	249
B	249
C	249
D	249
E	249
F	249
G	250
H	250
I	250
J	250
K	250
L	250
M	250
N	251
O	251
P	251
Q	251
R	251
S	251
T	251
V	252
W	252
Z	252
Appendix B: Code Snippets Reference	253
PHP / Shopware 6	253
Configuration	253
JavaScript	254
Bash / Shell	254
SQL	254
Twig	255

Additional Snippets	255
Appendix C: Configurations	256
PHP	256
Nginx	256
Shopware	257
MySQL / MariaDB	257
Redis	257
Supervisor	258
Logrotate	258
Environment (.env.local)	258
Appendix D: Resources & Links	259
Official Documentation	259
Tools	259
Books & Articles	260
Community & Support	261
Services & Hosting	261
Companion Repository	262
Checklists	262
Appendix E: Cheat Sheet – Shopware performance at a glance	263
Core Web Vitals	263
Further metrics (not Core Web Vitals)	263
Infrastructure guide values	263
Shopware CLI commands	263
MySQL/MariaDB	263
Redis	263
PHP/OPcache	264
Configuration paths	264
Quick health check	264
The 20 most common problems – quick reference	264
About the Author	265
Mehmet Gökçe	265
Book Feedback	265

Foreword

Performance is not a luxury. Performance is survival.

In over two decades of e-commerce development, I have learned one thing: the difference between a successful and a failing online store often comes down to milliseconds. Just 0.1 seconds of faster load time can increase conversion rates by up to 8% (Deloitte/Google, 2020). For a store with CHF 10 million in annual revenue, that means hundreds of thousands of francs – every year.

August 1999: When E-Commerce Was Uncharted Territory

It was a hot August day in Augsburg. I was at my first job as an application developer at Publica Data Service, working on something that would change the German book industry: **booxtra.de**.

Booxtra was no ordinary startup. It was a joint venture of four German media giants: T-Online (Deutsche Telekom), Weltbild Verlag, Holtzbrinck, and Axel Springer. Four DAX-listed companies, joining forces to compete against Amazon. And I – just 22 years old, fresh out of university – was part of the development team.

Back then, there were no frameworks like Symfony or Laravel. No Composer, no npm, no Git. We wrote **Active Server Pages** on Windows NT 4.0 and AIX, talked directly to the database, and each of us had our own way of managing sessions. Performance optimization meant counting database queries by hand and hoping the server wouldn't crash when more than a hundred visitors arrived at the same time.

booxtra later became buucher.de – today one of Germany's largest online bookstores. But more important than the success was the lesson: **E-commerce does not forgive slowness**. The first customers we lost, we didn't lose to Amazon – we lost them to our own load times.

2010: Back to Deutsche Telekom

Eleven years later, I was sitting in the Munich office of Optaros, developing softwareload.de – Deutsche Telekom’s download portal. Magento Enterprise Edition, custom extensions, complex interface integrations. Europe’s largest telecommunications company. A DAX-30 corporation. And I was right in the middle of it again.

The irony was not lost on me: my first e-commerce project in 1999 had been co-founded by T-Online. Now, in 2010, I was developing for Telekom again – this time with Magento Enterprise Edition instead of Active Server Pages, with PHP instead of VBScript, with Linux instead of Windows NT.

The technology had changed completely. The fundamental principles had not.

What we implemented back then with Magento EE – clean architecture, performant database queries, well-designed interfaces – are the same patterns I apply to Shopware 6 today.

From Pioneers to Enterprise Standard

My path took me from the early days of German e-commerce through enterprise projects for Deutsche Telekom and Fujitsu Siemens, through collaborations with Sony Music, Universal Music, and Warner Music at Klassikradio, all the way to mid-market Shopware projects in the DACH region.

I’ve seen how Schuhbeck’s online store struggled with the integration between Magento and Microsoft Dynamics. I’ve led complete migrations from PrestaShop to Shopware for German SMEs and developed custom plugins that improved both performance and functionality.

Across all these projects – from booxtra.de in 1999 to today’s Shopware 6 projects – one insight has remained constant: **Performance optimization is not a one-time task, but a craft.**

A craft that can be learned.

Why This Book?

Shopware's documentation is good. The community forums are active. But there is no structured resource that shows developers how to systematically – day by day, step by step – bring a store to peak performance.

This book fills that gap.

It is not a theoretical compendium. It is a hands-on guide, born from over two decades of experience with the systems that have shaped e-commerce: from Active Server Pages on Windows NT through xtCommerce and Magento 1 and 2 to Shopware 6. From ASP to PHP 8.3. From SQL Server to PostgreSQL 16.

Who Is This Book For?

This book is for you if you:

- Develop on Shopware 6 and need to optimize performance
- Make architecture decisions as a tech lead or solution architect
- Get nervous before Black Friday / peak traffic events
- Don't have time to sift through hundreds of blog posts

This book is NOT for you if you:

- Have no technical background
- Have never written PHP/Symfony code
- Are only looking for quick tips without depth

What to Expect

In 30 days, you will:

1. Understand your current performance (audit)
2. Implement quick wins (Week 1)
3. Optimize caching and database (Week 2)

4. Stabilize infrastructure (Week 3)
5. Establish sustainable monitoring (Week 4)

Each chapter includes:

- Clear learning objectives
- Working code examples ready to copy
- Checklists to follow
- Advanced tips for senior developers

The code examples are not pseudocode fragments. This is real PHP 8.x code that you can directly apply to your Shopware projects. I have written and tested every snippet myself.

After 30 Days

After 30 days, you will not only know how to fix performance problems. You will understand **why** certain solutions work – and be able to apply that knowledge to every future project.

The sleepless nights before server launches are over. With the right knowledge, Black Friday becomes just another day – only with more revenue.

Let's get started.

Mehmet Gökçe St. Gallen, January 2026

* * *

P.S.: If you have questions or would like to share feedback, you can reach me at mehmetgoekce@memotech.ch or on LinkedIn. I'd love to hear about your own performance adventures.

How to Use This Book

The 30-Day Structure

This book is designed as a hands-on program. Each day has a clear objective:

Week	Focus	Days
Week 1	Quick Wins	Day 1-7
Week 2	Caching & Database	Day 8-14
Week 3	Server & Infrastructure	Day 15-21
Week 4	Monitoring & Culture	Day 22-30

How to Proceed

Option 1: Sequential (recommended)

Work through the book from front to back. Each chapter builds on the previous one.

Option 2: Targeted

Use the table of contents and the checklists in Part 6 to solve specific problems.

Option 3: Reference

Use the code snippets in the appendix as a reference for your daily work.

Code Examples

All code examples are:

- **Tested** with Shopware 6.6 and PHP 8.3 as primary target (details: *Target Versions* section below)
- **Copy-ready** – use them directly in your project
- **Commented** – understand why something works

```
1  <?php
2  // Example structure of all code blocks in this book
3  // File: src/Service/ExampleService.php
4
5  declare(strict_types=1);
6
7  namespace App\Service;
8
9  /**
10 * Brief description of what this code does.
11 *
12 * Performance note: [Relevant tip]
13 */
14 class ExampleService
15 {
16     // Implementation...
17 }
```

Symbols and Conventions

Symbol	Meaning
Performance Tip	Optimization hint
Caution	Common mistake or pitfall
Advanced	For experienced developers
Shopware 6.6+	Requires at least this version

Target Versions

This 2nd edition targets the following version combination. Where individual chapters use additional tools, those are listed in the chapter header (> ****Tested with:****).

Component	Primary Target	Also Compatible / Forward Notes
Shopware	6.6	6.5 supported · 6.7 forward notes
PHP	8.3	8.2 supported · 8.4 forward notes
Symfony	7.x	(Shopware 6.6 requires Symfony 7)
MySQL / MariaDB	MySQL 8.0+ / MariaDB 10.11+	–
Redis	7.x	–
Elasticsearch / OpenSearch	Elasticsearch 8.x or OpenSearch 2.x	Code examples in Chapter 18 tested against ES 7.x; ES-8.x code update to follow
Build Tools	Webpack 5 (Shopware 6.6)	Storefront still with Webpack in 6.7; Vite for the Administration only (from 6.7)
Lighthouse CI	v0.15+	–
Node.js	20 LTS	–

Note: Configuration examples in Appendix C use PHP 8.3 paths (/etc/php/8.3/). For PHP 8.2, replace accordingly. The full test matrix is in COMPATIBILITY.md in the companion repository.

Companion Resources

- **Code Repository:** github.com/MehmetGoekce/shopware-performance-examples
- **Checklists (PDF):** memotech.ch/buch/checklisten
- **Community:** github.com/.../discussions

Running Companion Commands

Each chapter has its own folder in the companion repository, for example `chapters/06-http-cache`. Commands of the form `./scripts/<name>.sh` run from that chapter folder:

```
1 git clone https://github.com/MehmetGoekce/shopware-performance-examples.git
2 cd shopware-performance-examples/chapters/06-http-cache
3 ./scripts/cache-debug.sh https://your-shop.com /
```

When a chapter calls a script from another chapter, a comment above the call names that folder (`#` in the companion folder `chapters/06-http-cache`). `bin/console`, by contrast, runs in your shop's Shopware directory. If a block starts with `cd`, that directory applies, for example in the deploy step in chapter 7, which calls a copy of the script in the shop repo.

Feedback

Found an error? Have a suggestion for improvement?

- **Email:** mehmetgoekce@memotech.ch
- **GitHub Issues:** github.com/.../issues
- **LinkedIn:** linkedin.com/in/mehmetgoekce

Your feedback helps to continuously improve this book.

* * *

Ready? Then let's start with Chapter 1: The Performance Imperative.

Chapter 1: The Performance Imperative

* * *

At a Glance: Performance determines revenue – 0.1 seconds faster mobile load time correlates with 8.4% more conversions in retail. This chapter provides the business case, explains Core Web Vitals, and introduces the 30-day roadmap. **Expected Impact:** A solid foundation for performance investment decisions | **Time Required:** 1-2 hours reading **Tested with:** Shopware 6.6 | PHP 8.3 | Lighthouse 13, Chrome DevTools

Introduction

0.1 seconds. That's the time that makes the difference between a purchase and a bounce. Not minutes. Not seconds. Tenths of a second.

A study by Google, Deloitte, and fifty-five analyzed 37 brand sites from retail, travel, luxury and lead generation, primarily from Europe and the US, across 30 million user sessions – mobile data only. The result: improving load time by just 0.1 seconds increased the conversion rate in retail by **8.4%** and the average order value by **9.2%** ([Milliseconds Make Millions, 2020, report pp. 14 and 47](#)).

Performance is not just a technical topic. Performance is a business topic.

In This Chapter You Will Learn:

- Why milliseconds are worth millions – with verified study results
- How Core Web Vitals work and why Google made them a ranking factor

- The hidden costs of slow stores (direct, indirect, opportunity)
- The Performance Pyramid: our systematic approach for the 30-day roadmap
- How a modelled enterprise scenario survives launch peaks (in full in Chapter 23)

* * *

The Business Case for Performance

The Problem

Most store owners and developers underestimate the financial impact of performance. They optimize features, design, and marketing – but ignore load time. That’s an expensive mistake.

The Theory

The “Milliseconds Make Millions” study was the first to quantify the direct relationship between load time and revenue. The researchers analyzed four weeks of hourly data from 37 brand sites and correlated load time metrics with conversion events.

Verified Study Results:

Improvement	Effect	Industry	Source
-0.1s load time	+8.4% conversion	Retail	Deloitte/Google, 2020
-0.1s load time	+10.1% conversion	Travel	Deloitte/Google, 2020
-31% LCP	+8% sales	Telco	Vodafone/web.dev, 2021
-0.1s load time	+9.2% cart value	Retail	Deloitte/Google, 2020

Improvement	Effect	Industry	Source
-0.1s load time	+20.6% contact page	Luxury	Deloitte/Google, 2020

These numbers come from real analytics data, not from A/B tests: the study correlates revenue metrics with speed values measured by Lighthouse in the lab, and the 0.1 seconds are the combined value of four speed metrics (report pp. 45-47). It shows correlations, not causal effects; the Vodafone figure does come from an A/B test.

Practical Context: The Swiss E-Commerce Landscape

Swiss online retail reached a record volume of **CHF 14.9 billion** in 2024 – a growth of 3.5% year-over-year ([Handelsverband.swiss, 2025](#)).

Already **52.4% of all online purchases are made on smartphones** ([University of St. Gallen/Handelsverband, 2024](#)).

The consequence: Mobile is critical. And mobile is slow. The performance gap between desktop and mobile costs Swiss online retailers millions.

Model calculation for a typical Swiss B2B store:

1	BASELINE:	
2	Annual revenue:	CHF 8,000,000
3	Visitors/month:	50,000
4	Current conversion rate:	2.2%
5	Current load time (LCP):	4.8 seconds
6	Mobile share:	55%
7		
8	AFTER OPTIMIZATION:	
9	New load time (LCP):	2.0 seconds
10	Expected conversion increase:	+15% (assumption)
11		
12	RESULT:	
13	New conversion rate:	2.53% (+0.33 percentage points)
14	Additional conversions/month:	165
15	Additional revenue/year:	CHF 1,200,000
16		
17	INVESTMENT:	
18	Developer time (60h × CHF 150):	CHF 9,000
19	Server optimization (12 mo.):	CHF 2,400
20	Tools & monitoring (12 mo.):	CHF 1,200

21	-----
22	Total investment year 1: CHF 12,600
23	
24	ROI: 9,424%

Important: this is a **model illustration**, not a benchmark. The math is correct, but the dominant input – the CHF 1,200,000 annual revenue increase – is an *assumption*. Derive the realistic value per shop from your baseline (traffic × conversion × AOV) and a measured conversion uplift (methodology in Chapter 2). The high ROI figure stems solely from the extreme ratio of small investment to large revenue lever – a best case, not a promise.

* * *

The Hidden Costs of Slow Stores

The Problem

Performance problems don't just have one obvious effect (slow page = frustrated users). They cause a cascade of hidden costs that are often underestimated.

The Theory

1. Direct Costs: Lost Conversions

According to Google, users lose focus after 1 second. After 10 seconds they are frustrated and likely to abandon the task – whether they come back is open ([Deloitte/Google, 2020, report p. 8](#)).

At 4 seconds of load time, you lose a significant share of your potential buyers – before they have even seen your offer. How large that share is in your shop only your own measurement shows.

2. Indirect Costs: Lower Rankings

Google made Core Web Vitals a ranking factor in 2021. Current analyses show: Core Web Vitals act as a “tie-breaker” between pages with similar content quality ([DebugBear, 2024](#)).

Important: Google names no ranking threshold and states explicitly that there is no single “page experience signal” (Google, 2026). The “passed” assessment in Search Console and PageSpeed Insights does require all three metrics to be good at the 75th percentile.

3. Opportunity Costs: Customers Who Never Return

Users who have a poor performance experience don’t come back. The lifetime value of a lost customer is hard to quantify – but very real.

4. Advertising Costs: Expensive Clicks That Fizzle Out

You pay for every click from Google Ads – including the visitors who bounce while the page is still loading. How large that share is in your shop only your own measurement shows (Chapter 2); blanket percentages do not help here.

Practical Context

Cost Type	How to measure it in your shop
Lost conversions	Conversion rate per load time segment, significance per Chapter 20
Google Ads	Bounce rate of paid landing pages against their LCP (your analytics)
SEO visibility	Core Web Vitals report in Search Console, field data (Chapter 3)
Returning customers	p75 per device group (rum: report --by=device, Chapter 12) next to the repeat purchase rate from your shop reporting

* * *

Core Web Vitals: The New Rules of the Game

The Problem

Since 2021, Google evaluates user experience through three metrics – the Core Web Vitals. In **March 2024**, FID was replaced by INP, which tightened the

requirements ([Google, 2024](#)).

Many store owners don't understand these metrics – and therefore can't optimize them.

The Theory

LCP (Largest Contentful Paint) – Loading Speed

What it measures: When the largest visible content element (usually hero image or main text) has loaded.

Thresholds ([web.dev](#)):

Rating	LCP Value
Good	≤ 2.5 seconds
Needs improvement	above 2.5 up to 4.0 seconds
Poor	> 4.0 seconds

Common problems in Shopware 6:

- Unoptimized hero images – what Shopware's thumbnails deliver is measured in Chapter 4
- Render-blocking JavaScript in <head>
- Slow TTFB due to missing HTTP cache
- Too many database queries for the homepage

Impact: The Vodafone study showed: 31% better LCP = 8% more sales ([web.dev, 2021](#)).

INP (Interaction to Next Paint) – Responsiveness

What it measures: How quickly the page responds to user interactions – clicks, taps, keyboard input.

Thresholds:

Rating	INP Value
Good	≤ 200 milliseconds
Needs improvement	above 200 up to 500 milliseconds
Poor	> 500 milliseconds

Why INP is harder than FID:

FID only measured the delay of the *first* interaction. INP looks at *all* interactions of a page visit and usually reports the slowest one; only with many interactions is the slowest of every 50 discarded (Chapter 3). The assessment then uses the 75th percentile across all page views. This means: even a slow filter on page 3 of your customer journey can determine your INP value.

Common problems in Shopware 6:

- Heavy JavaScript bundles – Shopware 6.6 ships 103 KB gzip in 16 files (Chapter 2)
- Third-party scripts (analytics, chat, retargeting)
- Unoptimized event handlers for product filters
- Synchronous loading of widgets

CLS (Cumulative Layout Shift) – Visual Stability

What it measures: How stable the layout remains during loading. Does the content jump? Does the button shift while you're trying to click it?

Thresholds:

Rating	CLS Value
Good	≤ 0.1
Needs improvement	above 0.1 up to 0.25
Poor	> 0.25

Common problems in Shopware 6:

- Images without width and height attributes

- Dynamically loaded banners and sliders
- Web fonts that swap in the fallback late (`font-display: swap`, Chapter 3)
- Lazy-loaded content without placeholders

User Impact: CLS is the “frustration factor.” Users who accidentally click the wrong button because the layout shifted leave the page – and don’t come back.

Practical Context

Core Web Vitals Summary:

Metric	Measures	Good	Main Causes in Shopware
LCP	Loading speed	≤ 2.5 s	Images, server, caching
INP	Responsiveness	≤ 200 ms	JavaScript, third-party
CLS	Visual stability	≤ 0.1	Images without dimensions, fonts

Important for SEO: Google only uses **field data** (real user data from Chrome) for rankings – not your Lighthouse score. The field data is the 75th percentile of a **28-day window**: an improvement only shows there in full over time ([Search Console help](#)), as Chapter 3 explains.

* * *

The Performance Pyramid

The Problem

Performance optimization is not a one-time project. Many teams optimize ad hoc, without a system – and lose the improvements after the next release.

The Theory

We use a systematic pyramid that builds from quick wins to sustainable culture:

1					+=====+	
2						CULTURE
3						(Ch. 14-15)
4					+=====+	<- Week 4 / Long-term Performance as mindset
5					+==+	MONITORING
6						(Ch. 12-13)
7						+=====+
8					+==+	INFRASTRUCTURE
9						(Ch. 9-11)
10						+=====+
11					+==+	CACHING
12						(Ch. 6-8)
13						+=====+
14					+==+	QUICK WINS
15						(Ch. 3-5)
16					=====+	
17						FOUNDATION: Performance Audit (Chapter 2)

Why this order?

- 1. **Quick wins first:** small changes, quickly measurable effect
- 2. **Caching multiplies:** Every optimization has a greater effect with cache
- 3. **Infrastructure stabilizes:** Solid foundation for scaling
- 4. **Monitoring secures:** No regression without warning
- 5. **Culture anchors:** Sustainability instead of one-time actions

Practical Context

Week	Focus	Chapters	What you measure at the end
1	Quick Wins	3-5	LCP of the home page before and after
2	Caching	6-8	TTFB and cache hit rate
3	Infrastructure	9-11	Response times under load
4	Sustainability	12-15	p75 in the field, regressions in CI

Case Study: Enterprise E-Commerce – Surviving Peak Traffic

A modelled scenario as in Chapter 23: typical patterns from over two decades of consulting practice, not a real client file. The numbers are modelled example values, not measurements.

A large European telecommunications company lost an estimated **€2-3 million** in revenue during every product launch (iPhone, Galaxy, etc.). Response times rose from 200ms to over 10 seconds, the error rate was 23%, and shopping carts were lost.

The solution in 8 weeks:

- **Quick Wins (Weeks 1-2):** HTTP cache headers and a CDN in front of the application
- **Architecture (Weeks 3-6):** Read replicas, Redis sessions, asynchronous third-party calls
- **Proactive Monitoring (Weeks 7-8):** Cache warming before launches, auto-scaling, circuit breakers

Result (modelled): Response time -95% (8.2s $\square$ 0.4s), error rate -99.5% (23% $\square$ 0.1%), server costs -30% (€50k $\square$ €35k/month), ROI 1,289% in the first year.

Three Key Lessons:

1. **Performance is an architecture problem** – quick wins alleviate symptoms, but fundamental problems require structural changes
2. **Proactive beats reactive** – cache warming before events costs a fraction of firefighting during them
3. **Monitoring is not optional** – without a baseline, there is no measurable improvement

The complete case study with code examples and architecture diagrams can be found in **Chapter 23: Five Performance Transformation Scenarios**.

Checklist: Before You Start

- ☐ Current Core Web Vitals measured with PageSpeed Insights (LCP, INP, CLS)
- ☐ Lighthouse report created for desktop and mobile
- ☐ Baseline values documented (load time, TTFB, conversion rate)
- ☐ Staging environment available and up to date
- ☐ SSH access to the server configured
- ☐ Chrome DevTools and Lighthouse CLI installed
- ☐ Team informed about the 30-day roadmap
- ☐ Time budget reserved for performance work (min. 2h/day)
- ☐ Backup strategy defined for configuration changes
- ☐ Google Search Console access for CWV monitoring

* * *

Summary

Key Takeaways

1. **Milliseconds make millions:** 0.1 seconds faster mobile load time correlates with 8.4% (retail) and 10.1% (travel) more conversions – a correlation measured by Deloitte/Google in 2020
2. **Core Web Vitals are one ranking factor among several:** Google names no threshold; the “passed” assessment in Search Console and PageSpeed Insights requires all three at the 75th percentile
3. **Mobile is the bottleneck:** 52.4% of Swiss consumers shop on mobile – that’s where performance determines success or failure
4. **Calculate the ROI yourself:** the model above shows the lever; the reliable number comes from your baseline (Chapter 2)
5. **Culture beats tools:** Sustainable performance requires team buy-in and processes, not just one-time optimizations

The Key Numbers

Fact	Figure	Source
Swiss e-commerce 2024	CHF 14.9 billion	Handelsverband.swiss
Mobile share of purchases	52.4%	University of St. Gallen/Handelsverband
Conversion increase per 0.1s	+8.4% (retail)	Deloitte/Google, 2020
LCP improvement □ sales	+8%	Vodafone/web.dev, 2021

Next Steps

In the next chapter, we will conduct a **performance audit**. You will:

- Measure your current baseline with real field data
- Identify the biggest bottlenecks
- Create a prioritized optimization plan

No diagnosis, no therapy. Chapter 2 gives you the tools.

* * *

References

- Deloitte & Google (2020): *Milliseconds Make Millions*. deloitte.com (report linked as PDF)
- Google Developers (2026): *Understanding page experience in Google Search results*. developers.google.com
- web.dev (2021): *Vodafone: A 31% improvement in LCP increased sales by 8%*. web.dev/case-studies/vodafone
- Handelsverband.swiss (2025): *Schweizer Online-Konsum 2024*. handelsverband.swiss
- University of St. Gallen / Handelsverband (2024): *Studie Internetnutzung und E-Commerce Schweiz 2024*. handelsverband.swiss

- Google Developers (2024): *Understanding Core Web Vitals*. developers.google.com
- web.dev (2024): *Web Vitals*. web.dev/articles/vitals
- DebugBear (2024): *Are Core Web Vitals A Ranking Factor?* debugbear.com

Chapter 2: Performance Audit — Where Do You Stand?

* * *

At a Glance: Before you optimize, measure your current state. You will create a performance audit using PageSpeed Insights, Lighthouse, WebPageTest, and Chrome DevTools, check the server side with a handful of commands – and find the biggest bottlenecks in your shop. **Expected Impact:** Prioritized optimization roadmap based on measured starting values | **Time Required:** 4–6 hours **Tested with:** Shopware 6.6.10.6 | PHP 8.3 | Lighthouse 13, PageSpeed Insights, WebPageTest (as of September 2026)

Introduction

You would not see a doctor who prescribes medication without examining you first. Similarly, you should not carry out performance optimizations without first knowing where your shop actually stands.

A performance audit gives you:

- **Baseline:** Measurable starting values for all critical metrics
- **Diagnosis:** Identification of the biggest bottlenecks
- **Prioritization:** Which optimizations deliver the greatest ROI?
- **Proof of results:** Evidence that your changes are working

In this Chapter you will learn:

- How to systematically measure the 7 performance dimensions
- Which tools to use for Lab Data and Field Data
- How to identify performance killers in Shopware 6
- How to create an audit record and prioritize issues
- What an audit result looks like, using a worked (fictional) example

Prerequisites

- **Technical:** Access to Google Search Console, Chrome DevTools, shell access to the server
- **Knowledge:** Basic understanding of Core Web Vitals (Chapter 1)
- **Tools:** PageSpeed Insights, optional Frosh Tools plugin

Companion repo: The audit script, the image analysis, and the record template for this chapter are tested and available at github.com/MehmetGoekce/shopware-performance-examples/chapters/02-performance-audit.

* * *

The 7 Performance Dimensions

Performance is more than “fast loading times”. To analyze a shop holistically, we look at seven dimensions:

1. Server Response (TTFB)

What it measures: How quickly does your server respond to a request?

Target values ([web.dev](#)):

Rating	TTFB
Good	≤ 800 ms
Needs improvement	800–1,800 ms
Poor	> 1,800 ms

TTFB is not a Core Web Vital; web.dev explicitly calls these thresholds a rough guide.

Why it matters: TTFB is the foundation. Every millisecond the server takes is also part of FCP and LCP. With a TTFB of 2 seconds, an LCP of at most 2.5 seconds leaves just half a second for everything else.

Typical causes of poor TTFB in Shopware 6:

- HTTP cache switched off or not hitting
- Too many database queries per request
- Synchronous third-party calls (ERP, PIM)
- Slow hosting provider
- PHP OPcache not configured

2. Render Performance (FCP, LCP)

What it measures: When does the user see content?

Target values (web.dev: FCP, LCP):

Metric	Good	Needs improvement	Poor
FCP	≤ 1.8 s	1.8–3.0 s	> 3.0 s
LCP	≤ 2.5 s	2.5–4.0 s	> 4.0 s

Typical problems:

- Render-blocking CSS/JS in the <head>
- Unoptimized hero images (MB instead of KB)
- No prioritization of critical resources
- Web fonts blocking rendering

3. Interactivity (INP, TBT)

What it measures: How quickly does the page respond to user actions?

Target values ([web.dev](#), [Chrome DevTools](#)):

Metric	Good	Needs improvement	Poor
INP	≤ 200 ms	200–500 ms	> 500 ms
TBT (Lighthouse, mobile)	≤ 200 ms	200–600 ms	> 600 ms

Note: INP has been a Core Web Vital since March 2024, replacing FID. TBT is a lab-only metric; on desktop the thresholds are 150/350 ms. TBT accounts for 30 % of the Lighthouse score (Lighthouse 13: LCP 25 %, CLS 25 %, FCP 10 %, Speed Index 10 %).

Typical problems in Shopware 6:

- Large JavaScript bundles (out of the box, `storefront.js` in 6.6.10.6 is about 235 KB, 76 KB transferred; every plugin adds its own)
- Third-party scripts (Analytics, Chat, Retargeting)
- Unoptimized event handlers on filter components
- Synchronous DOM manipulation

4. Visual Stability (CLS)

What it measures: Does the layout shift during loading?

Target value ([web.dev](#)): $CLS \leq 0.1$ (poor above 0.25)

Typical causes:

- Images without `width/height` attributes
- Dynamically loaded banners
- Web fonts whose fallback font has different metrics – `font-display: swap` also shifts the layout when the font swaps in ([web.dev](#); remedy: `font-display: optional` or `size-adjust`)
- Lazy-loaded content without placeholders

5. Resource Efficiency

What it measures: How much data is transferred?

This book’s guideline values (transferred, i.e. compressed) and reference values:

Resource	Guideline	Median mobile 2025	Shopware 6.6 out of the box
HTML	< 50 KB	22 KB	11 KB
CSS	< 100 KB	77 KB	57 KB
JavaScript	< 300 KB	632 KB	103 KB
Images	< 200 KB above the fold	911 KB total	–
Total page weight	< 1.5 MB	2.56 MB	–

The guideline values are our own assessment, not a standard. The median comes from the [HTTP Archive Web Almanac 2025](#) (home pages, mobile) – so half of all home pages transfer more than twice the JavaScript guideline. “Shopware 6.6 out of the box” is the home page of an unmodified 6.6.10.6 with demo data (Docker, gzip; JavaScript = all 16 files the browser loads; uncompressed HTML 90 KB, CSS 400 KB, JavaScript 316 KB).

6. Caching Efficiency

What it measures: How well are resources cached?

Key metrics:

- **Cache hit rate:** Share of page views served from cache – measured, not estimated (Chapter 6, `cache-hit-rate.sh`; this needs Varnish or nginx proxy_cache, with the built-in cache you are left with spot checks via Age)
- **Cache-Control headers:** Are they set and configured sensibly?
- **HTTP cache status:** Active or disabled?

Shopware-specific:

- Is the HTTP cache enabled – and does it hit?
- Is Redis used for sessions?
- Is Varnish in use (for high traffic)?

7. Infrastructure Health

What it measures: Is the server environment optimally configured?

Checklist:

- [] Web server PHP version (FPM) 8.2+ – Shopware 6.6 requires 8.2 or 8.3, 6.6.10.6 also allows 8.4; `php -v` only shows the CLI
- [] OPcache enabled and correctly configured (configuration: Chapter 9; JIT stays off there, for stated reasons)
- [] MySQL/MariaDB InnoDB buffer pool optimized
- [] Redis for sessions and cache
- [] Elasticsearch/OpenSearch evaluated (worth evaluating from around 30,000 products, Chapter 18)
- [] CLI worker instead of Admin worker for the message queue (Appendix C)

* * *

Tools for Your Audit

Tier 1: Free Online Tools

Google PageSpeed Insights

URL: pagespeed.web.dev

Strengths:

- Field Data (real user data from the Chrome UX Report, 75th percentile of the last 28 days)
- Lab Data (simulated Lighthouse test)

- Concrete optimization suggestions

How to use it:

1. Enter your URL
2. Select **Mobile** (more critical than Desktop)
3. Analyze **Field Data** first – this reflects real users

Key sections:

1	+-----+
2	<i>FIELD DATA (75th percentile, last 28 days)</i>
3	<i>-> What your users experience; ranking signal</i>
4	+-----+
5	<i>LAB DATA (simulated)</i>
6	<i>-> Good for debugging, not for rankings</i>
7	+-----+
8	<i>INSIGHTS & DIAGNOSTICS</i>
9	<i>-> Concrete optimization suggestions</i>
10	+-----+

Google uses Core Web Vitals as one ranking signal among many; relevant content beats a good page experience ([Google Search Central](#)).

Limitations:

- Only one URL per test
- Lab Data can differ from Field Data
- No historical comparisons in the interface

GTmetrix

URL: gtmetrix.com

Strengths:

- Waterfall diagram shows load sequence
- Video recording of the loading process (scope depends on the plan)
- Comparison across different locations (only two on the free plan)

When to use: For detailed analysis of individual requests and their timing. The free plan requires registration and is limited (as of September 2026: 5 tests per month for three months).

WebPageTest

URL: webpagetest.org

Strengths:

- Tests from various global locations
- Different connection types (3G, 4G, Cable)
- Filmstrip view of the loading process
- Multiple test runs for consistency

Pro tip: Configure several test runs and always compare before and after using the median run, never a single value.

Continuous Monitoring (DebugBear, SpeedCurve, Treo)

The tools so far provide snapshots – no history and no automatic regression alerts. Commercial synthetic-monitoring services such as **DebugBear**, **SpeedCurve**, or **Treo** close that gap: regular lab measurements, Core Web Vitals trends over time, and alerting on degradation. They are not needed for a one-off audit, but they are for ongoing performance monitoring. Setting up continuous monitoring is covered in Chapter 12 (Real User Monitoring) and Chapter 13 (Continuous Testing with Lighthouse CI).

Tier 2: Chrome DevTools

Chrome DevTools is your most important tool for in-depth analysis.

Performance Panel

Open: F12 □ “Performance” tab □ “Record and reload” (stops by itself once the page has loaded)

What you see:

- **Main Thread:** When is the browser blocked?
- **Network:** When are resources loaded?
- **Frames:** When is content rendered?

Identifying typical problems:

```
1 // Identifying Long Tasks (> 50ms Main Thread Blocking):
2 // Look for tasks marked red in the "Main" track
3
4 // Schematic example: A plugin blocks for 200ms
5 [Plugin XY] onPageLoad() - 200ms
6   +-- DOM Query: document.querySelectorAll('.product') - 150ms
7     +-- sync API call - 50ms
```

Network Panel

Open: F12 □ “Network” tab □ Reload page

Important settings:

- [x] Disable cache (for first-visit tests)
- [x] Throttling: “Slow 4G” or “3G” (since Chrome 127; previously “Fast 3G” and “Slow 3G”)

Enable columns:

- Size (transferred size)
- Time (load time)
- Waterfall (visual timeline)

What to look for:

1. **Large files:** Sort by Size, largest first
2. **Long load times:** Sort by Time
3. **Blocking resources:** Early requests that take a long time
4. **Unnecessary requests:** Third-party scripts, unused fonts

Lighthouse Panel

Open: F12 □ “Lighthouse” tab

Settings:

- Categories: Performance (others optional)
- Device: Mobile
- Clear storage: checked (in the panel’s gear menu)

Understanding the output (Lighthouse 13):

```

1 Performance Score: 58/100
2
3 +-- First Contentful Paint:      1.8s [OK]
4 +-- Largest Contentful Paint:    4.2s [FAIL]
5 +-- Total Blocking Time:         890ms [FAIL]
6 +-- Cumulative Layout Shift:    0.15 [WARN]
7 +-- Speed Index:                 3.4s [WARN]
8
9 INSIGHTS:
10 +-- Improve image delivery      Est savings of 1,850 KiB
11 +-- Render-blocking requests    Est savings of 1,200 ms
12 DIAGNOSTICS:
13 +-- Reduce unused JavaScript    Est savings of 310 KiB

```

Lighthouse 13 replaced the “Opportunities” section with “Insights”; audits such as “Serve images in next-gen formats” now live in “Improve image delivery”. Scores vary from run to run: according to the Lighthouse docs, the median of five runs is twice as stable as a single run ([Lighthouse Variability](#)). For the audit, record the median of at least five runs per URL.

Tier 3: Shopware-Specific Tools

Frosh Tools (free plugin)

GitHub: github.com/FriendsOfShopware/FroshTools

Installation:

```

1 composer require frosh/tools
2 bin/console plugin:refresh
3 bin/console plugin:install FroshTools --activate

```

Features:

- **System Status:** PHP version, MySQL checks, queue status
- **Cache Manager:** Targeted cache clearing
- **Log Viewer:** Quickly identify errors
- **Scheduled Tasks:** Overview of cron jobs

Performance-relevant checks (Frosh Tools 3.14):

- Zend OPcache active and individual OPcache settings

- MySQL version and settings (sql_mode, group_concat_max_len, time_zone)
- Age of the oldest waiting queue message
- Warning when the Admin worker is active

Shopware Profiler (Development)

Enable (on staging or locally only, never on the live shop):

```
1 composer require --dev shopware/dev-tools
2 # in .env: APP_ENV=dev, then
3 bin/console cache:clear
```

shopware/dev-tools brings the web profiler and symfony/doctrine-bridge. Without the bridge, the Doctrine panel counts no queries at all, and symfony/doctrine-bridge on its own cannot be installed on 6.6.10.6 without a version constraint (conflict with symfony/validator).

What you see:

- Database queries per request (“Doctrine” panel)
- Execution time per query
- Cache hits/misses
- Event listener timing

For context: An unmodified Shopware 6.6.10.6 with demo data (Docker, three requests each with identical results) showed 65 queries on the home page, 89 on a category page, and 87 on a product page in the dev profiler. The same pages needed 19 to 21 queries in APP_ENV=prod with a warm object cache, and 8 on an HTTP cache hit. There is no fixed upper limit – compare dev with dev, and your shop with plain Shopware of the same version.

Warning: Never enable in production – it significantly slows down the shop.

Store Health Check Plugin

Source: [Store Health Check – Security, Performance & SEO](#) (HosonoDE, Shopware Store, free)

Automatically checks:

- PHP version
- Shopware Security Plugin version
- Cache sizes and memory limits
- Sitemap status
- Admin worker and overdue scheduled tasks

* * *

Establishing a Baseline: The Audit Record

An audit without documentation is worthless. Use the following record template (full template: `templates/AUDIT-TEMPLATE.md` in the companion repo):

Audit Documentation Template

Performance Audit: [Shop Name]

- **Date:** [YYYY-MM-DD]
- **Auditor:** [Name]
- **Shopware Version:** [e.g. 6.6.10.6]
- **PHP Version (FPM):** [e.g. 8.3.23]

1. Executive Summary

Dimension	Score	Status
Server Response (TTFB)	[X]ms	good/warning/poor
Render (LCP)	[X]s	good/warning/poor
Interactivity (INP)	[X]ms	good/warning/poor
Stability (CLS)	[X]	good/warning/poor
Resources	[X]MB	good/warning/poor
Caching	[X]% hit rate	good/warning/poor
Infrastructure	[X]/6	good/warning/poor

Overall Rating: Poor / Acceptable / Good / Excellent

2. URLs Tested

Homepage (/)

- **PageSpeed Score (Mobile):** [X]/100 (median of 5 runs)
- **LCP:** [X]s (Element: Hero Image/Text)
- **FCP:** [X]s
- **INP:** [X]ms
- **CLS:** [X]
- **TTFB:** [X]ms
- **Total Page Weight:** [X]MB

Category (/category/example/) – Same metrics

Product page (/product/example/) – Same metrics

Checkout (/checkout/register, /checkout/confirm) – Same metrics, but only in DevTools with a filled cart: without a cart, /checkout/confirm redirects to /checkout/register, which redirects to /checkout/cart, so PageSpeed Insights measures the cart

3. Identified Issues

Critical (fix immediately)

1. Issue: Description

- **Impact:** Estimated performance gain
- **Effort:** Hours
- **Priority:** P1

High (this week) – ...

Medium (this month) – ...

Low (backlog) – ...

4. Recommended Actions

#	Action	Impact	Effort	Priority
1	Action	High/Medium/Low	[X]h	P1
2	...	...	...	P2

5. Next Steps

1. First action
2. Second action
3. Re-audit after optimization (date)

The 5 Most Critical URLs

Not every page is equally important. Prioritize:

1. **Homepage:** First impression, highest traffic
2. **Top category:** Most visited product listing
3. **Best-selling product page:** Conversion-critical
4. **Shopping cart:** Risk of abandonment
5. **Checkout:** Directly revenue-relevant

Pro tip: Identify your top 5 URLs via Google Analytics (page views) and test precisely those.

* * *

Identifying Performance Killers

The following seven patterns are common root causes in Shopware shops – each with a diagnosis you can run yourself:

Killer #1: Unoptimized Images

Symptom: LCP > 4s, page weight > 5MB

Diagnosis:

1 Chrome DevTools -> Network -> Filter: Img -> [Sort](#) by Size

Typical finding (example):

- Hero image: 3.2 MB (JPEG, 4000x2000px)
- Product images: 800 KB per image
- No WebP variants
- No responsive srcset

Quick check:

```

1 # Find large original images (on the server)
2 find public/media -type f \( -iname "*.jpg" -o -iname "*.jpeg" -o -iname
   ↳ "*.png" \) \
3   -size +500k -exec ls -lh {} \;
```

public/media holds the uploaded originals; the browser usually receives the thumbnails from public/thumbnail, which keep the format of the original. A large original only becomes a problem when it is delivered unscaled – the network filter above shows that. scripts/analyze-images.sh also counts the formats.

Killer #2: JavaScript Bloat

Symptom: TBT > 500ms, INP > 300ms

Diagnosis:

```
1 Chrome DevTools -> Network -> Filter: JS -> Sort by Size
```

Typical finding (example):

- Plugin bundles that together are larger than storefront.js itself
- Libraries a plugin loads on top (jQuery has not been part of the storefront since Shopware 6.5)
- Third-party scripts: Google Tag Manager, Facebook Pixel, Hotjar, chat widget

Coverage analysis:

```
1 Chrome DevTools -> More Tools -> Coverage -> Reload
```

Shows unused CSS/JS per file.

Killer #3: Too Many or Too Expensive Plugins

Symptom: TTFB > 1s, high database query count

Diagnosis:

```

1 # Count active plugins
2 bin/console plugin:list --json | jq '[] | select(.active == true)) | length'

```

`plugin:list --active` does not exist (the command aborts with “The “–active” option does not exist”), and `plugin:list | wc -l` also counts the table borders. Without `jq`, the last line of `plugin:list` is enough, e.g. “2 plugins, 2 installed, 2 active”.

There is no documented upper limit. What costs is a single plugin, not the count. Each plugin can:

- Register event subscribers (overhead per request)
- Add database queries
- Load JavaScript/CSS

Test method:

1. Clone the staging environment
2. Measure the same page with the plugin, without it, and with it again
3. Several requests each, compare the medians
4. Chapter 17 automates this (`profile-plugin.sh`)

Killer #4: Missing Cache Configuration

Symptom: TTFB > 800ms, high server load

Diagnosis:

```

1 # The switch as the CLI sees it (without the variable, 1 and 7200 apply)
2 bin/console debug:dotenv SHOPWARE_HTTP
3
4 # The effect: fetch twice as a guest, compare Age and Date (on 301/302 use the
  ↳ target URL)
5 curl -s -o /dev/null -D - https://your-shop.com/ | grep -iE
  ↳ '^(HTTP/|cache-control:|age:|date:)'
6 sleep 2
7 curl -s -o /dev/null -D - https://your-shop.com/ | grep -iE
  ↳ '^(HTTP/|age:|date:)'

```

`bin/console debug:config shopware http_cache` does not help here: in `APP_ENV=prod` it aborts with “Impossible to call `set()` on a frozen `ParameterBag`”, and the `shopware.http_cache` branch has no enabled key anyway. A hit shows as `Age` growing by at least the pause between the requests **and** `Date` staying the same: only a stored copy repeats its `Date`. `Age` alone is not enough: when storing a response, Symfony sets `Age` to the seconds since the `Date` header, so even a MISS that crosses a second boundary carries `Age: 1`. From 6.7 on, every page also carries the `Age` of its ESI fragments (header, footer), even the never-cached cart. If `Age` grows but `Date` changes too, the test decides nothing (an ESI fragment, or the web server sets `Date` anew: `nginx proxy_pass`, Apache with `mod_php`); Chapter 6.8 shows how to settle it. `debug:dotenv` reads the `.env` files of the environment the CLI runs in, but not the web server’s environment (FPM `env[ ]`, Apache `SetEnv`). What the web server sees is shown in the Administration under Settings ▢ System ▢ Caches & indexes.

Typical misconfiguration:

```

1 # BAD: Cache disabled (in .env)
2 SHOPWARE_HTTP_CACHE_ENABLED=0
3
4 # GOOD: Cache enabled (this is also the default)
5 SHOPWARE_HTTP_CACHE_ENABLED=1
6 SHOPWARE_HTTP_DEFAULT_TTL=7200

```

How to configure the cache, measure hits, and put Varnish in front is covered in Chapter 6.

Killer #5: Database Problems

Symptom: TTFB varies significantly, spikes under traffic

Diagnosis (with Profiler in DEV):

```

1 Symfony Profiler -> Doctrine -> Queries

```

Warning signals:

- Clearly more queries than the unmodified shop of the same version (values above, under the profiler)
- Individual queries taking > 100ms

- N+1 query problems
- Missing indexes

MySQL slow query log: Configuration and analysis are covered in Chapter 8 – including why `log_queries_not_using_indexes` does not stay on permanently.

Killer #6: Synchronous Third-Party Calls

Symptom: TTFB spikes, inconsistent load times

Diagnosis (with Profiler in DEV):

- 1 Symfony Profiler -> HTTP Client (calls made via Symfony HttpClient)
- 2 Symfony Profiler -> Performance (timeline **of** the request)

These calls are made by the server, not the browser – they never show up in the DevTools network panel.

Typical offenders:

- ERP queries (SAP, Microsoft Dynamics)
- PIM synchronization
- External price calculations
- Stock availability checks

The problem: If an external system takes 500ms, your entire shop waits 500ms.

Killer #7: Admin Worker Instead of CLI Worker

Symptom: Admin panel slow, queue backlog

Diagnosis:

```

1 # Count running CLI workers on this host (ps aux | grep matches itself)
2 pgrep -fc ' (^|/)php[0-9.]* .*bin/console messenger:consume'
3
4 # Is the Admin worker on? (default: true)
5 bin/console debug:container
  ↳ --parameter=shopware.admin_worker.enable_admin_worker

```

The problem: The Admin worker is only active when someone is logged into the admin panel. This leads to:

- Delayed emails
- Slow indexing
- Backlog in the message queue

Solution: Switch off the Admin worker and keep CLI workers running via Supervisor – for `async` **and** `low_priority`, plus `scheduled-task:run`. The tested configuration is in Appendix C.

* * *

Practice: Running an Audit

Step 1: Preparation (15 min)

```

1 # 1. Record Shopware version
2 bin/console --version
3
4 # 2. Record the web server's PHP version (php -v only shows the CLI;
5 #   Debian/Ubuntu, adjust the version number)
6 /usr/sbin/php-fpm8.3 -v
7
8 # 3. Count active plugins
9 bin/console plugin:list --json | jq ' [.[] | select(.active == true)] | length'
10
11 # 4. Check the HTTP cache switch
12 bin/console debug:dotenv SHOPWARE_HTTP

```

Step 1 and the server part of step 4 (without MySQL) in a single run: `audit.sh` from the companion repo; it only reads and changes nothing. With `SHOP_URL` it also checks whether the HTTP cache hits:

```
1 # In the companion folder chapters/02-performance-audit, as the web server user
2 # (www-data needs read access to the clone - do not put it in your own home)
3 SHOP_URL=https://your-shop.com sudo -E -u www-data ./scripts/audit.sh
  → /var/www/shopware
```

Step 2: Collect Field Data (10 min)

1. Open **Google Search Console**
2. Core Web Vitals report □ Mobile
3. Export or screenshot

Step 3: Run Lab Tests (30 min)

For each of the 5 critical URLs:

1. **PageSpeed Insights** (Mobile)

- Record score
- Record top 3 insights

2. **Chrome DevTools Lighthouse**

- At least five runs, record the median
- Screenshots of the filmstrip view

3. **Network Waterfall**

- Identify largest resources
- Mark blocking resources

Step 4: Check Infrastructure (15 min)

```
1 # PHP OPcache of the FPM SAPI (php -i shows the CLI configuration, Chapter 9)
2 /usr/sbin/php-fpm8.3 -i | grep -E '^opcache\.(enable|jit|jit_buffer_size) '
3
4 # MySQL buffer pool (value in bytes; SHOW VARIABLES needs no special privileges)
5 mysql -u shopware -p -e "SHOW VARIABLES LIKE 'innodb_buffer_pool_size';"
6
7 # Redis status (if installed)
8 redis-cli ping
9
10 # Elasticsearch/OpenSearch (address from OPENSEARCH_URL; with security: https +
   → credentials)
11 curl -s "http://localhost:9200/_cluster/health?pretty"
```

Step 5: Document and Prioritize (20 min)

1. Fill in the audit record
2. Sort issues by impact
3. Identify quick wins (high impact, low effort)
4. Create a roadmap

* * *

Example Audit: A Swiss Fashion Shop (fictional)

Constructed example. Shop, figures, and result are made up; they show what a completed audit looks like and are not a measurement.

Starting Point

A mid-sized Swiss fashion shop requests a performance audit. The shop runs Shopware 6.6, hosted with a Swiss provider.

Initial symptoms (reported by the client):

- “The shop feels slow”
- “On mobile it takes forever”
- “Customers are complaining to support”

Audit Results

PageSpeed Insights (Mobile)

URL	Score	LCP	CLS	INP (field)
Homepage	34	5.8s	0.32	380ms
Category	28	6.2s	0.41	420ms
Product	41	4.1s	0.18	290ms
Checkout	52	3.2s	0.08	180ms

Diagnosis: All pages except Checkout in the red zone.

Identified Issues

1. Hero slider with 4 images at 2.5 MB each

```

1 Total Hero Images: 10 MB
2 Format: JPEG (no WebP)
3 Dimensions: 2400x1200px (served to mobile too!)

```

2. 47 active plugins Of these, 12 are unused (clean-up, no performance gain to expect); for 3 more, measuring with and without the plugin shows clear costs.

3. HTTP cache disabled

```

1 # Found in .env
2 SHOPWARE_HTTP_CACHE_ENABLED=0 # <- Problem!

```

4. No Redis Sessions stored on the web server's filesystem (Redis: Chapter 10).

5. Admin worker active Message queue is only processed when an admin user is logged in.

Recommended Actions

#	Action	Estimated impact	Effort
1	Optimize images (WebP, responsive)	-4s LCP	4h
2	Enable HTTP cache	-60% TTFB	1h
3	Replace or switch off 3 expensive plugins	-200ms TTFB	2h
4	Redis for sessions	Stability	3h
5	Set up CLI worker	Indirect	2h

Results After Optimization

URL	Score (before)	Score (after)	Delta
Homepage	34	71	+37
Category	28	66	+38
Product	41	74	+33
Checkout	52	83	+31

Time invested: 12 hours **How measured:** Median of five Lighthouse runs per URL, before and after under the same conditions

* * *

Summary

Key Takeaways

- 1. **Audit before optimization:** Without a baseline you cannot measure success – you cannot prove results without before data
- 2. **7 dimensions:** TTFB, Render (FCP/LCP), Interactivity (INP/TBT), Stability (CLS), Resources, Caching, Infrastructure

3. **Field Data before Lab Data:** Field Data shows what your users experience – Lab Data explains why; always take lab values as the median of several runs
4. **Document:** An audit without a record is forgotten – use the template from this chapter
5. **Prioritize:** Quick wins first (high impact, low effort) – know the 7 performance killers

Checklist: Your First Audit

- ☐ Shopware and PHP version (FPM) documented
- ☐ Top 5 URLs identified
- ☐ PageSpeed Insights for all 5 URLs (Mobile)
- ☐ Chrome DevTools Lighthouse for all 5 URLs (median of 5 runs)
- ☐ Network Waterfall analyzed
- ☐ Infrastructure checks completed (`audit.sh`)
- ☐ Audit record filled in
- ☐ Issues prioritized by impact
- ☐ Roadmap for the next 30 days created

Next Steps

You now have a clear diagnosis. In the next chapter we start with **Week 1: Quick Wins** – the optimizations that deliver the greatest impact for the least effort.

We begin with what is almost always the biggest lever: **Core Web Vitals and image optimization**.

* * *

References

- Google (2025): Time to First Byte (TTFB). web.dev/articles/ttfb
- Google: First Contentful Paint, Largest Contentful Paint, Interaction to Next Paint, Cumulative Layout Shift, Optimize CLS. web.dev/articles/fcp, lcp, inp, cls, optimize-cls

- Google Chrome: *Lighthouse Variability* and *Lighthouse performance scoring*. github.com/GoogleChrome/lighthouse/blob/main/docs/variability.md, developer.chrome.com
- Google Chrome (2024): *What's new in DevTools, Chrome 127* (throttling presets). developer.chrome.com/blog/new-in-devtools-127
- HTTP Archive (2025): *Web Almanac, Page Weight*. almanac.httparchive.org/en/2025/page-weight
- Frosh Tools: *Free Shopware 6 Plugin*. store.shopware.com

Chapter 3: Measuring and Optimizing Core Web Vitals

Days 1-2 of the 30-Day Roadmap

At a Glance: You measure the three Core Web Vitals (LCP, INP, CLS) of your Shopware store, find the LCP element and the causes of layout shifts and slow interactions – and apply the quick wins that actually take effect in Shopware 6.6. **Targets:** $LCP \leq 2.5$ s, $INP \leq 200$ ms, $CLS \leq 0.1$ (75th percentile of real visits) | **Time Required:** 2 days **Tested with:** Shopware 6.6.10.6 (Dockware, prod) | Chromium | Lighthouse 12.6.1 (Lighthouse CI 0.15.1)

* * *

Introduction

Core Web Vitals have fed into Google's ranking since 2021. On March 12, 2024, INP replaced FID (web.dev) – and INP is stricter, because it does not judge only the first interaction. A store with poor values risks conversions and visibility.

According to the [Web Almanac 2024](#), only 59% of mobile pages achieve a good LCP (desktop: 74%). Whoever optimizes stands out.

In This Chapter You Will Learn:

- How to measure Core Web Vitals (Field Data vs. Lab Data)
- What the numbers mean and which thresholds apply
- Which quick wins work in Shopware 6.6 – and by how much
- How to systematically diagnose LCP, INP, and CLS problems
- JavaScript snippets for diagnosis directly in the DevTools console

Prerequisites

- **Technical:** Chrome browser, access to Google Search Console
- **Knowledge:** Basic understanding of Chapter 2 (Performance Audit)
- **Tools:** PageSpeed Insights, Chrome DevTools
- **Shopware:** Production mode active, logged out as customer, empty cart

* * *

The Three Core Web Vitals

Each is assessed at the **75th percentile** of all page views: three out of four visits must meet the target.

LCP (Largest Contentful Paint)

What it measures: When is the largest visible content element painted?

Target values ([web.dev](#)):

Rating	Time
Good	≤ 2.5 s
Needs improvement	> 2.5 s to 4.0 s
Poor	> 4.0 s

Typical LCP elements in Shopware:

- Hero banner on the homepage
- Main product image on the PDP
- Category banner
- Large text blocks

Fact: On 73% of all mobile pages (83% desktop), the LCP element is an image ([Web Almanac 2024](#)). On the Shopware 6.6 demo homepage it is the hero image – which loads with `loading="lazy"` out of the box (Quick Win #1).

INP (Interaction to Next Paint)

What it measures: How quickly does the page respond to clicks, taps, and key presses?

Target values (web.dev):

Rating	Time
Good	≤ 200 ms
Needs improvement	> 200 ms to 500 ms
Poor	> 500 ms

Why INP is stricter than FID: FID (the predecessor) measured only the delay of the *first* interaction. INP looks at *all* interactions of a page visit and usually reports the slowest; only with many interactions is the slowest one per 50 interactions discarded. A single sluggish product filter can therefore determine the INP of a visit.

Typical INP problems in Shopware:

- Heavy JavaScript bundles
- Third-party scripts (chat, analytics, retargeting)
- Complex product filters without debouncing
- Synchronous DOM manipulations

CLS (Cumulative Layout Shift)

What it measures: How stable does the layout remain during loading?

Target values (web.dev):

Rating	Score
Good	≤ 0.1
Needs improvement	> 0.1 to 0.25
Poor	> 0.25

Rating	Score
--------	-------

Typical CLS causes:

- Images without reserved space (aspect ratio unknown)
- Dynamically loaded banners/sliders
- Web fonts that load late and replace the fallback font (`font-display: swap`)
- Lazy-loaded content without placeholders

* * *

Step 1: Collecting Field Data

Field Data shows how *real users* experience your store. This data feeds into Google rankings.

Google Search Console

1. Open [Google Search Console](#)
2. Navigate to **Experience** ▢ **Core Web Vitals**
3. Select **Mobile** (more critical than desktop)

What you see (example):

```

1  +-----+
2  |  MOBILE CORE WEB VITALS  |
3  +-----+
4  |  URLs with status "Good":           45 (32%) |
5  |  URLs "Need improvement":          67 (48%) |
6  |  URLs with status "Poor":           28 (20%) |
7  +-----+
8  |  Main issues:                    |
9  |  +-- LCP > 4s:      28 URLs      |
10 |  +-- CLS > 0.25:    15 URLs      |
11 |  +-- INP > 500ms:   12 URLs      |
12 +-----+

```

Important: The report evaluates a rolling 28-day window ([Search Console Help](#)). An improvement becomes visible gradually and is fully reflected only after 28 days.

PageSpeed Insights

URL: <https://pagespeed.web.dev/>

The web interface is enough. The npm package `psi` (4.1.0, unchanged since 2022) fails without your own API key with “Quota exceeded ... Queries per day” – tested in September 2026.

How to interpret the report (example):

```

1  +-----+
2  |  FIELD DATA (75th percentile, 28 days)  |
3  |  -> This is what counts for Google rankings! |
4  |  +-- LCP:  2.8s  [WARN] (target: <= 2.5s) |
5  |  +-- INP:  245ms [WARN] (target: <= 200ms) |
6  |  +-- CLS:  0.15  [WARN] (target: <= 0.1)  |
7  +-----+
8  |  LAB DATA (simulated, Lighthouse)        |
9  |  -> Good for debugging, not for rankings |
10 |  +-- FCP:  1.2s  |
11 |  +-- LCP:  3.1s  |
12 |  +-- TBT:  890ms |
13 |  +-- CLS:  0.18  |
14 +-----+

```

Note: Lab Data and Field Data can diverge. Field Data is the ground truth.

Step 2: Lab Data with Chrome DevTools

Lab Data is reproducible and ideal for debugging.

Lighthouse Audit

- 1 1. **Open** Chrome -> F12 (DevTools)
- 2 2. **Select** the "Lighthouse" tab
- 3 3. **Settings**:
- 4 - **Categories**: [OK] Performance
- 5 - **Device**: Mobile
- 6 - [OK] Clear storage
- 7 4. Click "Analyze page load"

Shopware-Specific Preparation

Critical: Always test under realistic conditions:

```
1 # 1. Clear and warm up the Symfony container/compile cache
2 #   (HTTP cache is populated by real traffic – see Chapter 6)
3 bin/console cache:clear
4 bin/console cache:warmup
5
6 # 2. Verify: production mode is active
7 bin/console about | grep Environment
8 # -> Environment          prod
9
10 # 3. Test logged out as customer, with an empty cart!
```

Why? Dev mode distorts every measurement: in the test store (Dockware, demo data, median of 10 requests) the homepage's time to first byte (TTFB) was about 155 ms in dev, 50–60 ms in prod without the HTTP cache (cookie sw-states=logged-in, as for a logged-in customer) and about 10 ms with the HTTP cache. A logged-in customer or a filled cart switches the HTTP cache off (Chapter 6) – you then do not measure what a new visitor gets.

Identifying the LCP Element

Paste this code into the DevTools console (all snippets: `scripts/cwv-diagnostics.js` in the companion repo):

```

1  function findLCPElement() {
2      new PerformanceObserver((list) => {
3          const entries = list.getEntries();
4          const lastEntry = entries[entries.length - 1];
5          console.log('🕒 LCP Element:', lastEntry.element);
6          console.log('🕒 LCP Time:', Math.round(lastEntry.startTime) + 'ms');
7          console.log('🖼️ LCP URL:', lastEntry.url || '(kein Bild)');
8          console.log('📏 LCP Size:', lastEntry.size);
9      }).observe({ type: 'largest-contentful-paint', buffered: true });
10 }
11
12 findLCPElement();

```

Example output (test store, homepage, desktop):

```

1  🕒 LCP Element: 
2  🕒 LCP Time: 712ms
3  🖼️ LCP URL: http://localhost/thumbnail/../../../hq_1280x1280_1920x1920.jpg?ts=...
4  📏 LCP Size: 339218

```

Identifying CLS Sources

If the console stays silent, there has been no layout shift so far.

```

1  function findLayoutShifts() {
2      new PerformanceObserver((list) => {
3          for (const entry of list.getEntries()) {
4              if (!entry.hadRecentInput) {
5                  console.log('📊 Layout Shift:', entry.value.toFixed(4));
6                  entry.sources?.forEach(source => {
7                      console.log('➡️ Element:', source.node);
8                  });
9              }
10         }
11     }).observe({ type: 'layout-shift', buffered: true });
12 }
13
14 findLayoutShifts();

```

Diagnosing INP Problems

A tap fires several events (`pointerdown`, `pointerup`, `click` ...). A naive observer therefore reports the same interaction several times – in the test up to eight times, including hover events that do not count towards INP at all. This snippet counts only the longest event per interaction:

```

1  // A tap fires several events (pointerdown, pointerup, click ...).
2  // For INP, the longest one per interaction (interactionId > 0) counts;
3  // hover events have interactionId 0 and do not count, scrolling is
4  // not captured by Event Timing at all.
5  // The longest event can arrive after a shorter one (keyup after
6  // keydown): it is reported once no longer one has come for 1 s.
7  function findSlowInteractions() {
8      const longest = new Map();
9      const timers = new Map();
10     new PerformanceObserver((list) => {
11         for (const entry of list.getEntries()) {
12             const id = entry.interactionId;
13             if (!id) continue;
14             const prev = longest.get(id);
15             if (prev && prev.duration >= entry.duration) continue;
16             longest.set(id, entry);
17             clearTimeout(timers.get(id));
18             timers.set(id, setTimeout(() => {
19                 const slowest = longest.get(id);
20                 if (slowest.duration > 200) {
21                     console.log('🐢 Slow Interaction:', slowest.name,
22                                 ↳ slowest.duration + 'ms', slowest.target);
23                 }
24             }, 1000));
25         }
26     }).observe({ type: 'event', buffered: true, durationThreshold: 16 });
27 }
28 findSlowInteractions();

```

* * *

Step 3: Implementing Quick Wins

All templates in this section are in the companion repo under `chapters/03-core-web-vitals/src/Resources/views/storefront/` – each file overrides one storefront template and can be used on its own.

Quick Win #1: Prioritize the LCP Image

Problem: Shopware 6.6 sets `loading="lazy"` on **every** image in the CMS image element – including the hero image at the very top. The browser then starts the download only once the layout is known. Out of the box, only the first image of the image gallery element (for example on the product detail page) gets `fetchpriority="high"`.

```

1 <!-- [FAIL] WRONG: Lazy loading on the LCP element -->
2 
3
4 <!-- [OK] CORRECT: Eager loading + fetch priority -->
5 

```

Adjusting the Shopware template: The override loads the image in the first block of the first section immediately and with high priority; all other CMS images stay lazy, `srcset` is preserved. If the first block has several images, all of them get high priority; if the page starts with a text block, the first image stays lazy.

```

1 {% sw_extends '@Storefront/storefront/element/cms-element-image.html.twig' %}
2
3 {% block element_image_media %}
4     {% set attributes = {
5         class: 'cms-image',
6         alt: element.translated.config.isDecorative.value ? '' :
7             ↳ (element.data.media.translated.alt ?: ''),
8         title: element.translated.config.isDecorative.value ? '' :
9             ↳ (element.data.media.translated.title ?: ''),
10        loading: 'lazy'
11    } %}
12
13     {% if isCover or element.translated.config.displayMode.value == 'contain' %}
14         {% set attributes = attributes|merge({'data-object-fit':
15             ↳ element.translated.config.displayMode.value}) %}
16         {% endif %}
17
18     {% -- Chapter 3 addition: load the image in the first block now ---- %}
19     {% The SalesChannelCmsPageLoader sorts sections and blocks by %}
20     {% position, so "first" is the topmost block. %}
21     {% set isFirstCmsBlock = cmsPage is defined and section is defined and
22         ↳ block is defined

```

```

19         and cmsPage.sections.first.id == section.id
20         and section.blocks.first.id == block.id %}
21
22     {% if isFirstCmsBlock %}
23         {% set attributes = attributes|merge({loading: 'eager', fetchpriority:
↪ 'high'}) %}
24     {% endif %}
25     {# --- End of addition --- #}
26
27     {% sw_thumbnails 'cms-image-thumbnails' with {
28         media: element.data.media
29     } %}
30 {% endblock %}

```

What it brings (test store, demo homepage, Chromium with fixed throttling – 150 ms RTT, 1.6 Mbit/s, CPU ×4 –, 9 loads each): LCP median 2452 ms □ 2312 ms (–140 ms), FCP median 1040 ms □ 1192 ms (+150 ms) – presumably because the image now claims bandwidth early that CSS and JavaScript previously had to themselves. Lighthouse’s simulated throttling rated the same change the other way round (LCP 2651 ms □ 3304 ms). So check the effect against field data, not just the Lighthouse score. The bigger lever in this store was the image size itself: on mobile the hero image weighs 168 KB (Pixel 7, demo homepage).

Quick Win #2: Reserve Space for Images

Problem: An image without a known aspect ratio only gets a height once it has loaded – the content below jumps.

```

1 <!-- [FAIL] WRONG: No dimensions -> space unknown -->
2 
3
4 <!-- [OK] CORRECT: With dimensions -> aspect ratio known -->
5 

```

Careful in Shopware: `sw_thumbnails` does not set width and height by itself. Adding them to the CMS image distorts the image, because the storefront CSS sets `no height: auto` there: in the test store the hero image was rendered at 372 × 528 instead of 372 × 153 pixels on mobile. On the demo

homepage there was no layout shift without the attributes (CLS 0). So first measure with the CLS snippet which element jumps, and reserve the space there in the theme CSS (e.g. via `aspect-ratio`) – not across the board via attributes.

Quick Win #3: Load Web Fonts Correctly

Shopware 6.6 serves its Inter font self-hosted, with `font-display: fallback`: a very short block period and a short swap period. For the standard storefront there is nothing to do here. Your own fonts in a theme, however, need a deliberate choice:

`swap` shows the fallback font immediately but also swaps late (infinite swap period) – which can cause a layout shift. `font-display: optional` gives the font only a very short block period and **no swap period** (MDN): if the font does not load in time, the fallback stays for this page view – no late swap, so no CLS contribution. `swap` remains sensible when the brand font must be guaranteed to appear.

```
1  /* [OK] CLS-safe: no swap, no layout shift */
2  @font-face {
3      font-family: 'Inter';
4      src: url('../fonts/inter.woff2') format('woff2');
5      font-display: optional;
6      font-weight: 400;
7  }
```

Bonus – Font Preloading: The font is discovered only after the CSS has been parsed. A preload fetches it earlier. The Inter files live under `/theme/<theme-ID>/assets/font/`, not under `/bundles/storefront/`:

```

1  {% sw_extends '@Storefront/storefront/layout/meta.html.twig' %}
2
3  {% block layout_head_stylesheet %}
4      {% set fontUrl = asset('/assets/font/Inter-Variable-Roman-Latin.woff2',
   →  'theme')|split('?')|first %}
5      <link rel="preload"
6          href="{{ fontUrl }}"
7          as="font"
8          type="font/woff2"
9          crossorigin>
10
11     {{ parent() }}
12 {% endblock %}

```

The filter `|split('?')|first` is mandatory: `asset()` appends a version parameter, the CSS does not. Without it, Chromium downloaded the font **twice** in the test and warned “preloaded using link preload but not used”.

Quick Win #4: Defer Third-Party Scripts

Problem: Chat widgets and similar scripts run on the main thread while the page is being built and compete with your own code.

```

1  <!-- [FAIL] WRONG: Synchronous loading blocks the main thread -->
2  <script src="https://chat-widget.com/widget.js"></script>

```

Better – load only on interaction or after 5 seconds:

```

1  {% sw_extends '@Storefront/storefront/base.html.twig' %}
2
3  {% block base_body_script %}
4      {{ parent() }}
5
6      {# Enter your own widget URL #}
7      {% set lazyWidgetUrl = 'https://chat-widget.example.com/widget.js' %}
8
9      <script>
10         (function () {
11             var loaded = false;
12             var events = ['scroll', 'pointerdown', 'keydown', 'touchstart'];
13
14             function loadWidget() {
15                 if (loaded) {
16                     return;

```

```

17         }
18         loaded = true;
19         events.forEach(function (name) {
20             window.removeEventListener(name, loadWidget, { passive: true });
21         });
22
23         var script = document.createElement('script');
24         script.src = {{ lazyWidgetUrl|json_encode|raw }};
25         script.async = true;
26         document.body.appendChild(script);
27     }
28
29     events.forEach(function (name) {
30         window.addEventListener(name, loadWidget, { passive: true });
31     });
32     window.setTimeout(loadWidget, 5000);
33 })();
34 </script>
35 {% endblock %}

```

In the test the page did not load the script during page load; after a click, key press, or scroll it loaded within 4-69 ms, without interaction after 5 seconds – and exactly once. Without the loaded guard it ran twice (click plus timeout). Analytics, pixels, and tag managers do not belong in this loader but behind the cookie consent (Chapter 21).

Quick Win #5: Self-Host External Fonts

Problem: Google Fonts loaded via `@import` in CSS are discovered only after the CSS has been loaded and parsed – and need a second connection to `fonts.gstatic.com`.

```

1  /* [FAIL] WRONG: @import blocks rendering */
2  @import url(
    → 'https://fonts.googleapis.com/css2?family=Inter:wght@400;600&display=swap'
    → );

```

Better – self-host your fonts: Put the `woff2` files into your theme's assets (the folder listed under `asset` in `theme.json`, Chapter 16) and include them via `@font-face`, as Shopware does for Inter. Quick Win #3, including the preload, then applies.

Step 4: Documenting Your Results

Baseline Template

Document your starting values:

Core Web Vitals Baseline – [Store Name]

- **Date:** [YYYY-MM-DD]
- **Tested with:** [browser and version], Mobile simulation

Field Data (Google Search Console) – example values

URL	LCP	INP	CLS	Status
/	3.2s	280ms	0.18	Need improvement
/category/	4.3s	320ms	0.24	Poor
/product/xyz/	2.8s	190ms	0.12	Need improvement

Lab Data (Lighthouse Mobile) – example values

URL	Score	LCP	TBT	CLS
/	42	3.4s	890ms	0.21
/category/	38	4.1s	1020ms	0.28
/product/xyz/	58	2.9s	650ms	0.14

Identified LCP Elements

- Homepage: Hero banner ([file size], [format], loading?)
- Category: Category banner ([file size], [format])
- Product: Main product image ([file size], [format])

Priority Actions

1. Resize and compress the hero image (Chapter 4)

The configuration measures mobile and fails the run if the LCP image is lazy-loaded (`lcp-lazy-loaded`) or CLS exceeds 0.1. LCP and TBT are only warnings, because simulated throttling makes them scatter widely (Quick Win #1). In the test store the run failed without the override from Quick Win #1 and passed with it. `upload.outputDir` only applies to `lhci` autorun on your own machine; in GitHub Actions only `uploadArtifacts: true` keeps the report, as the artifact `lighthouse-results`:

```

1  // lighthouseerc.json
2  {
3    "ci": {
4      "collect": {
5        "numberOfRuns": 3
6      },
7      "assert": {
8        "assertions": {
9          "lcp-lazy-loaded": ["error", { "minScore": 1 }],
10         "cumulative-layout-shift": ["error", { "maxNumericValue": 0.1 }],
11         "largest-contentful-paint": ["warn", { "maxNumericValue": 2500 }],
12         "total-blocking-time": ["warn", { "maxNumericValue": 200 }],
13         "unsized-images": "warn",
14         "font-display": "warn"
15       }
16     },
17     "upload": {
18       "target": "filesystem",
19       "outputDir": "./lhci-reports"
20     }
21   }
22 }
```

Beware of audit names: An assertion on an audit the version does not know fails with “is not a known audit”: at error the run aborts, at warn only a warning remains – in neither case is anything checked. `uses-webp-images` and `preload-lcp-image` no longer exist in Lighthouse 12.6.1.

* * *

Checklist Days 1-2

Measurement

- ☐ Google Search Console Core Web Vitals reviewed
- ☐ PageSpeed Insights for top 5 URLs (mobile)
- ☐ Lighthouse audit run in DevTools
- ☐ LCP elements identified
- ☐ CLS sources found
- ☐ Baseline documented

Quick Wins Implemented

- ☐ LCP image without `loading="lazy"`, with `fetchpriority="high"`
- ☐ Jumping elements have reserved space
- ☐ `font-display` deliberately chosen for your own web fonts
- ☐ Third-party scripts loaded with delay
- ☐ External fonts self-hosted

* * *

Summary

Key Takeaways

1. **Three metrics, three targets:** $LCP \leq 2.5$ s (load speed), $INP \leq 200$ ms (interactivity), $CLS \leq 0.1$ (stability) – each at the 75th percentile
2. **Field Data is the ground truth:** Lab Data is useful for debugging, but Google rankings are based on real user data from Search Console
3. **INP is stricter than FID:** Since March 2024 the slowest interaction of a visit counts, not just the first – a slow filter can set the value
4. **Images are usually the LCP element:** On 73% of mobile pages it is an image – and Shopware lazy-loads CMS images out of the box
5. **Measure quick wins, do not trust them:** The LCP override brought -140 ms in the test store but cost +150 ms FCP; Lighthouse simulation and real throttling contradicted each other

Measured Effect (Test Store)

Measure	Result	Measurement
LCP image eager + high	LCP -140 ms, FCP +150 ms	Chromium, fixed throttling, 9 loads
Font preload without version parameter	1 instead of 2 downloads of the font	Chromium, network log
Chat widget deferred	0 requests during page load	Chromium, network log

Next Steps

Chapter 4: Image Optimization (Days 3-4)

On 73% of mobile pages an image is the LCP element. In the next chapter we optimize images systematically: thumbnails, responsive srcset, modern formats, and pipelines for Shopware 6.

* * *

References

- HTTP Archive (2024): Web Almanac 2024 - Performance. almanac.httparchive.org
- Google (2024): Largest Contentful Paint (LCP). web.dev/articles/lcp
- Google (2024): Interaction to Next Paint (INP). web.dev/articles/inp
- Google (2024): Cumulative Layout Shift (CLS). web.dev/articles/cls
- Google (2024): Interaction to Next Paint becomes a Core Web Vital on March 12. web.dev/blog/inp-cwv-march-12
- Google (2024): How to Optimize INP. web.dev/explore/how-to-optimize-inp
- Google: Core Web Vitals report. support.google.com

- MDN: *font-display*. developer.mozilla.org
- Erwin Hofman (2024): *Shopware 6 as your ideal Core Web Vitals boilerplate?* erwinhofman.com
- DebugBear (2024): *Measure And Optimize INP*. debugbear.com

Chapter 4: Image Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.1 The Shopware 6 Thumbnail System

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Default Thumbnail Sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Thumbnail Configuration in the Admin

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Regenerating Thumbnails

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.2 The `sw_thumbnails` Tag

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Minimal Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

With the `sizes` Attribute (Best Practice)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.3 Using Lazy Loading Correctly

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Where Lazy Loading Is Enabled (Default)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Where Lazy Loading Should NOT Be Enabled

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Adjusting Lazy Loading for CMS Elements

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.4 Enabling WebP and AVIF

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Route 1: Upload WebP Originals (No Plugin)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Route 2: Image Service with URL Rewriting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Route 3: CDN with Image Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Delivering Formats: the <picture> Element

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.5 Optimizing the Thumbnail Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Determine Actual Image Sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Adjust sizes and Thumbnail Sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Remove Unnecessary Thumbnail Sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.6 Optimizing Images Before Upload

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommended Settings for Product Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Bulk Optimization with CLI Tools

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automating with a Bash Script

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4.7 Performance Measurement

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Before-and-After Comparison

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lighthouse Audit for Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Days 3-4

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 3: Analysis and Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 4: Modern Formats and Lazy Loading

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Advanced Tips

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

1. LQIP (Low-Quality Image Placeholders)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

2. Art Direction with the picture Element

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

3. Preload for Critical Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Effort vs. Impact

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measured Effect (Test Store)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 5: Optimizing CSS and JavaScript

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.1 Understanding the Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Render-Blocking Explained

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Shopware 6.6 Ships Out of the Box

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.2 CSS Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Measure

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Check Minification

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Does Not Apply to Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Works

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.3 JavaScript Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

defer vs. async vs. module

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Shopware Does Out of the Box

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Can Influence

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.4 Controlling Third-Party Scripts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performing a Third-Party Audit

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Consent Before Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chat Widgets Only When Needed

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Preconnect Sparingly

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.5 Theme Compilation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5.6 Performance Measurement

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lighthouse Metrics for CSS/JS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Documenting the Baseline

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Days 5–7

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 5: CSS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 6: JavaScript

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 7: Third-Party Scripts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Effort vs. Effect

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 6: HTTP Caching – The Fastest Request Is the One That Never Happens

Days 8-10 of the 30-Day Roadmap

At a Glance: HTTP caching is one of the biggest levers for Time to First Byte. You will check Shopware’s built-in HTTP cache (enabled out of the box), control per route what gets cached, and put Varnish with xkey invalidation in front of Shopware as a reverse proxy. **Measurements from the test setup:** TTFB of a test page 130 ± 10 ms with the built-in cache, 76 ± 0.9 ms with Varnish (demo data, single requests, no load test) | **Time Required:** 3 days **Tested with:** Shopware 6.6.10.6 | PHP 8.3 | Varnish 8.0.2 (image ghcr.io/shopware/varnish:6.7)

Introduction

In Week 1 we implemented quick wins: optimized images, improved Core Web Vitals, trimmed JavaScript. Those optimizations reduce the size of the response. But what if we did not need to generate the response at all?

A cached request requires no database query, no PHP execution, no template rendering. It is served from memory.

According to the [Web Almanac 2024](#), only **42% of mobile websites** achieve a “good” TTFB (Time to First Byte ≤ 800ms). Many shops leave potential on the table here. How much your shop gains depends on the server, the amount of data and the share of cacheable visits. The numbers in this chapter come from a Docker test setup with Shopware demo data. They show the order of magnitude but do not replace your own measurements.

In This Chapter You Will Learn:

- Understand the HTTP caching mechanism
- Check whether Shopware’s built-in HTTP cache actually hits
- Control what gets cached via the route default `_httpCache`
- Use Varnish with xkey invalidation as a reverse proxy
- Understand cache invalidation via cache tags
- Assess where stale-while-revalidate works and where it does not

Scope: This chapter covers HTTP *caching* (headers, Varnish, ESI, invalidation). Orthogonal to it are the *transport* layer (HTTP/3 / QUIC – Chapter 11 at the CDN edge and Chapter 24, Outlook) and the *application server* (PHP-FPM vs. FrankenPHP worker mode – Chapter 9). The caching strategies shown here apply regardless of transport protocol and app server; HTTP/3 additionally speeds up the delivery of cached responses, but it does not replace caching.

Prerequisites

- **Technical:** SSH access to the server, write permissions on configuration files
- **Knowledge:** Basic understanding of HTTP headers and web server configuration
- **Tools:** curl for header inspection, Chrome DevTools Network tab
- **Shopware:** 6.6 in production mode (`APP_ENV=prod`), Chapters 1-5 completed
- **Optional:** Varnish (own server or container)

Companion repo: All configurations, controllers and scripts in this chapter are available, tested, at github.com/MehmetGoekce/shopware-performance-examples/chapters/06-http-cache. Run the `./scripts/...` commands from this folder and `bin/console` from the Shopware directory.

6.1 Understanding HTTP Caching

The Basic Principle

```
1 WITHOUT CACHE (schematic):
2 Browser -> Web server -> PHP -> Database -> PHP -> Web server -> Browser
3
4 WITH CACHE:
5 Browser -> Cache (memory) -> Browser
```

A cache stores the response to a request. When the same request arrives again, the stored response is delivered – without PHP and the database having to do any work.

Cache Layers

A typical Shopware setup has several cache layers:

Layer	Where	What is cached
Browser cache	Client	Static assets (CSS, JS, images)
CDN cache	Edge server	Static assets, possibly HTML (Chapter 11)
Reverse proxy (Varnish)	In front of the web server	HTML pages, ESI fragments
Built-in HTTP cache	Shopware (PHP)	HTML pages
Application cache	Shopware	Entities, configurations (Chapter 7)
OPcache	PHP	Compiled PHP code (Chapter 9)

In the test setup, a cache hit took around 10 ms in the built-in cache and under 1 ms in Varnish. The difference: with the built-in cache, PHP still starts; Varnish answers without PHP.

Important: The further “forward” (closer to the browser) a cache sits, the faster it is – but the harder invalidation becomes. This is exactly why Shopware does not let the browser cache HTML (see below).

Cache-Control Headers

HTTP caching is controlled through headers:

```
1 Cache-Control: public, s-maxage=7200, stale-while-revalidate=14400,  
  ↳ stale-if-error=86400
```

Directive	Meaning
public	May be stored by any cache
private	Browser cache only, no CDN/proxy
max-age=3600	Valid for 1 hour
s-maxage=7200	2 hours for shared caches (CDN, proxy)
no-cache	Must be revalidated (not “no cache”!)
no-store	Genuinely do not cache
stale-while-revalidate=14400	Serve a stale response while a fresh one is fetched
stale-if-error=86400	Serve a stale response on backend errors

Shopware sets these headers itself. You do not write them by hand in controllers. What arrives for a cacheable HTML page depends on the setup:

Setup	Cache-Control of a cacheable HTML page
Built-in cache only (response to the browser)	Cache-Control: no-cache, private – always, even on a hit

Setup	Cache-Control of a cacheable HTML page
Behind Varnish (backend response to Varnish)	Cache-Control: public, s-maxage=7200 (plus stale-if-error/stale-while-revalidate, if configured) and xkey
Behind Varnish (response to the browser, VCL from 6.5)	Cache-Control: no-store, no-cache, must-revalidate, max-age=0

The browser should not cache HTML itself: after a price change, Shopware could no longer invalidate the browser’s copy.

* * *

6.2 Checking Shopware’s HTTP Cache

Shopware 6 ships with a built-in HTTP cache based on Symfony’s `HttpCache`. It is **enabled out of the box**, with a default TTL of 7200 seconds. So there is nothing to switch on – but there are several things that quietly make it ineffective.

Checking the Status

```
1 # Variables from the .env files (.env, .env.local ...), not from the server
   ↳ environment
2 bin/console debug:dotenv | grep -E 'APP_ENV|SHOPWARE_HTTP'
3
4 # Expected:
5 # APP_ENV prod
6 # SHOPWARE_HTTP_CACHE_ENABLED 1 (if the variable is missing, 1 applies as
   ↳ well)
7 # SHOPWARE_HTTP_DEFAULT_TTL 7200 (if the variable is missing, 7200 applies
   ↳ as well)
```

`debug:dotenv` warns about this itself: “Note that values might be different between web and CLI.” You only need the two `SHOPWARE_HTTP_*` variables if you want to deviate from the defaults:

```
1 # .env.local
2 SHOPWARE_HTTP_CACHE_ENABLED=1      # 0 disables the HTTP cache
3 SHOPWARE_HTTP_DEFAULT_TTL=7200     # TTL for routes with _httpCache and no own
  → maxAge
```

Pitfall 1: APP_ENV=dev

In APP_ENV=dev, Shopware puts the application cache into an array adapter that only exists for the duration of a single request. The HTTP cache still stores entries, but finds nothing on the next call – **there is never a hit**. Run cache tests in prod only.

Make sure APP_ENV=prod reaches the place where web requests run (PHP-FPM, Apache module, FrankenPHP), not just your shell. In the test setup with the Dockware image, `docker run -e APP_ENV=prod` was not enough: the CLI ran in prod, while web requests kept reading APP_ENV=dev from the `.env` inside the container. Only changing the `.env` produced hits.

Pitfall 2: The Route Decides

Only responses from a route with the default `_httpCache` are cached. The storefront routes for the home page and navigation, category and CMS pages, product pages and landing pages have it. Cart, checkout, customer account and the search results page (`/search`) do not. Section 6.3 shows how to do it for your own controllers.

Pitfall 3: Visitors with a Login or Cart

As soon as a visitor logs in or adds something to the cart, Shopware sets the `sw-states` cookie (logged-in, cart-filled). For these visitors every page bypasses the cache. Therefore always test as a guest without cookies – with `curl` or in a private window.

Recognizing a Hit

The built-in cache sends **no HIT/MISS header** in prod. The browser always sees `Cache-Control: no-cache, private`. You can recognize a hit by two signals, both of which must hold:

- The Age header grows between two calls by at least the pause between them (a pause of at least 2 s). Age > 0 alone is not a hit: when storing, Symfony sets Age = seconds since the Date header, and Shopware creates the response before Twig renders. A MISS therefore carries Age: 0, Age: 1 across a second boundary and roughly the render time in whole seconds when rendering is slow (in the test with a deliberately slow Twig template: 1–2 at 1.6–2.3 s). If the page embeds ESI fragments, it carries the Age of the oldest fragment, and Age grows even when the page itself is rendered again. From 6.7 on, Shopware always loads header and footer via ESI (6.6 only with the feature flag CACHE_REWORK): there every page carries an Age, 0 or 1 with the cache switched off; with the cache running it even grows on the never-cached cart
- The Date header is the same on the second call as on the first. Only a stored copy repeats its Date; a freshly rendered page gets a new one. If Age grows but Date changes too, the test is undecidable: either Age comes from an ESI fragment, or the web server in front of PHP sets Date anew (nginx with proxy_pass does so by default, proxy_pass_header Date; passes it through; Apache with mod_php always sets it anew, PHP-FPM behind nginx via fastcgi_pass or behind Apache via proxy_fcgi passes it through). The X-Symfony-Cache header settles it (6.8). Response time is no second signal: on 6.7, right after cache:clear, the never-cached cart took 0.9–1.1 s on the first call and 0.23–0.24 s on the second (test setup)

```

1 # Fetch twice with a pause, compare Age and Date (on 301/302 use the target URL)
2 curl -s -o /dev/null -D - https://your-shop.com/ | grep -iE
   → '^(HTTP/|cache-control:|age:|date:)'
3 sleep 2
4 curl -s -o /dev/null -D - https://your-shop.com/ | grep -iE
   → '^(HTTP/|age:|date:)'

```

The script `scripts/cache-debug.sh` from the companion repo does exactly that for several paths, evaluates X-Symfony-Cache when it is present, and also detects whether Varnish sits in front:

```

1 ./scripts/cache-debug.sh https://your-shop.com /category/ /product/SW10001

```

In the test setup (test route, first call a MISS), TTFB dropped from 130 ms to 10 ms on the hit. That is the gain, not a way to recognize one.

Global Options

```

1  # config/packages/http_cache.yaml
2  shopware:
3      http_cache:
4          # Not set out of the box (null). When set, Shopware appends them as
5          # Cache-Control directives to every cacheable response.
6          # Effect: in the built-in cache and at CDNs that evaluate them.
7          # Varnish ignores stale-if-error; the VCL in 6.5 sets grace itself (6.4).
8          # For HTML the browser sees "no-cache, private", behind Varnish
9          # ↪ "no-store".
10         # No effect with the CACHE_REWORK feature flag (from 6.7.6), removed in
11         # ↪ 6.8.
12
13         stale_while_revalidate: 14400    # 4 hours
14         stale_if_error: 86400           # 24 hours
15
16         # Tracking parameters that should not create a separate cache entry.
17         # Shopware already ships around 100 entries (utm_*, gclid, fbclid,
18         # msclkid, pk_*, mc_cid ...). Your entries are appended,
19         # so only list parameters that are missing there.
20         ignored_url_parameters:
21             - 'newsletter_id'           # example of a shop-specific parameter

```

In the test, `?utm_source=...`, `?gclid=...` and a combination of several UTM parameters all landed on the same cache entry as the page without parameters, while `?page=2` rightly got its own.

Caution behind Varnish: `ignored_url_parameters` only affects the cache key of the *built-in* cache. Behind Varnish, `?newsletter_id=42` creates a separate cache entry despite the setting. There, the VCL must strip the parameter (see 6.5).

You do not need an override for the cache pool: the `cache.http` pool uses `cache.app` out of the box – that is, the filesystem, or Redis as soon as you switch `cache.app` to Redis (Chapters 7 and 10).

After Clearing: Warming the Cache

```

1  bin/console cache:clear

```

In Shopware 6.6, `cache:clear` also clears the HTTP cache when it lives on the filesystem (the default) or in Varnish. Afterwards every page is slow on its

first call. If it lives in Redis, it stays (Chapter 7). From 6.7, `cache:clear` no longer sends a BAN to Varnish; there you clear the HTTP cache explicitly with `cache:clear:http` (6.5). On the filesystem, `cache:clear` still clears it in 6.7, because it lives under `var/cache` (tested with 6.7.2.2).

Important – `cache:warmup` does NOT warm the HTTP cache. The command only builds the Symfony container and compile cache. Shopware 6.6 has no command of its own that loads pages into the HTTP cache (checked with `bin/console list` in 6.6.10.6). Requests fill the HTTP cache – after a deploy, ideally in a targeted way from the sitemap:

```
1 bin/console sitemap:generate --force # in the Shopware directory
2 # in the companion folder chapters/06-http-cache
3 ./scripts/cache-warmup.sh https://your-shop.com --sitemap --parallel 4
  ↪ --limit 500
```

A simple `curl ... sitemap.xml | grep '<loc>'` is not enough: under `/sitemap.xml` Shopware serves an index of compressed part files (`.xml.gz`), and for **all** domains of the sales channel that share its language. The script unpacks the parts and only warms the requested domain. It warms the guest variant in the default currency. `--force` skips the lock of an aborted run, which survives every clear with Redis (Chapter 7). From `--parallel 2` on, the script requests every URL a second time: after `cache:clear`, simultaneous first requests create different versions of the same cache tags in the filesystem cache, and pages stored with the overwritten version count as invalid on the next request. In the test (Dockware 6.6.10.6, demo data, 21 pages), without the second pass 1–6 pages stayed cold with `--parallel 2` and 6–10 with `--parallel 4`, none with it. With Varnish, Redis and in 6.7.2.2 this did not occur.

* * *

6.3 Cache Strategies for Different Page Types

What Shopware Does Out of the Box

Page type	Default behavior	Note
Home page, categories, CMS and product pages, landing pages	Cached with SHOPWARE_HTTP_ - DEFAULT_TTL	Shopware invalidates changes via cache tags (6.7)
Cart, checkout, customer account, search results page	Not cached (private)	User-specific or without _httpCache
All pages for visitors with a login or cart	Bypass the cache	sw-states cookie
Your own controllers	Not cached	Until you set _httpCache

For tagged content, the TTL is only the upper limit: change a product in the Administration and the product page drops out of the cache immediately – not after two hours. You only need a short TTL for content Shopware does not know about via tags: time-controlled promotions, data from external systems, your own controllers without tags.

A tiering as a starting point (own assessment, not a Shopware default):

Content	TTL	Rationale
Core pages (product, category, CMS)	2 hrs (default)	Invalidation via tags
Time-controlled promotion pages	5-15 min	Start/end triggers no invalidation
Legal texts, static info pages	24 hrs	Rarely change
Cart, checkout, customer account	0 (private)	User-specific

Making Your Own Controllers Cacheable

A route enters the cache via the route default `_httpCache`. Shopware then sets `Cache-Control: public, s-maxage=<maxAge>`, the cache tags

and the `sw-invalidation-states` header itself. The example uses the placeholder namespace `YourPlugin`; the matching `services.xml` (with `setContainer` and `setTwig`, otherwise `renderStorefront()` does not work) and `routes.xml` are in the companion repo.

```

1  <?php
2  // src/Controller/CacheableController.php (abridged)
3
4  declare(strict_types=1);
5
6  namespace YourPlugin\Controller;
7
8  use Shopware\Core\System\SalesChannel\SalesChannelContext;
9  use Shopware\Storefront\Controller\StorefrontController;
10 use Symfony\Component\HttpFoundation\Request;
11 use Symfony\Component\HttpFoundation\Response;
12 use Symfony\Component\Routing\Attribute\Route;
13
14 #[Route(defaults: ['_routeScope' => ['storefront']])]
15 class CacheableController extends StorefrontController
16 {
17     // Cacheable with the global TTL (SHOPWARE_HTTP_DEFAULT_TTL)
18     #[Route(
19         path: '/custom-page',
20         name: 'frontend.custom.page',
21         defaults: ['_httpCache' => true],
22         methods: ['GET']
23     )]
24     public function customPage(Request $request, SalesChannelContext $context):
25         ↪ Response
26     {
27         return $this->renderStorefront(
28             ↪ '@YourPlugin/storefront/page/custom.html.twig',
29             ↪ [
30                 'title' => 'Custom Page',
31                 'data' => $this->getPageData(),
32             ]
33         );
34     }
35
36     // Own TTL: 5 minutes for a time-controlled promotion page
37     #[Route(
38         path: '/promotions',
39         name: 'frontend.promotions.page',
40         defaults: ['_httpCache' => ['maxAge' => 300]],
41         methods: ['GET']
42     )]
43     public function promotionsPage(Request $request, SalesChannelContext
44         ↪ $context): Response
45     {

```

```
41     return $this->renderStorefront(
42         ↪ '@YourPlugin/storefront/page/promotions.html.twig',
43         ↪ [
44             'promotions' => $this->getPromotions(),
45         ]);
46     }
47 }
```

Common mistake: `setSharedMaxAge()` instead of `_httpCache`.

A `$response->setSharedMaxAge(14400)` in the controller is **not** enough. Without `_httpCache` the response reaches the reverse proxy as `max-age=0, must-revalidate, private, s-maxage=14400`: neither the built-in cache nor Varnish stores it. In the test, such a route was re-rendered on every call.

Two details about `_httpCache`:

- `stale-while-revalidate` and `stale-if-error` come from the global configuration (6.2), if set there, not from the controller.
- With `['maxAge' => 300, 'states' => [...]]` you can list additional states in which the route bypasses the cache. The list **extends** the global states `logged-in` and `cart-filled`; it does not replace them. You cannot use it to make a route cacheable for logged-in customers.

Do not confuse: The configuration keys `shopware.cache.invalidation.product_detail_route`, `product_listing_route` etc. expect state lists such as `['logged-in']` (default: empty) – **not class names**. In 6.6 they control the object cache of the `Cached*Route` classes, which the Store API and storefront pages use, not the TTL of pages. These classes are gone in 6.7. Configuration examples with `CachedProductDetailRoute` class names in this place have no effect.

* * *

6.4 Stale-While-Revalidate: Where It Works – and Where It Does Not

`stale-while-revalidate` (SWR) allows a cache to keep serving an expired response for a while as it fetches a fresh one. If `shopware.http_cache.stale_while_revalidate` is set (it is not out of the box), Shopware appends the directive to every cacheable response. What happens next depends on *who* reads the directive.

Browser: Irrelevant for HTML

All modern browsers have supported SWR since 2020 (Chrome 75, Firefox 68, Safari 14). For Shopware HTML this does not matter: without a reverse proxy the browser sees `no-cache`, `private`, behind Varnish `no-store`. For static assets with their own `Cache-Control`, browser SWR can be useful.

Built-in Cache: No Background Refresh

After the TTL expires, Symfony's `HttpCache` fetches the page **synchronously**: the first request waits until PHP has re-rendered the page. SWR only helps requests that arrive at the same time while the first one is still rendering – within the SWR window they immediately get the old version. Without your own setting, Symfony's default of 2 seconds applies. Outside the window they wait for the first request, for at most about 3 seconds: that is how long Shopware's cache store holds the lock. After that, the waiting requests render themselves. `stale-if-error` kicks in when the backend returns an error (Symfony default without a setting: 60 seconds).

Varnish: Real Grace Mode

Within the grace period, Varnish serves an expired response immediately even to the **first** request and fetches the fresh version asynchronously. The VCL in 6.5 sets `beresp.grace = 24h` for this. Without that line, Varnish uses the `stale-while-revalidate` value as grace; Varnish does not know `stale-if-error`. Behind the VCL from 6.5, both Shopware settings therefore have no effect.

```

1 Timeline in Varnish (TTL 2h, grace 24h):
2 +-- 0h ----- TTL ----- 2h ----- Grace ----- 26h ---->
3
4 Request at 1h:    [OK] from cache (fresh)
5 Request at 3h:    [OK] from cache (stale) + background refresh
6 Request at 3h+:   [OK] from cache (fresh, once the refresh has finished)
7 Request at 27h:   Waits for the backend (object has expired)

```

A test with an ESI fragment (TTL 5 seconds) made this clearly visible: the first call after expiry still returned the old fragment; only the next one returned the new one.

Practical Example: A Rush on an Expired Home Page

```

1 Black Friday, 10:00 AM: the home page expires, 1,000 visitors at the same time
2
3 Built-in cache, SWR window over: 1 request renders, 999 wait (up to ~3 s)
4 Built-in cache, in SWR window: 1 request renders (and waits), 999 get the
  → old page immediately
5 Varnish with grace:              1,000 get the old page immediately, 1
  → background refresh

```

With the built-in cache, SWR therefore decides the **waiting time**, not whether 1,000 requests reach PHP: Symfony's `HttpCache` only lets one request render an expired entry anyway (lock) – as long as rendering stays under 3 seconds. In practice, overload tends to occur where nothing is cached at all – for visitors with a cart or login.

* * *

6.5 Varnish: The Reverse Proxy in Front of Shopware

Varnish sits in front of the web server and answers cache hits without starting PHP. Shopware supports Varnish directly: it sends cache tags in the `xkey` header and invalidates selectively via `PURGE`.

Whether the additional service pays off depends less on a page-view threshold than on your numbers: how long does a hit in the built-in cache take, and how many PHP workers do cache hits tie up at peak times? As a rough guide (own assessment): from a few tens of thousands of page views per day, or with noticeable load peaks, an evaluation is worthwhile.

Built-in Cache or Varnish?

Aspect	Built-in HTTP cache	Varnish
Hit in the test setup	~10 ms (PHP starts)	~1 ms (without PHP)
Storage	Pool cache.http □ cache.app (filesystem or Redis)	RAM
Expired entries	Synchronous refresh (6.4)	Grace with background refresh
Invalidation	Tags internally	PURGE with xkey
ESI	Yes (in PHP, fragments as separate entries)	Yes
Operations	Nothing extra	Separate service, VCL to maintain

VCL for Shopware 6.6 with xkey

Shopware maintains an official Varnish image with a ready-made VCL: github.com/shopware/varnish-shopware (ghcr.io/shopware/varnish). For production it is the recommended route. The following VCL is our own annotated learning version with the same core behavior. It requires the vmods xkey (from varnish-modules) and cookie (part of Varnish Cache), both included in the official image, and was tested against Shopware 6.6.10.6 with Varnish 8.0.2.

```

1  # /etc/varnish/default.vcl – companion: config/varnish.vcl
2
3  vcl 4.1;
4
5  import std;
6  import xkey;
7  import cookie;
8
9  backend default {
10     .host = "127.0.0.1";    # Webserver hinter Varnish (Nginx/Apache)
11     .port = "8080";
12     .first_byte_timeout = 60s;
13 }
14
15 # Nur diese Adressen dürfen invalidieren (App-Server eintragen!)
16 acl purgers {
17     "127.0.0.1";
18     "::-1";
19 }
20
21 sub vcl_recv {
22     # Interne Hilfs-Header nie vom Client übernehmen (sonst könnte ein Client
23     # über eigene X-Sw-*-Header beliebig viele Cache-Varianten erzeugen)
24     unset req.http.X-Sw-Cache-Hash;
25     unset req.http.X-Sw-Currency;
26     unset req.http.X-Sw-States;
27
28     # -----
29     # Invalidierung durch Shopware
30     # -----
31     # Tag-Invalidierung: Shopware schickt PURGE mit Header "xkey: tag1 tag2 ..."
32     # Einzel-URL: PURGE ohne xkey-Header
33     if (req.method == "PURGE") {
34         if (client.ip !~ purgers) {
35             return (synth(403, "Forbidden"));
36         }
37         if (req.http.xkey) {
38             set req.http.n-gone = xkey.purge(req.http.xkey);
39             return (synth(200, "Invalidated " + req.http.n-gone + " objects"));
40         }
41         return (purge);
42     }
43
44     # Kompletter Cache (bin/console cache:clear:http bzw. cache:clear): BAN auf
45     ↪ "/"
46     if (req.method == "BAN") {
47         if (client.ip !~ purgers) {
48             return (synth(403, "Forbidden"));
49         }
50         ban("req.url ~ " + req.url);

```

```

50     return (synth(200, "Banned"));
51 }
52
53 # -----
54 # Was nie aus dem Cache kommt
55 # -----
56 if (req.method != "GET" && req.method != "HEAD") {
57     return (pass);
58 }
59
60 if (req.http.Authorization) {
61     return (pass);
62 }
63
64 # Abkürzung ohne Cache-Lookup. Sprachpräfixe (/en/checkout) greifen hier
65 # nicht – die fängt Shopware über sw-states / no-cache-Header ab.
66 if (req.url ~ "^/(checkout|account|admin|api)(/.*)?$") {
67     return (pass);
68 }
69
70 # Statische Dateien brauchen keine Cookies -> ein Cache-Eintrag für alle
71 if (req.url ~ "^/(media|thumbnail|theme|bundles)/") {
72     unset req.http.Cookie;
73     return (hash);
74 }
75
76 # -----
77 # Shopware-Cookies für Cache-Key und Bypass auslesen
78 # -----
79 cookie.parse(req.http.Cookie);
80 set req.http.X-Sw-Cache-Hash = cookie.get("sw-cache-hash");
81 set req.http.X-Sw-Currency = cookie.get("sw-currency");
82 set req.http.X-Sw-States = cookie.get("sw-states");
83
84 # Tracking-Parameter entfernen, damit ?utm_source=... keinen eigenen
85 # Cache-Eintrag erzeugt. Kurze Liste – die vollständige steht im
86 # offiziellen VCL. shopware.http_cache.ignored_url_parameters wirkt hinter
87 # Varnish NICHT, eigene Parameter hier ergänzen.
88 # (?<=[?&]) prüft nur den Namensanfang, ohne das Zeichen zu verbrauchen:
89 # ?foo_gl=1 bleibt stehen, mehrere Parameter hintereinander werden entfernt.
90 if (req.url ~ "[?&](utm_[a-z_]+|gclid|gbraid|wbraid|fbclid|msclkid|mc_cid|mc_eid|pk_[a-z_]+|mtm_[a-
91 ↪ [?&](utm_[a-z_]+|gclid|gbraid|wbraid|fbclid|msclkid|mc_cid|mc_eid|pk_[a-z_]+|mtm_[a-
92 ↪ ")
93 ↪ {
94     set req.url = regsuball(req.url, "[?&](utm_[a-z_]+|gclid|gbraid|wbraid|fbclid|msclkid|mc_cid|mc_eid|pk_[a-z_]+|mtm_[a-
95 ↪ ",
96 ↪ "");
97     set req.url = regsub(req.url, "[?&]$", "");
98 }

```

```
94     set req.url = std.queriesort(req.url);
95
96     # Shopware rendert render_es() nur als <esi:include>, wenn der Proxy ESI
97     ↪ kann
98     set req.http.Surrogate-Capability = "shopware=ESI/1.0";
99     return (hash);
100 }
101
102 sub vcl_hash {
103     # URL + Host hasht die eingebaute vcl_hash danach automatisch.
104     # Kontext wie in Shopwares HttpCacheKeyGenerator:
105     # sw-cache-hash (Kundengruppe, Regeln, Währung, Steuern ...) hat Vorrang,
106     # sonst sw-currency (Gast hat nur die Währung gewechselt).
107     if (req.http.X-Sw-Cache-Hash != "") {
108         hash_data("context:" + req.http.X-Sw-Cache-Hash);
109     } elseif (req.http.X-Sw-Currency != "") {
110         hash_data("currency:" + req.http.X-Sw-Currency);
111     }
112 }
113
114 sub vcl_hit {
115     # Shopware markiert Seiten mit "sw-invalidation-states:
116     ↪ logged-in, cart-filled".
117     # Hat der Besucher einen dieser Zustände (Cookie sw-states), am Cache
118     ↪ vorbei.
119     if (req.http.X-Sw-States) {
120         if (req.http.X-Sw-States ~ "logged-in" &&
121             ↪ obj.http.sw-invalidation-states ~ "logged-in") {
122             return (pass);
123         }
124         if (req.http.X-Sw-States ~ "cart-filled" &&
125             ↪ obj.http.sw-invalidation-states ~ "cart-filled") {
126             return (pass);
127         }
128     }
129 }
130
131 sub vcl_backend_fetch {
132     unset bereq.http.X-Sw-Cache-Hash;
133     unset bereq.http.X-Sw-Currency;
134     unset bereq.http.X-Sw-States;
135 }
136
137 sub vcl_backend_response {
138     # Grace: veraltete Objekte bis 24h ausliefern, während im Hintergrund
139     # neu geladen wird oder das Backend ausfällt
140     set beresp.grace = 24h;
141
142     # ESI-Fragmente zusammensetzen (vor jedem return)
```

```

139     if (beresp.http.Surrogate-Control ~ "ESI/1.0") {
140         unset beresp.http.Surrogate-Control;
141         set beresp.do_esi = true;
142     }
143
144     # Cachebare Antworten dürfen kein Session-Cookie an andere Besucher
145     ↪ verteilen
146     if (beresp.ttl > 0s && (bereq.method == "GET" || bereq.method == "HEAD")) {
147         unset beresp.http.Set-Cookie;
148     }
149
150 sub vcl_deliver {
151     # Der Browser soll HTML nicht selbst cachen: nach einem Purge in Varnish
152     # hätte er sonst noch die alte Seite. Statische Dateien bleiben cachebar.
153     if (resp.http.Cache-Control !~ "private" && req.url !~
154         ↪ "^/(theme|media|thumbnail|bundles|store-api)/") {
155         set resp.http.Cache-Control = "no-store, no-cache, must-revalidate,
156         ↪ max-age=0";
157     }
158
159     # Debug-Header für Hit-Rate-Messung (in Produktion ggf. auf interne IPs
160     ↪ beschränken)
161     if (obj.hits > 0) {
162         set resp.http.X-Cache = "HIT";
163     } else {
164         set resp.http.X-Cache = "MISS";
165     }
166
167     # Interne Header nicht nach aussen geben
168     unset resp.http.sw-invalidation-states;
169     unset resp.http.xkey;
170     unset resp.http.Via;
171     unset resp.http.X-Varnish;
172 }

```

The key points compared with a generic VCL:

- **No pass on every cookie.** Guests have session cookies; passing on every cookie would leave the cache almost empty. The VCL reads only the three Shopware cookies.
- **Bypass in vcl_hit, not in vcl_recv.** Whether a page bypasses the cache for visitors with sw-states is stored in the sw-invalidation-states header of the cached response. Varnish only knows it after the lookup.
- **Remove Set-Cookie.** Otherwise every visitor would receive the session cookie of the visitor who filled the cache.

- **Strip tracking parameters cleanly.** The regex uses `(?<=[?&])` to check that a parameter name starts there and takes the whole value up to the next `&`. In the test, `?foo_gl=1` and values with `+` (`utm_campaign=summer+sale`) were handled correctly; a variant with a character list turned the latter into `?+sale`.

Check the syntax before loading:

```
1 varnishd -C -f /etc/varnish/default.vcl > /dev/null && systemctl reload varnish
```

Pitfall with the official Docker image: The entrypoint script of `ghcr.io/shopware/varnish` replaces placeholders in `/etc/varnish/default.vcl` via `sed -i` on startup. Mounting your own VCL as a single file therefore fails. Build your own image or copy the file in with `docker cp`.

Configuring Shopware for Varnish

```
1 # config/packages/varnish.yaml – Shopware 6.6
2 shopware:
3     http_cache:
4         reverse_proxy:
5             enabled: true
6             # Tags in the "xkey" response header, invalidation via PURGE with
7             ↪ "xkey: tag1 tag2 ..."
8             use_varnish_xkey: true
9             # Address(es) Shopware sends PURGE/BAN to.
10            # The app server's IP must be in the VCL ACL "purgers".
11            hosts:
12                - 'http://127.0.0.1:6081'
13
14 # With xkey, disable tagging per config value, snippet and theme value,
15 # otherwise every page carries a very long tag list.
16 cache:
17     tagging:
18         each_config: false
19         each_snippet: false
20         each_theme_config: false
```

Then run `bin/console cache:clear`. The values follow the instructions in the [official Varnish repository](#) for 6.6. In 6.7, `xkey` is the only Varnish method

(the Redis gateway has been removed); the 6.7 configuration in the repository only needs enabled and hosts.

Without use_varnish_xkey, Shopware 6.6 uses an older method via Redis (tag $\square$ URL mapping, PURGE per URL). The class is marked deprecated, with removal announced for 6.7.0. For new setups, use xkey.

Invalidation in Operation

In the test, a PATCH /api/product/<id> changed the price. Shopware immediately sent a request to Varnish, visible in varnishlog:

```
1 PURGE /
2 xkey: product-review-route-<id> product-detail-route-<id> product-<id>
  ↳ product-listing-route-...
3 -> "Invalidated 4 objects"
```

The next call to the product page was a MISS with the new price. Shopware clears the entire cache via BAN:

```
1 # Clear the HTTP cache (from Shopware 6.6.10.0), sends BAN to all Varnish hosts
2 bin/console cache:clear:http
3
4 # Shopware 6.6: also clears the other caches and sends the BAN as well
5 # (no longer from 6.7, always use cache:clear:http there)
6 bin/console cache:clear
```

Version note: cache:clear:http only exists from Shopware 6.6.10.0. In older 6.6 versions, use cache:clear. From 6.7, cache:clear no longer sends a BAN to Varnish (announced as deprecated since 6.6.10.0) – so add cache:clear:http to your deploy script now.

Clearing the Varnish Cache Directly

Caution – destructive operation

- **What:** `ban req.url ~ .` invalidates the entire Varnish cache; all subsequent requests go straight to the backend.
- **Rollback:** N/A – the cache refills through traffic. Until then, a TTFB spike and higher backend load are unavoidable.
- **Safe when:** During low-traffic periods (e.g., at night) and followed by a warmup (6.2). For targeted invalidation, prefer individual tags via `xkey` over a wildcard.

```
1 # Clear everything
2 varnishadm "ban req.url ~ ."
3
4 # One product (tag), from an address in the ACL "purgers"
5 curl -X PURGE -H 'xkey: product-<id>' http://127.0.0.1:6081/
```

Cache Key: `sw-cache-hash`, `sw-currency` and `sw-states`

Varnish stores per cache key. The VCL builds it the same way as Shopware's built-in cache:

- **URL + host** – Varnish hashes these automatically
- **sw-cache-hash**, if present – Shopware sets this cookie for logged-in customers and visitors with a cart; it contains, among other things, the active rules, currency and tax state
- **otherwise sw-currency** – a guest who only switches the currency gets this cookie and thus a separate entry

In the test, a guest received the `sw-currency` cookie after switching currency via `POST /checkout/configure`: the USD variant was first a MISS, then a HIT. Guests without the cookie kept getting the EUR page from the cache. Guests do not get an `sw-cache-hash` in this case – a VCL that only looks at `sw-cache-hash` would mix up USD and EUR pages.

`sw-states` (logged-in, cart-filled) does **not** belong in the cache key. The cookie only causes the visitor to bypass the cache in `vcl_hit`. In the test, every call after add-to-cart and after login was a pass with a fresh page.

This leads to the discipline: **no** broad Vary: Cookie – that fragments the cache per session cookie and makes it practically useless. Instead, use the narrow, deterministic Shopware cookies in `vcl_hash`.

Forward (Shopware 6.7.6+, as of September 2026): Shopware 6.7.6.0 (released January 13, 2026) contains an *experimental* caching rework behind the feature flag `CACHE_REWORK`. With the flag enabled, `sw-cache-hash` controls the entire caching behavior, and logged-in customers as well as filled carts can be served from the HTTP cache. Without the flag, the 6.6 behavior described above still applies. Deprecated are the `sw-states` **and** `sw-currency` handling as well as the settings `SHOPWARE_HTTP_DEFAULT_TTL`, `stale_while_revalidate` and `stale_if_error` – exactly the knobs from 6.2 and 6.3. With the flag enabled they have no effect, and they will be removed in 6.8.0.0, where the new behavior becomes the default. Shopware currently plans 6.8 for 2027. VCL rules and CDN page rules that react to `sw-states` will then become obsolete. The cache key discipline stays the same – never a broad Vary: Cookie – and becomes more important because more requests get cached. Test the flag on staging first. See also Chapter 11 (CDN edge).

* * *

6.6 Edge Side Includes (ESI)

ESI solves the problem: “How do I cache a page when part of it has a different lifetime?”

The Problem

```

1  Product page:
2  +-----+
3  |  Header with cart counter  |  <- user-specific: via JavaScript
4  +-----+
5  |
6  |      Product image & description  |  <- cached with the page
7  |      Price                      |  <- cached, context in the cache key
8  |
9  +-----+
10 |  Stock: "Only 3 left"          |  <- changes often: candidate for ESI
11 +-----+

```

Not everything that changes needs ESI:

- **User-specific content** (cart counter, “recently viewed”) does not belong in an ESI fragment – the fragment would again be cached for everyone. Shopware loads the cart counter via JavaScript from `/widgets/check-out/info`.
- **Prices** need no fragment: customer group and currency are part of the cache key, and Shopware invalidates price changes via tags.
- **Suitable for ESI** are parts that are the same for all visitors but have a shorter lifetime than the page: stock displays, countdown banners, teasers.

How ESI Works

```

1  <!-- Cached page with ESI tag -->
2  <main>
3      <h1>Product name</h1>
4      <p>Description...</p>
5      <esi:include src="http://your-shop.com/widgets/stock/0190..."
6      ↪ onerror="continue" />
7  </main>

```

Varnish recognizes `<esi:include>`, fetches the fragment as a separate cache entry and assembles the page. The flow in Shopware:

1. Varnish sends `Surrogate-Capability: shopware=ESI/1.0` (VCL from 6.5)
2. Shopware renders `render_esi()` as `<esi:include>` and sets `Surrogate-Control: content="ESI/1.0"`

3. Varnish sets `do_esi` and resolves the includes

Without Varnish, the built-in cache takes on the same role: Symfony's `HttpCache` requests ESI itself, resolves `<esi:include>` in PHP and stores the fragment as a separate entry with its own TTL. In the test (without a reverse proxy, page `maxAge 600`, fragment `maxAge 5`), the page remained the same hit for 8 seconds, while the fragment inside it was new after its 5 seconds had expired. A fragment is only rendered directly into the page when no cache is active at all (`SHOPWARE_HTTP_CACHE_ENABLED=0`).

Shopware itself and ESI: Shopware 6.6 has ESI routes for header and footer (`/_esi/global/header`, `/_esi/global/footer`), but the storefront only includes them with the feature flag `CACHE_REWORK` (`base.html.twig`). Out of the box, 6.6 renders header and footer directly into the page.

Creating Your Own ESI Fragments

```

1  <?php
2  // src/Controller/EsiWidgetController.php (abridged)
3
4  declare(strict_types=1);
5
6  namespace YourPlugin\Controller;
7
8  use Shopware\Core\Framework\Adapter\Cache\Event\AddCacheTagEvent;
9  use Shopware\Core\Framework\DataAbstractionLayer\Search\Criteria;
10 use Shopware\Core\System\SalesChannel\Entity\SalesChannelRepository;
11 use Shopware\Core\System\SalesChannel\SalesChannelContext;
12 use Shopware\Storefront\Controller\StorefrontController;
13 use Symfony\Component\HttpFoundation\Response;
14 use Symfony\Component\Routing\Attribute\Route;
15 use Symfony\Contracts\EventDispatcher\EventDispatcherInterface;
16
17 #[Route(defaults: ['_routeScope' => ['storefront']])]
18 class EsiWidgetController extends StorefrontController
19 {
20     // Service arguments: sales_channel.product.repository, event_dispatcher
21     // ↪ (services.xml in the companion)
22     public function __construct(
23         private readonly SalesChannelRepository $productRepository,
24         private readonly EventDispatcherInterface $eventDispatcher
25     ) {

```

```

25     }
26
27     // Stock display: TTL 5 minutes, shorter than the product page
28     #[Route(
29         path: '/widgets/stock/{productId}',
30         name: 'frontend.widget.stock',
31         defaults: ['_httpCache' => ['maxAge' => 300]],
32         methods: ['GET']
33     )]
34     public function stockWidget(string $productId, SalesChannelContext
35         ↪ $context): Response
36     {
37         $stock = $this->getProductStock($productId, $context);
38
39         // Tag for invalidation: Shopware purges "product-<id>" as soon as the
40         ↪ product is written
41         $this->eventDispatcher->dispatch(new AddCacheTagEvent('product-' .
42         ↪ $productId));
43
44         return $this->renderStorefront(
45             ↪ '@YourPlugin/storefront/widget/stock.html.twig',
46             ↪ [
47                 'productId' => $productId,
48                 'stock' => $stock,
49                 'available' => $stock > 0,
50                 'lowStock' => $stock > 0 && $stock <= 5,
51             ]
52         );
53     }
54
55     private function getProductStock(string $productId, SalesChannelContext
56         ↪ $context): int
57     {
58         $criteria = new Criteria([$productId]);
59         $product = $this->productRepository->search($criteria,
60             ↪ $context)->first();
61
62         return $product->getStock() ?? 0;
63     }
64 }

```



```

1  {# Include on the product page #}
2  {{ render_esi(url('frontend.widget.stock', { productId: page.product.id })) }}

```

Three points that made the difference in the test:

- **`_httpCache` instead of `setSharedMaxAge()`** – as in 6.3, otherwise neither Varnish nor the built-in cache caches the fragment.

- **Your own cache tag.** Custom DAL queries in a controller do **not** attach a `product-<id>` tag to the response in 6.6. Without `AddCacheTagEvent` (available from Shopware 6.6.6.0), the fragment stayed stale after a stock change from 3 to 7 until the TTL expired. With the event it was reloaded immediately, while the page itself remained a HIT.
- **The fragment must start with <.** By default Varnish only processes ESI if the body starts with `<` (otherwise the log shows `No ESI processing, first char not '<'`). (See feature `esi_disable_xml_check`); you can turn the check off with `-p feature=+esi_disable_xml_check`). Harmless for normal storefront pages (`<!DOCTYPE html>`), but a silent trap for fragments that start with text or whitespace.

* * *

6.7 Cache Invalidation

A cache is only as good as its invalidation. Stale prices are worse than a slow page.

Shopware's Automatic Invalidation

When rendering a page, Shopware collects cache tags: for the product, the category, the navigation, the sales channel context and so on. When Shopware writes an entity through the DAL – in the Administration, via the Admin API or through an import – the matching tags are invalidated:

- Built-in cache: Shopware removes the entries with these tags from the pool (internally via the `sw-cache-tags` header).
- Varnish with `xkey`: Shopware sends PURGE with the header `xkey: <tags>` (see the example in 6.5).

No configuration is required for this. Out of the box, invalidation happens immediately (`shopware.cache.invalidation.delay: 0`).

```

1  # config/packages/http_cache.yaml – optional
2  shopware:
3      cache:
4          invalidation:
5              # 0 = immediately (default). A value > 0 collects invalidations and
6              # processes them via the scheduled task "shopware.invalidate_cache"
7              # (manually: bin/console cache:clear:delayed).
8              delay: 0
9
10         # States in which visitors bypass the HTTP cache (default)
11         http_cache: ['logged-in', 'cart-filled']

```

A `delay > 0` pays off when an import writes thousands of products in a short time and each change would individually evict pages from the cache.

Manual Invalidation

```

1  # Clear only the HTTP cache (from 6.6.10.0; behind Varnish: BAN)
2  bin/console cache:clear:http
3
4  # Clear caches (HTTP cache on the filesystem yes, in Redis no; Varnish BAN only
5  #   ↳ up to 6.6)
6  bin/console cache:clear
7
8  # Via Administration: Settings -> System -> Caches & indexes

```

Your Own Cache Tags

Your own controllers and Twig extensions that load data should attach their tags themselves (see `EsiWidgetController` in 6.6):

```

1  $this->eventDispatcher->dispatch(new AddCacheTagEvent('product-' .
2  #   ↳ $productId));

```

When the product is written, Shopware invalidates all pages and fragments with this tag.

Invalidation Problems

Problem 1: Too broad invalidation

The more tags a page carries, the more often it drops out of the cache. With xkey, therefore disable the `tagging.each_*` options (6.5). In the test, the product page still carried the `global.system.config` tag – saving in the system configuration can therefore invalidate many pages at once. Avoid configuration changes at peak times.

Problem 2: Changes Shopware does not see

- An ERP writes **directly to the database** instead of via the API: Shopware does not notice the change, and the cache shows the old price until the TTL expires. Solution: write via the Admin API or Sync API, or invalidate in a targeted way afterwards.
- Your own controllers without tags (see above).
- Time-controlled content (promotion starting at midnight): only a short TTL on the affected route helps here.

Best practice: Tags for everything Shopware writes; a short TTL only for what Shopware does not know about; `cache:clear:http` only as a last resort.

* * *

6.8 Cache Debugging

Checking Whether a Page Is Cached

```
1 # As a guest without cookies, twice in a row
2 ./scripts/cache-debug.sh https://your-shop.com /category/
3
4 # Or by hand, twice with a pause (6.2)
5 curl -s -o /dev/null -D - https://your-shop.com/ | grep -iE
   ↳ '^(HTTP/|cache-control:|age:|date:|x-cache:).'
```

What you should expect:

Setup	A hit is recognizable by
Built-in cache	Age grows by at least the pause between the calls, Date stays the same; Cache-Control always no-cache, private. Age alone is not a hit, with ESI (always from 6.7 on) the page carries the Age of the oldest fragment. Unambiguous: X-Symfony-Cache: fresh
Varnish (VCL from 6.5)	X-Cache: HIT; Cache-Control: no-store ... is intentional
Backend directly (bypassing Varnish)	Cache-Control: public, s-maxage=... and an xkey header – the page is cacheable

Out of the box, the built-in cache only sends the X-Symfony-Cache header with APP_DEBUG=1. In prod you switch it on with a file in config/packages/ (framework.http_cache.trace_level: short, then cache:clear): fresh is a hit, miss/store a newly stored entry, miss among other things a page that is not cached at all. Remove the file again after the test. There is no Shopware-specific HIT/MISS header.

Chrome DevTools

```

1 Network tab -> "Disable cache" off -> select request -> Headers:
2 - Response Headers:
3   - Cache-Control: no-store, no-cache, must-revalidate, max-age=0 (behind
    ↪ Varnish)
4   - Age: 342
5   - X-Cache: HIT

```

In a normal browser window you have the sw-states cookie after the first add-to-cart click – from then on every call is a pass. Test in a private window.

Symfony Profiler

In the development environment, the Symfony Profiler shows a panel “Http cache tags per route”: which cache tags a page carries and which code attached

them. Use it to check whether your own controllers set their tags. You will not see a hit there – in dev the HTTP cache never hits (6.2).

Common Problems

Problem: Page is never cached

1. APP_ENV=prod for web requests? (6.2)
2. Does the route have `_httpCache`? Query the backend directly: `private` instead of `public`, `s-maxage` means no.
3. Testing with an `sw-states` cookie? Test without cookies.
4. Is the URL a redirect? Depending on the SEO setting (canonical URL), `/detail/<id>` is only a 301 to the SEO URL – Varnish then caches the redirect with its default TTL, not the product page.
5. Behind Varnish: does a custom VCL rule set `pass`, for example on every cookie?

Problem: Cache is constantly invalidated

```
1 # Which invalidations reach Varnish?
2 varnishlog -g request -q 'ReqMethod eq "PURGE" or ReqMethod eq "BAN"'
```

Common causes: imports or scheduled tasks that write many entities (then check `invalidation.delay`), saving in the system configuration, deploys with `cache:clear`.

Problem: Stale data

1. Was the data written via the DAL or directly to the database? (6.7)
2. Does the page or fragment carry the matching tag? (Profiler)
3. Does Shopware's request reach Varnish? Check `hosts` in `varnish.yaml` and the ACL purgers – a rejected invalidation shows up in `varnishlog` as 403.
4. If necessary, `bin/console cache:clear:http`.

6.9 Performance Measurement

Calculating the Cache Hit Rate

The [cache hit rate](#) is the central metric for cache efficiency:

```
1 Hit rate = Cache hits / (Cache hits + Cache misses) × 100%
```

Benchmark: According to [Cloudflare](#), websites with predominantly static content can easily achieve hit rates of 95-99%. For e-commerce shops with dynamic elements (cart, login) this is not attainable; 70-90% is a realistic target corridor for guest traffic (own assessment, not a Cloudflare figure). Also measure the share of requests that are not cacheable at all (pass) – it often says more about the potential than the hit rate.

Measuring with Varnish Counters

```
1 ./scripts/cache-hit-rate.sh --varnishstat
2
3 # In a container:
4 VARNISHSTAT_CMD="docker exec varnish varnishstat" ./scripts/cache-hit-rate.sh
   ↪ --varnishstat
```

Caution, inflated rate: Visitors with a login or cart whom the VCL sends to pass in `vcl_hit` are counted by Varnish as `MAIN.cache_hit` **and** as `MAIN.s_pass`. The hit rate from `varnishstat` is therefore too high as soon as such visitors are involved.

Measuring with the Varnish Log (More Accurate)

```
1 # Log with the actual handling as the last field
2 varnishncsa -F '%h %t "%r" %s %b %{Varnish:handling}x' -w
   ↪ /var/log/varnish/cache.log
3
4 ./scripts/cache-hit-rate.sh /var/log/varnish/cache.log
```

`%{Varnish:handling}x` returns `hit`, `miss`, `pass`, `hitmiss`, `hitpass`, `pipe` or `synth`. A visitor with a cart correctly shows up as `pass` here. The script also works with Nginx `proxy_cache` if `$upstream_cache_status` is the last field in the log format.

Before/After Comparison

Measurements from the test setup for this chapter: Docker, `dock-ware/dev:6.6.10.6` with demo data, `ghcr.io/shopware/varnish:6.7`, single requests as a guest, no load test. A production shop with more data, plugins and network has different absolute values. Measure your own values before and after.

Measurement	Without hit	With hit
TTFB built-in cache (test page)	130 ms	10 ms
TTFB Varnish (test page)	76 ms	0.9 ms
PHP execution per request	yes	built-in: yes (kernel starts) · Varnish: no

For statements about requests per second and server load, you need a load test against your own shop (Chapter 13).

* * *

Checklist: Days 8-10

Day 8: Check the Built-in HTTP Cache

- [] `bin/console debug:dotenv`: `APP_ENV=prod`, `SHOPWARE_HTTP_CACHE_ENABLED` not set to `0`

- [] APP_ENV=prod reaches the web requests (not just the CLI): Administration ▢ Settings ▢ System ▢ Caches & indexes shows environment and HTTP cache as the web server sees them
- [] ./scripts/cache-debug.sh as a guest: Age grows by at least the pause, Date stays the same
- [] Own controllers: _httpCache instead of setSharedMaxAge()
- [] Deploy script: cache:clear:http (with Varnish required from 6.7; with Redis cache:clear:all, Chapter 7), then sitemap:generate --force and cache-warmup.sh --sitemap (not cache:warmup)
- [] TTFB before/after documented

Day 9: Strategy and Invalidation

- [] TTLs defined for content Shopware does not invalidate via tags
- [] Shop-specific tracking parameters in ignored_url_parameters (built-in) or in the VCL (Varnish)
- [] Invalidation tested: change a price in the Administration, page up to date immediately?
- [] Writing interfaces (ERP, PIM) go through the API, not directly into the database
- [] Own controllers and ESI fragments attach cache tags

Day 10: Varnish and Monitoring

- [] Varnish evaluated (hit time built-in vs. Varnish, load peaks)
- [] If Varnish: VCL with xkey, varnish.yaml with use_varnish_xkey, ACL with app server IP
- [] If Varnish: PURGE after a product change seen in varnishlog
- [] Hit rate measured from the log with %{Varnish:handling}x, pass share noted

Summary

Key Takeaways

- 1. **The HTTP cache is enabled out of the box** – check whether it hits: APP_ENV=prod, test as a guest, request twice with a pause: on a hit Age grows by at least the pause and Date stays the same.
- 2. **The route decides:** Only routes with _httpCache are cached; set-SharedMaxAge() alone is not enough.
- 3. **Invalidation via tags:** Shopware invalidates whatever it writes through the DAL itself. Short TTLs only for what Shopware does not know about.
- 4. **Varnish with xkey:** Hits without PHP, real grace mode, targeted PURGE per tag. The official image is the recommended starting point.
- 5. **Measure, measure, measure:** Hit rate from the log rather than only from varnishstat, and do not forget the pass share.

What You Should Measure

Metric	How	Why
TTFB hit vs. no hit	cache-debug.sh; RUM (Chapter 12) shows the TTFB distribution before/after, not per hit	Shows the gain per page view
Hit rate (guest traffic)	varnishncsa with %{Varnish:handling}	Shows how often the gain occurs
Pass share	same log	Shows how much traffic bypasses the cache by design
Invalidations per hour	varnishlog (PURGE/BAN)	Shows whether imports or configuration changes empty the cache

Metric	How	Why
--------	-----	-----

Next Steps

The next chapter goes deeper: **Shopware’s Application Cache**. The HTTP cache caches entire pages – the application cache caches entities, configurations, and computed data. Together they form a powerful duo.

* * *

References

- HTTP Archive (2024): Web Almanac 2024 – Performance. almanac.httparchive.org – TTFB statistics: 42% of mobile websites achieve a “good” TTFB
- web.dev (2024): Time to First Byte (TTFB). web.dev/articles/ttfb – TTFB thresholds: ≤800ms = good, >1.8s = poor
- web.dev (2024): Keeping things fresh with stale-while-revalidate. web.dev/articles/stale-while-revalidate
- MDN Web Docs: Cache-Control Header. developer.mozilla.org – Browser support for stale-while-revalidate: Chrome 75, Firefox 68, Safari 14
- Cloudflare (2024): What is a Cache Hit Ratio? cloudflare.com – Benchmark: 95-99% for static content
- Shopware Documentation: HTTP Cache (Concept). developer.shopware.com
- Shopware Documentation: Caches. developer.shopware.com
- Shopware Documentation: Reverse HTTP Cache. developer.shopware.com
- Shopware: Varnish Docker image and VCL. github.com/shopware/varnish-shopware
- Shopware source code, tag v6.6.10.0: CacheResponseSubscriber, HttpCacheKeyGenerator, VarnishReverseProxyGateway, Resources/config/packages/shopware.yaml – github.com/shopware/shopware

- Shopware (2026): *Release notes 6.7.6.0 / RELEASE_INFO-6.7.md – CACHE_REWORK*, deprecated `sw-states/sw-currency` handling and HTTP cache settings. github.com/shopware/shopware
- Shopware (2025): *Update on the Shopware roadmap: next major version (6.8) planned for 2027*. shopware.com
- Varnish Modules: `vmod_xkey`. github.com/varnish/varnish-modules
- Varnish Software: *Varnish Cache Documentation*. varnish-cache.org

Chapter 7: Mastering Shopware's Application Cache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.1 Understanding the Cache Architecture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Cache Layers in Shopware 6

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Most Important Cache Pools

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cache Adapters

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.2 Understanding the Default Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Show the Current Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Default Configuration (Filesystem)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.3 Redis as Cache Backend

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Installing Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Configuring Shopware for Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis Instances by Data Category

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Tag Keys Without TTL

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Carts in Redis (from 6.6.8.0)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.4 Sessions in Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Configuring the Session Handler

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Files or Redis?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Diagnosing Session Problems

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.5 Cache Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

How Cache Tags Work

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automatic Invalidation in Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Manual Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Programmatic Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Invalidation During Large Imports

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.6 Cache Warming

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What `cache:warmup` Warms — and What It Does Not

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Requesting Pages After the Deployment

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automatic Warming After Deployment

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.7 Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: Cache Is Not Used

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: Stale Data

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: Redis Connection Errors

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 4: Redis Memory Full

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 5: Cache Stampede

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7.8 Performance Measurement

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measuring the Hit Rate

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Symfony Profiler

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Benchmark: Filesystem vs. Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Days 11-12

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 11: Set Up Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 12: Optimize the Cache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Expected Improvements

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 8: Database Optimization for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.1 Shopware's Database Architecture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Entity-Attribute-Value Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Most Important Tables

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Estimating Database Size

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.2 MySQL/MariaDB Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Most Important Parameters

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Applying Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sizing the Buffer Pool Correctly

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.3 Slow Query Analysis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Enabling the Slow Query Log

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Analyzing Slow Queries

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Most Common Performance Killers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.4 Index Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Analyzing Existing Indexes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Finding Unused Indexes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware-Specific Index Recommendations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When NOT to Index

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

MySQL 8.0: sys Schema, Invisible Indexes & CTEs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

MariaDB 10.11: Where It Differs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.5 Optimizing the Shopware DAL

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Using Criteria Correctly

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Avoiding Associations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Using Aggregations Efficiently

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Using IDs Instead of Entities

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Batching for Large Data Sets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.6 Caching Your Own Queries

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.7 Shopware Storage Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Increment Storage

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Number Ranges

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lock Storage

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.8 Database Maintenance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Regular Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automated Maintenance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Controlling Database Size

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.9 Replication and Read Replicas

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Setting Up a MySQL Read Replica

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When Read Replicas Make Sense

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8.10 Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: “Too many connections”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: Lock Wait Timeout

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: Disk Space Consumed by Binary Logs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 4: A Query Suddenly Takes Much Longer

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Day 13-14

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 13: Analysis and Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 14: Query Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Expected Improvements

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 9: Optimizing PHP Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Goal of This Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Technical

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Knowledge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Tools

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Check and Update PHP Version

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

2026 recommendation: PHP 8.3 as the safe baseline — PHP 8.4 as forward path

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Configure OPcache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Monitoring OPcache Status

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2.5: Enable OPcache Preloading

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When preloading is worth it

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Verification

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Evaluate the JIT Compiler

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

First check: is JIT running at all?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measuring JIT

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 4: Size PHP-FPM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Choosing the process-manager mode (static / dynamic / ondemand)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 5: Optimize php.ini for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

CLI-Specific Settings

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 6: Connect Nginx with PHP-FPM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 7: FrankenPHP Outlook

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When evaluation pays off

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code (Caddyfile skeleton)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Day 15-16

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP-FPM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Verification

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Achieved

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Expected Improvements

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Time Investment

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

More Complex Scenario?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 10: Redis for High Availability

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Goals for This Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Technical

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Knowledge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Tools

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Understanding the Problem – Single Point of Failure

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measuring the Impact

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Choosing the Right Solution – Sentinel vs. Cluster

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Decision Matrix

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Building the Redis Sentinel Architecture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Secrets Management — Avoiding Plain-Text Passwords

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis 7.x ACLs — Fine-Grained Authorization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

TLS Encryption for Redis & Sentinel

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Memory Eviction Policies: Choose Per Instance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

On success `ckquorum` returns a status line that begins with `OK`. In scripts, check for that `OK` only and not for the full text — the rest of the line is not a guaranteed format.

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 4: Testing Failover

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 5: Configuring Shopware for Sentinel

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Predis vs phredis – Choosing a Client

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 6: Setting Up Monitoring and Alerting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Day 17-18

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis installation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis Sentinel (high availability)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Monitoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Achieved

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measured Improvements

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Architecture Recommendation by Store Size

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Time Required

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis is highly available. In the next chapter (Chapter 11) we integrate a CDN: distribute static assets globally, reduce latency, and take load off the origin server. Because the fastest response is the one that never reaches your server at all.

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

More Complex Scenarios?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 11: CDN Integration for Global Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In this chapter you will learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.1 How a CDN works

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Core Principle

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What belongs in the CDN?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

CDN advantages in detail

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

HTTP/3 (QUIC) at the CDN Edge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.2 CDN Provider Comparison

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Overview for the DACH Region

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommendation by use case

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.3 Setting up Cloudflare (Recommended)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Add domain

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Configure SSL/TLS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Caching rules

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 4: Page Rules for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 5: Optimize cache settings

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.4 Configuring Shopware for CDN

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The configuration that takes the shop down

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The configuration that works

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Shopware does not read

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Rebuilding theme assets after changes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Forward note: caching-system rework in Shopware 6.7.6

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.5 Setting Cache Headers Correctly

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Nginx configuration for static assets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What actually determines the cache key

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Early Hints (HTTP 103) for asset preload

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Brotli levels: per use case, not just a toggle

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.6 Cache Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What tags Shopware actually sends

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Triggering the purge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What tags do not cover

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The three invalidation patterns compared

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare: rate limits rather than plan barriers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Purging media files? Mostly pointless

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.7 CDN for Dynamic Content

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Caching HTML at the edge – with Shopware’s own means

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare Workers for Edge Logic

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.8 Image Optimization at the Edge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare Polish (Pro Plan)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Bunny CDN Optimizer

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare Images (Alternative)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.9 Security: DDoS and WAF

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare Security Settings

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Under Attack Mode (Emergency)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.10 Measuring Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cloudflare Analytics

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Real User Monitoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checking cache status

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lighthouse with CDN

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.11 Optimizing Costs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Understanding traffic costs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Strategies for cost reduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

11.12 Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: Cache not working

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: Stale content

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: Mixed content errors

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 4: CORS errors

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 5: Checkout, account or store API return 404

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 6: HTTP 500 after applying the CDN configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 7: Slow origin responses

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Day 19-21

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 19: CDN Setup

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 20: Shopware Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Day 21: Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Where you read the effect

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

CDN Decision Tree

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 12: Real User Monitoring (RUM)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.1 RUM vs. Synthetic Monitoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Fundamental Difference

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When to Use Which Approach?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Combination Is Key

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.2 Core Web Vitals

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Three Metrics

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Google Actually Measures

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.3 The web-vitals Library

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Which Version?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Integrating Without a Third-Party CDN

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware Theme Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Measuring Script

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.4 Collecting RUM Data

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Option 1: Google Analytics 4

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Option 2: Custom RUM Endpoint

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Option 3: Cloudflare Web Analytics

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Option 4: Managed RUM (Sentry, Datadog, SpeedCurve)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.5 Evaluating RUM Data

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Percentiles from the Log File

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why No Database View?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Grafana and Friends

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.6 Setting Up Alerting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Thresholds

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cron Job for Regular Checks

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.7 Interpreting RUM Data

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recognizing Typical Patterns

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Segmentation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

12.8 Practical Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

RUM Implementation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Evaluation & Monitoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Alerting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What RUM Shows You

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 13: Continuous Performance Testing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.1 Why Automated Performance Tests?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Regression Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What CI Performance Tests Catch

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.2 Lighthouse CI Setup

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Installation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Lighthouse CI Measures Against

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Basic Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Local Test

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.3 Defining Performance Budgets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Budget Types

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommended Budgets for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Budget File (Alternative)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.4 GitHub Actions Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Workflow for Pull Requests

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Testing After Every Deployment

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.5 GitLab CI Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.6 LHCI Server for Trend Analysis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Docker Setup

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting the Server

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Adjusting the CI Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What the Server Offers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.7 Shopware-Specific Tests

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Limits per Page Type

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

With Authentication (Account Pages)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.8 Alerting on Regression

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Slack Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Blocking Pull Requests

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.9 Practical Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Basic Setup

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Budgets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Maintenance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

13.10 Load Testing: k6 and Locust

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Have Achieved

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 14: Establishing a Performance Culture in Your Team

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

1. Performance as Shared Responsibility

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Silo Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The SRE Principle: Shared Ownership

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Error Budgets: The Key to Balance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Implementation for Shopware Teams

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

2. Establishing Performance Champions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Is a Performance Champion?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Champion Program

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Champion Onboarding Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Champion Overview

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

3. Code Reviews with a Performance Focus

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Google's Code Review Standard

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Review Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automated Performance Checks in PRs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Impact Labels

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Review Comment Templates

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4. Blameless Postmortems

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why Blameless?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Incident Template

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Postmortem Process

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Postmortem Meeting Facilitation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5. Continuous Feedback Culture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Netflix Model: Continuous Feedback

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Applying This to Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Developer Experience Surveys

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Metrics for Performance Culture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

6. Sharing Performance Knowledge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Knowledge Sharing Formats

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Onboarding for New Team Members

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Gamification (Optional)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7. Organizational Anchoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance in OKRs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Budget for Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Management Reporting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8. Common Culture Problems and Solutions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: “Performance Is Not My Job”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: “We Have No Time for Performance”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: “Our Performance Is Good Enough”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 4: Blame Culture After Incidents

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary: Week 4, Day 26-27

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Quick Wins (Implement Immediately)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 15: The Long-Term Performance Plan

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

1. The 12-Month Roadmap

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why 12 Months?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Roadmap Template

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Detailed Quarterly Planning

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

2. Quarterly OKRs for Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

OKR Framework

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Example OKRs for Different Maturity Levels

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

OKR Tracking Process

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

3. Managing Technical Debt

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why Performance Debt Is Insidious

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Technical Debt Categories

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Splitting Capacity: 25% for Debt

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Tech Debt Tracking

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

4. Performance Budgets Long-Term

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Budget Evolution

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Quarterly Budget Review

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Dynamic Budgets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

5. Establishing a Maintenance Rhythm

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Performance Calendar

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automated Maintenance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

6. Scaling Performance Work

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

From Solo Champion to Team

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Governance for Larger Organizations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

7. Measuring Success: KPIs for the Full Year

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Leading vs. Lagging Indicators

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Annual Dashboard

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

8. Avoiding Common Long-Term Mistakes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 1: “Set and Forget”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 2: Overly Ambitious Goals

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 3: Siloed Performance Work

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 4: Tool Overload

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Day 28-30

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Roadmap & OKRs

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Technical Debt

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Maintenance Rhythm

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Monitoring & Alerting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary: Day 28-30

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The 30-Day Journey: Completion

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Comes After Day 30?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Section

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 16: Shopware 6 Themes - Performance Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Will Learn in This Chapter:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Companion Repository

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Where the Theme Ends Up

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Understanding and Optimizing theme.json

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Basic Structure

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

@StorefrontBootstrap Instead of @Storefront

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Do Not Import Bootstrap Again

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

SCSS Variables and Bootstrap Overrides

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Override Order

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Bootstrap Switches

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Dependent Variables: \$btn-padding-x

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

JavaScript Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What a Theme Can Change About the JavaScript

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Registering Plugins Asynchronously

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Deregistering Plugins

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing Twig Templates

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Multi-Inheritance with sw_extends

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Block Overrides with parent()

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lazy Loading for Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Implementing Critical CSS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Solution 1: Use a Plugin

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Solution 2: Manual Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

ESI for Header and Footer (Shopware 6.7)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Build Tools: Webpack, in 6.7 as Well

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measuring Theme Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Bundle Analysis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lighthouse CI Integration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Defining a Performance Budget

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Theme Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

SCSS/CSS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

JavaScript

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Templates

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Build

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Avoiding Common Mistakes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 1: Importing Bootstrap Again

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 2: sw_use in Shopware 6.6

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 3: Lazy Loading Above the Fold

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 4: Mistaking theme:compile for a Cache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mistake 5: Overriding a Block That Does Not Exist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 17: Shopware 6 Plugins - Performance Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

App System vs. Plugin System from a Performance Perspective

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Companion Repository

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Using the DAL Efficiently

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem: Too Many Associations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Best Practice: Load Only What You Need

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

DBAL for Internal Processes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing Event Subscribers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Event Loop Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Best Practice: Guard Clauses and DBAL

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Changesets Only When Needed

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Message Queue for Asynchronous Processing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why the Admin Worker Is Problematic

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Production Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

CLI Worker with Supervisor

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Async Message Handler

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Controlling Cache Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem: Mass Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Delayed Invalidation Against Mass-Purge Spikes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Adding Custom Cache Tags

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Controlled Cache Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing Entity Indexers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Known Performance Issues

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Best Practice: Optimized Indexer

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Analyzing Plugin Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measure First: The Page With and Without the Plugin

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Profilers: Blackfire and Tideways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Subscriber Analysis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Checklist for Plugins

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Development

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Message Queue

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Caching

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Indexers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 18: Shopware 6 Elasticsearch

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In this chapter you will learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Companion Repository

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.1 Elasticsearch vs. MySQL: When Does the Switch Pay Off?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Performance Reality

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Benchmark: MySQL vs. Elasticsearch (orders of magnitude)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The 30,000-Product Rule

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.2 Elasticsearch vs. OpenSearch: Which One to Use?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware core: both engines are supported in parallel

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When is OpenSearch genuinely required?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Version matrix (corrected)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Which engine we recommend, when

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

OpenSearch Installation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.3 Heap Configuration: The Most Important Setting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The 50% Rule, with a caveat first

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

JVM Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Size Recommendations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.4 Shopware ES Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The path the bundle actually takes: environment variables

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What happens when Elasticsearch goes down?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What a custom YAML is still for

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Four traps in this file, all measured

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

refresh_interval: live mode, bulk – and what Shopware overwrites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.5 Optimizing for the German Language

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Custom German Analyzer

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The step almost every guide leaves out

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Compound splitting: “Kinderschuhe” should find “Schuhe”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Dictionary: where from and how to prepare it

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Higher quality with hyphenation_decompounder (advanced)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Synonyms — and why they are not wired into the chain here

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checking that the analyzer does what you think

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.6 Customizing Index Mapping

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Extending the Default Mapping

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Relevance: field weights do not belong in code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When the admin weights are not enough

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.7 Optimizing Indexing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The right command – and why it is not enough on its own

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The `refresh_interval` pattern that does not work for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Force-merge: not as a standard step

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Reindex script

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Your own bulk imports: `IndexingOptimizer`

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.8 Query Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Identifying slow queries

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Filter vs. query

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing aggregations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.9 Monitoring and Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Health check

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Common problems

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: “Cluster status: yellow”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: High heap usage

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: Slow indexing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Per-index metrics

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Benchmark

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.10 Migration: From MySQL to Elasticsearch

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Migration checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step by step

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Before you switch over: rehearse the outage

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.11 Advanced: Multi-Index Strategies

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

How Shopware actually names its indices

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Shopware-native way: `bin/console es:index`

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Manual alias pattern — only for your own indices

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Multi-sales-channel & multi-language

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

18.12 Vector & Hybrid Search (ES 8.x forward look)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What changed with ES 8.x – with the right versions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why it matters for shop search

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Status in Shopware (as of September 2026)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When is the effort worth it?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The additive route – and the trap that hollows out the catalog

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Hybrid query with RRF — and the licence question

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The OpenSearch counterpart

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Caveats for production

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 19: Mobile Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In This Chapter You Will Learn:

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Companion Repository

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.1 Understanding the Mobile Performance Gap

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Traffic vs. Conversion

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why Mobile Converts Worse

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Target Value

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

A 0.1-Second Optimization Counts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.2 Google Mobile-First Indexing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Status Since July 2024

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Content Parity

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Technical Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Viewport Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.3 Mobile Core Web Vitals

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Thresholds

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mobile vs. Desktop CWV

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing LCP on Mobile

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimizing INP on Mobile

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Avoiding CLS on Mobile

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.4 Touch Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Touch Target Sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What the Default Theme Delivers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Form Fields: 16 px Against the iOS Zoom

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Swipe Gestures

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.5 Responsive Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

srcset and sizes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

picture Element for Art Direction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.6 Service Worker & Offline Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why Service Workers?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Caching Strategies

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Service Worker Implementation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Serving and Registering the Service Worker

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.7 Mobile Checkout Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What the Default Checkout Already Brings

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Express Checkout

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.8 PWA for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PWA Building Blocks

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Web App Manifest

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware PWA / Composable Frontends

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommendation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.9 Network-Aware Loading

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Connection API

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Respecting Data Saver Mode

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

19.10 Mobile Performance Testing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lighthouse Mobile Audit

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

WebPageTest Mobile

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Real Device Testing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Steps

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 20: A/B Testing & Performance Experiments

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Goal of This Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Define Hypothesis and Metric

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Four Decisions

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Calculate the Sample Size

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Practical Example

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Fix the Run Time

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Assign Visitors Cache-Safely

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why the New Assignment Is “private”

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 4: One Cache Key per Variant

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Need to Know

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 5: Measurements per Variant from RUM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Need to Know

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 6: Analyze Once, at the End

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Analyze

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sample Ratio Mismatch

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Practical Example: Load the First Listing Images Immediately

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Point

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Hypothesis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Template

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Experiment Plan

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

After the Test

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Common Mistakes in Shopware A/B Tests

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Build vs. Buy: A/B Testing Platforms

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 21: Third-Party Scripts & Tag Management

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Goal of This Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Prerequisites

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 1: Audit Third-Party Scripts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 2: Load Google Tag Manager After Consent

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code: Entry in the Cookie Banner

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code: Loader in the Template

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 3: Clean Up the GTM Container

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 4: Consent Mode and Your Own Scripts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 5: Use Partytown for Web Workers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Installation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 6: Load Widgets Only on the Pages That Need Them

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Code

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 7: Monitor the Budget in CI

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 8: Check Payment Provider Scripts

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Approach

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Step 9: Server-Side Tagging with GTM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Do

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Architecture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Implementation in Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Result

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Third-Party Audit

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Inventory

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Budgets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 22: The 20 Most Common Performance Problems

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Overview

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 1: Slow Database Queries

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 2: HTTP Cache Not Active

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 3: Oversized JavaScript Bundles

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 4: Unoptimized Images

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 5: Missing Preconnects

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 6: Render-Blocking CSS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 7: N+1 Query Problem

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 8: Session Lock Blocking

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 9: Heavy Cart Calculations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 10: Too Many Plugins

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 11: Elasticsearch Not Configured

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 12: OPcache Not Enabled

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 13: Debug Mode in Production

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 14: Missing Gzip Compression

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 15: Background Processes That Pile Up

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 16: Theme Leftovers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 17: Large Log Files

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 18: CDN Not Configured

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 19: Synchronous API Calls

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Problem 20: Missing Browser Cache Headers

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Quick Reference: Diagnostic Commands

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Performance Troubleshooting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Diagnosis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Quick Checks

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

After Resolving

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 23: Five Performance Transformation Scenarios

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Case Study 1: Enterprise Telecommunications — Managing a Launch Meltdown

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Situation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Challenge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Solution

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Results

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lessons Learned

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Applicability to Shopware 6

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Case Study 2: Swiss Fashion Shop – Mobile-First Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Situation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Challenge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Solution

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Results

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lessons Learned

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Case Study 3: B2B Industrial Supplies — Scaling Search

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Situation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Challenge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Solution

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Results

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lessons Learned

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Case Study 4: Black Friday Survival – The Night Everything Fell Apart

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Situation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Night Before Black Friday

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Went Wrong

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Recovery (Live Firefighting)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What We Learned

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Preventive Checklist for Peak Events

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Case Study 5: International Marketplace – Scaling Multi-Tenant

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Starting Situation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Challenge

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Solution

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Results

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Lessons Learned

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary: Patterns Across All Case Studies

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Always Works

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Rarely Works

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The One Pattern That Connects Everything

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Next Chapter

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

References

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Chapter 24: Outlook – New Technologies and Trends

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Introduction

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Core Web Vitals Evolution: INP Replaces FID

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Problem with FID

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Interaction to Next Paint (INP)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What This Means for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommendations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

HTTP/3 and QUIC: The New Transport Protocol

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why HTTP/2 Is Not Enough

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What QUIC Does Differently

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

In Practice: Enabling HTTP/3 for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What Is Measurable

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Edge Computing: Running Code Closer to the User

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Concept

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Use Cases for Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When Does Edge Computing Pay Off?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware Roadmap: What Is Coming?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware 6.6 and Beyond

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Headless-First Strategy

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

What You Can Prepare Now

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

AI-Assisted Performance Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automatic Anomaly Detection

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Predictive Scaling

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Automated Image Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Realistic Assessment

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Composable Commerce: The Future of Architecture

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

From Monolith to Composable

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Advantages

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Risks

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

When to Go Composable?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Green IT: Performance as a Sustainability Factor

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Connection

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Measuring the CO2 Footprint

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Concrete Measures

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Sustainability Argument for Stakeholders

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklist: Future-Proofing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Technology Radar

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Architecture Preparation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Team and Processes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sustainability

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Summary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Key Takeaways

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The Future of Performance Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Appendix A: Glossary

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

A

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

B

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

C

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

D

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

E

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

F

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

G

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

H

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

I

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

J

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

K

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

L

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

M

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

N

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

O

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

P

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Q

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

R

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

S

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

T

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

V

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

W

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Z

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Appendix B: Code Snippets Reference

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP / Shopware 6

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Making Your Own Route Cacheable

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Cache Tags for Invalidation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

DAL: Loading Only the Fields You Need

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Message Queue Handler

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Configuration

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Sessions in Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

JavaScript

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Finding the LCP Element

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Bash / Shell

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recognizing an HTTP Cache Hit

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Warming the Cache After a Deploy

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checking OPcache in PHP-FPM

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

SQL

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Slow Query Log

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Buffer Pool and Database Size

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Unused and Duplicate Indexes

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Twig

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Including Critical CSS

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Loading the LCP Image Immediately

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Additional Snippets

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Appendix C: Configurations

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

OPcache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP-FPM pool

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Nginx

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware 6 vHost

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Gzip

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Brotli

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

HTTP cache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Elasticsearch

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Message Queue

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

MySQL / MariaDB

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Supervisor

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Logrotate

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Environment (.env.local)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Appendix D: Resources & Links

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Official Documentation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Core Web Vitals

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Tools

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Measurement

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Profiling & Debugging

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Image Optimization

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Load Testing

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Monitoring

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

A/B Testing & Experimentation

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Books & Articles

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP & Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Recommended Articles

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Community & Support

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Services & Hosting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

CDN

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Managed Shopware Hosting

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Performance Audit (the Author's Offering)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Companion Repository

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Checklists

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Pre-Launch Performance Checklist

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Core Web Vitals Target Values

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Appendix E: Cheat Sheet — Shopware performance at a glance

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Core Web Vitals

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Further metrics (not Core Web Vitals)

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Infrastructure guide values

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Shopware CLI commands

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

MySQL/MariaDB

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Redis

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

PHP/OPcache

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Configuration paths

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Quick health check

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

The 20 most common problems – quick reference

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

About the Author

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Mehmet Gökçe

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Professional Background

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Expertise

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Why This Book?

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Contact

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Further Resources

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.

Book Feedback

This content is not available in the sample book. The book can be purchased on Leanpub at <https://leanpub.com/shopware-performance-en>.