

## Using Webpagetest

*Performance is a hugely important area of web development. If your site runs slowly, users are going to leave, and the problem only grows as your site gets more popular. Pro JavaScript Performance gives you the tools you need to keep your sites smooth and responsive no matter how many users you have. Best practices are changing or becoming redefined continually because of changes and optimizations at the interpreter level, and differences in system configuration, and network speeds. This is exacerbated by the quickened release schedule that most browsers have adopted. Just as important as following best practices is the ability to measure your own performance, so that you can adjust as times change, and so that you can note the subtle nuances in your own code and define your own best practices by your own observations. This book gives you the tools to observe and track the performance of your web applications over time from multiple perspectives, so that you are always aware of, and can fix, all aspects of your performance.*

*This book constitutes the proceedings of the 19th International Conference on Passive and Active Measurement, PAM 2018, held in Berlin, Germany, in March 2018. The 20 full papers presented in this volume were carefully reviewed and selected from 50 submissions. The papers demonstrate the import and extent to which measurements pervade systems – from protocols to performance to security. They are organized in the following topical sections: models and inference; security and privacy; CDNs; DNS; certificates; interdomain routing; and analyzing protocols.*

*This book constitutes the proceedings of the 12th International Conference on Internet and Distributed Systems held in Naples, Italy, in October 2019. The 47 revised full papers presented were carefully reviewed and selected from 145 submissions. This conference desires to look for inspiration in diverse areas (e.g. infrastructure & system design, software development, big data, control theory, artificial intelligence, IoT, self-adaptation, emerging models, paradigms, applications and technologies related to Internet-based distributed systems) to develop new ways to design and manage such complex and adaptive computation resources.*

*As a web designer, you encounter tough choices when it comes to weighing aesthetics and performance. Good content, layout, images, and interactivity are essential for engaging your audience, and each of these elements have an enormous impact on page load time and the end-user experience. In this practical book, Lara Hogan helps you approach projects with page speed in mind, showing you how to test and benchmark which design choices are most critical. To get started, all you need are basic HTML and CSS skills and Photoshop experience. Topics include: The impact of page load time on your site, brand, and users Page speed basics: how browsers retrieve and render content Best practices for optimizing and loading images How to clean up HTML and CSS, and optimize web fonts Mobile-first design with performance goals by breakpoint Using tools to measure performance as your site evolves Methods for shaping an organization's performance culture*

*12th International Conference, IDCS 2019, Naples, Italy, October 10–12, 2019, Proceedings*

*A Practical Guide for Beginners*

*Concepts, Methodologies, Tools, and Applications*

*Fast ASP.NET Websites*

*Essential Knowledge for Front-End Engineers*

*Learning HTTP/2*

*Beginning Progressive Web App Development*

Want your web site to display more quickly? This book presents 14 specific rules that will cut 25% to 50% off response time when users request a page. Author Steve Souders, in his job as Chief Performance Yahoo!, collected these best practices while optimizing some of the most-visited pages on the Web. Even sites that had already been highly optimized, such as Yahoo! Search and the Yahoo! Front Page, were able to benefit from these surprisingly simple performance guidelines. The rules in High Performance Web Sites explain how you can optimize the performance of the Ajax, CSS, JavaScript, Flash, and images that you've already built into your site -- adjustments that are critical for any rich web application. Other sources of information pay a lot of attention to tuning web servers, databases, and hardware, but the bulk of display time is taken up on the browser side and by the communication between server and browser. High Performance Web Sites covers every aspect of that process. Each performance rule is supported by specific examples, and code snippets are available on the book's companion web site. The rules include how to: Make Fewer HTTP Requests Use a Content Delivery Network Add an Expires Header Gzip Components Put Stylesheets at the Top Put Scripts at the Bottom Avoid CSS Expressions Make JavaScript and CSS External Reduce DNS Lookups Minify JavaScript Avoid Redirects Remove Duplicates Scripts Configure ETags Make Ajax Cacheable If you're building pages for high traffic destinations and want to optimize the experience of users visiting your site, this book is indispensable. "If everyone would implement just 20% of Steve's guidelines, the Web would be dramatically better place. Between this book and Steve's YSlow extension, there's really no excuse for having a sluggish web site anymore." -Joe Hewitt, Developer of Firebug debugger and Mozilla's DOM Inspector "Steve Souders has done a fantastic job of distilling a massive, semi-arcane art down to a set of concise, actionable, pragmatic engineering steps that will change the world of web performance." -Eric Lawrence, Developer of the Fiddler Web Debugger, Microsoft Corporation

Cloud computing is changing the way businesses and users interact with computers and mobile devices. Gone are the days of expensive data centers, racks of disk drives, and large IT support teams. In their place are software applications delivered to users on demand from the cloud, high-capacity, auto-replicated, secure cloud-based disk-storage and databases, virtualized-server and desktop environments, and cloud-based collaboration tools which support on-premise-, remote-, and hybrid-team success. Within the pages of Cloud Computing, readers will find a hands-on introduction to the cloud, which will have them using cloud-based data storage to store personal documents and to share photos and other digital media with other users and their own various devices, performing cloud-based automated backups, and using other cloud-based applications by the end of Chapter 1! Readers will learn specifics about software as a service (SaaS), platform as a service (PaaS), infrastructure as a service (IaaS), server and desktop virtualization, and much more. Each chapter of the book presents a cloud topic, examines the underlying business case, and then takes the reader on a test drive. The chapters are filled with real-world case studies. The book's content is ideal for users wanting to migrate to the cloud, IT professionals seeking knowledge on cloud fundamentals, developers who will build the cloud solutions of the future, and CIOs wanting insights on the most recent cloud solutions.

How To Start a Blog From Scratch? Chapter 1: UNDERSTAND YOUR "WHY" TO MAKE MONEY ONLINE. Various persons have various situations, or various thoughts to start blogging. Whether you want to create your

own brand, or simply to express your thoughts, or to share your skill for who wants to learn, or disliking current job, or need passive income, or wants to try a new thing, etc. like this everyone has their own reasons. Most bloggers are motivated by a desire to share their knowledge, expertise, and insider information on a topic. Passion, on the other hand, isn't enough to pay the bills. What happens if an article gets popular on Pinterest, Facebook and you receive a lot of traffic if you don't have a strategy behind it? You might get a few more email subscribers or readers, but your bank account won't notice. That's why you need the hottest point to succeed in blogging and to keep you on fire and make money from it. Chapter 2: HOW TO CHOOSE PERFECT NICHE TO MAKE MONEY. What is a Blog Niche? and How to choose a Blog Topic? Chapter 3: IF YOUR NICHE IS Gardening. For example, you selected the niche. But you don't know what to write. This chapter will help you how to develop the content. Chapter 4: HOW TO WRITE A BLOG POST? What is a blog post? You will never get run out of ideas for writing blog posts. Chapter 5: KEYWORD RESEARCH. WHAT, WHY, and HOW to do keyword research? HOW TO FIND KEYWORD IDEAS? Identifying 'seed' keywords. Use Free & Paid Tools for Keyword ideas. Look at the keywords that your competitors are ranking for. Research your niche. Chapter 6: How to APPLY SEO for the blog post. What Is Blog SEO? FACTORS TO BE CONSIDERED FOR SEO TYPES OF SEO 1. On-Page SEO 2. Off-Page SEO 3. Technical SEO In On-Page SEO, What Is On-Page SEO? What are the on-page SEO ranking factors that I should focus on? Advanced On-Page SEO Tips. In Off-Page SEO, What Is Off-Page SEO? Why Off-Page SEO Matters? Best Off-Page SEO Techniques. Types of Off-Page SEO Links. What are the best ways to gain high-quality links for your website? Most effective link-building techniques. Bonus Off-Page SEO Techniques. In Technical SEO, What Is Technical SEO and How Does It Work? What Is the Importance of Technical SEO? Technical SEO Best Practices. Technical Vs. On-Page Vs. Off-Page SEO: What's The Difference? Chapter 7: Best Blog Hosting Providers (Affordable and Fast Hosting) THINGS TO KNOW IN WEB HOSTING: What is web hosting? How does web hosting work? What are the types of Webhosting? Which web hosting is best? What is bandwidth in Webhosting? What are the main differences between shared hosting and VPS? What kind of hosting do I need? What is an SSL certificate? Can I buy hosting without a domain name? Can I upgrade my hosting plan as my website grows? Does My Hosting Choice Depend on my computer's OS (MAC, WINDOWS, LINUX)? Chapter 8: HOW TO BUILD A BLOG? Developing the mindset of a successful blogger. What are the requirements for starting a blog? Choosing the perfect domain name, WHY it Matters? What Is a Content Management System (CMS)? Which is the Best CMS Platform? How to start & setup a WordPress blog on Bluehost. Best FAQs like: Where can I get free images for my blog? How many images should be in a blog post? How is the blog post responsive to all types of devices? (Desktop, mobile, tablet) and many more... Chapter 9: Essential Things You Should Do After Launching Your Blog. CRAWLING, RENDERING, AND INDEXING (Submitting Websites To Search Engines). Check Your Site's Speed. Establish a Strong Social Media Presence. Repurpose Into Other Formats. Chapter 10: CAMPAIGNING (How-to-promote-your-blog). Optimize your blog for search engines. Bonus miscellaneous ways to get traffic. Chapter 11: HOW TO MAKE MONEY FROM BLOGGING. 22 Best Blog Monetization Methods.

The unprecedented scale at which data is both produced and consumed today has generated a large demand for scalable data management solutions facilitating fast access from all over the world. As one consequence, a plethora of non-relational, distributed NoSQL database systems have risen in recent years and today's data management system landscape has thus become somewhat hard to overlook. As another consequence, complex polyglot designs and elaborate schemes for data distribution and delivery have become the norm for building applications that connect users and organizations across the globe – but choosing the right combination of systems for a given use case has become increasingly difficult as well. To help practitioners stay on top of that challenge, this book presents a comprehensive overview and classification of the current system landscape in cloud data management as well as a survey of the state-of-the-art approaches for efficient data distribution and delivery to end-user devices. The topics covered thus range from NoSQL storage systems and polyglot architectures (backend) over distributed transactions and Web caching (network) to data access and rendering performance in the client (end-user). By distinguishing popular data management systems by data model, consistency guarantees, and other dimensions of interest, this book provides an abstract framework for reasoning about the overall design space and the individual positions claimed by each of the systems therein. Building on this classification, this book further presents an application-driven decision guidance tool that breaks the process of choosing a set of viable system candidates for a given application scenario down into a straightforward decision tree.

Web Information Systems and Technologies

Techniques and Tips for Optimizing Web Site Performance

18th International Conference, PAM 2017, Sydney, NSW, Australia, March 30-31, 2017, Proceedings

Scalability Rules

High Performance Mobile Web

Beginning Responsive Web Design with HTML5 and CSS3

**Despite working on the web every day, few developers have a good word to say about the monster they've created. Achingly slow sites with annoying overlays, cookie agreements, instant notifications, and obtrusive ads litter the web landscape. While there may be some excuses for complex web applications, there's little justification for sluggish content-based and ecommerce sites. People are notoriously impatient, and an unresponsive site receives fewer visitors and conversions. This practical, short book provides advice, tips, and best practice for improving website performance, ranging from quick, five-minute configuration changes to major website overhauls. We primarily concentrate on front-end activities and server configurations to optimize the code delivered to a browser. Some back-end tips are provided, but this is often specific to your application, framework, database, and usage patterns. Server-side performance can often be improved with additional or more powerful computing resources. Ideally, everyone involved in a project would consider performance from the start. Somewhat understandably, that rarely occurs, because no one can appreciate the speed of a website or application before it's been created. Many of the tips contained in this book can therefore be applied after your project has been delivered. Optimize the performance of your mobile websites and webapps to the extreme. With this hands-on book, veteran mobile and web developer Maximiliano Firtman demonstrates which aspects of your site or app slow down the user's experience, and what you can do to achieve lightning-fast performance. There's much at stake: if you want to boost your app's conversion rate, then tackling performance issues is the best way to start. Learn tools and techniques for working with responsive web design, images, the network layer, and many other ingredients—plus the metrics to check your progress. Ideal for web developers and web designers with HTML, CSS, JavaScript, and HTTP experience, this is your guide to superior mobile web performance. You'll dive into: Emulators, simulators, and other tools for measuring performance Basic web performance concepts, including metrics, charts, and goals How to get real data from mobile browsers on your real networks APIs and specs for measuring, tracking and improving web performance Insights and tricks for optimizing the first view experience Ways to optimize post-loading experiences and future visits Responsive web design and its performance challenges Tips for extreme performance to achieve best conversion rates How to work with web views inside native apps**

Leverage the full potential of the web to make your web sites better than native applications for every platform. Key Features Explore different models and patterns required to develop progressive web applications Create applications requiring shorter runtime for attracting more users Study different projects to understand the fundamentals of progressive web applications Book Description Are you a developer that wants to create truly cross-platform user experiences with a minimal footprint, free of store restrictions and features customers want? Then you need to get to grips with Progressive Web Applications (PWAs), a perfect amalgamation of web and mobile applications with a blazing-fast response time. Progressive Web Application Development by Example helps you explore concepts of the PWA development by enabling you to develop three projects, starting with a 2048 game. In this game, you will review parts of a web manifest file and understand how a browser uses properties to define the home screen experience. You will then move on to learning how to develop and use a podcast client and be introduced to service workers. The application will demonstrate how service workers are registered and updated. In addition to this, you will review a caching API so that you have a firm understanding of how to use the cache within a service worker, and you'll discover core caching strategies and how to code them within a service worker. Finally, you will study how to build a tickets application, wherein you'll apply advanced service worker techniques, such as cache invalidation. Also, you'll learn about tools you can use to validate your applications and scaffold them for quality and consistency. By the end of the book, you will have walked through browser developer tools, node modules, and online tools for creating high-quality PWAs. What you will learn Explore the core principles of PWAs Study the three main technical requirements of PWAs Discover enhancing requirements to make PWAs transcend native apps and traditional websites Create and install PWAs on common websites with a given HTTPS as the core requirement Get acquainted with the service worker life cycle Define service worker caching patterns Apply caching strategies to three different website scenarios Implement best practices for web performance Who this book is for Progressive Web Application Development by Example is for you if you're a web developer or front-end designer who wants to ensure improved user experiences. If you are an application developer with knowledge of HTML, CSS, and JavaScript, this book will help you enhance your skills in order to develop progressive web applications, the future of app development. This practical guide for students, researchers and practitioners offers real world guidance for data-driven decision making and innovation.

High Performance Web Sites

A Practical Guide to A/B Testing

19th International Conference, PAM 2018, Berlin, Germany, March 26-27, 2018, Proceedings

Pro JavaScript Performance

The Art of Capacity Planning

Creating a Native App Experience on the Web

Principles for Scaling Web Sites

*A practical book on website performance for web developers, concentrating mainly on front-end performance improvement. It covers plenty of solid theory, but is also packed with useful, real world hints and tips that you can use on your sites today. Topics covered include: User experience, design and performance Measuring and monitoring performance Setting up a page weight budget Network and server improvements Optimizing images and video Optimizing scripts and third party content Lean DOM operations The book also comes with a handy "cheat sheet" summarizing many of the key tips contained within the book.*

*Using Webpagetest*Oreilly & Associates Incorporated

*In the era of digital technology, business transactions and partnerships across borders have become easier than ever. As part of this shift in the corporate sphere, managers, executives, and strategists across industries must acclimate themselves with the challenges and opportunities for conducting business. Mobile Commerce: Concepts, Methodologies, Tools, and Applications provides a comprehensive source of advanced academic examinations on the latest innovations and technologies for businesses. Including innovative studies on marketing, mobile commerce security, and wireless handheld devices, this multi-volume book is an ideal source for researchers, scholars, business executives, professionals, and graduate-level students.*

*The Web Almanac is an annual research project by the web development community to better understand how the web is built and experienced. Industry experts and a team of peer reviewers and data analysts research the state of the web, one chapter at a time, focused in areas of web page composition, user experience, content publishing, and content delivery. The result is a richly detailed report brimming with insightful analysis written by subject matter experts built on a solid foundation of statistics aggregated over millions of top websites.*

*Lean Websites*

*Web Engineering*

*Cloud Computing*

*Mobile Commerce: Concepts, Methodologies, Tools, and Applications*

*Develop fast, reliable, and engaging user experiences for the web*

*Web Performance Testing for Novices and Power Users*

*Fast and Scalable Cloud Data Management*

What can your organization gain by adopting HTTP/2? How about faster, simpler, and more robust websites and applications? This practical guide demonstrates how the latest version of the Hypertext Transfer Protocol can dramatically improve website and application performance. You'll take a deep dive into HTTP/2 details, and learn how this updated protocol is changing the web landscape. HTTP/1.1 has been the primary means of communicating data across the web for the past 20 years, but the level of interaction today has gone well beyond what people envisioned in 1997. With this book, authors Stephen Ludin and Javier Garza show you how HTTP/2 will help speed the execution of modern sites

and applications. With this book, you'll explore: Performance challenges that led to the HTTP upgrade HTTP/2 in a nutshell, including benefits and transition methods Existing best practices and hacks to improve web performance HTTP/2 support for browsers, servers, proxies, and content delivery networks How the performance of sites using HTTP/2 compares to their HTTP/1.1 experience HTTP/2's effect on specific issues such as latency, packet loss, and Time to First Byte (TTFB) HTTP/2's effect on specific issues such as latency, packet loss, and Time to First Byte (TTFB)

Beginning Responsive Web Design with HTML5 and CSS3 is your step-by-step guide to learning how to embrace responsive design for all devices. You will learn how to develop your existing HTML, CSS, and JavaScript skills to make your sites work for the modern world. Web sites and apps are now accessed on a wide range of devices with varied sizes and dimensions, so ensuring your users have the best experience now means thinking responsive. In Beginning Responsive Web Design with HTML5 and CSS3 you will learn about all aspects of responsive development. You'll start with media queries, and fluid CSS3 layouts. You'll see how to use responsive frameworks such as Twitter Bootstrap, and how to use tools such as Grunt, Bower, Sass, and LESS to help save you time. You'll also learn how to use JavaScript to manage responsive states, manage your user's journey across screen sizes, and optimize your responsive site. By the end of the book you will be able to build new sites responsively, and update existing sites to be responsive. Every aspect of a responsive build will be covered. This book is perfect for developers who are looking to move into the future of responsive sites. Whether you have already dipped your toes into responsive development or are just getting started, Beginning Responsive Web Design with HTML5 and CSS3 will teach you the very best techniques to optimize your site and your user's experience.

Summary HTTP/2 in Action is a complete guide to HTTP/2, one of the core protocols of the web. Because HTTP/2 has been designed to be easy to transition to, including keeping it backwards compatible, adoption is rapid and expected to increase over the next few years. Concentrating on practical matters, this interesting book presents key HTTP/2 concepts such as frames, streams, and multiplexing and explores how they affect the performance and behavior of your websites. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology HTTP—Hypertext Transfer Protocol—is the standard for exchanging messages between websites and browsers. And after 20 years, it's gotten a much-needed upgrade. With support for streams, server push, header compression, and prioritization, HTTP/2 delivers vast improvements in speed, security, and efficiency. About the Book HTTP/2 in Action teaches you everything you need to know to use HTTP/2 effectively. You'll learn how to optimize web performance with new features like frames, multiplexing, and push. You'll also explore real-world examples on advanced topics like flow control and dependencies. With ready-to-implement tips and best practices, this practical guide is sure to get you—and your websites—up to speed! What's Inside HTTP/2 for web developers Upgrading and troubleshooting Real-world examples and case studies QUIC and HTTP/3 About the Reader Written for web developers and site administrators.

About the Authors Barry Pollard is a professional developer with two decades of experience developing, supporting, and tuning software and infrastructure. Table of Contents PART 1 MOVING TO HTTP/2 Web technologies and HTTP The road to HTTP/2 Upgrading to HTTP/2 PART 2 USING HTTP/2 HTTP/2 protocol basics Implementing HTTP/2 push Optimizing for HTTP/2 PART 3 ADVANCED HTTP/2 Advanced HTTP/2 concepts HPACK header compression PART 4 THE FUTURE OF HTTP TCP, QUIC, and HTTP/3 Where HTTP goes from here

Slow loading times break the user experience of any website — no matter how well crafted it might be. In fact, it only takes three seconds until users lose their interest in a site if they don't get a response immediately. If another site happens to be 250ms faster than yours, then users are more inclined to switch to a competitor's website in no time. Web fonts, heavy JavaScript, third-party widgets — all of them can sum up to become a real performance bottleneck. Nevertheless, tracking that down does not only improve loading times but also results in a much snappier experience and a higher user engagement. In this eBook, we've compiled an entire selection of front-end and server-side techniques that will help you tackle such bottlenecks. Find out how to speed up existing websites, build high-performance sites (for both mobile and desktop), and prepare them for heavy-load situations. Furthermore, you'll learn more about how performance improvements and a 97–99 Google PageSpeed score were achieved on Smashing Magazine, as well as how optimization strategies can enhance real-life projects by taking a closer look at Pinterest's paint performance case study. With the help of this eBook, you'll notice that it's high time to dig deeper into your own site and examine it closely. Why don't you polish it up and make it even better than it already is! TABLE OF CONTENTS: - Improving Smashing Magazine's Performance: A Case Study - How To Speed Up Your WordPress Website - You May Be Losing Users If Responsive Web Design Is Your Only Mobile Strategy - How To Make Your Websites Faster On Mobile Devices - Creating High-Performance Mobile Websites - Don't Get Crushed By The Load: Optimization Techniques And Strategies - Speed Up Your Mobile Website With Varnish - Cache Invalidation Strategies With Varnish Cache - Gone In 60 Frames Per Second: A Pinterest Paint Performance Case Study Performance Best Practices for Web Developers

Blogging: A Complete Step-By-Step Guide To Succeed.

Create Responsive, Fast and Reliable PWAs Using Angular

Web Performance Daybook Volume 2

HTTP/2 in Action

20th International Conference, ICWE 2020, Helsinki, Finland, June 9-12, 2020, Proceedings

Even Faster Web Sites

This book constitutes the proceedings of the 20th International Conference on Web Engineering, ICWE 2020, which was planned to take place in Helsinki, Finland, during June 9-12, 2020. Due to the corona pandemic the conference changed to a virtual format. The total of 24 full and 10 short contributions presented in this volume were carefully reviewed and selected from 78 submissions. The book also contains 4 PhD and 7 demo papers. The papers were organized in topical sections named: User interface technologies; performance of Web technologies; machine learning; testing of Web applications; emotion detection; location-aware applications; sentiment analysis; open data; liquid Web applications; Web-based learning; PhD symposium; demos and posters.

Testing is a critical discipline for any organization looking to deliver high-quality software. This practical book provides software developers and QA engineers with a comprehensive one-stop guide to testing skills in 10 different categories. You'll learn appropriate strategies, concepts, and practical implementation knowledge you can apply from both a development and testing perspective for web and mobile applications. Author Gayathri Mohan offers examples of more than 40 tools you can use immediately. You'll acquire the skills to conduct exploratory testing, test automation, cross-functional testing, data testing, mobile testing, and visual testing, as well as tests for performance, security, and accessibility. You'll learn to integrate them in continuous integration pipelines to gain faster feedback. Once you dive into this guide, you'll be able to tackle challenging development workflows with a focus on quality. With this book, you will: Learn how to employ various testing types to yield maximum quality in your projects Explore new testing methods by following the book's strategies and concepts Learn how to apply these tools at work by following detailed examples Improve your skills and job prospects by gaining a broad exposure to testing best practices

Performance is critical to the success of any website, and help with using today's new tools is key. In this remarkable guide, 32 leading web performance experts offer practical tips, techniques, and advice for optimizing your site's user experience. Originally written for an online calendar, this collection of articles will inspire you to squeeze every ounce of performance from your site—whether you're a web developer, mobile developer, or web designer. Check the table of contents and you'll be convinced. In order of appearance, Web Performance Daybook authors include: Patrick Meenan Nicholas Zakas Guy Podjarny Stoyan Stefanov Tim Kadlec Brian Pane Josh Fraser Steve Souders Betty Tso Israel Nir Marcel Duran Éric Daspét Alois Reitbauer Matthew Prince Buddy Brewer Alexander Podelko Estelle Weyl Aaron Peters Tony Gentilcore Matthew Steele Bryan McQuade Tobie Langel Billy Hoffman Joshua Bixby Sergey Chernyshev JP Castro Pavel Paulau David Calhoun Nicole Sullivan James Pearce Tom Hughes-Croucher Dave Artz

Harness the power of Angular to build fast, high performance progressive web apps that work offline. Learn exactly how to create an Angular Progressive Web App (PWA) from scratch, how you can use different tools to audit and improve it, and leverage Angular CLI or Workbox to turn your app into a PWA. Using browser APIs — including the Credential Management, Payment Request, Geolocation, Web Bluetooth, WebUSB and Generic Sensors APIs — you can unleash the potential of PWAs and build applications that enhance user experience. Angular's game-changing built-in features, including the Angular service worker module, can be leveraged to construct responsive and reliable PWAs that can look and feel just like native mobile apps. You'll learn how to boost your app speed, how to increase user engagement using push notifications, and how to implement offline storage and different caching APIs in Angular. You'll even see how to convert an existing Angular app into a PWA. Whether you're new to building PWAs, or want to learn how to use Angular to improve your app development, Progressive Web Apps with Angular provides the know-how to build and deploy an Angular PWA. What Readers Will Learn Build an Angular app that looks and feels just like a native mobile app Audit and improve an Angular PWA with different tools Increase user engagement by using push notifications Offline storage and different caching APIs in Angular Implement modern technologies into an Angular PWA Who This Book Is For Developers with basic knowledge of HTML, JavaScript and Angular Information Systems Architecture and Technology: Proceedings of 39th International Conference on Information Systems Architecture and Technology — ISAT 2018

Designing for Performance

Trustworthy Online Controlled Experiments

Progressive Web Apps with Angular

Search Engine Optimization

Best Practices for Optimizing Mobile Web Apps

Hardware and Software: Verification and Testing

**Summary Progressive Web Apps teaches you PWA design and the skills you need to build fast, reliable websites by taking you step-by-step through real world examples in this practical tutorial. Foreword by Addy Osmani, Google. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications. About the Technology Offline websites that work. Near-instant load times. Smooth transitions between high/low/no bandwidth. Fantasy, right? Not with progressive web applications. PWAs use modern browser features like push notifications, smart caching, and Service Workers to manage data, minimize server usage, and allow for unstable connections, giving you better control and happier customers. Better still, all you need to build PWAs are JavaScript, HTML, and the easy-to-master techniques you'll find in this book. About the Book Progressive Web Apps teaches you PWA design and the skills you need to build fast, reliable websites. There are lots of ways you can use PWA techniques, and this practical tutorial presents interesting, standalone examples so you can jump to the parts that interest you most. You'll discover how Web Service Workers vastly improve site loading, how to effectively use push notifications, and how to create sites with a no-compromise offline mode. What's Inside Improved caching with Service Workers Using manifest files and HTML markup Push notifications Offline-first web designs Techniques for data synchronization About the Reader Written for readers with experience developing websites using HTML, CSS, and JavaScript. About the Author Dean Alan Hume is a coder, author, and Google Developer Expert. He's passionate about web performance and user experience. Table of Contents PART 1 - DEFINING**

**PROGRESSIVE WEB APPS Understanding Progressive Web Apps First steps to building a Progressive Web App PART 2 - FASTER WEB APPS Caching Intercepting network requests PART 3 - ENGAGING WEB APPS Look and feel Push notifications PART 4 - RESILIENT WEB APPLICATIONS Offline browsing Building more resilient applications Keeping your data synchronized PART 5 - THE FUTURE OF PROGRESSIVE WEB APPS Streaming data Progressive Web App troubleshooting The future is looking good**

This Special Issue book focuses on the theory and practice of search engine optimization (SEO). It is intended for anyone who publishes content online and it includes five peer-reviewed papers from various researchers. More specifically, the book includes theoretical and case study contributions which review and synthesize important aspects, including, but not limited to, the following themes: theory of SEO, different types of SEO, SEO criteria evaluation, search engine algorithms, social media and SEO, and SEO applications in various industries, as well as SEO on media websites. The book aims to give a better understanding of the importance of SEO in the current state of the Internet and online information search. Even though SEO is widely used by marketing practitioners, there is a relatively small amount of academic research that systematically attempts to capture this phenomenon and its impact across different industries. Thus, this collection of studies offers useful insights, as well as a valuable resource that intends to open the door for future SEO-related research.

Summary Fast ASP.NET Websites delivers just what it promises—practical, hands-on guidance to create faster, more efficient ASP.NET sites and applications. This book offers step-by-step .NET-specific examples showing you how to apply classic page optimization tips, ASP.NET-specific techniques, and ways to leverage new HTML5 features. About the Technology There's a real cost to inefficient HTTP requests, overloaded data streams and bulky scripts. Server throughput is a precious commodity and seconds—even tiny fractions of a second—can seem like an eternity while a visitor waits for your site to load. As an ASP.NET developer, there are dozens of techniques you can apply immediately to make your sites and applications faster. You'll find them here. About this Book Fast ASP.NET Websites delivers just what it promises—practical, hands-on guidance to create faster, more efficient ASP.NET sites and applications. This book offers step-by-step .NET-specific examples showing you how to apply classic page optimization tips, ASP.NET-specific techniques, and ways to leverage new HTML5 features. Readers should be familiar with basic HTML, CSS, and ASP.NET concepts. Purchase of the print book includes a free eBook in PDF, Kindle, and ePub formats from Manning Publications.

What's Inside Drastically improved response times Tips for Webforms and ASP.NET MVC sites Optimizing existing pages .NET-specific examples About the Author Dean Hume is a software developer and blogger based in the U.K. A passionate techie, he created the ASP.NET HTML5 toolkit and blogs regularly about web performance at [www.deanhume.com](http://www.deanhume.com). Table of Contents PART 1 DEFINING PERFORMANCE High-speed websites First steps toward a faster website PART 2 GENERAL PERFORMANCE BEST PRACTICES Compression Caching: The sell-by date Minifying and bundling static files HTML optimization tips Image optimization ETags Content Delivery Networks PART 3 ASP.NET-SPECIFIC TECHNIQUES Tweaking ASP.NET MVC performance Tweaking ASP.NET Web Forms performance Data caching Fully updated! Fifty Powerful, Easy-to-Use Rules for Supporting Hyper Growth “Whether you’re taking on a role as a technology leader in a new company or you simply want to make great technology decisions, Scalability Rules will be the go-to resource on your bookshelf.” -Chad Dickerson, CTO, Etsy Scalability Rules, Second Edition, is the easy-to-use scalability primer and reference for every architect, developer, network/software engineer, web professional, and manager. Authors Martin L. Abbott and Michael T. Fisher have helped scale hundreds of high-growth companies and thousands of systems. Drawing on their immense experience, they present 50 up-to-the-minute technical best practices for supporting hyper growth practically anywhere. Fully updated to reflect new technical trends and experiences, this edition is even easier to read, understand, and apply. Abbott and Fisher have also added powerful “stories behind the rules”: actual experiences and case studies from CTOs and technology executives at Etsy, NASDAQ, Salesforce, Shutterfly, Chegg, Warby Parker, Twitter, and other scalability pioneers. Architects will find powerful technology-agnostic insights for creating and evaluating designs. Developers will discover specific techniques for handling everything from databases to state. Managers will get invaluable help in setting goals, making decisions, and interacting with technical teams. Whatever your role, you’ll find practical risk/benefit guidance for setting priorities, translating plans into action, and gaining maximum scalability at minimum cost. You’ll learn how to Simplify architectures and avoid “over-engineering” Design scale into your solution, so you can scale on a just-in-time basis Make the most of cloning and replication Separate functionality and split data sets Scale out, not up Get more out of databases without compromising scalability Eliminate unnecessary redirects and redundant double-checking Use caches and CDNs more aggressively, without unacceptable complexity Design for fault tolerance, graceful failure, and easy rollback Emphasize statelessness, and efficiently handle state when you must Effectively utilize asynchronous communication Learn from your own mistakes and others’ high-profile failures Prioritize your actions to get the biggest “bang for the buck”

Part I

Jump Start Web Performance

Progressive Web Apps

13th International Conference, WEBIST 2017, Porto, Portugal, April 25-27, 2017, Revised Selected Papers

13th International Haifa Verification Conference, HVC 2017, Haifa, Israel, November 13-15, 2017, Proceedings

Progressive Web Application Development by Example

The 2019 Web Almanac

Build fast, reliable web applications using the latest web development technologies. This book provides step-by-step learning through the process of transforming a “traditional” web app into a high-performance app, leveraging principles and lessons taught throughout the book. You will learn to improve the performance, reliability, reach, and user engagement of mobile web applications through the use of service workers. Because most non-trivial web applications developed today use JavaScript frameworks, you will learn about the most popular frameworks offering a PWA right out of the box, including React, Preact, and Svelte. You also will learn which tools to enlist to measure your application’s performance, such as Google’s Lighthouse. Beginning Progressive Web App Development includes best practices to make your app work when a user has a poor or no Internet connection, and to send notifications and reminders with the Notification and Push APIs to keep your users engaged. You will come away with an understanding of the principles of shells, server push technology, and caching—that will allow you to rapidly deliver content to your users. As important as it is to provide mobile users with a great experience, the principles of PWAs also apply to desktop smartphones. Most of what you will learn in this book is directly applicable to web applications on all screen sizes. What You’ll Learn Achieve nearly instant loading times Implement service workers to cache content and work while users are offline Keep users engaged with web notifications Measure the performance and reach of your web applications Transform your existing web app into a progressive web app Build a PWA from scratch Understand what building a truly fast web app entails with Google’s PRPL pattern Who This Book Is For Web developers with prior JavaScript experience

This three-volume set of books highlights major advances in the development of concepts and techniques in the area of new technologies and architectures of contemporary information systems. Full of case studies, specific research and analytical problems and glean useful knowledge and business value from the data. Each chapter provides an analysis of a specific technical problem, followed by a numerical analysis and the implementation of the solution to the real-life problem. Managing an organisation, especially in today’s rapidly changing circumstances, is a very complex process. Increased competition in the market, the result of the massive and successful entry of foreign businesses into domestic markets, changes in consumer behaviour, and broader access to new technologies and information, calls for organisational innovation and introduction and modification of management methods using the latest advances in science. This situation has prompted many decision-making bodies to introduce computer modelling of organisational processes. The three books present the peer-reviewed proceedings of the 39th International Conference “Information Systems Architecture and Technology” (ISAT), held on September 16–18, 2018 in Nysa, Poland. The conference was organised by the Computer Science and Management Systems Departments, Faculty of Computer Science and Management, Wroclaw University of Technology and Sciences and University of Applied Sciences. The papers have been grouped into three major parts: Part I—discusses topics including but not limited to Artificial Intelligence Methods, Knowledge Discovery and Data Mining, Big Data, Knowledge Engineering, Internet of Things, Cloud Computing and High Performance Computing, Distributed Computer Systems, Content Delivery Networks, and Service Oriented Computing. Part II—addresses topics including but not limited to Modelling for Control, Recognition and Decision Support, Mathematical Modelling in Computer System Design, Service Oriented Systems and Cloud Computing, and Complex Process Modelling. Part III—addresses topics including but not limited to Knowledge Based Management, Modelling of Financial and Investment Decisions, Modelling of Managerial Decisions, Production Systems Management and Maintenance, Risk Management, Business Management, and Theories and Models of Innovation.

In their early days, Twitter, Flickr, Etsy, and many other companies experienced sudden spikes in activity that took their web services down in minutes. Today, determining how much capacity you need for your web application is still a common frustration of operations engineers and software developers. This hands-on guide provides the knowledge and tools you need to measure, deploy, and manage your web application in order to avoid an experience explosive growth. In this thoroughly updated edition, authors Arun Kejariwal (MZ) and John Allspaw provide a systematic, robust, and practical approach to capacity planning—rather than relying on their own experiences and those of many colleagues in the industry. They address the vast sea change in web operations, especially cloud computing. Understand issues that arise on heavily trafficked websites. Explore how capacity fits into web/mobile app availability and performance Use tools for measuring and monitoring computer performance and usage Turn measurement data into robust forecasts and integrate them into the planning process Examine related deployment concepts: installation, configuration, and management automation Learn how cloud autoscaling enables you to scale your app’s capacity up or down Learn basic and advanced uses of WebPagetest, the performance measurement tool for optimizing websites. This practical guide shows users new to this tool how to run tests and interpret results, and provides a better and more thorough understanding of hidden features in WebPagetest that make testing easier. Written by WebPagetest power users and performance experts, this book will help web developers solve the problem of slow sites. Topics include: Basic test setup—shows beginners how to get meaningful results Advanced test setup—provides another level of technical depth by explaining features of the webpagetest.org Analysis of results—helps you understand of how to interpret test results Private instance setup—teaches power users the intricacies of the webpagetest private instance and how to use its advanced tools—provides a detailed reference for the API and demonstrates tools already using the API to extend WebPagetest

Weighing Aesthetics and Speed

20th International Conference, PAM 2019, Puerto Varas, Chile, March 27–29, 2019, Proceedings

Passive and Active Measurement

HTTP Archive’s annual state of the web report

Using WebPageTest

Internet and Distributed Computing Systems

Performance Optimization: Techniques And Strategies

This book constitutes the proceedings of the 18th International Conference on Passive and Active Measurement, PAM 2017, held in Sydney, Australia, in March 2017. The 20 full papers presented in this volume were carefully reviewed and selected from 87 submissions. They are organized in topical sections on IPv6, Web and applications, security, performance, latency, characterization and troubleshooting, and wireless.

This book constitutes the proceedings of the 20th International Conference on Passive and Active Measurement, PAM 2019, held in Puerto Varas, Chile, in March 2019. The 20 full papers presented were carefully reviewed and selected from 75 submissions. The papers cover a wide range of important networking measurement and analysis topics from low layers of the network stack up to applications, using measurements at scales large and small, and covering important aspects of the network ecosystem such as routing, DNS, privacy, security, and performance. They are organized in the following topical sections: mobile networks; measurement at Internet scale; measurement at other scales; domain names; failures; security and privacy; and Web.

This book constitutes revised selected papers from the 13th International Conference on Web Information Systems and Technologies, WEBIST 2017, held in Porto, Portugal, in

April 2017. The purpose of the WEBIST series of conferences is to bring together researchers, engineers and practitioners interested in technological advances and business applications of web-based information systems. The 12 full papers presented in this volume were carefully reviewed and selected from originally 77 paper submissions. They contribute to the understanding of relevant trends of current research on Web information systems and technologies, comprising unified interfaces, Progressive Web Apps (PWAs) as well as a mobile device taxonomy, XML and open data processing, the history of Web engineering, web development for end-users, access control, Web platform assessment, rule engines, and scientific blogging.

This book constitutes the refereed proceedings of the 13th International Haifa Verification Conference, HVC 2017, held in Haifa, Israel in November 2017. The 13 revised full papers presented together with 4 poster and 5 tool demo papers were carefully reviewed and selected from 45 submissions. They are dedicated to advance the state of the art and state of the practice in verification and testing and are discussing future directions of testing and verification for hardware, software, and complex hybrid systems.

Scaling Web Resources in the Cloud

Web Performance Daybook |

Monitoring and Visualization

Using Webpagetest

The 2021 Web Almanac

Full Stack Testing

***Performance is critical to the success of any web site, and yet today's web applications push browsers to their limits with increasing amounts of rich content and heavy use of Ajax. In this book, Steve Souders, web performance evangelist at Google and former Chief Performance Yahoo!, provides valuable techniques to help you optimize your site's performance. Souders' previous book, the bestselling High Performance Web Sites, shocked the web development world by revealing that 80% of the time it takes for a web page to load is on the client side. In Even Faster Web Sites, Souders and eight expert contributors provide best practices and pragmatic advice for improving your site's performance in three critical categories: JavaScript—Get advice for understanding Ajax performance, writing efficient JavaScript, creating responsive applications, loading scripts without blocking other components, and more. Network—Learn to share resources across multiple domains, reduce image size without loss of quality, and use chunked encoding to render pages faster. Browser—Discover alternatives to iframes, how to simplify CSS selectors, and other techniques. Speed is essential for today's rich media web sites and Web 2.0 applications. With this book, you'll learn how to shave precious seconds off your sites' load times and make them respond even faster. This book contains six guest chapters contributed by Dion Almaer, Doug Crockford, Ben Galbraith, Tony Gentilcore, Dylan Schiemann, Stoyan Stefanov, Nicole Sullivan, and Nicholas C. Zakas.***