



DIGITAL WEB SERVICES NETWORK

Bringing together digital product managers, designers, and engineers.

cdt.ca.gov/dwsn

DWSN Quarterly Forum

Thursday, January 20, 2022



California
DEPARTMENT OF TECHNOLOGY
STRATEGY INNOVATION DELIVERY



Digital Web Services Network

- Welcome to the DWSN forum, we will begin shortly.
- For the best experience, please use your computer to join the meeting.
- Mute your audio.
- Turn off your video.
- Use the raise hand button or the meeting chat for comments and questions.

Digital Web Services Network Forum Agenda

Opening Remarks	Blaine Wasylikiw, CDT (5 Minutes)
Cosmos Content Management System	Eric Kauffman, CDT (20 Minutes)
CA Stabilization Service	Ron Robinette, CDT (5 Minutes)
“Big Ideas” live discussion	All (10 Minutes)
Design Systems	
• Introduction & Overview	Artem Khomishen, Adam Little, Chach Sikes (20 minutes)
• Sneak Peek	Adam Little (5 minutes)
• Discussion Panel	Ehb Teng, Chach Sikes, Adam Little, Art Khomishen, Koji (20 minutes)
Suggested Future Topics / Closing Remarks	Blaine Wasylikiw, CDT (5 Minutes)

Please email DigitalWebServicesNetwork@state.ca.gov for suggested topics or questions.



**DIGITAL
WEB
SERVICES
NETWORK**

Opening Remarks

Blaine Wasykiw

Chief Web Officer

California Department of Technology



DIGITAL WEB SERVICES NETWORK

Cosmos Content Management System

Eric Kauffman

Principle Application Engineer (Ret.)
California Department of Technology

COSMOS CMS

REIMAGINED CONTENT MANAGEMENT SYSTEM

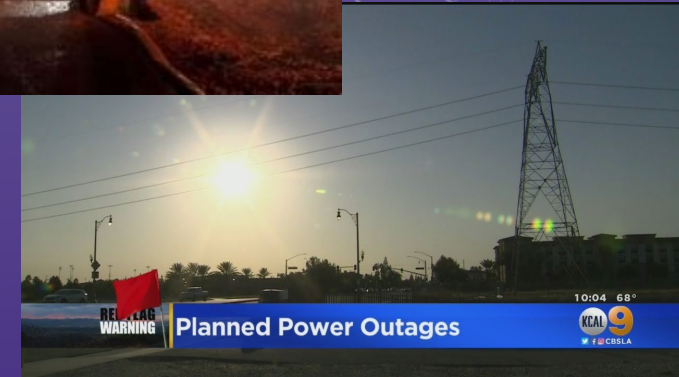
WITH A HYBRID DESIGN



ORIGIN

THE “RESPONSE” WEBSITE

- 2019 Power Safety Power Shutoffs
 - CDT built a high-performance website for the response
 - Top Objectives:
 - Handle more simultaneous users than we’ve ever done
 - Highly available
 - Fast over low bandwidth
 - Designed for mobile devices



In the beginning, there were websites...



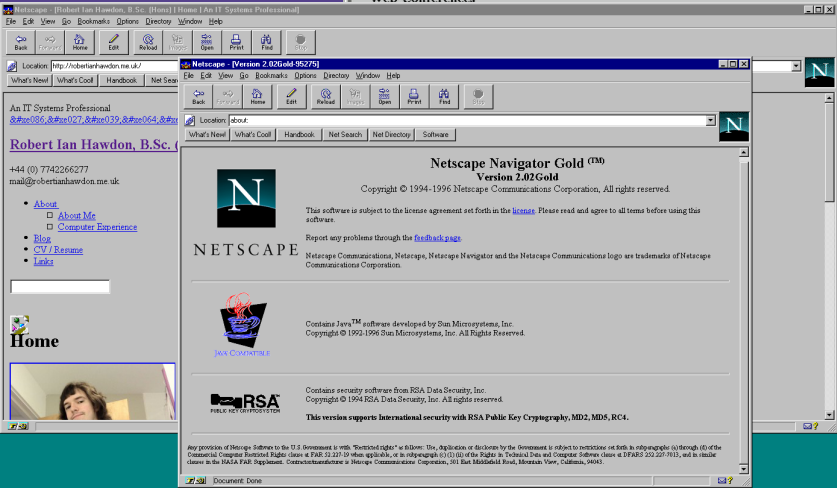
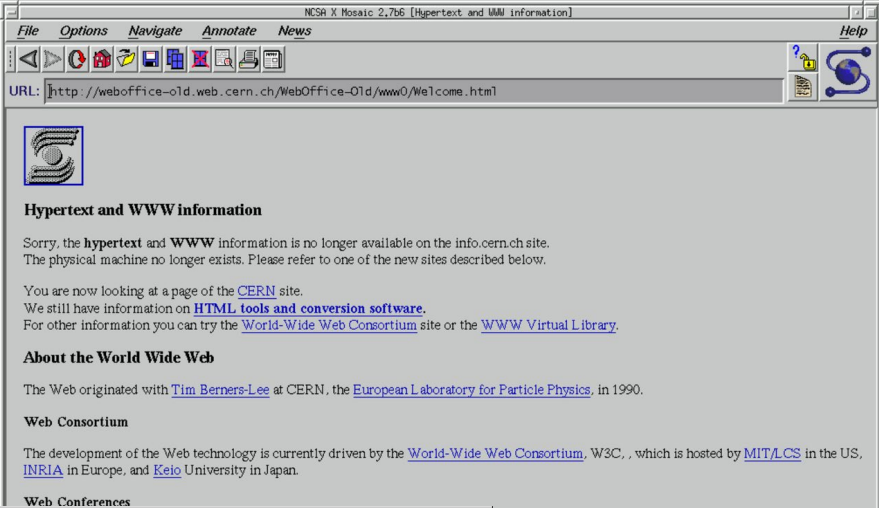
Website user on the Internet



Web server



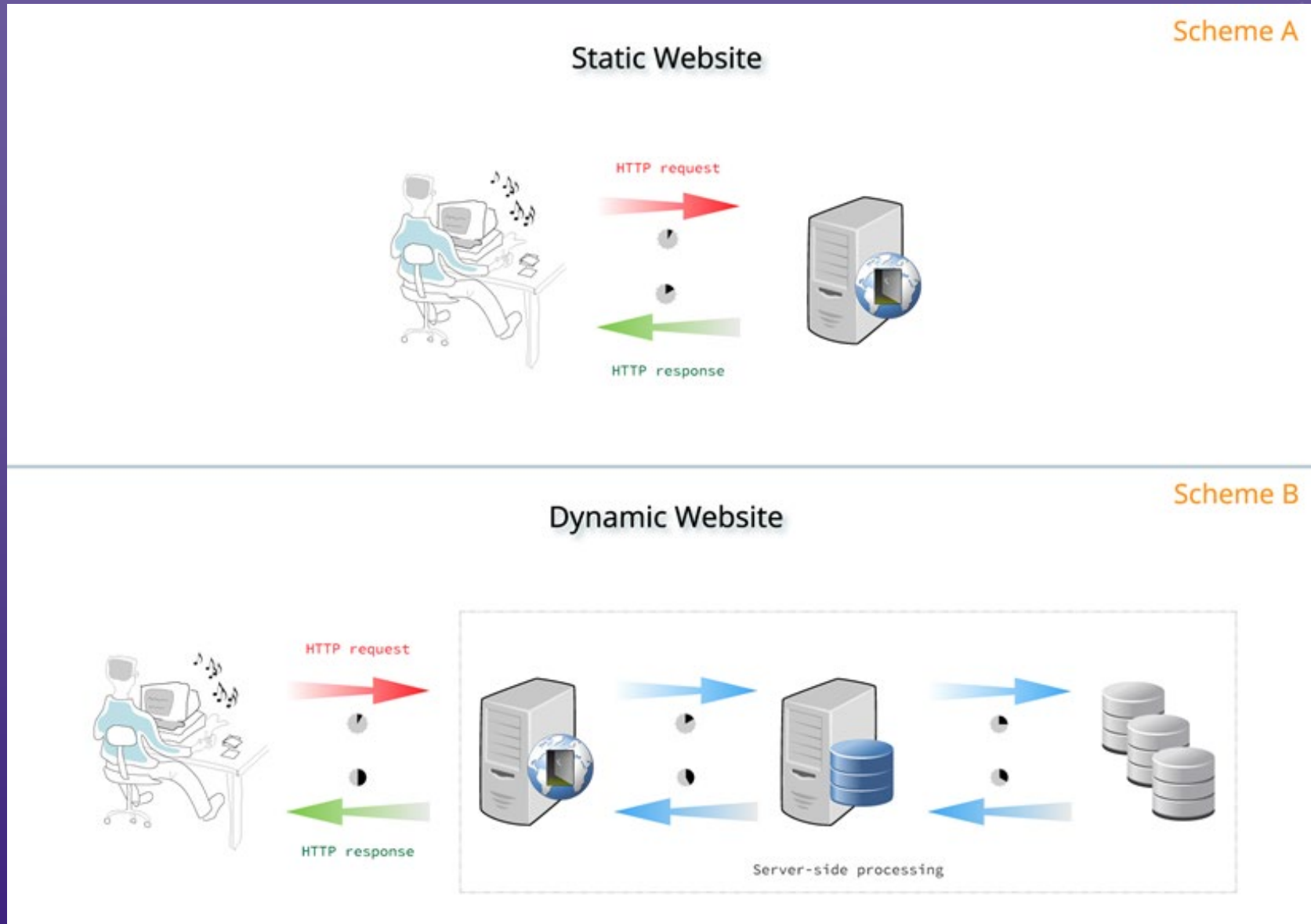
File storage



find latest info on them.

100%

Then came dynamic websites...



$$v = \sqrt{\frac{2\omega}{\sigma\mu}} = \sqrt{\frac{4\pi}{\sigma_c\mu_0}} \sqrt{\frac{f}{\sigma_r\mu_r}} \approx (0.41 \text{ m/s}) \sqrt{\frac{f/(1 \text{ Hz})}{\sigma_r\mu_r}}$$

LAWS OF PHYSICS NEVER CHANGE

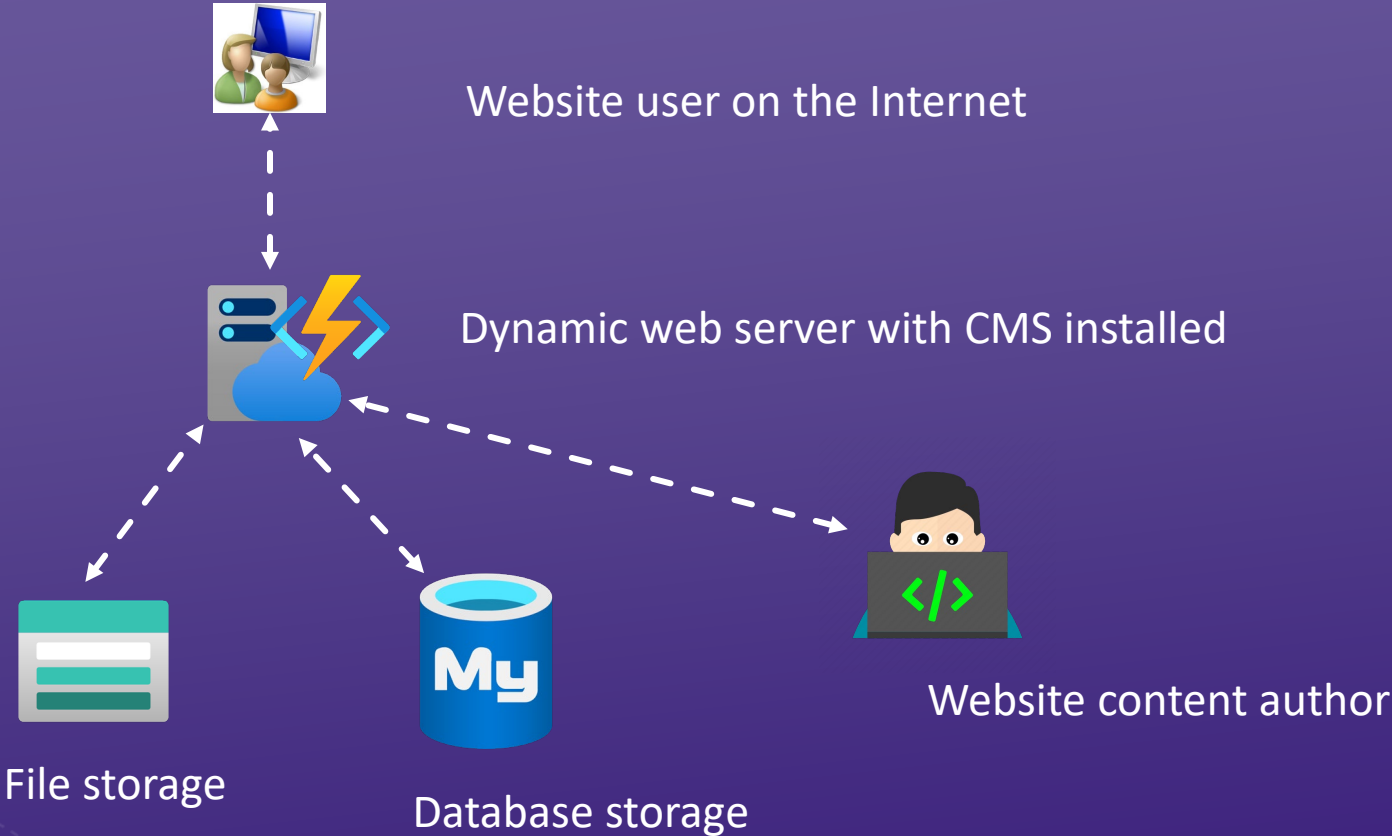
- Speed of electrons is slower than light
- Computer tasks rely on the movement of electrons
- More tasks, more electrons moved, the longer it takes to finish
- This has always been true
- Consequently, dynamic websites can be slower than static ones

FAST FORWARD – CONTENT MANAGEMENT SYSTEMS

- Very convenient
- Creating web content is relatively easy
- Accessible for the non-technical



Common CMS Architecture (Simplified)

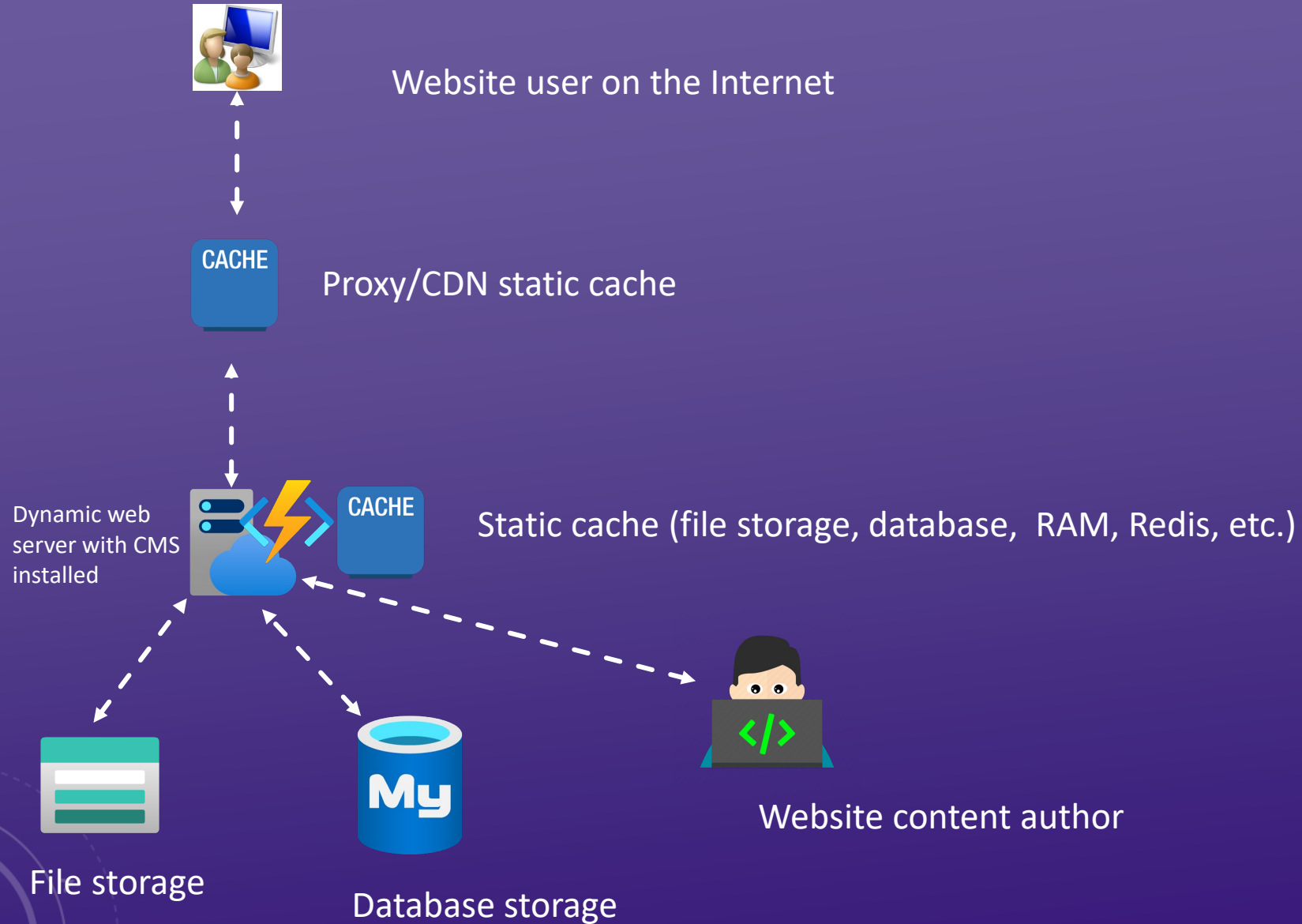


SPEEDING UP A CMS

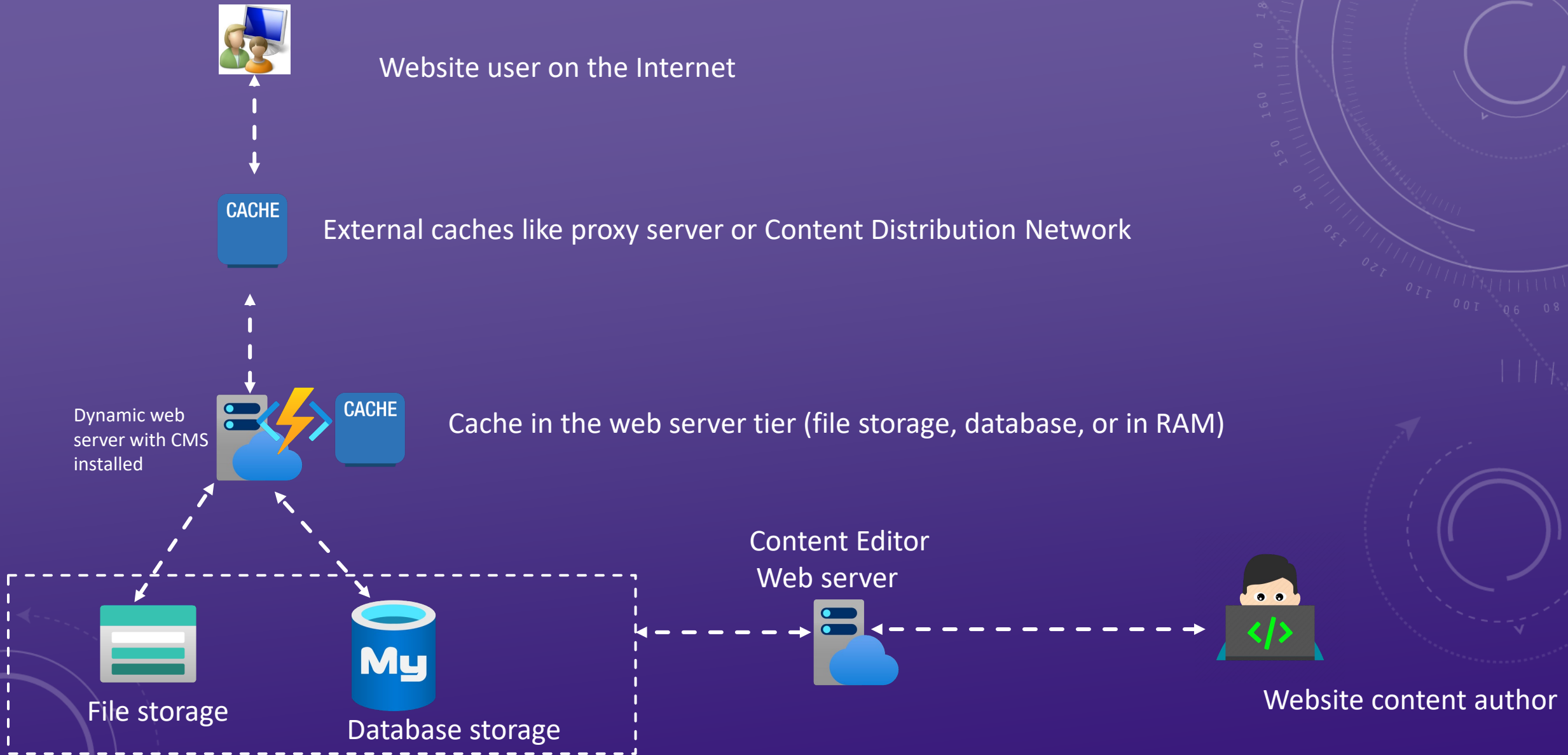
- Two common approaches:
 - Modify the CMS to work differently (plug-ins, modules, custom code, etc.).
 - HTML pages normally “built on the fly” are pre-generated and saved as static files.
 - Add external services that sit in between the CMS and user
 - Proxy server and/or Content Delivery Networks (CDN).
 - Dynamic content is cached as “static” in these external services.
 - Essentially a static website/service replaces CMS for serving content.

The Result: CMS now behaves like a static website.

Modified CMS (for performance)



Modified CMS With Editor Tier



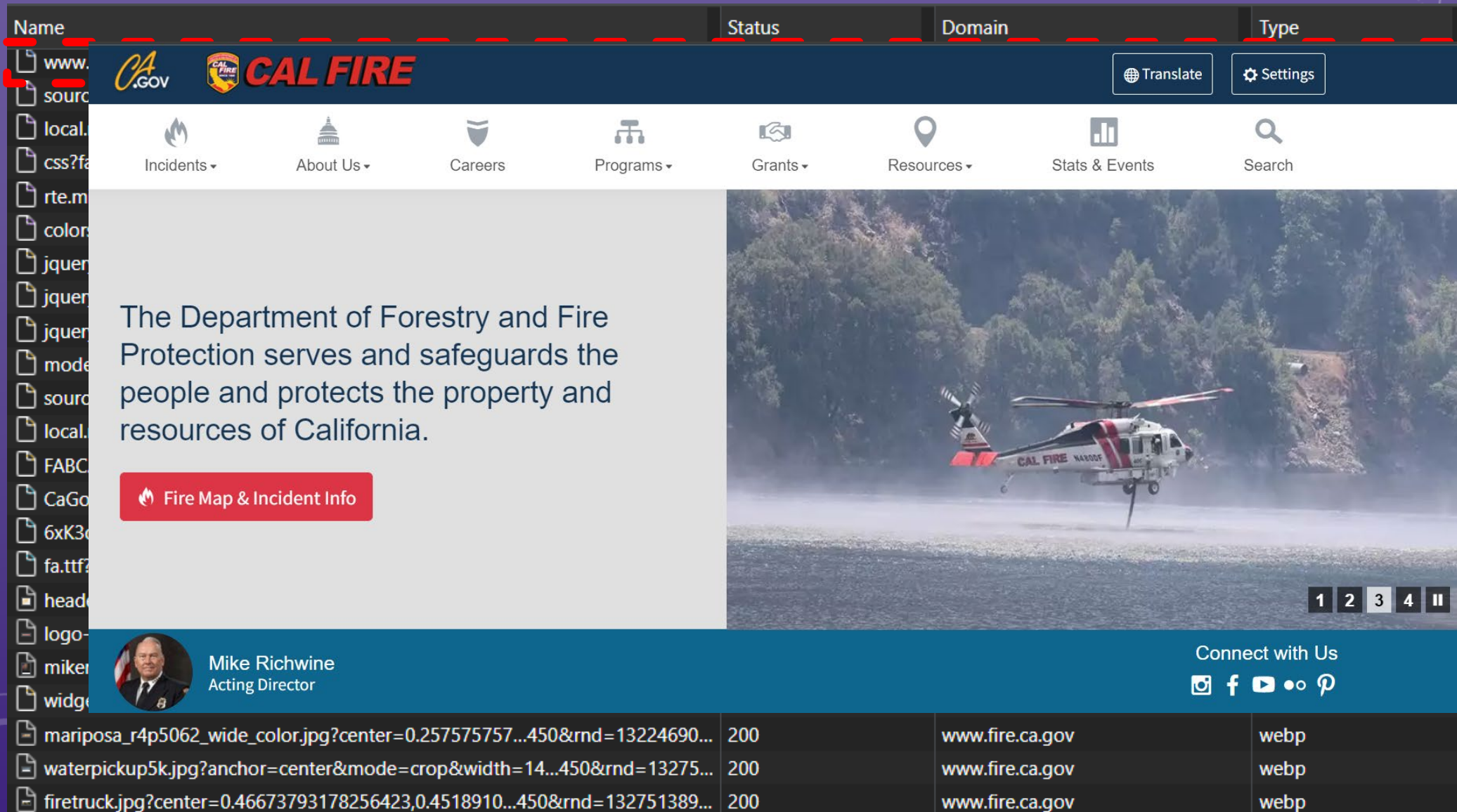
THE “RESPONSE” WEBSITE CHALLENGE

Remove the need for developers to post content and make it possible for an everyday person to so.

- Must perform as well as a static website “out of the box.”
- Web content creation must be easy (that’s another presentation)

“Out of the box” means no extra modifications needed after install such as plug-ins, modules, custom code.

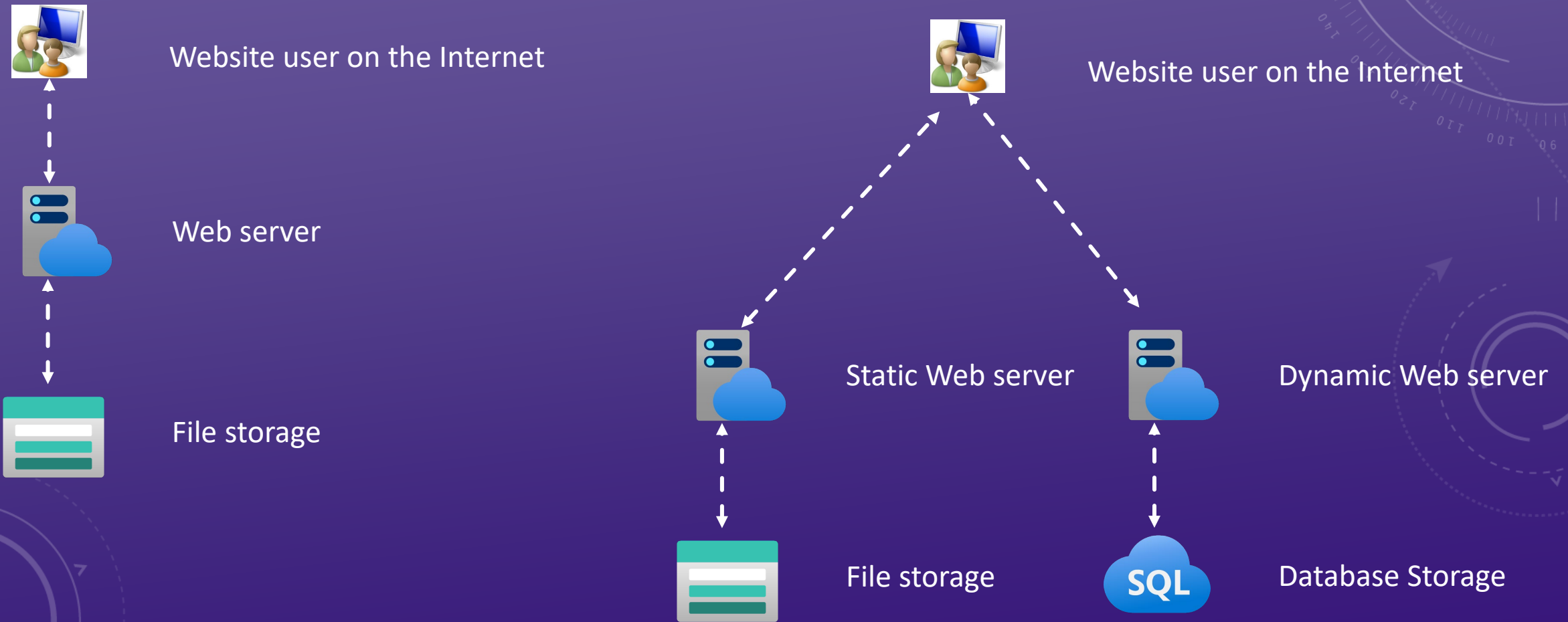
What is truly dynamic, and what is not?

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“Sooner or later, everything old is new again.”

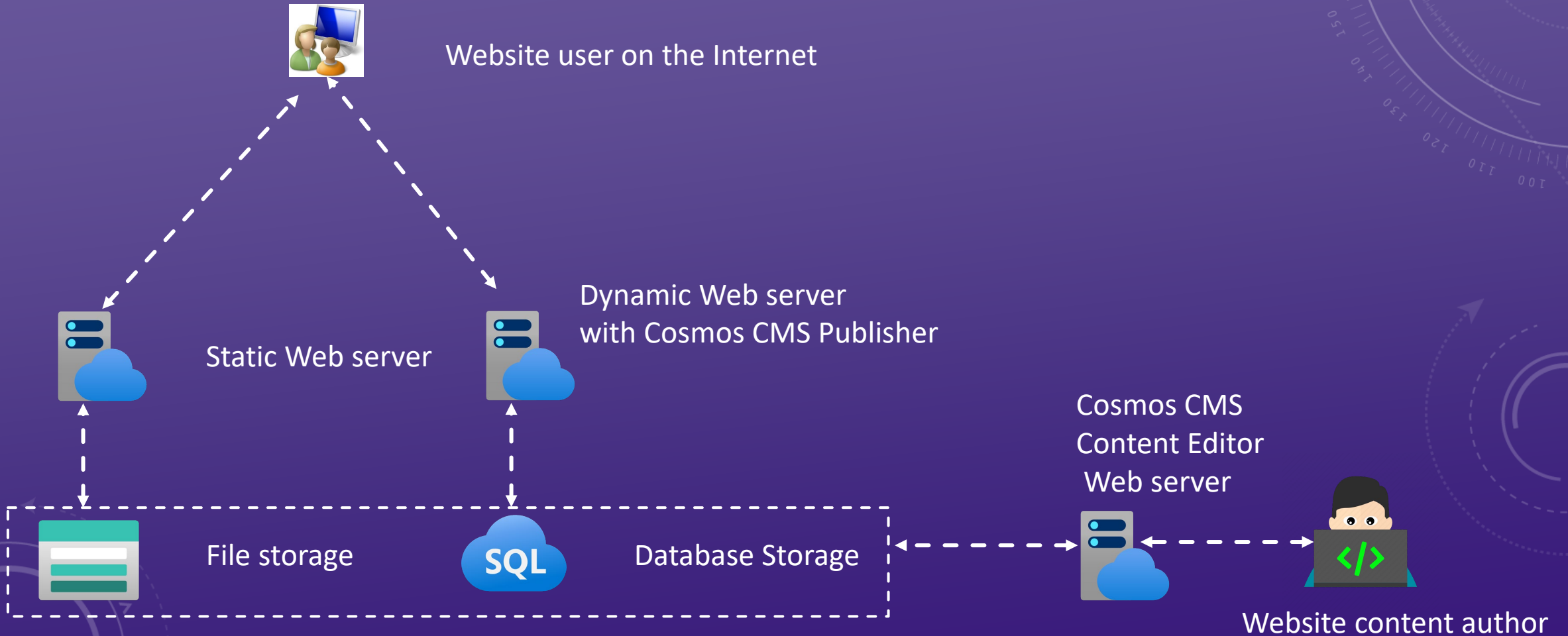
- Steven King, *the Colorado Kid*

Hybrid Design



Cosmos CMS With Editor Tier

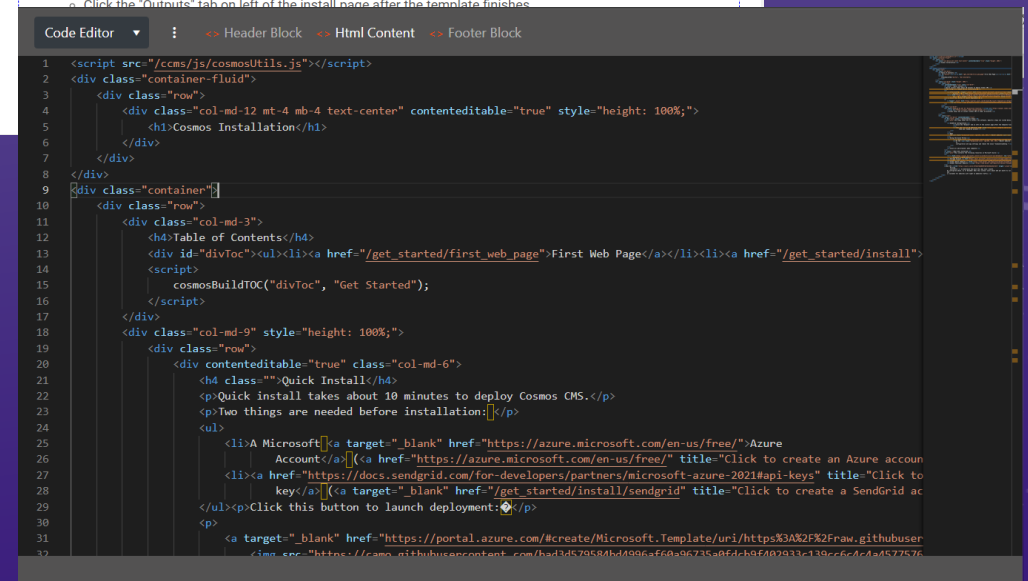
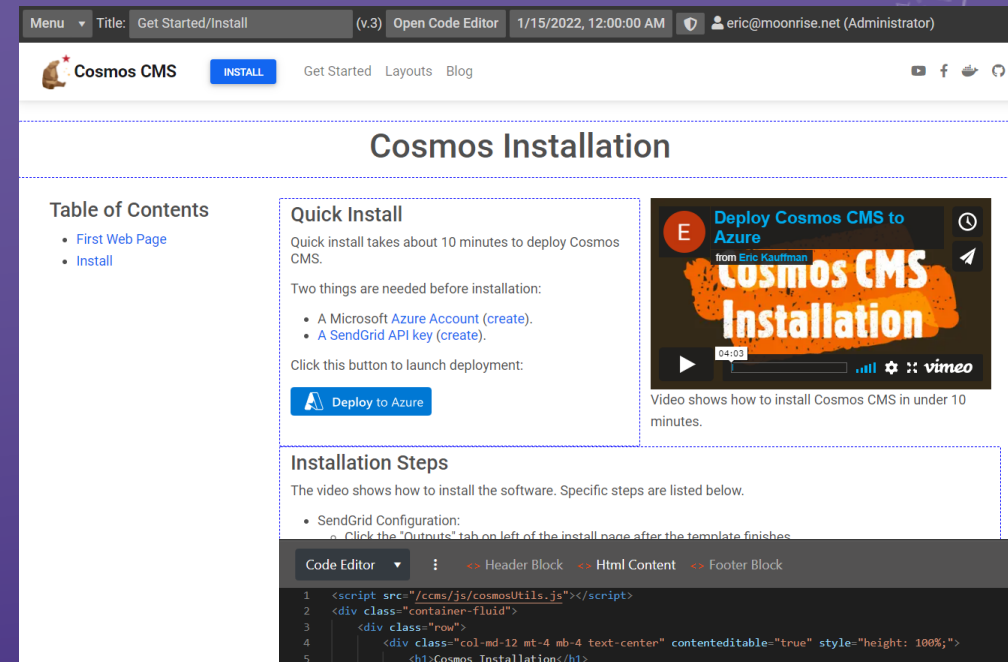
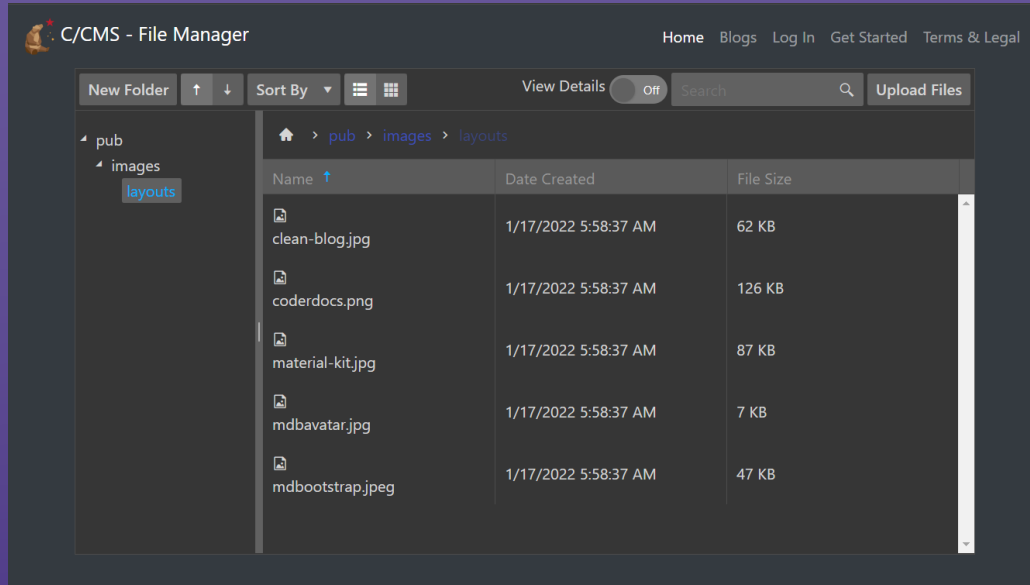
Hybrid Design



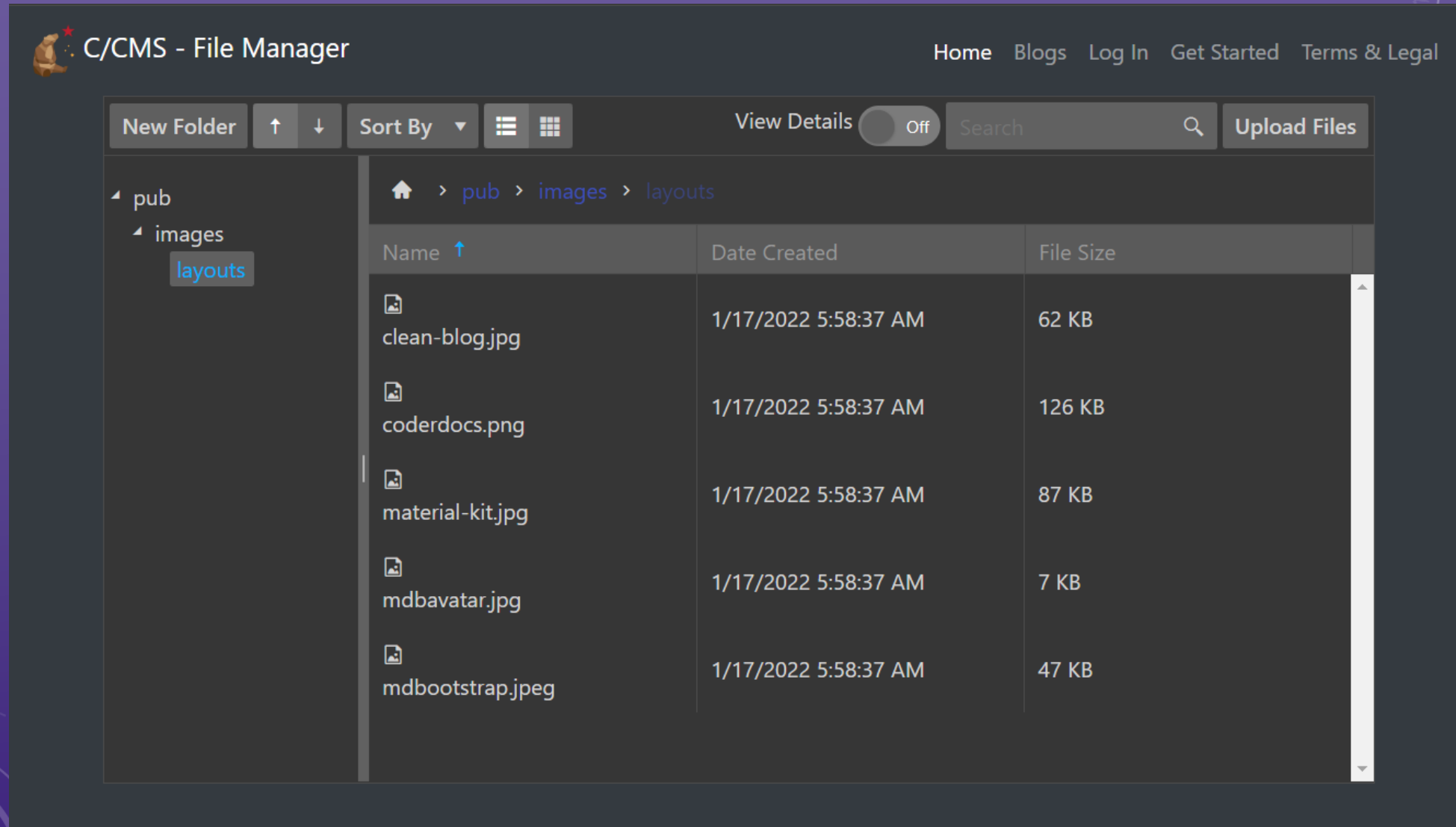
HOW IS PERFORMANCE?

- Static website performance same as before.
- Dynamic website
 - jMeter test with 50,000 concurrent threads
 - Dynamic site was 2 ½ times faster than serving HTML web pages from static web server
 - jMeter test with 100,000 concurrent threads
 - Dynamic site was 2 times faster

HOW CONTENT IS MANAGED IN COSMOS



STATIC CONTENT








C/CMS - File Manager

Home | Blogs | Log In | Get Started | Terms & Legal

New Folder | ↑ | ↓ | Sort By | View Details (Off) | Search | Upload Files

pub > images > layouts

Name ↑	Date Created	File Size
 clean-blog.jpg	1/17/2022 5:58:37 AM	62 KB
 coderdocs.png	1/17/2022 5:58:37 AM	126 KB
 material-kit.jpg	1/17/2022 5:58:37 AM	87 KB
 mdbavatar.jpg	1/17/2022 5:58:37 AM	7 KB
 mdbbootstrap.jpeg	1/17/2022 5:58:37 AM	47 KB

HTML WYSIWIG

Menu Title: Get Started/Install (v.3) Open Code Editor 1/15/2022, 12:00:00 AM eric@moonrise.net (Administrator)

Cosmos CMS INSTALL Get Started Layouts Blog

Cosmos Installation

Table of Contents

- [First Web Page](#)
- [Install](#)

Quick Install

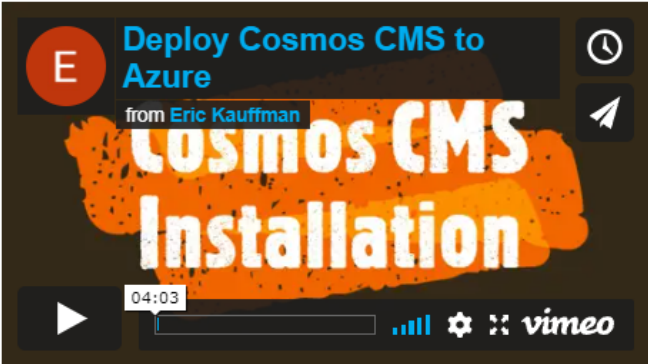
Quick install takes about 10 minutes to deploy Cosmos CMS.

Two things are needed before installation:

- A Microsoft [Azure Account](#) ([create](#)).
- A [SendGrid API key](#) ([create](#)).

Click this button to launch deployment:

[Deploy to Azure](#)



Video shows how to install Cosmos CMS in under 10 minutes.

Installation Steps

The video shows how to install the software. Specific steps are listed below.

- SendGrid Configuration:
 - Click the "Outputs" tab on left of the install page after the template finishes.
 - Copy the list of IP addresses and [add them your SendGrid account](#).
- Open the [Editor website](#) to setup the database and your admin account.
- Using the Azure Portal:
 - [Enable the static website](#) on the storage account.
 - On the [Editor website](#), go to configuration and app settings and remove the value "CosmosAllowSetup."
- Close all web browsers when complete

What Gets Installed

CODE EDITING

```
Code Editor  ⌵  ⋮  <> Header Block  <> Html Content  <> Footer Block

1  <script src="/ccms/js/cosmosUtils.js"></script>
2  <div class="container-fluid">
3      <div class="row">
4          <div class="col-md-12 mt-4 mb-4 text-center" contenteditable="true" style="height: 100%;">
5              <h1>Cosmos Installation</h1>
6          </div>
7      </div>
8  </div>
9  <div class="container">
10     <div class="row">
11         <div class="col-md-3">
12             <h4>Table of Contents</h4>
13             <div id="divToc"><ul><li><a href="/get_started/first_web_page">First Web Page</a></li><li><a href="/get_started/install">
14                 <script>
15                     cosmosBuildTOC("divToc", "Get Started");
16                 </script>
17             </div>
18             <div class="col-md-9" style="height: 100%;">
19                 <div class="row">
20                     <div contenteditable="true" class="col-md-6">
21                         <h4 class="">Quick Install</h4>
22                         <p>Quick install takes about 10 minutes to deploy Cosmos CMS.</p>
23                         <p>Two things are needed before installation:</p>
24                         <ul>
25                             <li>A Microsoft <a target="_blank" href="https://azure.microsoft.com/en-us/free/">Azure
26                                 Account</a> (<a href="https://azure.microsoft.com/en-us/free/" title="Click to create an Azure account
27                                 key</a> (<a href="https://docs.sendgrid.com/for-developers/partners/microsoft-azure-2021#api-keys" title="Click to
28                                 key</a> (<a target="_blank" href="/get_started/install/sendgrid" title="Click to create a SendGrid ac
29                         </ul><p>Click this button to launch deployment:</p>
30                         <p>
31                             <a target="_blank" href="https://portal.azure.com/#create/Microsoft.Template/uri/https%3A%2F%2Fraw.githubusercontent.com
32                             <img src="https://camo.githubusercontent.com/bad3d579584bd4996af60a96735a0fdcb9f402933c139cc6c4c4a4577576
```

SUPPORTED CLOUDS



HOW TO TEST DRIVE:

- Create a free SendGrid Account
- Have a Microsoft Azure Account
 - Free for first 12 months
 - For Visual Studio subscribers, monthly credit
- <https://cosmos.moonrise.net>
 - Click “Install”
 - There is a video that shows the process



Four-minute video shows how to install in MS Azure.

Entire install takes less than 10 minutes.

Installation is free.



THANK YOU!

ERIC@MOONRISE.NET

Product site:

- <https://cosmos.moonrise.net>

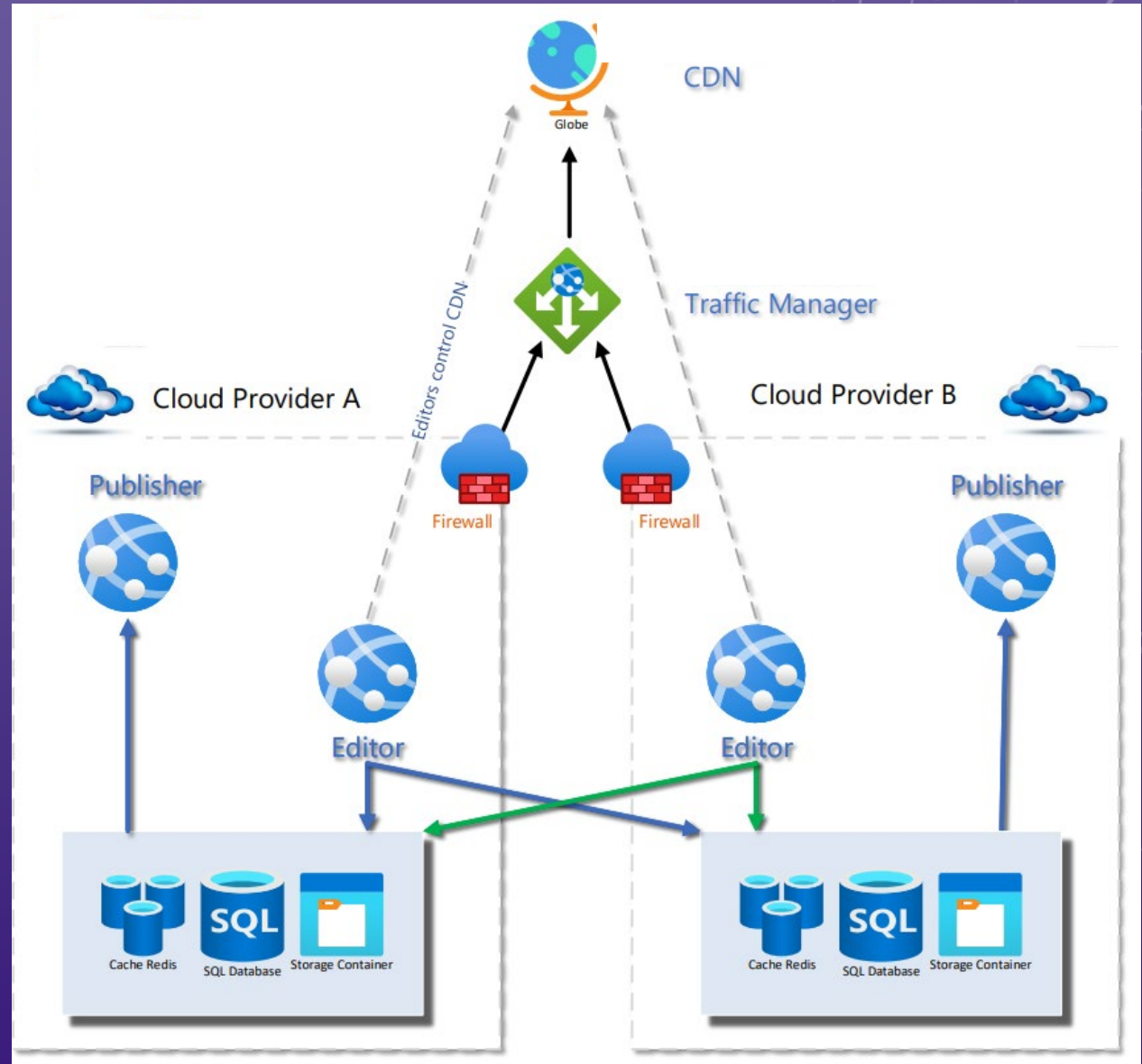
On GitHub:

- <https://github.com/CosmosSoftware/Cosmos.Cms>
- <https://github.com/CosmosSoftware/CDT.Cosmos.Cms.Website>
- <https://github.com/CosmosSoftware/Cosmos.Starter.Layouts>

MULTI CLOUD CONFIGURATION

REAL-TIME SYNCHRONIZATION OF FILES AND HTML WEB PAGES

- Real-time synchronization of
 - Static files
 - Dynamic HTML web pages
- Synchronization is bi-directional
- “Editors” can also:
 - update CDN when web pages change
 - Schedule when a page goes “live”
- “Publishers” are extensible
 - Use one of our Publishers
 - Turn your website into a publisher
 - AKA a “mash-up!”
 - NuGet Package Install





**DIGITAL
WEB
SERVICES
NETWORK**

CA Stabilization

Ron Robinette

Deputy Director, CA Stabilization Service
California Department of Technology



**DIGITAL
WEB
SERVICES
NETWORK**

Big Ideas

ALL




DIGITAL WEB SERVICES NETWORK

Design Systems Introduction & Overview

Artem Khomishen, CDT

Adam Little, ODI

Chach Sikes, ODI



What is your biggest challenge with delivering or managing your digital service?

Why a Design System?

- **redundant work**
- **unnecessary differentiation**
- **fractured user experience**
- **longer time to market**



Design systems aren't just for
designers and engineers

Design systems are for **people.**

Visual consistency



Functional consistency

4 different ways to login to a service

Web Pay

Login for Individuals


* = Required Field

Enter your Social Security Number and Last Name below. The combination must match our records in order to access this service.

* **Social Security Number**
9 numbers, no spaces or dashes

* **Last Name**
Up to 17 letters, no special characters

* **Type the characters from the picture**



If you use Web Pay, do not mail the paper payment voucher.

Login >

DMV Card application

Get started

What are you here for?

ID or driver license

Commercial driver license

[I don't know if I need a commercial driver license](#)

[Back](#) [Next](#)

[Conditions of Use](#)
[Disability Services](#)

CA.gov State of California Employment Development Department

Terms and Conditions

To create an online account with the EDD, you must agree to:

- Use your account for lawful purposes only.
- Allow electronic communications.
- Keep your contact information updated.
- Keep your email address current.
- Log out of your account when you are finished.
- Immediately report any fraud.

I agree to the terms and conditions

Cancel

CA.gov California Department of Tax and Fee Administration

CDTFA Home Resources Tutorials Online Chat

Menu

Home

ALERT

CDTFA public counters are now open for scheduling of in-person, video, or phone appointments. Please contact the local office nearest you. For questions about filing, extensions, tax relief, and more call: 1-800-400-7115. Online videos and Live Webinars are available in lieu of in-person classes.

Businesses impacted by the pandemic, please visit our COVID-19 page (Versión en Español) for information on extensions, tax relief, and more.

Online Services is available in Spanish. You can file your Sales and Use Tax Return, Make a Payment, Prepayment, and Register with the CDTFA entirely in Spanish. Additional programs will be offered in the future.

Use the buttons below to switch languages. Your selection will begin after leaving this page.

[English](#) [Español](#)

Login

Username

Password

[Login](#)

[Forgot Password?](#)

[Forgot Username?](#)

Express Login

Express Login Code is now called Limited Access Code. Limited Access Code allows you to file a return or make a payment without creating a username.

[File a Return](#)

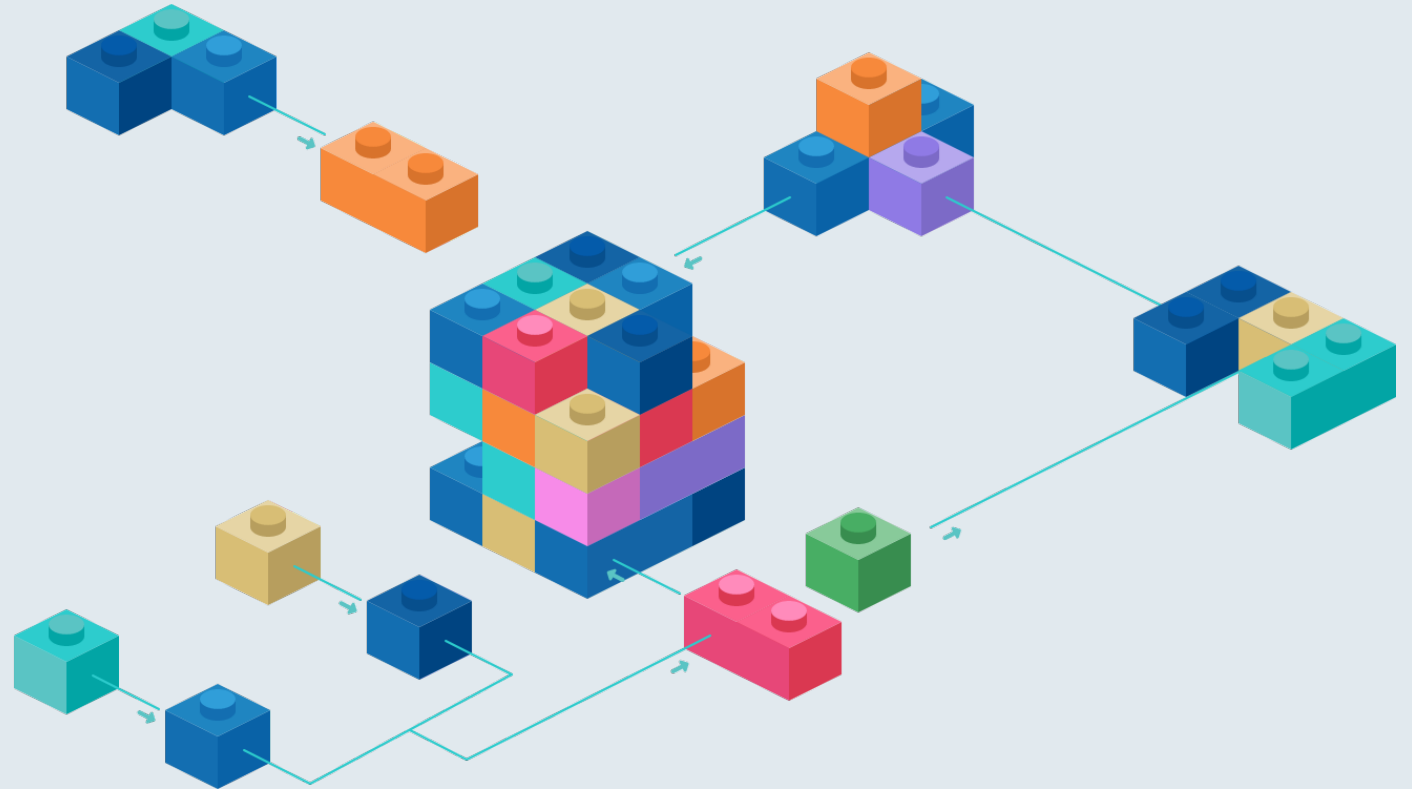
[Make a Prepayment](#)

[Make a Payment](#)

Asking the right questions

Rather than asking,
“how do I make a
website?”

Design systems ask:
“**what can we build
together?**”



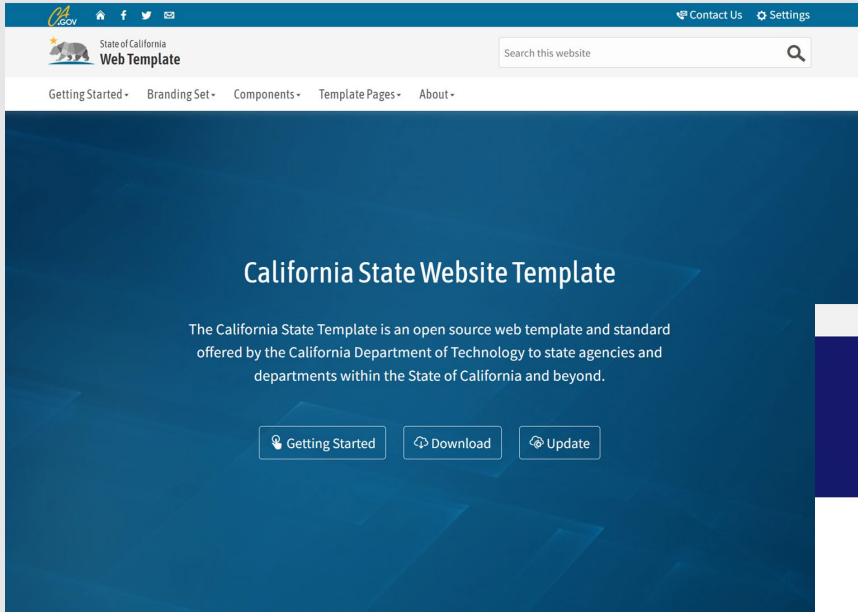


The opportunity of a **design system** for California

Create a **seamless digital experience** for Californians to **access the services they need**.

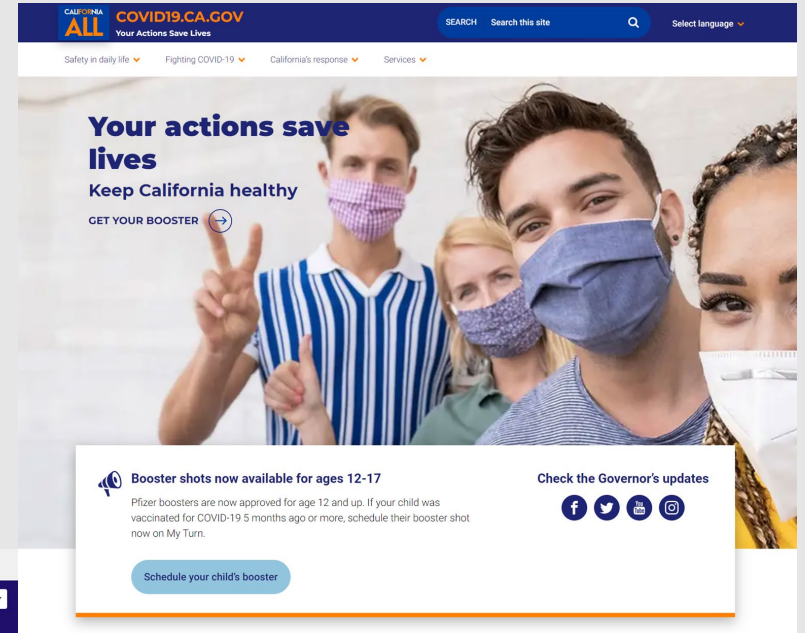
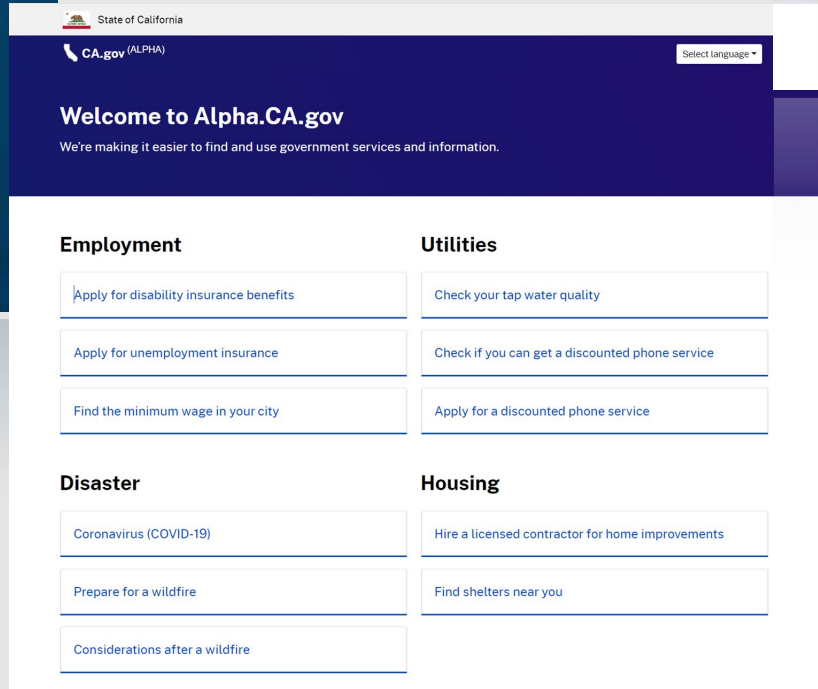
Helping **build trust** with the public by reducing existing fragmented and inconsistent experiences.

How did we get here?



State Web Template

Alpha.ca.gov



COVID19.ca.gov

What does a design system do?

What do design systems do?












Design systems collect knowledge and solutions to problems teams confront over and over again. They combine UX best practices, interface components, and code.

Teams work faster, design better, and focus on new problems instead of old ones.

Our Design System makes it easy for state digital teams to build accessible, consistent, and performant services and products to meet Californians' needs.

Who uses design systems?

Design systems have taken root at organizations of all types and sizes including [city, state and national governments](#).

			CITY of <u>BOSTON</u>
			
			

Why have a design system?

- **Cohesive & consistent user experiences**

Services and products that use the design system feel the same, even when they have their own identity. This puts the focus on what Californians need to do.

- **Tested solutions**

We test components before releasing them. This lets departments deploy them with confidence without having to do their own testing.

- **Leverage best practices across California**

The design system captures tried-and-true best practices and allows other teams to use them. As new best practices emerge, the design system absorbs them, upgrading all products.

Why have a design system? (continued)

- **Accessibility and performance**

All design system components meet WCAG 2.1 accessibility standards. The components take accessibility further by incorporating high performance so they work well across a range of devices and internet speeds.

- **Shared vocabulary**

A common language for components, patterns, and conventions eases collaboration within and across teams.

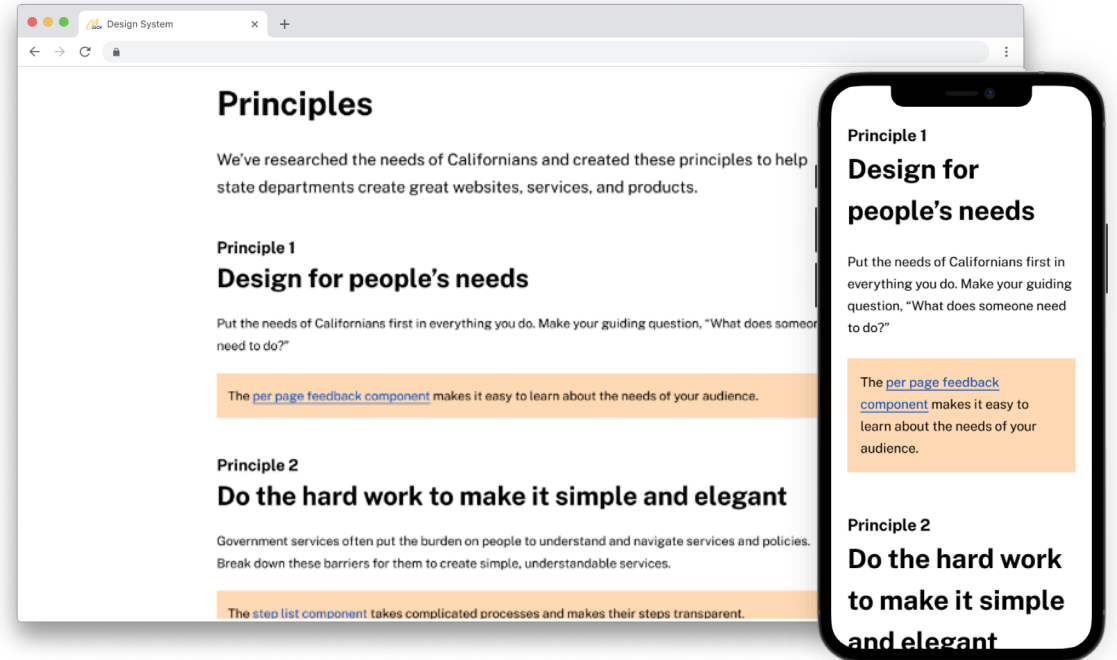
- **Effective use of resources**

With common problems already solved, designers and developers can speed through the basics, doing more with less time and budget.

What's in our design system?

Digital product development principles

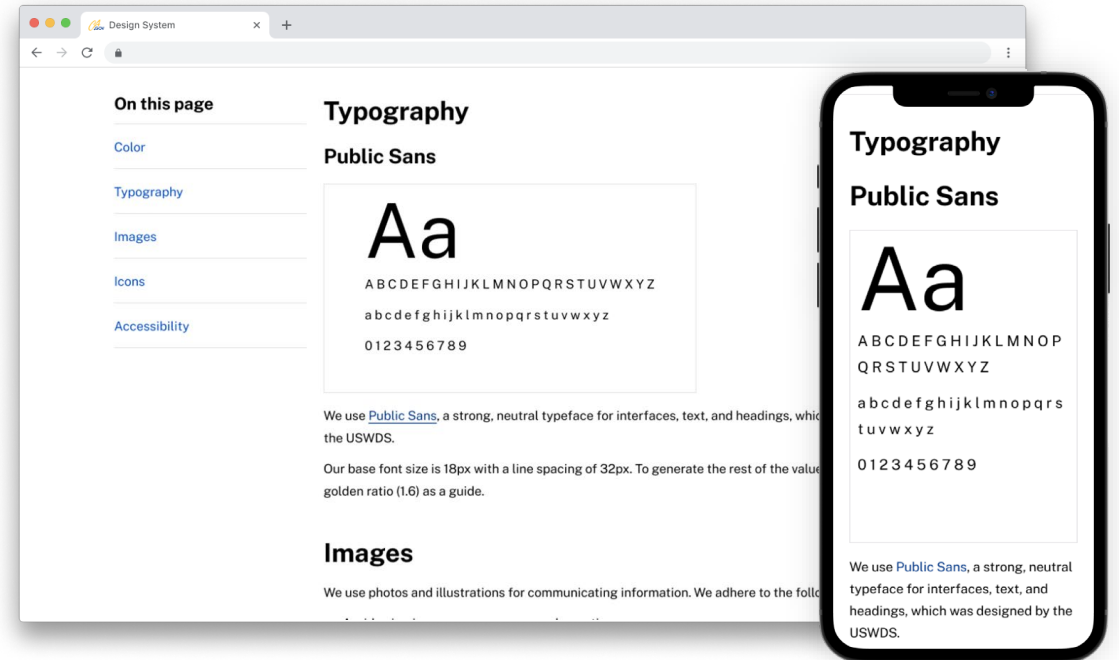
Designing excellent services and products is hard. The design system has best practices guide you in your journey.



What's in our design system? (cont.)

Content and design guides

Design systems are only as good as what goes in them. The content and design guides help you consistently build quality services and products.

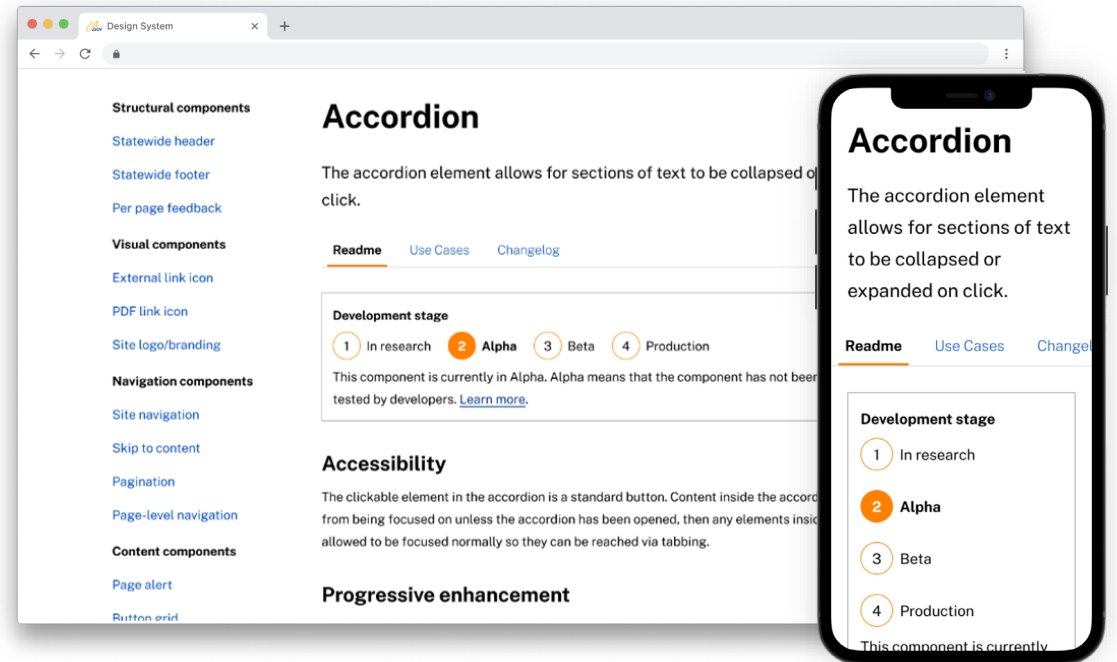


What's in our design system? (continued)

Component library

You do not have to reinvent the wheel every time you need a digital solution. The components solve common user needs for you.

The components can help create common user journeys.



Creating a design system for CA.gov

Design system history

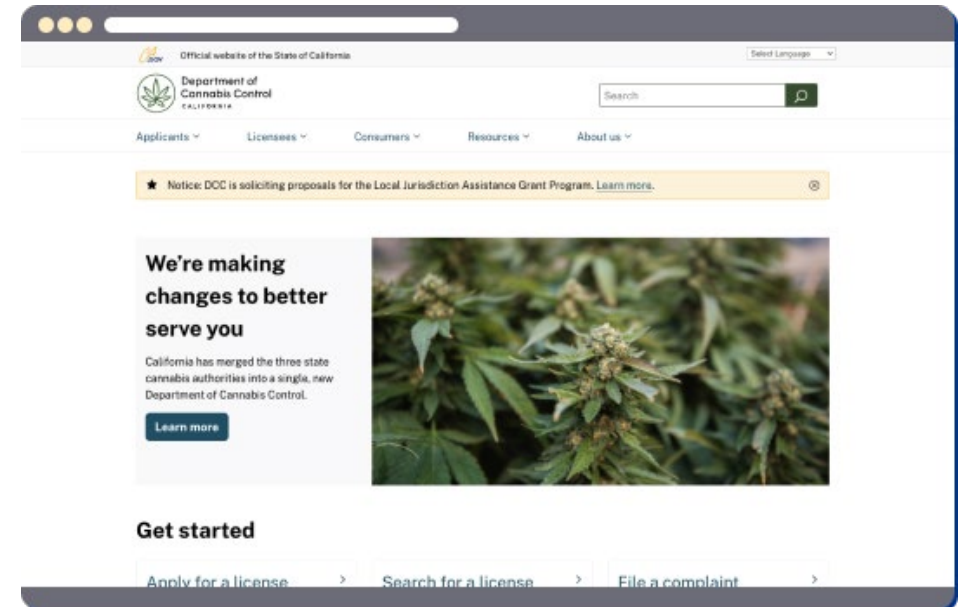
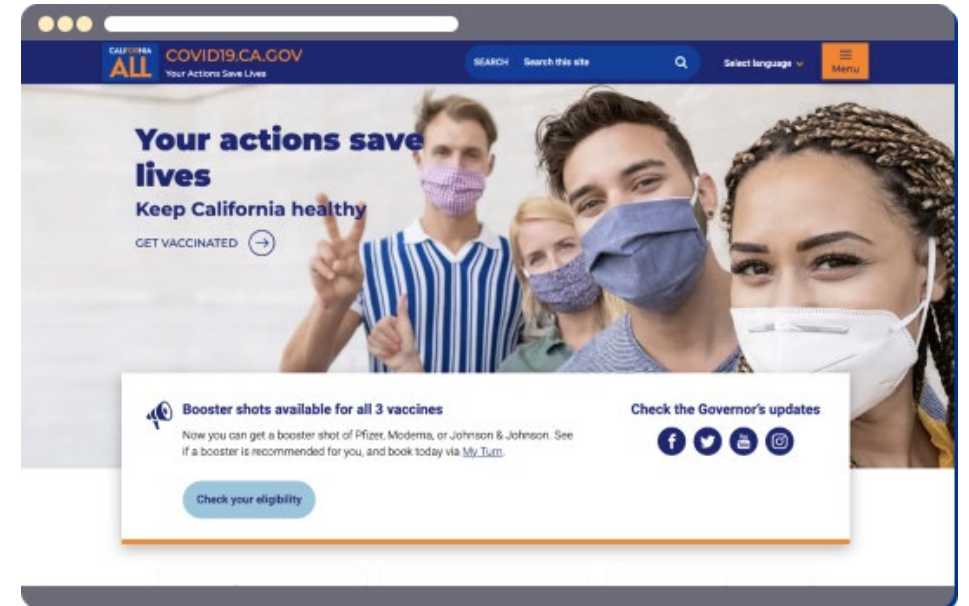
alpha.ca.gov - Develop approaches of design, content, research, product management and engineering (*Late 2019 - COVID-19*)

covid19.ca.gov - Work together, iterate constantly, use feedback, learn a lot (*March 2020 - Present*)

cannabis.ca.gov - Adapt learnings from COVID-19 project and apply content design to merge 4 sites into one. Establish Design System patterns and processes (*July 2021 - Present*)

drought.ca.gov - Work on creating repeatable system, starting to scale (*July 2021 - Present*)

Design System - Share principles, design, code, build community of practice (*Coming soon*)



Build on lessons learned

Performance

Many vendor platforms offer “the whole kitchen sink” with their widgets. These JavaScript bundles often won’t load on mobile devices. Test often with Lighthouse.

Emphasize design

Shift from traditional web “page layout” approaches to using researched UX patterns that help Californians access services.

Simplicity

When sites are written in plain-language and designed for ease of use, everyone wins.

Collaboration

Because our code uses the common languages of HTML, CSS and JavaScript, developers from different technical and experiential backgrounds can work together.

Design system web technology principles

Clean CSS

Create base CSS styles that support consistent, clear UI on all digital service experiences.

Web components

Create light re-usable W3C-compliant web components for displaying content, information, charts, and other functional elements that Californians need.

Equity-focused

Consider performance on all devices and bandwidths, accessibility, ease of translation, and inclusive practices.

Adaptable

Stay agnostic to platforms and frameworks.

Integrations

Make it easy for content creators to use Design System components in a variety of publishing systems, starting with WordPress.

Open source

Work in the open on Github. Share and review code packages.

Components

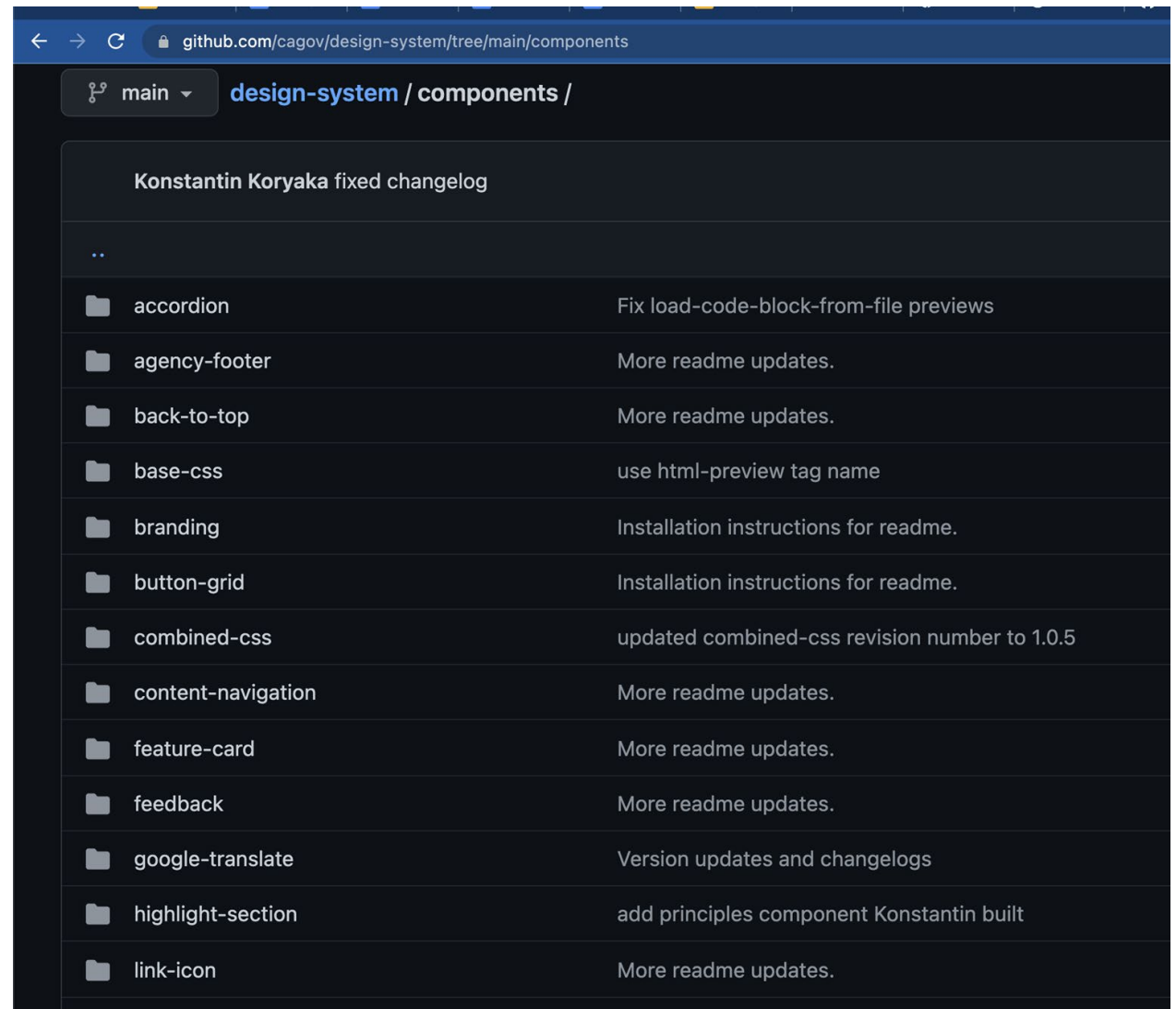
Code is sourced from COVID-19, Department of Cannabis Control, and drought.ca.gov web projects.

Kinds of components

- Structural
- Navigation
- Content
- Visual
- Service

Reviewed, documented and tested for:

- Accessibility
- Performance
- Translatability
- Progressive enhancement
- Style integration
- Integration into WordPress



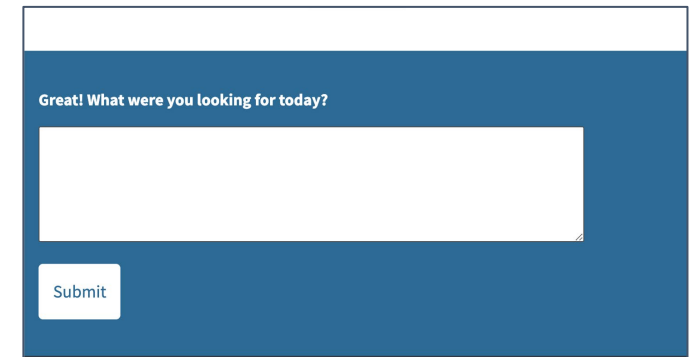
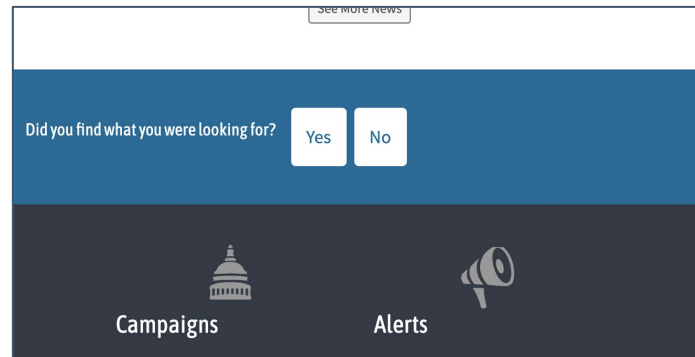
Example: Page Feedback

Component used on multiple ca.gov properties

The page feedback component lets people react to specific pages on your website.

The page feedback component is intended to:

- Let people alert us to bugs or out-of-date content
- Inform iterations to content pages
- Determine hierarchy and priority of information
- Identify themes in user sentiment
- Pinpoint missing or confusing content
- Identify specific spikes in feedback related to events

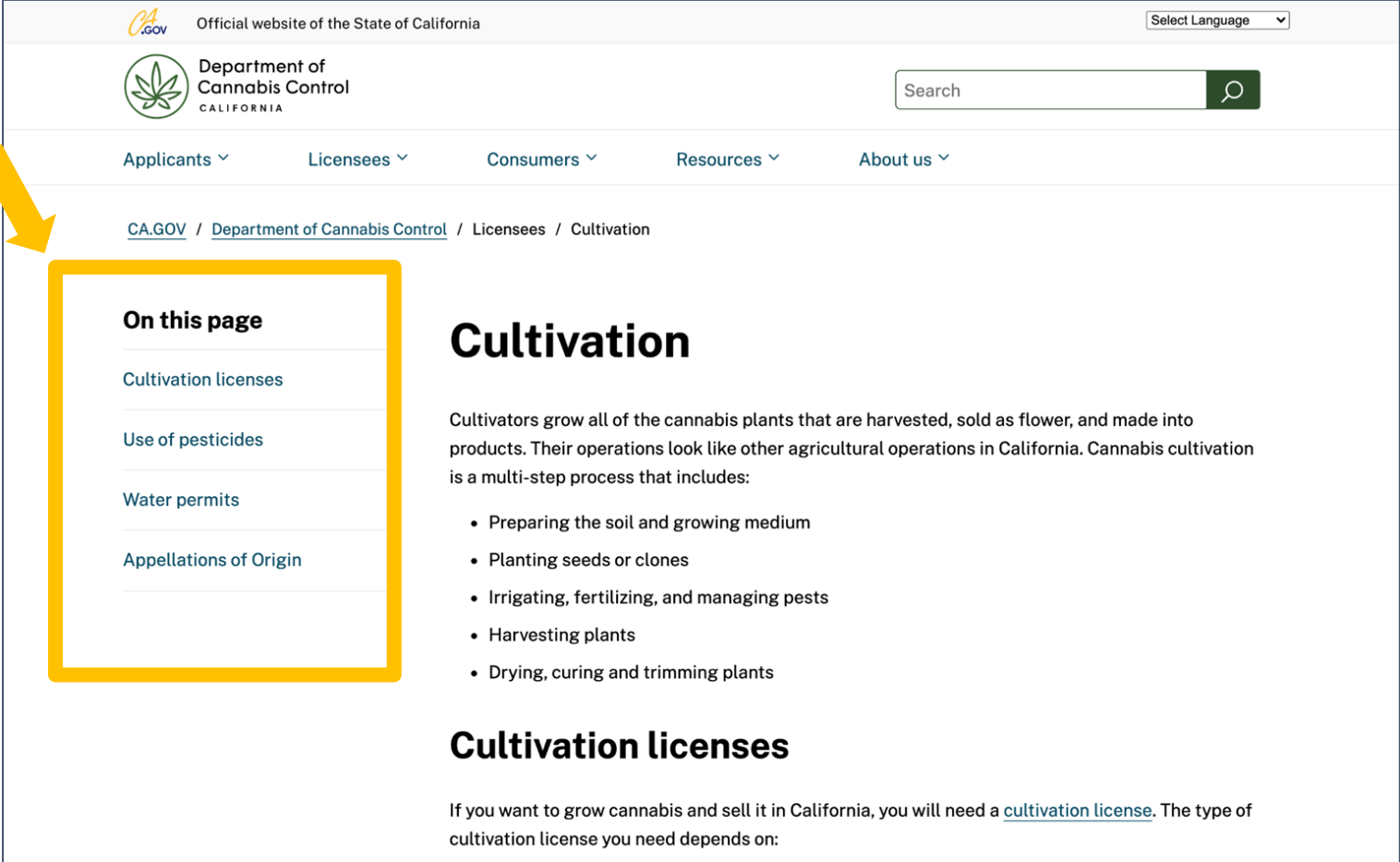


Now on CA.gov. Also appearing on cannabis.ca.gov, covid19.ca.gov and drought.ca.gov.

Example: Page navigation

Page navigation makes it easy to see what's on a page. It allows people to scan a page and know if they're in the right place.

- Page navigation lists and links to the level 2 headings (H2) of a webpage.
- It is placed at the top of the page on the left.
- People can select a link to go directly to that section.
- The links are introduced by the text *On this page*.



The screenshot shows the official website of the State of California, Department of Cannabis Control. The page is titled "Cultivation" and is part of the "Licenses" section. A yellow box highlights the "On this page" navigation menu, which lists four links: "Cultivation licenses", "Use of pesticides", "Water permits", and "Appellations of Origin". A yellow arrow points to the "On this page" heading. The main content area features a large heading "Cultivation" followed by a paragraph explaining the process and a bulleted list of steps: "Preparing the soil and growing medium", "Planting seeds or clones", "Irrigating, fertilizing, and managing pests", "Harvesting plants", and "Drying, curing and trimming plants". Below this is another heading "Cultivation licenses" and a paragraph stating that a cultivation license is required to grow and sell cannabis in California.

Official website of the State of California

Department of Cannabis Control CALIFORNIA

Applicants ▾ Licenses ▾ Consumers ▾ Resources ▾ About us ▾

CA.GOV / Department of Cannabis Control / Licenses / Cultivation

On this page

- [Cultivation licenses](#)
- [Use of pesticides](#)
- [Water permits](#)
- [Appellations of Origin](#)

Cultivation

Cultivators grow all of the cannabis plants that are harvested, sold as flower, and made into products. Their operations look like other agricultural operations in California. Cannabis cultivation is a multi-step process that includes:

- Preparing the soil and growing medium
- Planting seeds or clones
- Irrigating, fertilizing, and managing pests
- Harvesting plants
- Drying, curing and trimming plants

Cultivation licenses

If you want to grow cannabis and sell it in California, you will need a [cultivation license](#). The type of cultivation license you need depends on:

About the components

Component structure

- Modular
- HTML markup (custom element web component or a markup pattern)
- Support JS and CSS (usually as a JavaScript and CSS bundle from npm, or from CDN-hosted bundle)
- Documentation
 - Includes usage instructions, installation, accessibility, CSS, progressive enhancement status and content model.
 - Open source documentation generally includes README, CHANGELOG, ROADMAP

How components can be used on a project

- Embed markup in an HTML page
- Integrate with editor tools
- Auto-generate compiled markup with scripts and data

Built for performance

ODI's web performance and accessibility leaderboard

Website: <https://cagov.github.io/leaderboard/> Github repo: <https://github.com/cagov/leaderboard>,

Rank	Trophy	URL	Lighthouse				
#1	🏆🏆	digital.ca.gov/	100	100	100	100 🤖	▶ Data and Graphs
#2	🏆	alpha.ca.gov/	98	100	100	100 398	▶ Data and Graphs
#3	🏆	drought.ca.gov/	98	100	100	100 398	▶ Data and Graphs
#4		covid19.ca.gov/	97	98	100	93 388	▶ Data and Graphs
#5		headless.cannabis.ca.gov/	91	100	93	91 375	▶ Data and Graphs
#6		vision2023.cdt.ca.gov/	72	100	100	99 371	▶ Data and Graphs
#7		projecttracking.technology.ca.gov/PAL	90	100	87	92 369	▶ Data and Graphs
#8		http://www.clrc.ca.gov/	96	98	80	92 366	▶ Data and Graphs
#9		tech.covid19.ca.gov/	77	100	87	100 364	▶ Data and Graphs

Rank	Trophy	URL	Lighthouse					Axe
Date	Rank	Perf	A11Y	Best Practices	SEO	Axe		
Aug 05 19:14	#4	97	Calculator	98	✓ 100	93	🔴 2	
Aug 02 13:08	🏆 #3	97	Calculator	98	✓ 100	✓ 100	🔴 2	
May 29 21:00	🏆 #3	96	Calculator	98	✓ 100	93	✓ 0	
May 29 14:23	🏆 #3	94	Calculator	98	✓ 100	93	✓ 0	
May 29 14:19	🏆 #1	96	Calculator	98	✓ 100	93	✓ 0	
May 29 13:17	#6	90	Calculator	98	✓ 100	93	✓ 0	

Date	Core Web Vitals				Web Vitals		
	LCP	Max Potential FID	TBT	CLS	FCP	SI	TTI
Aug 05 19:14	2.05s	165ms	284ms	0.03	1.03s	1.15s	2.05s
Aug 02 13:08	1.22s	182ms	△ 305ms	0.03	1.01s	1.01s	2.03s
May 29 21:00	△ 2.66s	122ms	150ms	△ 0.10	1.01s	1.01s	2.12s
May 29 14:23	△ 2.81s	183ms	231ms	△ 0.10	1.03s	1.03s	2.18s
May 29 14:19	△ 2.68s	122ms	149ms	△ 0.10	1.00s	1.00s	2.11s
May 29 13:17	△ 3.12s	215ms	273ms	△ 0.10	1.81s	1.81s	2.96s

Measuring performance

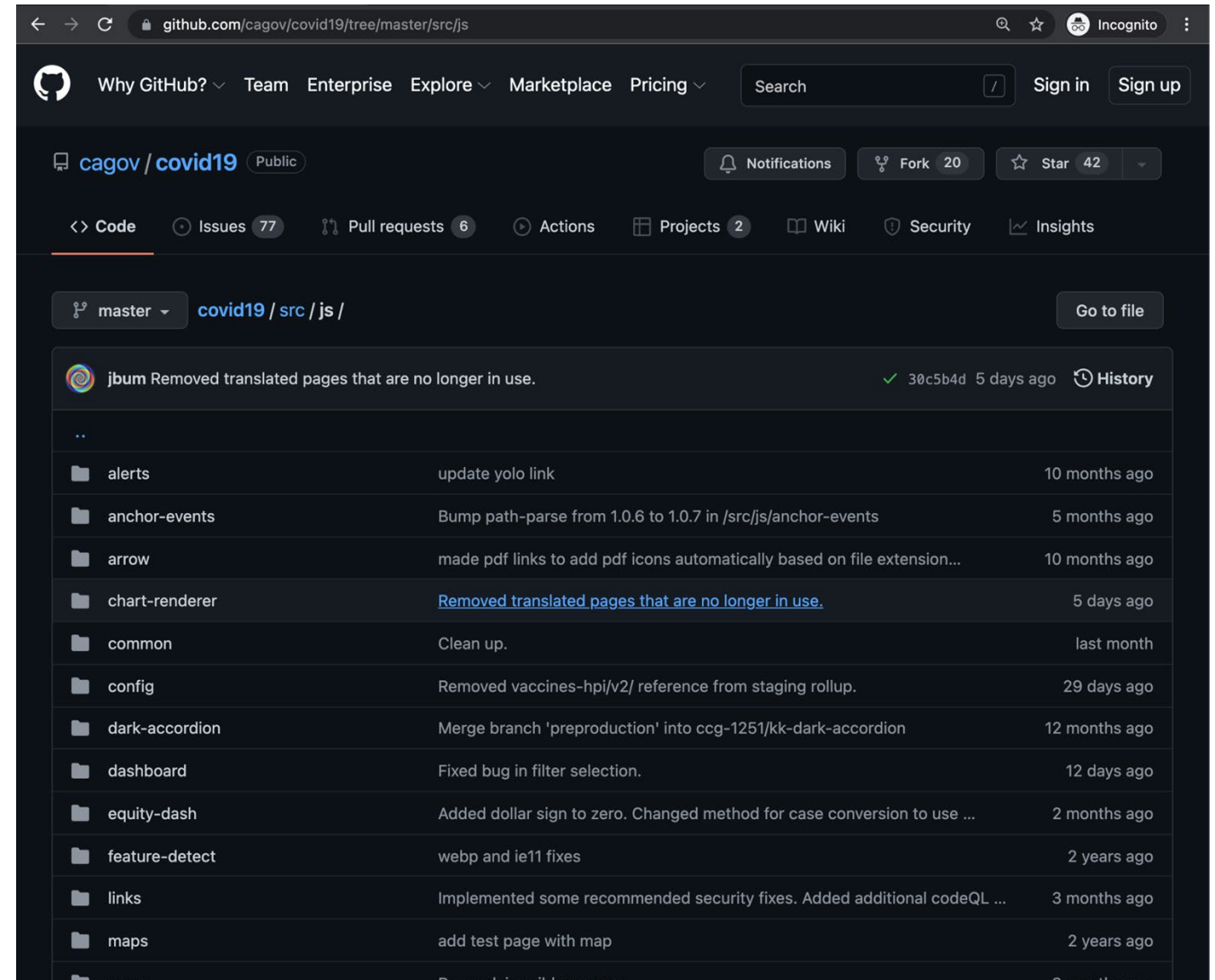
Example of lower performing sites. Many State websites have low performance scores. This impacts users on mobile devices, who may not be able to easily access critical services and information.

We recommend you test performance on your sites with <https://web.dev/measure>.

#101	webstandards.ca.gov/	44	97	73	99	313	► Data and Graphs
#102	courtreportersboard.ca.gov/	27	93	93	98	312	► Data and Graphs
#103	dir.ca.gov/chswc/	26	94	83	99	312	► Data and Graphs
#104	sierranevada.ca.gov/	43	98	87	84	312	► Data and Graphs
#105	women.ca.gov/	49	99	73	91	312	► Data and Graphs
#106	alrb.ca.gov/	42	95	80	95	312	► Data and Graphs
#107	naturopathic.ca.gov/	30	97	87	98	312	► Data and Graphs
#108	census.ca.gov/	47	95	87	83	312	► Data and Graphs
#109	osg.ca.gov/	40	100	73	98	312	► Data and Graphs
#110	energy.ca.gov/	33	100	93	85	311	► Data and Graphs
#111	fiduciary.ca.gov/	28	91	93	96	310	► Data and Graphs

Underlying tech stack of top performing sites

- Cloudfront CDN
- AWS s3 buckets
- GitHub
- CI/CD (GitHub actions)
- Static site generating tool (11ty + ODI tooling)
- Web components
- Sass and CSS Variables
- Content API + Middleware
- Markdown + HTML
- WordPress CMS editor or Github as flat-file data source
- Azure Functions as a service (FaaS)



Technical Skills

Modern web stack technology skills levels playing field for collaboration and hiring

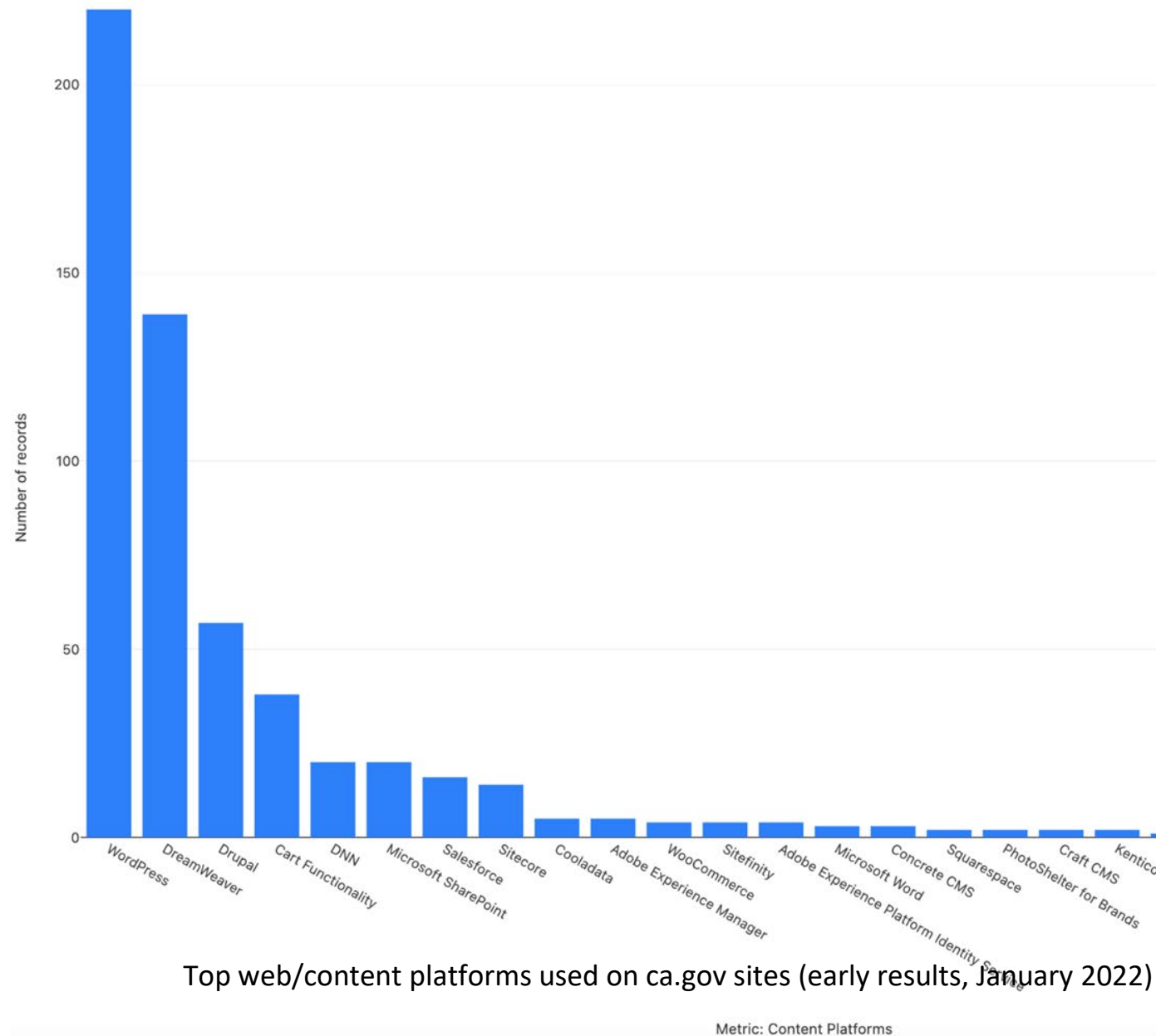
- W3C standard **Web components** (JavaScript ES6+, HTML, SASS, CSS Variables, JSON, Markdown)
- Github and CI/CD
- Static site generation
- Using npm packages
- Accessibility, web performance, translations
- Working with content and data APIs
- Creating FaaS/microservices (Azure, LAMBDA)
- Responsive web development

Technical roadmap

- Release first batch of components and website
- Review and feedback
- Improve system and communications
- Connect with a few partners for next round of projects
- Continuously research component upgrades
- Develop support capacity
- Review contributions
- Continue with publishing integrations (WordPress on multiple platforms, Static site workflows, Modern CMS explorations, Microsoft products, Drupal and others as decided)

Integrations

- First integration for WordPress in the works with CAWeb publishing
- Creating a dataset of CMS use across all State domains
- Top platforms found from initial research:
 - WordPress
 - Static HTML
 - Drupal
 - Microsoft products
 - “Long tail” of other CMSs
- Research emerging API-first CMSs



Process

Develop and build

- Start with user needs
- Research, Design, Prototype
- Feedback and user-testing
- Iterate

Propose a Design System project

- If you have a useful project, let Design System team know and we will direct you to guidance.
- Submit proposal

Contribute

- Create web components
- Meet technical requirements
- Design and technical review and feedback period
- Take project through Alpha, Beta and Production stages
- Develop support plan

Partner with us!

User Research
and Testing

Feedback and
Ideas

UX Design

Development

Get Involved!



**DIGITAL
WEB
SERVICES
NETWORK**

Sneak Peek

Adam Little

Designer

California Office of Digital Innovation



DIGITAL WEB SERVICES NETWORK

Panel Discussion

Moderator: Ehb Teng, ODI

Adam Little, ODI

Chach Sikes, ODI

Art Khomishen, CDT

Koji Kumpulainen, CDT



DIGITAL WEB SERVICES NETWORK

Suggested Future Topics Closing Remarks

Blaine Wasykiw

Chief Web Officer

California Department of Technology

Thank you

Post conference materials will be published on the [DWSN Website](#).

For questions, please write to: DigitalWebServicesNetwork@state.ca.gov



Bringing together digital product managers, designers, and engineers.



DIGITAL WEB SERVICES NETWORK

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Next DWSN Quarterly Forum Thursday, April 21, 2022