

A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The scene is heavily shaded, with bright sunlight filtering through the tall evergreen trees, creating a dramatic play of light and shadow. The person is small and silhouetted against the bright path.

ANGULAR IN THE JAMSTACK

TARA Z. MANICSIC
@TZMANICS

ANGULAR
DX ENGINEER
@NETLIFY



A photograph of a person walking away from the camera on a narrow, light-colored path. The path is surrounded by tall, dark evergreen trees and some deciduous trees with green leaves. Sunlight filters through the branches, creating bright highlights on the path and the person's silhouette. The overall atmosphere is misty and serene.

WHAT IS THE JAMSTACK

New! The first O'Reilly report on the Jamstack. [Get the free eBook](#)



[Best Practices](#) [Examples](#) [Resources](#) [Community](#) [Diversity and Inclusion](#)

Fast and secure sites and apps delivered by pre-rendering files and serving them directly from a CDN, removing the requirement to manage or run web servers.

When we talk about “The Stack,” we no longer talk about operating systems, specific web servers, backend programming languages, or databases.

The Jamstack is not about specific technologies. It's a new way of building websites and apps that delivers better performance,

FAQ

[What is the Jamstack? →](#)

[Why the Jamstack? →](#)

CONTENT DELIVERY NETWORKS

What more can a CDN do on the JAMstack?



Divya Jan 25 · 2 min read

#jamstack #jamuary

Compared to their predecessors, modern CDNs are not limited in their capacity and can do a lot more than serve static assets. The emergence of edge computing bolstered modern CDNs with the capability to handle crucial business logic like redirects and authentication at the edge. By forgoing the extra trip to the origin server, edge logic at the CDN layer brings the server ever closer to the user. With the increasingly blurred distinction between what an edge server can do and what an origin server can do, CDNs are increasingly being referred to as Application Delivery Networks (ADNs). With an ADN, logic once reserved for origin servers can now be implemented at the edge. Cache invalidation is one such example of this. In the context of an ADN, a new site build invalidates the old cache and replaces it with the updated content. Given the difficulty of managing the scale of a globally distributed network of edge servers, a CDN / ADN that

Netlify Edge

A new type of application delivery network custom designed for blazing fast sites and modern workflows.

Global by default. Multi-cloud by design.

A global platform with powerful features for managing code and assets.

Distributed just like a CDN, but with advanced functionality for publishing entire sites and applications. Automate builds to prerender content and deploy worldwide to every major cloud provider—including staging, rollbacks, and even A/B testing.





WTF is the Jamstack? Move past the label & build better websites.

At a high level, the Jamstack is an architectural approach to web apps that focuses on:

- generating cacheable, static assets at build time whenever possible,
- deploying those assets to CDNs, and
- using client-side JavaScript to call third-party APIs and serverless functions for dynamic interactions and data.

For individual developers, the Jamstack lowers the barrier to entry, cuts down on the number of tools to learn, and provides modern tooling to build web apps.

For teams, the Jamstack helps enforce a more maintainable architecture and decreases iteration time, enabling faster delivery along with increased security and scalability.

For users, Jamstack apps typically load faster and are more reliable, which makes the web a less frustrating place.

Can a JAMstack site be dynamic?



Divya Jan 9 · 2 min read

#jamstack #jamuary

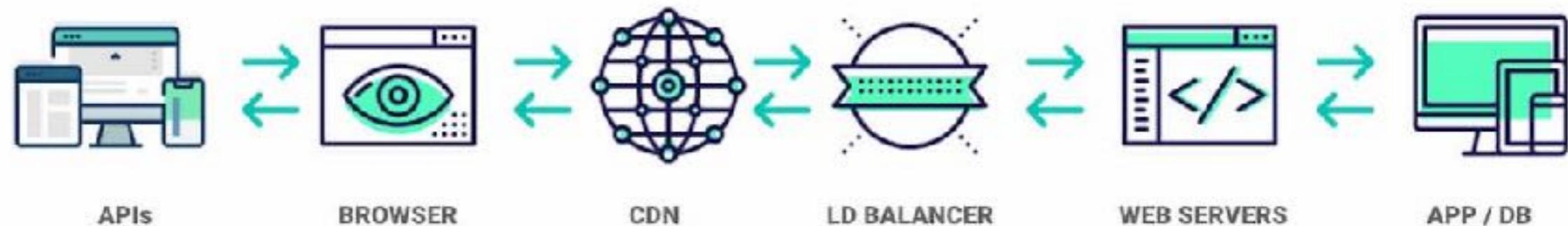
JAMstack sites are characterized by their fairly “static” nature. They consist of mostly static assets that are pre-generated ahead of time and served to the end user with minimal latency via a CDN. Because JAMstack sites favor pre rendering content at build time, they can seem antithetical to dynamic sites where content is “dynamically” fetched at request time from the server. This assumption is deeply predicated on the dichotomy of static and dynamic (This is unsurprising given that in the english language static and dynamic are in fact antonyms.) In the context of the web, static and dynamic are separate ends of a spectrum. A site can be at either extremes of static and

Jamstack architecture



VS

Monolithic architecture



Serverless made painless

Powered by AWS Lambda. Simplified by Netlify.

Write JavaScript or Go APIs to perform just about any backend task, scaling automatically as demand increases. Setting up AWS Lambdas on your own can be fairly complex—tutorials average 20 steps! With Netlify, simply set a folder and drop in your functions. Everything else is automatic.



How Netlify Functions work

Write simple functions that automatically become APIs.

Netlify deploys the functions you write as full API endpoints and will even run them automatically in response to events (like a form submission or a user login). Functions receive request context or event data, and return data back to your frontend.

[Learn more in the docs →](#)

/functions/split-test-activated.js

```
exports.handler = async (event, context) => {
  return {
    statusCode: 200,
    body: "We are now split testing!"
  };
}
```

By [Divya Tagtachian](#) in [Opinions & Insights](#) • April 29, 2020

Envisioning the future of the Jamstack

In the last 5 years, the Jamstack has seen a meteoric growth from relative obscurity to becoming one of the fastest growing architectures for building fast and secure websites. A notable catalyst for the Jamstack's rise in popularity was the global migration away from monolithic web applications to a more decoupled architecture that relied heavily on microservices. Up until that point, monolithic web applications had been the de-facto standard, and harnessing core business logic, like authentication, required a fully featured backend.

With the Jamstack, complex, monolithic applications could now be disassembled into small, independent components that are easier to parse and understand. The introduction of serverless and the emergence of the API further cemented the Jamstack as the perfect paradigm for building streamlined, and lightweight applications that scaled efficiently. Developers were now free to focus on their own unique implementations. Instead of reinventing the wheel with custom logic for common tasks like authentication and data storage, functionality can be easily imported via an API endpoint. Moreover, the Jamstack's static nature makes it ideal for building fast, reliable, and secure websites.

A photograph of a person walking away from the camera on a narrow, light-colored path. The path is surrounded by tall, dark evergreen trees and some deciduous trees with green leaves. Sunlight filters through the branches, creating bright highlights on the path and the person's silhouette. The overall atmosphere is misty and serene.

WHAT IS THE JAMSTACK

A photograph of a person walking away from the camera on a narrow, light-colored path. The path is surrounded by tall, dark evergreen trees and some deciduous trees with green leaves. Sunlight filters through the branches, creating bright highlights on the path and the person's silhouette. The overall atmosphere is peaceful and slightly misty.

BEST PRACTICES OF THE JAMSTACK

Plus: Entire Project on a CDN

Because Jamstack projects don't rely on server-side code, they can be distributed instead of living on a single server. Serving directly from a CDN unlocks speeds and performance that can't be beat. The more of your app you can push to the edge, the better the user experience.

Plus: Automated Builds

Because Jamstack markup is prebuilt, content changes won't go live until you run another build. Automating this process will save you lots of frustration. You can do this yourself with webhooks, or use a publishing platform that includes the service automatically.

Plus: Everything Lives in Git

With a Jamstack project, anyone should be able to do a `git clone`, install any needed dependencies with a standard procedure (like `npm install`), and be ready to run the full project locally. No databases to clone, no complex installs. This reduces contributor friction, and also simplifies staging and testing workflows.

Plus: Atomic Deploys

As Jamstack projects grow really large, new changes might require re-deploying hundreds of files. Uploading these one at a time can cause inconsistent state while the process completes. You can avoid this with a system that lets you do "atomic deploys," where no changes go live until all changed files have been uploaded.

Plus: Modern Build Tools

Take advantage of the world of modern build tools. It can be a jungle to get oriented in and it's a fast moving space, but you'll want to be able to use tomorrow's web standards today without waiting for tomorrow's browsers. And that currently means Babel, PostCSS, Webpack, and friends.

Plus: Instant Cache Invalidation

When the build-to-deploy cycle becomes a regular occurrence, you need to know that when a deploy goes live, it really goes live. Eliminate any doubt by making sure your CDN can handle instant cache purges.

[Sites](#) [Domains](#) [Members](#) [Audit log](#) [Team settings](#) Search site[New site from Git](#)

Want to deploy a new site without connecting to Git?

Drag and drop your site folder here

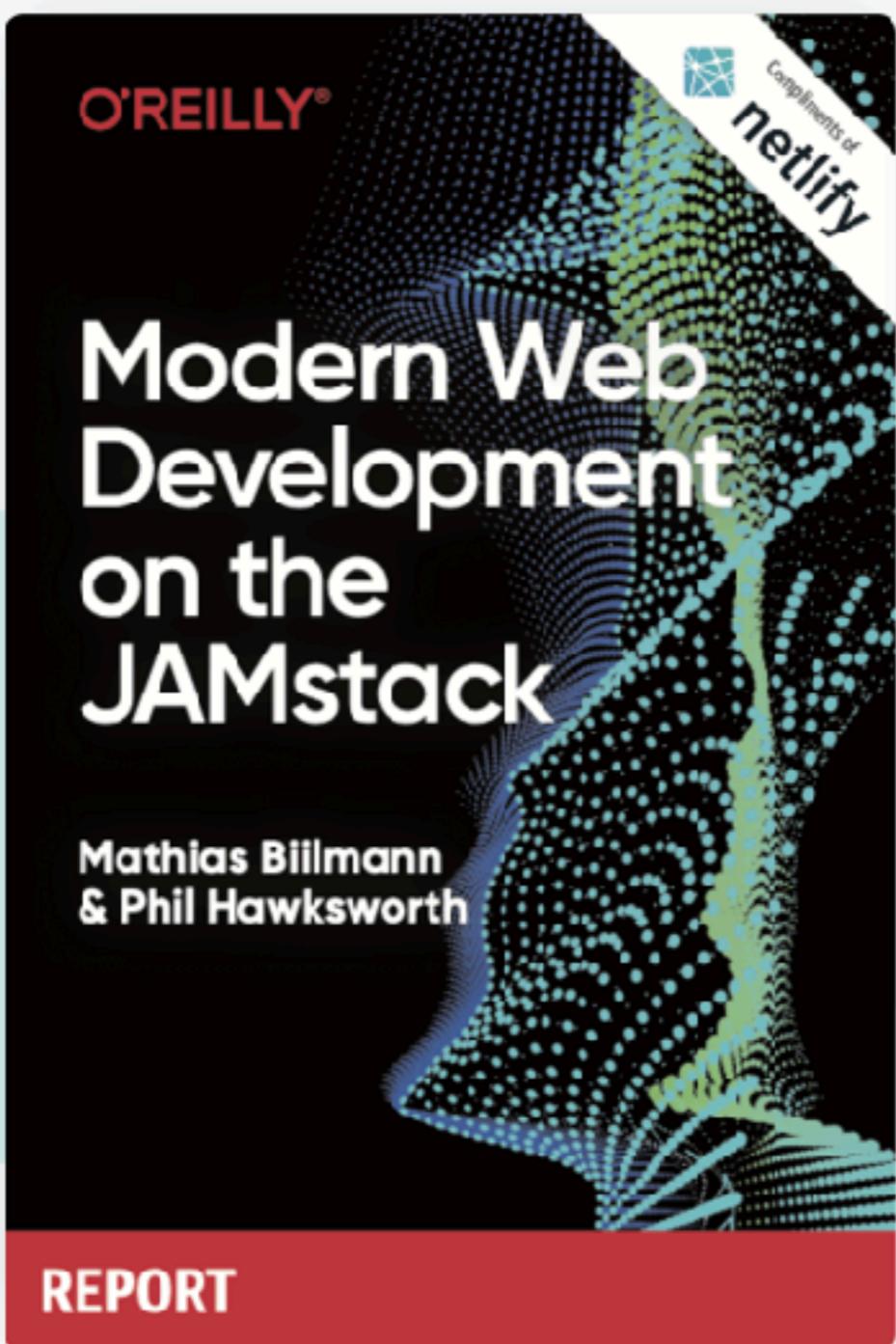
By [Rareş Matei](#) in [Guides & Tutorials](#) • April 21, 2020

Deploying Nx monorepos to Netlify

We're excited to have a guest post from our friend, Rareş Matei, a talented JavaScript Architect from [Nrwl](#) 🎉. Rareş was working on helping devs deploy their monorepos with this super thorough blog post and we thought it would be a great fit on the Netlify blog. If you were looking for different strategies to deploy only the changed files on your monorepo, whether with [Netlify build plugins](#), builders in the [Nx workspace](#), or with CI strategies, this post can help you out. Rareş is working with React in this post but the deployment strategies can work with Angular as well!

If you're new to Nrwl they are a consulting company filled with talented devs that help ambitious enterprises adopt best practices for development pioneered at the world's leading tech companies. Nrwl was founded by Angular team members and former Googlers, Jeff Cross and Victor Savkin, two brilliant and fun gents. They built their company to focus on developing teams, not just developing applications, to set companies up for long-term success. Netlify and Nrwl have a shared goal of trying to help devs build better sites faster. Read on and you can see some of the free dev

This practical report explains how to run your web projects—from simple sites to complex applications—on the JAMstack, a modern web architecture for deploying fast, secure and highly-scalable sites that don't require a traditional origin server.



Download the eBook

Email address

- I'm interested in learning more about using the JAMstack at work

[Get the eBook](#)

A photograph of a person walking away from the camera on a narrow, light-colored path. The path is surrounded by tall, dark evergreen trees and some lower green shrubs in the foreground. The scene is dimly lit, suggesting it might be early morning or late afternoon.

REDUCING COSTS



Reduced costs by 65%

Citrix executed a massive migration of their product documentation to Netlify ahead of schedule, resulting in a 65% cost savings and a significantly better user experience.

How the Jamstack enables enterprises to Deliver web projects 10x faster

Learn why Loblaw, Cornerstone OnDemand, Restaurant Brands International and more are using the Jamstack and Netlify to empower their developers

Download the whitepaper

Email

Name

Job title

Organization

Get the whitepaper

“Netlify empowers our engineering teams to launch websites and campaigns in minutes with no-ops, a goal that has often been a pipe dream in our industry.”



Justin Watts

Engineering Director, Loblaw Digital

By [Sarah Drasner](#) in [Guides & Tutorials](#) • April 24, 2020

Automate Contentful Deploys with Netlify Webhooks

When we publish a post on Contentful, we typically want our site to rebuild to include it. In this post we'll go over Netlify's webhooks, which allows Netlify to accept HTTP POST requests as a signal to trigger new builds when content updates.

It's fairly straightforward to set this up, though it does require some configuration within Contentful and some within Netlify.

A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The trees are tall and dark, creating a canopy that filters the sunlight. The path leads towards a bright opening in the background where the sky is visible.

FASTER
PERFORMANCE



SMASHING
MAGAZINE

Reduced time to first load from 800ms to 80ms

Smashing Magazine migrated its large content and e-commerce site from WordPress to the JAMstack and Netlify for easier integrations, speed, and better performance.

PERFECT KETO

6x faster performance

Dr. Gustin, founder of Perfect Keto, adopted a Headless WordPress architecture with Netlify to improve average page load time from 6.2s to 750ms.

A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The path is surrounded by tall evergreen trees and some deciduous foliage. Sunlight filters through the branches, creating bright highlights and deep shadows. The overall atmosphere is peaceful and somewhat mysterious.

BETTER
DEVELOPER EXPERIENCE

By Tom Preston-Werner & swyx in Opinions & Insights • January 17, 2019

The importance of Developer Experience with GitHub Founder Tom Preston-Werner



The next in our interview series with leaders and innovators in Developer Experience (DX) – who better to ask than the legendary founder of GitHub?

“The only thing that matters to me when it comes to developer experience is this: can I turn what’s in my mind into finished product quickly and easily, or not? ...”



Delivers web projects 30% faster

Cornerstone OnDemand migrated from an outdated, monolithic CMS architecture to the Netlify. Page loads are 25% faster and time to market for new pages and content has improved 30%.



Reduced costs by 65%

Citrix executed a massive migration of their product documentation to Netlify ahead of schedule, resulting in a 65% cost savings and a significantly better user experience.

[Case Study](#)

Fueling growth with the JAMstack

Peloton trusts Netlify as the build and serve platform for its website, ecommerce and user login infrastructure.

[Website](#)

Manages traffic spikes with ease

Non-profit organization encouraging voter participation uses Netlify to manage 500+ partner sites and handle big traffic spikes around election season.

[Website](#)

Launching a web campaign in



Delivers web projects 30% faster

"We now have the capability to develop easily and quickly. Netlify is a time saver, and a money saver."



JAMstack Conf

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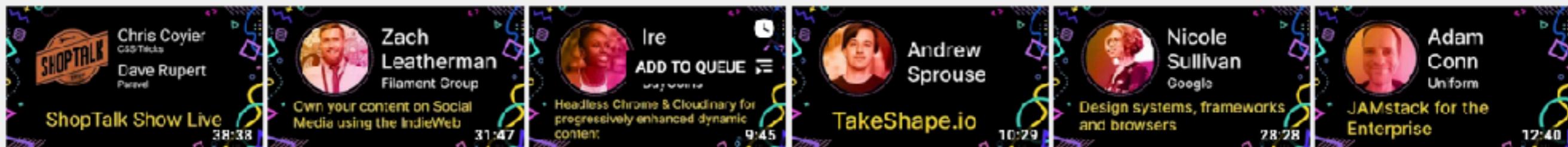
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Lightning launch - TakeShape

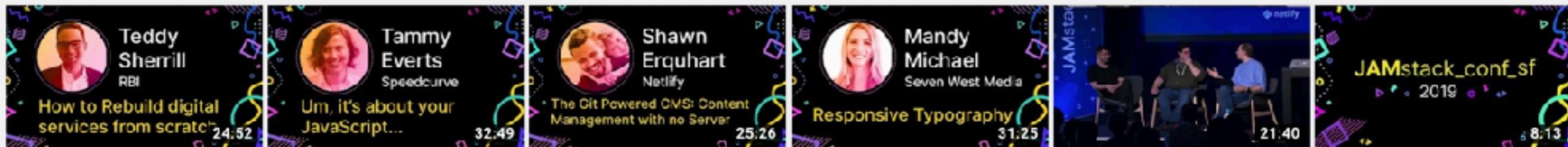
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Design systems, frameworks and browsers

1.5K views • 5 months ago

Lightning launch - Uniform

536 views • 5 months ago



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Um, its about your JavaScript...

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The Git Powered CMS Content Management with...

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Responsive Typography

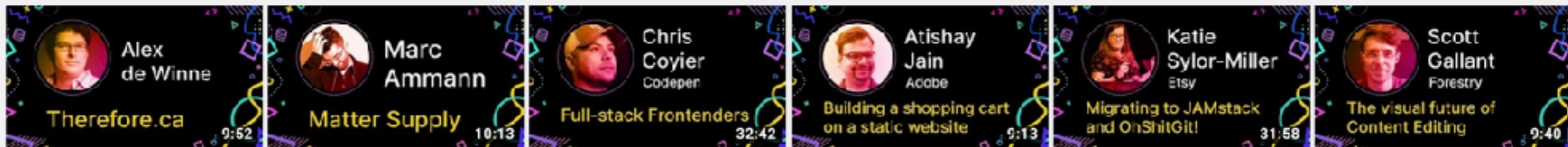
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JAMstack agency fireside chat

344 views • 5 months ago

JAMstack for Digital Agencies

406 views • 5 months ago



How Therefore Interactive is modernizing Longos on the...

Matter Supply fast tracks iconic Nike campaign with...

Oops—I guess we're full-stack developers now

Building a shopping cart on a static website

Migrating to JAMstack and OhShitGit!

The visual future of content editing



OVERVIEW

VIRTUAL

Jamstack Conf 2020

Jamstack Conf is a two day celebration of the next generation of web apps, where the Jamstack community and ecosystem comes together to learn, connect and create. Attendees range from front end and full stack engineers to web agencies all ready to push the boundaries of tomorrow's web architecture.

VIRTUAL

May 27-28

Join us for a Jamstack Conf takeover of the internet.

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SAN FRANCISCO

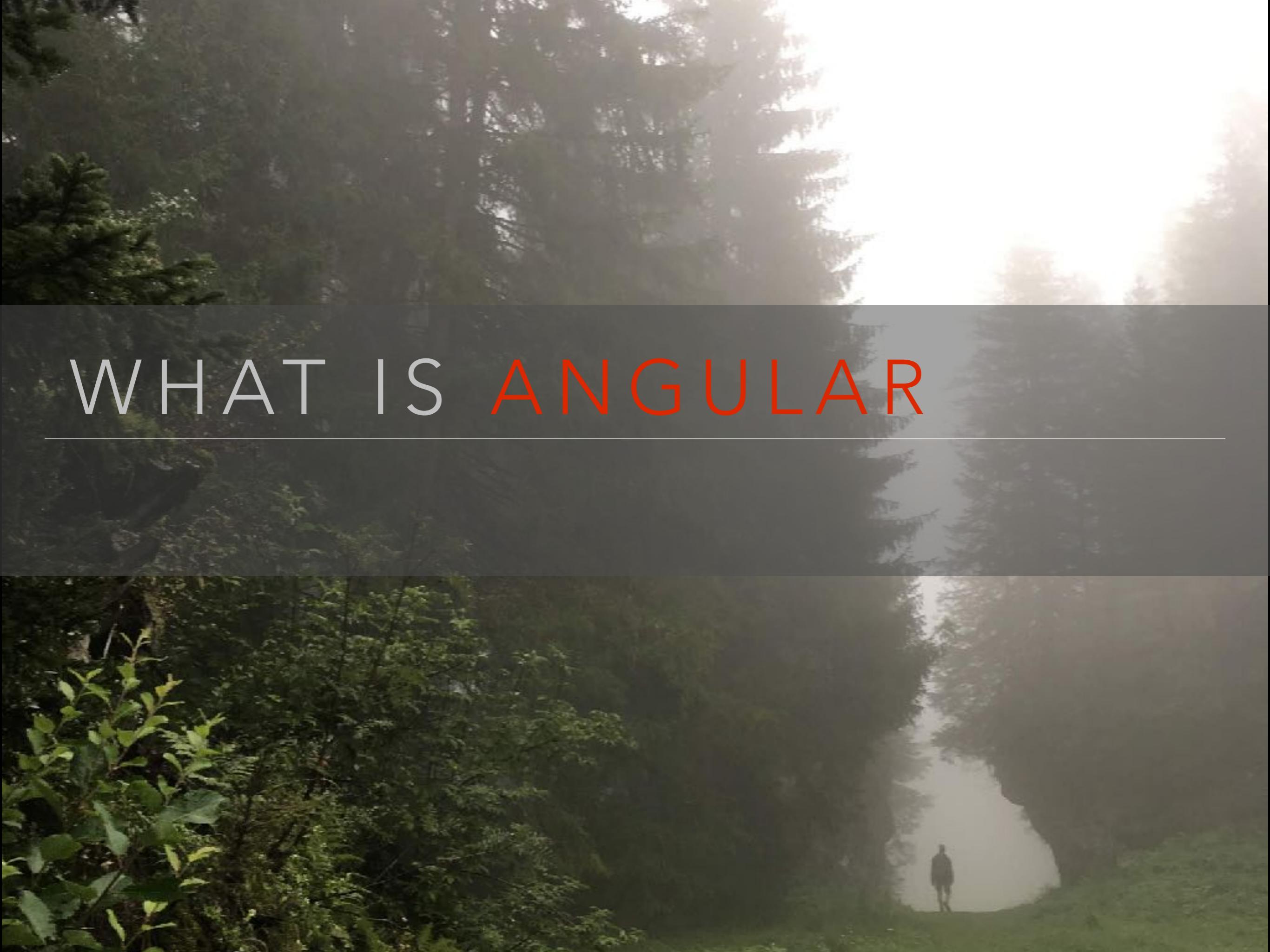
October 6-7

Join us for a Jamstack conf in San Francisco, CA.

[EARLY SIGN-UP](#)

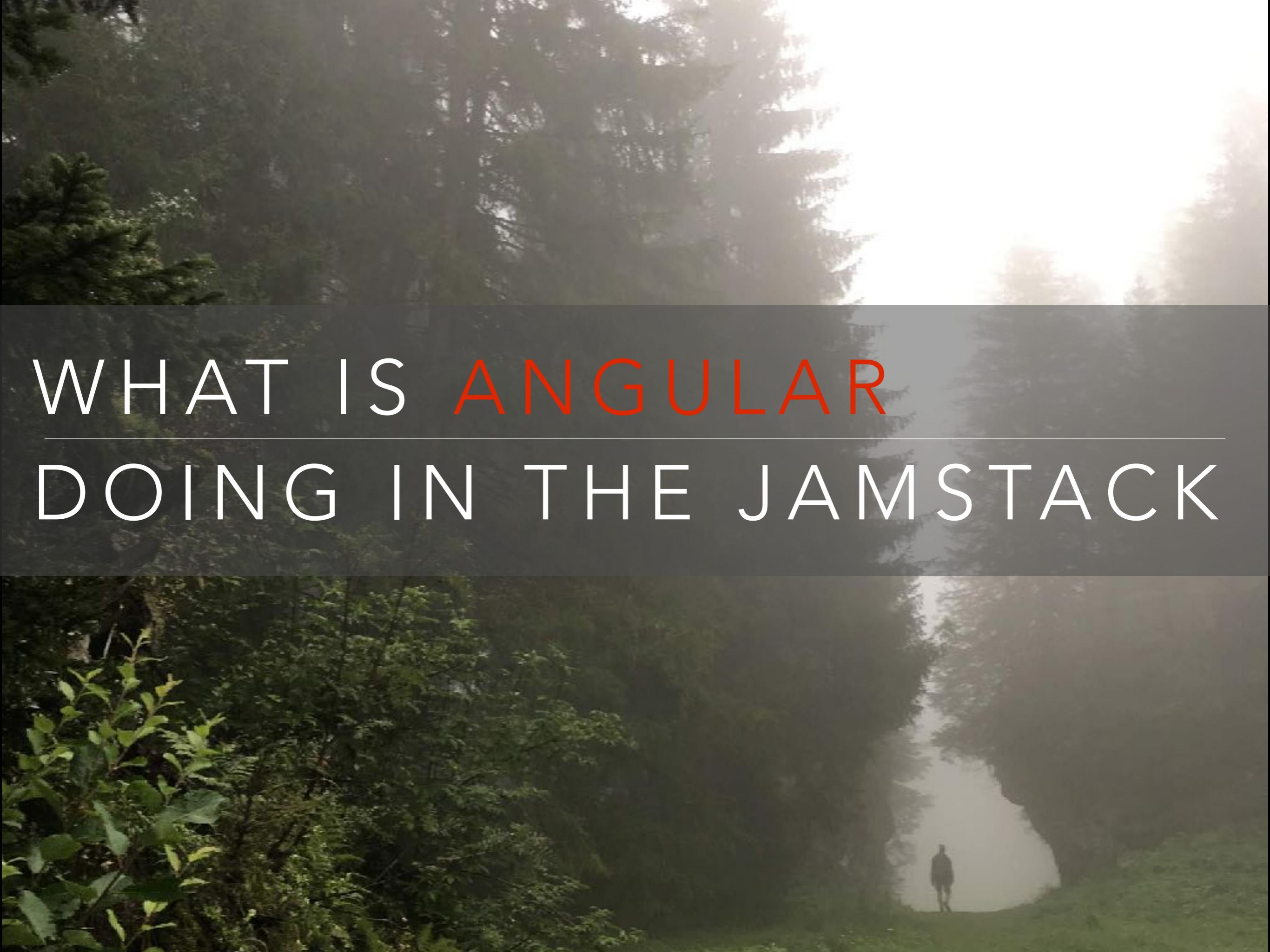
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A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The scene is bathed in dappled sunlight, with bright rays filtering through the tall evergreen trees. The foreground is filled with dark green foliage and bushes. The overall atmosphere is mysterious and peaceful.

WHAT IS ANGULAR





WHAT IS ANGULAR DOING IN THE JAMSTACK

Static Website with Angular



@UriShaked

- Component-based Architecture
- Content shows immediately - no waiting for JS
- No server-side code



▶ ▶ 🔍 3:36 / 34:02



Uri Shaked - Building High Performance Static Website with Angular

2,639 views • Dec 15, 2017

42

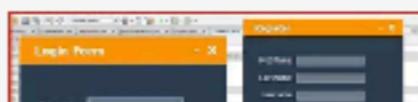
1

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Static Sites, wicked fast.

Scully is the best static site generator for Angular projects looking to embrace the JAMStack.

[GET STARTED](#)

FEATURES



Machine Learning Driven



Best of Both Worlds



The First in Angular

Building an Angular Jamstack App with Scully

Angular finally has a static site generator!! 🎉 Thanks to the team at [HeroDevs](#) we now have [Scully](#) to pre-render our Angular applications. You can learn more about it [in our Scully announcement post](#). HeroDevs just had a [live demo](#) of their alpha release and I wanted to give you a companion code resource to cover everything that they announced.

Today we'll:

- use Scully to pre-render an existing Angular app into static HTML pages
- rely on a JSON plugin to feed user information to render pages
- use Scully's routes service to display all our active routes as links
- create a blog and post with Scully's generate schematics
- deploy the whole kit and [caboodle](#) using Netlify

Minko Gechev
@mgechev

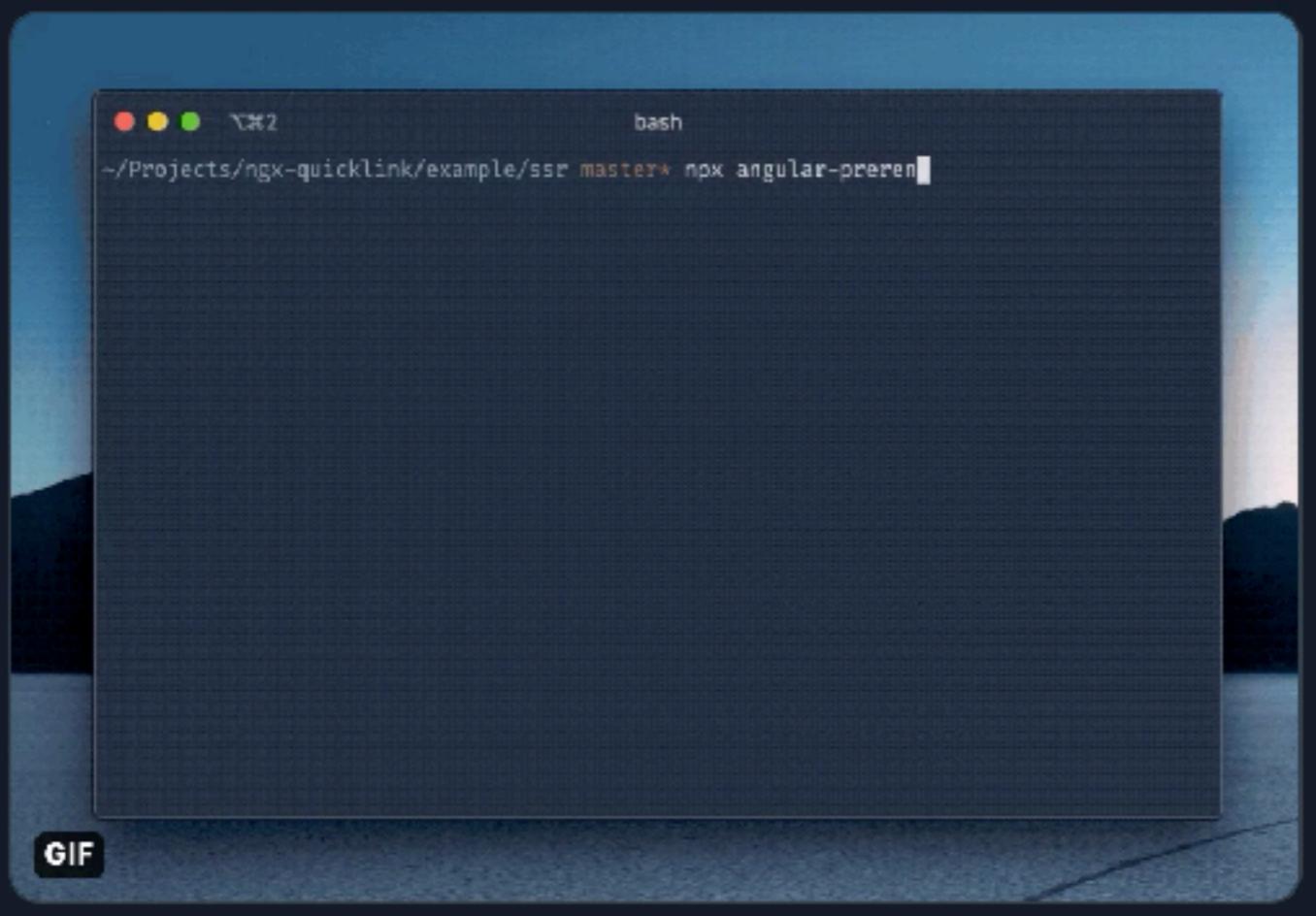
🔥 Using angular-prerender you can automatically prerenders all non-parametrized routes in your Angular Universal app!

In your project run:

```
npm i angular-prerender  
npx angular-prerender
```

With static analysis it finds all route defs and render them

📦 npmjs.com/package/angular-prerender





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THE POWER OF SERVERLESS
FOR FRONT-END DEVELOPERS

RESOURCES

Articles about things related to Serverless, JAMstack, and the whole ball of yarn.

TOPICS: AMPLIFY API API-GATEWAY APPSYNC ARCHITECTURE AUTH AZURE BLOG CALCULATOR
CLOUD-FUNCTIONS CLOUDFLARE CLOUDINARY CMS COMPARE DATABASE DYNAMODB EMAIL EXPLAIN
EXPRESS FAUNADB FIREBASE GATSBY GITHUB GOOGLE-CLOUD GRAPHQL HEROKU HOSTING HOW-TO
HUGO JAMSTACK LAMBDA MEDIA MONITORING NETLIFY NEWSLETTER NODE NOTIFICATIONS
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STATIC-SITE-GENERATOR STRAPI STRIPE TWILIO VIDEO YUE WEBTASK

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What is Serverless all about?

by Jonas Baldin

An overview of its history, basic concepts, providers, frameworks, benefits and drawbacks.

A Serverless CMS Architecture

by Aerobatic

Who has time to babysit servers? Not me. I have code to write, and customers to keep happy. I could use just a static site generator like Jekyll,

Amplify for Teams

by Kurt Kemple

How to implement a shared environment structure needed for you and your team or teams to succeed when building serverless applications with Amplify.

SERVICES

RESOURCES

IDEAS

A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The path is surrounded by tall evergreen trees and some deciduous bushes in the foreground. Sunlight filters through the canopy, creating bright highlights and deep shadows. The overall atmosphere is misty and serene.

LET'S MAKE ANGULAR
ON THE JAMSTACK



app.component.html — scully-angular-jamstack-sites

EXPLORER

OPEN EDITORS

- app.component.html (jamgular)
- TS app-routing.module.ts (angular)
- TS app.module.ts (jamgular/src/app)

SCULLY-ANGULAR-JAMSTACK-SITES

- jamgular
 - dist
 - jamgular
 - e2e
 - node_modules
 - src
 - app
 - about
 - home
 - home-routing.module.ts
 - home.component.html
 - home.component.scss
 - home.component.spec.ts
 - home.component.ts
 - home.module.ts
 - user
 - users

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

1: bash

✓ Update package.json
CREATE scully.config.js (65 bytes)
UPDATE package.json (1503 bytes)

@jlengstorf: ~/learnwithjason/scully-angular-jamstack-sites/jamgular (master *)
\$

Ln 1, Col 19 Spaces: 2 UTF-8 LF HTML Prettier: ✓ ⌂ ⌂ 2

Create a Static Site Using Angular & Scully

Jason Lengstorf (@jlengstorf) · Tara Z. Manicsic (@tzmanics)

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25 commits

1 branch

0 packages

0 releases

1 contributor

Branch: master ▾

[New pull request](#)[Create new file](#)[Upload files](#)[Find file](#)[Clone or download](#) ▾

 tzmanics	adds obviously needed for emojis	Latest commit b5d06d4 3 days ago
 src	adds redirects to toml	9 days ago
 .gitignore	initial commit from schematics cli	last month
 .npmignore	initial commit from schematics cli	last month
 CODE_OF_CONDUCT.md	adds COC and contributors docs	19 days ago
 CONTRIBUTING.md	adds COC and contributors docs	19 days ago
 README.md	adds obviously needed for emojis	3 days ago
 package-lock.json	1.1.1	13 days ago
 package.json	1.1.1	13 days ago
 tsconfig.json	initial commit from schematics cli	last month

[README.md](#) Netlify Schematics for Angular 

```
~/Documents/PON/CODE/NG/anglify-routes-skeleton(master) » █
```

tzmanics@Taras-MBP

A photograph of a person walking away from the camera on a narrow, light-colored path through a dense forest. The trees are tall and dark, creating a canopy that filters sunlight. The path leads towards a bright opening in the background where the sky is visible.

YOU MAKE ANGULAR
ON THE JAMSTACK

Schedule presented in London UK Timezone (GMT+1)



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Workshop: Angular in the Jamstack

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The Jamstack is a modern architecture that helps you create secure, dynamic sites faster. It uses JavaScript, APIs and prerendered Markup, served without web servers. Using Angular on the Jamstack is a "ripe" concept that's taking off fast. In this workshop we'll cover the core concepts and benefits of the JAMstack, so you can confidently tell your co-workers, "I know exactly what the JAMstack is!" Then we'll jump into coding our individual Jamstack sites using Angular. We'll cover how to handle search, forms, data, serverless functions, and more, all through coding out an application deployed with CI/CD for you to show off to friends & family. Hope to code with you soon!

Speakers



Tara Z. Manicsic

Developer Experience Engineer, Netlify



By [Tara Z. Manicsic](#) in [Guides & Tutorials](#) • October 30, 2019

What's Angular in the JAMstack? It Sounds Delicious!

You may have heard about the [JAMstack](#), it's been growing in popularity since [its conception](#). There are a ton of great articles, videos, and tutorials that explain the JAMstack. I wanted this post to specifically delve into the topic through Angular-colored glasses (which are, of course, rose-colored).

By [Tara Z. Manicsic](#) in [Guides & Tutorials](#) • September 23, 2019

First Steps Using Netlify & Angular

Well, hello there! Welcome to the start of your journey with Netlify and Angular. We're so happy to have you! At Netlify we want to empower you to make awesome web projects with ease; from local development to global deployment. In this post I'll walk you through the first steps of connecting and deploying your Angular application with our web UI (user interface aka website) and the Netlify CLI (command line interface) tools. If you have any questions or comments check out [our community](#) for answers from our team and fellow Netlify users. Let's get started!

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