

Building And Deploying a Static Site With Blogdown and Netlify

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Static and Dynamic Sites

- **Static Sites:** a bunch of files served up by a webserver
 - Usually just HTML, CSS, JS
 - No server communication other than initial load
 - Site can change based on user interaction, but those changes don't persist
 - If you refresh the page, it will go back to its original format
- **Dynamic Sites: everything else**
 - More advanced, dynamic capabilities
 - Serve up content that changes based on user actions or identity
 - Read from and write to a database based on user inputs
 - Show different content based on what user is logged in

Why Use a Static Site?

- **Simplicity**
 - Fewer moving parts = easier debugging and troubleshooting
- **Security**
 - Fewer moving parts = smaller attack surface
- **Faster Performance**
 - All your webserver has to do is serve up files
 - No need to generate content on the fly means less computation
 - Easier to distribute to a CDN to reduce latency
- **Easy to scale**
 - Just copy the files to more servers and load balance
- **Third party hosting (Netlify, Github Pages, etc.) limits infrastructure overhead**
- **Dynamic sites are often overkill for many use cases**

Static Site Generators

- Static sites have advantages, but can be a pain to manually create and modify the static files
- Static site generators pregenerate your files
 - Take templates and fill them with your content
 - Often take a more human-readable format e.g. markdown and create HTML, CSS, etc
- Often have easy-to-apply themes created by the community
- Examples: Jekyll, Hugo
 - Jekyll is Ruby-based, built by GitHub for powering Pages
 - Hugo is Go-based, focused on speed and flexibility
 - We'll be using Hugo today
- Big list of generators at <https://www.staticgen.com/>



What is Blogdown?

- Extends Hugo to allow generation from R Markdown
- Makes it easier to create and manage a site
- Several benefits
 - R snippets inside of the site itself (similar to an R Notebook)
 - LaTeX and other non-HTML-friendly systems much easier to support
 - RStudio is a nice editing environment
- Created by [Yihue Xie](#), an RStudio developer
 - Co-Authored rmarkdown and shiny, authored knitr, bookdown, a bunch of other stuff
- Not just for blogs, despite the name
- Uses Hugo by default, but other generators are possible with customization
- More info at <https://bookdown.org/yihui/blogdown/>



Static Site Hosting

- Hosting a static site is as simple as serving the files
- As mentioned before, there are several third-party static site hosting services
- Github pages is simple and great for personal sites or hosting documentation on a github.io domain
- Netlify is more full featured
 - Easy to get working with custom domain
 - Click a button and get HTTPS
 - Built in CI
 - Netlify CDN
 - Additional support for forms, AWS Lambdas, and other stuff

GitHub



netlify

Pre-Demo Questions?

Blogdown Setup

- I won't be demoing any of this because I already did it, but...
- Setup is pretty straightforward
 1. Install R
 2. Install RStudio
 3. `install.packages("blogdown")`
 4. `blogdown::install_hugo()`

Live Demo

1. Create new RStudio Project
2. Create test post
3. Build Site Locally
4. Create Git Repo
5. Create Netlify Site From Git Repo
6. Associate site with domain name

Post-Demo Questions?