



adaptTo()

APACHE SLING & FRIENDS TECH MEETUP
2 - 4 SEPTEMBER 2019

Static site generation: simple scalability at runtime

Chris Pilsworth | @cpilsworth



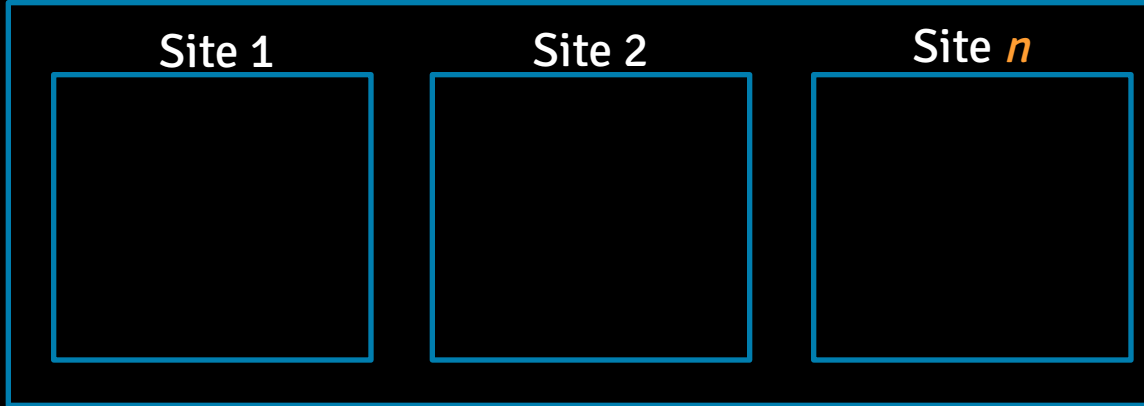
About me

- **Independent** solution architect & engineer
- Working *with* Adobe Professional Services
- Working in automotive,
& financial services

- **What?**
 - Generate sites *before* they are visited
 - Instead of rendering (and caching) on request
- **Ok, but... why?**

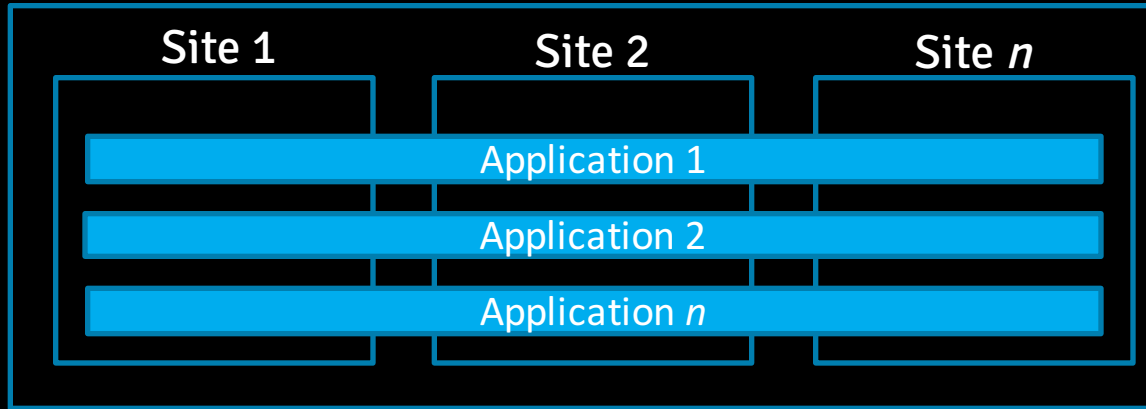
- Multiple sites

AEM Platform



- Multiple sites & teams

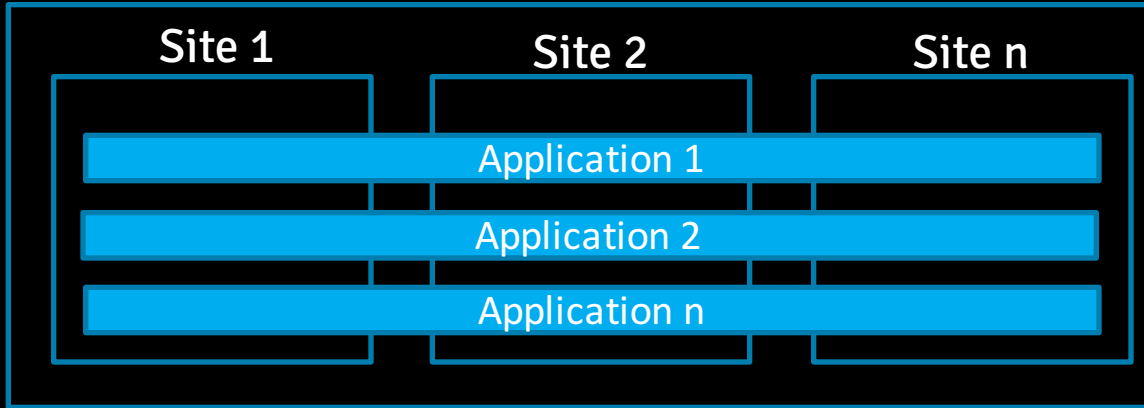
AEM Platform



Background – building a platform

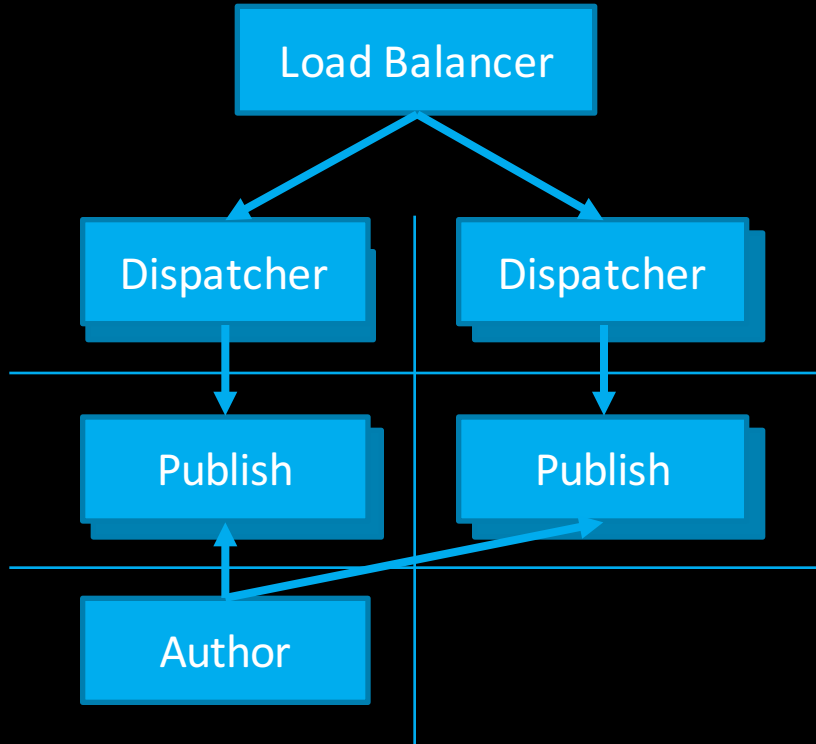
- Multiple sites & teams & regions

AEM Platform



(x3)

Typical deployment



Multi-tenancy

- **Good:** OSGi, namespaces
- **Bad:** Authoring customisation
- **Ugly:** Resource sharing, deployment, upgrades

- For best performance & scalability
- Reduce the need for runtime processing
- Most sites rely on **>90% cache** hit ratio
- Hardest problem: **cache invalidation**

Common problems

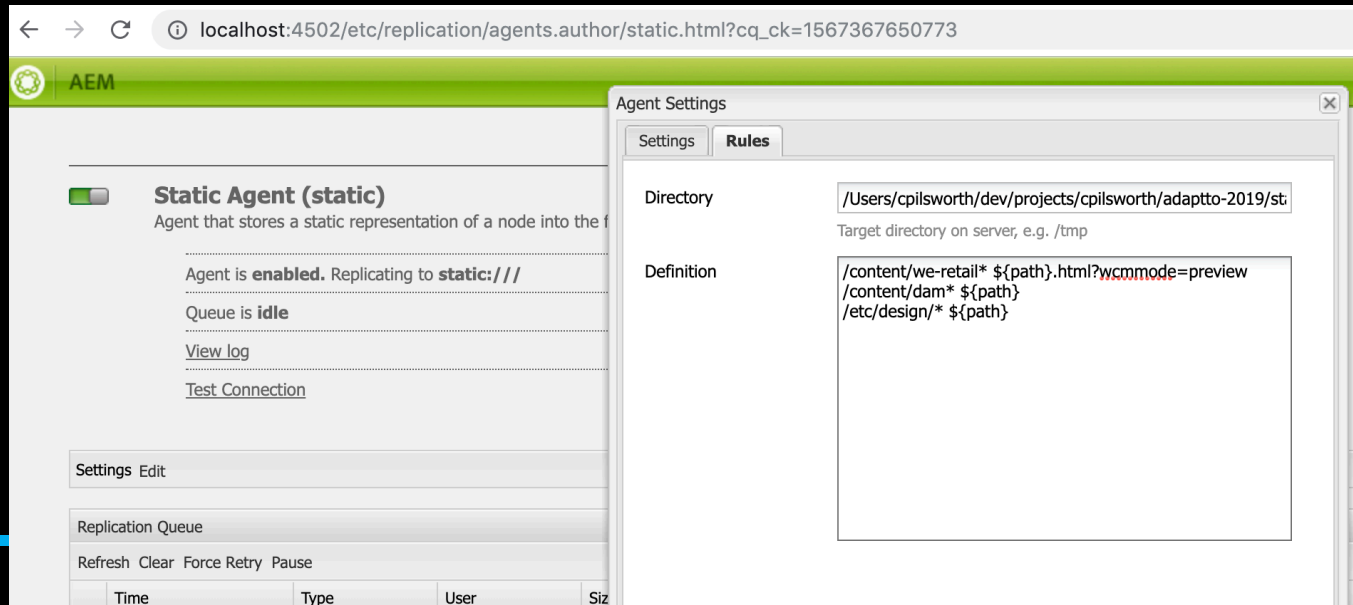
- Site “wobbles” courtesy of
 - Deployments
 - Content publishing
- Upgrades / Patching

- Pre-render site before publishing
- Serve site through web storage / CDN
- Remove *runtime* dependency on AEM

- *Content sync*
- Flexible +
- Extensible +
- Problems
 - Relative URLs
 - Rewriting?
 - Licensing!?

```
1 + weretail_go [cq:ContentSyncConfig]
2 - sling:resourceType = "contentsync/config"
3
4 + etc.designs.default [nt:unstructured]
5 - path = "/etc/designs/default"
6 - type = "copy"
7
8 + etc.designs.mobile [nt:unstructured]
9 - path = "/etc/designs/mobile"
10 - type = "copy"
11
12 + events.plist [nt:unstructured]
13 - path = "/content/weretail_mobile/en/events/jcr:content/par/events"
14 - type = "content"
15 - extension = "plist"
16
17 + events.touch.html [nt:unstructured]
18 - path = "/content/weretail_mobile/en/events"
19 - type = "pages"
20 - extension = "html"
21 - selector = "touch"
22
23 + logo [nt:unstructured]
24 - path = "/etc/designs/mobile/jcr:content/mobilecontentpage/logo"
25 - type = "logo"
26
27 + manifest [nt:unstructured]
28 - indexPage = "/content/weretail_mobile/en/events.touch.html"
29 - metadataPlist = "/content/weretail_mobile/en/events/_jcr_content/par/ev
```

- *Static replication agent*



The screenshot shows the AEM interface for configuring a Static Agent. The main page displays the agent's status as 'enabled' and 'idle', with a replication queue. An 'Agent Settings' dialog box is open, showing the 'Rules' tab with the following configuration:

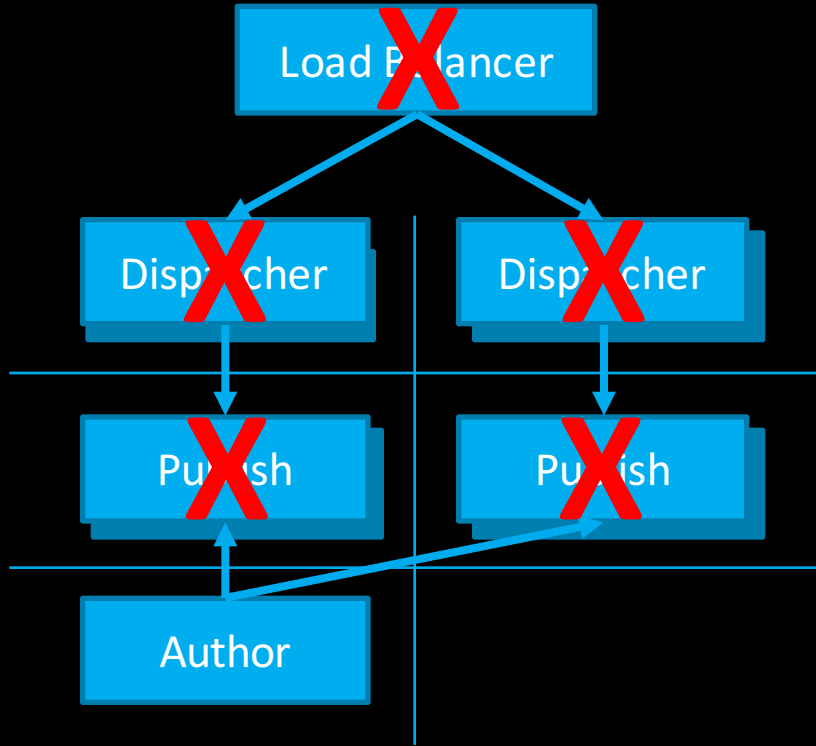
- Directory:** `/Users/cpilsworth/dev/projects/cpilsworth/adappto-2019/st`
Target directory on server, e.g. /tmp
- Definition:** `/content/we-retail* ${path}.html?wcmmode=preview
/content/dam* ${path}
/etc/design/* ${path}`

The dialog box also has 'Settings' and 'Rules' tabs, with 'Rules' currently selected.

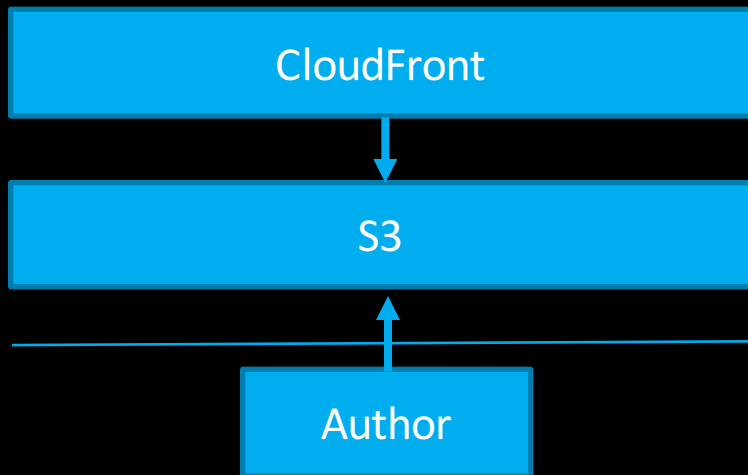
Selected Pattern: **Custom Push**

- *Custom S3 replication agent*
- Similar to static agent, but...
- Renders pages with **Host** header
 - Allows for sling mapping of urls
- Uploads directly to S3
- Regex path -> URL transformation

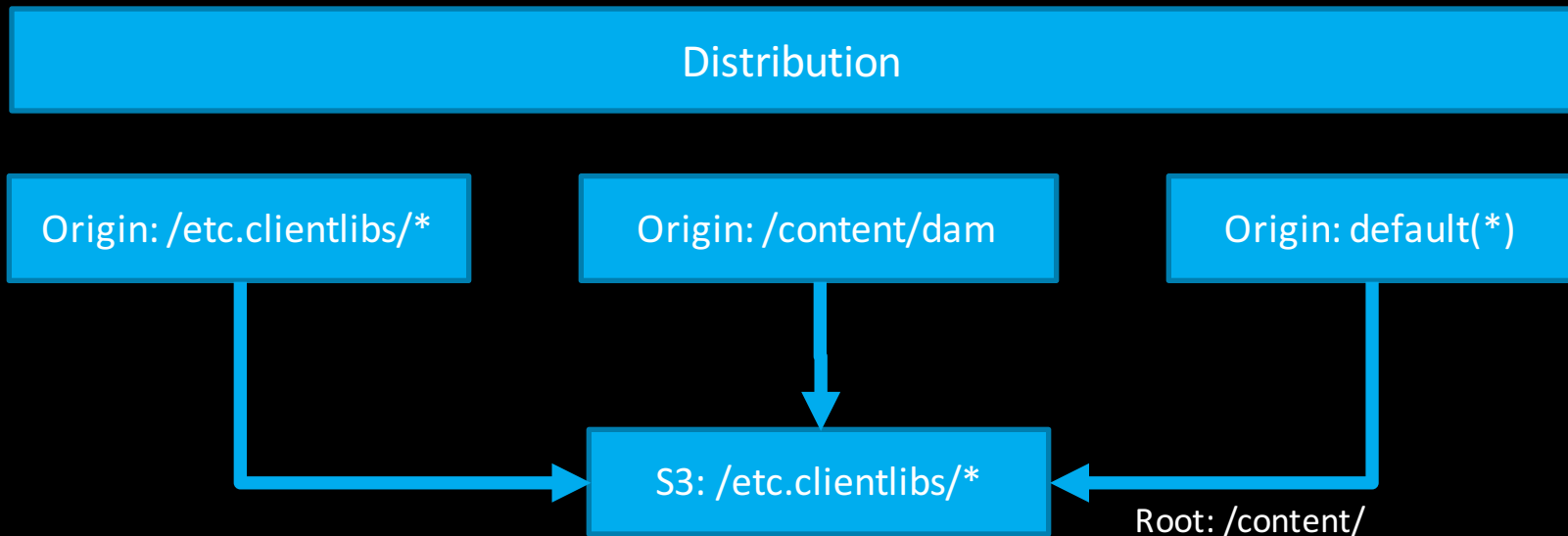
Static Publishing: what changes?



Static Publishing: simpler hosting



Static Publishing: CloudFront Setup



CloudFront Setup: Origins

Origins

[Create Origin](#) [Edit](#) [Delete](#)

	Origin Domain Name and Path	Origin ID	Origin Type	Origin Access Id	Origin
<input type="checkbox"/>	staticapp-hosting.s3.amazonaws.com	S3-staticapp-hosting	S3 Origin	origin-access-ide	-
<input type="checkbox"/>	staticapp-hosting.s3.amazonaws.com/content/staticapp	S3-staticapp-hosting/conter	S3 Origin	origin-access-ide	-

CloudFront Setup: Behaviours

CloudFront compares a request for an object with the path patterns in your cache behaviors based on the order of behaviors in your distribution. Arrange cache behaviors in the order in which you want CloudFront to evaluate them.

Change Precedence:

	Precedence	Path Pattern	Origin or Origin Group	Viewer Protocol Policy	For
<input type="checkbox"/>	0	/content/dam/*	S3-staticapp-hosting	Redirect HTTP to HTTPS	No
<input type="checkbox"/>	1	/etc.clientlibs/*	S3-staticapp-hosting	Redirect HTTP to HTTPS	No
<input type="checkbox"/>	2	/etc/*	S3-staticapp-hosting	Redirect HTTP to HTTPS	No
<input type="checkbox"/>	3	Default (*)	S3-staticapp-hosting/content/static	Redirect HTTP to HTTPS	No

- Lower cost
- Improved security
- First load performance
- Availability
- Resilience

Limitations

- Headers
- Redirects
- Form submission/validation
- Authentication

- Javascript | APIs | Markup
- Static asset hosting
- SaaS service integration for dynamic bits
- Rich client-side (e.g. React etc)

- Enriched ecosystem – great for *devs*

Retain valuable AEM features

- Content author experience
- Publishing workflows
- Content translation
- Asset management

Demo

- Metadata for incremental build
- Page associations

- Git replication agent
- IPFS replication agent

Conclusion

- Not for every site
- Getting easier to use useful static sites
- Great potential for making site hosting easier
- *If you can live with the constraints*

Get in touch

- Twitter: *@cpilsworth*
- Email: *cpilsworth@gmail.com*