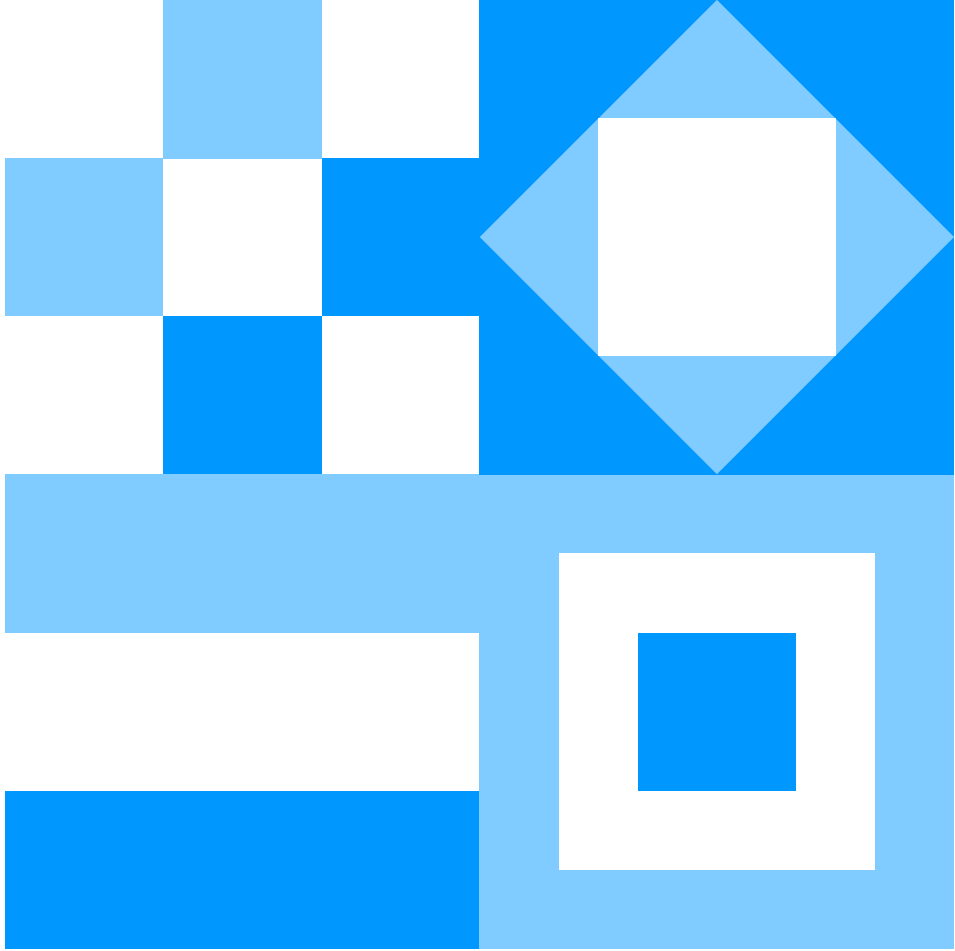
Microservices Architecture for AEM

Maciej Majchrzak / majchrzak_m



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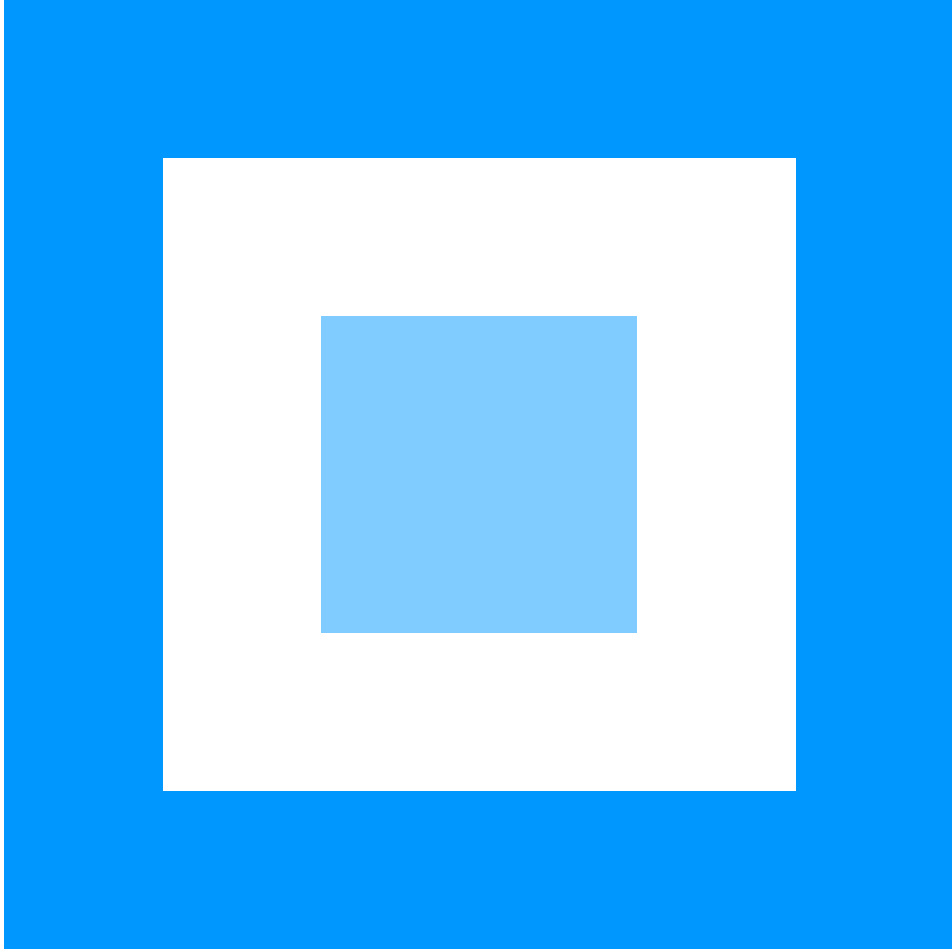
System architecture



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What?

What? With what?

What? With what? How?

What? With what? How?

What next?

http://woms.dyndns.org/fashion-designer-clothing.html

Scalability

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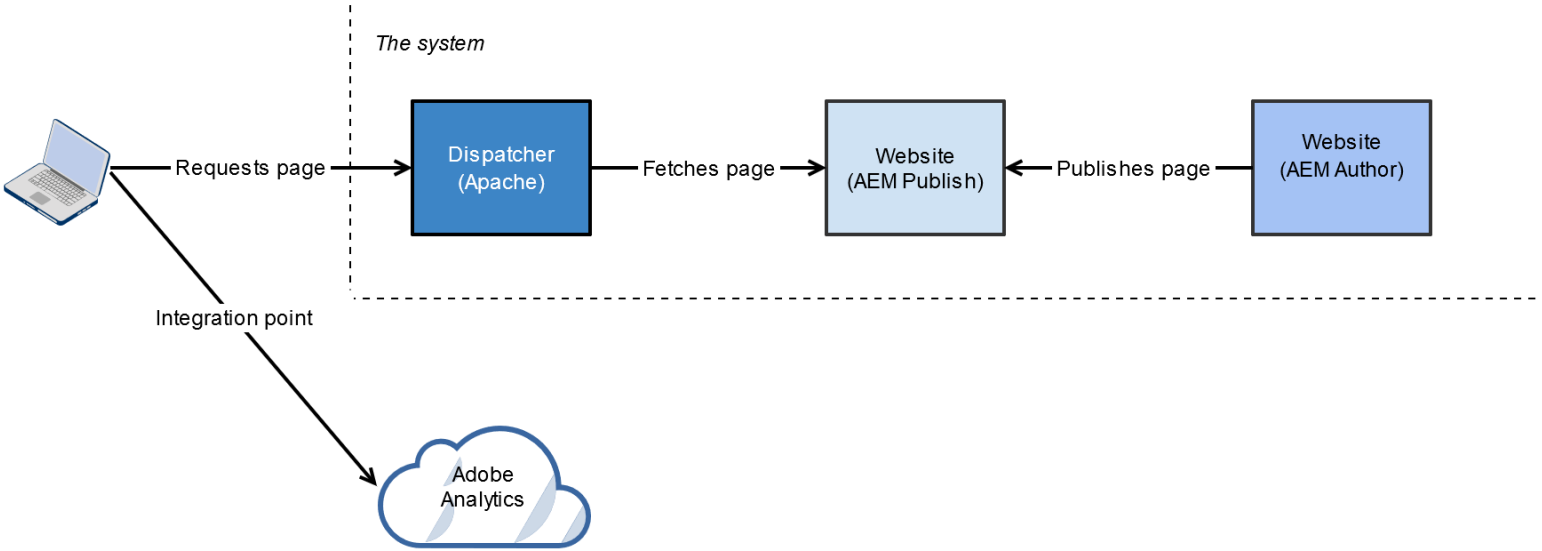
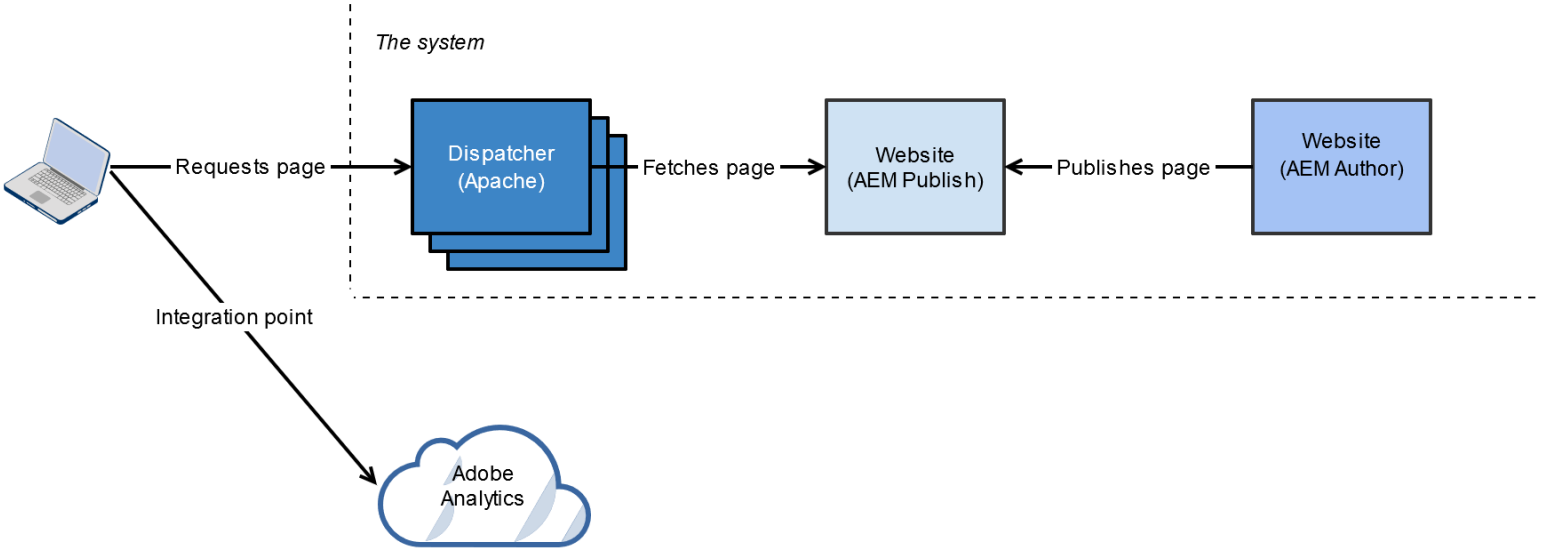
Simple AEM system


The system
Requests page
Dispatcher
(Apache)
Fetches page
Website
(AEM Publish)
Publishes page
Website
(AEM Author)
Integration point
Adobe
Analytics

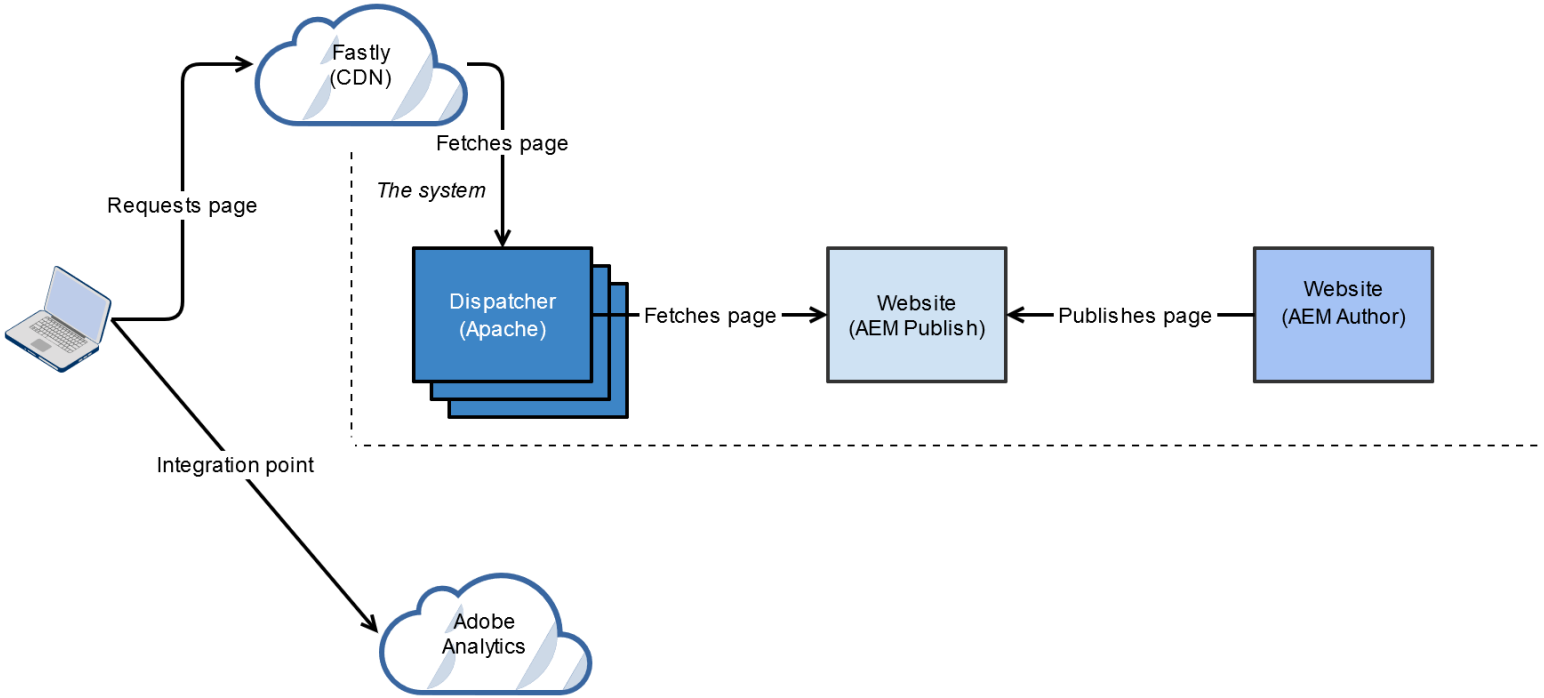
Scalability (1)

Caching layer



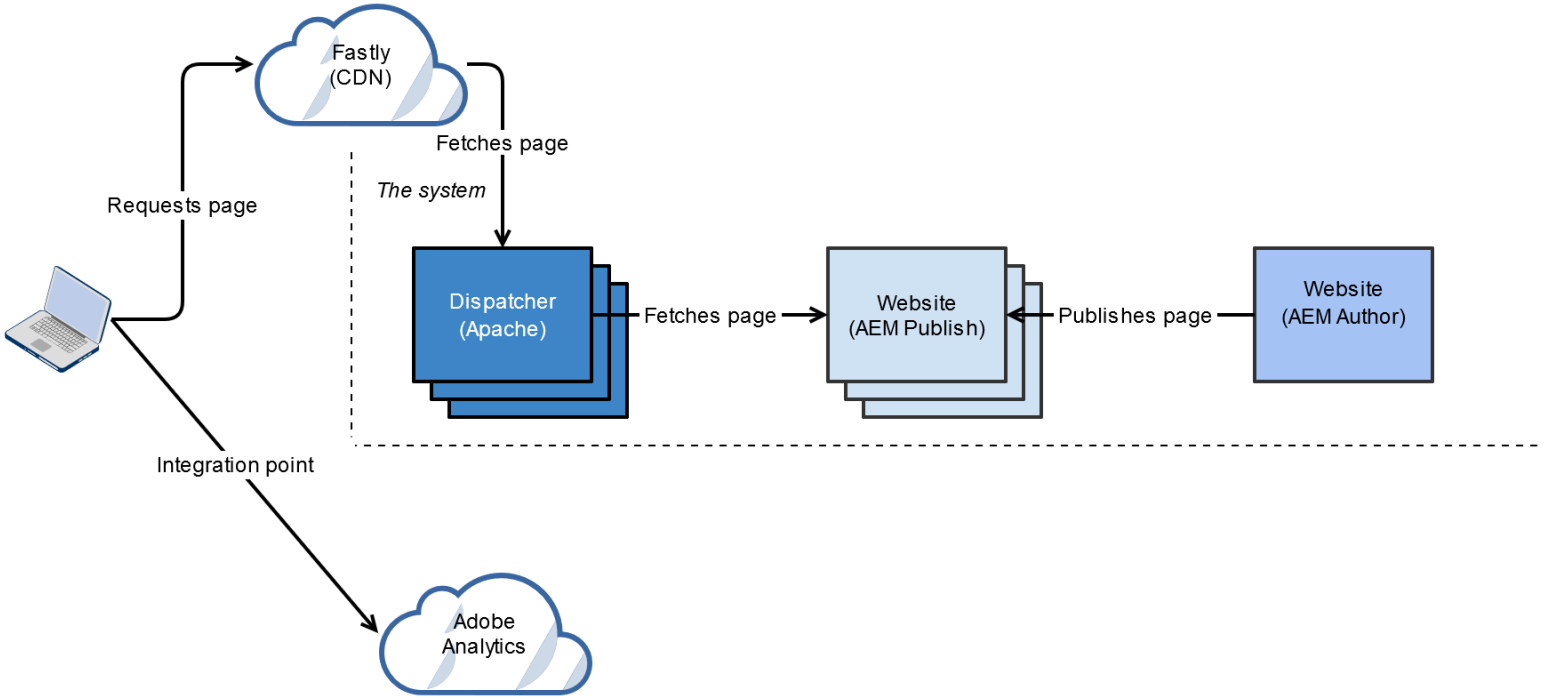
Scalability (1)

Caching layer



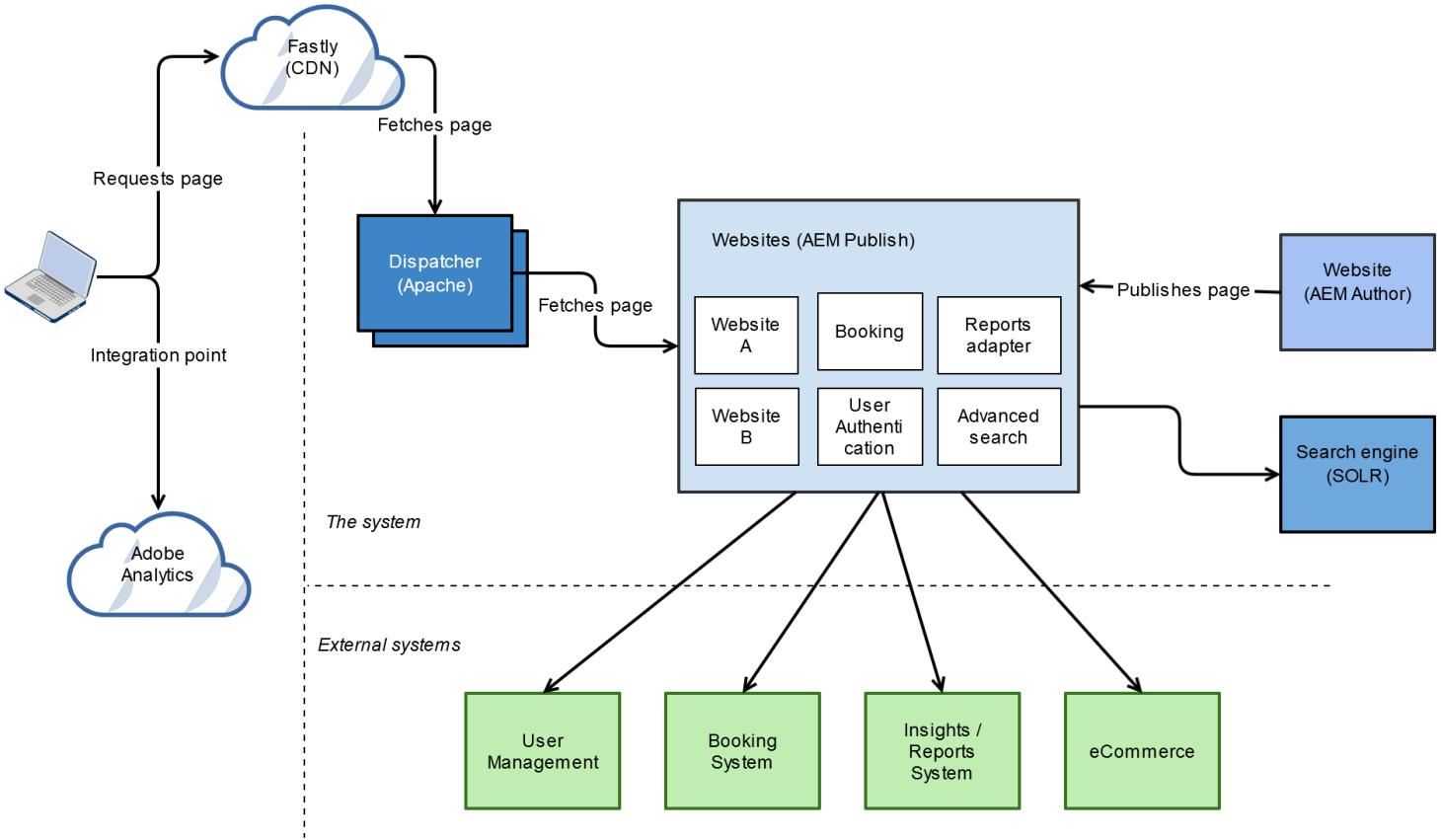
Scalability (2)

AEM layer

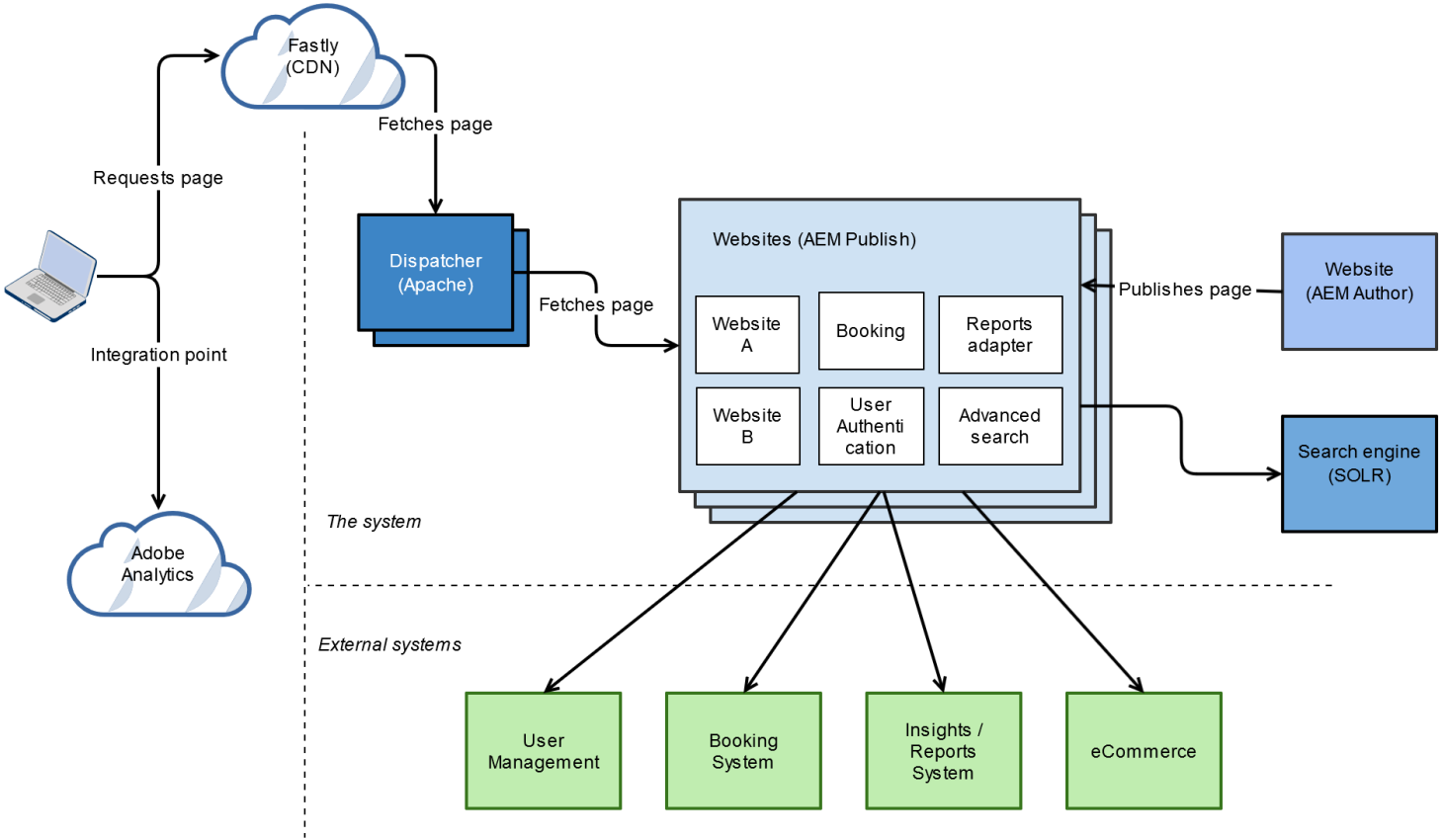


Simple AEM system

Complex system


Fastly
(CDN)
Fetches page
Requests page
Dispatcher
(Apache)
Fetches page
Websites (AEM Publish)
Website
A
Booking
Reports
adapter
Website
B
User
Authenti
cation
Advanced
search
Publishes page
Website
(AEM Author)
Search engine
(SOLR)
Integration point
Adobe
Analytics
The system
External systems
User
Management
Booking
System
Insights /
Reports
System
eCommerce

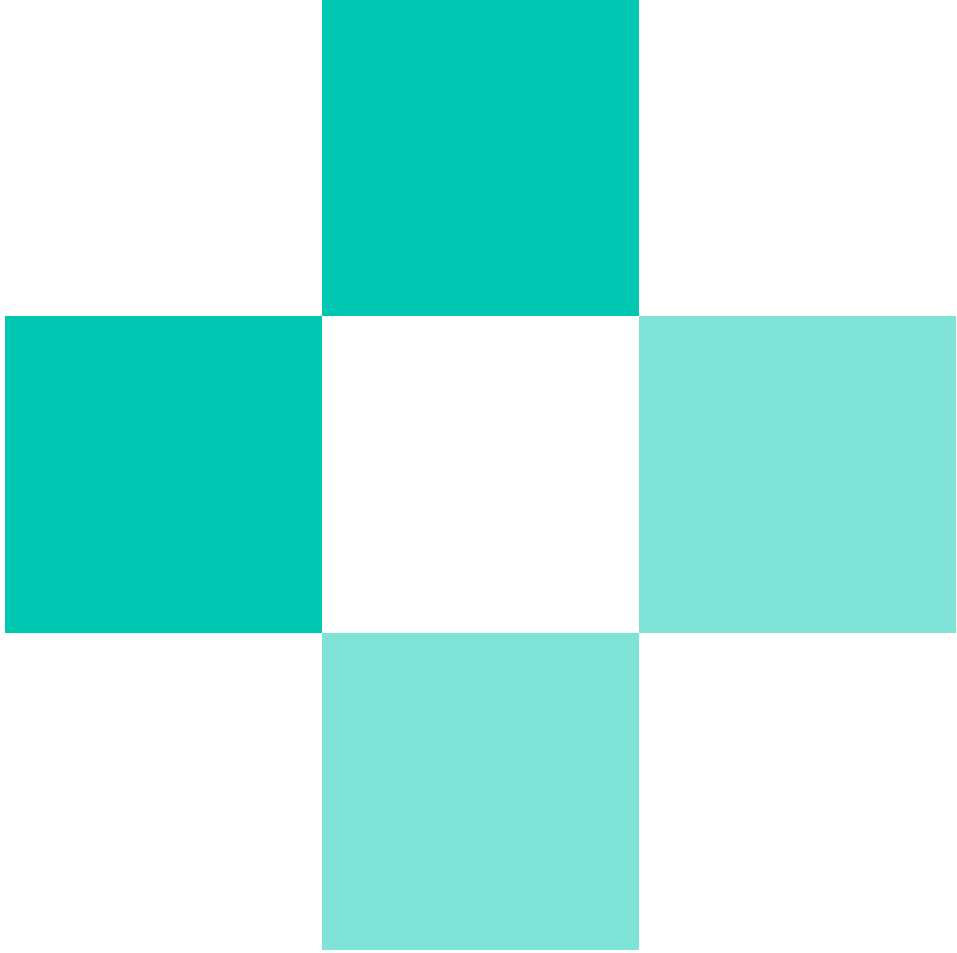
Scalability



Challenges

- Development
- Deployment
- Scalability
- Time to market and cost

Microservices architecture



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Architecture

The system

Dispatcher
(Apache)

Fetches template/page

Website
(AEM Publish)

Publishes template/page

AEM Author

Website

External systems

User & Profile
Management

Adverts
Management

The system

Dispatcher (Apache)

Fetches template/page

Website (AEM Publish)

Publishes template/page

AEM Author

Website

Search Engine (SOLR)

Feeds search

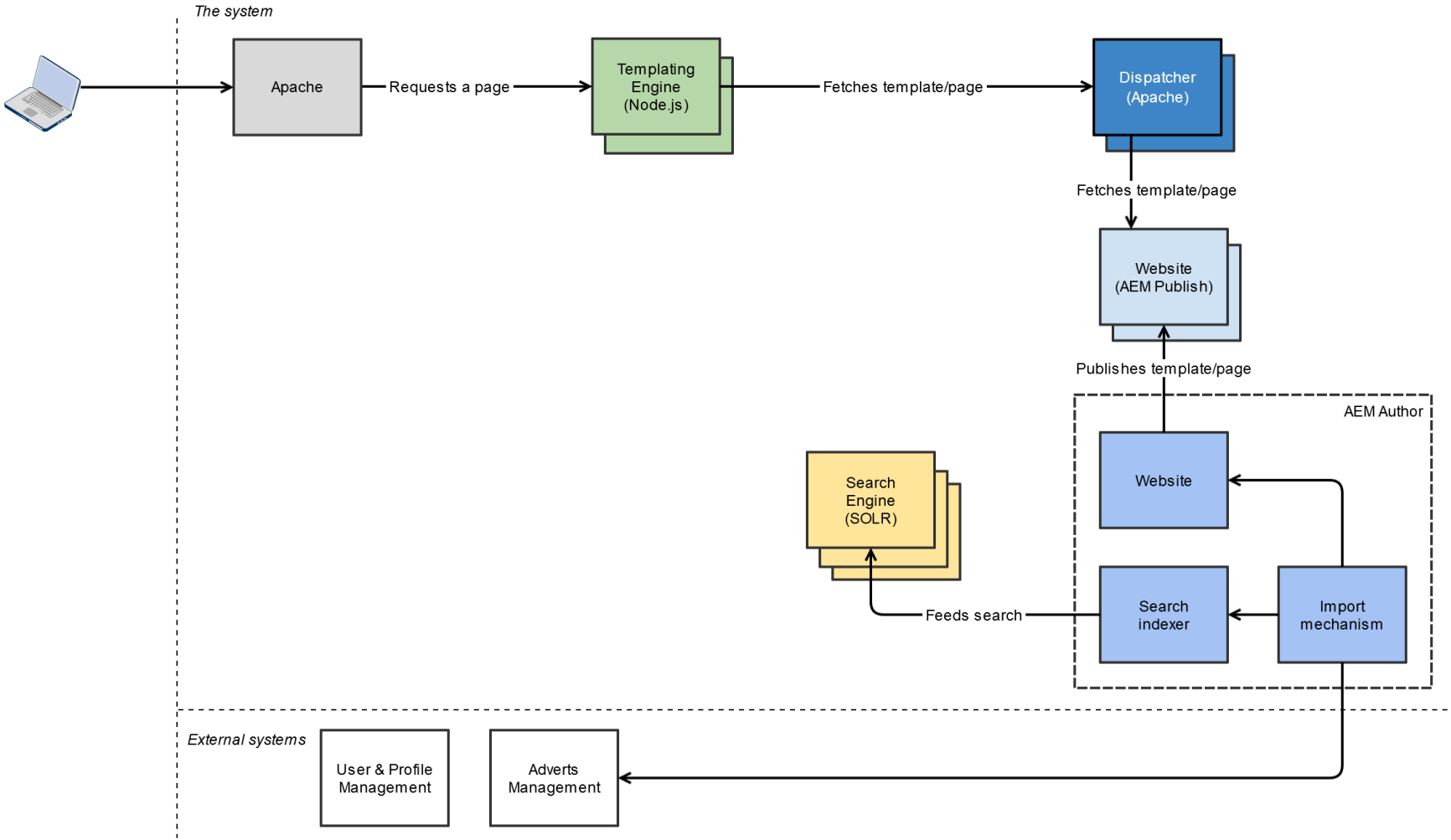
Search indexer

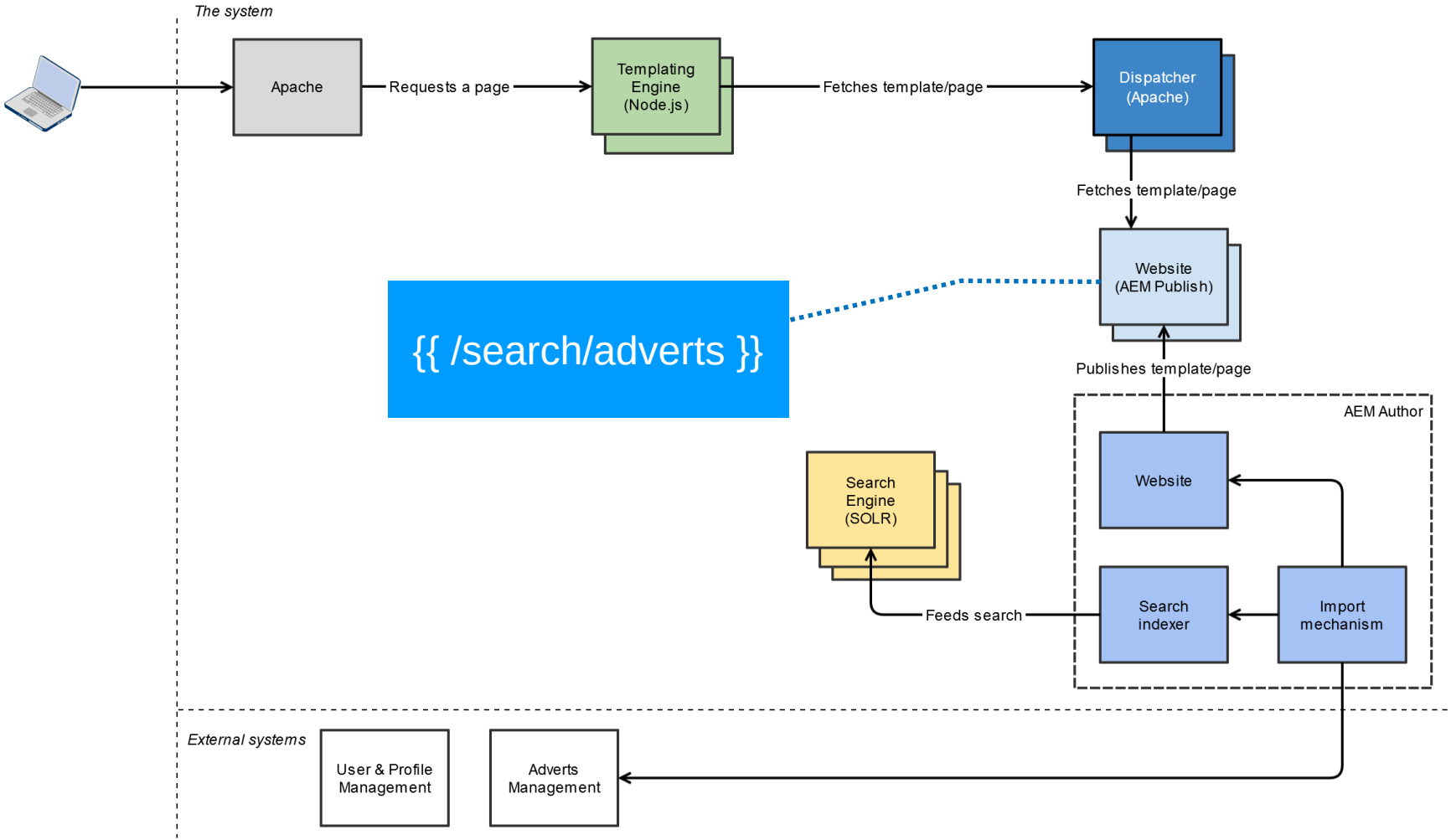
Import mechanism

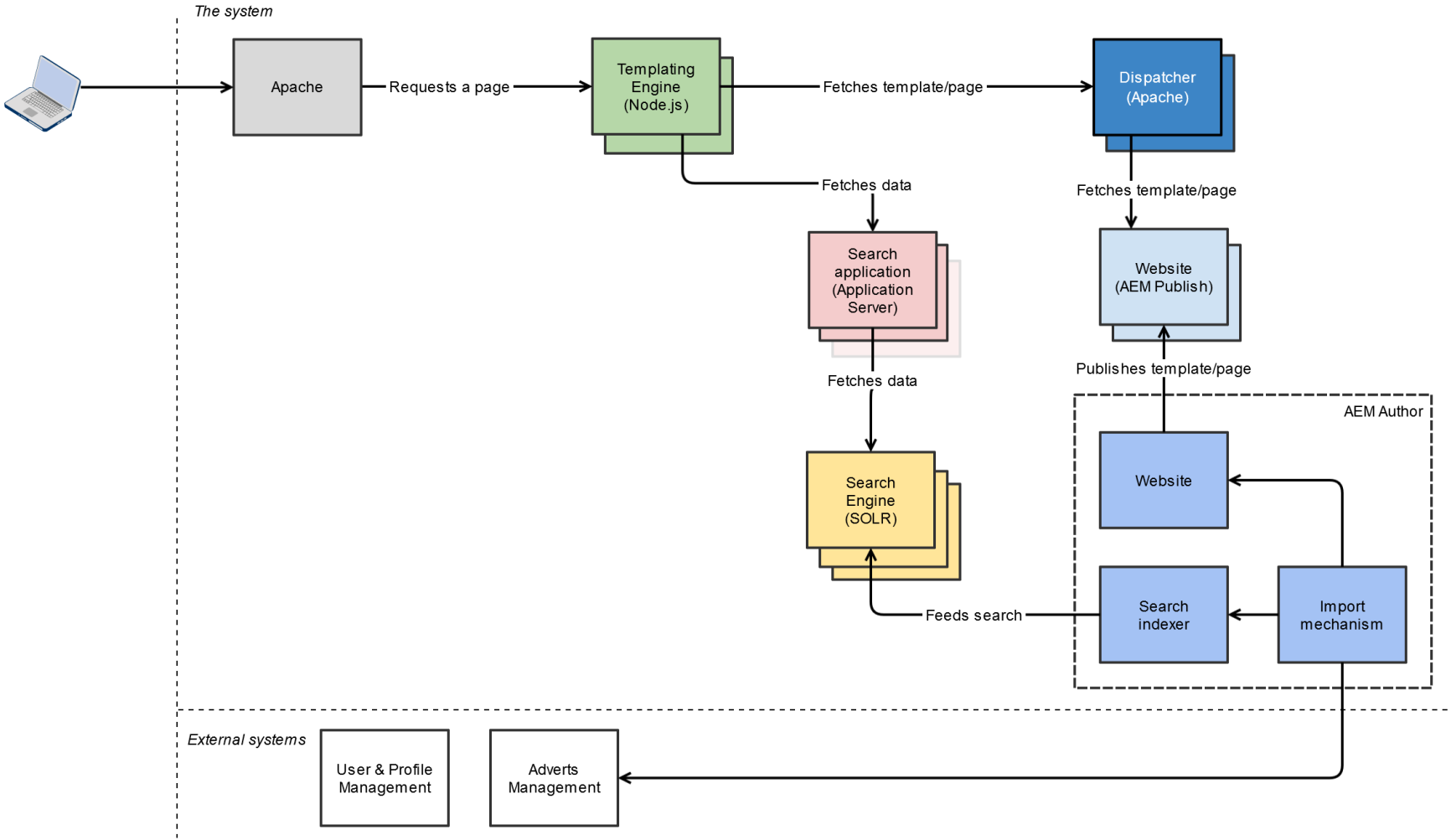
External systems

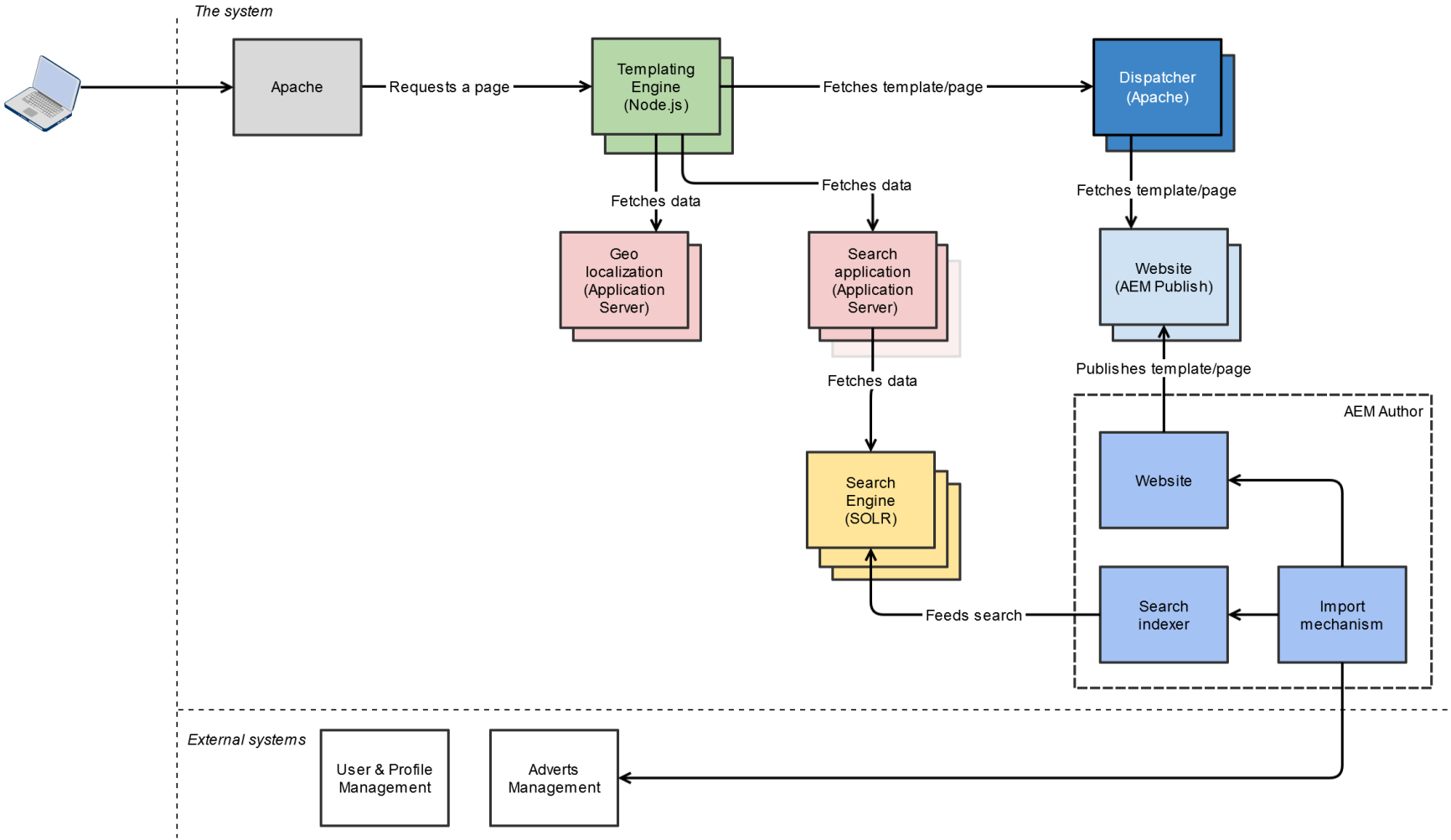
User & Profile Management

Adverts Management


The system
Apache
Requests a page
Templating Engine (Node.js)
Fetches template/page
Dispatcher (Apache)
Fetches template/page
Website (AEM Publish)
Publishes template/page
AEM Author
Website
Search Engine (SOLR)
Feeds search
Search indexer
Import mechanism
External systems
User & Profile Management
Adverts Management


The system
Apache
Requests a page
Templating Engine (Node.js)
Fetches template/page
Dispatcher (Apache)
Fetches template/page
Website (AEM Publish)
{{ /search/adverts }}
Publishes template/page
AEM Author
Website
Search Engine (SOLR)
Feeds search
Search indexer
Import mechanism
External systems
User & Profile Management
Adverts Management


The system
Apache
Requests a page
Templating Engine (Node.js)
Fetches template/page
Dispatcher (Apache)
Fetches data
Fetches template/page
Search application (Application Server)
Website (AEM Publish)
Fetches data
Publishes template/page
AEM Author
Search Engine (SOLR)
Website
Feeds search
Search indexer
Import mechanism
External systems
User & Profile Management
Adverts Management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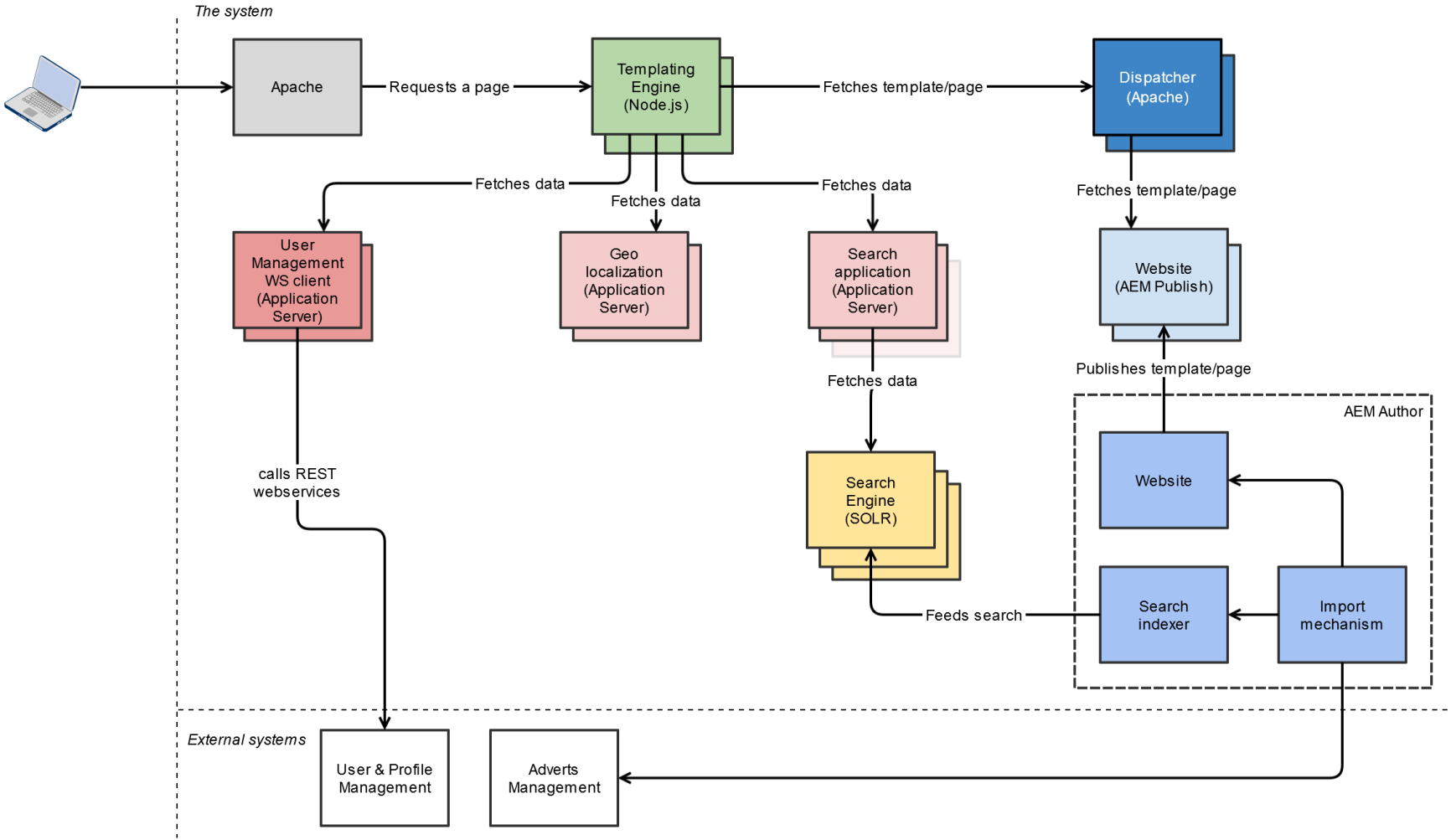
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User Management WS client (Application Server)
Geo localization (Application Server)
Search application (Application Server)
Website (AEM Publish)
Publishes template/page
AEM Author
Fetches data
Website
calls REST webservices
Search Engine (SOLR)
Search indexer
Import mechanism
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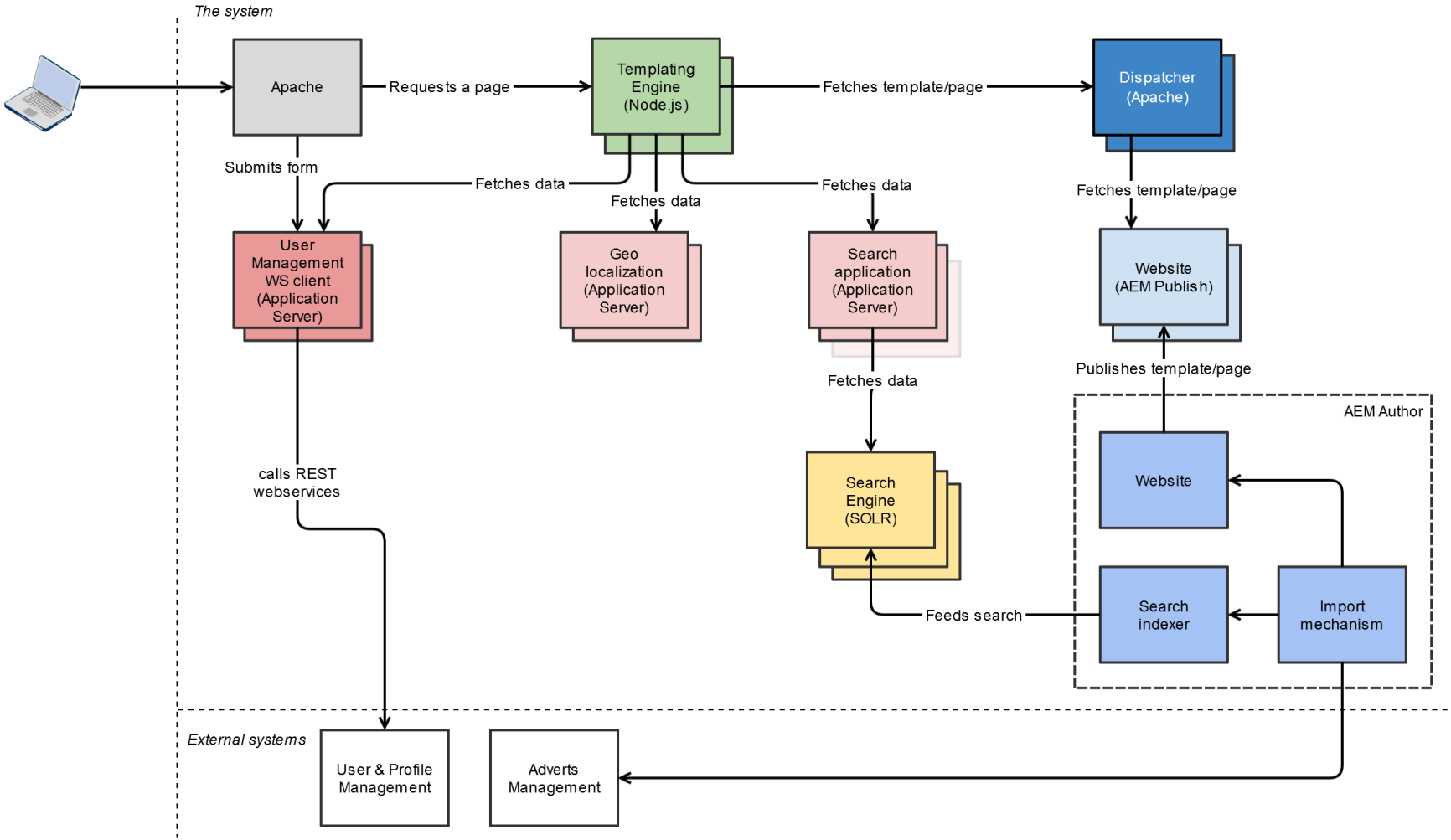
Adverts Management


The system
Apache
Requests a page
Templating Engine (Node.js)
Fetches template/page
Dispatcher (Apache)
Submits form
Fetches data
Fetches data
Fetches data
Fetches template/page
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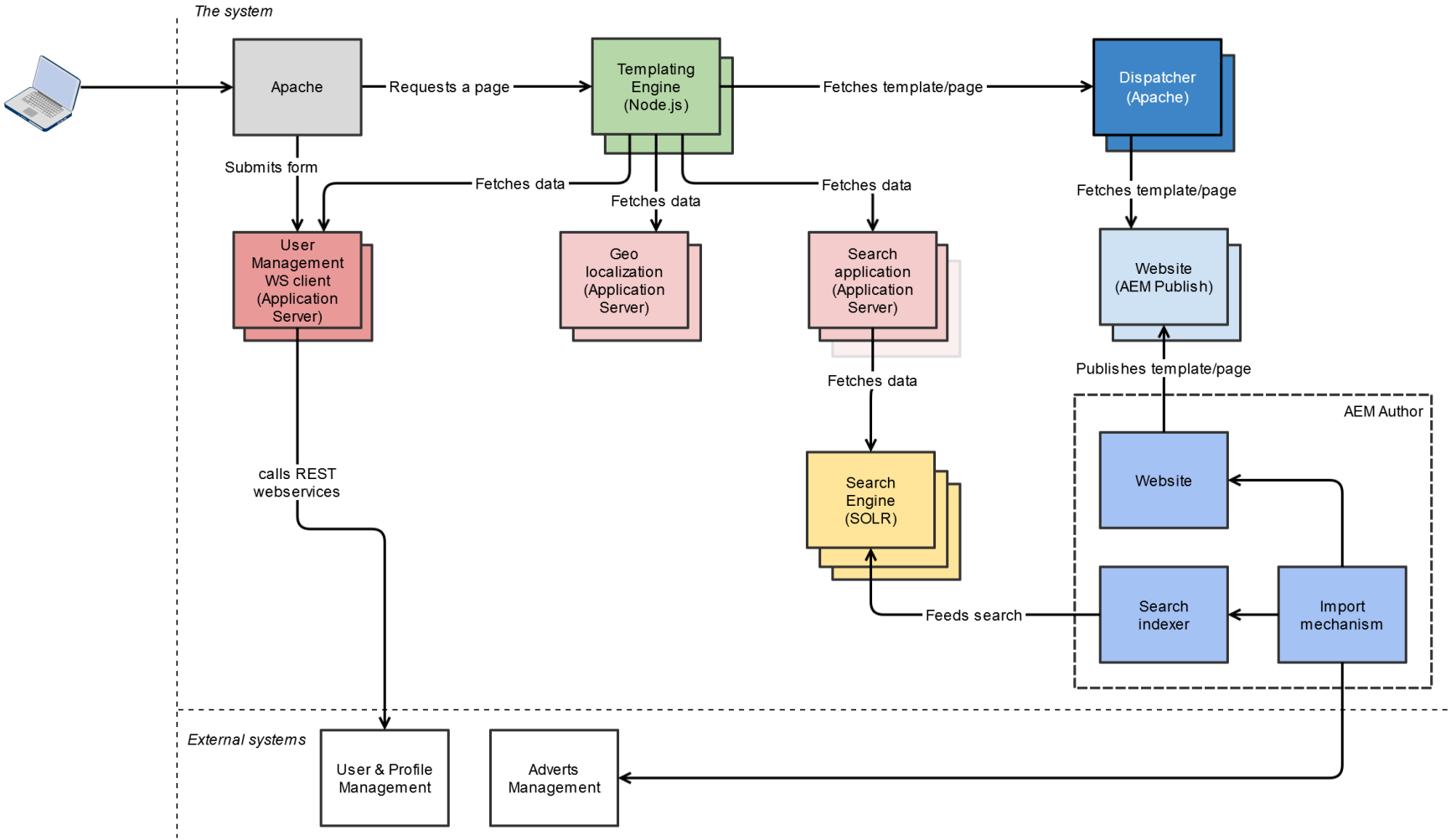
Architecture Scalability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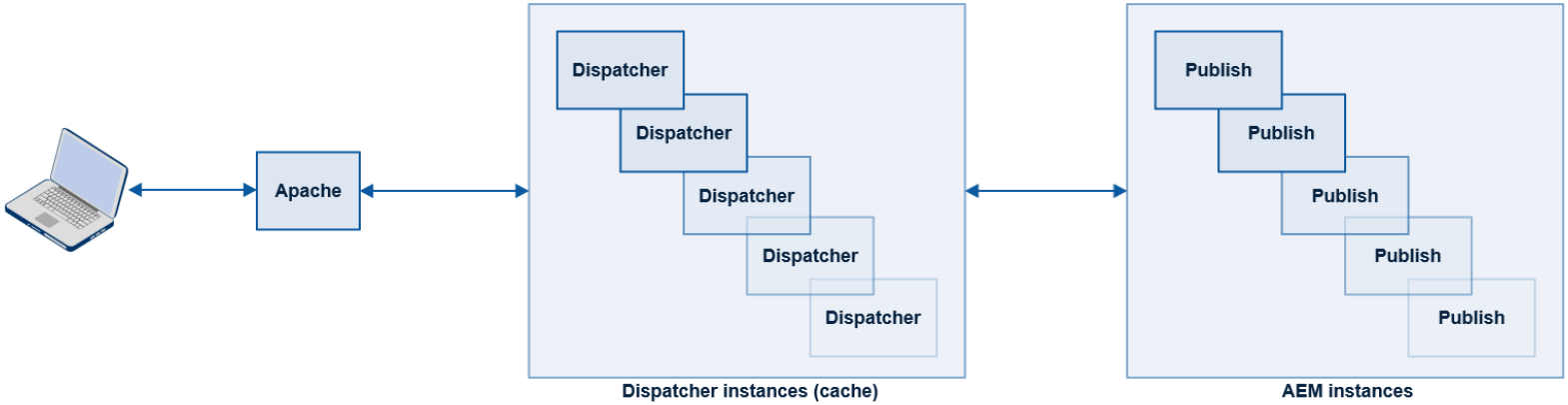
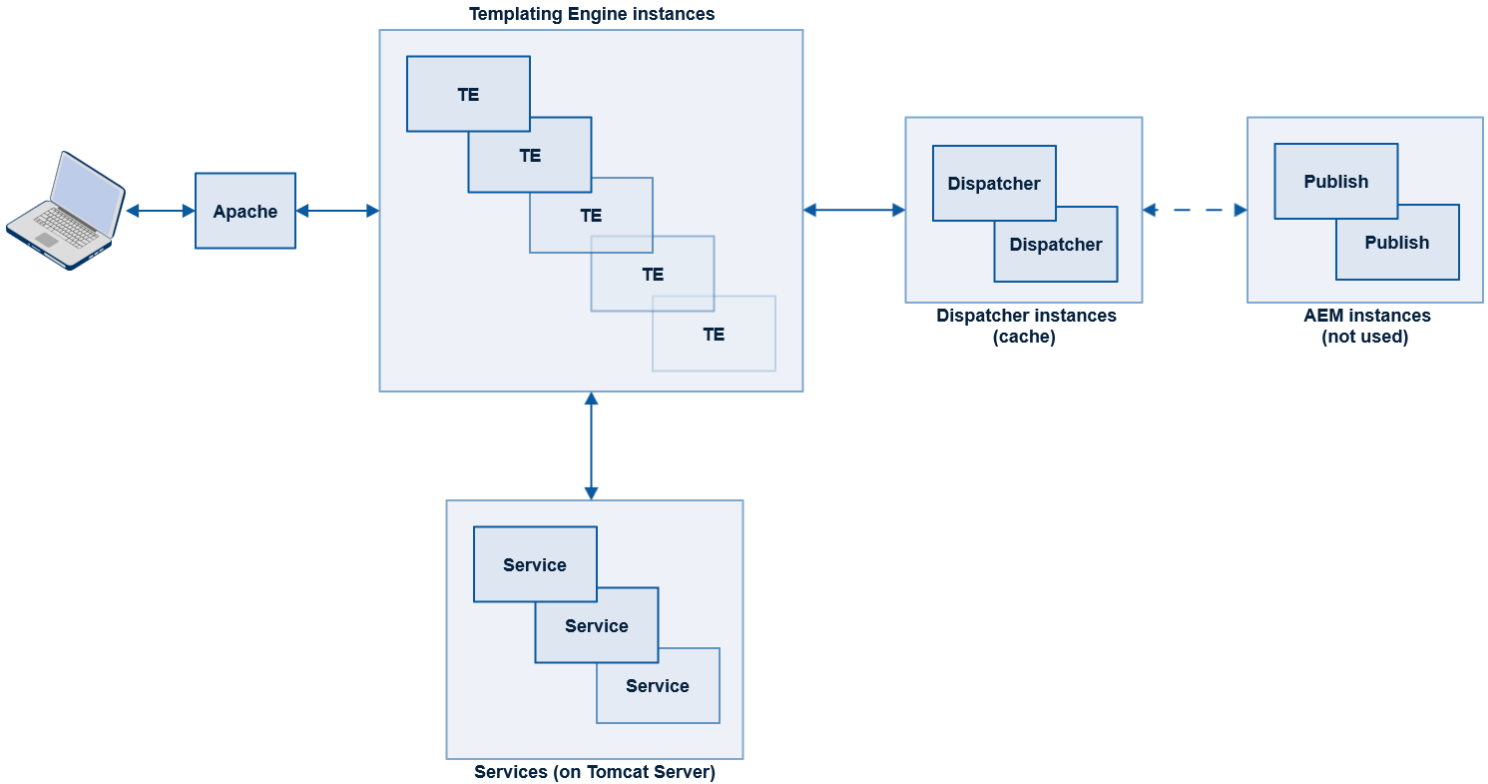
Architecture Scalability

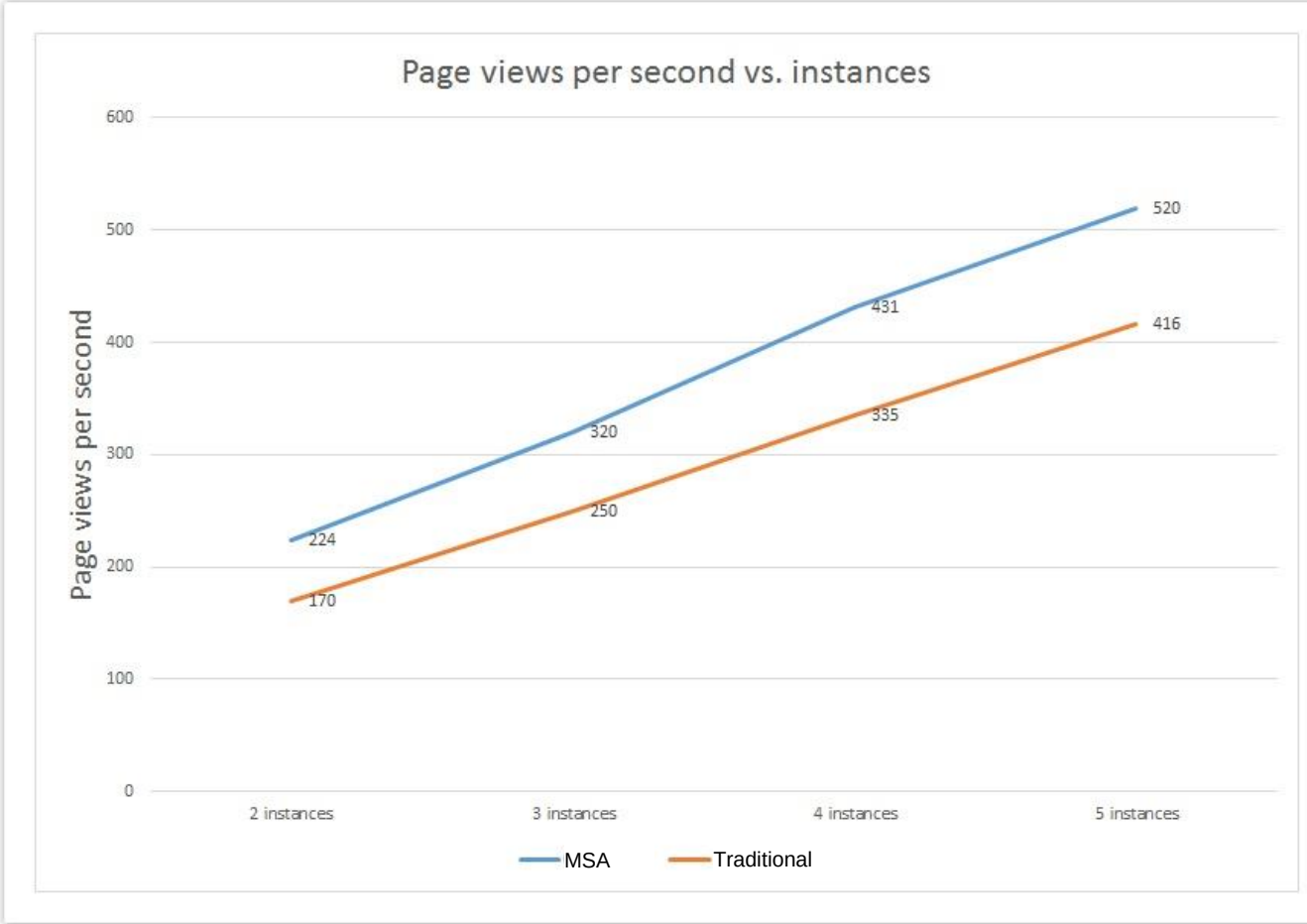
Performance

Traditional approach



Microservices approach




Page views per second vs. instances
Page views per second
600
500
400
300
200
100
0
2 instances
3 instances
4 instances
5 instances
224
320
431
520
170
250
335
416
MSA
Traditional

Architecture Scalability
Performance **Development**

Benefits

https://flic.kr/p/4gLRqc

Benefits

- Improved scalability – you can scale a part of the system which really needs it. You don’t need additional AEM licences to scale heavy-processing part of the system, like search, user management, etc.
- Faster development – you can use technology which best suits your needs, you’re no longer limited to AEM/OSGi stack. You can also separate your teams easily as they may work on separate applications with seperate technology stacks.
- Better performance – the system is performing better and more stable than a pure AEM-based one
- Increased agility – thanks to well seperated services any change introduction is simpler and takes less time

Benefits **Drawbacks**

Drawbacks

- More complicated infrastructure
- More discipline needed during design and services maintenance

Benefits Drawbacks

Success factors

Success factors

- Infrastructure provisioning and deployment automation – tools like Chef and Vagrant are your friends
- Be careful when deciding what should be a separate service

Benefits Drawbacks

Success factors **Take-aways**

Q&A

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AEM HUB

Adobe

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