

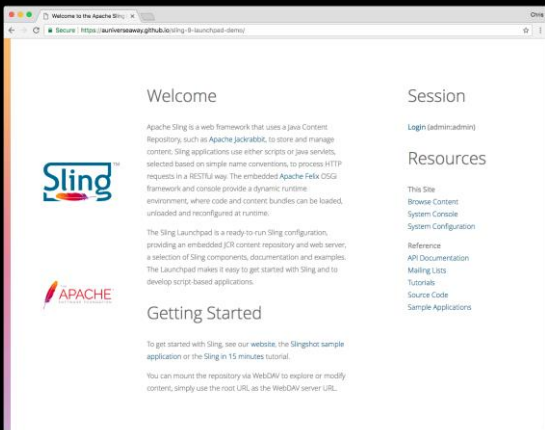


adaptTo()

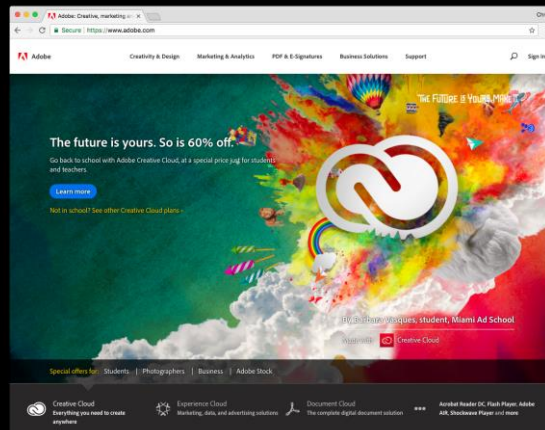
APACHE SLING & FRIENDS TECH MEETUP
BERLIN, 25-27 SEPTEMBER 2017

Slick – Not your typical Sling Blog Engine
Chris Millar, Adobe Systems.

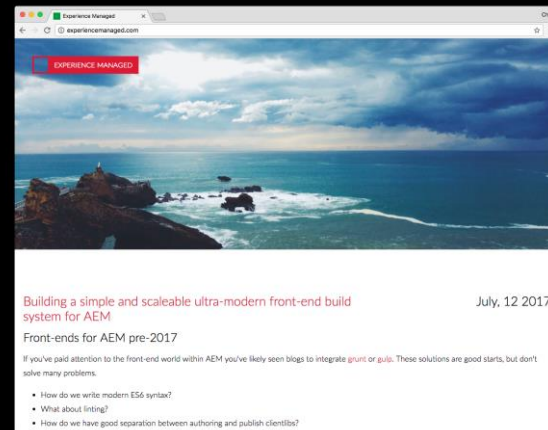
Who am I?



Sling 9 Launchpad



adobe.com



experiencemanaged.com

What is Slick?

SLICK

2

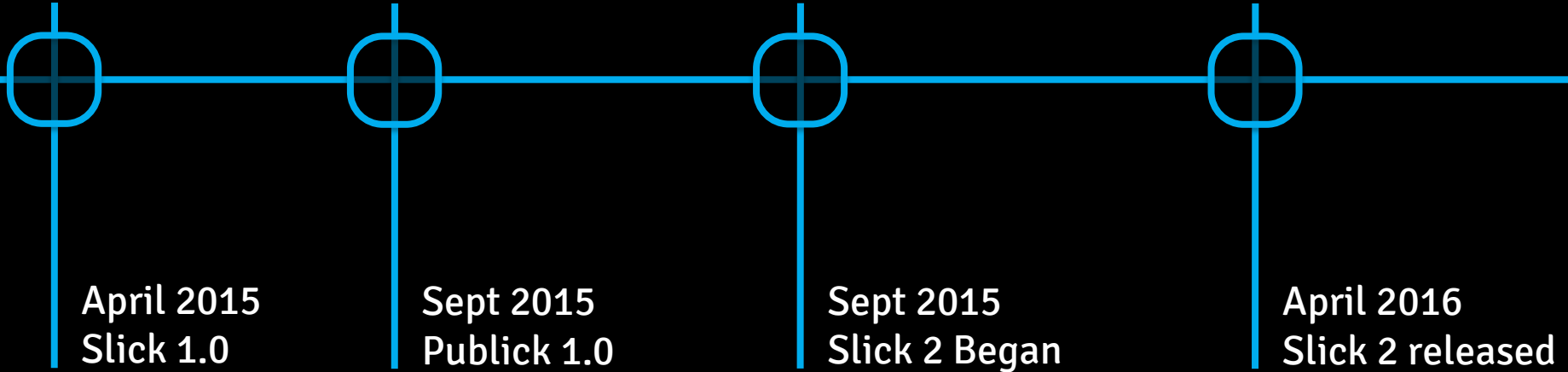
A blog engine obsessively crafted around
Apache Sling and related technologies.

(it's not a CMS)

Why was Slick built?

- 1 I had a lot to learn.
- 2 Writing a blog about a Java application using a PHP blog engine seemed wrong.
- 3 Slightly was contributed to Apache Sling.

History



What can it do? – Authors & Visitors

Easy to get creating content fast.

Creating and editing posts, pages, media, and tags.

Post and Page Scheduling

WYSIWYG Editor

RSS 2.0 Feed

Accent color support

Commenting

Authentication and user management

Search

Analytics, SEO, and social integrations

Pagination

Basic Localization



What can it do? – Developers

Proper OSGi services and configurations

Sling Models used extensively

Dispatcher support**

Entire stack written to be easy to maintain (Java, JS, HTL, SCSS)

Front-end build process is part of autoInstallBundle.

Uses a Maven multi-module project similar to AEM Archetype

Travis CI Integration

Basic localization string support

Eclipse Sling Plugin support

Container support

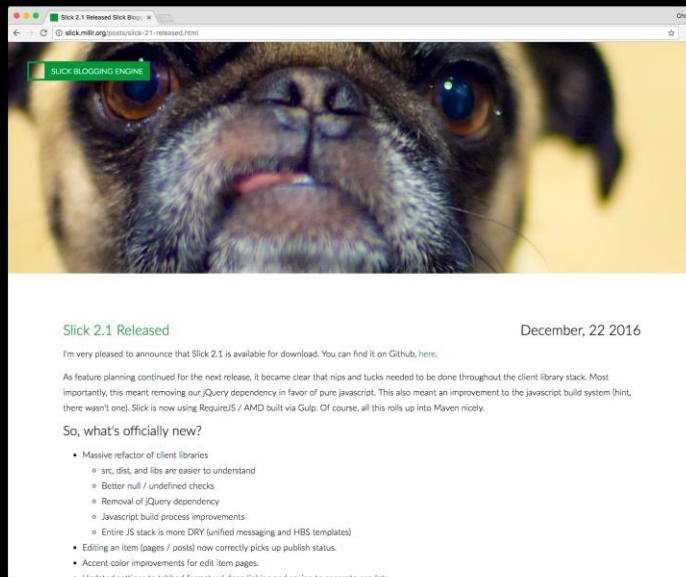
Decent Docs

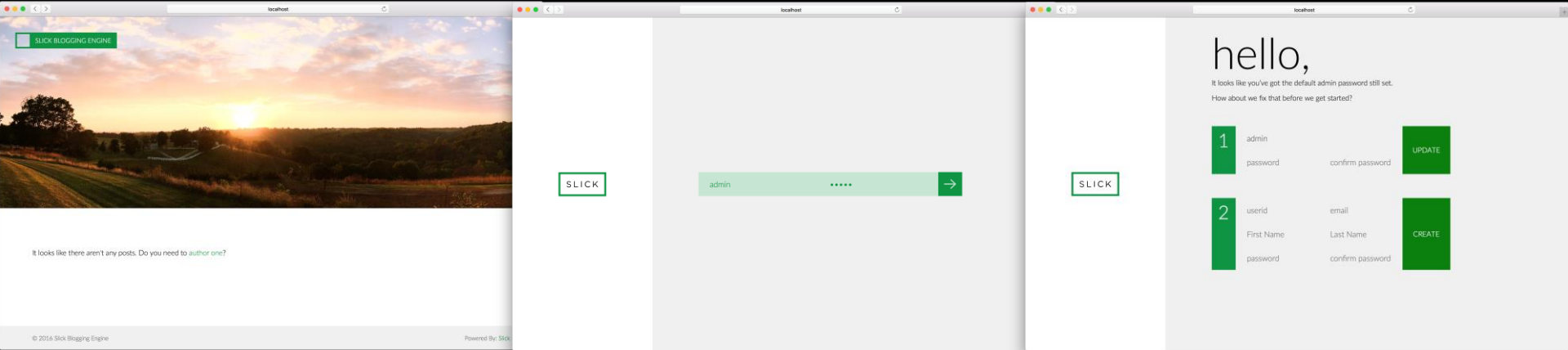
Crazy Fast On-Boarding

```
$ java -jar launchpad.jar
```



3 minutes



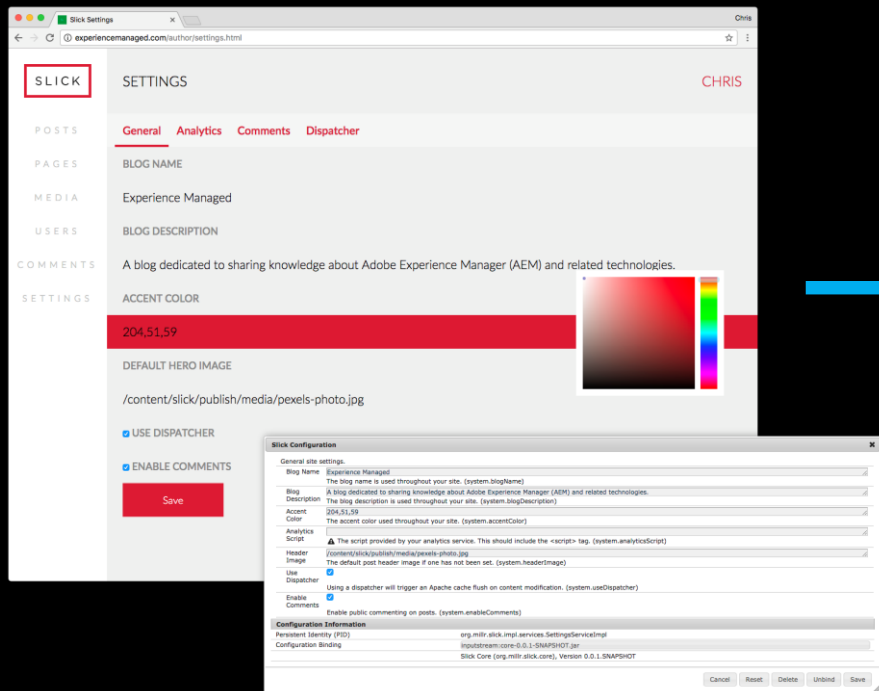


1

2

3

Settings & Themes



SLICK SETTINGS CHRIS

POSTS **General** Analytics Comments Dispatcher

PAGES

MEDIA Experience Managed

USERS BLOG DESCRIPTION

COMMENTS A blog dedicated to sharing knowledge about Adobe Experience Manager (AEM) and related technologies.

SETTINGS ACCENT COLOR

204,51,59

DEFAULT HERO IMAGE

/content/slick/publish/media/pexels-photo.jpg

USE DISPATCHER

ENABLE COMMENTS

Save

Slick Configuration

General site settings.

Blog Name Experience Managed
The blog name is used throughout your site. (system.blogName)

Blog Description A blog dedicated to sharing knowledge about Adobe Experience Manager (AEM) and related technologies.
The blog description is used throughout your site. (system.blogDescription)

Accent Color 204,51,59
The accent color used throughout your site. (system.accentColor)

Analytics Script
The script provided by your analytics service. This should include the <script> tag. (system.analyticsScript)

Header Image (/content/slick/publish/media/pexels-photo.jpg)
The default post header image if one has not been set. (system.headerImage)

Use Dispatcher
Using a dispatcher will trigger an Apache cache flush on content modification. (system.useDispatcher)

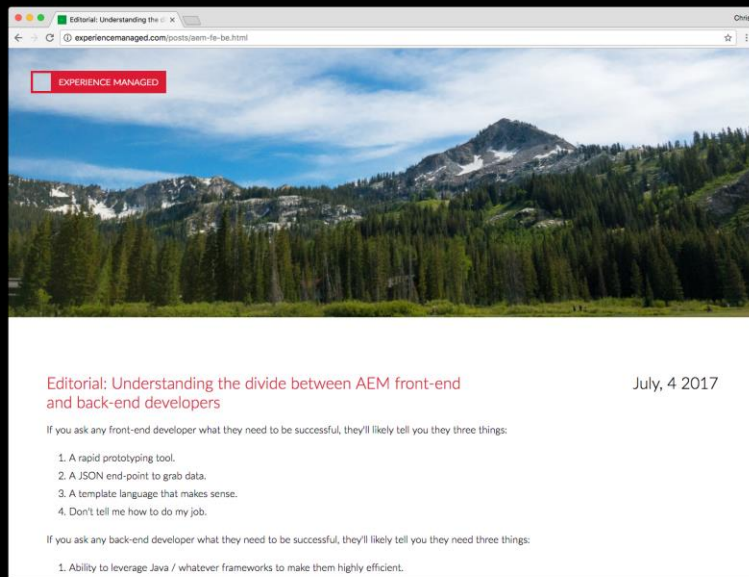
Enable Comments
Enable public commenting on posts. (system.enableComments)

Configuration Information

Persistent Identity (PID) org.mllr.atk.impl.services.SettingsServiceImpl

Configuration Binding /inputstream:core-0.0.1-SNAPSHOT.jar
Slick Core (org.mllr.atk.core), Version 0.0.1-SNAPSHOT

Cancel Reset Delete Unbind Save

EXPERIENCE MANAGED

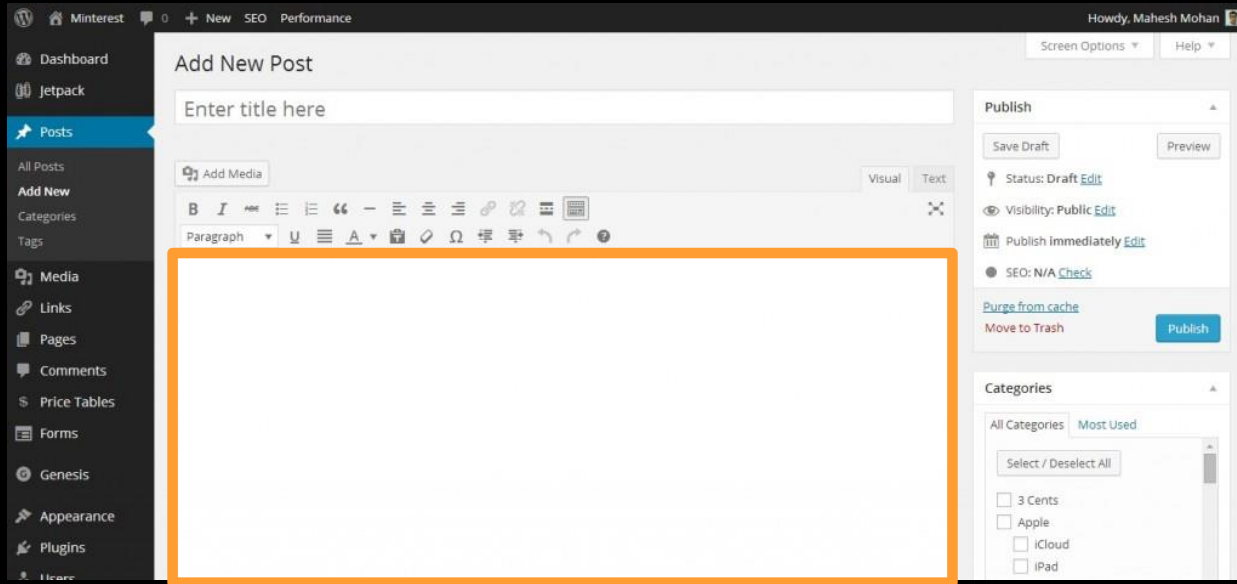
Editorial: Understanding the divide between AEM front-end and back-end developers July 4, 2017

If you ask any front-end developer what they need to be successful, they'll likely tell you they need three things:

1. A rapid prototyping tool.
2. A JSON end-point to grab data.
3. A template language that makes sense.
4. Don't tell me how to do my job.

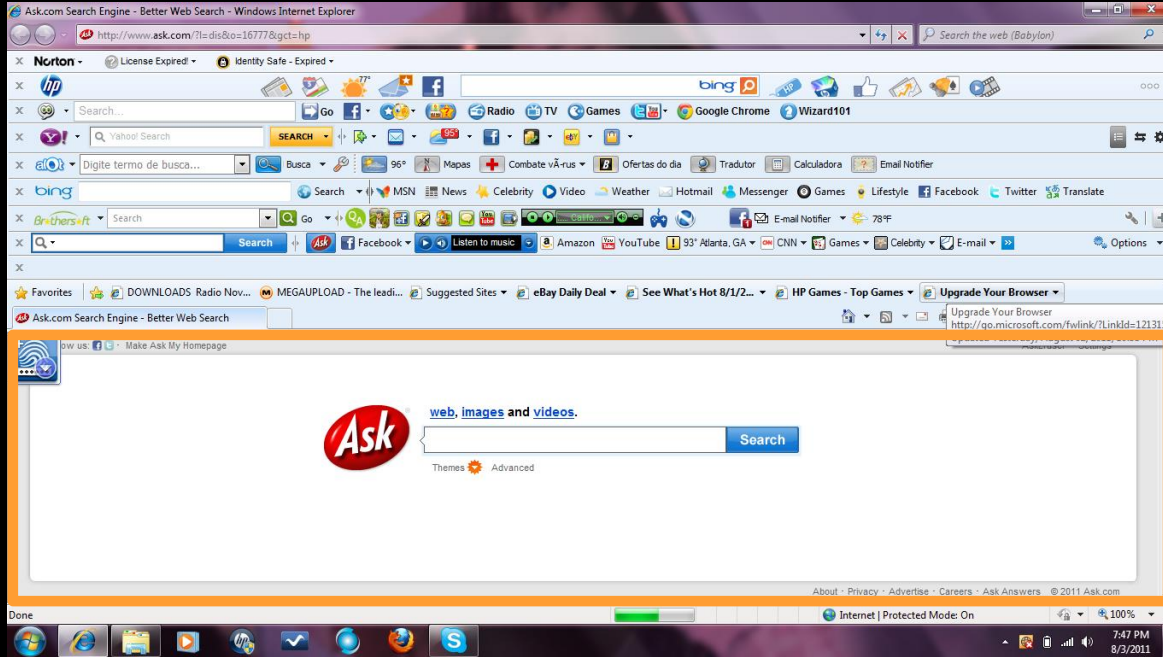
If you ask any back-end developer what they need to be successful, they'll likely tell you they need three things:

1. Ability to leverage Java / whatever frameworks to make them highly efficient.



The screenshot displays the WordPress 'Add New Post' editor. The top navigation bar includes 'Minterest', '+ New', 'SEO', and 'Performance'. The user's name 'Howdy, Mahesh Mohan' is visible in the top right. The left sidebar contains navigation options like 'Dashboard', 'Jetpack', 'Posts', 'All Posts', 'Add New', 'Categories', 'Tags', 'Media', 'Links', 'Pages', 'Comments', 'Price Tables', 'Forms', 'Genesis', 'Appearance', 'Plugins', and 'Users'. The main content area is titled 'Add New Post' and features a title input field with the placeholder 'Enter title here'. Below the title field is a rich text editor with a toolbar containing various formatting options (bold, italic, underline, text color, background color, link, unlink, list, ordered list, quote, code, table, etc.). The content area is currently empty and is highlighted with a thick orange border. On the right side, there are two main sections: 'Publish' and 'Categories'. The 'Publish' section includes buttons for 'Save Draft', 'Preview', and 'Publish', along with status and visibility information. The 'Categories' section shows a list of categories with checkboxes, including '3 Cents', 'Apple', 'iCloud', and 'iPad'.

A rant



Remember this?

Slick Edit Post

experiencemanaged.com/author/posts/item.html?edit=efficient-error-handling-with-aem-dispatcher-and-apache-web-server

SLICK EDIT POST CHRIS

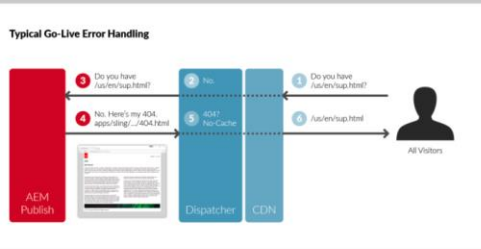
Efficient Error Handling with AEM, Dispatcher, and Apache Web Server

Let's start with a few basic assumptions, a good error page is:

1. Branded
2. Helpful
3. Localized
4. Fast

Out of the box, AEM uses Sling's default error page. Most projects, however, will overlay `sling/servlet/errorhandler/404` to create a branded error experience. This can cause performance problems with Dispatcher. Let's look at a typical go-live example.

Typical Go-Live Error Handling



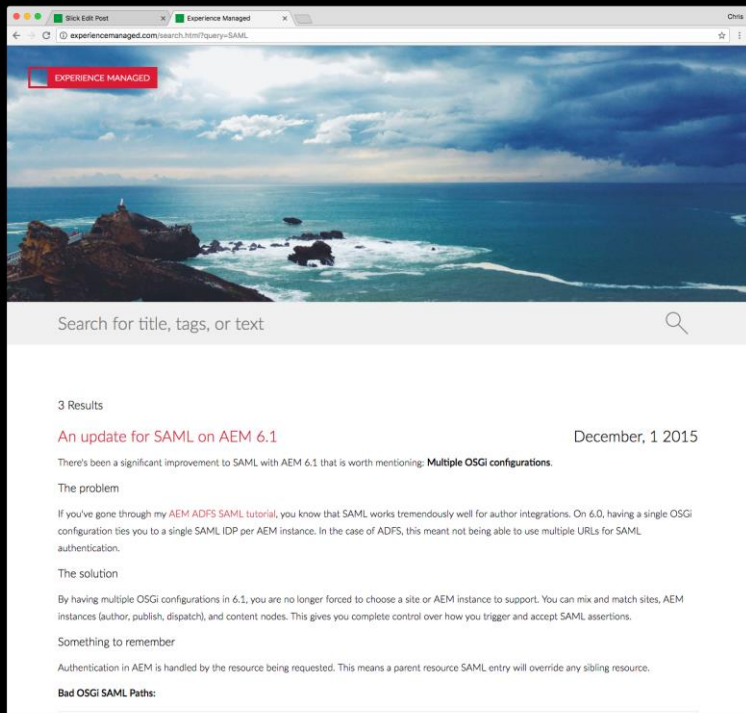
```

    graph LR
      User[All Visitors] -- "1. Do you have /us/en/sup.html?" --> Dispatcher
      Dispatcher -- "2. No." --> AEM[AEM Publish]
      AEM -- "3. No. Here's my 404 supporting /_404.html" --> Dispatcher
      Dispatcher -- "4. /us/en/sup.html" --> User
      AEM -- "5. 404 Not Found" --> CDN
      CDN -- "6. /us/en/sup.html" --> User
  
```

1. A user requests /us/en/sup.html
2. Dispatcher doesn't have it in cache, so it must...
3. Ask Publish if it has the resource

Publish Post

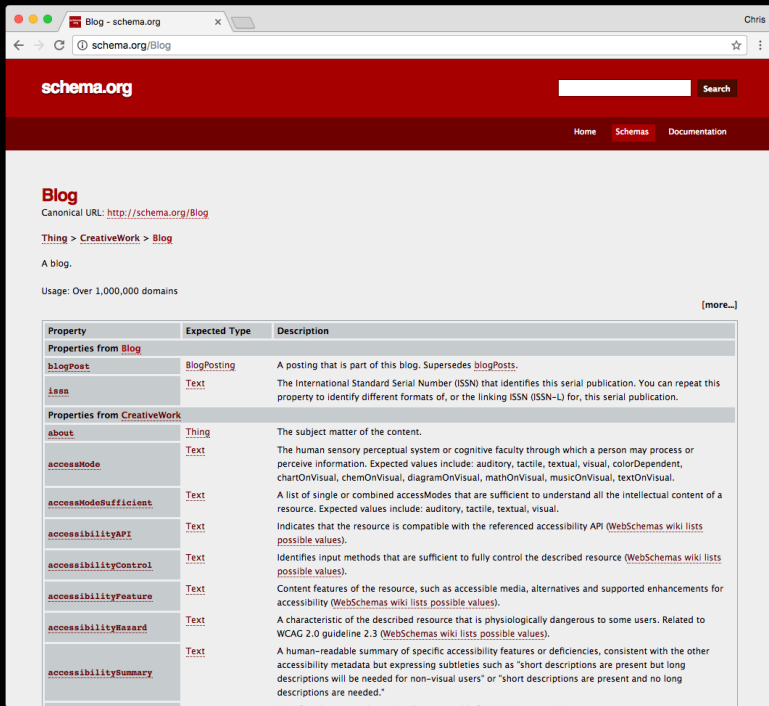
Respect
The Content



Search

```
42 private static final String INITIAL_QUERY = "SELECT "
43 ..... + "*" FROM [slick:page] "
44 ..... + "AS s "
45 ..... + "WHERE contains(s.*, '%s' ) "
46 ..... + "AND ISCHILDNODE(s, '" + SlickConstants.POSTS_PATH + "')";
47
```

(nothing too impressive)



schema.org

Blog

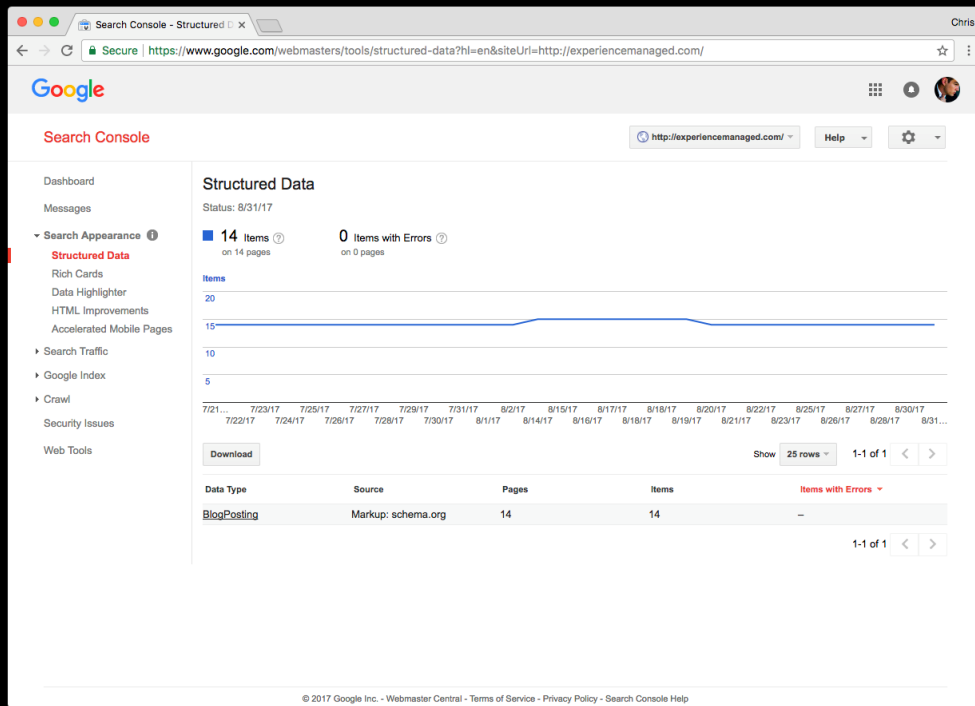
Canonical URL: <http://schema.org/Blog>

Thing > CreativeWork > Blog

A blog.

Usage: Over 1,000,000 domains [\(more...\)](#)

Property	Expected Type	Description
Properties from Blog		
blogPost	BlogPosting	A posting that is part of this blog. Supersedes blogPosts .
issn	Text	The International Standard Serial Number (ISSN) that identifies this serial publication. You can repeat this property to identify different formats of, or the linking ISSN (ISSN-L) for, this serial publication.
Properties from CreativeWork		
about	Thing	The subject matter of the content.
accessMode	Text	The human sensory perceptual system or cognitive faculty through which a person may process or perceive information. Expected values include: auditory, tactile, textual, visual, colorDependent, chartOnVisual, chemOnVisual, diagramOnVisual, mathOnVisual, musicOnVisual, textOnVisual.
accessModeSufficient	Text	A list of single or combined accessModes that are sufficient to understand all the intellectual content of a resource. Expected values include: auditory, tactile, textual, visual.
accessibilityAPI	Text	Indicates that the resource is compatible with the referenced accessibility API (WebSchemas wiki lists possible values).
accessibilityControl	Text	Identifies input methods that are sufficient to fully control the described resource (WebSchemas wiki lists possible values).
accessibilityFeature	Text	Content features of the resource, such as accessible media, alternatives and supported enhancements for accessibility (WebSchemas wiki lists possible values).
accessibilityHazard	Text	A characteristic of the described resource that is physiologically dangerous to some users. Related to WCAG 2.0 guideline 2.3 (WebSchemas wiki lists possible values).
accessibilitySummary	Text	A human-readable summary of specific accessibility features or deficiencies, consistent with the other accessibility metadata but expressing subtleties such as "short descriptions are present but long descriptions will be needed for non-visual users" or "short descriptions are present and no long descriptions are needed."



Search Console

Structured Data

Status: 8/31/17

14 items on 14 pages

0 items with errors on 0 pages

Items: 20

Download

Data Type	Source	Pages	Items	Items with Errors
BlogPosting	Markup: schema.org	14	14	0

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aem front-end back-end tooling webpack npm ES6



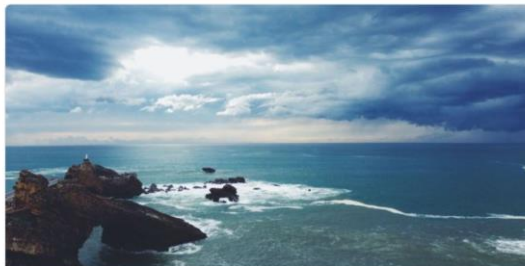
Chris Millar



Pinned Tweet

Chris Millar @auniverseaway · 12 Jun 2016

Create an admin console in #AEM 6.2 to list, sort, create, update and delete shared data.



How to create an AEM 6.2 Admin Console for Touch UI

IntroductionBuilding an AEM Admin interface, also known as a console, is not a trivial task at first glance. This post describes how to c...

experiencemanaged.com

11 14

Lightweight
& Effortless
Sharing

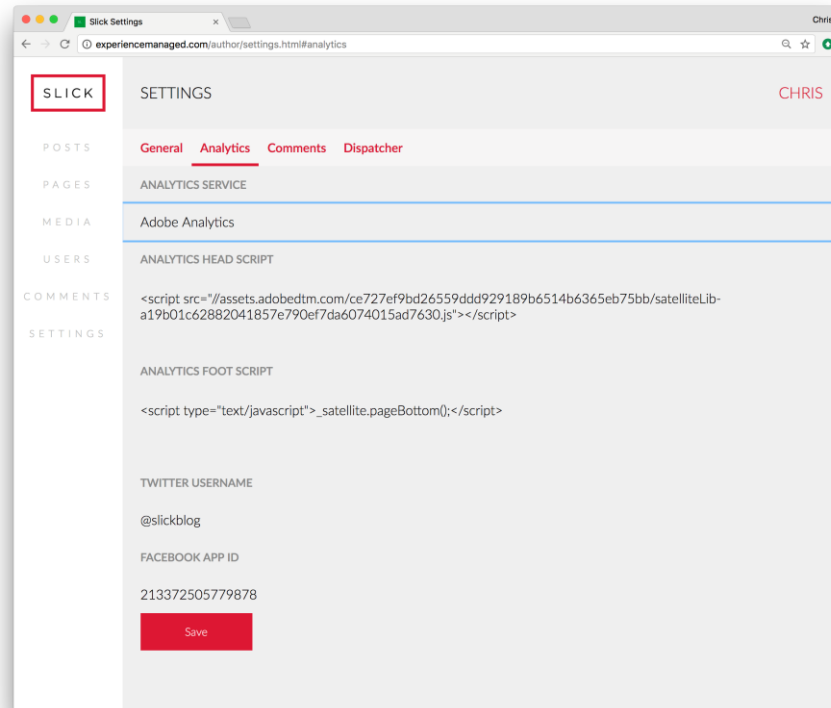
How lightweight?

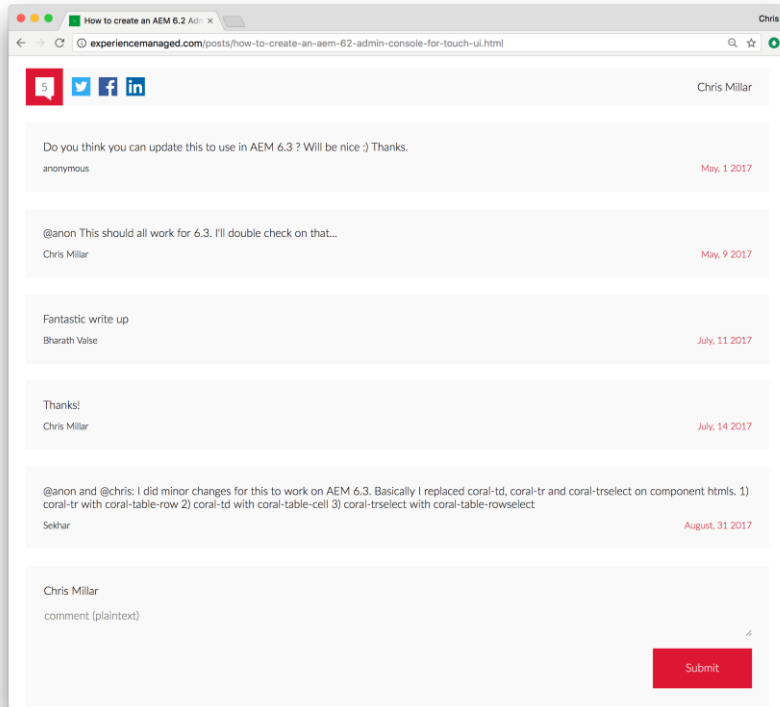
```

55 lines (49 sloc) | 1.73 KB
Raw Blame History
1  /!global window, define */
2  /**
3   * Analytics, Social, and SEO Functions.
4   *
5   * <p>This module will handle new windows for social sharing.</p>
6   * <p>If analytics are enabled, send the appropriate events to those services.</p>
7   */
8  define(function () {
9    'use strict';
10
11    var analyticsType = document.body.dataset.analyticsType;
12
13    /**
14     * Send social information to analytics services.
15     * @param {String} shareUri The URL we're sharing.
16     * @param {String} socialNetwork The social network.
17     * @return {void}
18     */
19    var trackLink = function (shareUri, socialNetwork) {
20      if (analyticsType === 'adobeAnalytics') {
21        var s = window.s_c_l[0];
22        if (s) {
23          s.tl(shareUri, 'o', socialNetwork, ({linkTrackVars: 'prop1', prop1: s.pageName});
24        }
25      } else if (analyticsType === 'googleAnalytics') {
26        if (window.ga) {
27          window.ga('send', 'social', socialNetwork, 'Share', shareUri);
28        }
29      }
30    };
31
32    var forEach = function (array, callback, scope) {
33      var i;
34      for (i = 0; i < array.length; i += 1) {
35        callback.call(scope, array[i]);
36      }
37    };
38
39    var handleClick = function (element) {
40      element.addEventListener('click', function (event) {
41        event.preventDefault();
42        var socialNetwork = this.dataset.socialNetwork;
43        var shareUri = this.dataset.shareUri;
44        trackLink(shareUri, socialNetwork);
45        window.open(this.getAttribute('href'), socialNetwork, 'height=500,width=575');
46      }, false);
47    };
48
49    // Share Windows
50    var socialLinks = document.querySelectorAll('.social');
51    if (socialLinks) {
52      forEach(socialLinks, handleClick);
53    }
54  });
55

```

Google Analytics
Adobe Analytics
DTM, GTM
Other (Piwick, Open Analytics)





So what?

```

{
  "responseCode": 200,
  "responseType": "success",
  "responseMessage": "success",
  "content": {
    "count": 5,
    "comments": [
      {
        "name": "2c45af72-9a12-44d0-92e9-db8c852832fa",
        "author": "anonymous",
        "comment": "Do you think you can update this to use in AEM 6.3 ? Will be nice :) Thanks.",
        "created": "May, 1 2017"
      },
      {
        "name": "0a66c216-6009-437c-8fe2-f3ecb6d984ce",
        "author": "Chris Millar",
        "comment": "@anon This should all work for 6.3. I'll double check on that...",
        "created": "May, 9 2017"
      },
      {
        "name": "06710120-e49b-4cbb-8756-210383cf3149",
        "author": "Bharath Valse",
        "comment": "Fantastic write up",
        "created": "July, 11 2017"
      },
      {
        "name": "14b5381f-1257-457d-bd41-a4ed16a7b5d9",
        "author": "Chris Millar",
        "comment": "Thanks!",
        "created": "July, 14 2017"
      },
      {
        "name": "259131b2-32a4-44c5-8caf-718f6e523299",
        "author": "Sekhar",
        "comment": "@anon and @chris:\r\nI did minor changes for this to work on AEM 6.3. Basically I replaced coral-td, coral-tr and coral-trselect on component htms. \r\n1) coral-tr with coral-table-row\r\n2) coral-td with coral-table-cell\r\n3) coral-trselect with coral-table-rowselect",
        "created": "August, 31 2017"
      }
    ]
  }
}

```

Comments are JSON endpoints retrieved via AJAX to optimize for cache-ability.

Architecture - Comments

/posts.html

/posts/hello-world.html



/posts/hello-world.**list.comments**.json

Comment Count

Comment List



Dispatcher is supported
(Legal implications, read fine print)

```
northstar — root@totoro:~ — ssh totoro.millr.org — 156x43
/clientheaders
{
  $include "clientheaders.any"
}

/virtualhosts
{
  $include "virtualhosts.any"
}

/renders
{
  $include "renders.any"
}

/filter
{
  $include "filter.any"
}

/cache
{
  $include "cache.any"
}

/statistics
{
  $include "statistics.any"
}

# /auth_checker
# {
#   $include "auth_checker.any"
# }
~
~
~
~
```

Architecture - Dispatcher Interface

```
16 references
20 public interface DispatcherService {
21     |
22     |     2 references
23     |     ... Boolean canFlush();
24     |
25     |     6 references
26     |     ... JSONObject flush(String domain, String flushType);
27     |
28     |     1 reference
29     |     ... JSONObject flushAll(String domain);
30     |
31     |     1 reference
32     |     ... JSONObject flushUi(String domain);
33     |
34     |     1 reference
35     |     ... JSONObject flushContent(String domain);
36     |
37     |     1 reference
38     |     ... JSONObject flushContent(String domain, String path);
39     |
40     | }
41 }
```

Simple &
Powerful
Flush Service



Containers

Container Support

```
sllick ~ cmillar@totoro: ~ ssh totoro.millr.org -- 173x49

1 [ ] Tasks: 38, 251 thr; 1 running
2 [ ] Load average: 0.40 0.56 0.61
Mem[ ] |-----| 3.16G/3.8
Swp[ ] |-----|

PID USER      PRI  NI  VIRT   RES   SHR  S CPU% MEM%   TIME+  Command
25694 root        20   0 10.36 1539M 15788 S   0.0 39.0 1542h  java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25732          20   0 10.36 1539M 15788 S   0.0 39.0 735h  java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25731          20   0 10.36 1539M 15788 S   0.0 39.0 735h  java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25733          20   0 10.36 1539M 15788 S   0.0 39.0 31h56:22 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25961          20   0 10.36 1539M 15788 S   0.7 39.0 13h14:02 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
30790          20   0 566M 21016 6988 S   0.7 0.5 7h36:51 /usr/bin/dockerd
30796          20   0 372M 3516 828 S   0.0 0.1 5h19:31 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
9906          20   0 10.46 1347M 29012 S   0.0 34.1 4h52:00 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8181
25916          20   0 10.36 1539M 15788 S   0.0 39.0 4h14:29 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25877          20   0 10.36 1539M 15788 S   0.0 39.0 3h14:50 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25962          20   0 10.36 1539M 15788 S   0.0 39.0 3h03:18 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25981          20   0 10.36 1539M 15788 S   0.0 39.0 3h03:16 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25977          20   0 10.36 1539M 15788 S   0.0 39.0 3h02:59 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25955          20   0 10.36 1539M 15788 S   0.0 39.0 3h02:50 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25984          20   0 10.36 1539M 15788 S   0.0 39.0 3h02:42 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
25740          20   0 10.36 1539M 15788 S   0.0 39.0 2h42:46 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
10179          20   0 10.46 1347M 29012 S   0.0 34.1 1h48:17 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8181
3157          20   0 506M 5560 4248 S   0.0 0.1 1h35:53 /usr/sbin/NetworkManager --no-daemon
30791          20   0 566M 21016 6988 S   0.0 0.5 1h11:25 /usr/bin/dockerd
30795          20   0 566M 21016 6988 S   0.0 0.5 1h04:37 /usr/bin/dockerd
31075          20   0 566M 21016 6988 S   0.0 0.5 1h00:53 /usr/bin/dockerd
32689          20   0 566M 21016 6988 S   0.0 0.5 54:01.36 /usr/bin/dockerd
12158          20   0 566M 21016 6988 S   0.0 0.5 52:54.31 /usr/bin/dockerd
323          20   0 372M 3516 828 S   0.0 0.1 49:01.49 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30830          20   0 566M 21016 6988 S   0.0 0.5 48:00.61 /usr/bin/dockerd
3457          20   0 540M 1560 1076 S   0.0 0.0 44:02.20 /usr/bin/python -Es /usr/sbin/tuned -l -p
3759
31070          20   0 372M 3516 828 S   0.0 0.1 42:39.38 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30802          20   0 372M 3516 828 S   0.0 0.1 42:14.53 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30915          20   0 372M 3516 828 S   0.0 0.1 40:00.86 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30798          20   0 372M 3516 828 S   0.0 0.1 39:20.49 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
17436          20   0 372M 3516 828 S   0.0 0.1 32:36.49 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30910          20   0 566M 21016 6988 S   0.0 0.5 30:44.31 /usr/bin/dockerd
10137          20   0 10.46 1347M 29012 S   0.0 34.1 29:07.01 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8181
30799          20   0 372M 3516 828 S   0.0 0.1 28:26.17 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30801          20   0 372M 3516 828 S   0.0 0.1 25:28.84 docker-containerd -l unix:///var/run/docker/libcontainerd/docker-containerd.sock --metrics-interval=0 --start-
30832          20   0 566M 21016 6988 S   0.0 0.5 23:08.86 /usr/bin/dockerd
25978
9953          20   0 10.46 1347M 29012 S   0.0 34.1 20:01.93 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8181
25873          20   0 10.36 1539M 15788 S   0.0 39.0 18:34.48 java -Xmx1200m -jar org.apache.sling.launchpad.jar -p 8282
1          20   0 186M 3936 2440 S   0.0 0.1 18:22.76 /usr/lib/systemd/systemd --system --deserialize 22
F1Help F2Setup F3SearchF4FilterF5Tree F6SortB,F7Nice F8Nice F9Kill F10Quit
```

OSGi Service Implementations

impl

services

settings

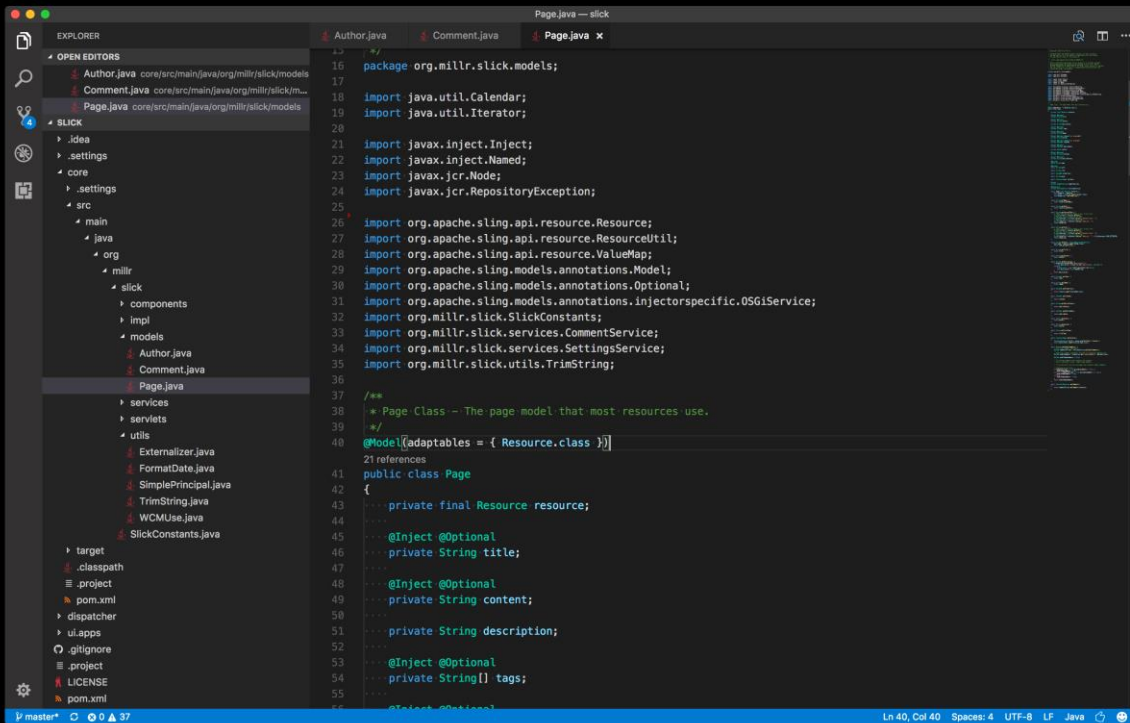
- CommentServiceImpl.java
- CurrentUserServiceImpl.java
- DispatcherServiceImpl.java
- MediaServiceImpl.java
- OsgiServiceImpl.java
- PostServiceImpl.java
- SettingsServiceImpl.java
- UiMessagingServiceImpl.java
- UploadServiceImpl.java
- Activator.java

Component
Sling Models
Exposed to pages

```
└─ org
  └─ millr
    └─ slick
      └─ components
        └─ author
          └─ CurrentUser.java
          └─ EditBlog.java
          └─ ListMedia.java
          └─ Login.java
          └─ Navigation.java
        └─ common
          └─ CommentPagination.java
          └─ Draft.java
          └─ ListComments.java
          └─ ListPosts.java
          └─ MediaPagination.java
          └─ Navigation.java
          └─ NotFound.java
          └─ Pagination.java
          └─ Search.java
          └─ Settings.java
          └─ ViewPage.java
```

Base Sling Models

- Page
- Author
- Comment



```

15 package org.mllr.slick.models;
16
17
18 import java.util.Calendar;
19 import java.util.Iterator;
20
21 import javax.inject.Inject;
22 import javax.inject.Named;
23 import javax.jcr.Node;
24 import javax.jcr.RepositoryException;
25
26 import org.apache.sling.api.resource.Resource;
27 import org.apache.sling.api.resource.ResourceUtil;
28 import org.apache.sling.api.resource.ValueMap;
29 import org.apache.sling.models.annotations.Model;
30 import org.apache.sling.models.annotations.Optional;
31 import org.apache.sling.models.annotations.injectorspecific.OSGiService;
32 import org.mllr.slick.SlickConstants;
33 import org.mllr.slick.services.CommentService;
34 import org.mllr.slick.services.SettingsService;
35 import org.mllr.slick.util.TrimString;
36
37 /**
38  * Page Class - The page model that most resources use.
39  */
40 @Model(adaptables = { Resource.class })
41
42 public class Page
43 {
44     @Inject @Optional
45     private final Resource resource;
46
47     @Inject @Optional
48     private String title;
49
50     @Inject @Optional
51     private String content;
52
53     @Inject @Optional
54     private String description;
55
56     @Inject @Optional
57     private String[] tags;
58
59     @Inject @Optional
60     private CommentService commentService;
61
62     @Inject @Optional
63     private SettingsService settingsService;
64
65     @Inject @Optional
66     private TrimString trimString;
67
68     public Resource getResource() {
69         return resource;
70     }
71
72     public String getTitle() {
73         return title;
74     }
75
76     public String getContent() {
77         return content;
78     }
79
80     public String getDescription() {
81         return description;
82     }
83
84     public String[] getTags() {
85         return tags;
86     }
87
88     public CommentService getCommentService() {
89         return commentService;
90     }
91
92     public SettingsService getSettingsService() {
93         return settingsService;
94     }
95
96     public TrimString getTrimString() {
97         return trimString;
98     }
99
100 }

```

`${view.page.title}`

`${view.page.body}`

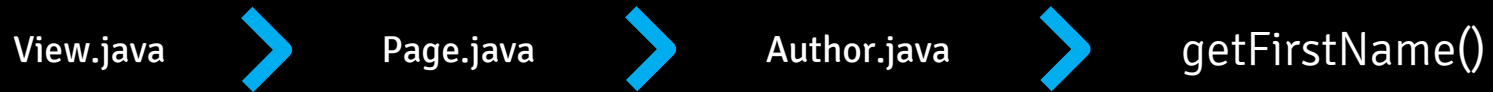
`${view.author.firstName}`

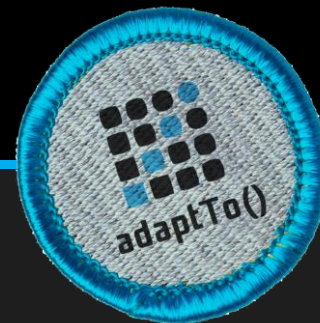
`${view.external.url}`

Straight-forward
Naming conventions

Extensive use of
`data-sly-template`

```
${ view . page . author . firstName }
```





```
194     public Iterator<Page> getChildren()  
195     {  
196         Iterator<Resource> children = resource.getChildren().iterator();  
197         return ResourceUtil.adaptTo(children, Page.class);  
198     }  
199
```



Demo

Slick Source

<http://github.com/auniverseaway/slick-2>

Twitter

<http://twitter.com/auniverseaway> (a universe away)

Slick Blog

<http://slick.millr.org>

Q & A