



**adaptTo()**

APACHE SLING & FRIENDS TECH MEETUP  
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# Dynamic Components using SPA Concepts

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# Dynamic Components

# Dynamic vs Static Components

Count of Dynamic vs Statics  
(in hundreds)



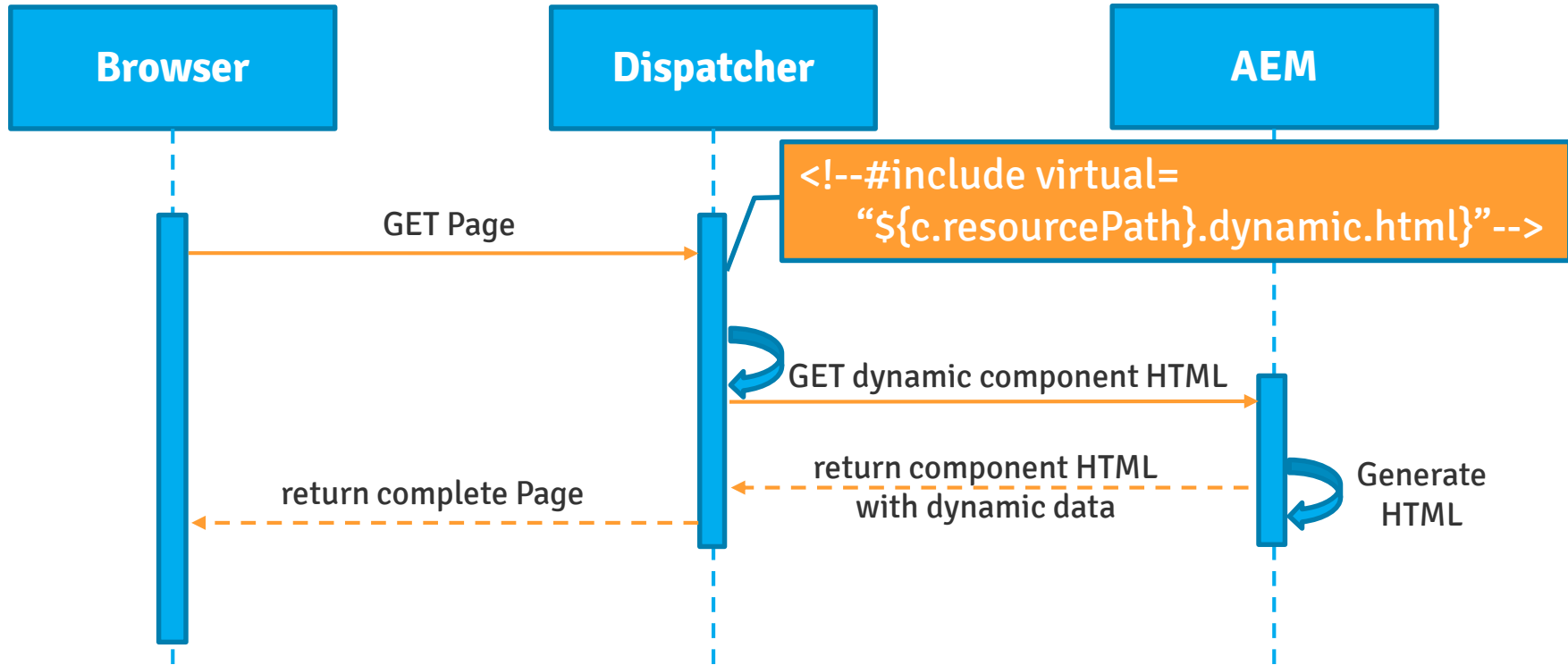
Initial and form-based components take big chunk of the **statics**

We spend more than 90% of the time developing **dynamics**

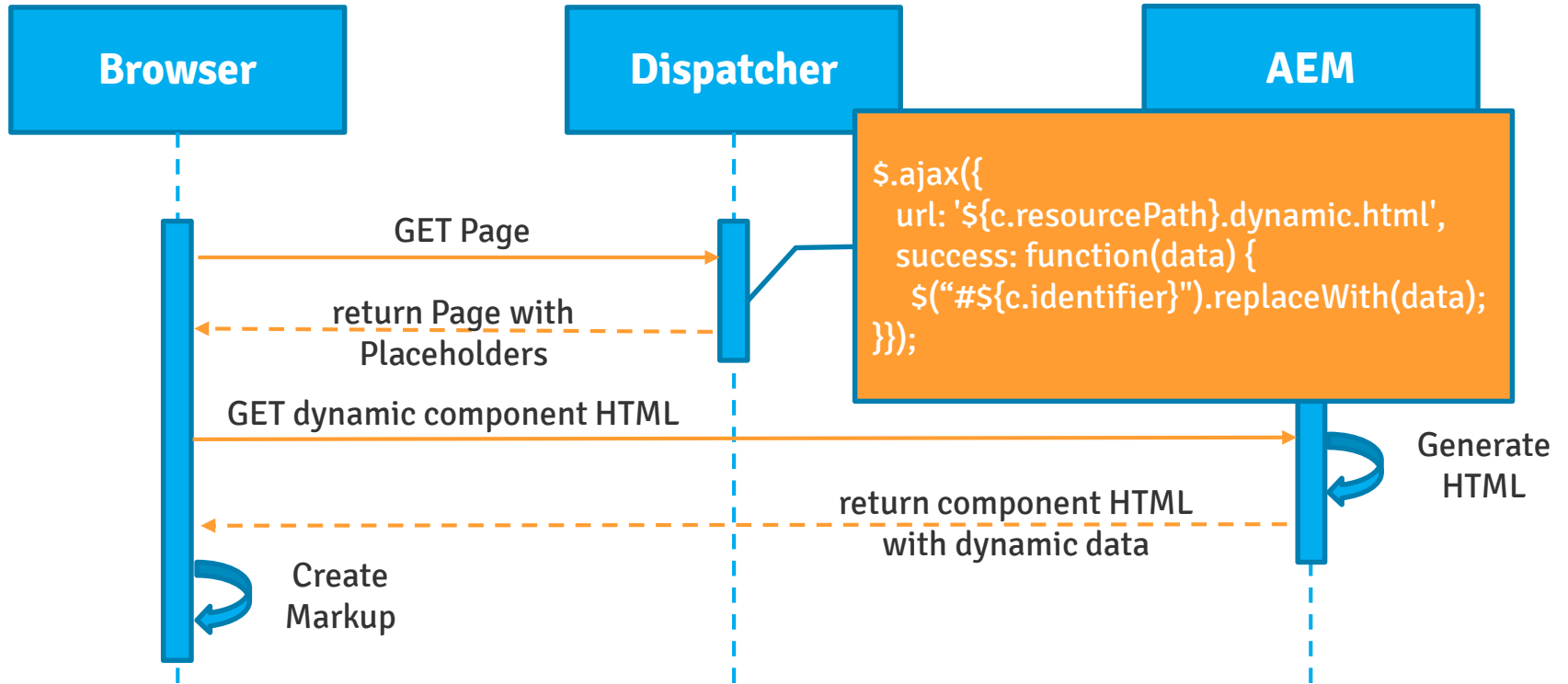
# Dynamic Component Development

- Placeholder for dynamic component in dispatcher
  - think about what you will have in the dispatcher
- Request dynamic component via URL
  - [/content/page/\\_jcr\\_content/par/comp.dynamic.html](/content/page/_jcr_content/par/comp.dynamic.html)
- Instruct dispatcher not to cache based on selector
  - `#/0042 { /type "deny" /glob "GET *.dynamic.html*" }`

# Server Side Includes



# AJAX





- Sling Concepts
  - component-path
  - selectors
  - sling:resourceSuperType
- Aspect-Oriented Solution
- Sling Dynamic Include



## What if...

- ... you have high number of dynamic components on a single page?
- ... your components need to communicate between themselves and update their state?
- ... you need to do notifications for the user?  
... basically need SPA



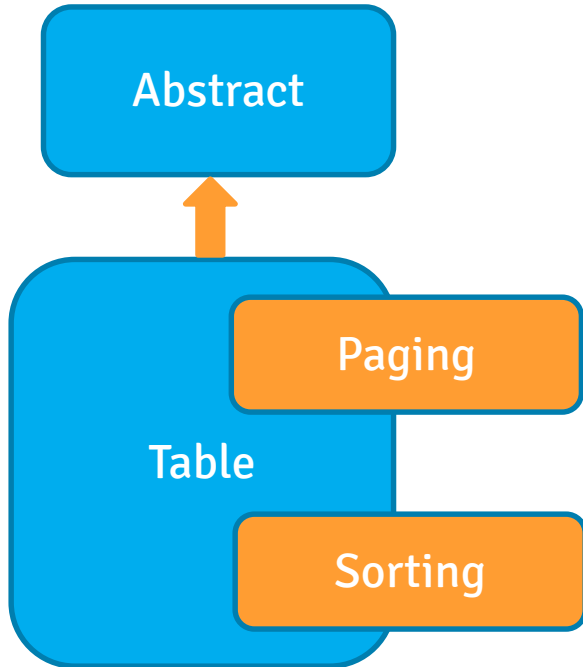
# Why were the usual approaches Tricky?



They were meant to be used  
with **page reloads**

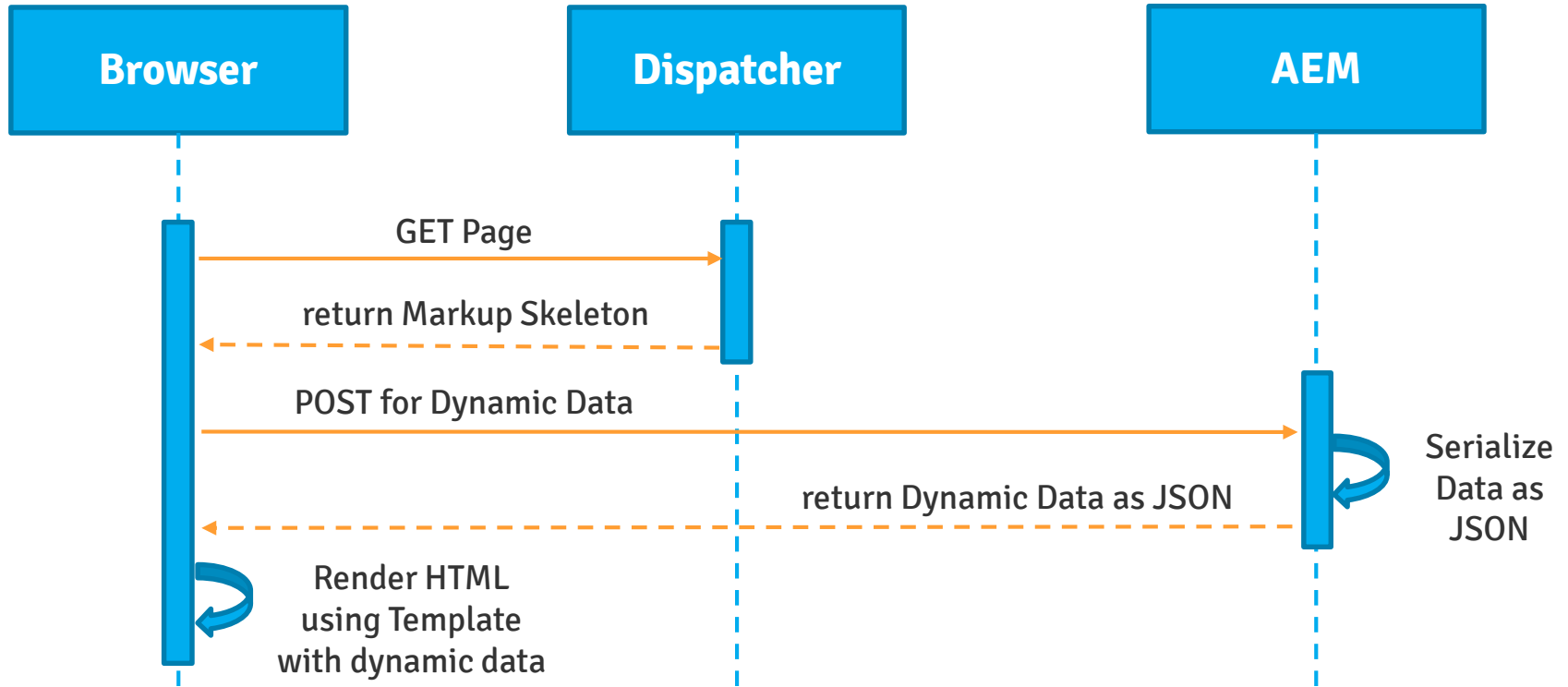
They work with **pre-loaded  
Markup** from server

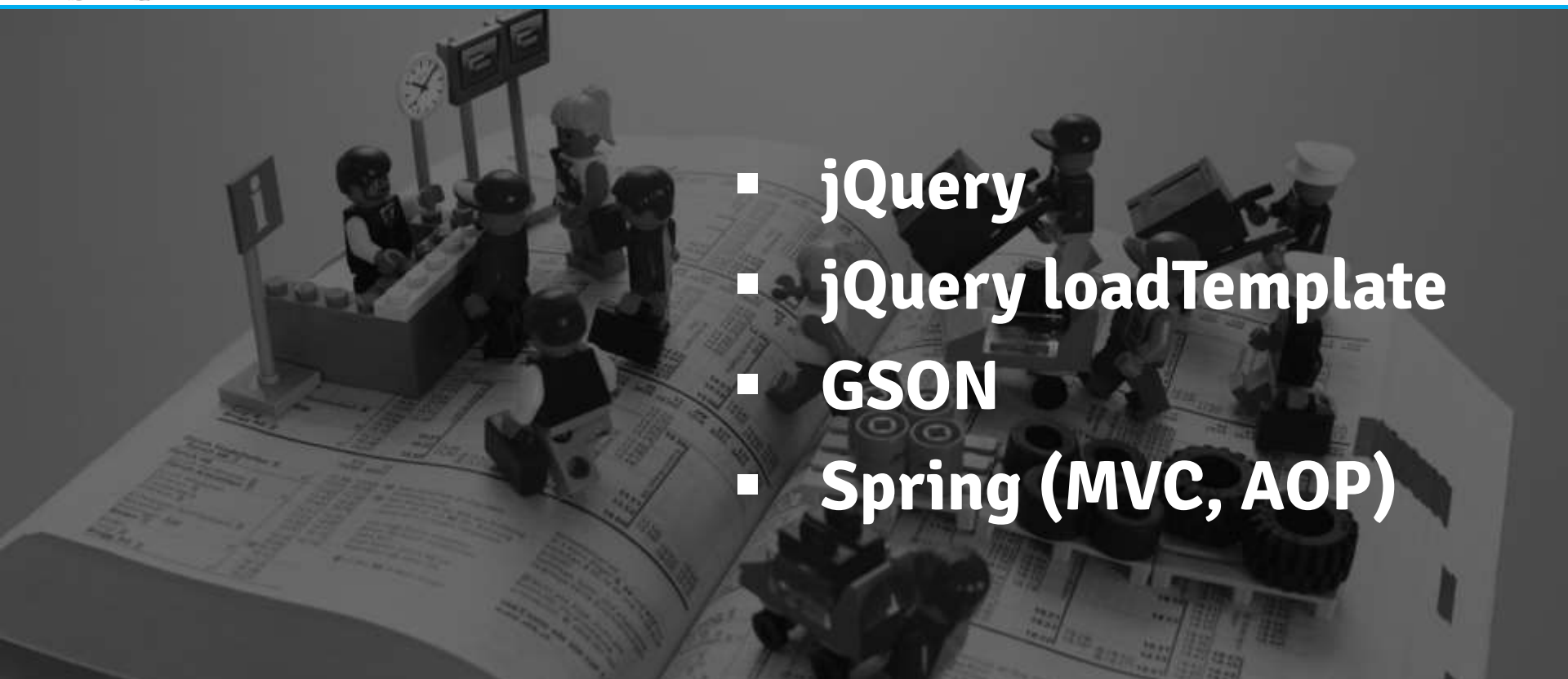
# Single Page Application



- Rendering Script (JSP)
  - Cached, Inherited
- Module (JS)
  - Cached, Composition
- Controller
  - Handles all dynamic calls

# Page Load



- 
- A grayscale photograph of several LEGO minifigures on a newspaper. The minifigures are arranged in a scene that includes a counter, a clock, and various pieces of furniture, suggesting a busy office or service environment. The newspaper they are on has some text and diagrams visible, though they are mostly obscured by the minifigures.
- **jQuery**
  - **jQuery loadTemplate**
  - **GSON**
  - **Spring (MVC, AOP)**



- Perceived User Experience
- Separation of front- and back-end engineering
  - easier development
  - prototype
  - mocked data

# Showcase

# Rendering Script

```
<table
  class="scheduleTable">
  <th>
    <td>Talk Name</td>
    <td>Time</td>
  </th>
  <tbody></tbody>
</table>
```

Static  
Markup

```
<script type="text/html"
  id="scheduleTableTemplate">
  <tr>
    <td data-content="talkName"></td>
    <td data-content="time"></td>
  </tr>
</script>
```

Template

```
$(`.scheduleTable tbody`).loadTemplate(
  `#scheduleTableTemplate`,
  data.talks);
```

Inject data

```
<script type="text/javascript">
  aemdemo.scheduletable.init(
    'http://localhost:4502/bin/mvc.do/scheduletable/getresult');
</script>
```

Initialization script



```
aemdemo.schedulestable = (function($, paging, sort) {  
    var params;  
    function init (dataUrl) {  
        params.dataUrl = dataUrl;  
    }  
    function getDataByPage (pageNumber) {  
        $.ajax {  
            data : { . . . },  
            url : params.dataUrl,  
            success : function (data) { paging.update (data) }  
        }  
    }  
    return {  
        init: init  
    }  
} (jQuery, aemdemo.paging, aemdemo.sort));
```

## @Controller

```
public class ScheduleTableController {  
    @RequestMapping(value = "/scheduletable/getresult",  
        produces = {"application/json"}, method = POST)  
    @ResponseBody  
    public String getResult(@RequestParam int pageNumber) {  
        ConferenceDay conferenceDay = getDataFromService();  
        return serializeData(conferenceDay);  
    }  
}
```

# Identify and Control POSTs

## ■ Add Header

```
$.ajaxPrefilter(function (options, originalOptions, jqXHR) {  
    jqXHR.setRequestHeader('X-Request-Source', 'spa-ajax');  
});
```

## ■ Check Handler

```
Servlet servlet = servletResolver.resolveServlet(slingRequest);  
if ("SlingPostServlet".equals(servlet.getClass().getSimpleName())  
    && isDynamicRequest() ) {  
    // ups  
}
```





# Demo Project

<http://bit.ly/aemspademo>





Thank You!

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