Go From Dashboards to Applications With Ease

SplunkJS and Splunk Python for Non-Developers

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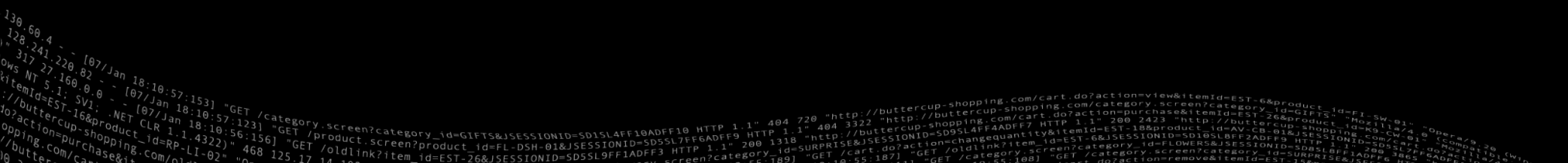
Agenda

- Introductions – Who Are We, Who Are You?
- The App
- The Meat
  - Running a Search from SplunkJS (Veuve)
  - Tokens for adequate interactivity (Herrald) (Or other content.. Maybe a simple python something?)
  - Modal Dialogs (Veuve)
  - … (Herrald)
  - Our Top 5 Techniques for Making an App Great (Both)

What Is This Talk About?

- We have built a lot on top of Splunk
- We don't know what we're doing
- We've suffered
- We don't want you to suffer
- We put all our lessons learned in an app, and this talk accompanies the app



Introductions

Who Are We?

David Veuve

- He wrote the 5th most installed Splunk App: Splunk Security Essentials
- He also wrote the cult classic Splunk App: Search Activity
- He's presented 8 talks, 11 times to more than 2800 Splunkers @ .confs
- He just hit his 10 year anniversary of using Splunk

Dave Herrald

- More than 8,000 people have used his BOTS Scoring app
- He's built the most secure Splunk app on record
- He's presented at X SANS events and is super good at Security
- Splunk won't stop giving him awards for being awesome at Splunk

Why Are We Here? Because We Believe

- We believe that Splunk is an awesome development tool
- We believe that Splunk dev documentation is for people smarter than us
- We believe in maintaining state
- We believe in a great application experience
- We believe in being friends with people who understand UX design

- But above all…
- We believe in Copy-Paste Code Samples

Who Are You?

You're A Dashboard/Search Wizard

- You want to make better things
- You've probably copy-pasted code
- Maybe you've even written some code yourself!
- You're scrappy and want to impress people

You're a Software Engineer

- You know how to code
- You know how to read docs
- You want to save yourself a *ton* of energy with a quick start

Goal

- You should understand the essentials of doing Splunk Development with SplunkJS and Python
- You should understand how to leverage the app we are providing
- You should feel comfortable that you'll be able to do great things

The App

Get The App

https://splunkbase.splunk.com/app/4104/

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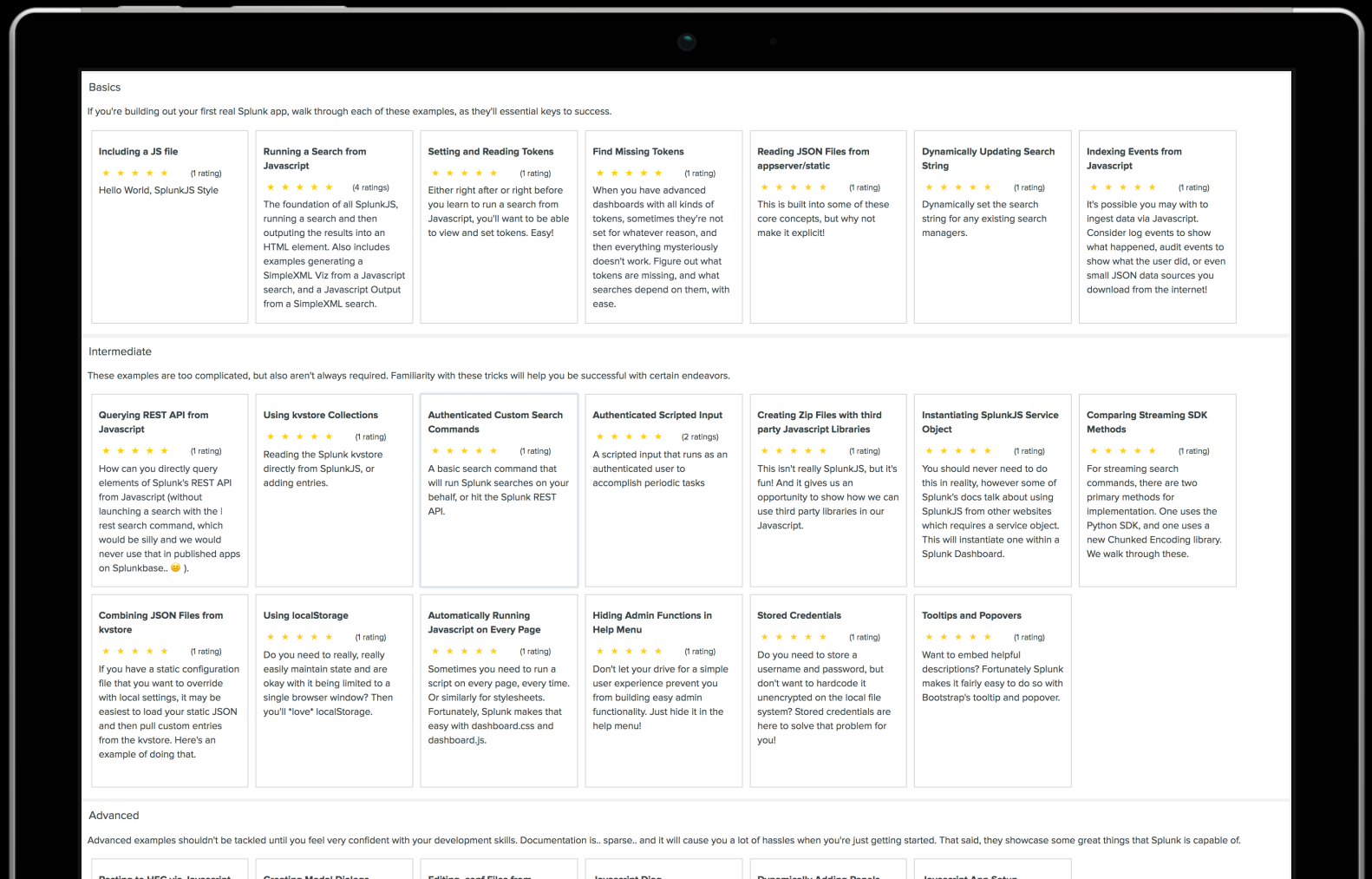
30+ Examples



- Guidance
- Basic
- Intermediate
- Advanced

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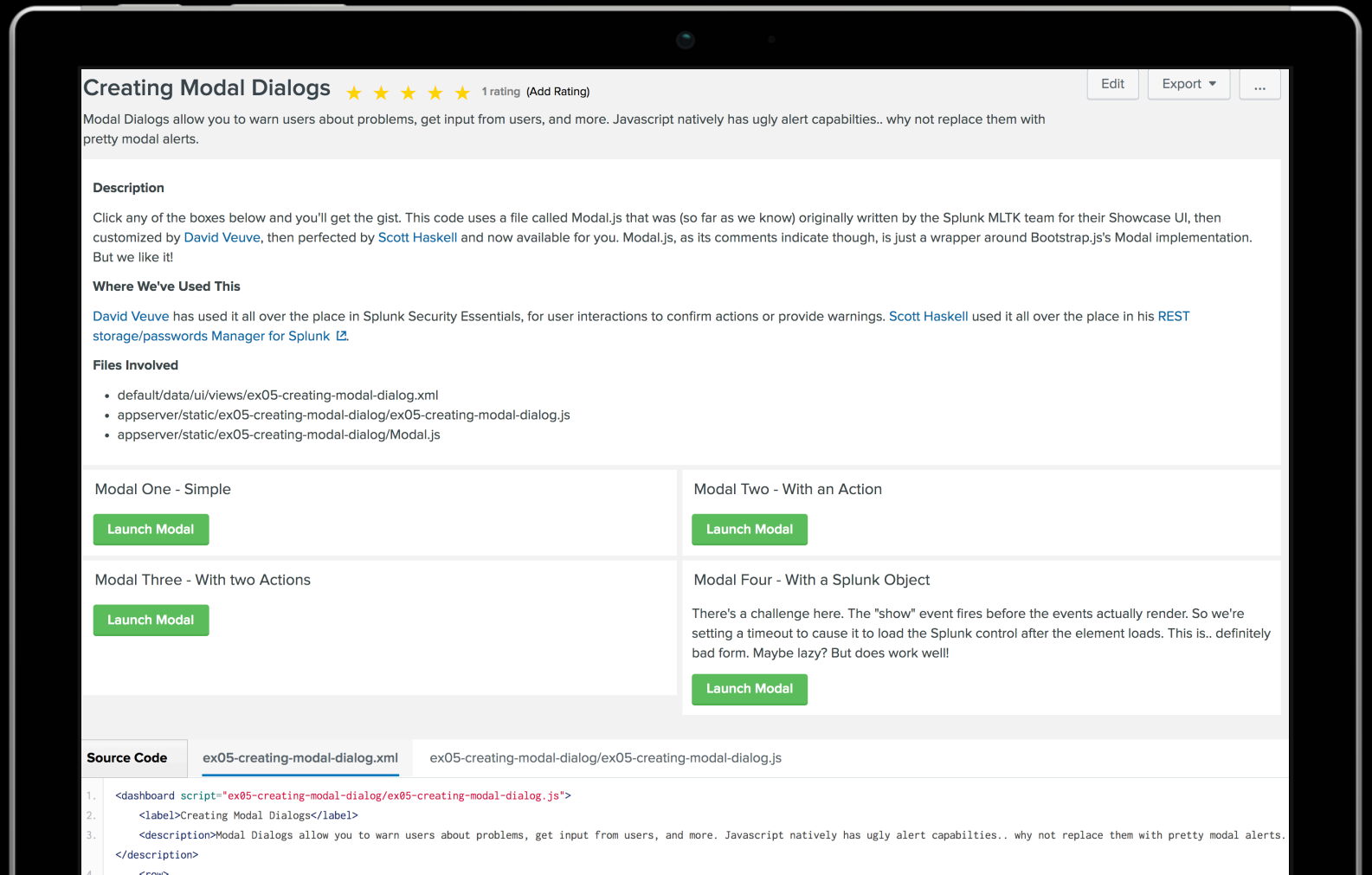
In Each Example...



- The JS / CSS
- Description
- Where we've used it
- Doc links
- Rating
- Working examples you can interact with
- (A few) detailed "how would you learn this" guides

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What's In The App?

As of this slide being built… conf is still weeks away!

Guidance

- Setting Up Your Development Environment
- Powerful Third Party and jQuery Plug-ins
- Splunk Style Guildelines (and Icons and such)
- Logging and Debugging

Basic

- Running JS
- Running a Search from SplunkJS
- Setting and Reading Tokens
- Find Missing Tokens
- Reading JSON Files from appserver/static
- Dynamically Updating Search String
- Indexing Events from Javascript
- Automatically running Javascript on Every Page

Intermediate

- Querying REST API from Javascript
- Using kvstore Collections
- Authenticated Custom Search Commands
- Authenticated Scripted Input
- Creating Zip Files with Third Party Javascript Libraries
- Instantiating SplunkJS Service Objects
- Comparing Streaming SDK Methods
- Combining JSON files with kvstore
- Using localStorage
- Hiding Admin Functions in Help Menu
- Stored Credentials
- Tooltips and Popovers

Advanced

- Posting to HEC via Javascript
- Creating Modal Dialogs
- Editing .conf Files from Javascript
- Javascript Diag
- Dynamically Adding Panels
- Javascript App Setup

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Running A Search from SplunkJS

Code Example

First The Basics - SplunkJS

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Require.js

- Require.js allows you to import modules – the equivalent of:
  - Perl: use HTTP::Simple;
  - Python: import json
  - Etc
- You take the code that you would normally write, and you just stick it in a require function:

```
require(["jquery", "splunkjs/ready!"], // run once view loaded
        function($, Ready) {
            $("body").append("<p>Hello World!</p>");
        }
       )
```

Search Manager

- Search Managers let you .. Manage searches. Run, edit, etc.

```
require(["splunkjs/mvc/searchmanager"], function(SearchManager) {

    // New Search
    var sm = new SearchManager({ [...]},
      { tokens: true, tokenNamespace: "submitted" });

    // Load Search
    var other_sm = splunkjs.mvc.Components.getInstance("search2")

    // Delete Search
    splunkjs.mvc.Components.revokeInstance("search2")

    // Test if Search Exists
    typeof splunkjs.mvc.Components.getInstance("search2") == "object"

})
```

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There Are Many Useful Classes

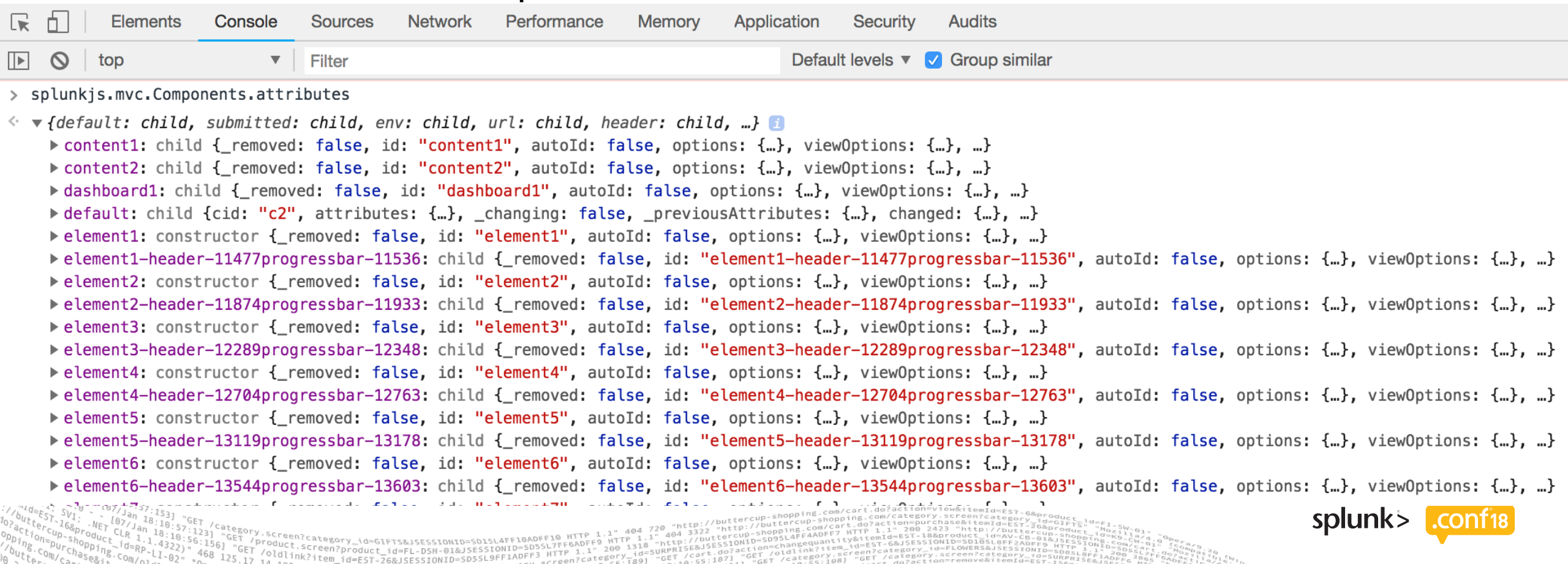
Here are a list of classes, and how the typical name they're loaded with

- "jquery" -> $
- "underscore -> _
- "splunkjs/mvc/dropdownview" -> DropdownView
- "splunkjs/mvc/textinputview" -> TextInputView
- "splunkjs/mvc/chartview" -> ChartView
- "splunkjs/mvc/tableview" -> TableView
- "bootstrap.tooltip" -> N/A (put it at the end, no object required)

- How to discover these? Easiest – put the element on an SimpleXML Dashboard and convert to HTML

Discovering Objects

- Every instantiated object is stored in: splunkjs.mvc.Components.attributes
- Find this in the Javascript Console:



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Loading Custom JavaScript

- Add a script tag to your dashboard tag:

```
<dashboard script="myscript.js">
   [...]
</dashboard>
```

- myscript.js will automatically load from: $SPLUNK_HOME/etc/apps/myApp/appserver/static/myscript.js
  - Any other resources you need can also be stored in that folder, or in subfolders.
- You can verify the file is there by going to: http://mySplunk:8000/static/app/myApp/myscript.js
  - .. Which adds language automatically: http://mySplunk:8000/en-US/static/app/myApp/myscript.js

Okay, enough with the basics
Let's run a search!

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Demo Plan

- If you're reading this slide, you're looking at the PDF copy. That means you're missing out!
- What are you missing out on? Well, a 4 minute demo. And in that demo I will do a:
  - Quick SA-jsforall App Demo
  - Create a new Simple XML Dashboard with an HTML element and an empty div
  - Add a Script Tag
  - Create a new Javascript file
  - Copy-paste the code example from ex01 that will output the first event
  - Save, debug refresh and _bump
  - (Discuss how you don't have to do that)
  - (Discuss how splunkd sometimes doesn't _bump on app updates because splunkd can be obnoxious)

Herrald Example 1 (Tokens? Python Basics?)

Code Example

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Creating Modal Dialogs

Code Example

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First The Theory

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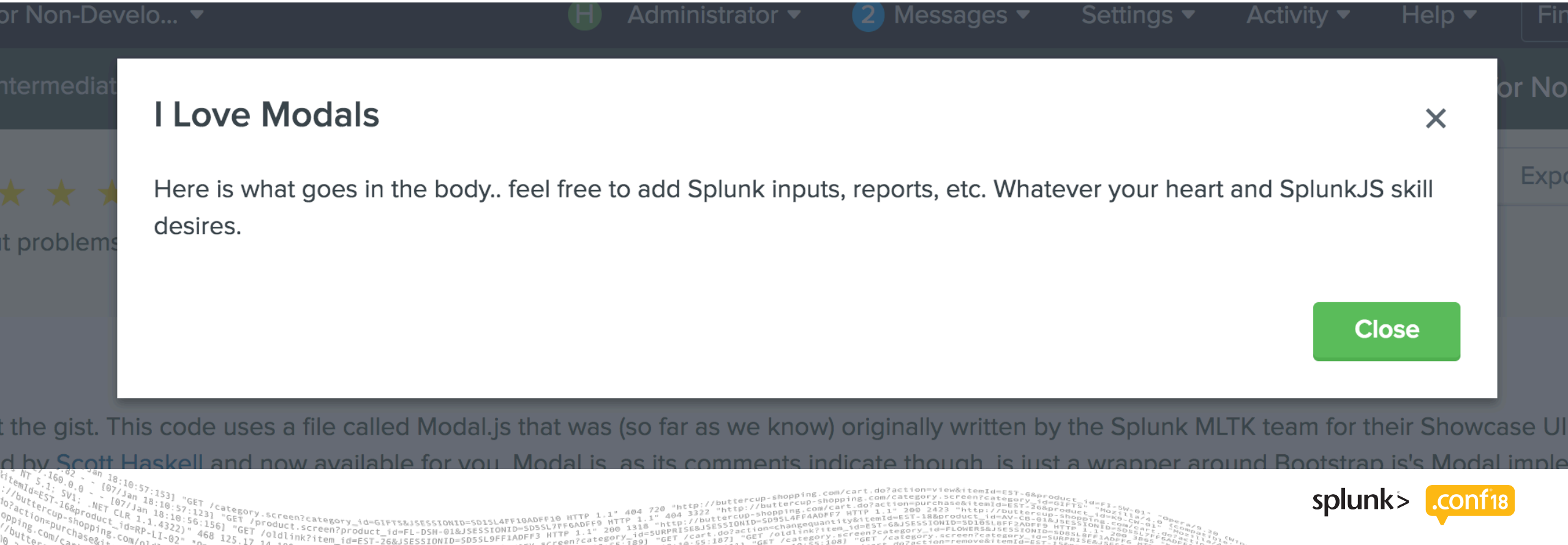
What is a Modal?

- A modal is fully known as a Modal Dialog. It's a box that pops up on the screen and confirms, asks for details, etc.
- In other words, it's one of these:



Modals Come From Bootstrap

- Bootstrap.js ships with Splunk, and it does all the really heavy lifting here
- We *do* need to create a new object for the modal, though.
- We'll create a new file (well, copy-paste from the app) and load via require

Modals have actions

- You can do things on modal hide (start of hide action), on modal hidden (end of hide action), etc.
- You can also add buttons to modals.

Let's Do It!

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Demo Plan

- If you're looking at this slide, you're viewing the PDF copy of the slides. That means you're missing out on the demo again!
- In this demo, I will start with a SimpleXML dashboard to add a new item into a threat intel dashboard – a text form input, and then a <button> that calls "addElement()"
  - Have a comment which includes the search string that should be run
  - Have a panel that includes the current # of elements and the last element added
- Copy-paste example from the app to create a confirmation modal
- Copy-paste example from the app to run a search if the user clicks Yes

Herrald Example

Code Example

Top 5 Elements for a Great App

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#5 – Use Modals

- Modals are really easy to use
- They provide a more polished user experience and more interactivity

- You can even include Splunk dashboard elements in them (dropdowns, charts, etc.)
  - Trick: you may need to add a setTimeout or add them after the modal finishes rendering

#4 - Herrald

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#3 – Maintain State

- An application remembers what you've done before
- An application does not repeatedly prompt you for the same information

- There are several great methods for maintaining state:
  - Locally in the browser via localStorage
  - By accessing the kvstore
  - Even storing details in a macro or lookup

#2 - Herrald

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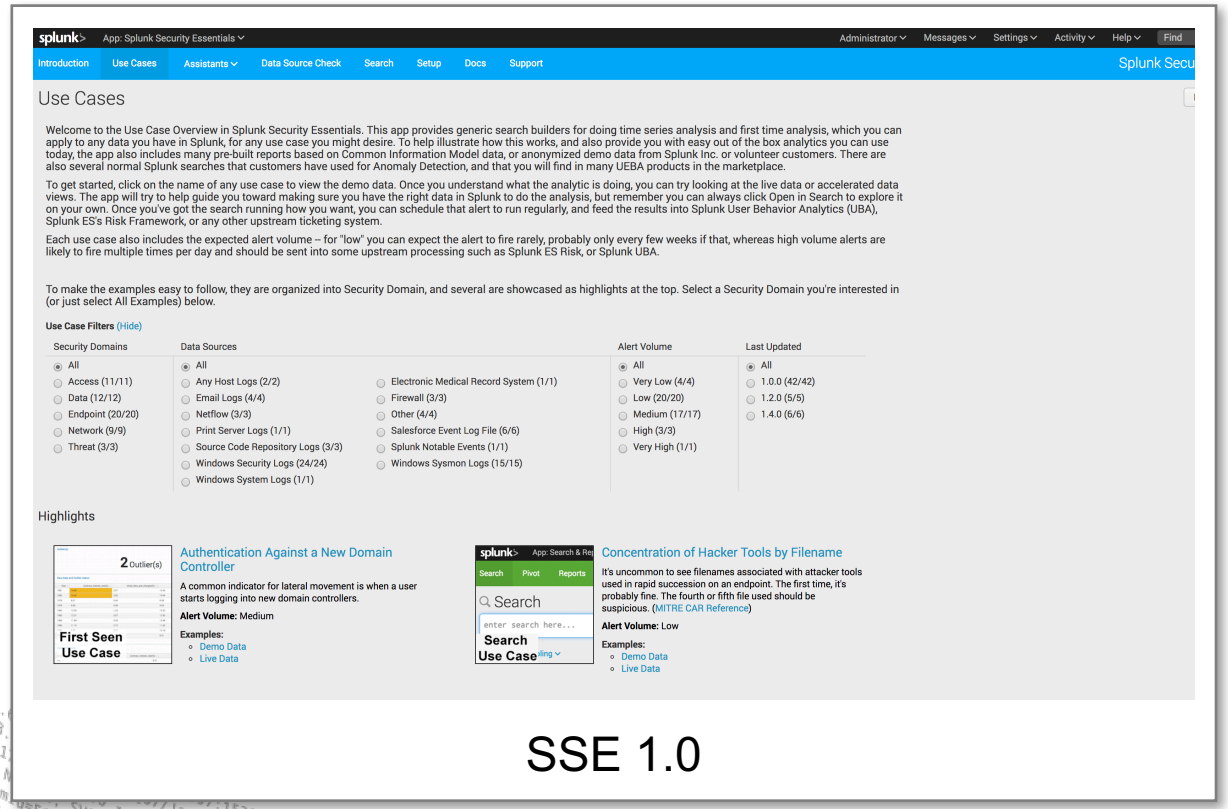
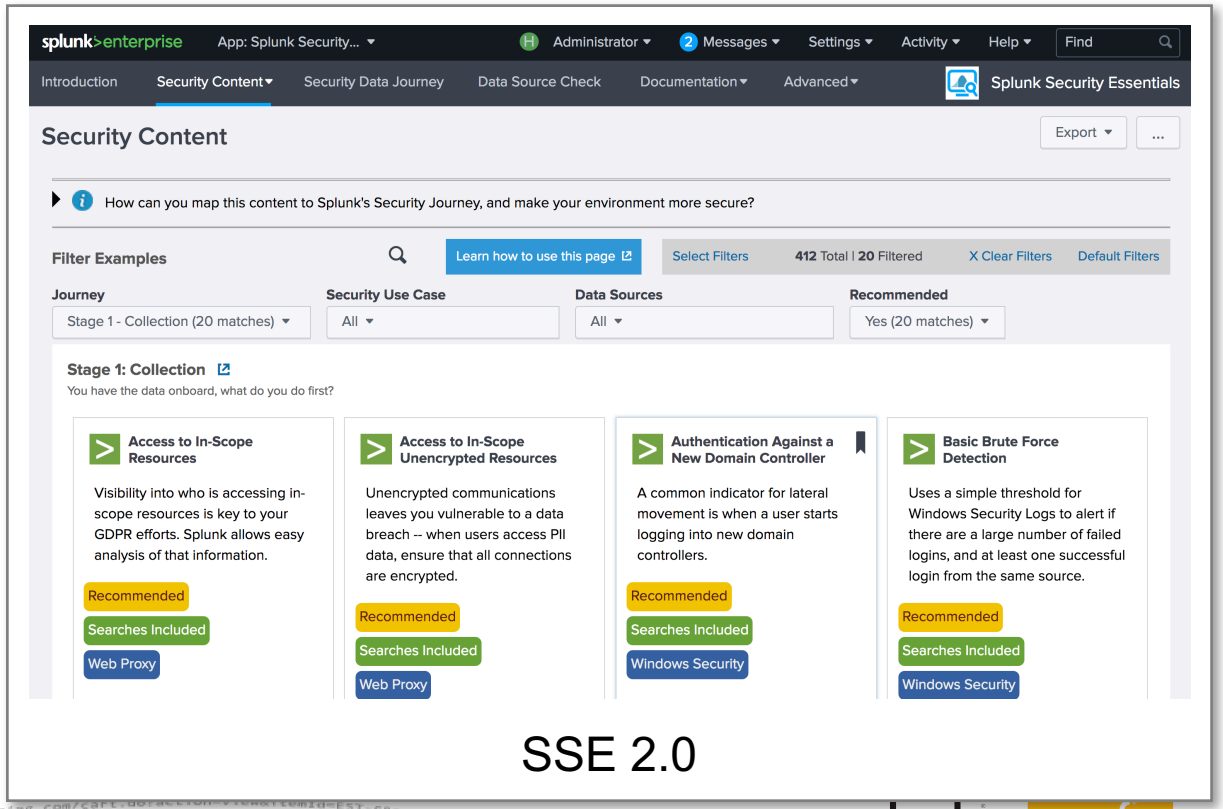
#1 – Get Design Help

- If you aren't good at design, ask someone who is.
- If you don't know someone, buy some time on fiverr.com, upwork.com, etc.
  - $300 spent on outsourced design can net you a promotion



SSE 1.0



SSE 2.0

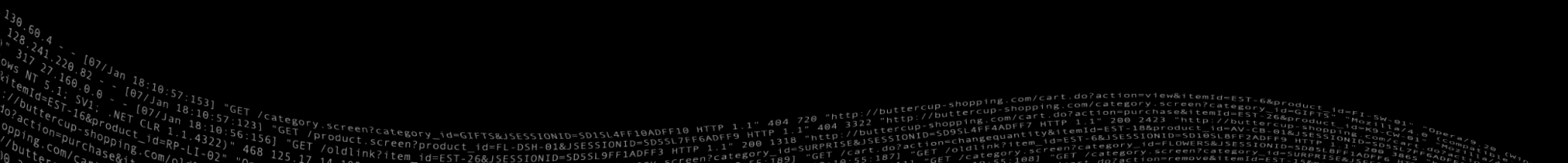
Key Takeaways

Download the app!

https://splunkbase.com/app/4104

Making more interactive and powerful UIs is easy

If you find content like this useful, please rate us in the app so that Splunk provides more content like this.



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Thank You

Don't forget to rate this session in the .conf18 mobile app