Dashboard Wizardry:
Advanced Dashboard Interactivity

Nicholas Filippi - Product Management, Splunk

Siegfried Puchbauer - Core Engineering, Splunk

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Brought to You By…

Siegfried Puchbauer

- Lead Engineer, Dashboard Team
- Expert in Dashboards, Alerting, Javascript, and Bowler Hats

Nicholas Filippi

- Product Management, Splunk
- Responsible for Dashboards & Info Delivery

You are Here Because…

- Interested in Building More Interactive Dashboards
- Don’t Want to Use Custom Javascript or Stylesheets
    - (but familiar with Simple XML)

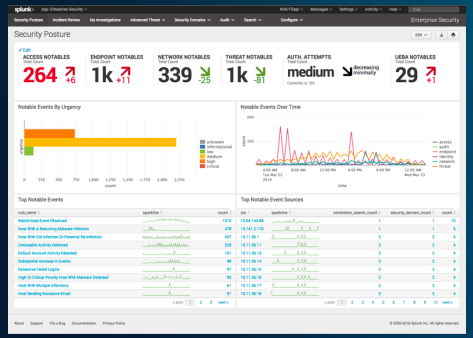
Agenda

- Background
- Live Example
  - Tokens
  - Event Handlers
  - Show/Hide content
  - Search Events
- What's new in Splunk 6.5
- Wrap-Up

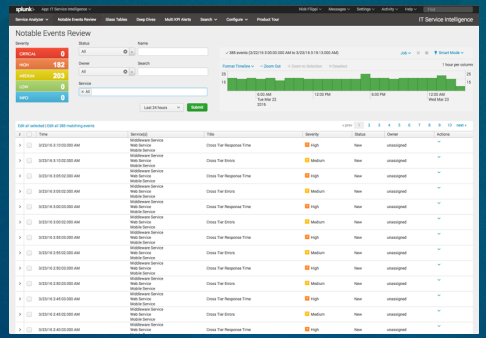
What Is A Dashboard?

Premium Solutions

Enterprise Security



IT Service Intelligence



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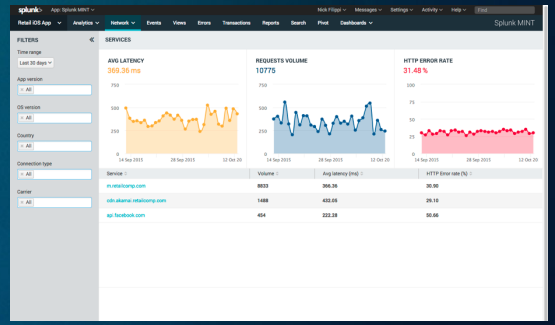
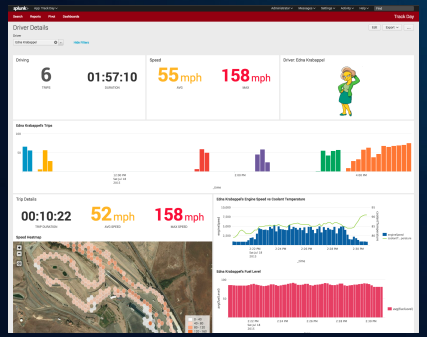
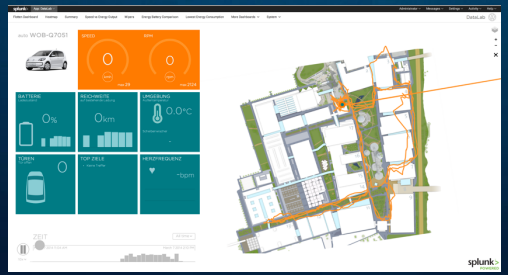


Internal Examples

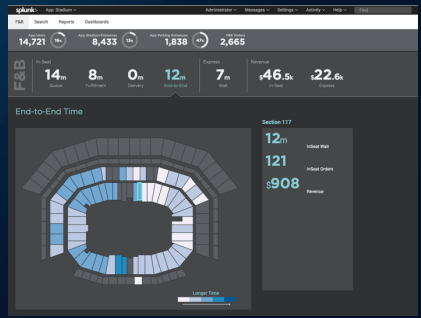
Sample App



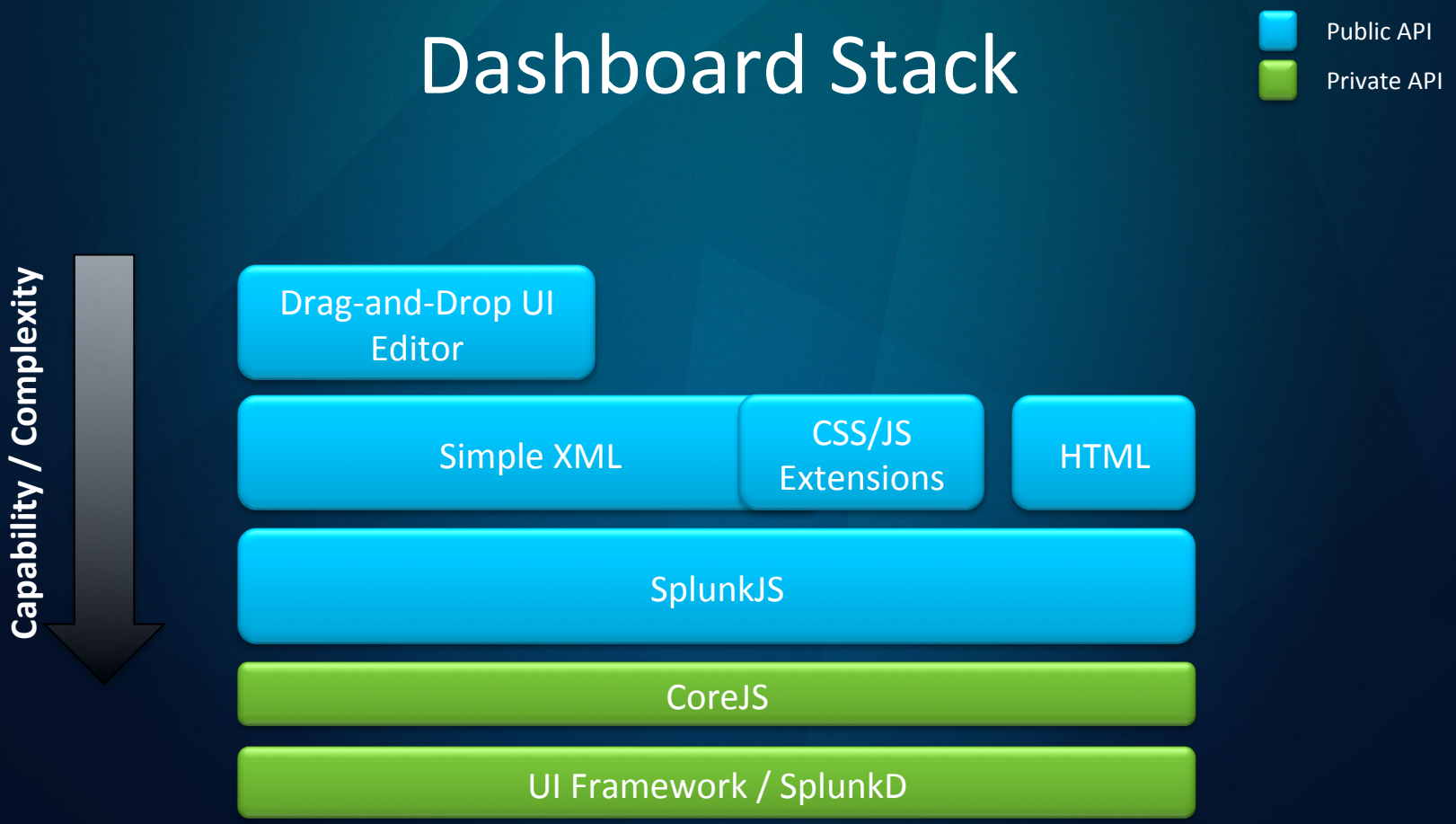
eCars Project



Stadium Project



Dashboard Stack

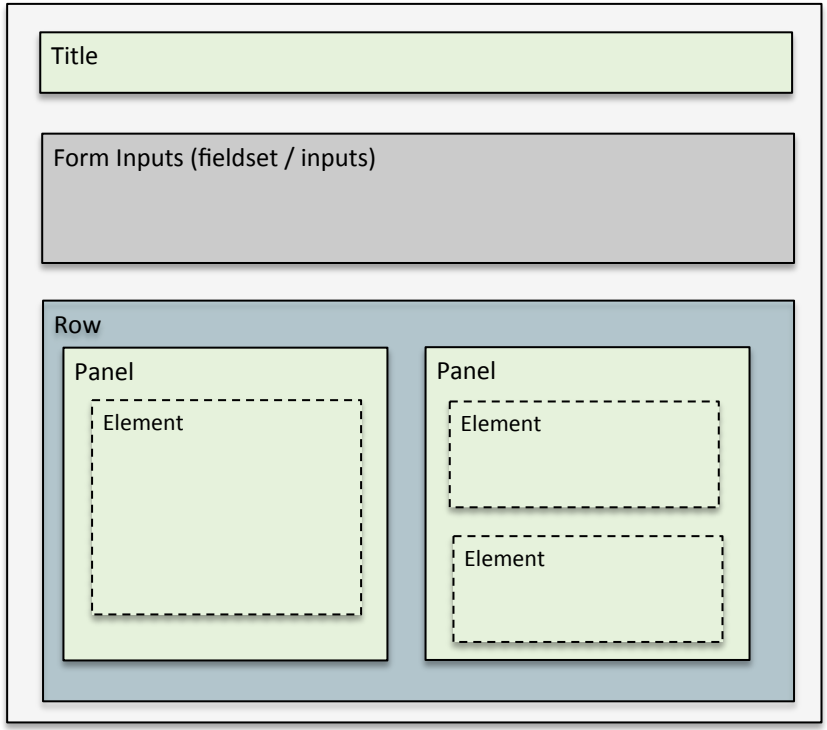


Anatomy of a Dashboard

```
<form>
   <label>My Dashboard</label>

   <fieldset>
      <input>
         <!- form inputs -->
      </input>
   </fieldset>

   <row>
      <panel>
         <chart>
            <!- ... -->
         </chart>
         <table>
            <!- ... -->
         </table>
      </panel>
   </row>
</form>
```



Dashboard Fundamentals

Layout	Search Managers	Event Handlers	Form Inputs	Display Controls	Visualizations	Extensions
• row • panel • element	• search • ref (report) • base (Post-process) • cache • refresh** • refreshType**	• input • change • search • drilldown • selection • init**	• text • radio • dropdown • checkbox • multiselect • link • time	• depends • rejects	• Events • Table • Line • Area • Column • Bar • Pie • Scatter • Bubble • Single Value • Radial Gauge • Filler Gauge • Marker Gauge • Map • Choropleth Map	• script (JS) • stylesheet (CSS) • dashboard.js • dashboard.css

Token Management

** New in Splunk Enterprise 6.5

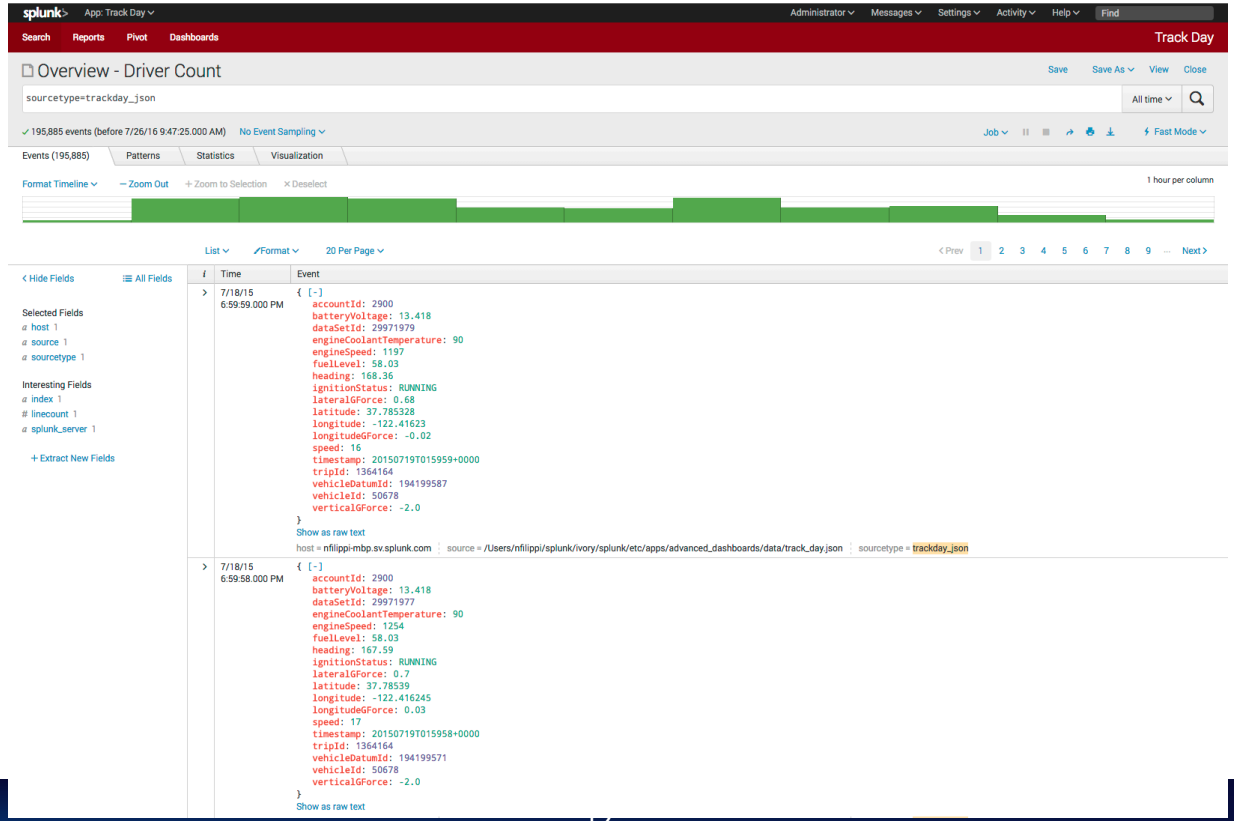
Let’s Build Some Dashboards!

The Data: Track Day

- Sonoma Raceways
  - 1 Day
  - 28 Splunkers
  - 30 Cars

- Data via carvoyant
  - ODB II Dongle -> Cloud Service -> Modular Input
  - Location data & metrics (speed, rpm, etc)

The Data: Track Day



Building Dashboards

Part I

Tokens

- Automatic data binding
- Variables – connecting components and interactions
- Use in UI or XML

$buttercup$

Token Filters

- Insert altered/processed value
- Built-in
  - `$token|s$` - search escape
  - `$token|u$` - URL encode
  - `$token|h$` - HTML escape
  - `$token|n$` - No encoding (New in Splunk 6.5)
- Build your own (in Javascript)
  - `$token|myfilter$`

Form Input Values and Token Namespaces

- Token Namespaces
  - **default** – current values of form input fields
  - **submitted** – submitted values of fields
  - **url** – submitted form.* tokens persisted

Refer to namespaces:

```
$submitted:driver$
```

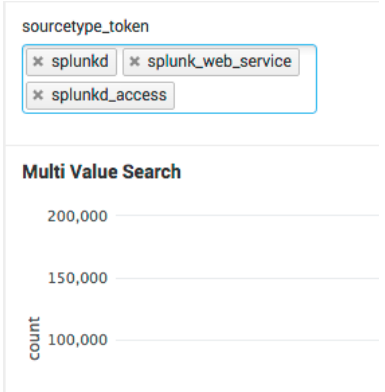
- `$form.mytoken$`
  tokens contain raw form input
- `$mytoken$`
  after applying prefix, suffix, default value

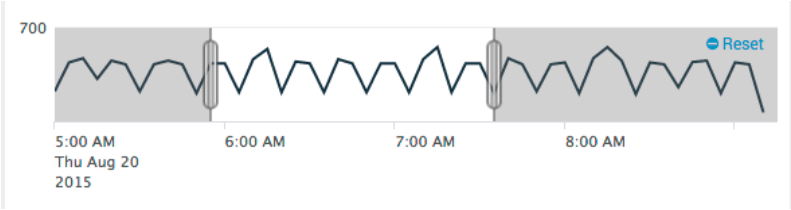
Building Dashboards

Part II

Event Handlers

- Introduce behaviors based on event hooks
  - User initiated events, or search job events
- Types
  - Drilldown/condition – user clicks on a cell, or bar on a chart
  - input / change – user selects a value on a form input
  - selection – for line/column/area, user selects a window to zoom into
  - search – events come back from a search job (progress, done, error)
  - init – initial page load; use this to set page tokens
- Configure Behaviors
  - Set tokens
  - Unset tokens
  - Link to another page or search
  - Evaluate new tokens





Show and Hide Content

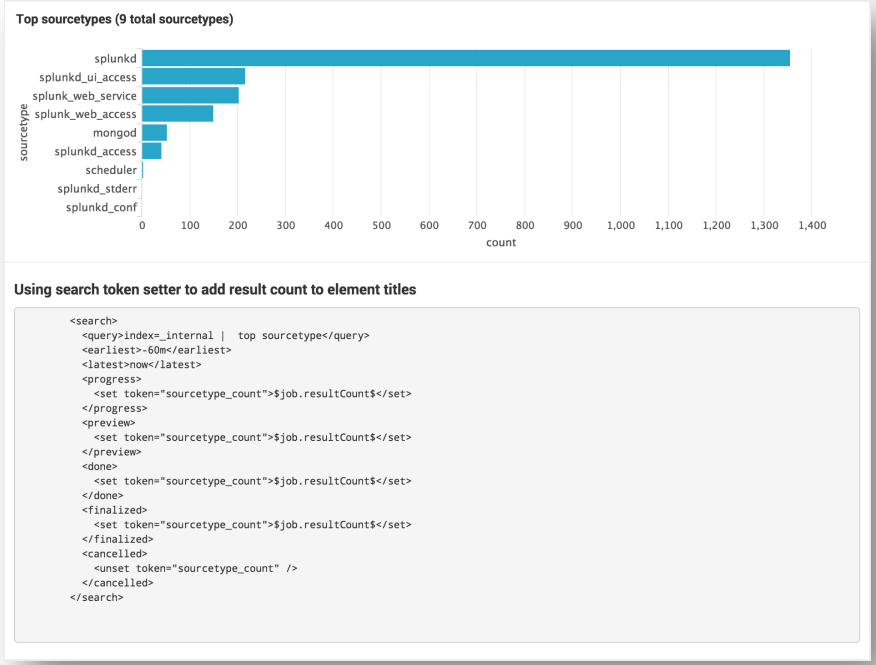
- Control whether you hide or show a given object based on existence of a token
  - Contextual (in-page) Drilldown
  - Cascading Form Inputs
- Applies to element, row, panel, input objects
- Type
  - `<table depends="$show_table$">`
    - Hide by default, show when token(s) exist
  - `<table rejects="$hide_table$">`
    - Show by default, hide when token(s) exist

Building Dashboards

Part III

Search & Result Token Setter

- Advanced Dashboard Logic
- Key Benefits
  - Include result count in title
  - Null search swapper (hide if search returns no results)
  - Custom HTML element driven by search object
- Run search object anywhere on the page
- Set tokens within search based on
  - Search metadata (string, earliest/latest)
  - Job metadata (result count, run time)
  - 1st result
- Eval-based condition/value support



Wrap-Up

What's New in 6.5

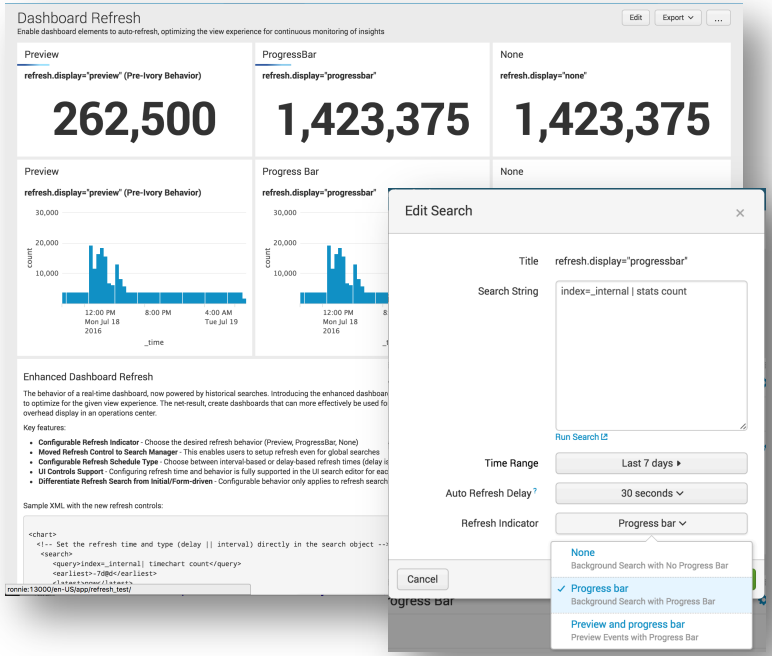
- Search Refresh & RefreshDisplay
- Initial Page Load Controls
  - <init> event
  - Global environment variables
- Token Filters
  - For "No Encoding", use $token|n$

Dashboard Refresh

optimizing the view experience for continuous monitoring of insights

- Continuous dashboard monitoring
  - Run refresh searches in the background, then configure how you want the results to surface to the UI
  - Seamlessly transition new results to the page
  - Pseudo real-time behavior

- Technical Details
  - Configurable refresh indicator
    - (“none” | “progress bar” | “preview and progress bar”)
  - Configurable refresh interval/delay schedule
  - UI editor support (no XML editing needed)
  - Refresh supported within search manager



Initial Page Load Controls

- Global Variables For Use Throughout the Page
  - $env:app$
  - $env:user$
  - $env:user_realname$
  - $env:user_email$
  - $env:locale$
  - $env:page$
  - $env:product$
  - $env:version$
  - $env:instance_type$
  - $env:deployment_type$

```
<dashboard>
   <label>Network Monitoring</label>
   <init>
      <set token="application">Exchange</set>
      <eval token="now">strftime(now(),"%m/%d/%y %H:%M:%S")</eval>
   </init>
…
</dashboard>
```

- <init> Event
  - Set global page variables
  - Use condition logic against global variables

More Information

- Splunk 6.x Dashboard Examples

  https://splunkbase.splunk.com/app/1603/

- Documentation

http://docs.splunk.com/Documentation/Splunk/6.5.0/Viz/PanelreferenceforSimplifiedXML

More Information

- Demo Code

  https://github.com/splunk/advanced-dashboards-conf15

- Splunk 6.x Dashboard Examples

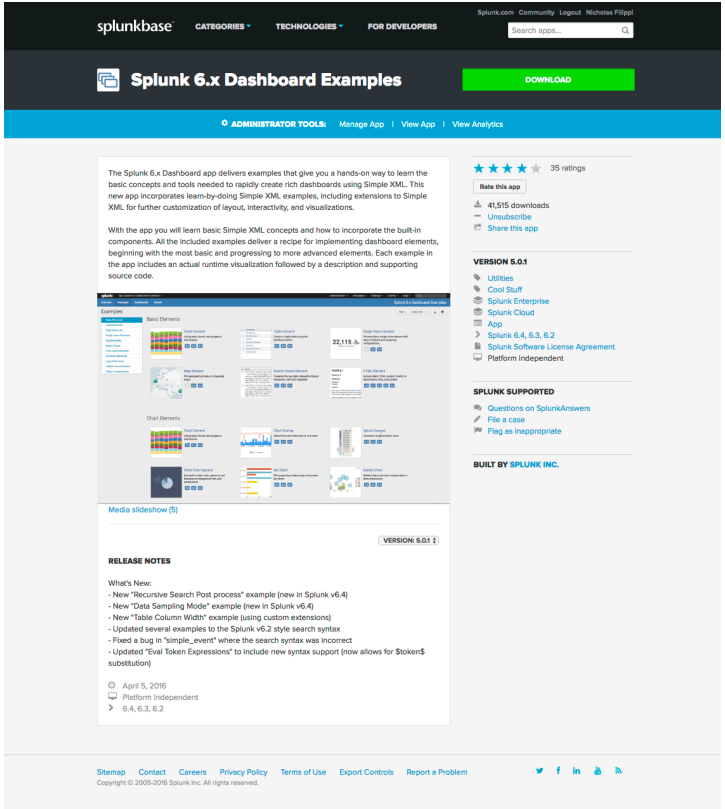
  https://splunkbase.splunk.com/app/1603/

- Documentation

  http://docs.splunk.com/…/6.3.0/Viz/OverviewofSimplifiedXML

Splunk 6.x Dashboard Examples App

- Recipe Book for Dashboards
- Updated on Every Release
- Examples
  - Basic
  - Chart
  - Table
  - Single Value
  - Map
  - Search Types
  - Form Input
  - Drilldown
  - Layout
  - Custom Visualizations
  - Token Customization
- Tools



Come Visit – “Ask the Dashboard Expert”

@Dashboard Clinic

- For assistance with troublesome dashboards
- For migration tips
- To brag about something cool you built
- To ask questions
- Or, just to say hi!

THANK YOU

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