SELF ADAPTING OPS DASHBOARD

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September 25, 2017 | Washington, DC
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Integration of NYS Information Technology

- 55 State Agencies
- 10,000 Servers
- 144,000 Employees

“A computer lover’s heaven with every kind of software and computer you could ever want”
“It’s a Love Hate Relationship.”

A voice in the corner of the office
Who Asks For Splunk Services?
Statewide Disaster Response and Management

- Performance KPIs
  - Heavy load testing
  - Available 24 x 7
- Environments
  - Production
  - QA
- Tiers
  - GIS
  - Application
  - Web
Who Asks For Splunk Services?
NYS Integrated Justice Information Portal

- Performance KPIs
- Errors and Usage
- Environments
  - 67 hosts
  - PROD, QA & DEV
- Tiers
  - datapower, ftp, mail
  - mq, was, wbm, wpo, wps
  - web
Who Asks For Splunk Services?
Voter Registration – Rapid to Market

- Performance KPIs
  - Crucial Load Tests
  - Continuous Monitoring
  - Business Results

- Environments
  - PROD, QA, DEV

- Tiers
  - App, FS, SQL, WEB
Information Technology Systems
Splunk Team

By now it should be clear:

• NYS has a large demand for Splunk Services
  − Many agencies, many applications
  − Critical business delivery requirements
  − Streamlined request system

• Requests will be very diverse
• Speed, speed, speed
Standard OPS Dashboard - Windows
Deployed into the Password Manager Application

- Performance KPIs
  - Processor Time
  - Bandwidth Utilization
  - Page Faults
  - Disk Free
Standard OPS Dashboard - UNIX
Deployed into the Password Manager Application

- Select Collection of Hosts by Function
  - Time
  - Environment
    - Prod, QA etc
  - Tier
    - Db, Web, App

The Use Case (civil service) is sensed automatically by being in the APP
How?

Make OPS dashboards auto sensing

1. ONBOARD lookup that organizes the hosts the way the user wants to see them.

2. SPLUNK_APPS lookup that ties the current APP name to the hosts needed.

3. Auto-sensing javascript in dashboards that knows the current APP.
Splunk Service Request

ITSM Service Request – Open to All

- Details about hosts, sources and sourcetypes
- Categorize hosts by:
  - Environment
  - Middleware Tier
- Business case justifying resources
  - Security requirements
  - Retention
  - Estimate of size
- Accept responsibility to inform Splunk Team of changes
Use Case Hierarchy
The hosts can be grouped into three levels

Tier 1
Application – Use Case – Splunk APP
Like Motor Voter, Pub1075, Excelsior, Biztalk, Aspera, DNS, Tivoli …

Tier 2
Environment – Stage of Development
Like Prod, Dev, Staging, Test, QA …

Tier 3
Tier – Software Classification
Like DB, Web, WAS, app … Multiply connected.
# 1. Onboard Lookup

Knowledge Object with Application Hierarchy

<table>
<thead>
<tr>
<th>agency</th>
<th>use_case</th>
<th>environment</th>
<th>tier</th>
<th>host</th>
<th>ip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dot</td>
<td>PRIMAVERA</td>
<td>Dev</td>
<td>Web</td>
<td>Host1</td>
<td>10.1.0.1</td>
</tr>
<tr>
<td>Dot</td>
<td>PRIMAVERA</td>
<td>Dev</td>
<td>Services</td>
<td>Host2</td>
<td>10.1.0.2</td>
</tr>
<tr>
<td>Dot</td>
<td>PRIMAVERA</td>
<td>Prod</td>
<td>Web</td>
<td>Host3</td>
<td>10.1.2.3</td>
</tr>
<tr>
<td>Dot</td>
<td>PRIMAVERA</td>
<td>Prod</td>
<td>Web</td>
<td>Host4</td>
<td>10.1.2.1</td>
</tr>
<tr>
<td>Dot</td>
<td>PRIMAVERA</td>
<td>Prod</td>
<td>Services</td>
<td>Host5</td>
<td>10.1.2.2</td>
</tr>
</tbody>
</table>
ONBOARD
Implemented by a Global Lookup

- Lookup Advantages over Tag
  - Global Knowledge Object
  - Easy to setup, change, test and deploy
  - Uses database tools to manage changes

Lookup table can be used to setup a search to find which hosts are *not* reporting data
## 2. SPLUNK_APPS Lookup

Zips the local APP name to Use Case

<table>
<thead>
<tr>
<th>Local App Name</th>
<th>use_case</th>
</tr>
</thead>
<tbody>
<tr>
<td>Justice_center</td>
<td>JUSTICE</td>
</tr>
<tr>
<td>Primavera</td>
<td>PRIMAVERA</td>
</tr>
<tr>
<td>Hesc</td>
<td>EXCELSIOR</td>
</tr>
<tr>
<td>Hunt_fish_ny</td>
<td>HUNTFISH</td>
</tr>
<tr>
<td>Biztalk</td>
<td>BIZTALK</td>
</tr>
</tbody>
</table>
3. Autosense APP Name

Implemented by JavaScript

To sense the current APP name, insert reference in the first line of the simple XML

```xml
<form script="set_app_token.js"> …
```

- Creates $app$ token
- See Define Custom Tokens in Splunk 6.x Dashboard Examples
- Built into Splunk 6.6
Self Adapting Dashboard Implementation
Use the 3 Knowledge Objects in the Simple XML

1. Sense current, get APP name
   - <form script="set_app_token.js" > ...
     - Creates $app$ token
     - See Define Custom Tokens in Splunk 6.x Dashboard Examples
     - Built into Splunk 6.6

2. Build Dropdowns from Lookups
   - <query>
     | inputlookup onboard
     | search `use_case($app$)`
     | fields stage
   </query>

3. Incorporate into Panel query
   - <query>..
     [ | inputlookup onboard
     | search `use_case($app$)`
     | stage="$environment$"
     | tier=$tier$
     | fields host ]
   ... </query>
So How Is It Fast and Easy?

We make the dashboard into a template!
New APP Creation
Standard OPS Dashboard Deployed Immediately

Provisos:
• ONBOARD Loaded
  - use_case
  - environment
  - tier
  - hosts
• SPLUNK_APP Loaded
  - splunk_app
  - use_case
Use Template for Rapid Deployment
Loads the OPS Dashboards on APP Creation

09:23:35 /splunk/splunk/share/splunk/app_templates
$ tree unix_ops
unix_ops
  ├── bin
  │   └── README
  │
  └── default
      ├── app.conf
      │
      └── data
          └── ui
              ├── nav
              │   └── default.xml
              │
              └── views
                  └── analysis_of_cpu_usage.xml
                      └── analysis_of_network_rw_speed.xml
                          ...
      │
      └── metadata
          └── default.meta
Results
Deploying Standard OPS Dashboards

▶ Value created as soon as the data arrives.

▶ Users do not have to create the standard dashboards.

▶ OPS dashboards are same across all applications for consistent comparison.

▶ Dashboard creation is automated. Fewer errors and more time for new features.
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Don't forget to rate this session in the .conf2017 mobile app
APPENDIX

Some additional details
Acknowledgements
SPLUNK Team

- Admins: Jason Mantor and Ulrike Pohlig
- Developers: Jeff Irving, Bruce Shattuck
- Onboarding: Susan Brownell
- Network Developer: Craig Stillwell
- Intern: Christopher Mitchell
Fill the Dropdowns

Use current app and lookups to populate the dropdown menus
Build the Query

Use the dropdown tokens to complete the search
Template Guidelines

Hints

▶ Include all the children drilldown dashboards
  • If a Library app is used the user gets confused when the app context changes

▶ Make children dashboards invisible unless they can stand alone. Prevent user from clicking it in dashboard list.
  • <form isVisible="false"/>

▶ Protect all the dashboards from change in default.meta
  • access = read : [*], write : [admin]
Modification of Standard OPS
Use Deployment Server

▶ Create serverclass for each set standard dashboards
  • serverClass:searchhead_std_apps
  • Populate with searchhead to receive standard dashboard

▶ Create serverclass app for each installed app
  • app:aspera
  • Etc …

▶ On deployment server in ..deployment-apps/
  • Create folder aspera
  • cp -r of production folder unix_ops (softlink?)
Future
Additional OPS Dashboards

▶ Server load, database connects
▶ SCOM and/or Tivoli Alerts
▶ ITSM changes/ incidents/ request
▶ IPS Warnings and Threats
▶ Certificate status
▶ CIM compliance
▶ KPI collection for ITSI glass tables
▶ Standard dashboards for Web Servers