splunk'> .conf2017

You've Inherited a Splunk Enterprise Deployment... Now What?

A Seminar for Admins Who Are All "What is this? I Can't Even...."

Jessica Law | Senior Staff Technical Writer

Matthew Ness | Principal Technical Writer



September 2017 | Washington, DC

Forward-Looking Statements

During the course of this presentation, we may make forward-looking statements regarding future events or the expected performance of the company. We caution you that such statements reflect our current expectations and estimates based on factors currently known to us and that actual events or results could differ materially. For important factors that may cause actual results to differ from those contained in our forward-looking statements, please review our filings with the SEC.

The forward-looking statements made in this presentation are being made as of the time and date of its live presentation. If reviewed after its live presentation, this presentation may not contain current or accurate information. We do not assume any obligation to update any forward looking statements we may make. In addition, any information about our roadmap outlines our general product direction and is subject to change at any time without notice. It is for informational purposes only and shall not be incorporated into any contract or other commitment. Splunk undertakes no obligation either to develop the features or functionality described or to include any such feature or functionality in a future release.

Splunk, Splunk>, Listen to Your Data, The Engine for Machine Data, Splunk Cloud, Splunk Light and SPL are trademarks and registered trademarks of Splunk Inc. in the United States and other countries. All other brand names, product names, or trademarks belong to their respective owners. © 2017 Splunk Inc. All rights reserved.



You've Inherited a Splunk Enterprise Deployment ... Now What?

A Seminar for Admins Who Are All "What is this? I Can't Even...."





RELAX

We are here to help



1 "GET / GET / GET

Agenda

- ▶ Part 1: Diagram your deployment topology.
- ▶ Part 2: Get to know your data.
- ▶ Part 3: Survey your apps and add-ons.
- ▶ Part 4: Check your licenses.
- ▶ Part 5: Study your user authentication methods.
- ▶ Part 6: Review the security of your deployment.
- ▶ Part 7: Monitor the health of your system.
- ▶ Part 8: Investigate your knowledge objects.

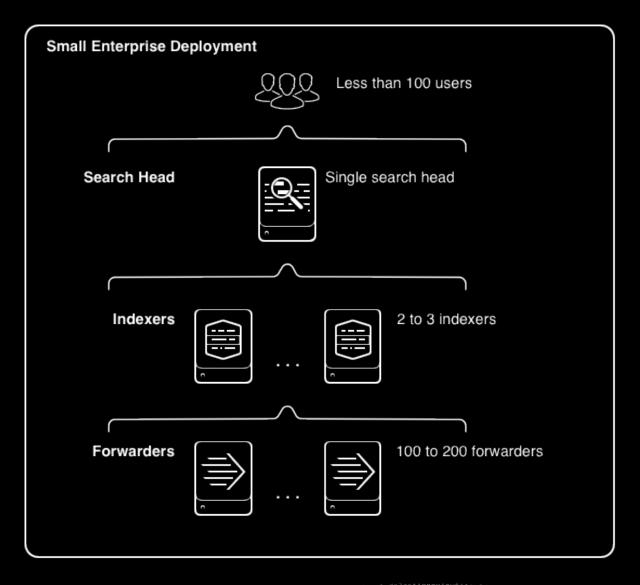




Diagram Your Deployment Topology



Example Small Deployment





Splunk Enterprise Components

Processing components



Forwarders



Indexers



Search heads

Management components



License master



Monitoring console



Deployment server



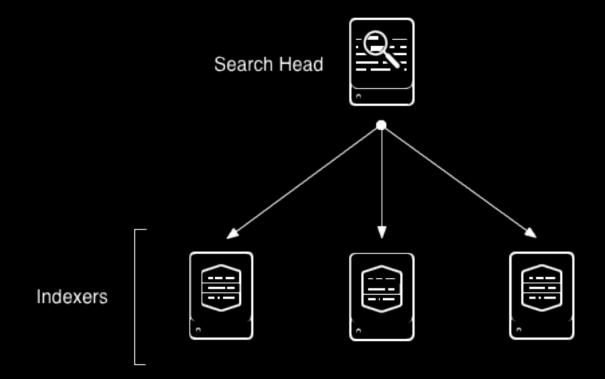
Indexer cluster master



Search head cluster deployer

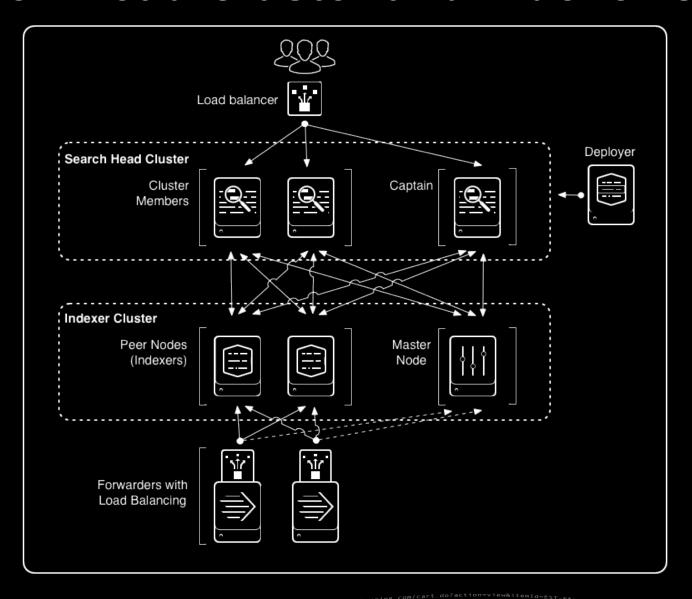


Basic Distributed Environment



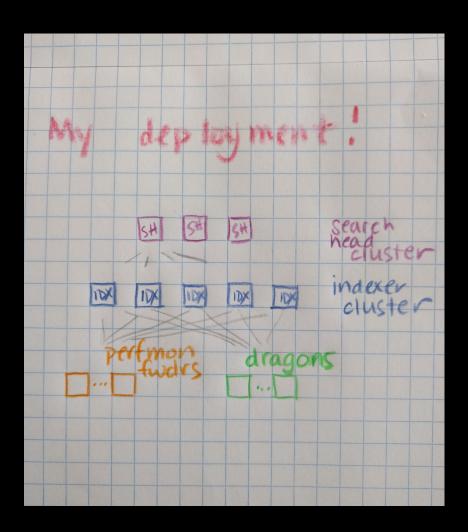


Search Head Cluster and Indexer Cluster



Draw a Diagram of Your Deployment

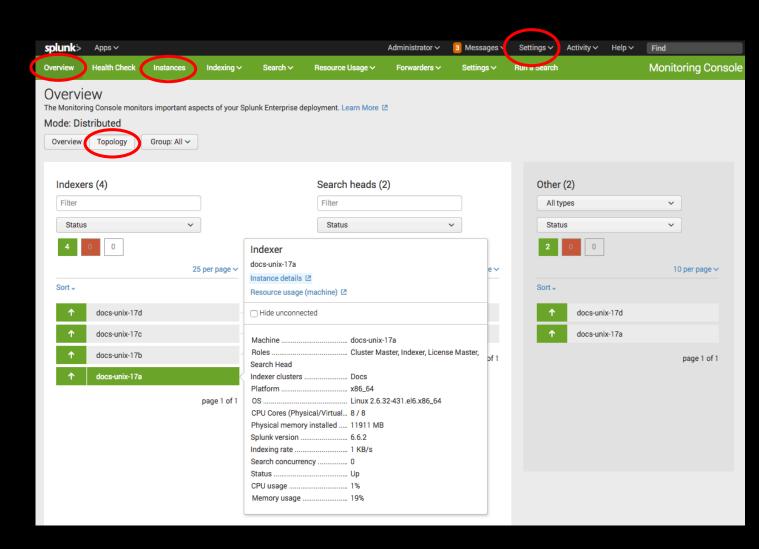
- Include every component
 - Search heads and indexers
 - Management components
 - Forwarders or groups of forwarders
- ► For each component, include details
 - Splunk Enterprise version
 - Whether it is running KV store
 - All open ports
 - Machine information





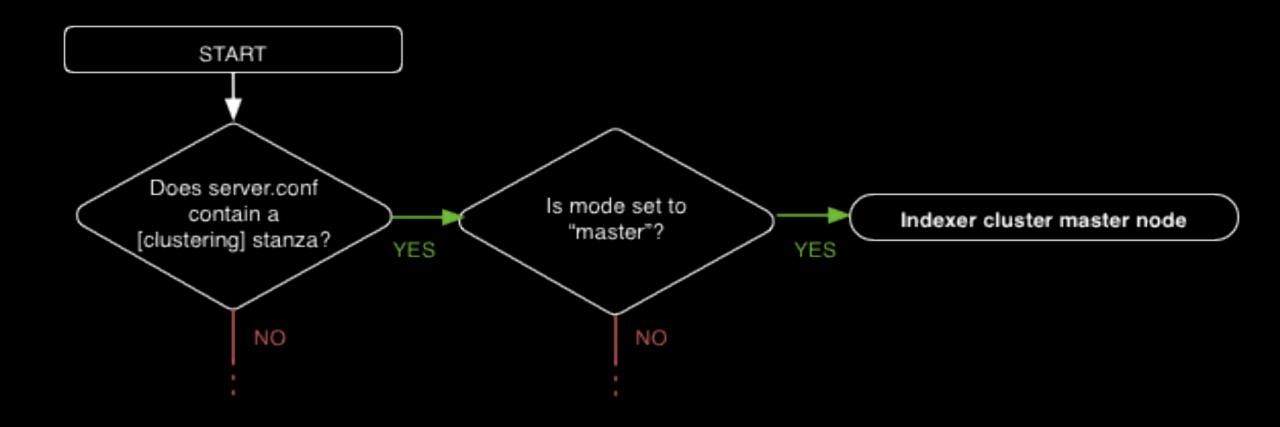
Discover Topology with the Monitoring Console

- Access the monitoring console
 - Click Settings > Monitoring Console
- Use the Instances page
 - Record instance, machine name, roles, cluster labels
- ▶ Use the Topology view
 - Click Overview > Topology
 - Record roles, Splunk version, OS, CPU cores





Discover Topology with Configuration Files





Conf File Discovery Example

- ▶ Determine whether each instance is a search head or indexer.
 - Examine \$SPLUNK_HOME/etc/system/loca l/server.conf
 - Look for a [clustering] stanza.
 - Examine mode setting.
- Record findings on diagram.
- ► Find Splunk Enterprise version with splunk version

```
[[jlaw@docs-unix-17a ~]$ cd /opt/splunk/etc/system/local/;ls
distsearch.conf inputs.conf migration.conf README server.conf
[[jlaw@docs-unix-17a local]$ sudo more server.conf
[aeneral]
serverName = docs-unix-17a
pass4SymmKey =
[sslConfig]
sslPassword =
[lmpool:auto_generated_pool_download-trial]
description = auto_generated_pool_download-trial
quota = MAX
slaves = *
stack_id = download-trial
[diskUsage]
minFreeSpace = 500
[clustering]
cluster_label = Docs
mode = master
pass4SymmKey =
replication_factor = 2
```



Deployment Diagram Checkpoint

Search head



docs-unix-6d Linux RHEL 7 12 CPU cores SE 6.6.2

Cluster master / monitoring console / deployment server / license master

Indexers





docs-unix-6c Linux RHEL 7 8 CPU cores SE 6.6.2

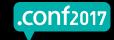


docs-unix-6e Linux RHEL 7 8 CPU cores SE 6.6.2



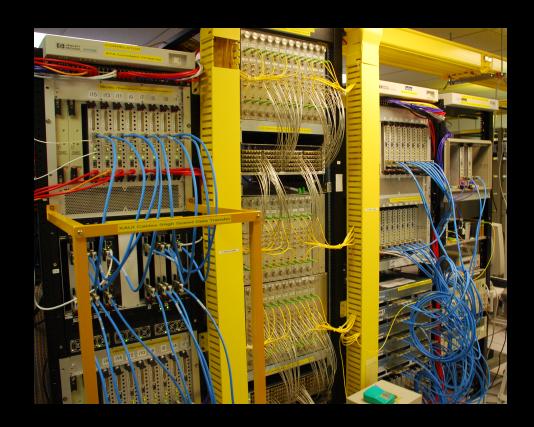
docs-unix-6a Linux RHEL 7 8 CPU cores SE 6.6.2





Splunk and Its Environment

- Splunk processes require open ports
 - Conventions can be reconfigured
- ► Find used ports for a search head
 - In Splunk Web, click Settings > Server settings > General settings
 - Record port numbers
- ► Find used ports for an indexer
 - On *nix, netstat or Isof system utilities
 - On Windows, netstat, netsh, or cmdlets utilities





Deployment Diagram Checkpoint

All:

Splunk web port 8000 Management port 8089 App server port 8065 KVstore port 8191 Search head



docs-unix-6d Linux RHEL 7 12 CPU cores SE 6.6.2

Indexers



docs-unix-6b Linux RHEL 7 8 CPU cores SE 6.6.2



docs-unix-6c Linux RHEL 7 8 CPU cores SE 6.6.2



docs-unix-6e Linux RHEL 7 8 CPU cores SE 6.6.2



Cluster master / monitoring console / deployment server / license master

docs-unix-6a Linux RHEL 7 8 CPU cores SE 6.6.2





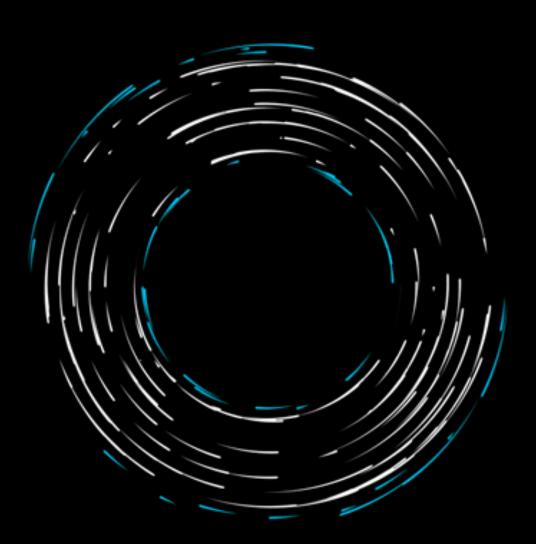


Get To Know Your Data

You Have Data

Learn All About It

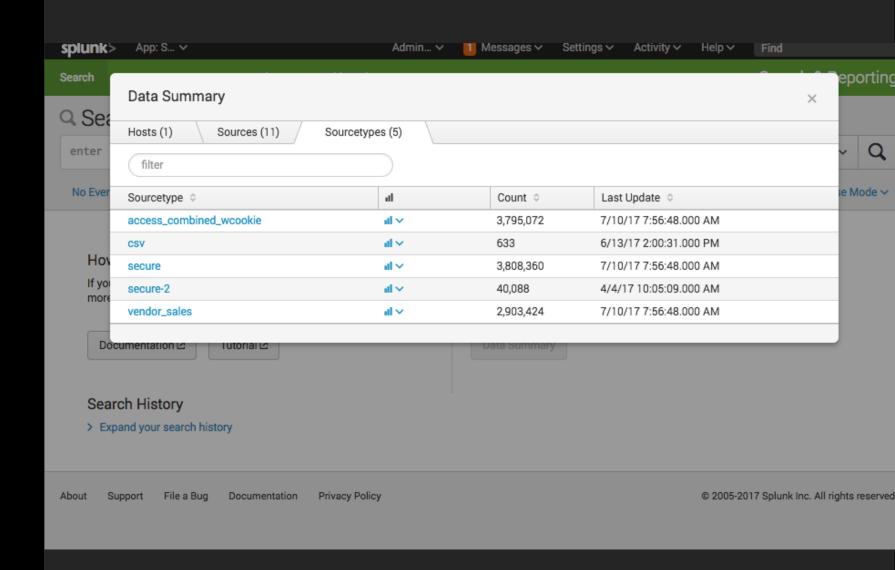
- What kinds of data does your deployment store?
- ▶ Where does that data come from?
- What management rules have been set up for this data?





Review The Data Summary

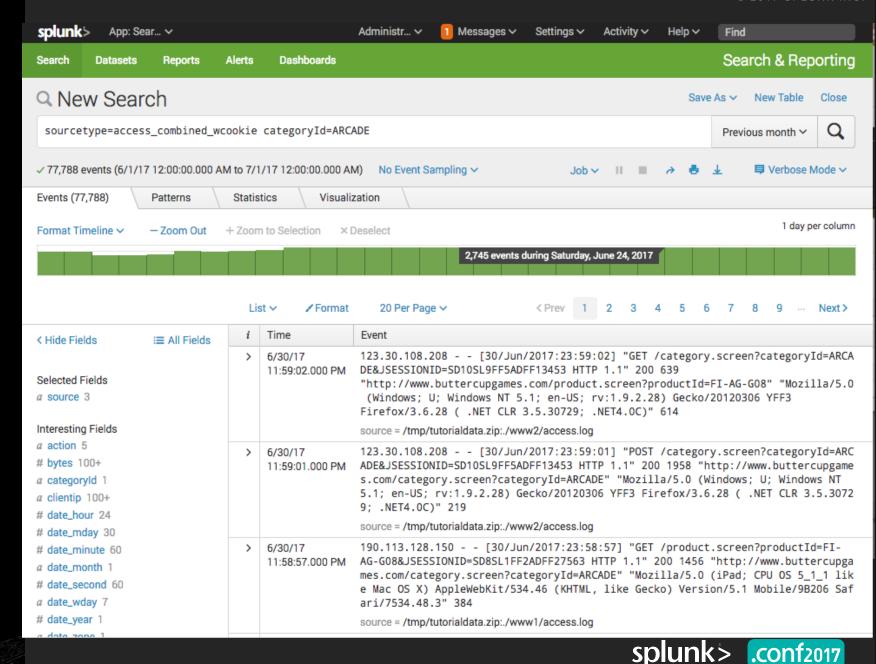
- ► Find it in the Search and Reporting view.
- Instantly identify the different types of data in your system.
- Generate timecharts for specific hosts, sources, or source types.





Run Searches on Your Data

- Explore your data through simple searches.
- Examine the Fields sidebar and study interesting fields.
- Use the Patterns tab to investigate event patterns.



Study Your Data Inputs

- ► The inputs.conf file controls:
 - When data is collected
 - What types of data are collected

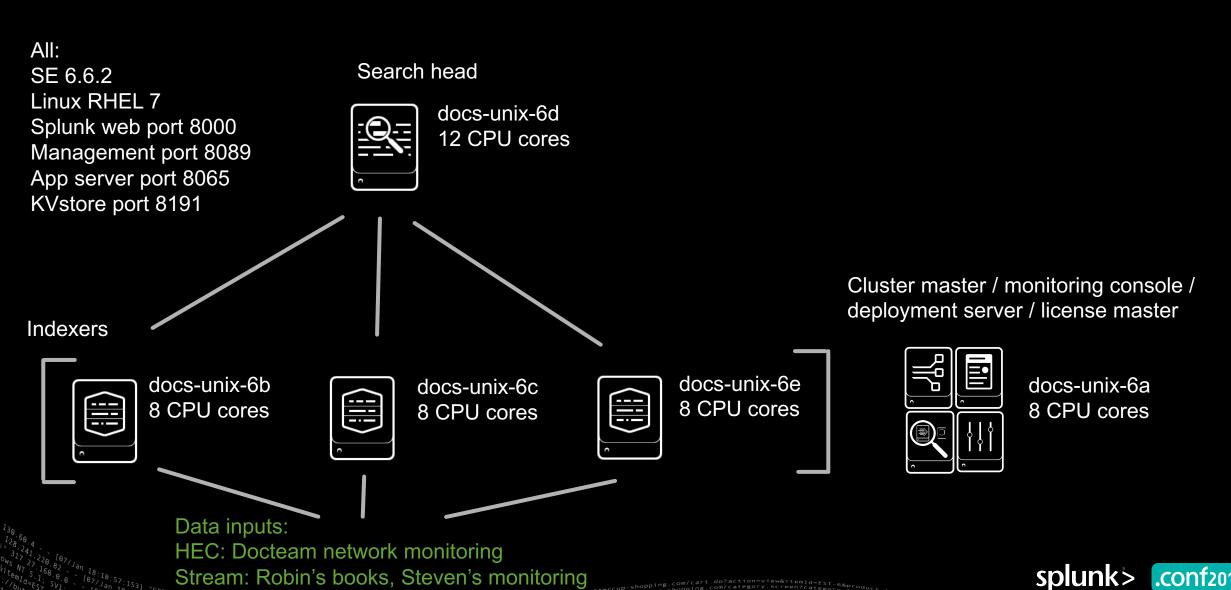
- ► Check inputs.conf on:
 - Indexers and forwarders
 - Apps and add-ons
 - Deployment servers

```
[books read://current]
goodreads_user_id = xxxxx
interval = 86400
shelf_name = currently-reading
[books_read://toread]
goodreads_user_id = xxxxx
interval = 3600
shelf name = read
[streamfwd://streamfwd]
splunk_stream_app_location =
http://localhost:8000/en-us/custom/splunk app_stream/
stream_forwarder_id =
disabled = 0
[aws_config://Config input]
aws_account = Test Account
aws region = us-east-1
enable_additional_notifications = False
polling_interval = 30
sourcetype = aws:config
sgs queue = ONLY FOR DEMO
[splunk_ta_aws_logs://S3 input]
aws_account = Test Account
```



.conf2017

Deployment Diagram Checkpoint



Stream: Robin's books, Steven's monitoring

Survey Your Apps and Add-ons

Apps and Add-ons

What's Running In Your Deployment?

Apps

- Have their own, often quite specialized UIs
- Focus on specific business use-cases

Add-ons

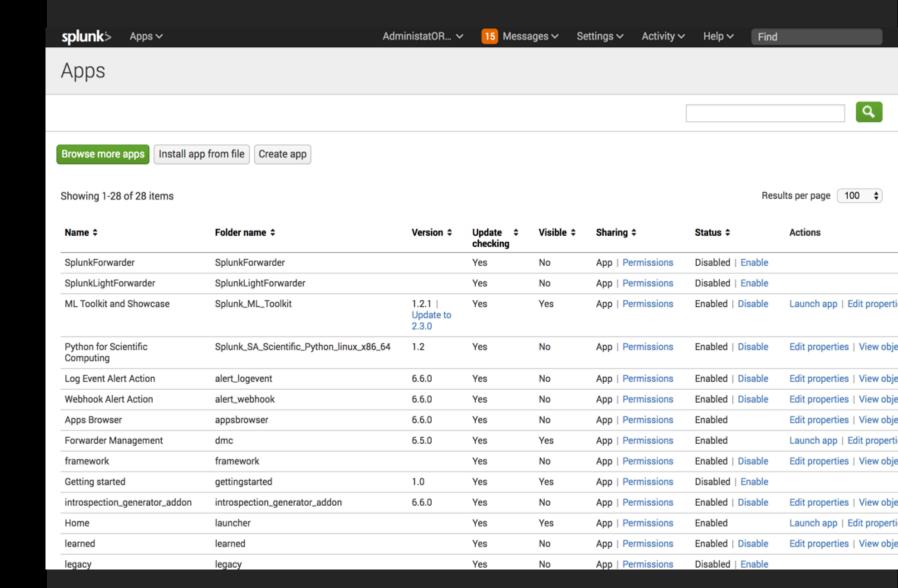
- Contain knowledge objects that help with data ingestion
- Often designed to be paired with apps
- Usually do not have UI elements of their own





See What's Installed

- Open your app list
 - Select Apps > Manage Apps
 - Note which items are disabled
- Review app and add-on objects
 - Select Settings > All configurations
 - Filter the list by app





The KV Store and Your Apps

- ► The app key value store can retain state information about apps
- KV store processes are independent of those of search head clusters
- Find KV Store members
 - ./splunk show kvstore-status
- Locate apps with KV store collections
 - ./splunk btool collectionslist—debug
 - In the results, look for items belonging to \$SPLUNK_HOME/etc/apps.

```
This member:
                             date: Tue Jul 21 16:42:24 2016
                          dateSec : 1466541744.143000
                         disabled: 0
                             quid: 6244DF36-D883-4D59-AHD3-5276FCB4BL91
                oplogEndTimestamp : Tue Jul 21 16:41:12 2016
            oplogEndTimestampSec: 1466541672.000000
              oplogStartTimestamp : Tue Jul 21 16:34:55 2016
           oplogStartTimestampSec : 1466541295.000000
                             port : 8191
                       replicaSet : splunkrs
                replicationStatus : KV store captain
                       standalone: 0
                           status : ready
 Enabled KV store members:
   10.140.137.128:8191
                             quid : 6244DF36-D883-4D59-AHD3-5276FCB4BL91
                      hostAndPort: 10.140.137.128:8191
   10.140.137.119:8191
                             quid: 8756FA39-F207-4870-BC5D-C57BABE0ED18
                      hostAndPort: 10.140.137.119:8191
   10.140.136.112:8191
                             quid : D6190F30-C59A-423Q-AB48-80B0012317V5
                      hostAndPort : 10.140.136.112:8191
```



Deployment Diagram Checkpoint

All: Search head SE 6.6.2 Linux RHEL 7 docs-unix-6d Splunk web port 8000 12 CPU cores Management port 8089 Splunk App for *nix App server port 8065 KV store KVstore port 8191 Indexers docs-unix-6b docs-unix-6e docs-unix-6c 8 CPU cores 8 CPU cores 8 CPU cores Splunk App for *nix Splunk App for *nix Splunk App for 'nix Data inputs:

Cluster master / Monitoring console / deployment server / license master



docs-unix-6a 8 CPU cores

HEC: Docteam network monitoring

Stream: Robin's books, Steve's monitoring



Considerations for Splunk Premium Solutions

- Premium Splunk apps require additional oversight
 - Splunk Enterprise Security (ES)
 - Splunk IT Service Intelligence (ITSI)
 - Splunk User Behavior Analytics (UBA)
- ES and ITSI tend to be resourceintensive
- They can have specific search head and indexer requirements
 - For example, ES needs a dedicated search head



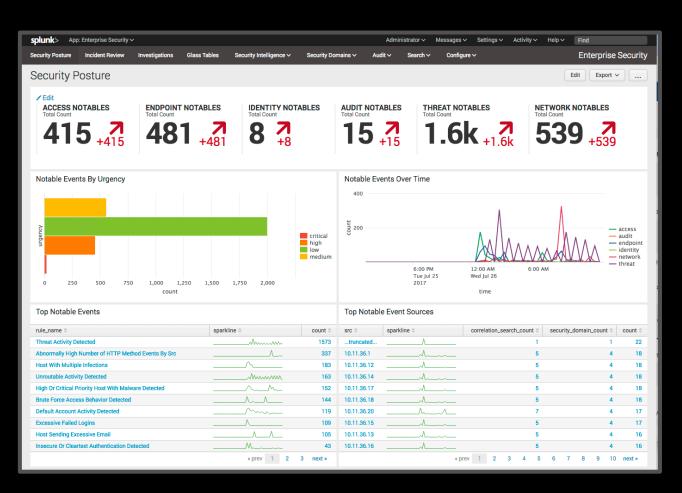


Enterprise Security

What To Watch Out For

Heavy reliance on data models, lookups, modular inputs, KV Store, and scheduled searches

- Keep an eye on:
 - The Content Profile dashboard
 - The Data Model Audit dashboard
 - Correlation searches





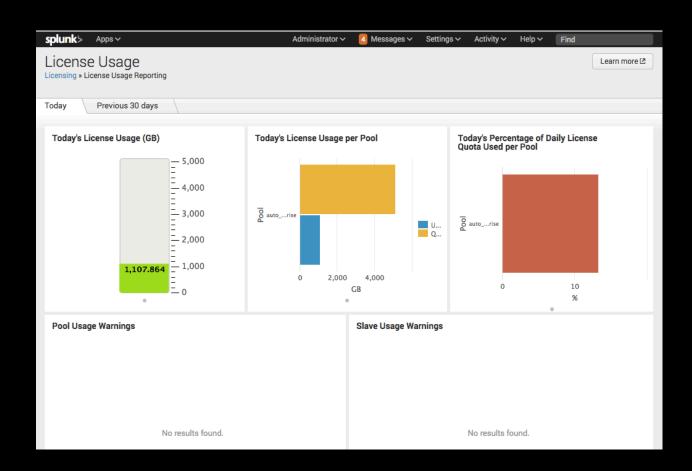
4

Check Your Licenses



Understand Your Licenses

- Survey licenses in Splunk Web on the license master.
 - Settings > Licensing
 - Five warnings in 30 day window = violation
 - If your license master is 6.5.0+, consider asking for a no-enforcement license
- Enable licensing alerts
 - The monitoring console comes with two licensing alerts.
 - Update the alert actions for your notification preferences.





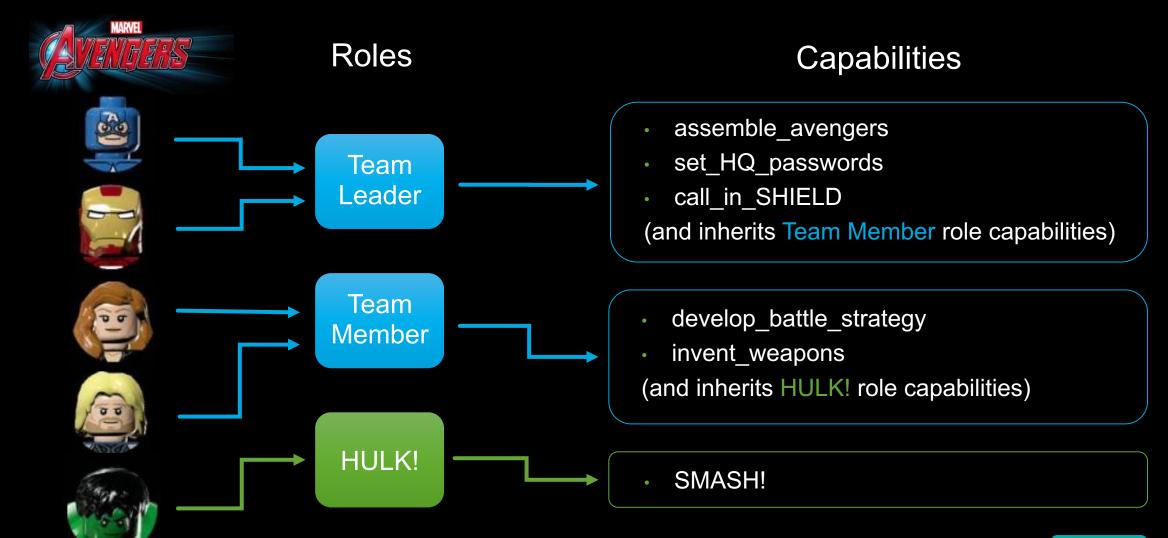


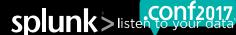
Users, Roles, and Authentication



Users, Roles, and Capabilities

Roles Determine Actions Users Can Perform





Roles and Data Access

Roles Control What Your Users Can See

- Know how your roles define data access rights
 - Index restrictions
 - Search result filters
 - Search time range limits
 - Capability assignment
 - Role inheritance



► Go to Settings > Access Controls > Roles to review your role settings



User Authentication

Let The Right Ones In

- Select Settings > Access Controls
 Authentication Method to review or create configurations for
 - LDAP authentication
 - SAML authentication for SSO
 - Multifactor authentication with Duo Security
- ProxySSO
 - Review or create configurations in the settings stanza of web.conf



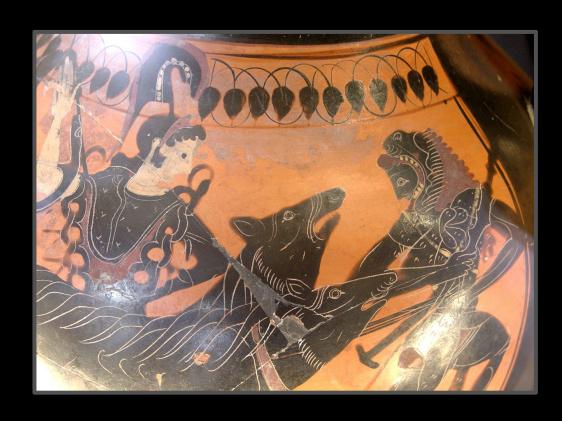


Review Your Deployment Security



Secure Your Communications With SSL

- SSL certificates encrypt and authenticate communications between:
 - The browser and Splunk Web
 - Splunk Enterprise components (except for search heads and peers in distributed search environments)
- Default SSL certificates are located in \$SPLUNK_HOME/etc/auth



▶ Verify your SSL configurations with the following search:

index=_internal source=*metrics.log* group=tcpin_connections | dedup hostname
table time hostname version sourceIp destPort ssl



Key-based Encryption in Splunk Enterprise

- Distributed search
 - Search heads and peers use public-key encryption
 - If necessary, SSL can be configured for each member of a search head cluster
 - Check requireClientCert in server.conf
- ▶ The splunk.secret key
 - Collects and encrypts authentication information
 - Stored in .conf files





Monitor the Health of Your System

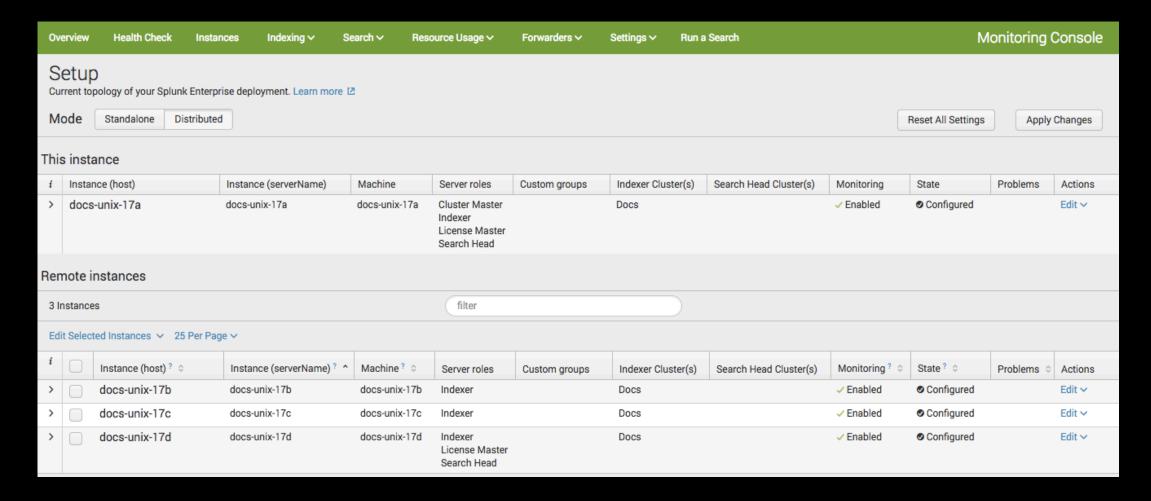
Monitor Your Deployment's Health

- Monitor for these things:
 - CPU load, memory utilization, and disk usage
 - On a *nix system, OS level settings such as THP and ulimits
 - Indexing rate
 - Skipped searches
 - Bad data onboarding practices

- Survey for existing monitoring apps
 - Monitoring console
 - Splunk on Splunk (SoS)
 - Fire Brigade
 - Custom apps
- Set up monitoring console



Demo of Monitoring Console Setup and Health Check



ET /Posteen/Category_id=GIFTS&JSESSIONID=SDISLAFF10ADFF10 HTTP 1.1" 10 A94 //butt "GET /OdUct_screen/product_id=EL_DSH-01&JSESSIONID=SDSSJ7F6ADF90 1318 http://dislikering.org/ 5.17 14 GIIIk/?tem_id=EST-26&JSESSIONID=SDSSL9FF1ADF3 HTTP 1.1" 200 id=SURPRISESSIONID=SDSSL9FF1ADF3 HTTP 1.2" 200 id=SURPRISESSIONID=SDSSL9FF1ADF3 HTTP 1.3" 200 id=SURPRISESSION



Investigate Your Knowledge Objects



Knowledge Objects

Collect Them All

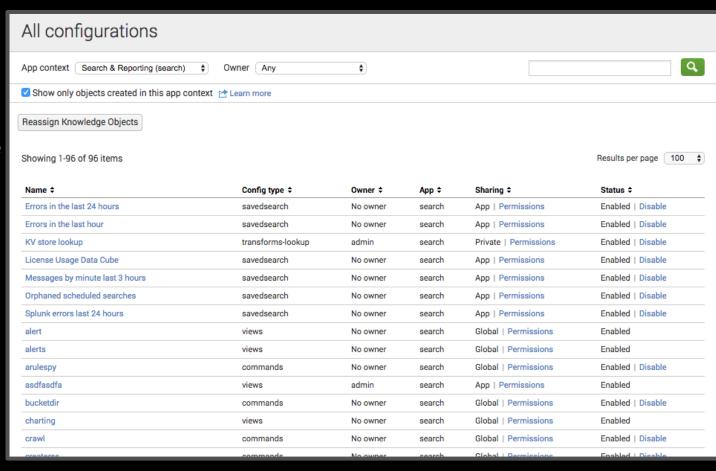
- ▶ Saved searches, reports, and alerts
- Extracted fields
- Calculated fields
- Event types
- ► Tags
- Aliases
- Lookups
- Search macros
- Data models and datasets
- UI components





Survey Your Knowledge Objects

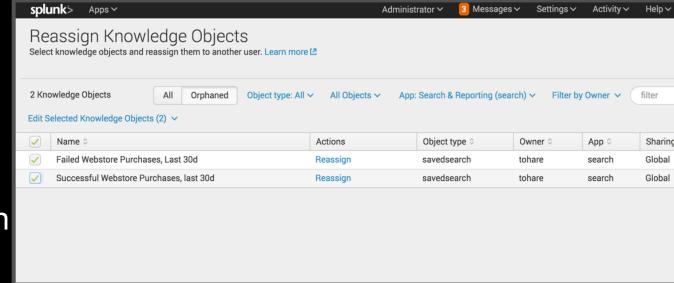
- ► The Knowledge section of the Settings menu has all of the object pages
- Open the All Configurations page to see all your objects in one place
 - Filter by app
 - Organize by name, type, or owner
- There are a lot of considerations
 - Naming conflicts
 - Interdependency issues
 - Object sharing and permissions
 - Data model, dataset, and report
 acceleration





Knowledge Object Ownership

- When a user creates an object:
 - It is unshared, private to that user
 - It is "owned" by that user
- Sharing an object does not change its ownership
- What happens to shared objects when their owners are removed from the system?
 - Not much, in some cases
 - BUT THIS BREAKS SCHEDULED REPORTS, ALERTS, AND SAVED SEARCHES!
- Orphaned knowledge object reassignment is your quick fix to this problem







Presented by Matt Ness



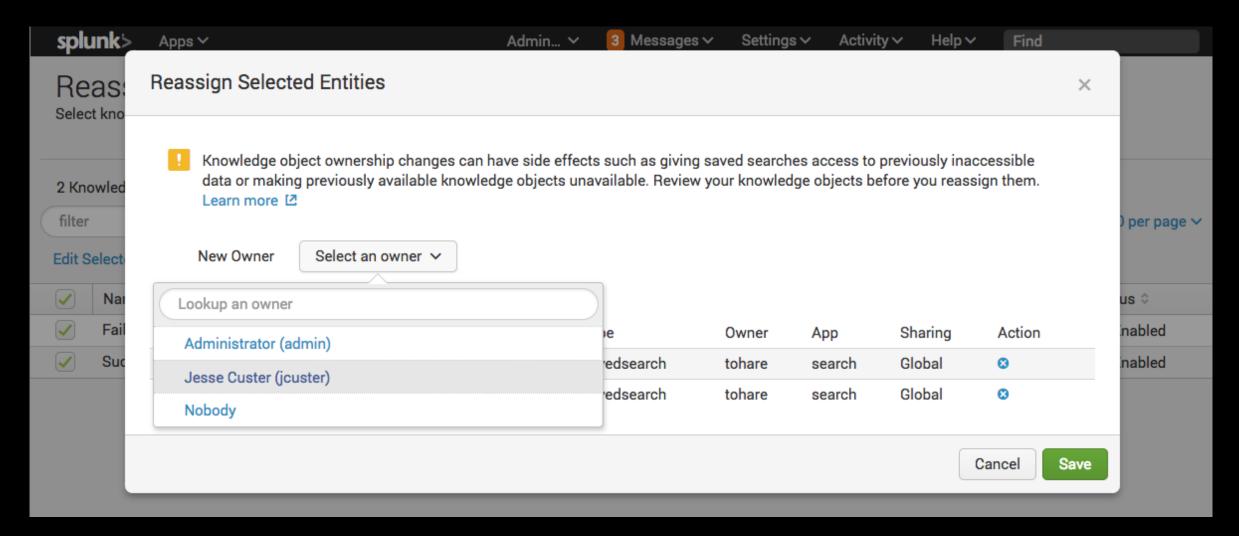
Orphaned Object Reassignment

Let's Set The Stage

Object Owner	Shared, Scheduled Searches	Related Dashboard Panels
Tulip O'Hare	 Successful Webstore Purchases, Last 30d Failed Webstore Purchases, Last 30d 	 Buttercup Games Purchases, last 30 days Top Buttercup Games Product Categories
Jesse Custer	 Top Purchase Categories ARCADE Product Purchases 	 Failed Webstore Purchases, last 30 days Top Arcade Items



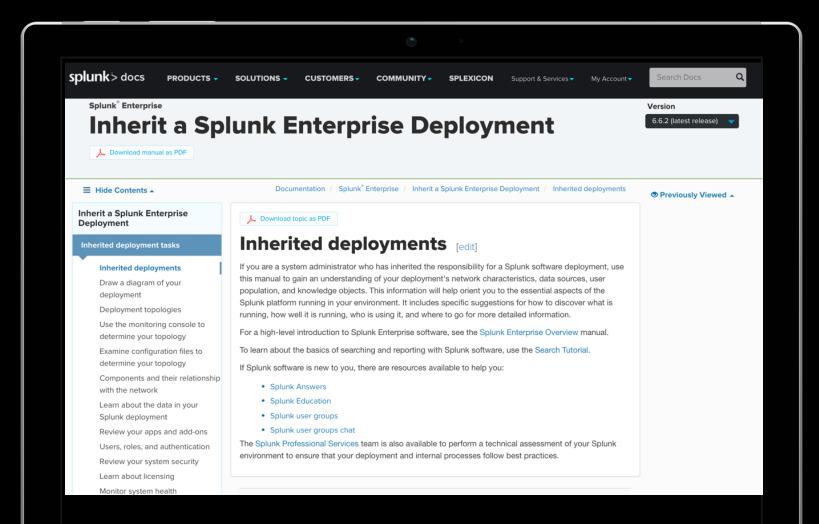
Orphaned Object Reassignment





You've heard the talk

Now read the manual!



- ➤ You can find more information in Inherit a Splunk Enterprise Deployment, at docs.splunk.com.
- If you read it, we'd love to get your feedback.



And That's It

Thanks To Everyone Who Made This Possible

- ▶ The members of the Splunk Doc team who wrote the manual!
- Our friends in Support, Professional Services, Sales Engineering, Product Development, and especially the Splunk Trust, for reviews and suggestions!
- ▶ YOU, for taking on the challenge of an existing Splunk Enterprise Deployment!



Extra-special thanks to Malcolm Moore, our silent presentation partner and resident DJ, for help with slide design and demo environment prep!



Q&A

Jessica Law | Senior Staff Technical Writer Matt Ness | Principal Technical Writer



Thank You

Don't forget to rate this session in the .conf2017 mobile app



IT Service Intelligence

What To Watch Out For

- Made up of services that monitor IT operations and business processes
- ▶ ITSI services are comprised of key performance indicator (KPI) searches that return single value results
- Keep an eye on:
 - Overall KPI search load
 - Entities data sources for ITSI services and their KPIs

