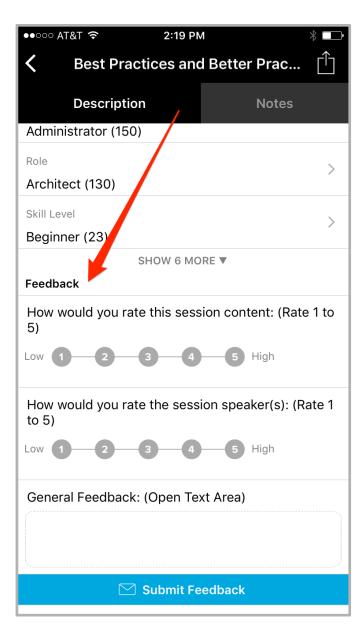
Sandboxing with Splunk

...while you get settled...

- ► Latest Slides:
 - https://splunk.box.com/v/blueprints-docker-sandbox
- ► Handout:
 - https://splunk.box.com/v/blueprints-docker-sandbox-ref
- Collaborate: #docker-sandbox
 - Sign Up @ http://splk.it/slack
- Load Feedback ----->









(with Docker)

Burch | Senior Best Practices Engineer

.conf2017 | 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.

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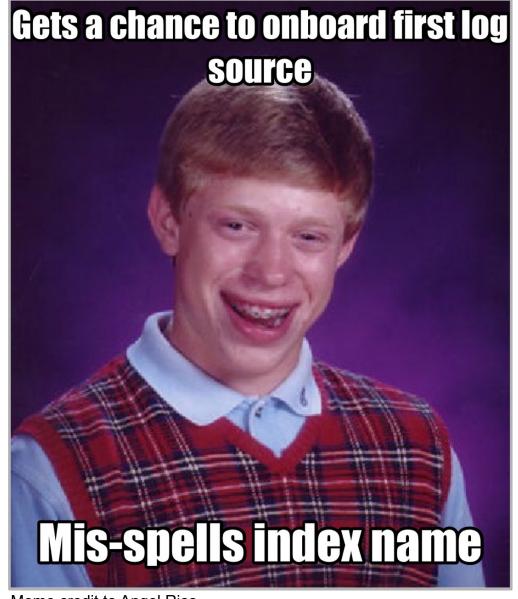


Who are you?

This should make sense ----->

- Experience installing Splunk
- ► Familiar with Splunk's Ports
- Comfortable using Command Line

It's totally cool if you wanna bounce!



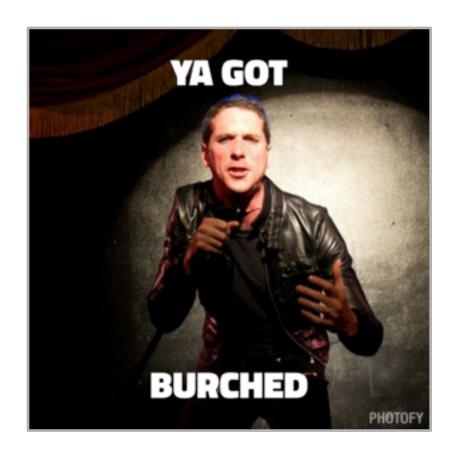
Meme credit to Angel Rios



What's a "Burch"?

Senior Best Practices Engineer

- Was a Senior Sales Engineer
- Before that, Splunk Customer
- Before that, Middleware Eng
- Before that, Computer Science
- Before that, an idea of my parents
- Docker Expert





Follow up != Prerequisite





Your Splunk Sandbox

Wednesday, September 28, 2016 | 11:00 AM-11:15 AM

INTERMEDIATE | Products: Splunk Enterprise | Role: Splunk Technical Champion, Architect, Developer, Administrator | Track: Community Theater | Session Focus: Using Splunk | Other Topics: Best Practices, Getting Data In, Dev Tools

Speakers

Burch Simon, Senior Sales Engineer, Splunk

Recording I Slides





Greatest Sandbox == Least Effort



/Product.screen?category_id=GIFTS&1SESSIONID=SDISL4FE10ADFF10 HTTP 1.1TP 1. T/Oldlink?item_id=E5-7268JSESSIONID=SDISL4FE10ADFF3 HTTP 1.1" 200 1318 17.14



Build a Splunk Sandbox: Options







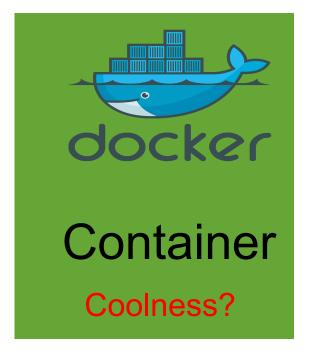
Localhost

Admin Rights? Cloud

Exfiltration?

Virtual

Effort?





Install & Setup

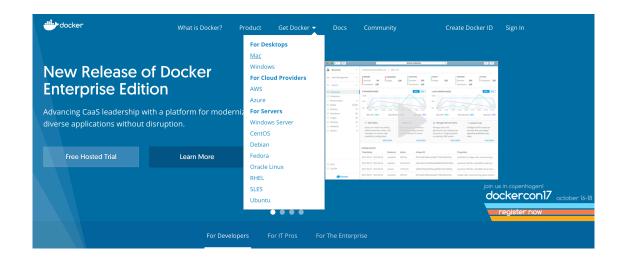
Already done to your lab machines





Download Docker

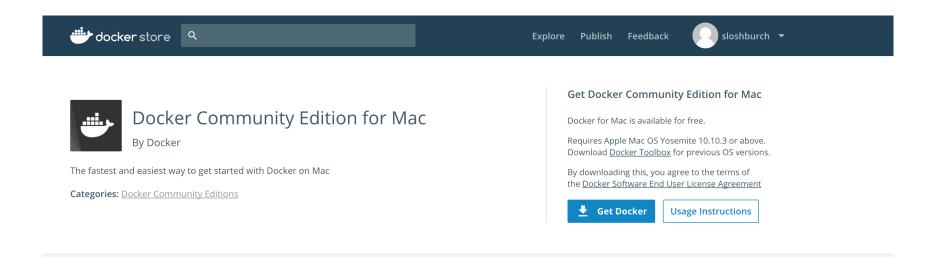
https://www.docker.com/







Hosted in Docker Store



DESCRIPTION REVIEWS RESOURCES

Docker CE for Mac

Docker CE for Mac is an easy-to-install desktop app for building, debugging, and testing Dockerized apps on a Mac. Docker for Mac is a complete development environment deeply integrated with the Mac OS Hypervisor framework, networking, and filesystem. Docker for Mac is the fastest and most reliable way to run Docker on a Mac.

Features and Benefits

- Easy installation and setup of a complete Docker development environment for the Mac.
- Integrated Docker platform and tools <u>Docker command line</u>, <u>Docker Compose</u>, and <u>Docker Notary</u> command line.
- Automatic updates with channels for monthly Edge and quarterly Stable versions of Docker.
- Fast and reliable performance with native macOS virtualization running a custom minimal Linux distro.
- Seamless volume mounting for code and data, including file change notifications that unlock fast edit-test cycles.
- National Advances and the state of the state

/product.screen?product_id=FL-DSH-01&JSESSIONID=SD1SL4FF10ADFF10 HTTP 1.1 T /oldlinksseen?product_id=FL-DSH-01&JSESSIONID=SD5L7FF6ADF17 1.1 200 1318



Great Instructions

Installation

System requirements

Docker for Mac works on OS X El Capitan 10.11 and newer macOS releases.

Get Docker

Stable

The Stable version is fully baked and tested, and comes with the latest GA release of Docker.

Get Docker CE for Mac (Stable)

Edge

The Edge version offers cutting edge features and comes with experimental features turned on.

Get Docker CE for Mac (Edge)

Install it

Double-click Docker.dmg to start the install process.

When the installation completes and Docker starts, the whale in the top status bar shows that Docker is running, and accessible from a terminal.

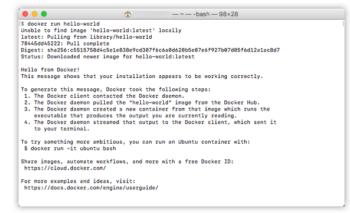


Run it

Open a command-line terminal, and try out some Docker commands.

- Run docker version to check that you have the latest release installed.
- Run docker run hello-world to verify that Docker is pulling images and running as expected.







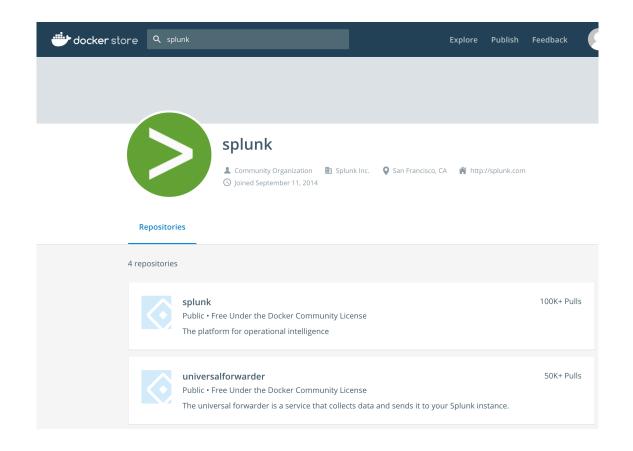




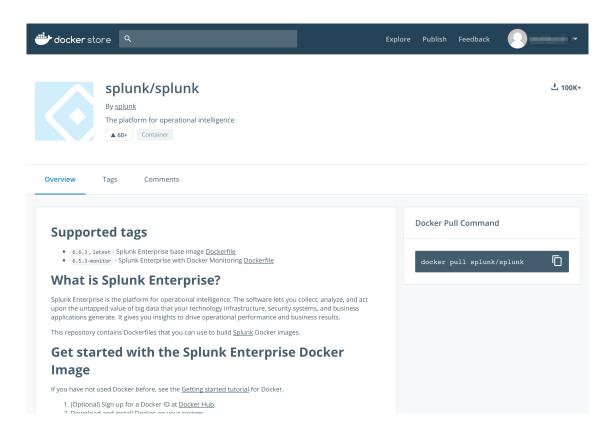


Splunk Images

https://store.docker.com/profiles/splunk



1 38:10:57:123] "GET / Category.screen?category_id=GIFTS&JSESSIONID=SDISLAFFL@ADFF1@ HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=wiew&itemId=EST-G&, and a 10:57:123] "GET / product.screen?category_id=GIFTS&JSESSIONID=SDISLAFFL@ADFF1@ HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=wiew&itemId=EST-G&, and a 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=wiew&it





Download Splunk Image

docker pull splunk/splunk

\$ docker pull splunk/splunk

```
Using default tag: latest
```

latest: Pulling from splunk/splunk

ad74af05f5a2: Pull complete

6ed26c881126: Pull complete

0efc5eeb5075: Pull complete

123d19a3ee15: Pull complete

6fe48f1452ee: Pull complete

fc6bbc9992f6: Pull complete

8ebdf9134129: Pull complete

Digest: sha256:1be3208a6c1d96ca5ad320fc21cbfcf06428e3ea12f10773e2efc7d2dbb4b522

Status: Downloaded newer image for splunk/splunk:latest

\$ docker images

REPOSITORY TAG IMAGE ID CREATED SIZE

splunk/splunk latest 9cad3d52dc92 9 days ago 736MB



Command Crash Course

Put on your helmet



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

Run a command in a new container



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

Run a command in a new container

• -P, --publish-all

Publish all exposed ports to random ports



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

• -P, --publish-all

• -d, --detach

Run a command in a new container

Publish all exposed ports to random ports

Run container in background and print container ID



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

- -P, --publish-all
- -d, --detach
- -e, --env list

Run a command in a new container

Publish all exposed ports to random ports

Run container in background and print container ID

Set environment variables



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

• -P, --publish-all

• -d, --detach

• -e, --env list

Run a command in a new container

Publish all exposed ports to random ports

Run container in background and print container ID

Set environment variables

• SPLUNK START ARGS="--accept-license"



▶ docker run -P -d -e SPLUNK_START_ARGS="--accept-license" splunk/splunk

• run

Run a command in a new container

• -P, --publish-all

• -d, --detach

• -e, --env list

• splunk/splunk

Publish all exposed ports to random ports

Run container in background and print container ID

Set environment variables

SPLUNK START ARGS="--accept-license"

Image name

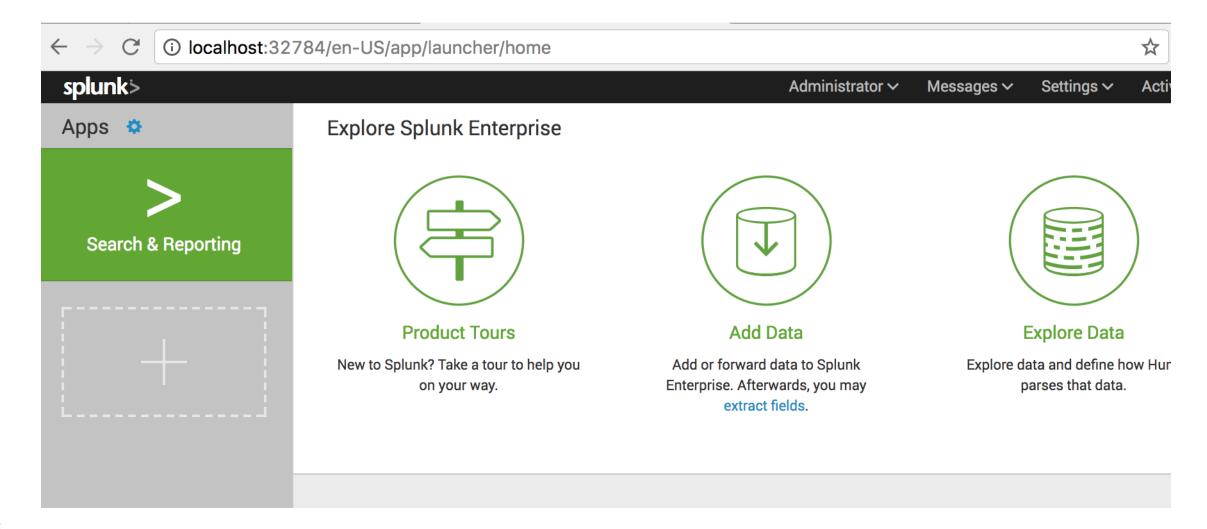


Now what?

- \$ docker container list
 - CONTAINER ID unique id
 - IMAGE splunk/splunk
 - COMMAND out of scope for us today
 - CREATED relative time existing
 - STATUS relative time running
 - PORTS Port mappings. See below
 - NAMES Random name (unless name used)
- ▶ 0.0.0.0:32784->8000/tcp
 - localhost:32784 traffic to container port 8000 (splunk web!)
 - 32784 different each time (—P)



Look ma! Splunk!





But wait, what about conf files?

Terminal Access

- Command Line:
 - docker exec -it <container name|id> bash
 - -i, --interactive Keep STDIN open even if not attached
 - -t, --tty Allocate a pseudo-TTY
- But not much installed
 - Not even vi
 - apt-get FTW!

But wait, what about conf files?

Local Editing

- Or, mount a folder!
 - -v, --volume list

Bind mount a volume

- Example: -v apps/local_app:/opt/splunk/etc/apps/remote_app
 - local_app is a folder on the host; remote_app lives in the container
- Directly edit on your host (GUI editor)
- ▶ Direct link == edits reflected in container



Key Docker Commands

https://splunk.box.com/v/blueprints-docker-sandbox-ref

- Create and start a Splunk container
 - docker run --name foo -P -d -e SPLUNK START ARGS="--accept-license" splunk/splunk
 - Optional: ...license" -v ~/Desktop/myapp:/opt/splunk/etc/apps/conf2017 app splunk/s...
- Navigate web browser to container
 - docker container list
- Stop a container
 - docker stop foo
- Start a container
 - docker start foo
- Destroy a container
 - docker rm -fv foo
 - -f, --force Force the removal of a running container (uses SIGKILL)
 - -v, --volumes Remove the volumes associated with the container





Create a Splunk Sandbox

This is where you come in...lazy bones;)



Your Mission

should you choose to accept it...

- Create and Connect many containers
- Change settings
 - Suggestion: http port and try UI restart ;)
- Destroy!
- ► Change environment variables, set hostname, etc...
 - https://store.docker.com/community/images/splunk/splunk
- ► Load Tutorial App & add web.conf settings
 - http://docs.splunk.com/Documentation/Splunk/latest/AdvancedDev/CustomVizTutorial#Development mode_settings



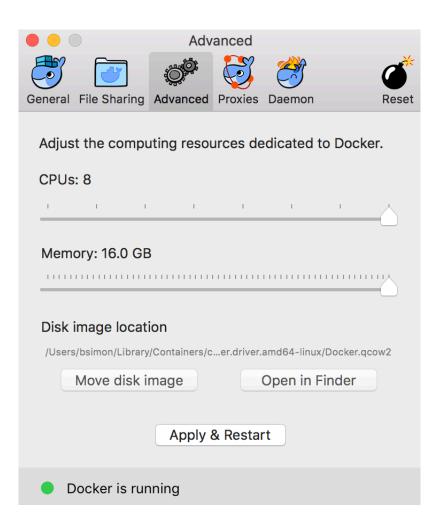
Next Steps!





Container Resources







Do More!

https://store.docker.com/community/images/splunk/splunk

Ports

This Docker container exposes the following network ports:

- 8000/tcp Splunk Web interface
- 8088/tcp HTTP Event Collector
- 8088/tcp Splunk Services
- 8191/tcp Application Key Value Store
- 9997/tcp Splunk receiving Port (not used by default) typically used by the Splunk Universal Forwarder
- 1514/tcp Network Input (not used by default) typically used to collect syslog TCP data

This Docker image uses port 1514 instead of the standard port 514 for the syslog port because network ports below 1024 require root access. See <u>Run Splunk Enterprise as a different or non-root user</u>.

Hostname

When you use this Docker image, set a hostname for it. If you recreate the instance later, the image retains the hostname.

Basic configuration with Environment Variables

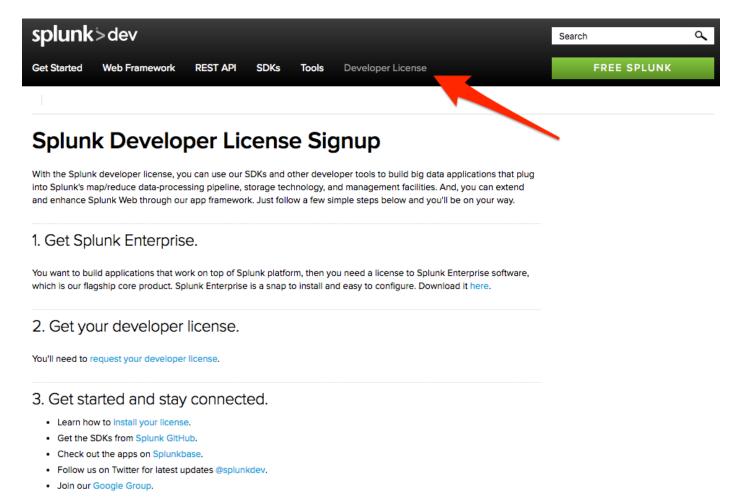
You can use environment variables for basic configuration of the indexer and forwarder. For more advanced configuration, create configuration files within the container or use a Splunk deployment server to deliver configurations to the instance.

- SPLUNK_ENABLE_DEPLOY_SERVER='true' Enables deployment server on Indexer.
- SPLUNK_DEPLOYMENT_SERVER='<servername>:<port> configure deployment client. Set deployment server url.
 - Example: --env SPLUNK DEPLOYMENT SERVER='splunkdeploymentserver:8089'.
- SPLUNK_ENABLE_LISTEN=<port> enable receiving.
 - O Additional configuration is available using SPLUNK ENABLE LISTEN ARGS environment variable.
- SPLUNK FORWARD SERVER=<servername>:<port> forward data to indexer.
 - Additional configuration is available using SPLUNK FORWARD SERVER ARGS environment variable.
 - Additional forwarders can be set up using SPLUNK_FORWARD_SERVER_<1..30> and SPLUNK_FORWARD_SERVER_<1..30>_ARGS.
 - Example: --env SPLUNK_FORWARD_SERVER='splunkindexer:9997' --env
 SPLUNK_FORWARD_SERVER_ARGS='method clone' --env SPLUNK_FORWARD_SERVER_1='splunkindexer2:9997' --env SPLUNK_FORWARD_SERVER_1_ARGS='-method clone'.
- SPLUNK_ADD='<monitor|add> <what_to_monitor|what_to_add>' execute add command, for example to monitor files or listen on specific ports.
 - Additional add commands can be executed (up to 30) using SPLUNK_ADD_<1..30>.
 - Example --env SPLUNK ADD='udp 1514' --env SPLUNK ADD 1='monitor /var/log/*'.
- SPLUNK_CMD='any splunk command' execute any splunk command.
 - Additional commands can be executed (up to 30) using SPLUNK_CMD_<1..30>.
 - o Example --env SPLUNK CMD='edit user admin -password random password -role admin -auth



Data Volume Increase

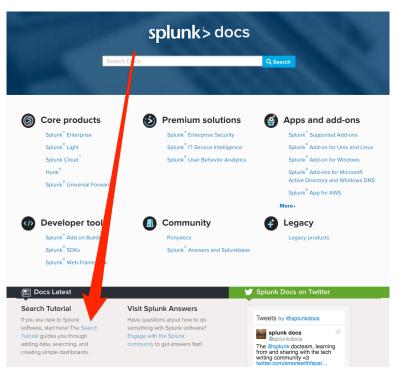
> 60 day then doing it wrong



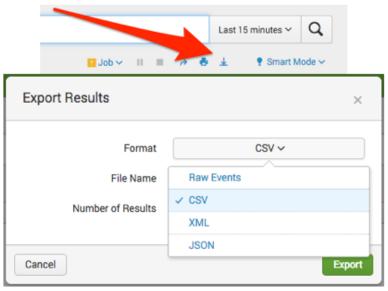


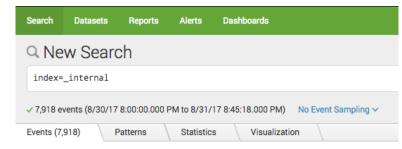
Sample Data

Tutorial, Prod Export, _internal, Peer with Prod



18:18:53] "GET /Category.screen?category_id=GIFTS&ISESSIONID=SDISLAFF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.lil. 18:10:56:123] "GET /product.screen?category_id=GIFTS&ISESSIONID=SDISLAFF10ADFF10 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/get/disloudies/d









Upgrade Splunk Image

docker pull splunk/splunk

\$ docker pull splunk/splunk:latest

Using default tag: latest

latest: Pulling from splunk/splunk

ad74af05f5a2: Pull complete

6ed26c881126: Pull complete

0efc5eeb5075: Pull complete

123d19a3ee15: Pull complete

6fe48f1452ee: Pull complete

fc6bbc9992f6: Pull complete

8ebdf9134129: Pull complete

Digest: sha256:1be3208a6c1d96ca5ad320fc21cbfcf06428e3ea12f10773e2efc7d2dbb4b522

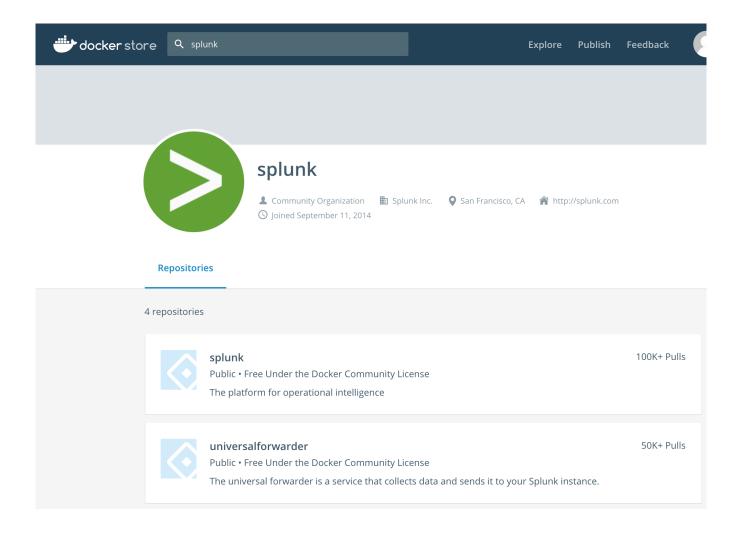
Status: Downloaded newer image for splunk/splunk:latest

\$ docker images

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
splunk/splunk	latest	9cad3d52dc92	9 days ago	736MB
splunk/splunk	6.6.2	1b6fa73035a6	5 weeks ago	736MB



Universal Forwarder





Splunk n' Box

https://github.com/mhassan2/splunk-n-box

Breakout Session

Splunk n' Box

Wednesday, September 27, 2017 | 3:30 PM-4:15 PM

INTERMEDIATE

Mo Hassan, Missouri, Splunk Inc.

I have written an extensive and feature-rich bash script (4000+ lines) that can be used by Splunk admins, regular users and Splunk employees to test multiple Splunk deployment scenarios using Docker (while shielding the user from learning Docker in the process). The script is widely used by Splunk customers, Splunk SEs and Splunk partners. The code base is the result of five months of development and testing.



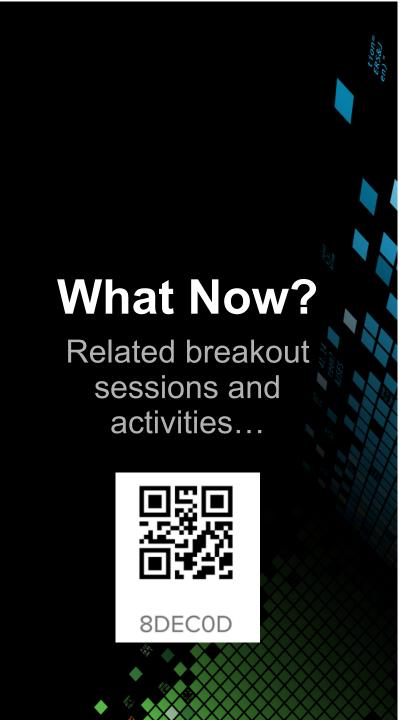
```
Splunk n' Box v4.2.2.9: MAIN MENU [Containers:0 Running:0 Paused:0 Stopped:0 I

=>DOCKER:[ver:17.03.1-ce cpu:8 mem:15GB] OS:[FreeMem:5.2GB Load:3.39] Image:[splunknb]

M A I N - M E N U

1) Manage All Containers & Images
2) Manage Lunch & Learn Containers
3) Manage Splunk Clusters
4) Manage Splunk Demos [**internal use only**]
5) Manage 3Rd Party Containers & Images [**under construction**]
6) Manage System
7) Change Log Level
?) Help
Q) Quit
Enter your choice [1-6] _
```





- 1. Rate this! (be honest)
- 2. Collaborate: #docker-sandbox
 - Sign Up @ http://splk.it/slack
- 3. Customer Success Studio
- 4. More talks, search for
 - Blueprints
 - Burch
 - Champagne
 - Delaney
 - Optimization
 - Best Practices
 - Veuve



Questions & Discussion?

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

.conf2017

splunk>