Running Splunk Enterprise within Docker

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What is Docker?

- Docker is a container system
- Binaries and libraries are packaged in each container
Why use Splunk on Docker?

- Easily create Splunk clusters
  - Replicate production environment in a smaller footprint
  - Test cluster upgrades
  - Lab environments
- Reduced hardware resources and costs
- After initial setup, clusters can be created on-demand
- Not recommended for use in production environments
Getting Docker

- **www.docker.com**

- Community Edition


- Installers available for:
  - Windows
  - Mac
  - Linux
  - AWS & Azure
A Docker image is a collection of binaries and settings to be used when starting a container.

Images are defined in a ‘Dockerfile’

There are official Splunk Docker images

- hub.docker.com/r/splunk/splunk/
- github.com/splunk/docker-splunk
Splunk Image from Docker Hub

- **Splunk Enterprise:**
  - "docker pull splunk/splunk"

- **Splunk Universal Forwarder:**
  - "docker pull splunk/universalforwarder"

- Tags can be used to download a specific version.
  - "docker pull splunk/splunk:6.5.3"
  - "docker pull splunk/universalforwarder:latest"
Splunk Image from Github

• “git clone https://github.com/splunk/docker-splunk”

▶ Splunk Enterprise
  • “docker build -t splunkenterprise ./enterprise/”

▶ Splunk Universal Forwarder
  • “docker build -t splunkuniversalforwarder ./universalforwarder/”

▶ Change branch for other versions of Splunk before building image
  • “git checkout 6.3”
Running Splunk Images

- Creating a container
  - `docker run --name splunk imagename`

- Starting/Stopping a container
  - `docker stop splunk`
  - `docker start splunk`

- Removing a container
  - `docker rm splunk`
Managing Ports

Docker containers run in an isolated virtual network

- `-p hostip:hostport:destport`

- `-p 0.0.0.0:8000:8000`
- `-p 8000:8000`
- `-p 8000`
- `-p 443:8000`
- `-p 1500-1600`
Storage in Docker

- Changing ports or storage or upgrading the container version requires the container be removed and run again
  - docker stop splunk && docker rm splunk
  - docker run -p 8000 -name splunk splunk/splunk

- This destroys all data!

- Ways to have persistent data:
  - Volumes
  - Bind mounts
Bind mounts vs volumes

### Bind mounts
- Files or folders on the host machine are mounted in the container
  - Easy to edit files
  - Dependant on host folder structure
  - Harder to share and migrate between hosts

### Volumes
- Files or folders in a container that are managed by Docker
  - Everything is contained within Docker
  - Easier to back-up and migrate than bind mounts
  - Ability to use volume drivers

Both are used with the argument: `--mount`
Pulling it all together

- docker run --name splunk \\n  -p 80:8000 \\n  -p 8089 \\n  -p 9997 \\n  --mount /data/splunk/etc:/opt/splunk/etc \\n  --mount /data/splunk/var:/opt/splunk/var \\n  -e SPLUNK_START_ARGS="--accept-license" \\
  splunk/splunk:6.6.2
Docker Compose

- Used for defining and running multiple containers
- Written in YAML

- [docs.docker.com/compose](https://docs.docker.com/compose)
- A sample Docker Compose file is in the Splunk Docker Github repo
  - [github.com/splunk/docker-splunk](https://github.com/splunk/docker-splunk)
Q&A

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Further Information

- Docker Documentation: [docs.docker.com](http://docs.docker.com)
- Docker Glossary: [docs.docker.com/glossary](http://docs.docker.com/glossary)
Thank you

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