



**Persistent Storage  
with Containers ...**  
the short short version

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# Agenda

## Data Persistence

Do I need it?

Going overboard

Keeping it elastic

## Options

Local

Remote

Data Containers

## Demo

Maestro

# Data Persistence

What is it good for?

**YEAH IF YOU COULD MAKE EVERYTHING  
STATELESS**



**THAT'D BE GREAT**

memegenerator.net

# Persistent Data

Always try to be stateless, but ...

- **It's not a stateless world**
- **Databases are important**
- **Sometimes you just can't be stateless**

# Persistent Data

Don't go crazy, these aren't VM's

- **We still want micro-services**
- **We still want ephemeral services**
- **BUT we tend to \*do things\* with data**

# Persistent Data

Choose wisely

- **We still want/need to be elastic**
- **Portability matters**
- **Automation**
- **Scale**
- **Simplicity matters**

**So many choices**



# Storage Types

There will be a quiz!

	Persist beyond the container	Share across containers on the same host	Available to containers on other hosts	Dynamically provisioned	Survives host outages
<b>Ephemeral</b>					
<b>Host</b>	X	X			
<b>External (Mount)</b>	X	X	X		X
<b>External (Plugin)</b>	X	X	X	X	X

up and can do more advanced stuff too

# Docker Volume Plugins

Rapidly growing number of choices

- **Individual device plugins**
- **“Uber” plugins**
  - **management layer**
  - **abstraction layer**
  - **multiple backend-devices**
  - **schedulers**

# Docker Volume Plugins

They all have strengths/weaknesses

- **NetApp nDVP**
- **SolidFire**
- **REX-Ray**
- **Flocker**
- **Convoy**
- **GCE**
- **Contiv Volume Plugin**
- .....

# Futures

# Extending Docker Engine

Expose more advanced storage concepts  
but in an app-friendly way

- **Snapshots**
- **Clones**
- **Replication**
- ...

# Extending into Orchestrators

Storage needs to be scheduled too

- **Match capabilities to app requirements**
  - ... over the entire lifecycle!
- **Host and network affinity**
- **... all coordinated with container scheduling!**

# Let's do a demo!!



Thank you!

