RSA Conference2015
San Francisco | April 20-24 | Moscone Center

SESSION ID: ASD-W04

Containers vs VMs for Secure Cloud Applications

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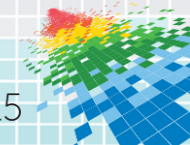
This is an “Intermediate” Level Panel

- You know enough to be dangerous about
  - Docker/LXC, Windows, Linux, Virtualization
  - Private and Public Cloud Architectures
- Our goals

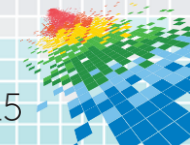
1. Highlight security considerations / challenges for app delivery in VMs and containers on Public & Private Clouds
2. Offer architectural guidelines to maximize containerized app security
3. Spotlight security roadmap for Docker, Azure, Micro-Services & Micro-virtualization

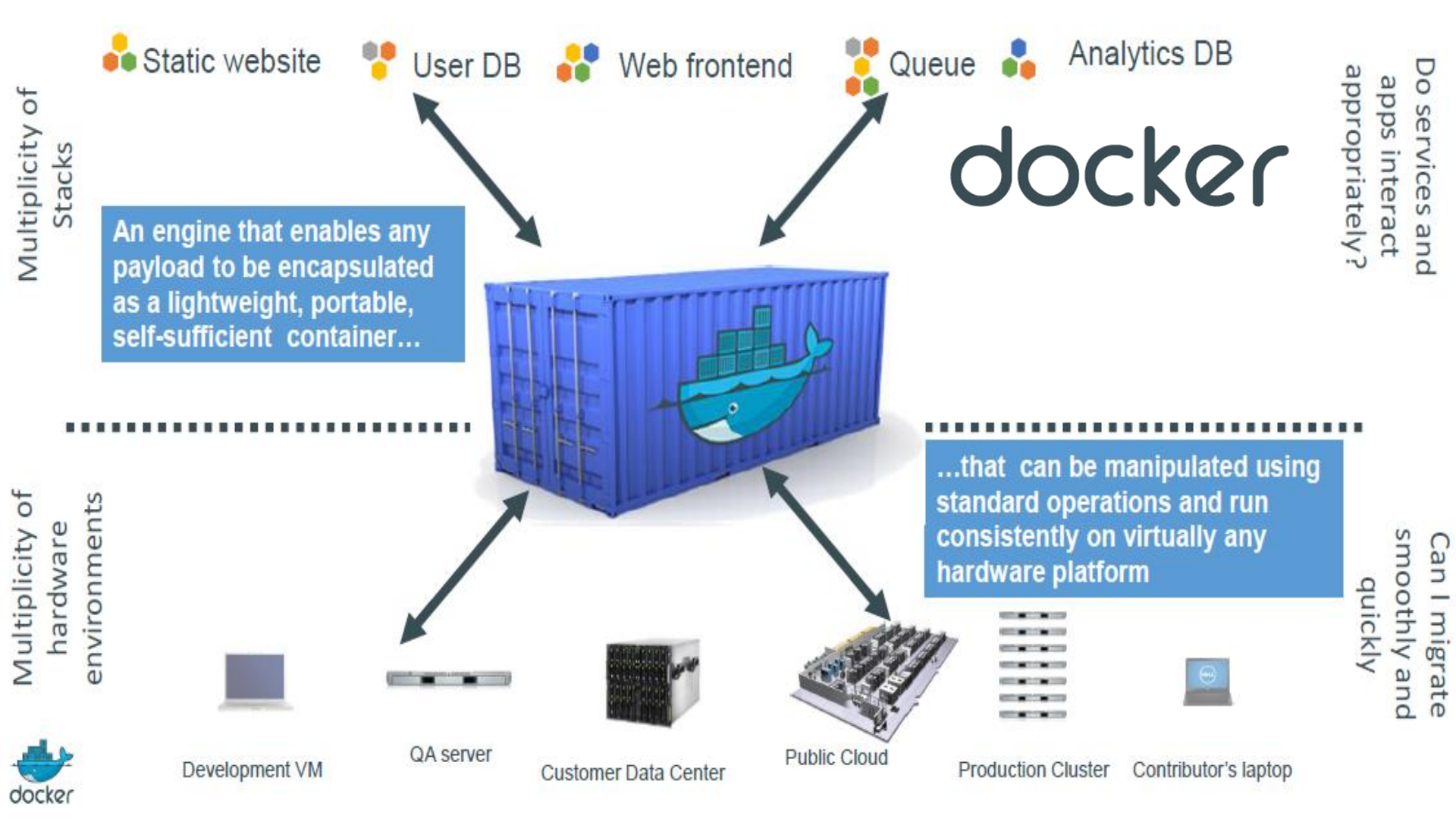


VMs

vs

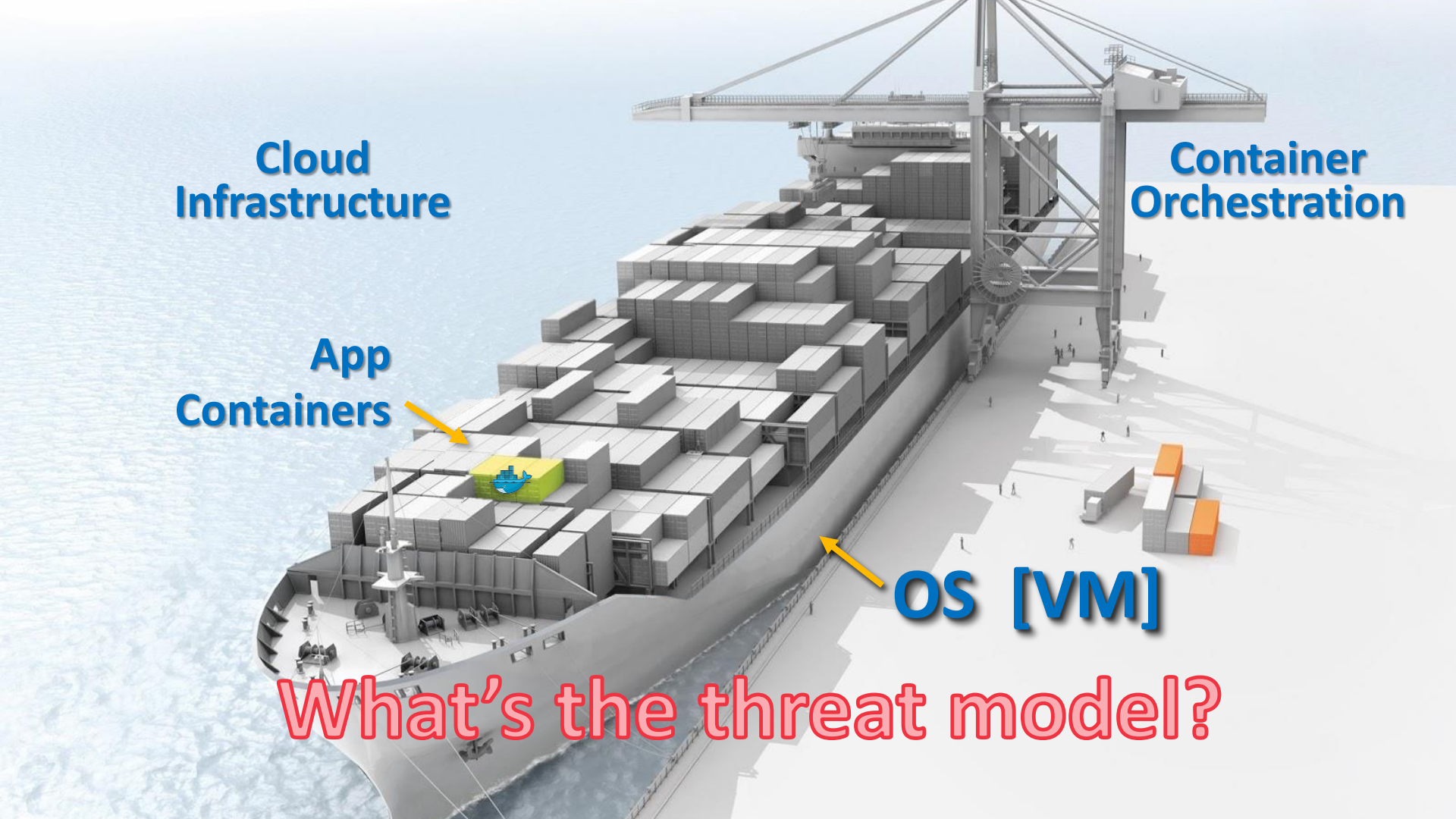
Containers

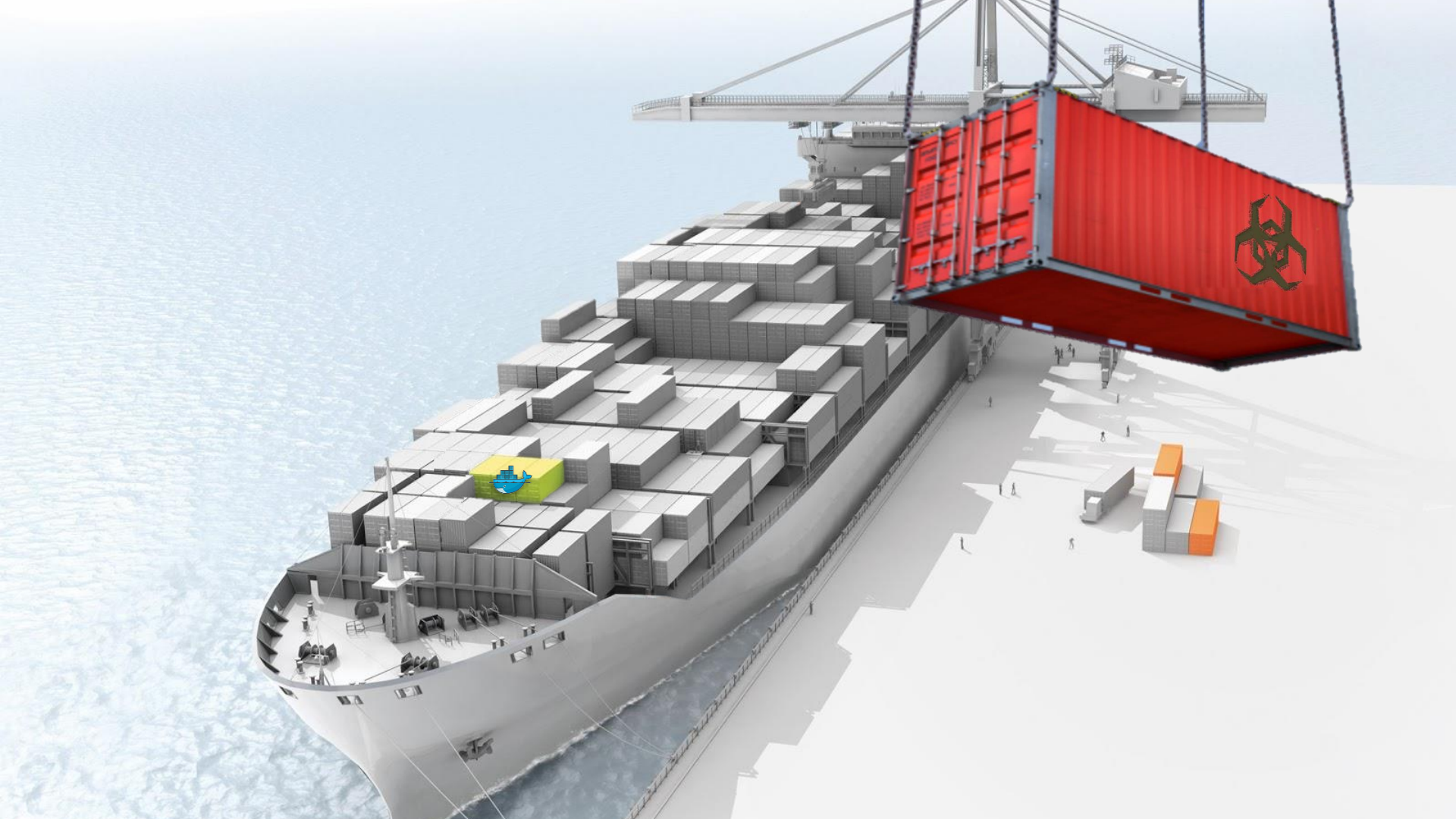


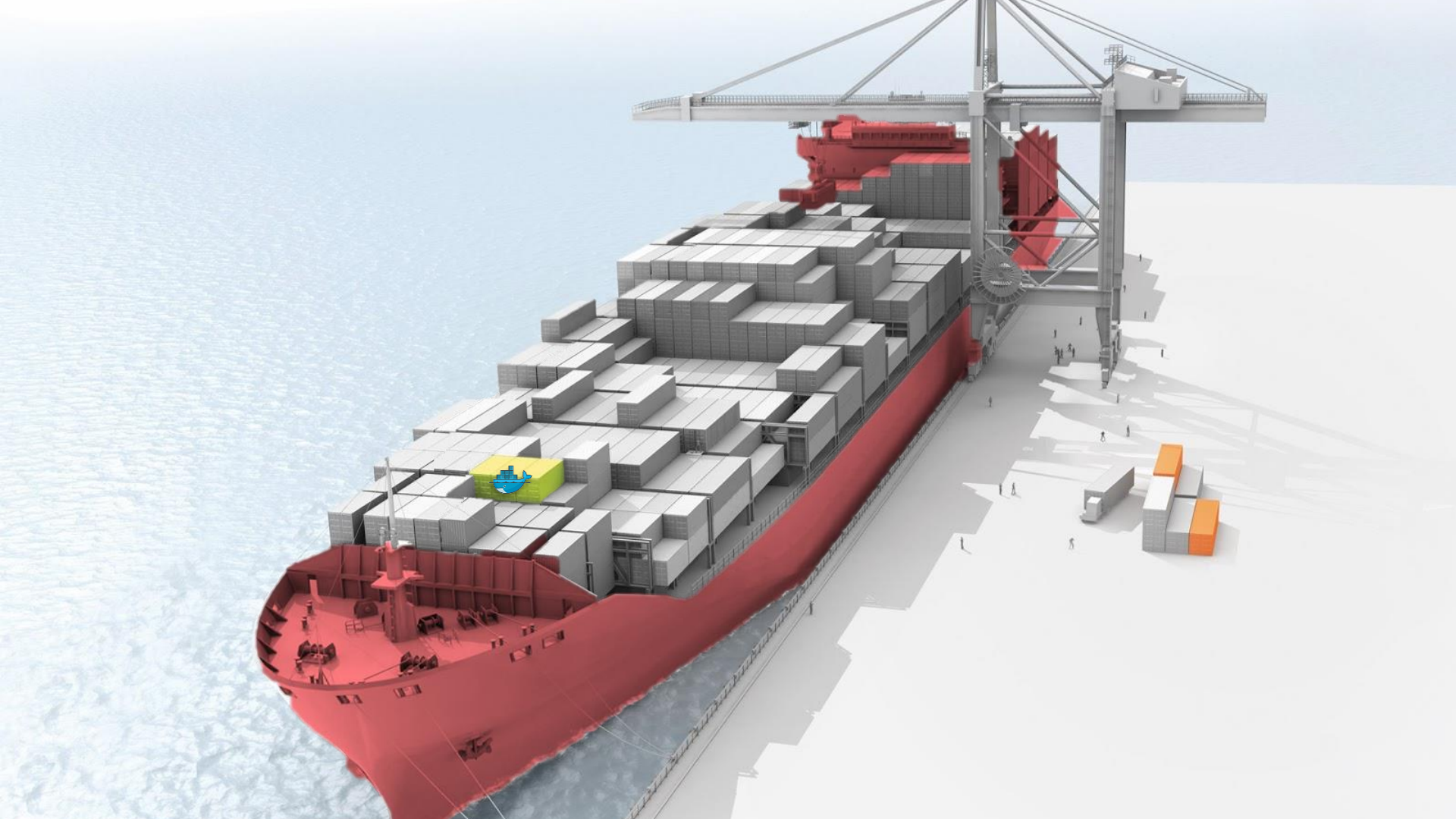

Static website
User DB
Web frontend
Queue
Analytics DB
docker
Multiplicity of Stacks
Do services and apps interact appropriately?
An engine that enables any payload to be encapsulated as a lightweight, portable, self-sufficient container…
…that can be manipulated using standard operations and run consistently on virtually any hardware platform
Multiplicity of hardware environments
Can I migrate smoothly and quickly
Development VM
QA server
Customer Data Center
Public Cloud
Production Cluster
Contributor's laptop
docker

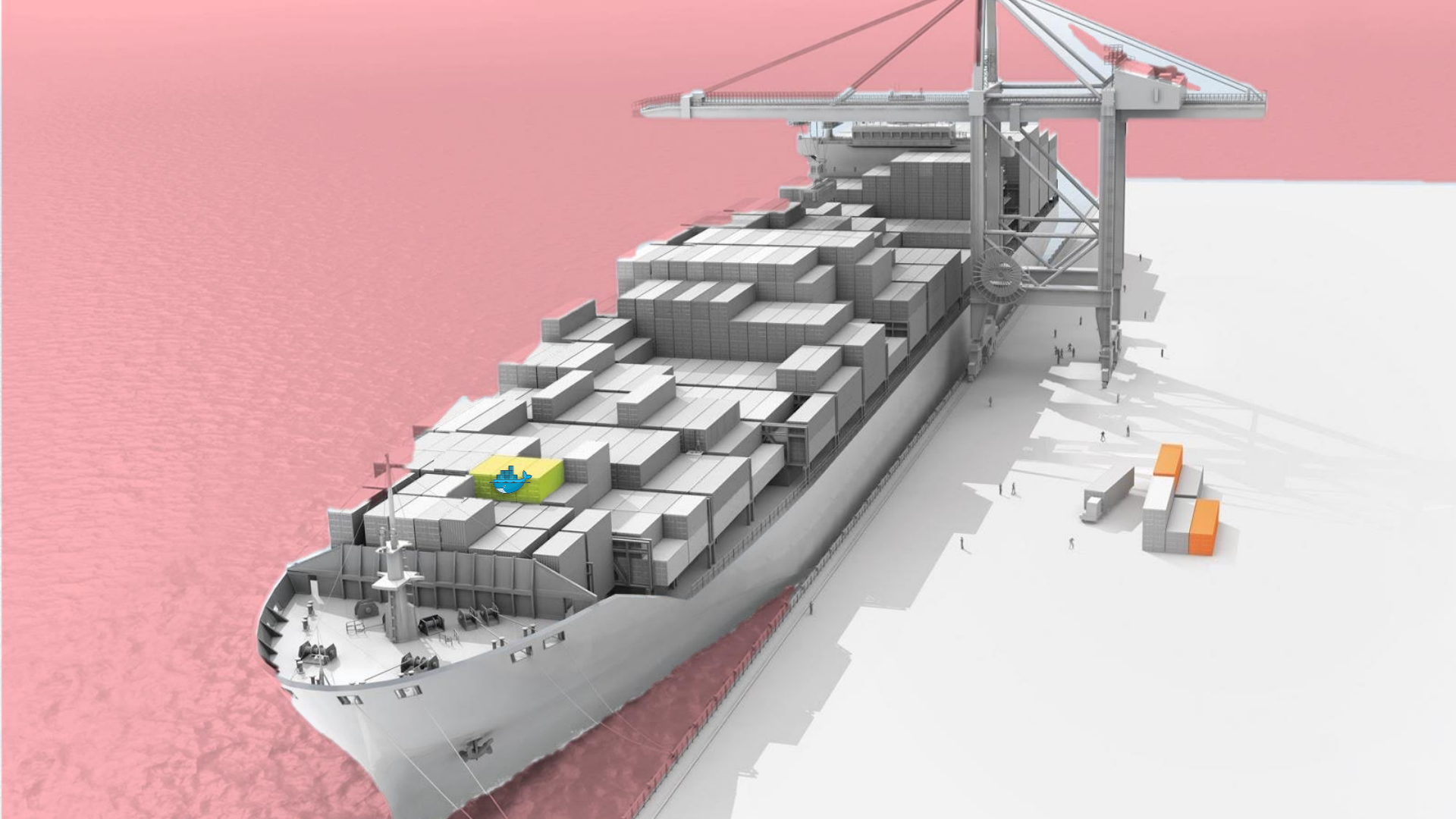
VMs

Containers


Cloud
Infrastructure
Container
Orchestration
App
Containers
OS [VM]
What's the threat model?







Layered Multiplexing

VMs → Cloud

containers → VMs

Multiplexing = Shared Fate
HYUNDAI
HYUNDAI FORTUNE
PANAMA

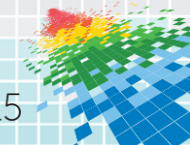
Multiplexing = Shared Fate
CAPITAL

Isolation = Protection

Apply What You Have Learned Today

- Get involved!
  - docker.com/resources/security

- If your organization is developing cloud apps using containers / VMs
  - Make *security-first* a design commitment
  - Understand the security differences & limitations of containers and VMs
  - Educate your dev-ops team on the security / compliance challenges of any shared infrastructure environment – even if it is a private cloud
  - Educate your team on the role of micro-services networking to help to secure cloud based applications



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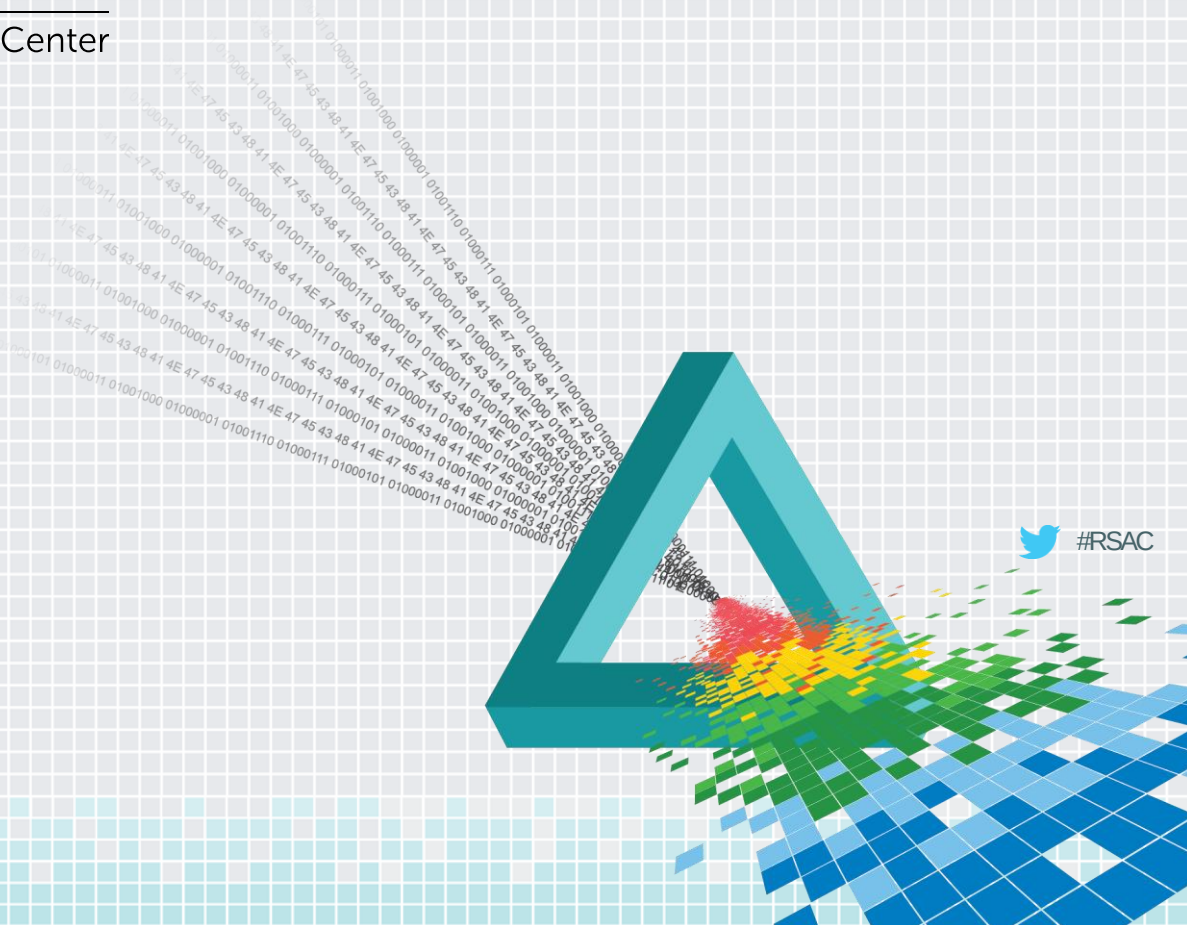
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