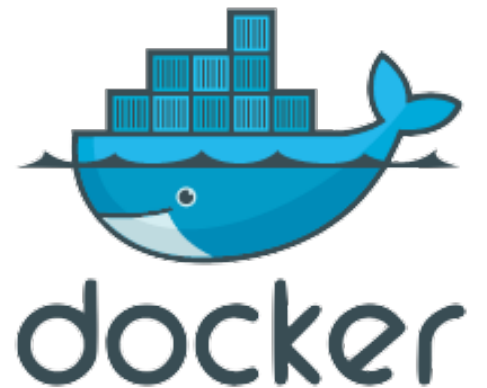


# Docker from Scratch



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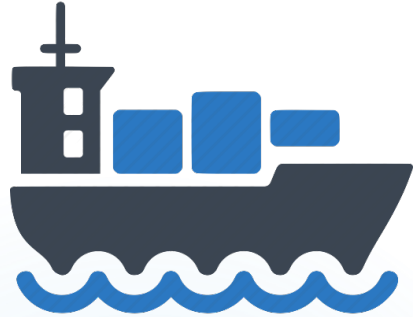
<https://github.com/pablovilla83/do-cdmx-nginx>



# What is Docker?

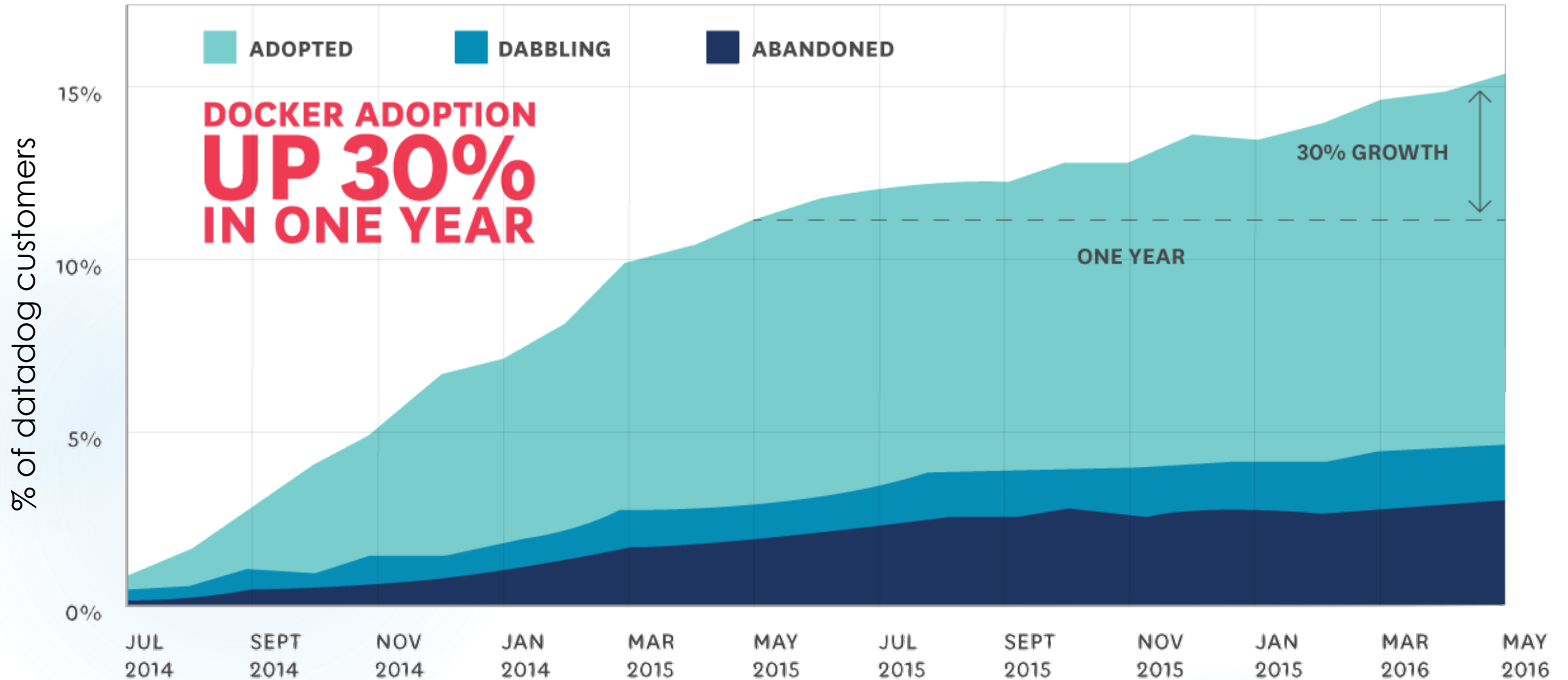
- ▶ Open source project – 38+k stars, 11+k forks, 180 pull requests, 1,945 issues
- ▶ Tool designed to make it easier to create, deploy, and run applications
- ▶ Envelope for software delivery
- ▶ Pushing code to the server shouldn't be too hard. Docker helps to fix the problem of “will it run in Production?”
- ▶ The application stack has increased in complexity (Apache server vs Node JS project with tons of dependencies). Making sure code behaves the same way across all devices is nearly impossible.

# What is Docker? Contd.



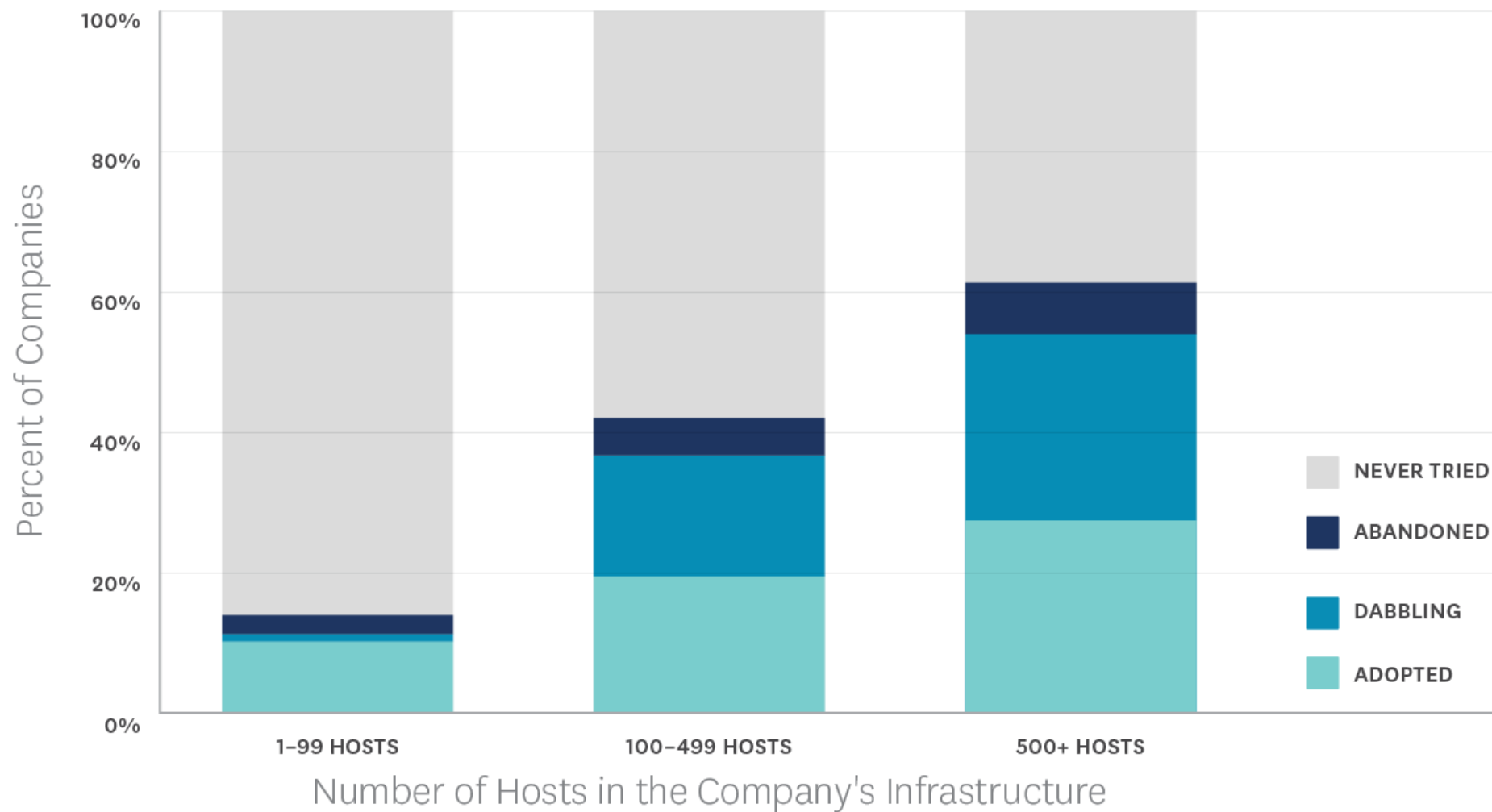
- ▶ The transportation industry has solved this problem
- ▶ Achieved separation of concerns. I focus on my load and I can handle it to a wide variety of infrastructure providers
- ▶ Developer worries about the inside of the box. DevOps worries about the outside

# Docker Adoption Behavior

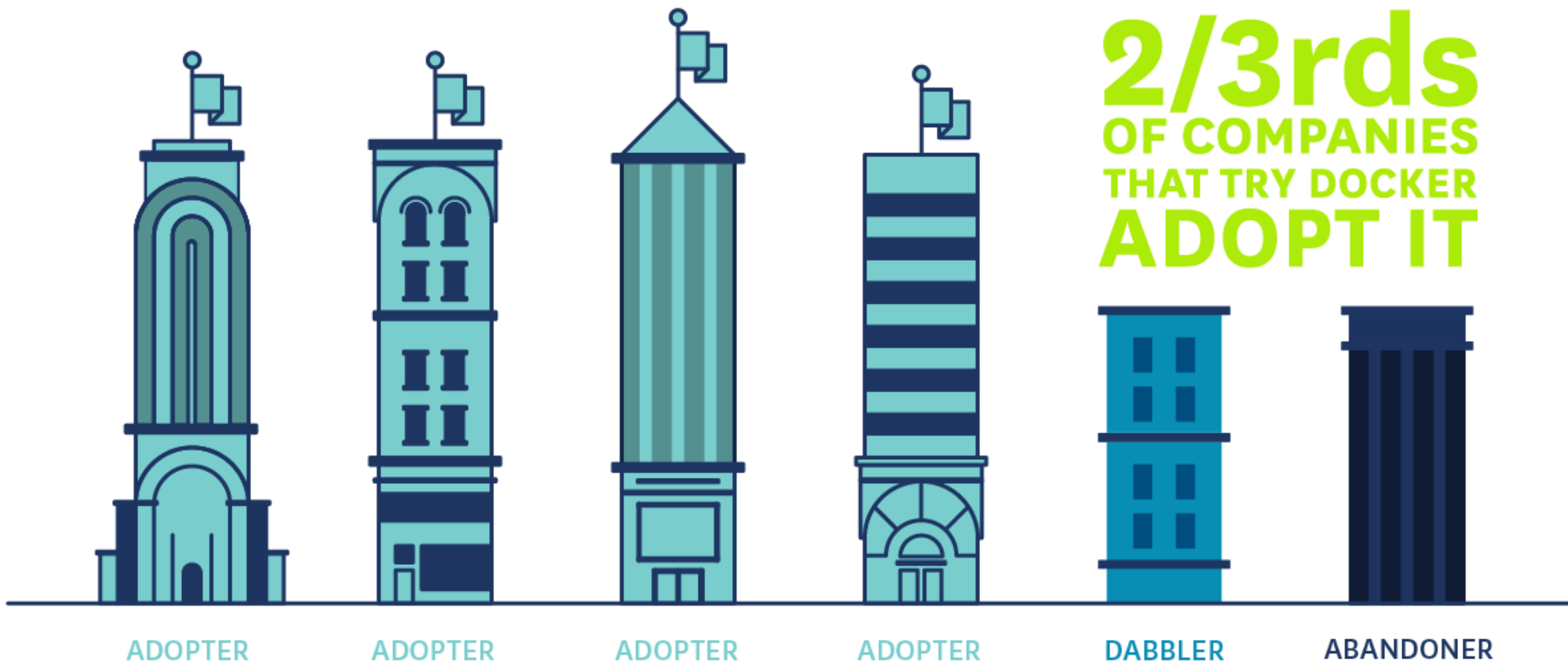


Source: Datadog

## Docker Adoption Status by Infrastructure Size

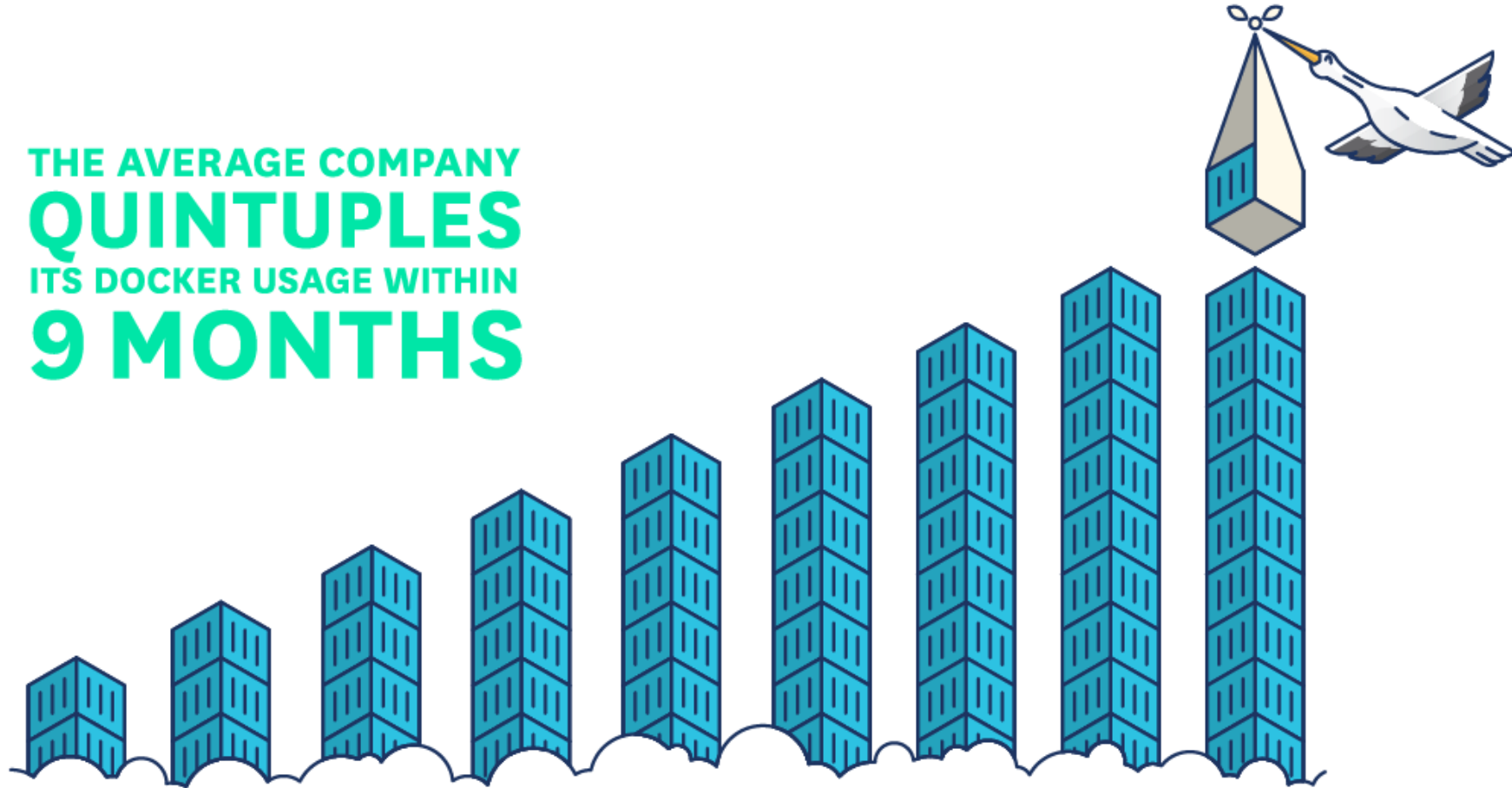


Source: Datadog



Source: Datadog

THE AVERAGE COMPANY  
**QUINTUPLES**  
ITS DOCKER USAGE WITHIN  
**9 MONTHS**

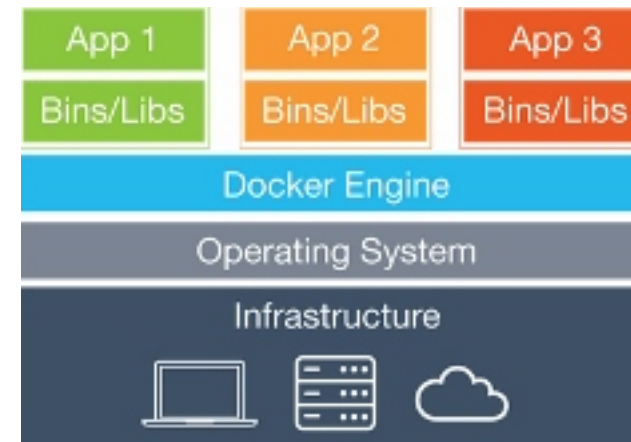


Source: Datadog

# Differences between VM's and Containers



Virtual Machines



Containers



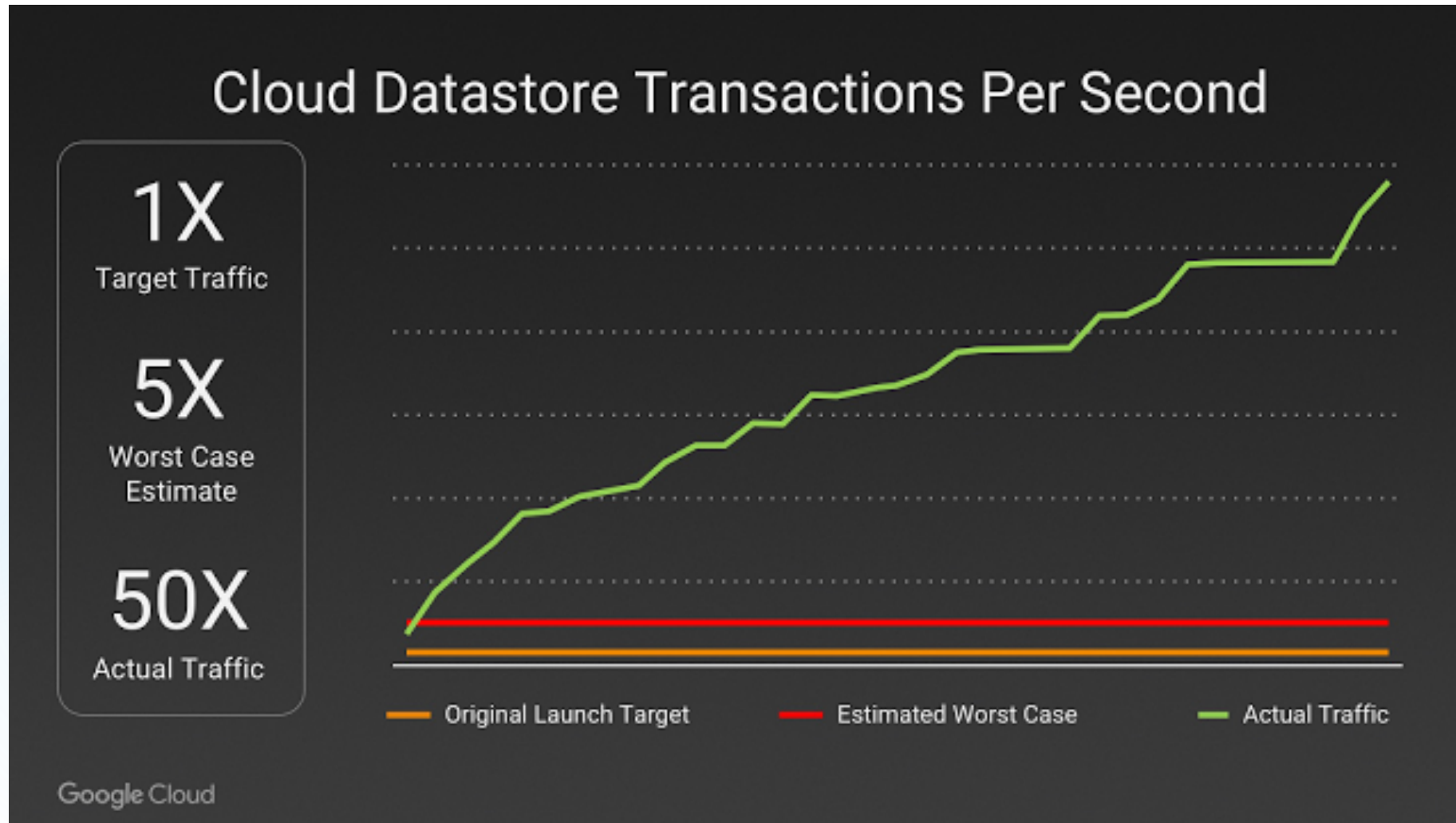
# Advantages of Containers

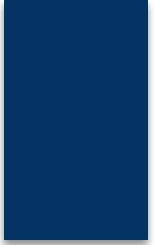
- ▶ Containers include the minimal application requirements to run, making them lightweight. I avoid dealing with stuff I don't need.
- ▶ Portability across machines of an entire environment. As long as the Host OS runs Docker, I'm all set!
- ▶ Version control for an application's runtime - DockerHub
- ▶ Increased control of server's resources. I don't assign static resources to a VM, rather give the container exactly what it needs.
- ▶ Boot speed.

# Advantages of Containers Cont'd

- ▶ A container stops when the main process finishes. Shorter lifetime.
- ▶ This means that Applications can be deconstructed into much smaller components (i.e. micro-service architecture) – Docker changes the way in which we build software
- ▶ Makes the management in production easier
- ▶ Much better horizontal scaling and less overhead. Deploying a new container takes a few seconds at most.

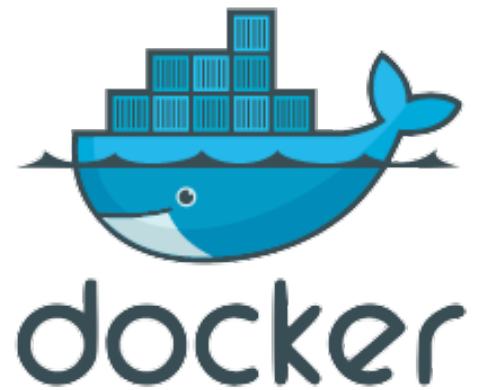
# Example in the Wild: Pokémon GO



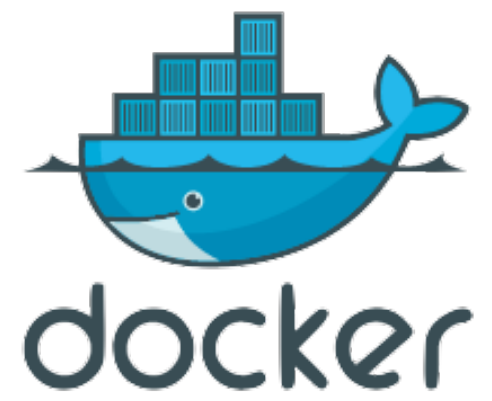
- 
- ▶ The application logic for the game runs on a Container Engine (GKE) powered by the open source Kubernetes project.
  - ▶ Containers can be scaled at planetary scale
  - ▶ The developers were free to develop live changes for their players
  - ▶ Pokémon GO was the largest Kubernetes deployment on GCP ever.
  - ▶ To support Pokémon GO's massive player base, many tens of thousands of cores were provisioned for Niantic's Container Engine cluster.

# Hands on

<https://github.com/pablovilla83/do-cdmx-nginx>



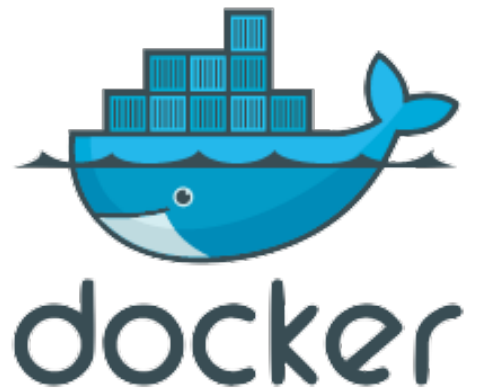
Questions?



# Thank you!



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# Sources and Extra Material

- ▶ Docker for the virtualization admin
  - ▶ <https://goto.docker.com/docker-for-the-virtualization-admin.html>
- ▶ 8 surprising facts about Docker adoption
  - ▶ <https://www.datadoghq.com/docker-adoption/>
- ▶ Bringing Pokémon Go to life in GCP
  - ▶ <https://cloudplatform.googleblog.com/2016/09/bringing-Pokemon-GO-to-life-on-Google-Cloud.html>
- ▶ Docker commands
  - ▶ <https://docs.docker.com/engine/reference/commandline/>