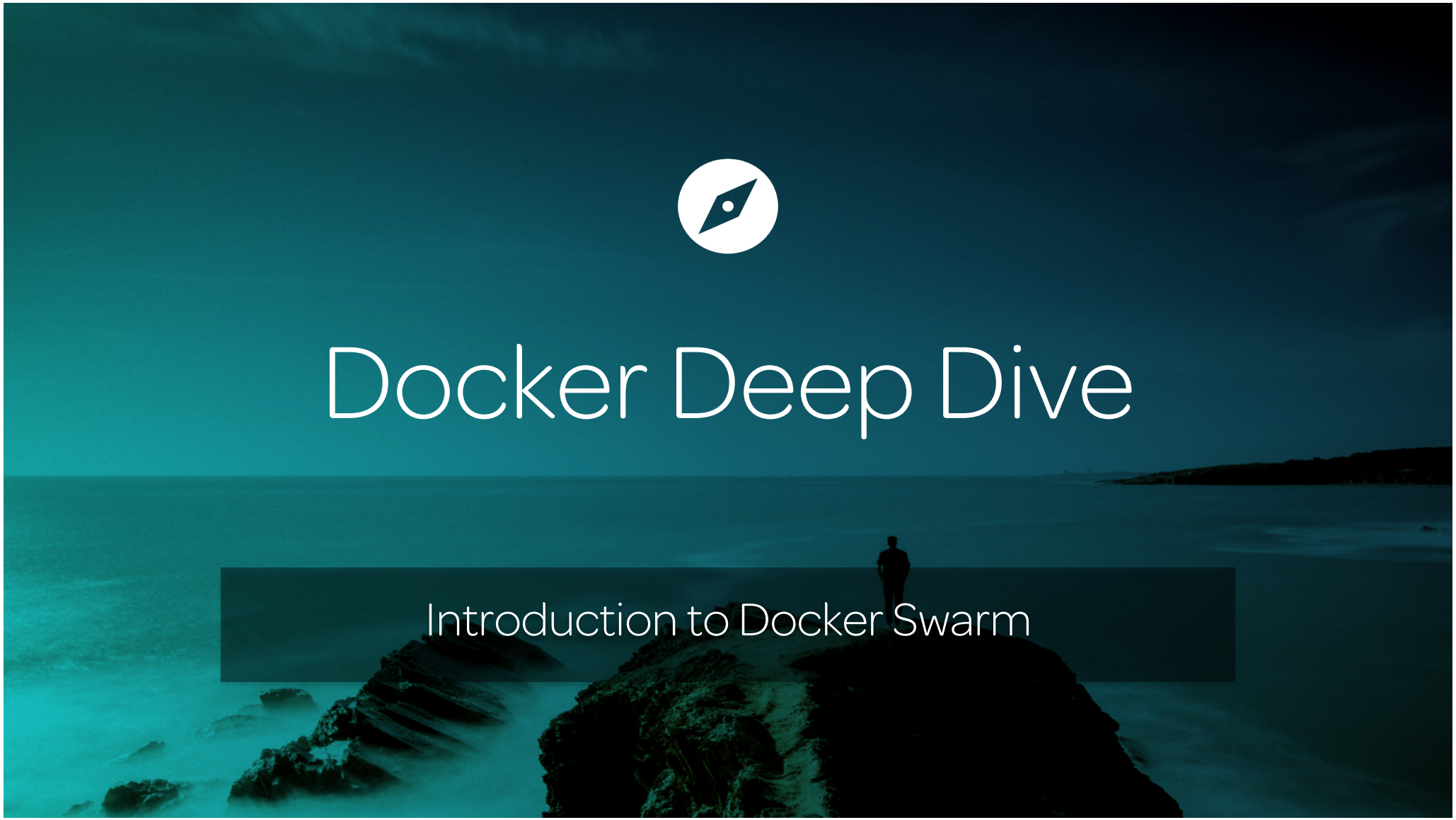
Docker Deep Dive
Introduction to Docker Swarm

Swarm 101

Swarm has two major components :

- An enterprise-grade secure cluster:
  - Manage one or more Docker nodes as a cluster
  - Encrypted distributed cluster store
  - Encrypted networks
  - Secure join tokens
- An orchestration engine for creating microservices:
  - API for deploying and managing microservices
  - Define apps in a declarative manifest files
  - Perform rolling updates, rollbacks, and scale apps
- Swarm was initially separate product layered on Docker
- Since Docker 1.12 it became a part of the engine

The Cluster

- A swarm consists of one or more Docker nodes
- Nodes are either a manager or a worker
- Managers:
  - Manage the state of the cluster
  - Dispatches tasks to workers
- Workers:
  - Accepts and execute tasks
- State is held in etcd
- Swarm uses Transport Layer Security (TLS)
  - Encrypted communication
  - Authenticate Nodes
  - Authorize roles

Orchestration

- The atomic unit of scheduling is a swarm service
- The service construct adds the following to a container:
  - scaling
  - rolling updates
  - rollback
- A container wrapped in a service is a task or a replica