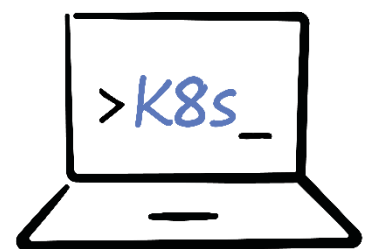




# CONTAINER AND KUBERNETES FUNDAMENTALS

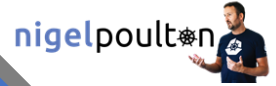
A day of expert hands-on training where  
you'll master the fundamentals!



[nigelpoulton.com](https://nigelpoulton.com)

Mind-blowing **Kubernetes** training

# Putting fun and excitement into learning containers and Kubernetes through theory and getting your hands-on!



By the end of the day you'll be ready to dive into Kubernetes and take your next steps.

## OVERVIEW

If you're new to Kubernetes and want to learn, or brush up with the basics, this training is perfect for you.

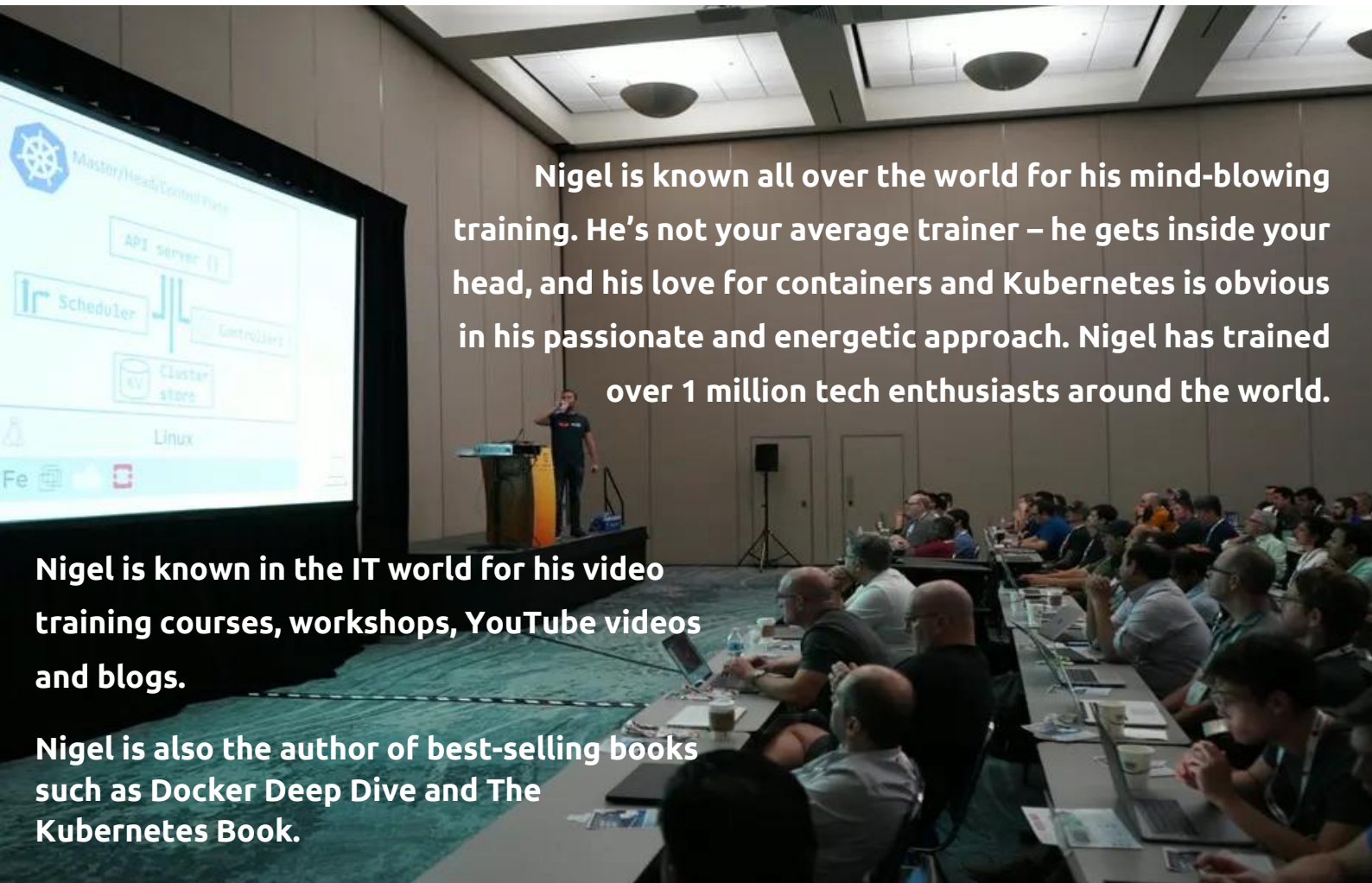
We start out with the basics so that everyone is on the same level. We demystify things like, "*what the heck is a **cloud-native microservices app***", and what do we mean when we say things like "*Kubernetes is a **cluster***" and "*Kubernetes is an **application orchestrator**...*".

Once the groundwork is laid, we introduce important Kubernetes primitives such as **Pods**, **Services**, and **Deployments**. Throughout the training, every concept is clearly explained, with accompanying diagrams, animations and examples.

**There's also lots of hands-on examples.** You'll deploy a stateless app, break it, scale it up and down, connect to it from the internet, perform a zero-downtime rolling update, and perform a versioned rollback.

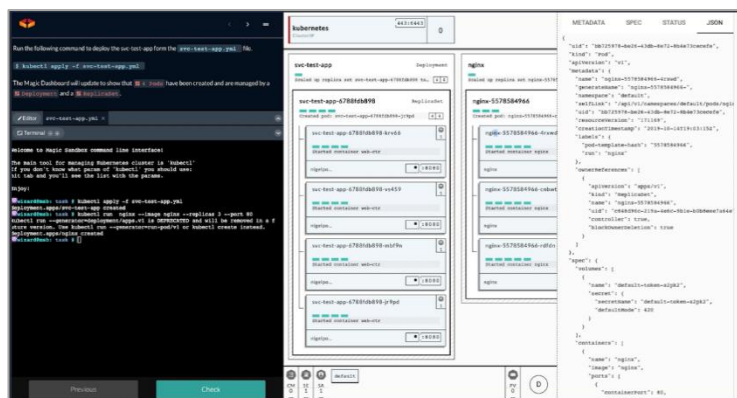


## ABOUT THE TRAINER



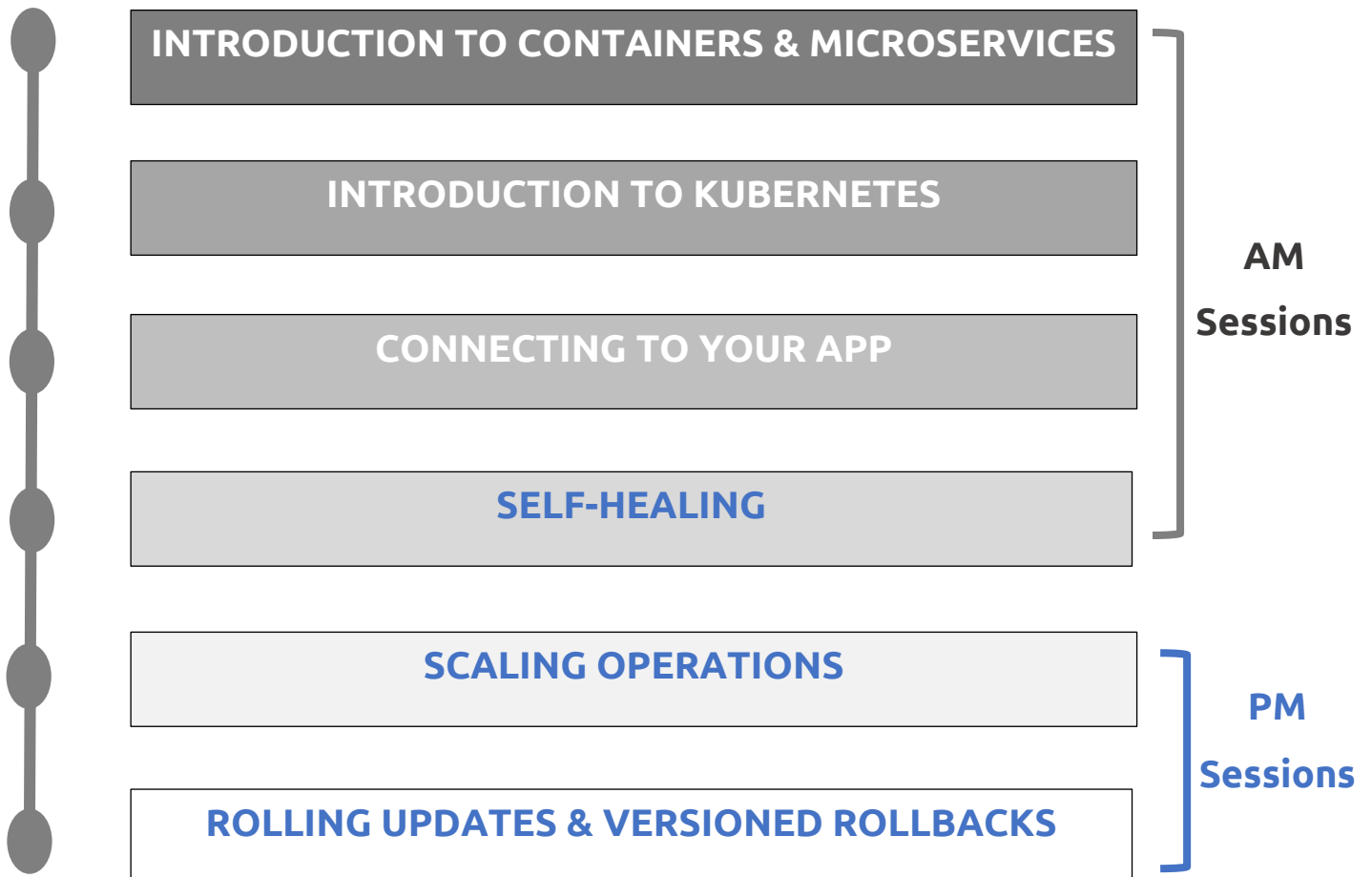
## THE MAGIC SANDBOX (MSB) PLATFORM

We use it for all of our training, and you can have it!



All labs run on the MSB interactive Kubernetes learning platform where every attendee has their own secure multi-node cluster with a live dashboard. Annual MSB subscriptions unlock the potential of your engineers through access to curated Kubernetes lessons and challenges on the cutting edge MSB hands-on training platform. Each subscription enables an engineer to learn at their own pace on real infrastructure. Team tracking features allow progress to be monitored and tracked.

## AGENDA



## SKILLS YOU'LL LEARN

- ✓ What are microservices and containers
- ✓ Kubernetes architecture
- ✓ Containerizing applications
- ✓ Deploying apps to Kubernetes
- ✓ Scaling
- ✓ Self-healing
- ✓ Rolling updates
- ✓ Versioned rollbacks

# WHAT YOU WILL LEARN IN EACH SESSION

## INTRODUCTION TO CONTAINERS AND MICROSERVICES

We start with the basics and clarify the jargon. We describe and compare monolithic versus microservices applications. This includes the impact of containers, Docker, and Kubernetes. You'll "containerize" a simple application from a GitHub repo by building it into a container image. At the end of this session, you'll know what a container is and be familiar with the process of building source code into a container image.

## INTRODUCTION TO KUBERNETES

This session brings you up-to-speed with the fundamental architecture, objects, and patterns of Kubernetes. You'll learn cluster architecture such as masters and nodes, design fundamentals such as Pods, Deployments and Services, as well as patterns such as declarative configuration. In the hands-on session, you'll deploy the previously containerized application to your Kubernetes cluster. Every workshop attendee will have their own private multi-node Kubernetes cluster.

## CONNECTING TO YOUR APP

Kubernetes provides a powerful networking construct called a Service. You'll learn how it provides reliable networking for internal and external access to applications (from inside the cluster and from outside). You'll learn the properties and architecture of Kubernetes Services, as well as demonstrate several examples, including integrating with a cloud-based internet facing load-balancer.

## SELF HEALING

Now that you have a working application, you'll test various failure scenarios to see how Kubernetes copes. You'll be introduced to Kubernetes Deployments and Replica Sets allowing your application to automatically self-heal from software and hardware failures.

## SCALING OPERATIONS

This section will take you're highly available application (HA provided by Kubernetes) and scale it up and down. You'll also learn the importance of declarative configuration and management.

## ROLLING UPDATES

The workshop finishes with the theory and practical of performing rolling updates on stateless applications. You'll demonstrate imperative and declarative updates, including versioned rollbacks. You'll understand how it's implemented by Kubernetes using Deployments and ReplicaSets, as well as how reliable networking is maintained by Service objects.



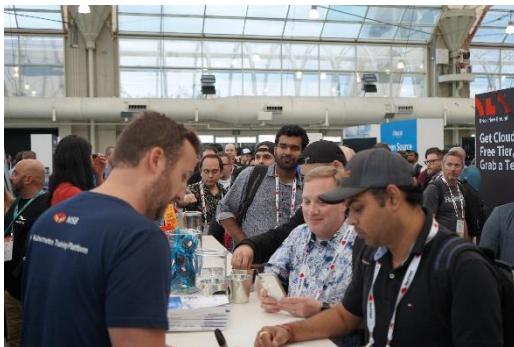


# WHAT PEOPLE ARE SAYING ABOUT NIGEL'S TRAINING



**You've gotta love Nigel Poulton. The knowledge and being straight to the point with no BS.. He is the real deal in the new cloud world!**

**Luca**

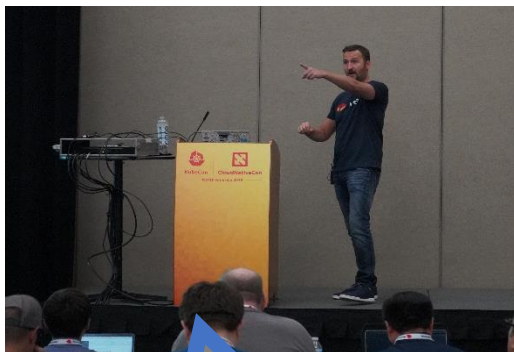


**"@nigelpoulton That was what I needed. You sir are a gifted teacher. Thank you so much. "**

**Propupal**

**Thank you so very much @nigelpoulton for your training "getting started with Kubernetes". I'm really excited to learn more about Kubernetes. Congrats! I've been doing a lot of others training, but yours is the better!!! [sic]**

**Marcos Riquetta**



**"@nigelpoulton if you don't know it yet, let me tell you. You're an absolute gem of a teacher. You bring magic."**

**Rohit Kumar**



**A massive thank you to @nigelpoulton for his clear and concise (and often funny) Kubernetes training. It makes Kubernetes a little less scary.**

**Savvas Stephanides**