kubernetes QUICKSTART
Preamble:

- This is essentially a follow-on to my previous presentation on *cloud buzzwords and how they are related to each other*
  - Microservice development & containers has been standard in development courses/books for years
  - Containers have been a focus on the sysadmin side for the last few years (and now it’s Kubernetes)
  - I’ve always approached Kubernetes from the developer side (easy), but I now have to think of how to introduce it on the sysadmin side
Shameless plug:
Microservices & Kubernetes (K8S)

• Want to deploy, scale & manage containers in your public/private cloud?
  – K8S is the industry standard orchestrator/API
  – You install a K8S **cluster** with a **control plane** and one or more **nodes** (~VMs with container runtime & **kubelet**)
  – Web apps are called **pods** and may consist of one or more containers or persistent storage volumes.
  – Managed K8S is common (cloud provider service)
Kubernetes cluster (black box with API)

Internet

Load Balancer / Ingress Controller

public IP

service

master node (control plane)

API server
Controllers
Schedulers
etcd
K8S Quickstart Lab Setup

- **Docker Desktop** (includes the containerd runtime) on Windows or macOS
- **Minikube** (a pre-configured single-node Kubernetes cluster that runs in a VM/macOS or WSL2/Windows)
- **kubectl** (the main K8S command – `cue-bee-cuttle`)
- **Helm** (a package manager for Kubernetes)
- **Lens** (a visual K8S management & monitoring tool)
- **Prometheus** (a K8S data collection tool)
- **Grafana** (displays data from Prometheus)
K8S Quickstart Lab Setup

• If you are using Windows, install **WSL2**:
  
  ```bash
  wsl --install
  wsl --set-default-version 2
  ```

• Install the **Docker Desktop** app (Windows/macOS) from the Docker website & start it
  
  – Containerd runs in background when app is closed

• Let’s play with a quickstart (also on my blog)
  