Kubernetes

return to the Linux Foundation

Note: The following is an excerpt from the official Kubernetes (K8) home page. It is provided here as a convenience and is not authoritative. Refer to the original document as the authoritative reference.

Table 1: Data sheet for Linux Kubernetes

Title	Kubernetes
Acronym	K8s
Version	v1.18
Operating Systems	Darwin, Linux, Windows
Downloads	https://kubernetes.io/docs/setup/release/notes/#downloads-for-v1180
Repository	https://github.com/kubernetes/kubernetes
Supported Languages	
License	Apache License 2.0
Reference	https://kubernetes.io/docs/reference/

Kubernetes (K8s) *is an open-source system for automating deployment, scaling, and management of containerized applications. It groups containers that make up an application into logical units for easy management and discovery. Kubernetes builds upon 15 years of experience of running production workloads at Google, combined with best-of-breed ideas and practices from the community*

It is based on the principles of:

- ***Planet Scale****: Designed on the same principles that allows Google to run billions of containers a week, Kubernetes can scale without increasing your ops team.*
- ***Never Outgrow****: Whether testing locally or running a global enterprise, Kubernetes flexibility grows with you to deliver your applications consistently and easily no matter how complex your need is.*
- ***Run Anywhere****: Kubernetes is open source giving you the freedom to take advantage of on-premises, hybrid, or public cloud infrastructure, letting you effortlessly move workloads to where it matters to you.*

Kubernetes features:

- **Service discovery and load balancing**: no need to use an unfamiliar service discovery mechanism.
- **Storage Orchestration**: ability to automatically mount storage mechanisms of choice.
- **Automated rollouts and rollbacks**: progressive change rollouts including application health monitoring.
- **Automatic bin packing**: automatically places containers based on resource requirements and other constraints.
- **Batch execution**: manages batch and CI workloads.
- **Service Topology**: Route service traffic based on cluster topology.
- **Self-healing**: manage failed and failing containers and dead nodes.

- **Secret and configuration management**: Deploy and update secrets and application configuration without rebuilding your image and without exposing secrets in your stack configuration.
- **IPv4/IPv6 dual-stack**: Allocate of IPv4 and IPv6 addresses to Pods and Services
- **Horizontal scaling**: Scale applications with simple CLI and/or UI or in automatically in response to CPU usage.