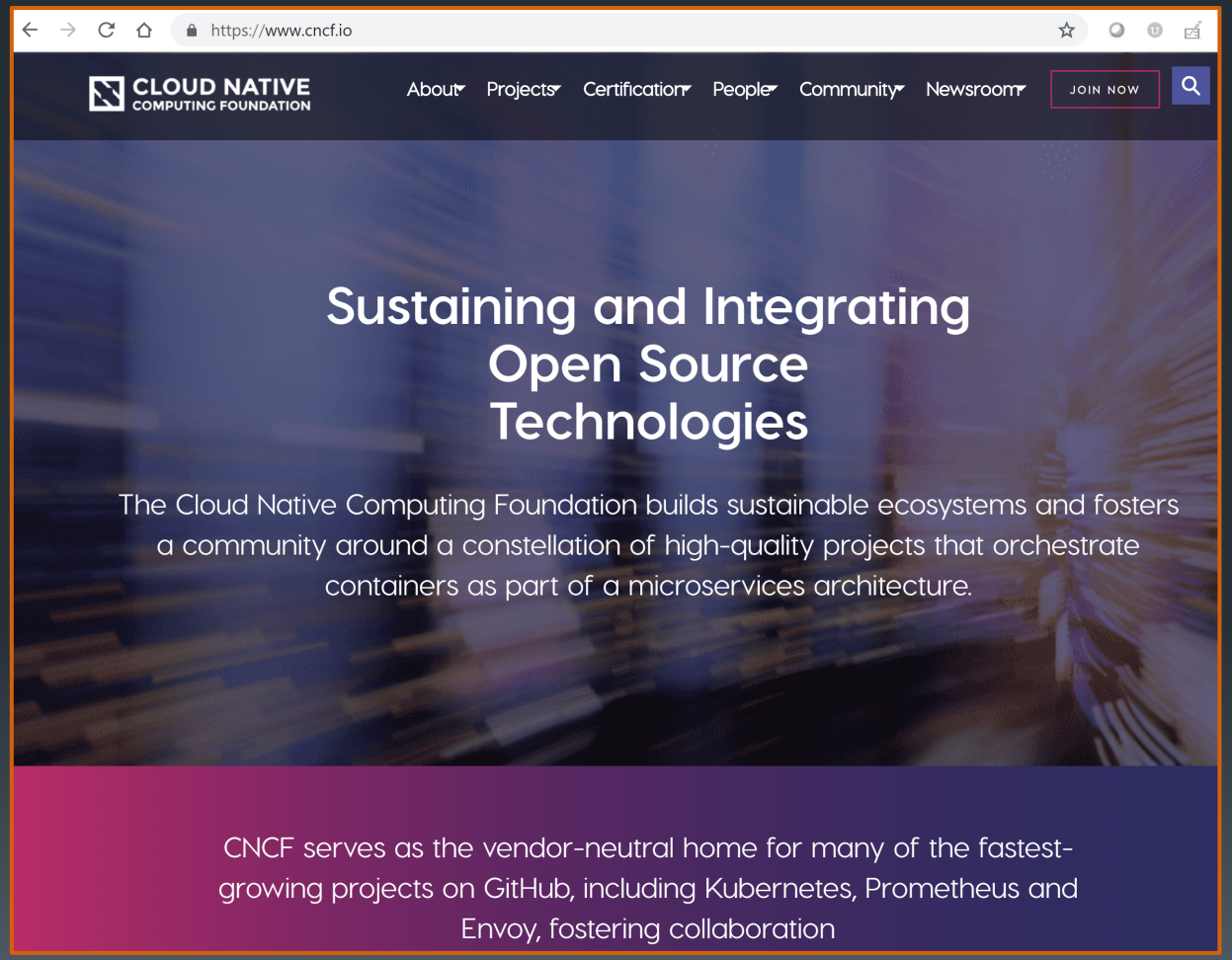
RX-M Cloud Native Consulting

Everything You Need to Know About the CKA and CKAD

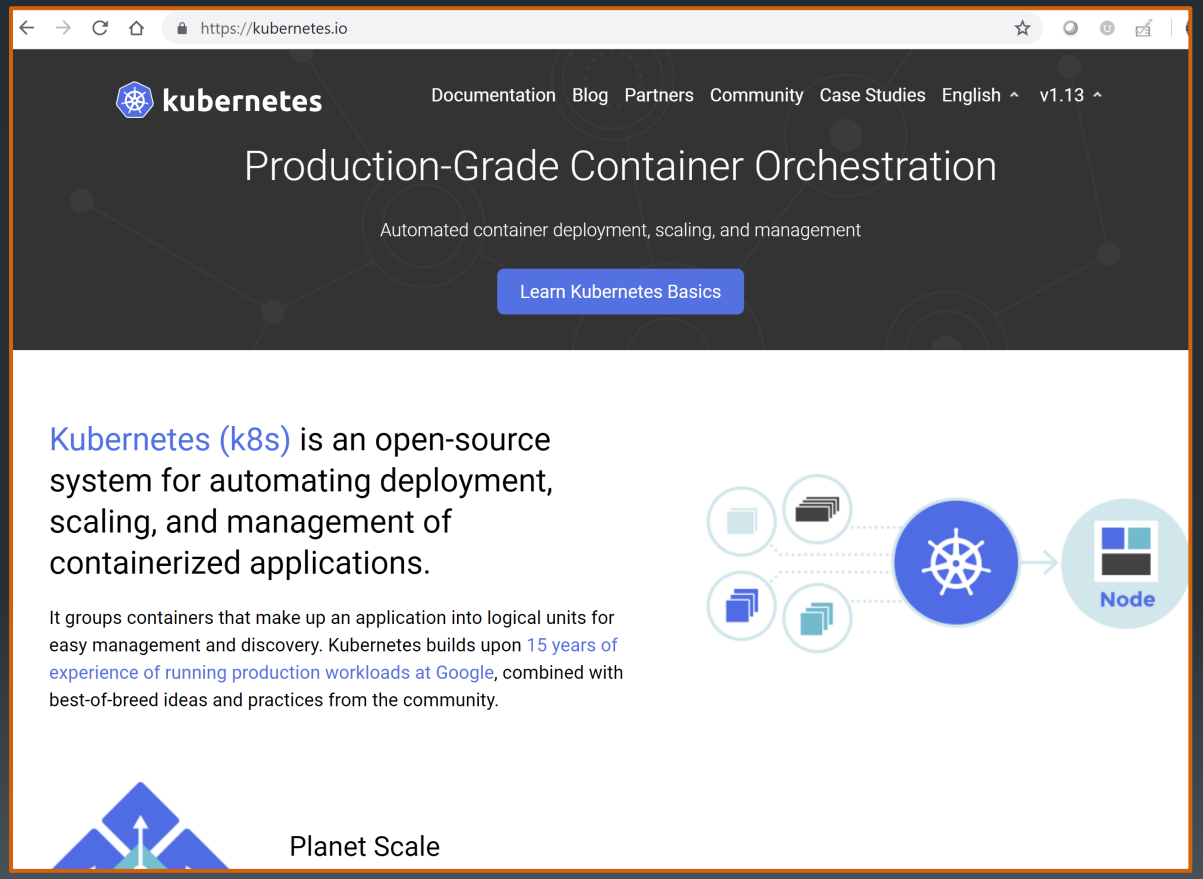
CNCF in review

- Sustaining and Integrating Open Source Technologies
- Build sustainable ecosystems and foster a community around a constellation of high-quality projects that orchestrate containers as part of a microservices architecture



The Growing Importance of Kubernetes

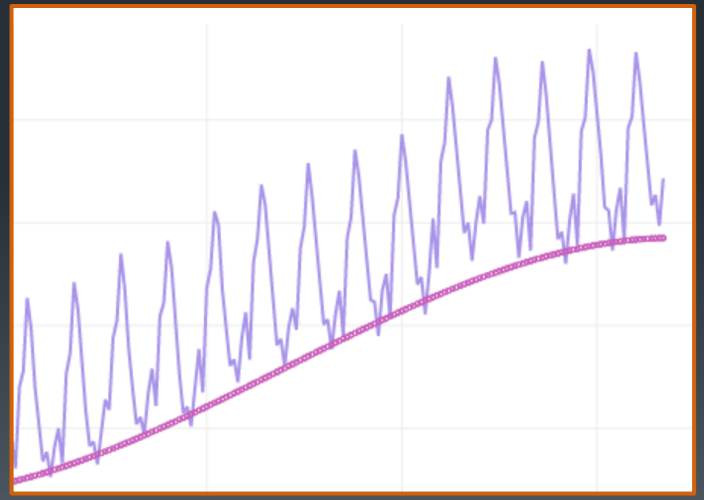
- Kubernetes is the platform upon which a growing number of cloud native solutions are built
  - Hosted Cloud offerings:
    - GKE
    - EKS
    - AKS
    - IKS
    - …
  - Vendor supported PaaS
    - OpenShift
    - PKS
    - …
  - Pure upstream solutions:
    - Rancher
    - …
  - Managed solutions
    - Giant Swarm
    - …



The fastest growing choice for Hybrid and Multicloud

What does certification bring to the table?

- A baseline
  - A minimum standard to which parties can be held
- A rigorous discussion around a system's key concepts
  - What matters most
  - What is in common, the parts everyone can agree on
- A call to action
  - A motivation to learn and a bar to clear



Value Proposition

RX-M Cloud Native Consulting

Individuals

Certification allows Administrators and Developers to prove a level of expertise

Partner Organizations

Certification allows professional services organizations to demonstrating expertise and show dedication to enterprise Kubernetes adoption

Platform Vendors

Certification gives end users confidence that a given Kubernetes product will have a high level of common functionality

Programs

Certified Kubernetes Administrator (CKA) Program
Focuses on the deployment, configuration, and troubleshooting skills required to successfully administer a Kubernetes cluster

Certified Kubernetes Application Developer (CKAD) Program
Focuses on defining application resources and using core primitives to build, monitor, and troubleshoot applications in Kubernetes

Kubernetes Certified Service Provider (KCSP) Program
Partner organizations that offer Kubernetes support, consulting, professional services and training

Certified Kubernetes Conformance Program (CKCP)
Ensures vendor versions of Kubernetes support the required APIs and guarantees interoperability from one Kubernetes installation to the next

CKA / CKAD Exams

Candidates demonstrate their competence by solving a set of **performance-based problems** in a command-line environment that tests their Kubernetes Administrator and Application Developer skills

CKA includes **24** problems
CKAD consists of **19** problems

Online, proctored exam – *take your test from any computer with reliable internet and a webcam (a quiet environment is recommended)*

CKA candidates have **3 hours** to complete the exam
CKAD candidates have **2 hours** to complete the exam

Candidates may use their browser to access information at https://kubernetes.io/docs/ or https://kubernetes.io/blog/

CKA was the first of the programs and currently most popular–more than 3200 registrations for the CKA exam as of Oct 2018

Tests scheduled to move from 1.12 to 1.13 on in Feb 2019

CKA / CKAD Exam Details

How much do the exams cost?
Each exam is $300 USD and include a free retake

What version of Kubernetes is used in the exam?
Quarterly exam updates match Kubernetes releases so that the exam reflects the latest version of Kubernetes

How are the exams proctored?
Remotely via streaming audio, video, and screensharing, allowing proctors to view candidates' desktops

What language(s) are the exams offered In?
The CKA and CKAD exams are currently offered in English only

How are the exams scored?
Scoring is automated and results are emailed within 36 hours from the time that the Exam was completed and

How long is the certification valid?
The certification is valid for 2 years starting on the date the exam is passed

What's on the CKA Exam?

- **Application Lifecycle**: rollouts and rollbacks, scaling - 8%
- **Installation, Configuration & Validation**: HA config, install, infra deploy - 12%
- **Core Concepts**: API primitives, cluster architecture, network primitives - 19%
- **Networking**: Ingress, DNS, Pod/Node net configuration, load balancing - 11%
- **Scheduling**: using labels for scheduling, DaemonSets, schedulers - 5%
- **Security**: authN/authZ, Net Policy, TLS setup - 12%
- **Cluster Maintenance**: cluster upgrades, backup and restore procedures - 11%
- **Logging / Monitoring**: monitor & manage logs for cluster and apps - 5%
- **Storage**: PVs, PVCs, volume access modes - 7%
- **Troubleshooting**: application and cluster failure, net troubleshooting - 10%

There may be more than one way to solve a given problem; with only 7 minutes per question, utilize the quickest solution!

For example, writing manifests from scratch in a foreign command line environment is perilous. Use kubectl run or create to generate a resource, then use kubectl edit or –dry-run -o yaml to have a base manifest generated for you.

What's on the CKAD Exam?

- **Core Concepts**: API primitives & basic Pods - 13%
- **Configuration**: resource requests & limits, SecurityContexts, ConfigMaps, Secrets, ServiceAccounts - 18%
- **Multi-Container Pods**: ambassador, adapter, and sidecar patterns - 10%
- **Observability**: liveness & readiness probes, logging, monitoring - 18%
- **Pod Design**: rollouts & rollbacks, Jobs & CronJobs, metadata (labels, selectors, annotations) - 20%
- **Services & Networking**: Service configs, NetworkPolicies - 13%
- **State Persistence**: PersistentVolumeClaims - 8%

Practice the most efficient techniques for creating, editing, and patching specs

Use imperative commands and flags to avoid yaml

The CKAD only allows 6 minutes per question!

CKA / CKAD Resources

Exam curriculum guides: https://github.com/cncf/curriculum

Certification FAQ: https://www.cncf.io/certification/cka/faq/

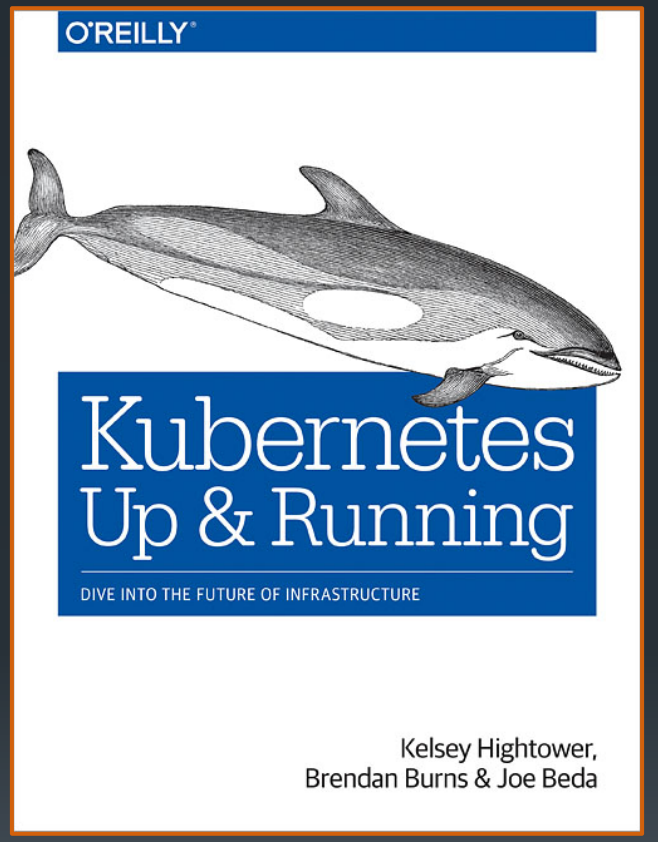
Candidate Handbook: https://www.cncf.io/certification/candidate-handbook

Exam tips: https://www.cncf.io/certification/tips

Kubernetes from Scratch: https://kubernetes.io/docs/setup/scratch/

Kubernetes Up & Running: http://shop.oreilly.com/product/0636920043874.do

Kubernetes the Hard Way:
https://github.com/kelseyhightower/kubernetes-the-hard-way



Katacoda Interactive Browser-Based Scenarios: https://www.katacoda.com/courses/kubernetes

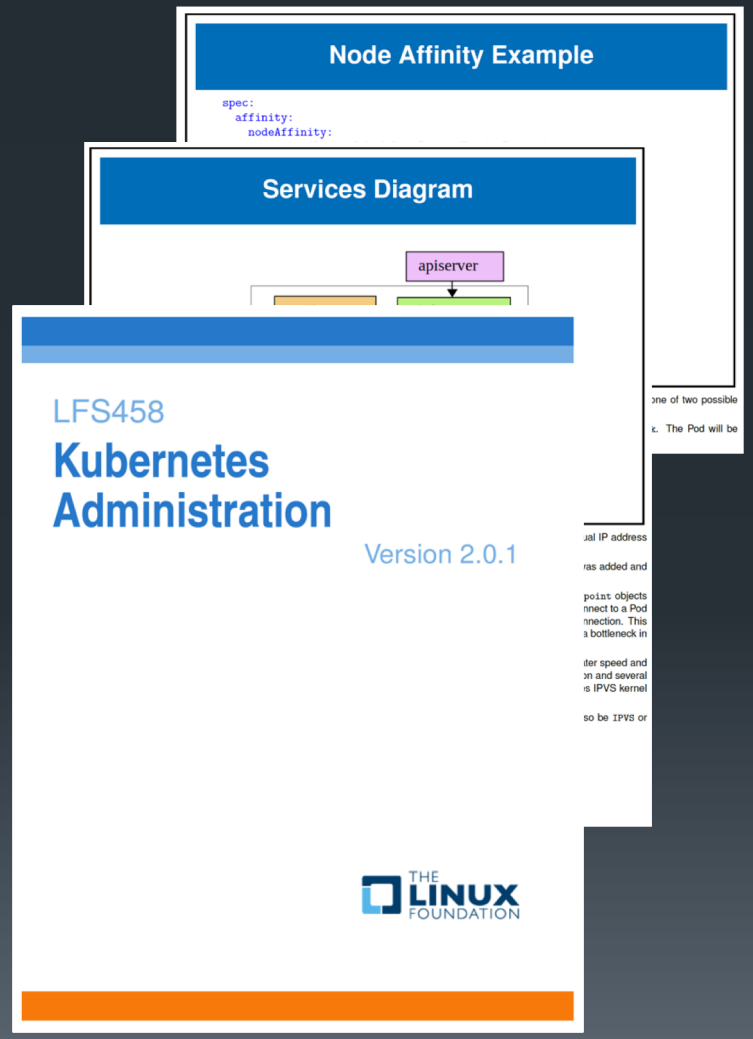
Get Trained!

Introduction to Kubernetes (LFS158) – *free edX course !!*
https://www.edx.org/course/introduction-to-kubernetes#!
Online, self-paced, ~15 hours of content

Kubernetes Fundamentals (LFS258)
https://training.linuxfoundation.org/training/kubernetes-fundamentals/
Online, self-paced, 35 hours of content, including hands-on labs and videos
Includes 12 months of access

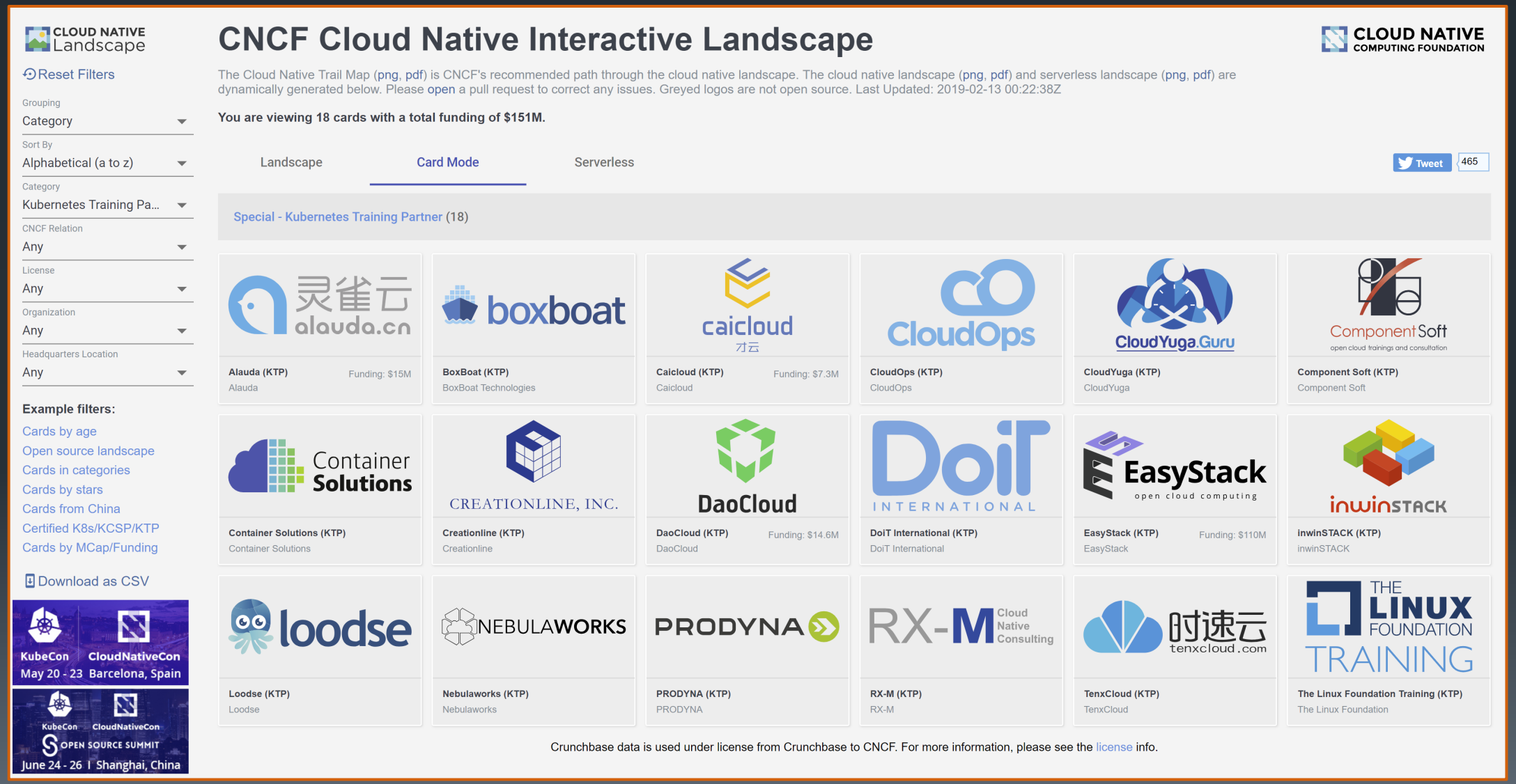
Kubernetes for Developers (LFD259)
https://training.linuxfoundation.org/training/kubernetes-for-developers/
Online, self-paced, 35 hours of content, including hands-on labs and videos
Includes 12 months of access

Kubernetes Administration (LFS458)
https://training.linuxfoundation.org/training/kubernetes-administration/
Instructor-led training delivered online or in-person by Linux Foundation instructors and/or authorized training partners
Designed as preparation for the Kubernetes Certified Administrator Exam



KTPs

landscape.cncf.io



Thank you!

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