How to Create Kubernetes Experts

•••

Supergiant.io

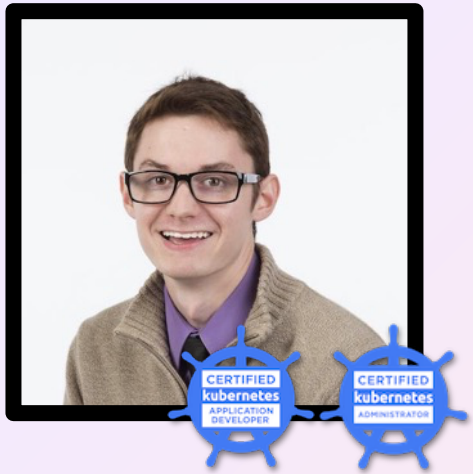
© 2019 Qbox, Inc.

Who Is Supergiant?

26% Certified

Who Are We?

© 2019 Qbox, Inc.



Clarke

Kubernetes Educator

"Do we have to have a quote?"

Aaron

Software Engineer

"Breaking things is a great way to learn about them."

How to Create K8s Experts:

- *What is expertise?*
- Why should you build it?
- How do you build it?
- Conclusion/Resources

Agenda

© 2019 Qbox, Inc.

What is an Expert?

© 2019 Qbox, Inc.

Expertise is:

- More than just experience
- A deep understanding of the subjects supporting your field
    - For example: networking, security, infrastructure, etc.

©2019 Qbox, Inc.

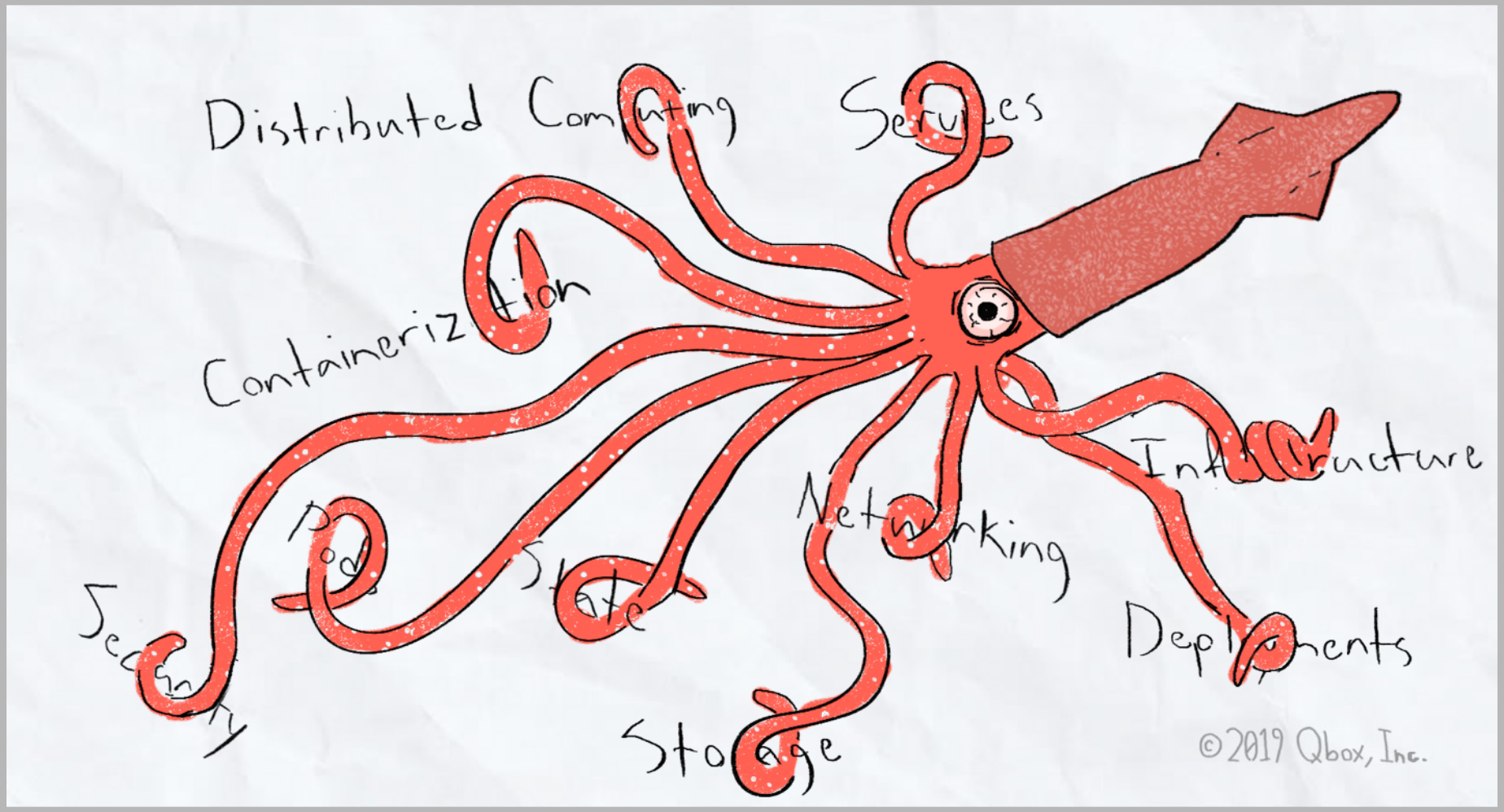
Example: fixing a load balancer

- Experience:
  - I can fix it, because I've memorized the process.
- Expertise:
  - I can fix it, because I understand how it works.

A Flavor of Skill, Not Just a Flattering Title

© 2019 Qbox, Inc.

YOUR COMPANY
K8s
Networking
Containers
SOA
DevOps
Security
- HELP
©2019 Qbox, Inc.


Distributed Computing
Containerization
Networking
Storage
©2019 Qbox, Inc.

How to Create K8s Experts:

- ~~What is expertise?~~
- *Why should you build it?*
- How do you build it?
- Conclusion/Resources

Agenda

© 2019 Qbox, Inc.

Experts are Unicorns

© 2019 Qbox, Inc.

The Hiring Challenge:

- Kubernetes is still new
  - Experts are still rare
- Qualified hires are expensive
  - 100,000 to 200,000 USD
- But...

Anyone Can Create an Expert

How to Create K8s Experts:

- ~~What is expertise?~~
- ~~Why should you build it?~~
- *How do you build it?*
- Conclusion/Resources

Agenda

© 2019 Qbox, Inc.

K8S ADVENTURES

©2019 Qbox, Ink.

BORK

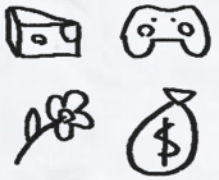
Manager

Likes

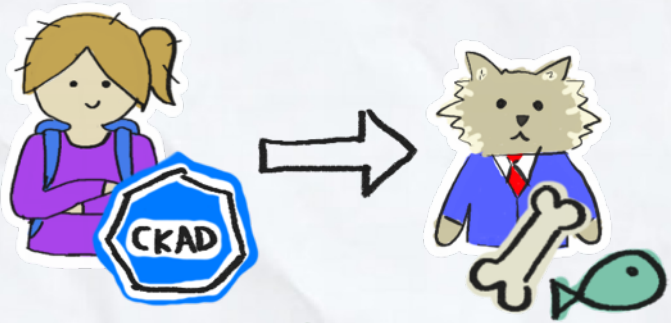
STEVIE

Trainee

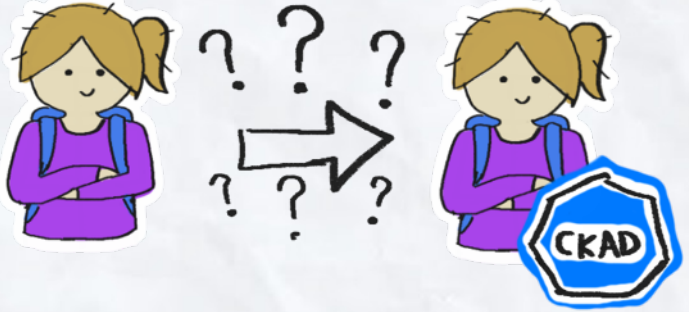
Likes



©2019 Qbox, Ink.



THE GOAL



THE PROBLEM

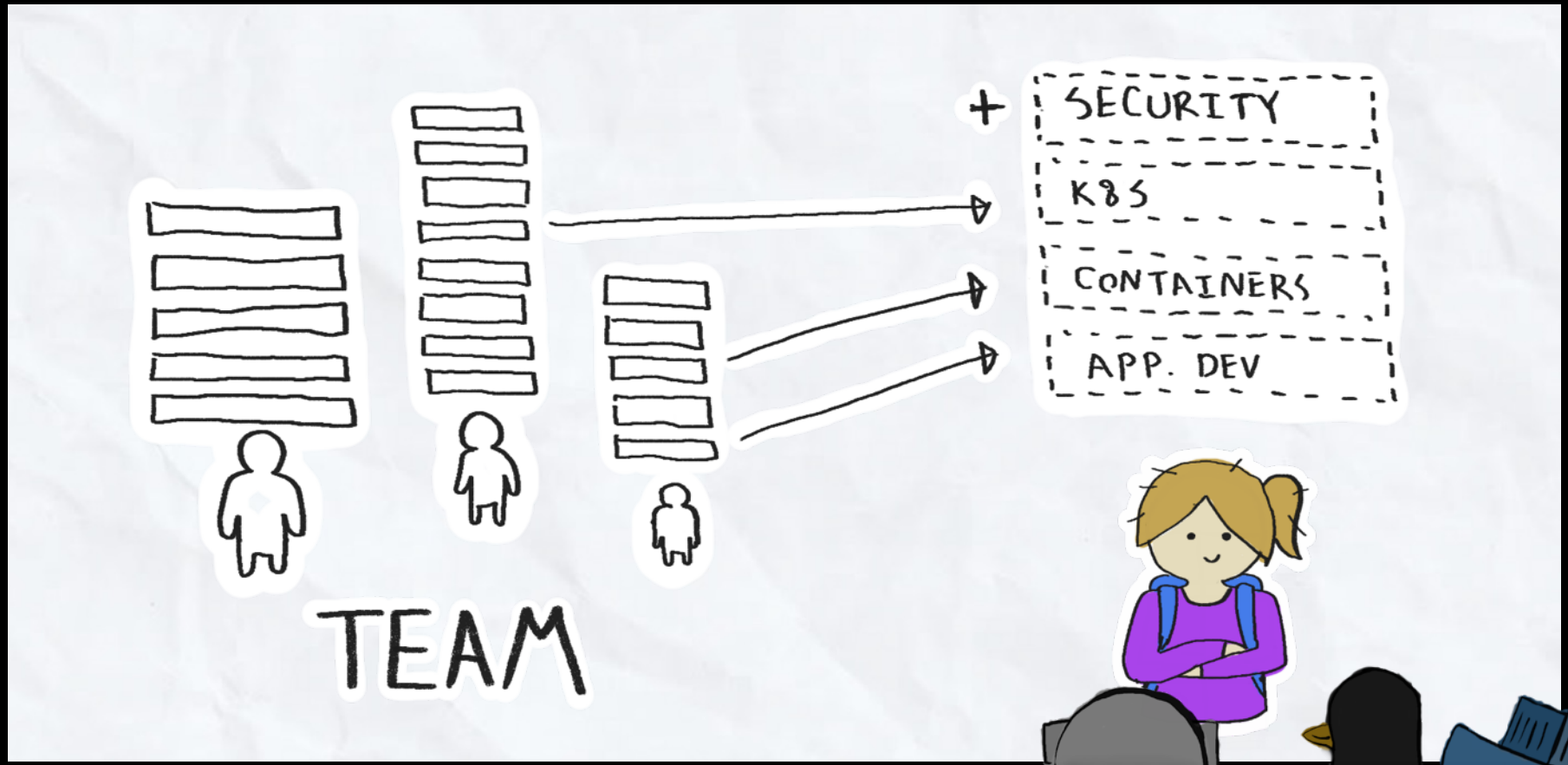
©2019 Qbox, Ink.

Svoling the Porblem

© 2019 Qbox, Inc.

Bork needs an understanding of:

- K8s and its ecosystem
- The vision of the company
    - How the company is using K8s to achieve that vision
- (Make sure to communicate!)



©2019 Qbox, Ink.

SECURITY

K8S

CONTAINERS

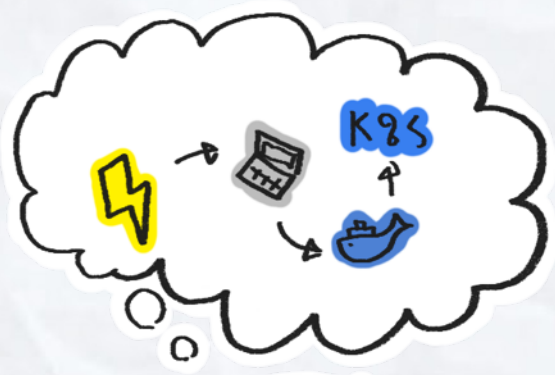
APP. DEV

DOCKER ?

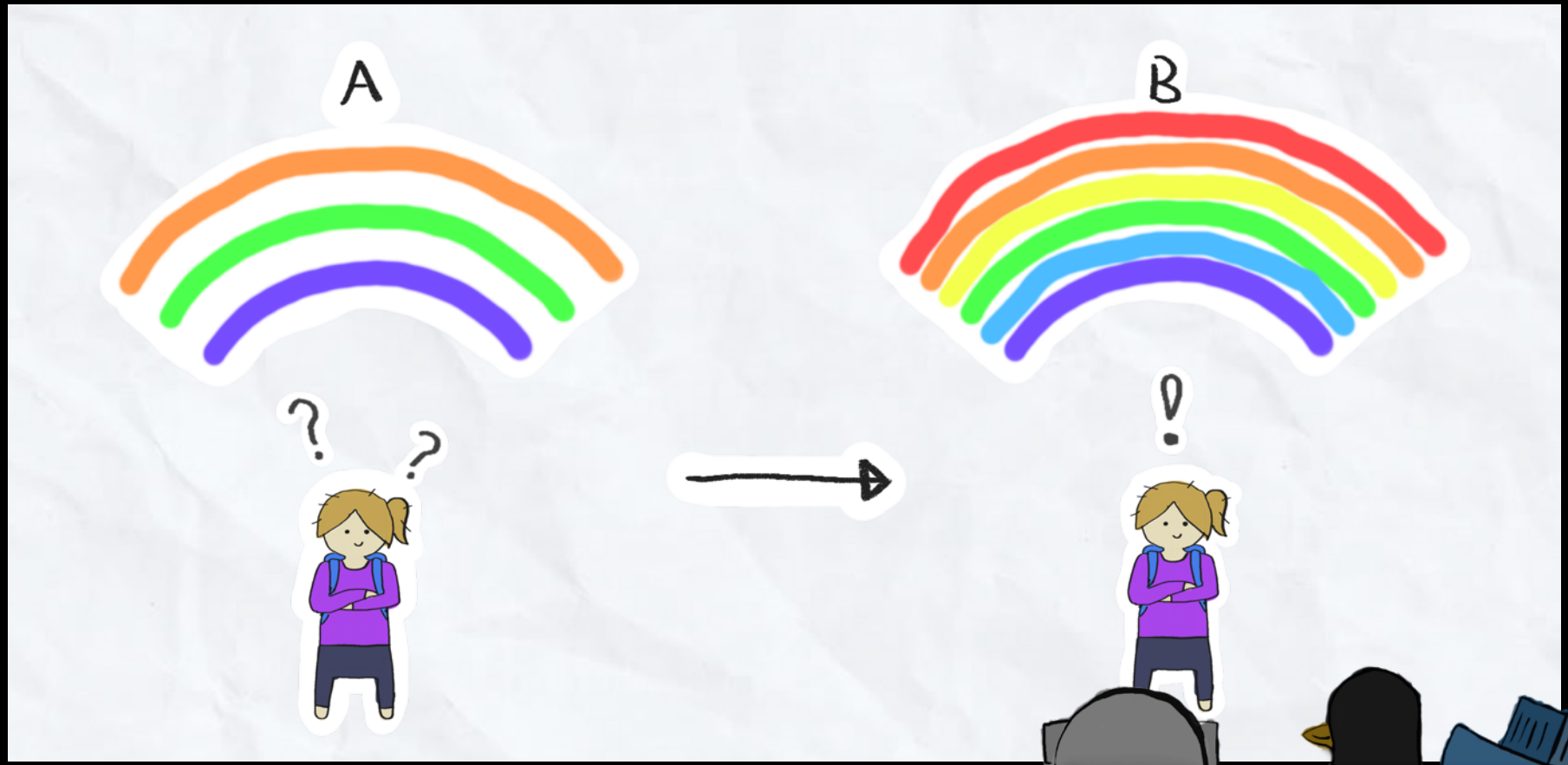
CONTAINERS ?

LINUX ?

PROCESSES ?



©2019 Qbox, Ink.



©2019 Qbox, Ink.

Stevie:

- Wants to take pride in her job
- Wants to contribute to the company and be valuable
    - Would prefer to apply knowledge to real projects

Perspective

© 2019 Qbox, Inc.

Bork:

- Is overseeing someone's development for the first time
- Knows that learning a new profession can take a while

How to get from A to B?

- For each layer, Stevie needs to know “what, why, and how"
  - What is a container?
  - Why are they useful?
  - How do they work?

Things Change!

© 2019 Qbox, Inc.

Plan only the next steps:

- 6 months ahead is too far
- Plan where to get *started*
    - Then provide guidance *throughout* the process

Pick A Project

© 2019 Qbox, Inc.

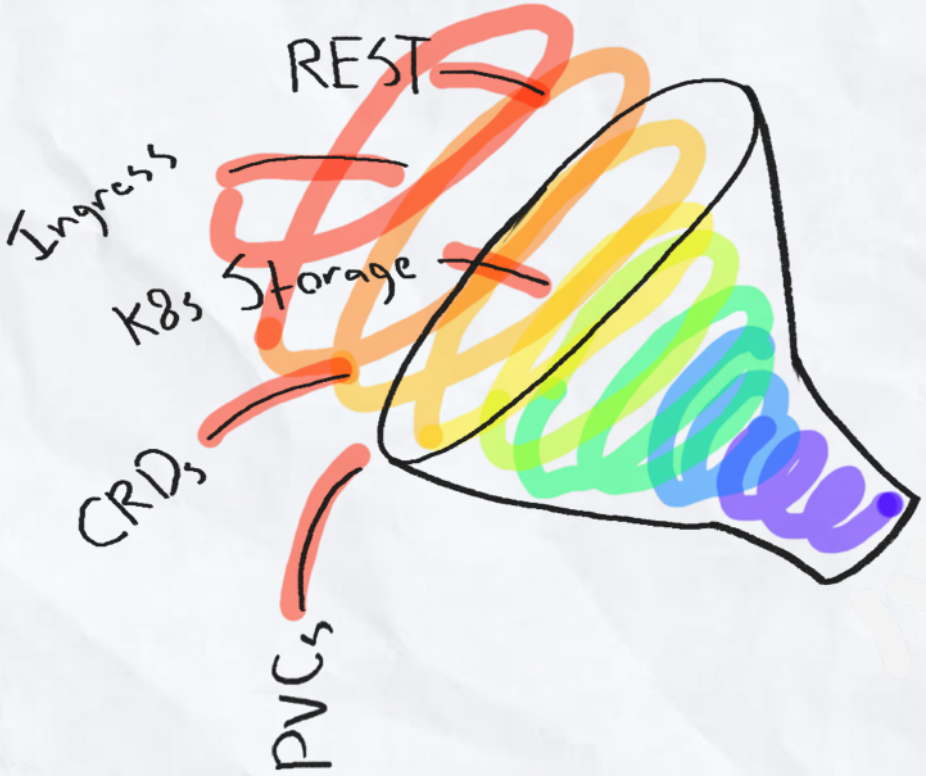
Answer “what, why & how,” and:

- Give trainees practical and real-world experience
  - Stevie's first layer is Docker.
  - Stevie can develop apps.
  - Have her containerize one!

Getting to work

- Stevie started work on her programming project
- Stevie read through tutorials and articles to set up Docker
- Stevie ran into issues with volume mounting
- Bork gave Stevie examples of correctly mounting volumes
- Stevie had issues getting image into Dockerhub
- 🦴 Bork halp
- Stevie had a functioning image

The Execution



©2019 Qbox, Ink.

Iteration: Iteration: Iteration

- Did any problems occur from last project the trainee had a hand in?
- Can they reliably transfer their knowledge to someone else?
- Can the trainee pass the CKA or CKAD?

?s to Ask Yourself

© 2019 Qbox, Inc.

How to Create K8s Experts:

- ~~What is expertise?~~
- ~~Why should you build it?~~
- ~~How do you build it?~~
- *Conclusion/Resources*

Agenda

© 2019 Qbox, Inc.

Courses:

- katacoda.com/courses/docker
- ryanstutorials.net/linuxtutorial/
- kubernetesbyexample.com/
- katacoda.com/courses/kubernetes
- magicsandbox.io/
- classroom.udacity.com/courses/ud615
- edx.org/course/introduction-to-kubernetes

Resources We Like

Courses (continued):

- tutorialspoint.com/data_communication_computer_network/
- khanacademy.org/computing/computer-science/internet-intro

Treasure Trove:

- docs.google.com/spreadsheets/d/10NltoF_6y3mBwUzQ4bcQLQfCE1BWSgUDcJXy-Qp2JEU/

Videos:

- https://www.youtube.com/playlist?list=PLvmPtYZtoXOENHJiAQc6HmV2jmuexKfrJ

Resources We Like

Videos (continued):

- youtube.com/watch?v=8SvQqZNP6uo

Books:

- shop.oreilly.com/product/0636920064947.do
- shop.oreilly.com/product/0636920043874.do

Guides:

- github.com/kelseyhightower/docker-kubernetes-tls-guide
- github.com/kelseyhightower/intro-to-kubernetes-workshop
- github.com/kelseyhightower/kubernetes-the-hard-way

Resources We Like

Guides (continued):

- github.com/aws-samples/aws-workshop-for-kubernetes
- github.com/hardening-kubernetes/from-scratch
- deis.com/blog/2016/kubernetes-illustrated-guide/

Misc. Articles:

- kamalmarhubi.com/blog/2015/08/27/what-even-is-a-kubelet/
- kamalmarhubi.com/blog/2015/09/06/kubernetes-from-the-ground-up-the-api-server/
- kamalmarhubi.com/blog/2015/11/17/kubernetes-from-the-ground-up-the-scheduler/

Resources We Like

Misc. Articles (continued):

- blog.heptio.com/how-heptio-engineers-ace-the-certified-kubernetes-administrator-exam-93d20af32557
- medium.com/@anne_e_currie/kubernetes-aws-networking-for-dummies-like-me
- thenewstack.io/hackers-guide-kubernetes-networking/
- jvns.ca/blog/2016/12/22/container-networking/
- jvns.ca/blog/2017/10/10/operating-a-kubernetes-network/

Resources We Like

Supergiant University offers on-site and online Kubernetes training courses that match the experience and needs of your team.

Foundational page 3

Requires little to no experience with Kubernetes (or associated technologies).

Intermediate pages 4-5

Requires familiarity with related aspects of Kubernetes (or associated technologies).

Advanced pages 6-7

Requires advanced experience with related aspects of Kubernetes (or associated technologies).

The Supergiant Kubernetes training courses are delivered by experts in Cloud Native, Microservices, CI/CD, DevOps culture and, of course, Kubernetes. Our trainers also hold CKA and CKAD certifications from The Linux Foundation and CNCF.

K8S 331

Monitoring, Logging, and Disaster Planning

This track provides a workshop where participants will learn how to prepare for and mitigate disasters, and how to troubleshoot clusters and applications. Participants will also get hands-on setting up a monitoring, logging, and alerting stack, utilizing several technologies to do so.

The goal is learning how to provide meaningful alerting and troubleshooting data. Simulated problems will test participants' understanding of principles and practices for disaster planning, including runbooks and documentation.

Course Length: 2 days
Contact us for pricing

K8S 411 + K8S 421

CKA / CKAD Bootcamps

The goal for each of these tracks is to assess the skill level of participants on the topics covered in the exam, to walk participants through simulated hands-on examples of the questions, and to provide tips for passing the CKA or CKAD exam.

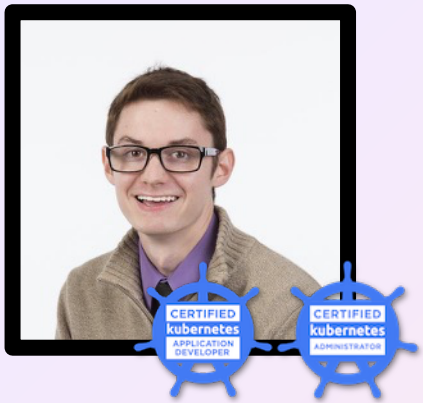
Participants will go through a period of assessment regarding the official exam curriculum, and they will then be given tips for strengthening their individual weaknesses. In addition, multiple portions of the exam will be simulated, allowing participants to experience what taking the exam will actually be like.

Course Length: 1 day per track
Contact us for pricing

supergiant.io/training/

See us at: supergiant.io

© 2019 Qbox, Inc.



Clarke

clarke@supergiant.io
GitHub: TheKLARKEN
Twitter: @theklarken

Aaron

aaron@supergiant.io
GitHub: aaronteague
Slack: supergiantio.slack.com