

CKA Study Group - References and Agendas (Cohort 2)

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We will use this as a tentative guide for our discussions.

A note from CKA Udemy Course author, Mumshad

Changes in the CKA Exam

Linux Foundation [recently announced](#) changes to the CKA exam curriculum which will go into effect 1st of September 2020. There are some changes to the curriculum as well. However, they are not very different from what we cover already in our courses. There seems to be more emphasis on troubleshooting activities and one or two new topics. Any additional topic required for the new version of exam will be updated in the upcoming months.

Important Instructions: CKA and CKAD

- [Suggested pre-requisites/refreshers:](#)
 - [Study Group Tentative Agenda:](#)
 - [Domains & Competencies. \(as of Sept 1, 2020\)](#)
 - [Domains & Competencies. \(prior to Sept 1, 2020\)](#)
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Suggested pre-requisites/refreshers:

- Basic Docker knowledge
 - Creating and running containers
 - <https://app.pluralsight.com/library/courses/docker-kubernetes-big-picture/table-of-contents>
 - Linux administration
 - Networking / DNS
 - Sudo / ssh
 - Systemd / daemon management - <https://www.linode.com/docs/quick-answers/linux-essentials/>
 - Bash/VI/YAML
 - Editing yaml files
 - Command line basics - <https://app.pluralsight.com/library/courses/introduction-bash-shell-linux-mac-os/table-of-contents>
 - VI - <https://ryanstutorials.net/linuxtutorial/vi.php>
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Study Group Tentative Agenda:

Sept 17 - Section 2: Core Concepts

- Review Cluster Architecture and
- Review Pods, ReplicaSets, Deployments and Services

Sept 24- Section 3 & 4: Scheduling/Logging & Monitoring

- Review taints and tolerations, static pods, daemon sets

Oct 1 - Section 5: Application Lifecycle Management

- Review rolling updates, secrets, init containers

Oct 8 - Section 6: Cluster Maintenance

- Review upgrades, backup and restore

Oct 15 - Section 7 & 8: Security / Storage

- Review RBAC, cluster roles and bindings, pv and pvc

Oct 22 - Section 9: Networking

- Review Ingress, service networking

Oct 29 - Networking

- Review Ingress, service networking

Nov 5 - Section 10 & 11: Kubernetes the Hard Way and Kubeadm

- Review deploying cluster via kubeadm

Nov 5 - Section 12 & 13: End to End Tests / Troubleshooting

- Review application failure, worker node failure, control plane failure

Nov 19 - Section 15 & 16: Lightning Labs / Mock Exams

Domains & Competencies. (as of Sept 1, 2020)

The CKA Certification focuses on the skills required to be a successful Kubernetes Administrator in industry today. The CKA Certification exam includes these general domains and their weights on the exam:

- Application Architecture, Installation & Configuration – 25%
- Services & Networking – 20%
- Workloads & Scheduling – 15%
- Storage – 10%
- Troubleshooting – 30%

Cluster Architecture, Installation & Configuration – 25%

- Manage role based access control (RBAC)
- Use Kubeadm to install a basic cluster
- Manage a highly-available Kubernetes cluster
- Provision underlying infrastructure to deploy a Kubernetes cluster
- Perform a version upgrade on a Kubernetes cluster using Kubeadm
- Implement etcd backup and restore

Services & Networking – 20%

- Understand host networking configuration on the cluster nodes
- Understand connectivity between Pods
- Understand ClusterIP, NodePort, LoadBalancer service types and endpoints
- Know how to use Ingress controllers and Ingress resources
- Know how to configure and use CoreDNS
- Choose an appropriate container network interface plugin

Troubleshooting – 30%

- Evaluate cluster and node logging
- Understand how to monitor applications
- Manage container stdout & stderr logs
- Troubleshoot application failure
- Troubleshoot cluster component failure
- Troubleshoot networking

Workloads & Scheduling – 15%

- Understand deployments and how to perform rolling update and rollbacks
- Use ConfigMaps and Secrets to configure applications
- Know how to scale applications
- Understand the primitives used to create robust, self-healing, application deployments
- Understand how resource limits can affect Pod scheduling
- Awareness of manifest management and common templating tools

Storage – 10%

- Understand storage classes, persistent volumes
- Understand volume mode, access modes and reclaim policies for volumes
- Understand persistent volume claims primitive
- Know how to configure applications with persistent storage