Linux Foundation KCSA試験の準備方法｜100％合格率のKCSA日本語受験教科書試験｜効率的なLinux Foundation Kubernetes and Cloud Native Security Associate赤本合格率

ちなみに、GoShiken KCSAの一部をクラウドストレージからダウンロードできます：https://drive.google.com/open?id=1CGJ8OtgOllW49brjJCFXOBmLQ9CP-I63

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>> KCSA日本語受験教科書 <<

試験の準備方法-実際的なKCSA日本語受験教科書試験-実用的なKCSA赤本合格率

テスト志向の高品質なKCSA試験問題があなたにとって最良の選択であると信じています。すべての受験者がKCSA試験に合格し、KCSA準備ガイドの多大なメリットを享受できることを心から願っています。 KCSA試験問題の合格率は99％～100％です。受験者がKCSA試験に合格できるようにすることは、当社の文化において常に長所であり、購入および使用のプロセスでメールで連絡を取ることができます。できるだけ早く返信いたします。

Linux Foundation KCSA 認定試験の出題範囲：

トピック	出題範囲
トピック 1	• Overview of Cloud Native Security: This section of the exam measures the skills of a Cloud Security Architect and covers the foundational security principles of cloud-native environments. It includes an understanding of the 4Cs security model, the shared responsibility model for cloud infrastructure, common security controls and compliance frameworks, and techniques for isolating resources and securing artifacts like container images and application code.

トピック 2	• Kubernetes Security Fundamentals: This section of the exam measures the skills of a Kubernetes Administrator and covers the primary security mechanisms within Kubernetes. This includes implementing pod security standards and admissions, configuring robust authentication and authorization systems like RBAC, managing secrets properly, and using network policies and audit logging to enforce isolation and monitor cluster activity.
トピック 3	• Platform Security: This section of the exam measures the skills of a Cloud Security Architect and encompasses broader platform-wide security concerns. This includes securing the software supply chain from image development to deployment, implementing observability and service meshes, managing Public Key Infrastructure (PKI), controlling network connectivity, and using admission controllers to enforce security policies.
トピック 4	• Kubernetes Threat Model: This section of the exam measures the skills of a Cloud Security Architect and involves identifying and mitigating potential threats to a Kubernetes cluster. It requires understanding common attack vectors like privilege escalation, denial of service, malicious code execution, and network-based attacks, as well as strategies to protect sensitive data and prevent an attacker from gaining persistence within the environment.
トピック 5	• Kubernetes Cluster Component Security: This section of the exam measures the skills of a Kubernetes Administrator and focuses on securing the core components that make up a Kubernetes cluster. It encompasses the security configuration and potential vulnerabilities of essential parts such as the API server, etcd, kubelet, container runtime, and networking elements, ensuring each component is hardened against attacks.

Linux Foundation Kubernetes and Cloud Native Security Associate 認定 KCSA 試験問題 (Q40-Q45):

質問 # 40
Which label should be added to the Namespace to block any privileged Pods from being created in that Namespace?

- A. pod-security.kubernetes.io/enforce: baseline
- B. privileged: true
- C. pod.security.kubernetes.io/privileged: false
- D. privileged: false

正解：A

解説：
* KubernetesPod Security Admission (PSA)enforcesPod Security Standardsby applying labels on Namespaces.
* Exact extract (Kubernetes Docs - Pod Security Admission):
* "You can label a namespace with pod-security.kubernetes.io/enforce: baseline to enforce the Baseline policy."
* Thebaselineprofile explicitly disallowsprivileged podsand other unsafe features.
* Why others are wrong:
* A & D: These labels do not exist in Kubernetes.
* B: Setting privileged: true would allow privileged pods, not block them.
References:
Kubernetes Docs - Pod Security Admission: https://kubernetes.io/docs/concepts/security/pod-security- admission/ Kubernetes Docs - Pod Security Standards: https://kubernetes.io/docs/concepts/security/pod-security- standards/

質問 # 41
Is it possible to restrict permissions so that a controller can only change the image of a deployment (without changing anything else about it, e.g., environment variables, commands, replicas, secrets)?

- A. Not with RBAC, but it is possible with an admission webhook.
- B. Yes, with a 'managed fields' annotation.
- C. No, because granting access to the spec.containers.image field always grants access to the rest of the spec object.
- D. Yes, by granting permission to the /image subresource.

正解：A

解説：
* RBAC in Kubernetesis coarse-grained: it controlsverbs(get, update, patch, delete) onresources(e.g., deployments), butnot individual fieldswithin a resource.
* There isno /image subresource for deployments(there is one for pods but only for ephemeral containers).
* Therefore,RBAC cannot restrict changes only to the image field.
* Admission Webhooks(mutating/validating)canenforce fine-grained policies (e.g., deny updates that change anything other than spec.containers[*].image).
* Exact extract (Kubernetes Docs - Admission Webhooks):
* "Admission webhooks can be used to enforce custom policies on objects being admitted." References:
Kubernetes Docs - RBAC: https://kubernetes.io/docs/reference/access-authn-authz/rbac/ Kubernetes Docs - Admission Webhooks: https://kubernetes.io/docs/reference/access-authn-authz
/extensible-admission-controllers/

質問 # 42
What is the difference between gVisor and Firecracker?

- A. gVisor and Firecracker are two names for the same technology, which provides isolation and security for containers.
- B. gVisor is a user-space kernel that provides isolation and security for containers. At the same time, Firecracker is a lightweight virtualization technology for creating and managing secure, multi-tenant container and function-as-a-service (FaaS) workloads.
- C. gVisor is a lightweight virtualization technology for creating and managing secure, multi-tenant container and function-as-a-service (FaaS) workloads. At the same time, Firecracker is a user-space kernel that provides isolation and security for containers.
- D. gVisor and Firecracker are both container runtimes that can be used interchangeably.

正解：B

解説：
* gVisor:
* Google-developed, implemented as auser-space kernelthat intercepts and emulates syscalls made by containers.
* Providesstrong isolationwithout requiring a full VM.
* Official docs: "gVisor is a user-space kernel, written in Go, that implements a substantial portion of the Linux system call interface."
* Source: https://gvisor.dev/docs/
* Firecracker:
* AWS-developed,lightweight virtualization technologybuilt on KVM, used in AWS Lambda and Fargate.
* Optimized for running secure, multi-tenant microVMs (MicroVMs) for containers and FaaS.
* Official docs: "Firecracker is an open-source virtualization technology that is purpose-built for creating and managing secure, multi-tenant container and function-based services."
* Source: https://firecracker-microvm.github.io/
* Key difference:gVisor # syscall interception in userspace kernel (container isolation). Firecracker # lightweight virtualization with microVMs (multi-tenant security).
* Therefore, optionAis correct.
References:
gVisor Docs: https://gvisor.dev/docs/
Firecracker Docs: https://firecracker-microvm.github.io/

質問 # 43
Which of the following snippets from a RoleBinding correctly associates user bob with Role pod-reader ?

- A. subjects:
  - kind: User
  name: bob
  apiGroup: rbac.authorization.k8s.io
  roleRef:
  kind: ClusterRole
  name: pod-reader
  apiGroup: rbac.authorization.k8s.io

- B. subjects:
  - kind: Group
  name: bob
  apiGroup: rbac.authorization.k8s.io
  roleRef:
  kind: Role
  name: pod-reader
  apiGroup: rbac.authorization.k8s.io
- C. subjects:
  - kind: User
  name: pod-reader
  apiGroup: rbac.authorization.k8s.io
  roleRef:
  kind: Role
  name: bob
  apiGroup: rbac.authorization.k8s.io
- D. subjects:
  - kind: User
  name: bob
  apiGroup: rbac.authorization.k8s.io
  roleRef:
  kind: Role
  name: pod-reader
  apiGroup: rbac.authorization.k8s.io

正解：D

解説：
Kubernetes RBAC usesRoleBindingto grant permissions defined in aRoleto asubject(user, group, or service account) within a namespace. The official example shows binding user jane to Role pod-reader:
"A RoleBinding grants the permissions defined in a Role to a user or set of users...." Example:
subjects:
- kind: User
name: jane
apiGroup: rbac.authorization.k8s.io
roleRef:
kind: Role
name: pod-reader
apiGroup: rbac.authorization.k8s.io
- Kubernetes docs, RBAC: RoleBinding and ClusterRoleBinding
OptionBmatches this pattern exactly, with name: bob as theUsersubject and roleRef pointing to theRole named pod-reader.
* Aswaps the names (subject is pod-reader, role is bob) # incorrect.
* Creferences aClusterRole, not aRole(the question asks for Role).
* Duses kind: Group even though we need theUserbob.
References:
Kubernetes Docs - Using RBAC Authorization #RoleBinding and ClusterRoleBinding: https://kubernetes.io
/docs/reference/access-authn-authz/rbac/#rolebinding-and-clusterrolebinding

質問 # 44
In a cluster that contains Nodes withmultiple container runtimesinstalled, how can a Pod be configured to be created on a specific runtime?

- A. By specifying the container runtime in the Pod's YAML file.
- B. By setting the container runtime as an environment variable in the Pod.
- C. By modifying the Docker daemon configuration.
- D. By using a command-line flag when creating the Pod.

正解：A

解説：

* Kubernetes supportsmultiple container runtimeson a node via theRuntimeClassresource.
* To select a runtime, you specify the runtimeClassName field in thePod's YAML manifest. Example:
* apiVersion: v1
* kind: Pod
* metadata:
* name: example
* spec:
* runtimeClassName: gvisor
* containers:
* - name: app
* image: nginx
* Incorrect options:
* (A) You cannot specify container runtime through a kubectl command-line flag.
* (B) Modifying the Docker daemon config does not direct Kubernetes Pods to a runtime.
* (C) Environment variables inside a Pod spec do not control container runtimes.
References:
Kubernetes Documentation - RuntimeClass
CNCF Security Whitepaper - Workload isolation via different runtimes (e.g., gVisor, Kata) for enhanced security.

質問 # 45
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