EXAM BLUEPRINT GUIDE

Nutanix Certified Professional Cloud Native (NCP-CN) 6.10 Beta Exam

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1. The Exam

1.1 Purpose of Exam

The Nutanix Certified Professional - Cloud Native (NCP-CN) 6.10 beta exam will measure a candidate's ability to deploy, configure, optimize, troubleshoot, and perform administrative tasks on a Nutanix Kubernetes Platform (NKP) cluster. Successful candidates demonstrate mastery of these skills and abilities.

1.2 Number of Questions

The NCP-CN 6.10 beta exam consists of 109 multiple-choice and multiple-response questions.

1.3 Pricing

There is no cost for the NCP-CN 6.10 beta exam.

1.4 Passing Score

The final score will be determined by examining the results from the beta exam period, determining which exam items performed well, and evaluating each candidate's results, based on only the items that performed well.

This process can take from 4-6 weeks from the time the beta period has ended. Once the evaluation is complete, candidates will receive their scores. Candidates who have passed will not need to take the live exam.

1.5 How Objectives Relate to Questions on the Exam

Objectives summarize what the test is designed to measure. Objectives are developed by Exam Developers and Subject Matter Experts based on identified tasks that relate to the job of deploying, configuring, optimizing, troubleshooting, and performing administrative tasks on a Nutanix Kubernetes Platform (NKP) cluster.

Once the initial development process is complete, these objectives are verified using an external group of individuals in the actual job role. Finally, a number of questions is determined for each objective, which relates directly to the criticality of the task in the job role.

1.6 Languages

The beta exam is available in English.

1.7 Time Limit

The time limit for the beta exam is 180 minutes.

1.8 Scheduling and Taking the Exam

The NCP-CN 6.10 beta exam is delivered via remote proctoring or in-person at select test centers.

If you select remote proctoring, after registering for the exam and providing valid identification, you will receive information on how to take the exam from your location using a web browser. Because the exam is remote proctored, you will be provided with a locked down, monitored, secure exam experience.

If you select in-person testing, you will be able to select a test center near you. On the day of the exam, you will need to arrive at the test center 15 minutes prior to the exam start time with a valid government-issued ID.

1.9 Certification Tracks

The NCP-CN 6.10 beta exam is a core component of the Nutanix Cloud Native track. Passing this exam results in achieving the NCP-CN 6 certification.

The certification requires a passing score on the exam. While it is not required that you attend a course, Nutanix provides training that covers the objectives on the exam. Details on the recommended training course are provided in Section 4.

1.10 Retake Policy

If a candidate fails an exam on the first attempt, he or she is allowed two additional attempts. There is a seven-day waiting period between attempts. Like the first attempt, these are paid for individually and Nutanix recommends that you allow sufficient time between attempts to be properly prepared and to maximize your chances for success.

Please note: After three attempts, you will be unable to take the exam for 60 days, after which you can email university@nutanix.com and request that your attempts are reset. Nutanix recommends you utilize the time to thoroughly review this guide and the related references and/or take the recommended training for this exam.

1.11 Exam Security

Nutanix reserves the right to refuse certifying a candidate who violates exam security policies. This includes copying and redistribution of exam material, using any type of study material during the exam itself, attempting to photograph exam items and taking an exam using a false identity. Your identity is captured as part of the exam registration process and must be validated before you will be allowed to take the exam.

1.12 Recertification

Once you have passed the Nutanix Certified Professional – Cloud Native 6.10 beta exam and achieved the NCP-CN 6 certification, it will remain valid for two years.

To maintain your certification status, you must either renew your existing certification, pass an equivalent NCP-level exam within another certification track, or pass the NCM-MCI exam.

1.13 Benefits of Certification

- Digital badge from Credly that you can share on social media
- Access to the Certification store at http://store.nutanix.com for shirts, mugs, and more
- Opportunity to participate as a SME to develop future exams
- Discount on attending Nutanix .NEXT

2. Intended Audience

A candidate for the NCP-CN 6.10 exam and NCP-CN 6 certification has at least 6-12 months of building and managing Kubernetes clusters, 6-12 months of working with Linux, and 6 months of experience with a Kubernetes platform.

The successful candidate should have foundational knowledge about the target platforms, an understanding of basic networking and basic cloud native concepts and should possess a Certified Kubernetes Administrator (CKA) certification level of knowledge.

Successful candidates are typically DevOps Engineers, Cloud Engineers, NKP Administrators, Platform Administrators, or Platform Engineers. They may also be Solution Architects, Developers, Systems Engineers, or Systems Reliability Engineers.

Finally, the successful candidate will most likely have taken training courses, such as the Nutanix Kubernetes Platform Administration (NKPA) course.

3. Objectives Covered in the NCP-CN 6.10 Beta Exam

3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary to deploy, configure, optimize, troubleshoot, and perform administrative tasks on a Nutanix Kubernetes Platform (NKP) cluster before attempting the NCP-CN 6.10 exam. It is also recommended that the candidate complete the training course described in Section 4 prior to taking the exam.

For the NCP-CN 6 certification, candidates will be tested on the following software versions:

- NKP: version 2.12
- AOS: version 6.10
- Prism Central: version pc2024.2

3.2 Objectives

Prior to taking this exam, candidates should understand each of the following objectives. Each objective is listed below; along with related tools the candidate should have experience with, and related documentation that contains information relevant to the objective. Please note that some documentation requires access via the Support Portal. Information on creating an account for use with the Support Portal can be found here.

All objectives may also be referenced in other product documentation not specifically highlighted below. The candidate should be familiar with all relevant product documentation or have the equivalent skills.

Section 1 – Prepare the Environment for an NKP Deployment

Objective 1.1: Seed a private registry

Knowledge

- Identify the purpose for seeding a registry
- Identify parameters for registry seeding command
- Demonstrate understanding of the workflow for seeding a registry
- Troubleshoot issues that arise during seeding the registry
- Recognize the network requirements for a private registry

References

- Air-gapped vs. Non-Air-gapped Environments
- Seeding the Registry for an Air-gapped Cluster
- Prerequisites for Installation
- Nutanix Air-gapped: Loading the Registry

Objective 1.2: Create a bootstrap cluster

Knowledge

- Identify the purpose for creating a bootstrap cluster
- Identify parameters for creating a bootstrap cluster
- Demonstrate understanding of the workflow for creating a bootstrap cluster
- Troubleshoot issues that arise during the creation of a bootstrap cluster

References

- CAPI Concepts and Terms
- Nutanix Air-gapped Installation
- NKP Prerequisites
- Outputting the Bootstrap Cluster Kubeconfig to a File

Objective 1.3: Determine license tiers for clusters

Knowledge

- Differentiate between the feature levels per license type
- Align the use case with a license tier
- Identify the process for obtaining a license

References

- NKP Starter License
- NKP Pro License
- NKP Ultimate License
- Add an NKP License
- Remove an NKP License

Objective 1.4: Prepare a bastion host

Knowledge

- Identify the purpose of a bastion host
- Demonstrate understanding of the bastion host prerequisites and components
- Recognize the network requirements for a bastion host

References

- Creating a Bastion Host
- Basic Installations by Infrastructure

Objective 1.5: Build machine images or prepare nodes

Knowledge

- Demonstrate understanding of the purpose and process for building machine images using the NIB CLI tool
- Demonstrate understanding of the purpose and process for preparing nodes the KIB CLI tool
- Recognize the prerequisites for building machine images
- Recognize the minimum requirements for building machine images and preparing nodes
- Determine how to customize the process of building images or preparing nodes
- Demonstrate understanding of changes required to build an image in a Airgap environment

References

- Konvoy Image Builder
- KIB for AKS
- Creating an Air-gapped Package Bundle
- Konvoy Image Builder CLI
- Pre-provisioned Air-gapped: Configure Environment
- vSphere FIPS: Creating a CAPI VM Template
- vSphere FIPS: Creating the Management Cluster

Objective 1.6: Gather information for building a cluster on a target provider

Knowledge

- Identify parameters associated for building a cluster on a target provider
    - Networking requirements
    - Connectivity details
    - Storage requirements

References

- AKS Installation Options
- Pre-provisioned: Defining the Infrastructure
- General NKP Resource Requirements
- Supported Operating Systems

Section 2 – Manage Building an NKP Cluster

Objective 2.1: Customize and deploy clusters

Knowledge

- Use NKP CLI to build and deploy a cluster
- Given a use case, determine when and how to employ the various components of cluster API for customization
- Determine steps to diagnose a cluster deployment issue
    - Determine which cluster API resources should be analyzed
- Determine when and how to use a custom manifest for deploying clusters
    - Determine corresponding cluster API resources and their configuration parameters
- Analyze the NKP CLI parameters required for a specific cluster deployment use case

References

- Prerequisites for Installation
- Installing NKP
- Pro and Ultimate Cluster Minimum Requirements
- Nutanix Air-gapped Installation
- Nutanix Air-gapped Environment Creating a New Cluster
- Project Applications

- Nutanix Kubernetes Platform Insights Guide
- AWS Installation Options
- Creating vSphere Node Pools
- Creating a New AWS Air-gapped Cluster

Objective 2.2: Customize and deploy Kommander and apply appropriate licenses

Knowledge

- Use NKP CLI to build and deploy Kommander
- Determine steps to diagnose a Kommander deployment issue
- Determine when and how to use a custom manifest for deploying Kommander
    - Determine corresponding platform application resources and their configuration parameters
- Analyze the NKP CLI parameters required for a specific Kommander deployment use case

References

- FIPS Support in NKP
- Using KIB with vSphere
- BaseOS Image Requirements
- Installing Kommander in a Small Environment
- Additional Kommander Configuration

Section 3 – Perform Day 2 Operations

Objective 3.1: Configure authentication and authorization

Knowledge

- Configure identity provider and groups
- Differentiate between Kommander roles and cluster roles
- Configure custom roles and role bindings
- Use tokens to authenticate users
- Demonstrate understanding of environment contexts and role inheritance
- Using RBAC authorization

References

- NKP Security
- Enforcing Policies Using Gatekeeper
- External LDAP Directory Configuration
- Access Control

Objective 3.2: Configure logging

Knowledge

- Demonstrate understanding of logging stack
- Enable logging stack applications
- Configure and manage logging stack application
- Manage logging in a multitenant environment
- Gather logs
- Integrate persisting data to Nutanix Unified Storage
- Scale the logging stack

References

- NKP Logging
- Logging Operator
- Logging Stack Operator
- Customing Logging Stack Applications
- Multi-Tenant Logging
- Configuring Loki to Use AWS S3 Storage in NKP

Objective 3.3: Configure cluster backup and recovery

Knowledge

- Recognize dependencies for cluster backup and recovery
- Determine target storage requirements for cluster backup
- Configure Velero (e.g., schedule backups, enable)
- Use Velero CLI to perform backups and restores
- Configure storage/volume snapshot classes for backup

- Diagnose and address backup issues
- Perform a cluster restore

References

- NKP License Support for Backup & Restore
- Backup Operations
- Velero Configuration
- Velero Installation Using CLI

Objective 3.4: Conduct performance and health monitoring

Knowledge

- Demonstrate understanding of the monitoring stack
- Configure/enable monitoring stack
- Centralize monitoring in a multi-cluster environment
- Customize service- and system-level metrics
- Diagnose and address performance and health issues
- Use custom dashboards
- Configure monitoring alerts and endpoints
- Configure backend storage for a monitoring application

References

- Centralized Metrics
- Cluster Metrics
- Monitoring and Alerts
- Nutanix Kubernetes Platform Insights Guide
- Nutanix Management Tools

Objective 3.5: Configure cluster autoscaling

Knowledge

- Recognize the purpose and use cases for enabling and configuring cluster autoscaling
- Demonstrate how to enable and configure cluster autoscaling

References

- Configuring Nutanix Cluster Autoscaler
- Configuring AWS Cluster Autoscaler
- Configuring vSphere Cluster Autoscaler

Objective 3.6: Conduct lifecycle management functions

Knowledge

- Upgrade clusters
- Given a scenario, determine when and how to update cluster configurations
- Manage node pools
- Manually scale clusters
- Use the NKP CLI to delete clusters

References

- Upgrade Prerequisites
- Upgrade: For Air-gapped Environments Only
- Upgrade NKP Ultimate
- Upgrade NKP Pro
- Upgrading Kubernetes Version on a Managed Cluster

Section 4 – Conduct NKP Fleet Management

Objective 4.1: Configure workspaces

Knowledge

- Given a use case, determine workload cluster workspace assignment
- Recognize the purpose and use cases for a workspace
- Configure infrastructure provider
- Configure access control at workspace level
- Deploy application to a workspace
- Recognize the purpose and use case of Insights

References

- Creating a Workspace
- Deleting a Workspace
- Workspace Applications
- Enabling an Application per Cluster
- Generating a Dedicated Login URL for Each Tenant
- Multi-Tenancy in NKP
- Nutanix Kubernetes Platform Insights Overview
- Installing NKP Insights Ultimate License

Objective 4.2: Deploy workload clusters to a workspace

Knowledge

- Recognize the impact of target provider environments on workload cluster deployments
- Recognize the purpose and use cases for deploying workload clusters
- Given a scenario, determine how to deploy workload clusters
- Troubleshoot the deployment of a workload cluster

References

- Workspaces
- Workspace Applications
- Creating a Managed Cluster on VCD Through the NKP UI
- vSphere Creating Managed Clusters Using the NKP CLI
- Infrastructure Providers
- Managing Access
- Creating Workspace Role Bindings

Objective 4.3: Attach clusters to a workspace

Knowledge

- Recognize the purpose and use case for attaching clusters
- Given a scenario, determine how to attach a cluster
- Recognize capabilities of attached clusters

- Troubleshoot cluster attachments
- Configure and update attached clusters

References

- Basic Requirements for Attaching Existing Clusters
- Requirements for Attaching Existing AKS, EKS, and GKE Clusters
- Attaching an Existing Kubernetes Cluster
- EKS: Preparing the Cluster
- Prerequisites for a Tunneled Attachment
- Creating a Default StorageClass

Objective 4.4: Detach or delete clusters from a workspace

Knowledge

- Recognize the purpose and use case of decommissioning
- Use the Kommander dashboard to delete a cluster front the GUI
- Troubleshoot a cluster detachment/deletion issue

References

- Disconnecting or Deleting Clusters
- Delete an NKP Cluster with One Command
- Deleting EKS Cluster from the NKP UI

Objective 4.5: Configure projects

Knowledge

- Recognize the purpose and use cases for a project
- Given a use case, determine workload cluster project assignments
- Configure access control at the project level
- Deploy applications at the project level
- Configure CD deployment
- Add clusters to a project
- Federate resources

References

- Creating a Project Using the UI
- Continuous Deployment
- Continuous Delivery with GitOps
- Managing Access to Projects
- Project Quotas and Limit Ranges

Objective 4.6: Configure platform applications

Knowledge

- Recognize platform application dependencies
- Customize a platform application deployment from the Kommander dashboard
- Differentiate between global and cluster scope application configuration
- Troubleshoot platform application configurations
- Modify, disable, or enable platform application via CLI

References

- Platform Applications
- Platform Application Dependencies
- Ultimate: Enabling an Application Using the UI
- Deployment Scope
- Deploy Platform Applications Using CLI
- Kommander Installation Based on Your Environment

4. NCP-CN 6.10 Training Recommendations

4.1 Course Recommendation

Nutanix offers a course that provides training on the objectives tested for in the exam. More information on this course, including delivery methods and pricing, can be found at nutanix.com/training.

The course details are as follows

The **Nutanix® Kubernetes Platform Administration (NKPA)** course teaches the skills needed to deploy, configure, optimize, troubleshoot, and perform administrative tasks on a Nutanix Kubernetes Platform (NKP) cluster.

The NKPA course will explore a number of subjects, including:

- What NKP is, key terms and concepts, how to install NKP in an air-gapped and non-air-gapped environment, and how to license an NKP cluster.
- Various lifecycle management operations for an NKP cluster, including configuring infrastructure; using workspaces; creating, attaching, and scaling clusters; creating projects; and upgrading NKP.
- How to configure and manage access control, by configuring identity providers, creating identity provider groups, configuring workspace and project roles, and binding roles.
- What platform applications are, the categories of platform applications that NKP provides out-of-the-box (monitoring, logging, security, and so on), and how to deploy platform applications.
- How to protect and restore NKP clusters, and the applications running on those clusters.
- About the NKP logging stack, how to enable, customize, and scale the logging stack applications, how to restrict logging to specific namespaces, and how to view logs.
- About NKP's monitoring capabilities, including which components gather metrics, which metrics are exposed, cost monitoring, visualizations using Grafana, and how to configure alert rules and alert notifications.

This course is available online or instructor-led. More information including schedules and how to register can be found at www.nutanix.com/university.

The material provided in the course covers a majority of the objectives (approximately 80%) that appear on the NCP-CN 6.10 beta exam and is recommended for individuals who want to gain a good understanding of these objectives. Please note that additional exposure to a Nutanix environment is highly recommended.

5. Resources

5.1 Nutanix Community Edition

The Nutanix Community Edition is a free product that allows you to deploy a Nutanix Cloud Platform. To download the software and build your own environment for exam preparation, click here.

5.2 Test Drive

You can also take a 2-hour Hyperconverged Test Drive, which utilizes the Nutanix Community Edition, by clicking here.

5.3 The Nutanix Community

Connect with cloud builders from around the world, learn from IT Pros in your industry and share experiences on the Nutanix Community. The community maintains an area focused on Nutanix certifications, which is located here.

5.4 Additional Cloud Native Resources

Find a wealth of additional Cloud Native resources here.