Nutanix Certified Professional Unified Storage (NCP-US) 6.10 Exam

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1. The Exam

1.1 Purpose of Exam

The Nutanix Certified Professional - Unified Storage (NCP-US) 6.10 exam will measure a candidate's ability to deploy, configure, optimize, troubleshoot, and perform administrative tasks in a multicloud Nutanix Unified Storage (Files, Objects, and Volumes) environment. Successful candidates demonstrate mastery of these skills and abilities.

1.2 Number of Questions

The NCP-US 6.10 exam consists of 75 multiple-choice and multiple-response questions.

1.3 Pricing

The cost for the NCP-US 6.10 exam is $199 USD.

1.4 Passing Score

The passing score for this exam is 3000, using a scaled scoring method. The scale is from 1000-6000. Scaled scores are calculated using a mathematical formula that considers a variety of factors, including the number and type of exam questions included in a specific version of the exam.

Because this combination may vary in different versions of the same examination, scaled scores provide a fair score for everyone based on the version of the exam taken.

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 in a multicloud Nutanix Unified Storage (Files, Objects, and Volumes) environment.

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 exam is available in English.

1.7 Time Limit

The time limit for the exam is 120 minutes.

1.8 Scheduling and Taking the Exam

This 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-US 6.10 exam is a core component of the Nutanix Unified Storage track. Passing this exam results in achieving the NCP-US 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 – Unified Storage 6.10 exam and achieved the NCP-US 6 certification, it will remain valid for three 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-US 6.10 exam and NCP-US 6 certification has approximately 1-2 years of general IT experience, with six to 12 months of Nutanix Unified Storage experience or applicable training.

Successful candidates are typically IT professionals and IT architects who are capable of deploying, configuring, optimizing, troubleshooting, and performing administrative tasks in a multicloud Nutanix Unified Storage (Files, Objects, and Volumes) environment.

Finally, the successful candidate will most likely have taken training courses, such as the Nutanix Unified Storage Administration (NUSA) course.

3. Objectives Covered in the NCP-US 6.10 Exam

3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary for deploying, configuring, optimizing, troubleshooting, and performing administrative tasks in a multicloud Nutanix Unified Storage (Files, Objects, and Volumes) environment before attempting the NCP-US 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-US 6 certification, candidates will be tested on the following software versions:

- AOS: version 6.10
- Prism Central: version pc2024.2
- Volumes: version 6.10
- Files: version 5.0
- File Analytics: version 3.4
- Data Lens: version DL2024.6
- Objects: version 5.0

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 – Deploy and Upgrade Nutanix Unified Storage

Objective 1.1: Identify the steps to deploy Nutanix Files

Knowledge

- Identify prerequisites and limitations for Files deployment
- Identify appropriate client and storage networks
- Ensure NTP, DNS and Active Directory Services have been correctly configured
- Identify supported protocols
- Integrate Files with Data Lens
- Describe how to deploy File Analytics

- Describe integration with Nutanix Central
- Identify how to use VDI Sync to sync profiles between sites
- Identify subdomains vs. folder structures for FQDN pathing

References

- Prerequisites for Deploying Files
- Deploying Files
- Installing Files
- Files Overview
- Creating a File Server
- Network Segmentation

Objective 1.2: Identify the steps to deploy Nutanix Objects

Knowledge

- Identify prerequisites and limitations for Objects deployment
- Ensure NTP, DNS, and Active Directory Services have been correctly configured
- Identify requirements for enabling fault tolerance
- Integrate Objects with Data Lens
- Validate connectivity before handoff

References

- Nutanix Objects Overview
- Objects Prerequisites and Limitations
- Objects Deployment Prerequisites - AHV and ESXi
- Enabling Objects
- Objects Life Cycle Manager Upgrades

Objective 1.3: Perform upgrades/maintenance for Files/Objects implementations

Knowledge

- Determine Files/Objects dependencies and prerequisites
- Explain Files/Objects upgrade process
- Maintain impact for Files and Objects (i.e. distributed versus standard shares)
- Understand when to scale up/scale out

References

- Introduction to Nutanix Files
- Nutanix Files Upgrades
- Updating File Server Basics
- Upgrading the Files Manager
- File Server Updates
- Scaling FSVMs
- Upgrading Objects Manager
- Performance Optimization

Objective 1.4: Apply product and implementation parameters

Knowledge

- Determine capacity and performance requirements for Files/Objects
- Determine capacity and performance requirements for Volumes
- Determine network segmentation requirements of each product

References

- Nutanix Objects Configuration Maximums
- Nutanix Files Configuration Maximums
- Nutanix Files Prerequisites
- Creating a File Server

Section 2 – Configure and Utilize Nutanix Unified Storage

Objective 2.1: Configure Nutanix Files with advanced features

Knowledge

- Configure Smart DR, File Analytics, and Smart Tiering
- Onboard Nutanix File instances to Data Lens
- Create a CIFS, NFS, and multi-protocol share
- Manage permissions
- Implement nested shares and exports

References

- Nutanix Files Data Sync
- Nutanix Files Permissions
- File Analytics Ports and Protocols
- Files Data Collection
- Stopping a File Server VM (FSVM)
- Configuring a Tiering Location
- Creating an SMB Share
- Files Share and Export Management
- Creating a Multi-Protocol Share or Export

Objective 2.2: Configure Nutanix Volumes

Knowledge

- Present Nutanix Volumes to physical servers
- Present Nutanix Volumes to virtual machines
- Add/Remove volumes to Volume Groups
- Configure CHAP
- Determine when to use cluster white lists versus volume white lists

References

- Nutanix Volumes Overview
- Creating a Volume Group for Use with Nutanix Volumes
- Configuring Windows Clients
- Configuring the QLogic HBA
- Examples of Supported Volumes Use Cases
- Nutanix Cloud Infrastructure (NCI)

Objective 2.3: Configure Nutanix Objects

Knowledge

- Validate connectivity within a Nutanix Objects environment
- Generate access keys
- Configure Nutanix Objects for endpoint access
- Create and configure buckets
- Create additional namespaces
- Configure Federation
- Secure Objects

References

- Enabling Objects
- Objects Prerequisites and Limitations
- AHV Configuration for Objects Deployment
- Creating and Configuring an NFS Bucket in Objects
- Sharing a Bucket in Objects
- Use Cases and Recommendations for Network File System on Objects
- Replication Topologies Supported for Nutanix Objects as Destination
- Viewing Object Store Deployments
- Role-Based Access Control Workflows for Objects

Objective 2.4: Given a scenario, configure shares, buckets, and/or Volume groups

Knowledge

- Given a scenario, determine the appropriate product to meet business requirements for such storage technologies as:
  - iSCSI
  - NFS
  - SMB
  - S3

References

- Salient Features of Objects
- Creating a Lifecycle Rule in Objects
- Access-Based Enumeration (SMB only)
- Share and Export Management
- Creating a Multi-Protocol Share or Export

Objective 2.5: Determine the appropriate method to ensure data availability/recoverability

Knowledge

- Given a scenario with RPO and RTO defined, determine the appropriate Nutanix local and remote platform solution
- Given a scenario with RPO and RTO defined, determine the appropriate local and remote. backup basic recovery options
- Recognize how to integrate Mine with Objects

References

- Metro Availability for Nutanix Files
- Protection Policies
- Self-Service Restore
- Cloning a File Server
- Smart DR
- Nutanix Support & Insights Portal

Objective 2.6: Explain Data Management capabilities for Files and Objects

Knowledge

- Describe technologies used to ensure data availability, such as:
  - Smart DR
  - Smart Tiering
  - Data Sync
  - Self-Service Restore
  - Protection Domain and Protection Policies

- Describe HA options within Files and Objects

- Describe data recoverability using Mine for Objects

References

- Data Management

- Smart Tier Architecture

- Files Options

- Durable SMB File Handles

- Performance Optimization

- Creating an NFS Export

- Enabling Self-Service Restore

Section 3 – Analyze and Monitor Unified Storage

Objective 3.1: Utilize File Analytics for data security

Knowledge

- Use anomalies to determine suspicious activity or abnormal behavior

  - Determine if something has been deleted

- Audit file access, usage, and modifications

  - Determine users with too many resource demands

  - Determine top active users

  - Determine file distribution by type

- Detect ransomware and other security threats

References

- File Analytics Dashboard

- Audit Trails

- File Analytics Anomalies

- Configuring an SMTP Server

- Ransomware Protection Features

- Enabling Ransomware Protection

Objective 3.2: Describe how to monitor performance and usage

Knowledge

- Identify when to scale up/out Files and Objects clusters
- Identify metrics to determine when to scale up/out
- Identify performance constraints from a cluster utilization perspective
- Recognize management/monitoring interfaces and their usage, such as:
    - Nutanix Central
    - Prism Central
    - File Server Manager
    - Prism Element

References

- Objects Prometheus Explorer
- File Analytics Administration
- Prism Central Application Switcher
- Nutanix Central
- Performance Monitoring in Prism Element

Objective 3.3: Describe the use of Data Lens for data security

Knowledge

- Describe use cases for Data Lens
- Relate requirements and supported features to a given use case
- Differentiate between Smart Tiering, Standard Tiering, and Advanced Tiering
- Differentiate File Analytics and Data Lens

References

- Nutanix Data Lens Overview
- Data Lens Licensing
- Data Lens Premium and Basic Features
- Smart Tiering

- Data Lens Risk Profiles
- Data Lens Reports

Section 4 – Troubleshoot Nutanix Unified Storage

Objective 4.1: Troubleshoot issues related to Files

Knowledge

- Determine user permissions issues for:
    - Multiple groups
    - Conflicting permissions
    - Back-up accounts
    - Share administrator
    - Identity Access Management
- Determine shared visibility issues
- Determine the reasons for deployment failures
    - Determine the Active Directory service account
    - Determine why DNS records were not created
- Determine why data is not being tiered
- Determine why Directory Services and DNS are not being changed in Smart DR
- Determine issues related to failing over and failing back a file server
- Address cross cluster User profile issues

References

- Access-Based Enumeration (SMB only)
- Share and Export Management
- Distributed Shares
- Audit Trails
- Creating a File Server
- Nutanix Files - Troubleshooting DNS record validation failures

Objective 4.2: Troubleshoot issues related to Objects

Knowledge

- Troubleshoot the reasons for deployment failures
- Troubleshoot issues with read/write capabilities
- Troubleshoot appropriate access for troubleshooting
- Troubleshoot Objects with appropriate CLI commands
- Troubleshoot issues with Objects replication
- Troubleshoot issues related to Cloud Tiering

References

- Prism Element Clusters or Subnets Not Listed in the User Interface
- Nutanix Objects: Troubleshooting deployment failures of downloading files from server
- Cloud Bucket Endpoint Recommended Settings

Objective 4.3: Troubleshoot issues related to Volumes

Knowledge

- Determine proper authentication
- Determine proper firewall settings
- Determine correct IQNs/whitelists
- Determine proper iSCSI timeout settings
- Determine the basic steps needed to add a capacity to a VG
- Troubleshoot the inability to see newly added capacity

References

- Enable Nutanix Volumes
- SCSI UNMAP
- Discovering the Nutanix Volumes Target from the Linux Client
- Discovering the Nutanix Volumes Target from the Windows Client
- Volume Group/File Server Tab missing from Prism UI

Objective 4.4: Troubleshoot a failed upgrade for Files/Objects

Knowledge

- Address AOS/Nutanix Central/Prism Central compatibility issues and requirements
- Determine the appropriate logs to review
- Address File Analytics compatibility issues and requirements
- Address Data Lens compatibility issues and requirements

References

- Nutanix Files Upgrades
- Nutanix Files - Preupgrade Check failure due to an internal error

4. NCP-US 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® Unified Storage Administration (NUSA) course teaches the skills needed to install, configure, manage, and upgrade three different Nutanix storage solution products: Nutanix Files, Nutanix Volumes, and Nutanix Objects.

 The NUSA course explores a number of subjects, including:

- Understanding Nutanix Unified Storage Concepts

- Nutanix Volumes - Learn how Nutanix Volumes provides block storage for your VMs or physical hosts using the iSCSI protocol, with the same simplicity as virtualized workloads, consolidating infrastructure into a single unified platform.

- Nutanix Files - Set up and manage Nutanix Files, a software-defined, scale-out file storage solution that provides Server Message Block (SMB) and Network File System (NFS) file services to clients.
- Nutanix Objects - Learn how easy it is to use Nutanix Objects, a software-defined, scale-out object storage solution that provides a scalable repository for unstructured data.

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

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 Unified Storage Resources

Find a wealth of additional Unified Storage resources here.