NUTANIX UNIVERSITY

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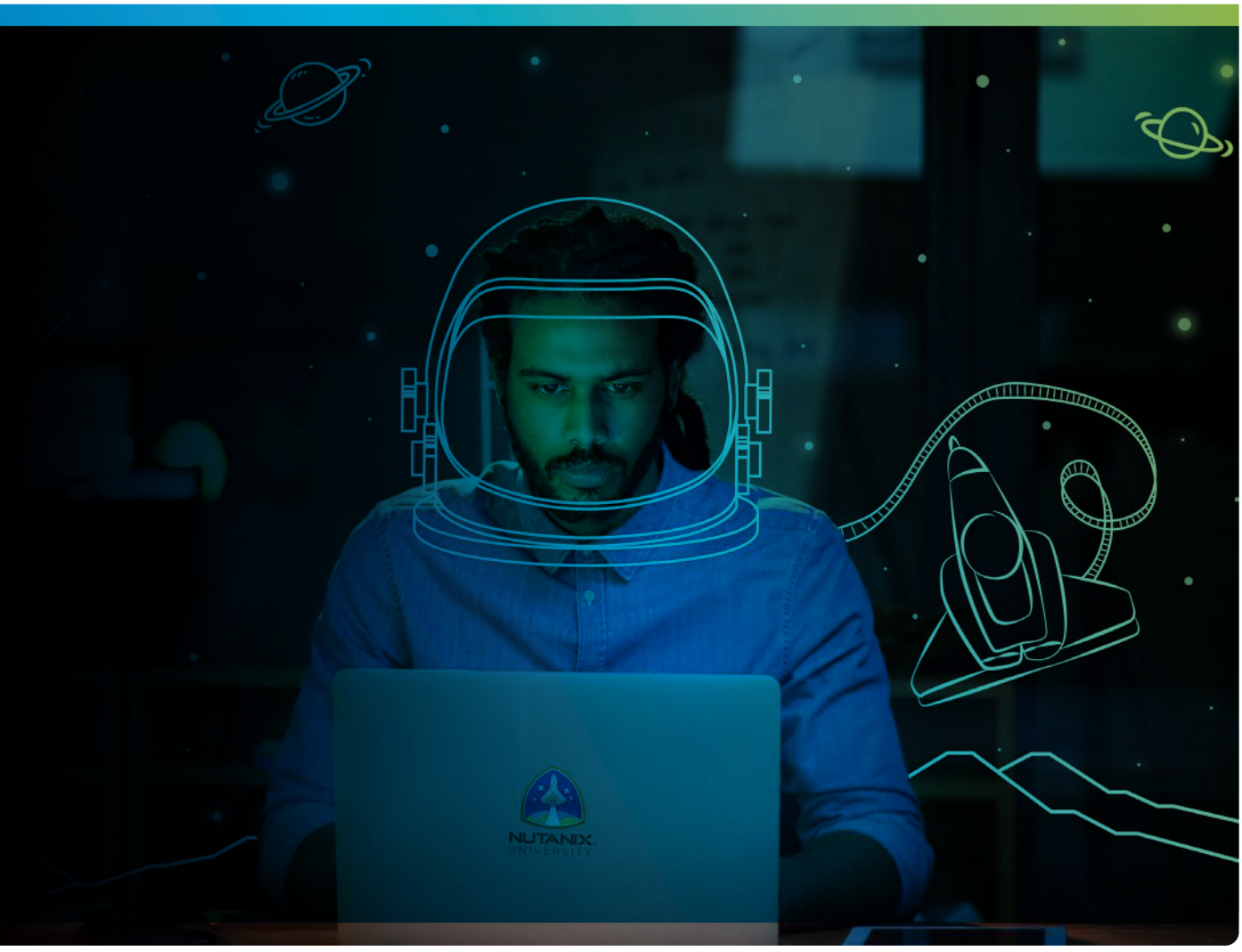
Exam Blueprint

Nutanix Certified Professional Unified Storage 6 (NCP-US) 6 Exam



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Author:
Jeff Hall – Manager, Technical Certification Development
Jon C. Hall – Director, Technical Certification

Contributors:
Todd Burris, Systems Engineer
Lev Goronshtein – Advisory Systems Engineer
Keith Olsen, Sr. Systems Engineer
Jason Burroughs, Sr. Systems Engineer
Christian Marrero, Inside Systems Engineer
Tim Holterhus, Sr. Systems Engineer
Farhan Parker, Platform Solution Specialist
Drew Plaster, Sr. Network System Admin
Oscar Chacon, Engineering Sales Specialist
Maroane BOUTAYEB, Systems Engineer
Florian Schorn, Systems Engineer
Darren McDonagh, Sr. Systems Engineer
Cory Thackeray, Infrastructure Engineer

Disclaimer:
The Nutanix Certified Professional – Unified Storage 6 (NCP-US 6) Exam Blueprint Guide provides an overview of the objectives that must be mastered to achieve the NCP-US 6 credential. Nutanix does not offer any guarantees that this guide will ensure a candidate's success in achieving the NCP-US 6 certification. All information in this guide is subject to change at any time at the sole discretion of Nutanix.

1.The Exam

1.1 Purpose of Exam

The Nutanix Certified Professional – Unified Storage 6 (NCP-US 6) exam tests candidates on their skills and abilities to deploy, configure, optimize, troubleshoot, and perform administrative tasks on the Nutanix Unified Storage technologies: Files, Objects, and Volumes.

1.2 Number of Questions

The NCP-US 6 exam consists of 75 multiple-choice and multiple-response questions.

1.3 Pricing

The cost for the NCP-US 6 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 on the Nutanix Unified Storage services: Files, Objects, and Volumes technologies.

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 NCP-US 6 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 in your home or office, or at a designated testing center. Occasionally, testing at Nutanix events may also be offered. At the start of the registration process, you will be asked to choose remote or in person testing. After registering for the exam, you will receive further information specific to the testing method you chose. Regardless of whether you test remotely or in person, you must provide valid identification and will be provided with a monitored and secure exam experience.

1.9 Certification Tracks

The NCP-US 6 exam is a core component of the Nutanix Unified Storage track. 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 course and track 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 e-mail education@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 exam and achieved the NCP-US 6 certification, it will remain valid for two years.

To maintain your certification status, you must either renew your existing certification, take an equivalent NCP-level exam within another certification track, or upgrade your certification to a higher-level certification, such as to the Nutanix Certified Master tier within this same two-year period.

2. Intended Audience

A candidate for the NCP-US 6 certification has approximately one to two years of general IT experience, with six to 12 months of data storage experience. They are typically IT professionals and IT architects who are capable of deploying, configuring, optimizing, troubleshooting, and performing administrative tasks on the Nutanix Enterprise Cloud Unified Storage services: Files, Objects, and Volumes technologies.

3. Objectives Covered in the NCP-US 6 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 the Nutanix Enterprise Cloud Unified Storage environment before attempting the NCP-US 6 exam. It is also recommended that the candidate complete the recommended course prior to taking the exam.

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

- AOS and Volumes: version 6.5
- Files: version 4.1
- Objects: 3.4

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 appropriate client and storage networks
- Ensure NTP, DNS, and SPN have been correctly configured
- Identify supported protocols
- Validate connectivity before handoff

References

- File Server Prerequisites
- Files Deployment
- Multi-Protocol Support for Files
- Installing or Upgrading Nutanix Files
- Files – SMB Shares and NFS Exports FAQ
- The Nutanix Bible – Files

Objective 1.2 – Identify the steps to deploy Nutanix Objects

Knowledge:

- Identify prerequisites and limitations for Objects deployment
- Ensure NTP, DNS, and SPN have been correctly configured
- Identify subdomains versus folder structures for FQDN pathing
- Validate connectivity before handoff

References

- Objects Deployment Prerequisites
- Objects Deployment Limitations
- Creating or Deploying an Object Store (Prism Central)
- Salient Features of Nutanix Objects
- Objects Network Configuration
- The Nutanix Bible – Objects

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

Knowledge:

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

References

- Files Upgrades
- Managing Performance Optimization
- Updating a File Server Network
- Objects Microservices Platform (MSP)
- Files Analytics Upgrades
- File Analytics Limitations

Objective 1.4 – Given a scenario, determine product and sizing parameters

Knowledge:

- Determine capacity and performance requirements for Files/Objects
- Determine capacity and performance requirements for Volumes
- Determine network segmentation requirements of each product
- Add/Remove volumes to a Volume Group

References

- Files Sizing Guide
- Files Load Balancing and Scaling
- Files Smart Tier
- Advantages of Objects
- Nutanix Objects – Usage of Objects
- Nutanix Objects Bucket Policy Configuration
- Network Segmentation with Files
- Objects Network Configuration
- Volumes Overview
- Creating a Volume Group for Use with Volumes

Section 2 – Configure and Utilize Nutanix Unified Storage

Objective 2.1 – Configure Nutanix Files with advanced features

Knowledge:

- Create CIFS, NFS, and multi-protocol shares
- Block specific file types
- Configure permissions within the Microsoft Manage Console
- Create an additional new Files server
- Configure quotas

References

- Creating a Multiprotocol Share or Export
- Files Exports and Shares
- Files SMB Share Default Permission
- Logging on to a File Server VM
- Files Options
- Files Smart DR
- Managing Quotas within Files
- Files Data Lens
- Changing an FSVM Password
- Files Encryption
- Cloning a File Server
- Files Self-Service Restore
- Managing Roles within Files
- Configuring Antivirus Scanning (SMB Only)

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

- Volumes Overview
- Volumes Best Practices
- Configuring Windows Clients for Connectivity
- Modifying or Deleting a Volume Group
- Enabling Load Balancing of vDisks in a Volume Group
- Boot Over iSCSI
- Discovering the Volumes Target from the Linux Client
- Changing the Controller VM IP Address in your Nutanix Cluster
- Challenge Handshake Authentication Protocol (CHAP)
- Creating a Storage Class (Nutanix Volumes)
- The Nutanix Bible – Volumes

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

References

- Bucket Policy Configuration
- Generating Access Keys for API Users
- Objects WORM Bucket
- Maintaining Compliance with WORM for Nutanix Objects
- Creating and Configuring an S3 Bucket
- Bucket Naming Conventions
- Objects Cloud Tiering
- Access Objects Endpoints
- Objects Streaming Replication
- Objects NFS-S3 Interoperability

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

- Creating a Share (SMB)
- Creating an NFS Export
- Creating and Configuring a WORM Share
- What is Object Storage?
- Volume Group Connectivity
- Objects WORM Bucket
- Files Access-Based Enumeration (SMB only)
- Data Lens Smart Tiering
- Objects WORM Bucket

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

References

- Enabling Self-Service Restore
- Files Retrieving Files with Self-Service Restore
- Files Data Protection and Recovery
- Files High Availability

Section 3 – Analyze and Monitor Nutanix Unified Storage

Objective 3.1 – Utilize File Analytics to assess usage patterns

Knowledge:

- Identify workloads with excessive resources
- Use anomalies to determine suspicious activity or abnormal behavior
- Determine the top active users
- Determine file distribution by type

References

- Managing File Categories
- Files Anomaly Detection
- File Analytics Anomalies
- File Analytics Blacklisting
- File Analytics Audit Trail – Files

Objective 3.2 – Describe how to monitor performance and usage

Knowledge:

- Identify when to scale up/out a Files cluster
- Identify metrics to determine when to scale up/out
- Identify performance constraints from a cluster utilization perspective

References

- Files Performance
- Files Data Lens Global Dashboard
- Files Monitoring and Auditing Guide
- Files Alerts and Health Checks
- Files – File Server Dashboard
- Assigning Quota Policy to a User
- Objects Specific Alerts
- Objects Monitoring and Alerts
- Viewing Object Store Usage
- Viewing Performance of Object Stores
- Files Data Lens Audit Trails

Objective 3.3 – Given a scenario, utilize Prism Pro for capacity planning

Knowledge:

- Given a scenario, identify the capacity runway, in terms of months, for a solution
- Given a scenario of growth, identify cluster capacity

References

- Prism Central Resource Planning
- Cluster Maximum Storage Utilization Recommended Guidelines
- Updating Capacity Configurations within Prism Central

Section 4 – Troubleshoot Nutanix Unified Storage

Objective 4.1 – Troubleshoot issues related to Nutanix Files

Knowledge:

- Determine the Active Directory service account
- Determine the cause of user permissions issues relating to:
  - Multiple groups
  - Conflicting permissions
  - Backup accounts
  - Share administrators
  - Files
- Determine the cause of shared visibility issues
- Given a scenario, determine the cause of quota issues
- Identify why DNS records were not created
- Discover the reasons for deployment failures

References

- Troubleshooting Files
- Troubleshooting Active Directory Validation Check alerts
- Active Directory and SMB Operations
- Creating, Renaming, and Deleting Home Share Top Level Directories (TLDs)
- Files NFS Basics and Mount Options
- Windows Previous Version (WPV) Hanging When Trying to Recover SSR Snapshots
- Creating a File Server

Objective 4.2 – Troubleshoot issues related to Nutanix Objects

Knowledge:

- Discover the reasons for deployment failures
- Identify the cause of read/write capability-related issues
- Determine appropriate access for troubleshooting
- Troubleshoot Objects using appropriate CLI commands

References

- Sharing a Bucket
- Listing the Shared Buckets
- WORM Bucket
- Maintaining Compliance with WORM for Nutanix Objects

Objective 4.3 – Troubleshoot issues related to Nutanix Volumes

Knowledge:

- Determine the proper authentication methods and settings
- Determine the proper firewall settings
- Identify the correct IQNs/whitelists
- Verify the proper iSCSI timeout settings, as per client tuning requirements
- Determine the basic steps needed to add capacity to a Volume Group
- Troubleshoot the inability to see newly-added capacity

References

- Configuring CHAP Authentication (Windows)
- Configuring Mutual CHAP Authentication (Linux)
- Volume Group Support for PR3 Reservations
- Volumes – Supported Client Environments
- Concurrent Access from Multiple Clients
- Obtaining the Windows Client iSCSI Initiator Name
- Guest VM Affinity and High Availability Admission Control
- Converting Existing Volume Groups and updating Clients to Use Volumes
- Checking Volume Group Space Usage

Objective 4.4 – Explain Nutanix Files High Availability process

Knowledge:

- Explain the scale out benefits of having more FSVMs
- Describe the order of actions in cases of High Availability events
- Describe the impact to clients during a single FSVM failure

References

- Files High Availability
- Scale Out Client Networks
- Scaling FSVMs
- Files Smart Tiering

Objective 4.5 – Troubleshoot a failed upgrade for Files/Objects

Knowledge:

- Determine AOS/Prism Central compatibility issues
- Determine the appropriate logs to review

References

- Objects Cluster Deployment Troubleshooting
- Upgrading Objects Manager
- Files – Pre-upgrade Check failures
- MSP Version Objects Upgrade/Deployment failures
- Files – Sub task poll errors

4. NCP-US 6 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 details are as follows:

Nutanix® Data Center Services Administration

The Nutanix Data Services Administration hands-on training course teaches you the administrative skills needed to install, configure, manage, and upgrade three different Nutanix storage solution products: Nutanix Files, Nutanix Volumes, and Nutanix Objects.

The course covers the following objectives:

- Understanding Nutanix Data Services Concepts
- Deploying, Managing, and Troubleshooting a Nutanix Files environment
- Deploying, Managing, and Troubleshooting a Nutanix Objects environment
- Deploying, Managing, and Troubleshooting a Nutanix Volumes environment.

The material provided in the course covers a majority of the objectives (approximately 80%) that appear on the NCP-US 6 exam and is recommended for individuals who want to gain a good understanding of these objectives. Please note that additional exposure to a Nutanix Data Services 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 Enterprise Cloud. To download the software and build your own environment for exam preparation, click here.

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

5.2 The Nutanix Next Community

The Nutanix Next Community is a social interaction site where professionals can connect with cloud builders from around the world, learn from IT Pros in the industry and share experiences. The community maintains an area focused on each NCP certification, which is located here.

5.3 Nutanix® Unified Storage Test Drive

Get quality hands-on practice serving any data anywhere from a single, flexible platform Using Files, Objects, and/or Volumes via the Nutanix Test Drive Platform.

5.4 Additional Unified Storage Resources

Find a wealth of additional Unified Storage resources here.

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix Enterprise Cloud OS leverages web-scale engineering and consumer-grade design to natively converge compute, virtualization, and storage into a resilient, software-defined solution with rich machine intelligence. The result is predictable performance, cloud-like infrastructure consumption, robust security, and seamless application mobility for a broad range of enterprise applications. Learn more at www.nutanix.com or follow us on Twitter @nutanix.

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