

**Exam Blueprint Guide**

# Nutanix Certified Professional – Unified Storage (NCP-US) 6.5 Exam



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**Disclaimer:**

The Nutanix Certified Professional – Unified Storage (NCP-US) 6.5 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.

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# 1.The Exam

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## 1.1 Purpose of Exam

The Nutanix Certified Professional – Unified Storage (NCP-US) 6.5 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.

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## 1.2 Number of Questions

The NCP-US 6.5 exam consists of 75 multiple-choice and multiple-response questions.

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## 1.3 Pricing

The cost for the NCP-US 6.5 exam is \$199 USD.

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## 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.

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## 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.

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## 1.6 Languages

The exam is available in English.

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## 1.7 Time Limit

The time limit for the exam is 120 minutes.

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## 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.

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## 1.9 Certification Tracks

The NCP-US 6.5 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](#).

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## 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](mailto: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.

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## 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.

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## 1.12 Recertification

Once you have passed the Nutanix Certified Professional – Unified Storage 6.5 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.



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## 2. Intended Audience

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A candidate for the NCP-US 6.5 exam 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.



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# 3. Objectives covered in the NCP-US 6.5 Exam

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## 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 6.5 exam. It is also recommended that the candidate complete the recommended course prior to taking the exam.

For the NCP-US 6.5 exam, candidates will be tested on the following software versions:

- AOS and Volumes: version 6.5
- Files: version 4.2
- File Analytics: version 3.2
- Data Lens: 1.0
- Objects: version 3.6

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## 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 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



- Describe how to onboard to Data Lens
- Describe how to deploy File Analytics
- Identify subdomains vs. folder structures for FQDN pathing

#### References

- [Introduction to Nutanix Files](#)
- [Files Deployment](#)
- [File Server Prerequisites](#)
- [File Server Network Requirements](#)
- [Files Port Reference](#)
- [Onboarding into Data Lens](#)
- [Deploying File Analytics](#)
- [Updating Domain Name System \(DNS\) Entries](#)
- [Directory Services and Authentication](#)

#### Objective 1.2 – Identify the steps to deploy Objects

##### Knowledge:

- Identify prerequisites and limitations for Objects deployment
- Ensure NTP, DNS, and SPN have been correctly configured
- Validate connectivity before handoff

#### References

- [Enabling Objects](#)
- [Objects Deployment Prerequisites – AHV and ESXi](#)
- [Objects Port Reference](#)
- [Types of Objects Users](#)

#### 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

- [Upgrading Files](#)
- [Upgrading File Server Module](#)
- [Scaling FSVMs from Prism Element](#)
- [Upgrading Objects Manager](#)
- [Modifying a Share or Export](#)
- [Durable SMB File Handles](#)

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](#)
- [Nutanix Files Use Cases](#)
- [Objects Deployment and Network Prerequisites](#)
- [Creating and Configuring an NFS Bucket](#)
- [Volumes Networking for iSCSI](#)
- [File Server Management](#)

## Section 2 – Configure and Utilize Nutanix Unified Storage

Objective 2.1 – Configure Files with advanced features

#### Knowledge:

- Create CIFS, NFS, and multi-protocol shares
- Configure Smart DR, File Analytics, and Smart Tiering
- Onboard Nutanix File instances to Data Lens
- Manage permissions
- Block specific file types
- Create an additional new Files server

#### References

- [Creating a Share \(SMB\)](#)
- [Creating an Export \(NFS\)](#)
- [Creating a Multi-Protocol Share or Export](#)

- [Smart DR](#)
- [Smart Tiering](#)
- [Tiered Data](#)
- [Onboarding into Data Lens](#)
- [Access-Based Enumeration \(SMB only\)](#)
- [Blocking Files on a File Server](#)
- [Security Hardening](#)
- [Creating a File Server](#)

## Objective 2.2 – Configure 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 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 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](#)
- [Directory Configuration and Access Key Generation](#)
- [Generating Access Keys for API Users](#)
- [Rules for Lifecycle Policy when Object Versioning is Enabled](#)
- [Objects Streaming Replication](#)
- [Objects WORM Bucket](#)
- [Creating and Configuring an S3 Bucket](#)
- [Bucket Naming Conventions](#)
- [Objects Cloud Tiering](#)
- [Access Objects Endpoints](#)
- [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

- [Volumes Requirements and Supported Clients](#)
- [Creating a WORM Share](#)
- [Volume Group Connectivity](#)
- [Creating an NFS Export](#)
- [Files Access-Based Enumeration \(SMB only\)](#)
- [Continuously Available Shares \(SMB Only\)](#)
- [What is Object Storage?](#)
- [Usage of Objects](#)
- [Objects WORM Bucket](#)
- [Data Lens Smart Tiering](#)

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](#)
- [Updating AD and DNS Entries](#)
- [Retrieving Files with Self-Service Restore](#)
- [Data Protection and Recovery](#)
- [High Availability](#)

### Section 3 – Analyze and Monitor Nutanix 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
- Describe the difference between Standard Tiering and Advanced Tiering

References

- [File Analytics Dashboard](#)
- [Anomalies](#)
- [Configuring Anomaly Detection](#)
- [Creating a Custom Report](#)
- [Ransomware Protection Features](#)
- [Configuring Ransomware Protection](#)
- [Audit Trails](#)
- [File Analytics Limitations](#)

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

References

- [Creating a File Server](#)
- [Files Performance](#)
- [Workload Optimization](#)
- [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 – Describe the use of Data Lens for data security

Knowledge:

- Describe use cases
- Identify requirements and supported features
- Describe Smart Tiering requirements and recommendations
- Differentiate File Analytics and Data Lens

References

- [Getting Started with Data Lens](#)
- [Smart Tiering Requirements and Recommendations](#)
- [Data Lens Port Reference](#)
- [Deleting Audit Data](#)
- [Enabling SSR](#)
- [Configuring Ransomware Protection Policy](#)
- [Scheduling a Report](#)
- [Performing Audits](#)

## Section 4 – Troubleshoot Nutanix Unified Storage

### Objective 4.1 – Troubleshoot issues related to Files

#### Knowledge:

- Determine user permissions issues
  - multiple groups, conflicting permissions, back-up accounts, share administrator
- 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 Active Directory and DNS are not being changed in Smart DR
- Determine issues related to failing over and failing back a file server

#### References

- [Troubleshooting Files](#)
- [Files Console](#)
- [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](#)
- [Smart DR](#)
- [Smart DR Troubleshooting](#)
- [AFS Duplicate IP Detected](#)

### 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

- [Objects Deployment and Network Prerequisites](#)
- [Sharing a Bucket](#)
- [Listing the Shared Buckets](#)
- [WORM Bucket](#)
- [MSP Nutanix Objects Cluster Deployment Troubleshooting](#)
- [Exceeding Quotas in Objects](#)

#### 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

- [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](#)
- [External iSCSI Attachments Not Snapshotted](#)
- [VG SyncRep Container Not Found](#)
- [Volume Group Protection Failed on PC](#)
- [Volume Group Protection Failed](#)
- [Consistency Group with Stale Entities](#)



#### Objective 4.4 – Explain Data Management processes for Files and Objects

##### Knowledge:

- Describe technologies used to ensure data availability
  - Smart DR
  - Smart Tiering
  - Self-Service Restore
  - Protection Domain and Protection Policies
- Describe HA capabilities within Files and Objects

##### References

- [Smart DR Concepts and Terminology](#)
- [Standard Smart Tiering Overview](#)
- [Smart Tier Configuration](#)
- [Self-Service Restore](#)
- [Protection Policies](#)
- [Data Protection and Recovery](#)
- [High Availability](#)

#### Objective 4.5 – Troubleshoot a failed upgrade for Files/Objects

##### Knowledge:

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

##### References

- [Prism Element Clusters or Subnets Not Listed in the User Interface](#)
- [Objects Cluster Deployment Troubleshooting](#)
- [Upgrading Objects Manager](#)
- [Files – Pre-upgrade Check failures](#)
- [MSP Version Objects Upgrade/Deployment failures](#)
- [Files – Sub task poll errors](#)
- [Object Store Not Listed While Creating a Replication Rule](#)
- [Special Considerations When Deploying or Upgrading Object Store Cluster in a Proxy Environment](#)
- [File Analytics Deployment Requirements](#)
- [File Analytics Limitations](#)



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# 4. NCP-US 6.5 Exam Training Recommendations

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## 4.1 Course Recommendation

Nutanix offers the following resources that provide training and hands-on experience on the objectives tested in the exam. More information on this course, including delivery methods and pricing, can be found at [nutanix.com/training](https://nutanix.com/training). The details are as follows:

### **Nutanix® Unified Storage Administration**

The Nutanix Unified Storage 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 6.5 exam and is recommended for individuals who want to gain a good understanding of these objectives. Please note that additional exposure to a Nutanix Unified Storage environment is highly recommended.

### **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](#).



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## 5. Resources

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### 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](#).

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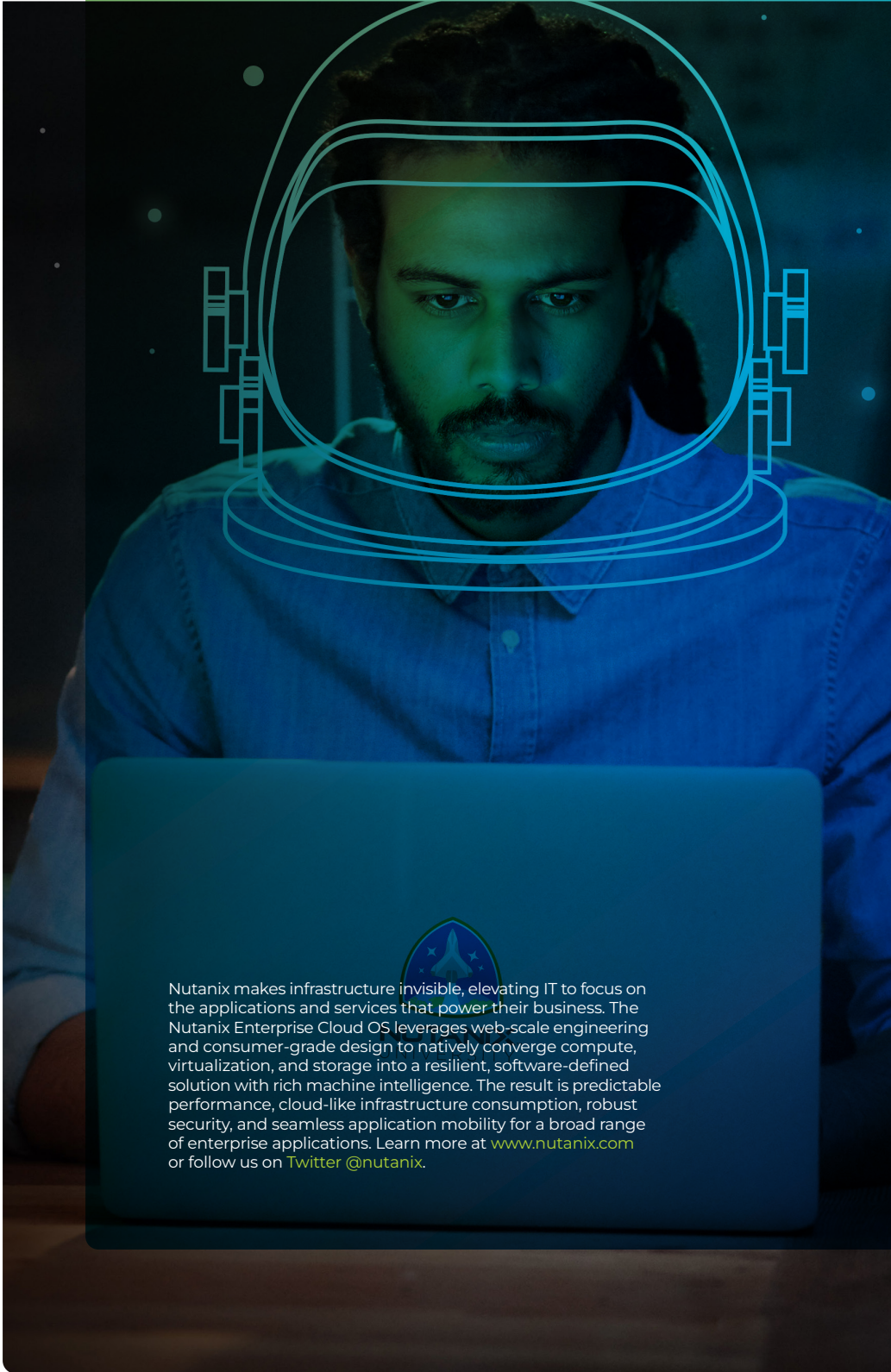
### 5.2 The Nutanix Next Community

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](#).

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### 5.3 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](http://www.nutanix.com) or follow us on Twitter [@nutanix](https://twitter.com/nutanix).

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