



Exam Blueprint

# Nutanix Certified Professional Data Services 5 (NCP-DS 5) Exam

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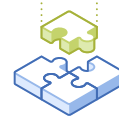
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**Disclaimer:**

The Nutanix Certified Professional - Data Services 5 (NCP-DS 5) Exam Blueprint Guide provides an over-view of the objectives that must be mastered to achieve the Certified Professional - Data Services 5 (NCP-DS) credential. Nutanix does not offer any guarantees that this guide will ensure a candidate's success in achieving the Certified Professional - Data Services 5 (NCP-DS) 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 - Data Services 5 (NCP-DS 5) exam tests candidates on their skills and abilities to deploy, configure, optimize, troubleshoot, and perform administrative tasks on the Nutanix Enterprise Cloud storage and data services Files, Objects, and Volumes technologies.

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## 1.2 Number of Questions

The NCP-DS 5 exam consists of 75 multiple choice and multiple response questions.

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## 1.3 Pricing

The cost for the NCP-DS 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 Enterprise Cloud storage and data 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 NCP-DS 5 exam is available in English, Japanese, and Simplified Chinese.

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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. 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.

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## 1.9 Certification Tracks

The NCP-DS 5 exam is a core component of the Nutanix Data Services 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 NCP-DS 5 exam and achieved the NCP-DS 5 certification, it will remain valid until Nutanix releases the next version of the certification. At that time, you have one year to upgrade your certification to the new release before it expires. Nutanix provides a delta training covering features that are part of the AOS release that coincides with the new version of the certification.

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## 1.13 Benefits of Certification

- Digital badge from Credly that you can share on social media
- Points on Nutanix Xtribe that you can redeem for prizes (not available for Nutanix employees)
- 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



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## 2. Intended Audience

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### 2.1 Intended Audience

A candidate for the NCP-DS 5 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 storage and data services Files, Objects, and Volumes technologies.



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## 3. Objectives Covered in the NCP-DS 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 storage and data services environment before attempting the NCP-DS 5 exam. It is also recommended that the candidate complete the recommended course prior to taking the exam.

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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 Data Services

##### 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

- [Nutanix File Server Prerequisites](#)
- [Nutanix Files Deployment](#)
- [Installing or Upgrading Nutanix Files](#)
- [Nutanix Files - SMB Shares and NFS Exports FAQ](#)
- [The Nutanix Bible](#)

## 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

- [Nutanix Objects User Guide](#)
- [Creating or Deploying an Object Store \(Prism Central\)](#)
- [Salient Features of Nutanix Objects](#)
- [The Nutanix Bible](#)

## 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

- [Network Files Guide](#)
- [Fetching the Files Dark Site Bundle](#)
- [Nutanix Files Upgrades](#)
- [Managing Performance Optimization](#)
- [Updating a File Server Network](#)
- [Nutanix Objects Microservices Platform \(MSP\)](#)
- [Nutanix File Analytics Guide](#)
- [Nutanix 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

- [Nutanix Files Guide](#)
- [Nutanix Files Exports and Shares](#)
- [Nutanix Files Sizing Guide](#)
- [Nutanix Objects Bucket Policy Configuration](#)
- [Nutanix Volumes](#)
- [Nutanix Files Application Workloads](#)
- [Microsoft Exchange Server](#)

### Section 2 – Configure and Utilize Nutanix Data Services

#### 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

- [Nutanix Files Options](#)
- [Nutanix Files Exports and Shares](#)
- [Nutanix Files SMB Share Default Permission](#)
- [Nutanix Files Guide](#)
- [Managing Quotas within Nutanix Files](#)
- [Nutanix Files Encryption](#)
- [Cloning a File Server](#)
- [Nutanix Files Self-Service Restore](#)
- [Managing Roles within Nutanix Files](#)
- [Configuring Antivirus Scanning \(SMB Only\)](#)
- [Creating a Multiprotocol 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](#)
- [Nutanix Volumes Guide](#)
- [Nutanix Volumes Recommendations](#)
- [Modifying or Deleting a Volume Group](#)

## 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

- [Nutanix Objects User Guide](#)
- [Nutanix Objects WORM Bucket](#)
- [Creating and Configuring a Bucket](#)
- [Bucket Naming Conventions](#)
- [Directory Configuration and Access Key Generation](#)
- [Access Objects Endpoints](#)
- [Objects Streaming Replication](#)
- [Objects v1.0 on demo.nutanix.com](#)
- [Maintaining Compliance with WORM for Nutanix 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
  - › S

## References

- [Nutanix Objects User Guide](#)
- [Nutanix Volumes](#)
- [Nutanix Volumes Recommendations](#)
- [What is Object Storage?](#)
- [Nutanix Files Guide](#)
- [Volume Group Connectivity](#)
- [Nutanix 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

- [Nutanix Files Self-Service Restore](#)
- [Nutanix Objects User Guide](#)
- [Nutanix Files Data Recovery](#)

## Section 3 – Analyze and Monitor Nutanix Data Services

### Objective 3.1 – Utilize File Analytics to assess usage patterns

#### Objectives

- 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

- [File Analytics Guide](#)
- [Managing File Categories](#)
- [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

- [Viewing Object Store Usage](#)
- [Objects Monitoring and Alerts](#)
- [Nutanix Files Performance](#)
- [Nutanix Files Monitoring and Auditing Guide](#)
- [Nutanix Files Alerts and Health Checks](#)
- [Nutanix Files - File Server Dashboard](#)
- [Assigning Quota Policy to a User](#)
- [Nutanix Files Guide](#)
- [Cluster Maximum Storage Utilization Recommended Guidelines](#)

### 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 Data Services

### 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 Nutanix Files](#)
- [Troubleshooting Active Directory Validation Check alerts](#)
- [The Nutanix Bible Objective](#)

#### 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](#)
- [Maintaining Compliance with WORM for Nutanix Objects](#)
- [The Nutanix Bible](#)

#### 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

- [Nutanix Volumes](#)
- [Nutanix Volumes - Troubleshooting](#)
- [Volume Group Support for PR3 Reservations](#)
- [Concurrent Access from Multiple Clients](#)

#### 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

- [Nutanix Files High Availability](#)
- [Share and Export Management](#)

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

##### Knowledge

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

##### References

- [Nutanix Objects Cluster Deployment Troubleshooting](#)
- [Upgrading Objects Manager](#)
- [Nutanix Files - Pre-upgrade Check failures](#)
- [MSP Version Objects Upgrade/Deployment failures](#)
- [Nutanix Files - Sub task poll errors](#)



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# 4. The Nutanix Data Services Track and Course Recommendations

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## 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](https://nutanix.com/training). The details are as follows:

### Nutanix Data Services Administration Training Course

This course teaches you the administrative skills needed to install, configure, manage, and upgrade three different Nutanix storage solution products:

- [Nutanix Files](#) - As part of this module, you will set up and manage Nutanix Files, a software-defined, scale-out file storage solution that provides a repository for unstructured data, such as home directories and departmental shares.
- [Nutanix Volumes](#) - You will learn how Nutanix Volumes provides file storage for your physical workloads, with the same simplicity as virtualized workloads, consolidating infrastructure into a single unified platform.
- [Nutanix Objects](#) - Nutanix Objects allows you to build a simple, secure, and scale-out stack. Learn how easy it is to spin up the Nutanix Objects service in few simple steps.

**Note:** While this course is recommended for pursuing a NCP-DS certification, it is NOT required





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## 5. Resources

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### 5.1 Nutanix Community Edition

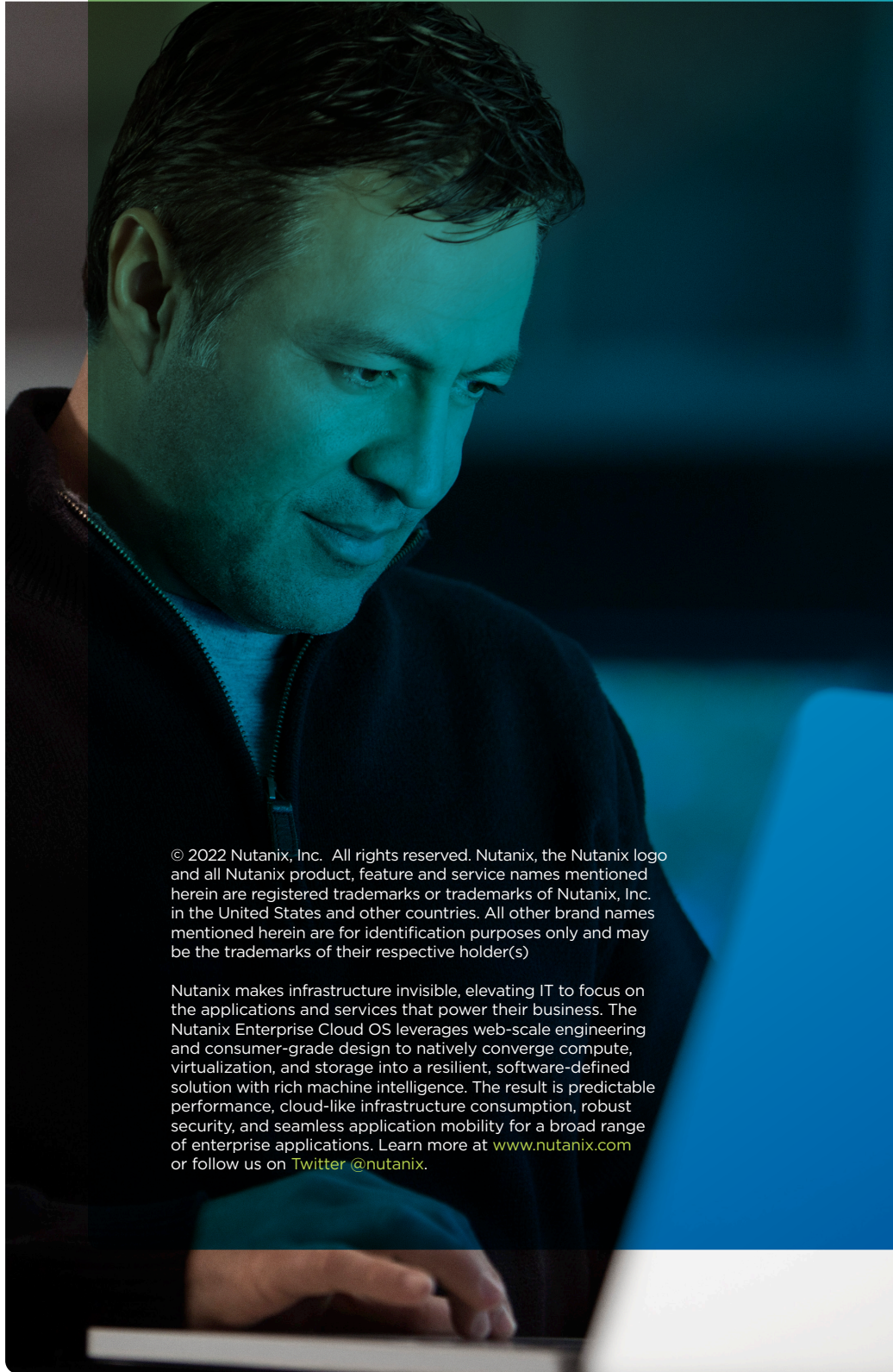
The Nutanix Community Edition is a free product that allows you to deploy a Nutanix Enterprise Cloud. To download the software and build your own environment for exam preparation, [click here](#).

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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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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