

EXAM BLUEPRINT GUIDE

# Nutanix Certified Professional Database Automation (NCP-DB) 6.10 Exam



# Table of Contents

Author	3
Contributors	3
<b>1. The Exam</b>	<b>4</b>
1.1 Purpose of Exam	4
1.2 Number of Questions	4
1.3 Pricing	4
1.4 Passing Score	4
1.5 How Objectives Relate to Questions on the Exam	4
1.6 Languages	4
1.7 Time Limit	4
<b>1.8 Scheduling and Taking the Exam</b>	<b>5</b>
1.9 Certification Tracks	5
1.10 Retake Policy	5
1.11 Exam Security	5
1.12 Recertification	5
1.13 Benefits of Certification	6
<b>2. Intended Audience</b>	<b>6</b>
<b>3. Objectives Covered in the NCP-DB 6.10 Exam</b>	<b>7</b>
3.1 Introduction	7
3.2 Objectives	7
Section 1 – Deploy and Configure an NDB Solution	7
Section 2 – Monitor alerts and storage usage within an NDB implementation	9
Section 4 – Administer an NDB Environment	14
<b>4. NCP-DB 6.10 Training Recommendations</b>	<b>18</b>
4.1 Course Recommendation	18
<b>5. Resources</b>	<b>19</b>
5.1 Nutanix Community Edition	19
5.2 Test Drive	19
5.3 The Nutanix Community	19
5.4 Additional Database Automation Resources	19

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### Disclaimer:

The Nutanix Certified Professional - Database Automation (NCP-DB) 6.10 Exam Blueprint Guide provides an overview of the objectives that must be mastered to achieve the NCP-DB 6 credential. Nutanix does not offer any guarantees that this guide will ensure a candidate's success in achieving the NCP-DB 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 - Database Automation (NCP-DB) 6.10 exam will validate a candidate's skills and abilities in deploying, administering, optimizing, and troubleshooting database workloads using Nutanix Database Service (NDB). Successful candidates demonstrate mastery of these skills and abilities.

## 1.2 Number of Questions

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

## 1.3 Pricing

The cost for the NCP-DB 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, administering, optimizing, and troubleshooting database workloads using Nutanix Database Service (NDB).

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-DB 6.10 exam is a core component of the Nutanix Database Automation track. Passing this exam results in achieving the NCP-DB 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](mailto: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 – Database Automation 6.10 exam and achieved the NCP-DB 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-DB 6.10 exam and NCP-DB 6 certification has approximately 1-2 years of database management experience, while having at least 6 months of Nutanix Database Service (NDB) experience.

Successful candidates are typically database administrators, Nutanix technical employees, Nutanix channel partners, Nutanix OEM vendors, and Nutanix customers who are capable of successfully provisioning, patching, protecting, and cloning databases. Additionally, the candidate should be able to deploy and configure NDB, register databases and database server VMs, recover databases, and create new NDB profiles. Finally, the successful candidate will most likely have taken training courses, such as the Nutanix Database Administration (NDBA) course.

# 3. Objectives Covered in the NCP-DB 6.10 Exam

## 3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary for provisioning, patching, protecting, and cloning database workloads using Nutanix Database Service (NDB) before attempting the Nutanix Certified Professional – Database Automation 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-DB 6 certification, candidates will be tested on the following software versions:

- AOS and Prism: version 6.10
- Nutanix Database Service: version 2.6

## 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](#). The candidate should be familiar with all relevant product documentation or have the equivalent skills.

### Section 1 – Deploy and Configure an NDB Solution

#### Objective 1.1: Deploy an NDB VM

##### Knowledge

- Download, import, create, and run the installation wizard
- Assign a static IP address to the NDB VM by using the console

##### References

- [Getting Started with NDB](#)
- [Welcome to NDB Wizard](#)
- [Installing NDB on AHV](#)
- [Installing NDB on ESXi](#)
- [NDB Network Requirements](#)
- [NDB Control Plane Configuration and Scalability](#)

## Objective 1.2: Configure an NDB instance

### Knowledge

- Determine & configure required network ports and segmentation
- Configure the connection to the management UI
- Perform Basic Configuration
  - Change the Language Settings
  - Configure an SSL Certificate
  - Change NTP/DNS from NDB Server CLI
  - Configure SMTP

### References

- [Assigning a Static IP Address to the NDB VM via the Console](#)
- [NDB Required Ports and Protocols](#)
- [Configuring an SSL Certificate](#)
- [IP Address Management](#)
- [Setting an SMTP Server for Alert Notification](#)
- [Configuring DNS Servers](#)
- [Changing the Language Settings](#)
- [Updating a Nutanix Cluster](#)

## Objective 1.3: Deploy and configure NDB HA

### Knowledge

- Configure HA
- Discuss service resiliency
- Deploy NDB HA for single sites and multiple Nutanix clusters

### References

- [NDB High Availability Overview](#)
- [Enabling High Availability for NDB](#)
- [Enabling NDB Multi-Cluster](#)
- [Registering a Nutanix Cluster with NDB](#)



- [NDB Service Management](#)
- [NDB Service Resiliency](#)
- [Nutanix Cluster Management](#)

## **Section 2 – Monitor alerts and storage usage within an NDB implementation**

### Objective 2.1: Manage alerts

#### Knowledge

- Monitor alerts
- Clear alerts
- Filter time range
- Set policies

#### References

- [Alert Policies Management](#)
- [Setting Alert Retention](#)
- [Sending Alert Notifications to an Email Recipient](#)

### Objective 2.2: Monitor and manage storage usage

#### Knowledge

- Identify database source and clone size
- Monitor database storage efficiency
- Monitor the number and size of snapshots
- Scale or extend storage for a database

#### References

- [Scaling an Oracle Database](#)
- [Scaling a SQL Server Database](#)
- [Clone Management](#)

## Section 3 – Operate and Maintain an NDB environment

### Objective 3.1: Register database server VMs and databases

#### Knowledge

- Verify prerequisites
  - Download scripts to verify Windows or Linux VMs
- Provide OS and database instance credentials
- Select Nutanix cluster for registration
- Discover the database instance
- Select one or more database(s)
- Provide credentials to connect to the database
- Manage logs with NDB vs third-party backup (SQL Server only)

#### References

- [Downloading Prerequisites Script \(GUI\)](#)
- [Downloading Prerequisites Script \(Linux\)](#)
- [Updating the IP Address of a Registered Database Server VM](#)
- [SQL Server Database Server VM Registration](#)
- [Registering a SQL Server Database](#)
- [Nutanix Cluster Management](#)
- [Database Server VM Registration Prerequisite Checks](#)
- [Database Log Backup Management in NDB](#)

### Objective 3.2: Provision databases

#### Knowledge

- Select database engine
- Select single instance or HA instance
- Select Nutanix cluster(s) for provisioning
- Select profiles
- Provide name and size of database
- Configure Time Machine
  - Select SLA, define schedule, select Nutanix cluster(s) for Time Machine backups

## References

- [NDB Workflow](#)
- [NDB Prerequisites](#)
- [Oracle Database Provisioning Prerequisites](#)
- [Oracle Database Provisioning](#)
- [Oracle Current Limitations](#)
- [Provisioning a SQL Server Database](#)
- [Provisioning a SQL Server Availability Database](#)
- [PostgreSQL Database Provisioning](#)
- [Adding a Database to an Existing PostgreSQL Instance](#)
- [Provisioning a PostgreSQL HA Instance](#)
- [PostgreSQL High Availability \(HA\) Support](#)
- [MongoDB Database Provisioning](#)
- [NDB Time Machine Management](#)
- [SQL Server Database as a Group](#)

## Objective 3.3: Patch databases and operating systems

### Knowledge

- Determine when and how to create and associate maintenance window
- Perform database patching
  - Create software profile versions
  - Publish/unpublish/deprecate software profile versions
  - Test patches according to vendor-specific processes
  - Apply database patches
  - Differentiate between major vs minor database upgrades
- Perform OS Patching
  - Apply OS patches
  - Manage OS patches

## References

- [Operating System Patching](#)
- [One-Click Patching](#)
- [PostgreSQL - Updating a Software Profile Version](#)
- [Oracle - Updating a Software Profile Version](#)
- [MongoDB - Updating a Software Profile Version](#)
- [SQL Server - Updating a Software Profile Version](#)
- [Maintenance Window](#)

Objective 3.4: Given a scenario, troubleshoot NDB operations

## Knowledge

- Analyze alerts
- Review and interpret operation logs
- Generate diagnostics bundle

## References

- [Alert Notifications](#)
- [Viewing Operation Logs](#)
- [Downloading the Diagnostics bundle](#)

Objective 3.5: Clone databases

## Knowledge

- Determine business requirements for clones
- Create Clones
  - Configure refresh schedule
  - Configure removal schedule
  - Authorize existing VMs
  - Configure pre and post create scripts (e.g., data masking, permission management)
  - Determine target VM for clone
  - Create from manual snapshot or point-in-time
  - Clone from a remote cluster

- Refresh Clones
  - Manage refresh schedule
  - Execute manual refresh

#### References

- [Clone Management](#)
- [Creating a Clone Refresh Schedule](#)
- [Refreshing Database Clones \(Manual\)](#)
- [SQL Server Database Clone](#)
- [Creating Single Node Database Clones](#)
- [Creating Database Group Clones](#)
- [Adding a Database to an Existing Database Group Clone](#)
- [Authorizing Database Server VMs](#)

#### Objective 3.6: Restore source databases

##### Knowledge

- Restore from a snapshot
- Restore to a point in time
- Restore from a remote cluster

##### References

- [Restoring a SQL Server Database](#)
- [Restoring a PostgreSQL Instance](#)
- [Oracle Database Restore Workflow](#)
- [NDB with Nutanix Objects](#)
- [Operating System Patching](#)

## Objective 3.7: Manage Time Machine

### Knowledge

- Determine Time Machine requirements
  - Determine number of snapshots
  - Determine schedule retention policies
  - Determine storage requirements based on policy
- Manage SLAs and create custom SLAs
- Manage Data Access Management (DAM) policy
  - Create Data Access Management policy
  - Replicate snapshots and logs to remote clusters
- Protect databases
  - Apply SLA to databases
  - Create manual snapshot

### References

- [NDB Time Machine Management](#)
- [Time Machine Snapshot Retention and Promotion](#)
- [Time Machine Behaviour and Functionality](#)
- [Time Machine Heal Snapshot](#)
- [Data Access Management](#)
- [SLA Management](#)
- [Built-in SLAs](#)
- [Creating Snapshots \(Manual\)](#)

## Section 4 – Administer an NDB Environment

### Objective 4.1: Manage NDB profiles

#### Knowledge

- Create Profiles
  - Software
  - Compute
  - Network

- Database parameters
- Windows domain
- Manage profile status (e.g., published, unpublished, and deprecated)
- Identify OOB software profiles
- Replicate Software Profile to Remote Cluster

#### References

- [NDB Profiles](#)
- [Updating a Software Profile Version](#)
- [Creating a Software Profile](#)
- [Creating a Compute Profile](#)
- [Creating a Network Profile](#)
- [Creating a Database Parameter Profile](#)
- [NDB Network Management](#)

#### Objective 4.2: Perform NDB software upgrades

##### Knowledge

- Perform upgrade of NDB
- Perform a manual upgrade of NDB (e.g., upgrading at a dark site)

##### References

- [NDB Upgrade Management](#)
- [Upgrading NDB \(One-Click Upgrade\)](#)
- [Upgrading NDB \(Offline Upgrade\)](#)
- [Upgrading Notes in NDB Release Notes](#)
- [Update OOB profiles in a dark site](#)

### Objective 4.3: Add Nutanix clusters to NDB

#### Knowledge

- Verify prerequisites, such as:
  - Versions
  - Network connectivity
  - Credentials
  - IP addresses
- Register the cluster
- Enable multi-cluster
- Configure storage containers

#### References

- [Welcome to NDB Wizard](#)
- [Registering a Nutanix Cluster with NDB](#)
- [Enabling NDB Multi-Cluster](#)

### Objective 4.4: Manage networks in NDB

#### Knowledge

- Determine when to use an NDB-managed network
- Create an NDB-managed network
- Add a VLAN

#### References

- [NDB Network Management](#)
- [Adding IP addresses to a Static VLAN](#)
- [Adding a VLAN to NDB](#)
- [Adding an AHV-managed VLAN as NDB-managed](#)

### Objective 4.5: Manage access controls

#### Knowledge

- Integrate with Active Directory
- Manage permissions and roles:



- Create custom roles
- Create users and groups
- Map users and groups
- Share entities

#### References

- [Role-based Access Control](#)
- [Configuring Active Directory Access](#)
- [Privileges and Permission](#)
- [Adding a User](#)
- [Creating a Role](#)
- [Viewing Users' Roles](#)
- [Configuring User Profile Settings](#)

#### Objective 4.6: Use NDB APIs and CLI

##### Knowledge

- Select appropriate tools (e.g., API explorer versus API Equivalent button)
- Use API equivalent button
- Use CLI
- Use API

#### References

- [NDB Initial Configuration](#)
- [Accessing the REST API Explorer](#)
- [Using the API Equivalent button to Enable Peer Authentication](#)
- [NDB Security](#)
- [NDB GUI and CLI](#)

## 4. NCP-DB 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](https://nutanix.com/training).

The course details are as follows:

The [Nutanix® Database Management & Administration \(NDMA\)](#) course teaches the skills needed to install, configure, operate, and manage Nutanix Database Service (NDB).

The NDBA course explores a number of subjects, including:

- The what, how, why, and benefits of database-as-a-service (DBaaS).
- Important NDB terms and concepts, like copy data management, time machine, provisioning profiles and data access management.
- Implementing role-based access control (RBAC), including working with built-in and custom roles, and managing users and groups.
- Adding multiple clusters to NDB, working with Nutanix Guest Tools, and registering a Nutanix cluster with NDB.
- Monitoring and investigating issues with NDB, using alert policies, notifications, and collecting logs.
- Operations involved in protecting and restoring databases, including creating snapshots, cloning databases, log catch-up operations, refreshing clones, and restoring source databases.

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

The material provided in the course covers a majority of the objectives (approximately 80%) that appear on the NCP-DB 6.10 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 Database Automation Resources

Find a wealth of additional Database Automation resources [here](#).

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