

Exam Blueprint Guide

Nutanix Certified Professional - Multicloud Automation (NCP-MCA) 6.5 Exam



Author:

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

Contributors:

Maroane Boutayeb, Team Lead Nutanix, OVHcloud
John Burton, Sr. Staff Escalation Engineer
Victor D'Gibbs, Sr. Systems Engineer
Lev Goronshtein, Advisory Systems Engineer
Tod Holsenbeck, Sr. Staff Resident Architect
Ross Hunt, Staff Resident Architect
Dave Keefe, Sr. Solutions Architect - Automation
Chris McMahon, Sr. Solutions Architect
Chris Nelson, Sr. Solutions Architect - Automation
Rickard Wendel, Sr. Systems Engineer



Disclaimer:

The Nutanix Certified Professional - Multicloud Automation (NCP-MCA) 6.5 Exam Blueprint Guide provides an overview of the objectives that must be mastered to achieve the NCP-MCA 6 credential. Nutanix does not offer any guarantees that this guide will ensure a candidate's success in achieving the NCP-MCA 6 certification. All information in this guide is subject to change at any time at the sole discretion of Nutanix.

Table of Contents

1. The Exam	
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.....	5
1.7. Time Limit.....	5
1.8. Scheduling and Taking the Exam.....	5
1.9. Certification Tracks.....	5
1.10. Retake Policy.....	5
1.11. Exam Security.....	6
1.12. Recertification.....	6
1.13. Benefits of Certification.....	6
2. Intended Audience.....	7
3. Objectives Covered in the NCP-MCA 6.5 Exam	
3.1. Introduction.....	8
3.2. Objectives.....	8
4. NCP-MCA 6.5 Training Recommendations	
4.1. Course Recommendations.....	16
5. Resources	
5.1. Nutanix Community Edition.....	17
5.2 Test Drive.....	17
5.3. The Nutanix Next Community.....	17
5.4. Additional Multicloud Automation Resources.....	17

1.The Exam

1.1 Purpose of Exam

The Nutanix Certified Professional - Multicloud Automation (NCP-MCA) 6.5 exam will measure a candidate's knowledge of automation principles, as well as the automation capabilities built into the Nutanix platform. Successful candidates demonstrate mastery of these skills and abilities.

1.2 Number of Questions

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

1.3 Pricing

The cost for the NCP-MCA 6.5 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 and administering a multicloud environment utilizing Nutanix products and 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 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-MCA 6.5 exam is a core component of the Nutanix Multicloud Automation track. Passing this exam results in achieving the NCP-MCA 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 – Multicloud Automation 6.5 exam and achieved the NCP-MCA 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
- Points on Nutanix Xtribe that you can redeem for prizes (only available for Nutanix customers)
- 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-MCA 6.5 exam and NCP-MCA 6 certification is familiar with the principles of automation and has approximately 3-6 months of experience with leveraging Nutanix products to automate the deployment of infrastructure and applications across a multicloud environment.

Successful candidates are IT professionals interested in pursuing, or currently engaged in, DevOps concepts and/or multicloud automation using Nutanix technologies. Additionally, the successful exam candidate will most likely have taken training courses, such as the Nutanix Multicloud Automation Administration (NMCAA) course.

3. Objectives covered in the NCP-MCA 6.5 Exam

3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary to leverage Nutanix products to automate deployment of infrastructure and applications across a multicloud environment before attempting the Nutanix Certified Professional – Multicloud Automation 6.5 exam. It is also recommended that the candidate complete the training course described in [Section 4](#) prior to taking the exam.

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

- AOS: version 6.5
- Prism Central: pc2022.6.x
- Nutanix Self Service (formerly Calm): version 3.6.0

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: Describe and Differentiate Automation Concepts and Principles

Objective 1.1: Determine and apply the steps required to automate a given manual process

Knowledge:

- Determine the logical steps in automating a process (e.g., put things in order of operation utilizing Self-Service library and pre-create and post-delete with Self-Service)
- Given a graphic, determine how to use Self-Service to complete the pre-provisioning steps

References

- [Calm Blueprints Overview](#)
- [Playbook Actions](#)
- [Creating Playbooks using Triggers](#)
- [Creating Custom Alert Policies](#)
- [Adding a Pre-create or Post-delete Task](#)
- [Setting up the Service Dependencies](#)
- [Scheduler Overview](#)
- [Runbook Sharing across Projects](#)
- [Nutanix Integration with ServiceNow](#)
- [How to find a VM creation date and time in Prism Central](#)

Objective 1.2: Demonstrate an understanding of event-driven playbooks

Knowledge:

- Demonstrate an understanding of how to create a Playbook by setting trigger and defining actions
- Arrange playbook steps (using X-Play)
- Create a playbook that applies to multiple virtual infrastructure resources

References

- [Playbook Actions](#)
- [Creating Custom Alert Policies](#)
- [Creating Playbooks using Triggers](#)
- [Using Branch Action \(Conditional Execution\)](#)
- [Configuring Autopilot for Playbook](#)
- [Creating Playbooks Using Event](#)

Objective 1.3: Define the components of X-Play

Knowledge:

- Define Playbook's action gallery and plays
- Identify alerts and manual triggers

References

- [X-Play Overview](#)
- [Playbook Actions](#)
- [Prerequisites for VM Actions in Playbooks](#)
- [Creating Playbooks Using Alert](#)
- [Running a Playbook \(Manual Trigger\)](#)
- [Configuring Manual Parameters](#)

Objective 1.4: List how to implement categories for the appropriate use cases

Knowledge:

- Describe how to create Categories
- Explain the effects of Categories
- Given a category and a blueprint, infer if a policy will be applied to a VM

References

- [Category Management](#)
- [Creating a Category](#)
- [Assigning a Category](#)
- [Configuring Nutanix Environment](#)

Objective 1.5: Identify the capabilities of Projects

Knowledge:

- Describe how to create Projects
- Define how to assign RBAC in a Project
- Define how to create quotas
- Explain the definition of a project
- Define how to assign infrastructure to a project

References

- [Projects Overview](#)
- [Project Details View](#)
- [Creating a Project](#)
- [Deleting a Project](#)
- [Calm Role-Based Access Control](#)
- [Allocating Resource Quota to an Account](#)

[Section 2: Deploy and Configure Self-service and Related Components](#)

Objective 2.1: Given a scenario, create a blueprint to deploy infrastructure and applications using Self-Service

Knowledge:

- Given a scenario, determine the correct method to create a Self-Service blueprint
- Given a scenario, determine the correct method to create a substrate
- Given a scenario, determine the correct method to create a day two action

- Given a scenario, determine the correct method to create a task
- Given a scenario, determine the correct method to configure install/uninstall packages
- Determine which task type to use per script language/function
- Determine pre-requirements for Self-Service deployment
- Determine how to utilize Self-Service built-in macros within blueprints
- Determine how to set application infrastructure requirements related to automation optimization
- Determine if an application profile should be used in the Blueprint

References

- [Create a Single-VM Blueprint](#)
- [Creating a Multi-VM Blueprint](#)
- [Creating Day Two Actions](#)
- [Configuring Tasks or Packages in a Blueprint](#)
- [Creating an HTTP Task](#)
- [Configuring Advanced Options for a Blueprint](#)
- [Calm Scripts](#)
- [Prerequisites to Deploy Calm](#)
- [Calm Benchmarks](#)
- [Macros - Virtual Machine Common Properties](#)
- [Setting up the Service Dependencies](#)
- [Provider Account Settings in Calm](#)
- [Adding and Configuring an App Profile](#)

Objective 2.2: Demonstrate an Understanding of Self-service Managed Infrastructure and Applications

Knowledge:

- Determine how to scale out and/or in
- Determine how to retire a managed application
- Determine how to manage an application
- Determine how to run a task

References

- [Adding and Configuring Scale Out and Scale In](#)
- [Architecting AHV for Nutanix Calm](#)
- [Nutanix Account Configuration](#)
- [Self-Service Manage Tab](#)
- [Adding and Configuring an Application Profile](#)

- [Creating Brownfield Application](#)
- [Tunnels for Orchestration within a VPC](#)
- [Variable Types Overview](#)
- [Configuring Tasks or Packages in a Blueprint](#)
- [Creating a Set Variable Task](#)

Objective 2.3: Identify required configuration settings for a Self-Service deployment

Knowledge:

- Describe how to configure providers
- Recall the requirements for setting up environments within Self-Service to deploy to various supported Accounts
- Define Marketplace capabilities
- Describe how to configure endpoints
- Describe how to create a library item

References

- [Provider Account Settings in Calm](#)
- [Prerequisites to Enable Calm](#)
- [Support for Multi-PC Setup](#)
- [Self-Service Ports and Protocols](#)
- [Self-Service Software Options](#)
- [Marketplace Manager in Calm](#)
- [Endpoints in Calm](#)
- [Deleting an Endpoint](#)
- [Library Overview](#)
- [Task Library Overview](#)

Objective 2.4: Identify common Blueprint features

Knowledge

- Identify built-in macros, tasks, and action/task dependencies
- Identify blueprint features to include authentication credentials in a cloudinit and sysprep
- Recognize the syntax of a macro
- Identify application profiles

References

- [Calm Blueprints Overview](#)
- [Blueprint Configurations in Calm](#)
- [Configuring Tasks or Packages in a Blueprint](#)
- [Credentials Overview](#)
- [Macros Overview](#)
- [Macros - Virtual Machine Common Properties](#)

Objective 2.5: Identify common Runbook features

Knowledge

- Identify task types
- Identify built-in macros, tasks, and task dependencies

References

- [Runbooks in Calm](#)
- [Creating a Runbook](#)
- [Executing a Runbook](#)
- [Deleting a Runbook](#)

Objective 2.6: Describe the features and requirements of Self-Service

Knowledge

- Describe Self-Service requirements
- Define Self-Service use cases

References

- [Prerequisites to Deploy Calm](#)
- [Calm Benchmarks](#)
- [Self-Service Ports and Protocols](#)

Objective 2.7: Identify common Governance features

Knowledge

- Describe an approval policy
- Describe a scheduler task

References

- [Policy Engine Overview](#)
- [Approval Policy Overview](#)
- [Conditions in Approval Policies](#)
- [Scheduler Overview](#)

Section 3: Validate Blueprints, Runbooks, Playbooks, and Automation Settings

Objective 3.1: Determine the causes of a Blueprint or Runbook deployment failure

Knowledge

- Determine how to use audit trails to identify a task that has failed
- Given an error message, explain the issue

References

- [Self-Service Audit Tab](#)
- [Adding Credentials to a Project Environment](#)
- [Applications Overview](#)
- [App deployment/deletion fails when deployed VM has no IP address](#)
- [Authentication failure during task execution](#)
- [App/VM deployment resource utilization issues](#)
- [VM creation script execution failure errors](#)
- [Logon session termination errors](#)
- [Unsupported customization of Guest Operating System errors](#)

Objective 3.2: Describe where to find information to assist in validation

Knowledge

- Given an issue with Self-Service, locate troubleshooting data/collect the logs
- Given an issue with Playbooks, locate troubleshooting data/collect the logs

References

- [Self-Service Applications Auditing](#)
- [Configuring Rsyslog for Policy VM](#)
- [Azure Troubleshooting in Self-Service](#)

Objective 3.3: Determine the correct method to validate required Playbook configurations

Knowledge

- Given a Playbook and symptom, explain an issue
- Given a scenario, determine how to correctly configure a Playbook

References

- [Prerequisites for VM Actions in Playbooks](#)
- [Creating a Playbook using Triggers](#)
- [Running a Playbook \(Manual Trigger\)](#)
- [Playbook Actions](#)
- [Task Automation](#)
- [Creating Playbooks Using Alert](#)
- [Integrating Ansible Action in Playbooks](#)

Objective 3.4: Determine the causes of issues associated with automation

Knowledge

- Given a scenario/screenshot, interpret the issue
- Given a log, infer what type of issue may be present
- Determine how to optimize a workflow to align with best practices
- Given a scenario/image, explain how to triage/frame/predict an issue

References

- [VM creation RPC request errors](#)
- [Windows blueprint deployment process creation failure errors](#)
- [Blueprint launch errors due to account verification state](#)
- [Blueprint launch errors due to failed connection](#)
- [Self-Service Showback not able to reach Beam service](#)
- [Logon session termination error when importing script that maps network drive](#)
- [Policy engine version mismatch](#)
- [App/VM deployment resource utilization failure errors](#)
- [App deployment/deletion failure when deployed VM has no IP address](#)

4. NCP-MCA 6.5 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:

Nutanix Multicloud Automation Administration (NMCAA)

The Nutanix Multicloud Automation Administration course teaches you the skills needed to install, configure, operate, and manage Nutanix X-Play and Nutanix Calm (renamed to Nutanix Cloud Manager (NCM) Self-Service).

The NMCAA course will explore a number of subjects, including:

- How to perform codeless task automation using X-Play and its actions gallery, plays, and playbooks
- What Nutanix Calm is, how to install and configure it, and how to use the Marketplace to launch blueprints and runbooks
- How to create single- and multi-VM blueprints, and how to publish them to the Marketplace for consumption
- How to manage an application
- How to identify issues with Nutanix Calm and X-Play

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

The material provided in the course covers a majority of the objectives (approximately 80%) that appear on the NCP-MCA 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 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](#).

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 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 the NCP certification, which is located [here](#).

5.4 Additional Multicloud Automation Resources

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

NUTANIX

certification@nutanix.com
www.nutanix.com/university
 @nutanixedu



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](https://twitter.com/nutanix).