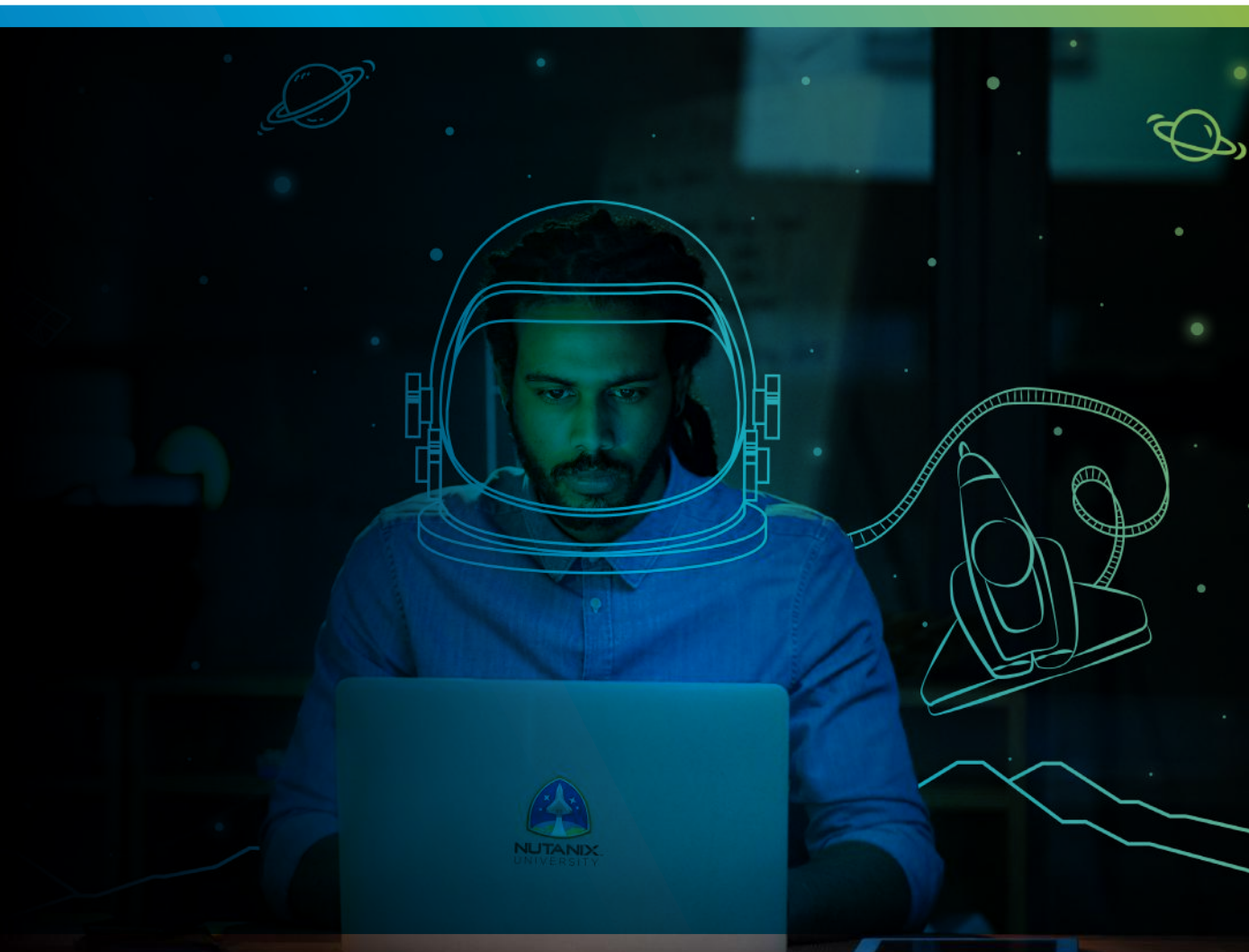**Exam Blueprint**

Nutanix Certified Professional Multicloud Automation (NCP-MCA) 6 Exam

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Disclaimer:
The Nutanix Certified Professional – Multicloud Automation 6 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.

1. The Exam

2. Intended Audience

3. Objectives Covered In The NCP-MCA 6 Exam

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1.The Exam

1.1 Purpose of Exam

The Nutanix Certified Professional - Multicloud Automation 6 exam tests that candidates are comfortable with principles of automation, as well as the automation of infrastructure and single/multi-tiered applications within the Nutanix platform. Successful candidates demonstrate mastery of these skills and abilities.

1.2 Number of Questions

The exam consists of 75 multiple choice and multiple response questions.

1.3 Pricing

The cost for the NCP-MCA 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 automating infrastructure and single/multi-tiered applications within a Nutanix multicloud environment. 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-MCA 6 exam is available in English.

1.7 Time Limit

The time limit for the exam 120 minutes.

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.

1.9 Certification Tracks

The Nutanix Certified Professional - Multicloud Automation 6 exam is a core component of the Nutanix Multicloud Automation Management 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 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 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 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, 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 Nutanix Certified Professional - Multicloud Automation 6 exam and NCP-MCA 6 certification understands IT automation and how Nutanix multicloud solutions help to automate infrastructure and applications. Candidates for the NCP-MCA 6 certification will understand how to design single and multi-tiered applications and will be able to incorporate manual tasks in the automation process.

Successful candidates have at least 3-6 months of automation experience within the Nutanix environment. They are typically IT professionals interested in pursuing, or currently engaged in, DevOps concepts and/or multicloud automation using Nutanix technologies.

The successful 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 Exam

3.1 Introduction

It is recommended that candidates have the knowledge and skills necessary to understand IT automation, leverage Nutanix multicloud solutions to automate infrastructure and single/multi-tiered applications, and be comfortable incorporating manual tasks in the automation process before attempting the Nutanix Certified Professional - Multicloud Automation 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 certification, candidates will be tested on the following software versions:
- AOS: version 6.5
- Prism Central: 2022.6
- Calm: version 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 – 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
- Determine how to use Calm to complete pre-provisioning steps

References

- Runbooks Overview
- Runbooks in Calm
- Creating a Runbook with an Execute or Set Variable Task
- Setting up the Service Dependencies
- Blueprint Overview
- Multi-VM Blueprints
- Adding a Pre-create or Post-create Task
- Exporting or Importing Playbooks

Objective 1.2 – Demonstrate an understanding of event-driven Playbooks

Knowledge:

- Demonstrate an understanding of how to create a Playbook by setting a trigger and defining actions
- Demonstrate an understanding of how to correctly arrange Playbook steps using X-Play

References

- Creating Playbooks Using Triggers
- Prerequisites for VM Actions in Playbooks
- Creating Playbooks Using Webhook
- Configuring Autopilot for Playbook
- Playbook Actions
- Exporting or Importing Playbooks
- Creating Playbooks Using Event
- Configuring Manual Parameters
- Using Branch Action (Conditional Execution)
- PagerDuty Integration with Prism

Objective 1.3 – Define the components of X-Play

Knowledge:

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

References
- Task Automation
- Playbook Actions
- Plays
- Creating Playbooks Using Event
- Exporting or Importing Playbooks
- Running a Playbook (Manual Trigger)
- PagerDuty Integration with Prism

Objective 1.4 – Demonstrate an understanding of Categories

Knowledge:
- Demonstrate an understanding of how to create Categories
- Explain the effects of Categories
- Given a Category and a blueprint, infer is a policy will be applied to a VM

References
- Assigning a Category
- Categories Summary View
- Category Management
- Creating Custom Alert Policies
- Assigning a Role
- Modifying a Category
- Configuring an Image Placement Policy
- Adding Custom Alert Policies
- Operations Policy Management

Section 2 – Deploy and Configure Calm and Related Components

Objective 2.1 – Create a blueprint to deploy infrastructure and applications using Calm

Knowledge:
- Demonstrate an understanding of how to create a Calm blueprint
- Demonstrate an understanding of how to create a substrate
- Demonstrate an understanding of how to create a task
- Demonstrate an understanding of how to configure install/uninstall packages
- Determine which task type to use per script language/function
- Demonstrate an understanding of prerequisites for Calm deployment
- Demonstrate an understanding of how to utilize Calm built-in macros within blueprints
- Demonstrate an understanding of how to set application infrastructure requirements related to automation optimization

References
- Nutanix Calm Overview
- General Settings in Calm
- Adding a Pre-create or Post-create Task
- Creating an HTTP Task
- Account Configuration
- Adding Accounts to a Project
- Adding and Configuring Scale Out and Scale In
- Setting up the Service Dependencies
- Publishing a Blueprint
- Prerequisites for Enabling Nutanix Calm
- Macros Overview
- Adding an Action
- Variables Overview

Objective 2.2 – Demonstrate an understanding of Calm managed infrastructure and applications

Knowledge:
- Demonstrate an understanding of how to scale out
- Demonstrate an understanding of how to retire a managed application
- Demonstrate an understanding of how to manage an application
- Demonstrate an understanding of how to run a task

References
- Adding and Configuring Scale Out and Scale In
- Creating a Brownfield Application
- Calm Roles and Responsibilities Matrix
- Adding and Configuring an Application Profile
- Calm Library Overview
- Calm Blueprints Public Repository
- Calm Benchmarks
- Calm Administration – Manage Tab
- Calm Administration – Getting Started
- Update VM Configurations of Running Applications
- Variable Types Overview

Objective 2.3 – Apply typical configuration settings to a Calm deployment

Knowledge:

- Describe how to configure providers

- Describe how to configure a project

- Define user permissions and roles

- Recall the requirements for setting up environments within Calm to deploy to various supported Clouds

- Define Marketplace capabilities

References
- Provider Account Settings in Calm
- Projects Overview
- Prerequisites for Using Calm
- Calm Pre-Configuration
- Role-Based Access Control in Calm
- Calm SaaS API Key Management
- Enabling Showback
- Calm Recovery Points Tab
- Creating a Tunnel Entity
- Marketplace Manager Overview

Objective 2.4 – Identify common blueprint features

Knowledge:
- Identify built-in macros, tasks, and action/task dependencies
- Recognize the syntax of a macro
- Identify blueprint features to include authentication credentials
- Identify endpoints
- Describe how to execute Calm Runbooks within blueprints

References
- Built-in Macros
- Adding and Configuring an Application Profile
- Pre-Create Tasks
- Runtime Variables Overview
- Single-VM Blueprints in Calm
- Multi-VM Blueprints in Calm
- Blueprints Management in Calm
- Credentials in Calm
- Endpoints Overview
- Configuring Nutanix and Existing Machine VM, Package, and Service
- Executing a Runbook

Objective 2.5 – Describe the requirements and use cases of Calm

Knowledge:
- Define Calm
- Describe Calm requirements
- Define Calm use cases

References
- Introduction to Calm
- Prerequisites for Enabling Nutanix Calm
- Enabling Nutanix Calm
- Calm VM Deployment
- Calm Use Cases

Section 3 – Validate Blueprints, Playbooks, and Automation Settings

Objective 3.1 – Understand the typical causes of a blueprint deployment failure

Knowledge:
- Demonstrate an understanding of audit trails
- Given an error message, explain the cause of the issue

References
- Calm Audit Tab
- Calm - Authentication failure during task execution
- Calm – App deployment/deletion fails when deployed VM has no IP address
- Calm Project Environments

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

Knowledge:
- Given an issue with Calm, locate troubleshooting data and collect the logs
- Given an issue with Playbooks, locate troubleshooting data and collect the logs

References
- Plays
- Downloading an Application Log Archive
- Applications Overview
- Calm – Azure Troubleshooting
- Calm Audit Tab
- Approving and Publishing a Blueprint or Runbook
- Calm Recovery Points Tab

Objective 3.3 – Validate typical Playbook configurations

Knowledge:
- Interpret data/logs to determine the cause for a given issue
- Given a Playbook and symptom, explain a given issue

References
- Playbook Actions
- Creating Playbooks Using a Predefined Alert
- Prerequisites for VM Actions in Playbooks
- Task Automation

Objective 3.4 – Understand the typical causes of issues associated with automation

Knowledge:

- Given a scenario, interpret a given issue
- Given a log, infer what type of issue may be present
- Explain how to optimize a workflow to align with best practices
- Given a scenario, explain how to triage and narrow down the possible root causes of an issue

References

- Calm showback is not able to reach beam service
- Onboarding Nutanix Account
- Calm – Blueprint Save validation errors for VMware blueprints
- Calm – Logon session errors when importing scripts that map network drives
- Integrated Linux Based Powershell Gateway Errors
- Calm – Windows Blueprint process creation failure errors
- Calm – VM creation task failure
- Calm – Error when launching blueprint
- Calm – Connection refused error

4. NCP-MCA 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® Multicloud Automation Administration (NMCAA)

The Nutanix Multicloud Automation Administration course teaches you the skills needed to course to install, configure, operate, and manage Nutanix X-Play and Nutanix Calm.

In this course, you 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 and how to identify issues with Nutanix Calm and X-Play

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, 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 the NCP-MCA certification, which is located here.

5.3 Additional Multicloud Automation Resources

Find a wealth of additional Multicloud Automation 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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