Nutanix® Platform Expert (NPX)

Design Review Preparation Guide

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Disclaimer

The Nutanix® Platform Expert (NPX®) Design Review Preparation Guide provides an overview of the knowledge categories that must be mastered to achieve the NPX credential. Nutanix does not offer any guarantees that this guide will ensure a candidate's acceptance into or success in the NPX Program. All information in this guide is subject to change at any time at the sole discretion of Nutanix.

1: Nutanix Platform Expert (NPX)

1.1: NPX Program Overview

Nutanix nu.school has developed a series of professional certifications to support adoption of hyper-converged/Web-scale architecture in the enterprise and to identify and promote thought leaders in this fast-growing, competitive market segment. The flagship certification in the series is the Nutanix Platform Expert (NPX).

Certified graduates of the NPX Program will have a very unique set of skills, including the demonstrated ability to deliver enterprise-class Web-scale solutions using multiple hypervisors and vendor software stacks on the Nutanix platform (VMware® vSphere®, Microsoft® Hyper-V®, and KVM). This hypervisor agnostic certification for Enterprise Architects is a first in the industry; our groundbreaking approach allows an NPX the freedom to design cutting-edge Web-scale solutions for customers based solely on their business needs. The depth and breadth of the solution design and delivery skills validated through our peer-vetted program make NPX the new standard for excellence. In accordance with program goals every NPX will be a superb technologist, a visionary evangelist for Web-scale, and a true Enterprise Architect - capable of designing and delivering a wide range of cutting-edge solutions; custom built to support the business goals of the Global 2000 and government agencies in every region of the world.

1.2: NPX Program Requirements for Candidates

NPX candidates are expected to have considerable IT industry experience and to be expert technologists, consultants, and solution architects with portfolios of work reflecting this expertise. A successful NPX applicant will document and demonstrate their ability to deliver enterprise-scale IT solutions that support applications with service level agreements specified by business stakeholders.

Success in the NPX Program will require a high level of proficiency in all knowledge areas specified in this guide. While it is not necessary that a candidate hold specific industry certifications beyond Nutanix Platform Professional (NPP) or specific professional or academic credentials, it is highly recommended that the following matrix be used as a benchmark tool to ensure a candidate is prepared for the rigors of the NPX Program.

> *Because NPX is unique in requiring expert-level mastery of multiple vendor solution stacks, it is highly recommended that candidates have skills equivalent to individuals holding one primary plus one of the secondary certifications used as a skills benchmark. The matrix is not meant to be exhaustive – equivalent industry certifications, professional credentials, or academic degrees may also be used as benchmarks for self-assessment prior to applying for NPX Program acceptance.*

Nutanix Platform Expert (NPX) Program Readiness Self-Evaluation

	VMware VCDX-NV	VMware 2 VCAPs or VCIX	Microsoft MCSE-Private Cloud	Cisco CCIE CCDE	Citrix CCIA CCE-V	CCC PCSA	Red Hat RHCA	AWS® CSA-P
Microsoft® MCM, MCSM, MCA *or* MCSE-Private Cloud + TOGAF® or Zachman®	✔	✔		✔	✔	✔	✔	✔
Cisco® CCAr or CCDE + TOGAF or Zachman		✔	✔		✔	✔	✔	✔
Cloud Credential Council® (CCC) PCSA + TOGAF or Zachman	✔	✔	✔	✔	✔			✔
Red Hat® RHCA (w/RHCSA OpenStack)	✔	✔	✔	✔	✔			✔
VMware® VCDX (-DCV, -DT, or -Cloud)			✔	✔	✔	✔	✔	✔

Primary Skill Benchmarks (1 Recommended) + **Secondary Skill Benchmarks (1 Recommended)**

Nutanix® Support Specialist (NSS) Recommended

Nutanix Platform Professional (NPP) Required

Nutanix Platform Professional (NPP) Certification

NPP certification is a prerequisite for acceptance into the NPX Program. It is recommended that candidates take the recommended training course prior to sitting the NPP exam.

The Nutanix Administration Course is the foundational technical course that covers essential configuration, operation and management topics in preparation for the NPP exam. The course includes instruction on Nutanix concepts and procedures as well as labs for hands-on experience.

There are low-cost and no-cost options available for those preparing for the NPP exam. Complete details on NPP and other nu.school education offerings are available on the nu.school Website.

Additional material that candidates may find useful in preparation for the NPP exam is available from a number of online sources. One of the best resources for all things Nutanix and Web-scale is Steven Poitras' Nutanix Bible.

Nutanix Support Specialist (NSS) Certification

While not a prerequisite for NPX, the NSS training and certification vets the skills required for Level 1 & 2 support of a Nutanix cluster. NPX Program candidates may find these skills very useful in the hands-on portion of the NPX Design Review.

To learn more about training and exam availability for the NSS certification, email nu.school@nutanix.com.

2: NPX Certification Process Overview

NPX certification is a two-stage process; the first stage being a review of a candidate's NPX Program Application. If a candidate's application is accepted they will be invited to participate in the NPX Design Review (NDR). The NDR is modeled after an academic viva voce defense (live, oral exam) and requires candidates to present their solution to, and answer questions posed to them by NPX-Certified Examiners (NCE). The NDR also includes a series of hands-on exercises, which must be completed by the candidate. Successful completion of both stages is required to earn the NPX credential.

NPX Design Review Schedule and NPX Program information

A schedule of NDR offerings with associated NPX Application due dates is published in the NPX forum which is hosted on the Nutanix NEXT Community Website. This forum also contains the NPX Program FAQ and is the authoritative source for NPX Program information and communications.

2.1: NPX Certification Process Stage 1 – NPX Application Review

The NPX Program Application

The NPX Program Application serves as a content checklist and provides detailed guidance on how to structure the documentation supporting a submitted solution design. Additionally, the application form provides information on acceptable document formats, the application submission process, and rules pertaining to the submission of fictitious solutions and solution designs with multiple contributors.

There are specific elements required in the NPX Application pertaining to a candidate's qualifications and the document set supporting the solution design. All NPX Applications must contain the following:

- Candidate's work history (CV);
- Documentation of relevant Industry certifications (if held);
- 3 professional references;
- An evaluation of emerging technologies related to Web-scale and DevOps, and recommendations for incorporating them in Nutanix solutions - authored by the candidate;
- A fully documented enterprise-class infrastructure solution design, built on Nutanix, architected and delivered successfully by the candidate.
    - In order to be considered for review a candidate's solution design documentation must contain the following:
        - A current state and operational readiness assessment
        - A Web-scale migration and transition plan
        - Documentation of specific business requirements driving the solution design
        - Documentation of assumptions that impacted the solution design
        - Documentation of design constraints that impacted the design and delivery of the solution
        - Documentation describing risks identified in the design and delivery of the solution and how those risks were remediated
        - A solution architecture including a conceptual/logical and physical design with appropriate diagrams and descriptions of all functional components of the solution
        - An implementation plan
        - An installation guide
        - A test and validation plan
        - Documentation of operational procedures

NPX Solution Design Judgment Criteria

The infrastructure solution design included in an NPX candidate's application will be judged in the following categories:

Conceptual/Logical Design Elements

- Scalability
- Resiliency
- Performance
- Manageability and Control Plane Architecture
- Data Protection and Recoverability
- Compliance and Security
- Virtual Machine Logical Design
- Virtual Networking Design
- Third-party Solution Integration

Physical Design Elements

- Resource Sizing
- Storage Infrastructure
- Platform Selection
- Networking Infrastructure
- Virtual Machine Physical Design
- Management Component Design
- Datacenter Infrastructure (Environmental and Power)

NPX application length or word count is not specified and will vary widely depending on the documentation practices employed by applicants. Enterprise-class solution designs may require hundreds of pages in supporting documentation but candidates should consider each included item carefully. A good method for avoiding clutter in an NPX application is to provide links to supporting materials such as generic product documentation, whitepapers, and KB articles.

Generally, NPX application reviewers are expecting all submitted documentation to be succinct, well organized, and complete. A wide range of styles and organizational frameworks are acceptable in solution design documentation but the over-arching standard is this: The supporting document set must be logically organized and contain sufficient detail to allow the solution to be delivered and validated by a reasonably skilled implementation team without undue assistance from the designer(s).

NPX Application Acceptance and Rejection

All submitted NPX Program Applications are reviewed and scored by a team of Nutanix Certified Examiner (NCE) reviewers. An application receiving a passing score from the majority of reviewers will result in a candidate being invited to the next scheduled Nutanix Design Review (NDR).

If a candidate submits an application that does not achieve a score sufficient to pass the NPX Program Application Review (NPAR) their application will be rejected. Other reasons for application rejection may include late submission (missed deadline), an incomplete document set, lack of sufficient detail in the solution design, or any evidence of plagiarism. Detailed feedback will be provided regarding areas that require improvement. After a 6-month waiting period has expired (6 months from the application due date), candidates will be allowed to reapply. Reapplying candidates will be required to document their revisions and show compliance with recommendations made by their NCE Reviewers.

Candidates who fail a second NPX Program Application Review will be required to submit an entirely new design for any subsequent attempts. Additionally, they may be required to seek training and obtain certifications equivalent to those specified in the NPX Program Readiness Self-Evaluation Matrix before reapplying.

2.2: NPX Certification Process Stage 2 - NPX Design Review (NDR)

After a successful review, acceptance into the NPX Program will include an invitation to participate in the second stage; the NPX Design Review (NDR) - a ½-day live, performance-based exam modeled after an academic viva voce defense. During the NDR, candidates should be prepared to present their solution and answer questions about the following before NPX-Certified Examiners: All aspects of their Nutanix-based solution (including all decisions made during the conceptual, logical, and physical design phases); The features and benefits of Web-scale and how it is shaping the future of datacenter design, IT operations, and application development.

Additionally candidates will be required to demonstrate expert-level Nutanix knowledge and advanced troubleshooting skills with multiple Nutanix-based solution sets. This is accomplished through participation in a hands-on exercise with a live Nutanix environment and completion of a solution design exercise that includes: Creation of a 3-tier-to-Web-scale migration strategy for an existing architecture; and Creation of a conceptual/logical solution design. Both exercises will utilize a second solution stack/hypervisor pre-selected by the candidate (e.g., a Hyper-V/Nutanix based cluster and solution design if the candidate's NPX application contained a vSphere/Nutanix or KVM/Nutanix solution).

Components of the NDR and Session Timeline

The NDR will be structured as follows:

- Solution Design Presentation, Web-scale and technology trends discussion, and Q&A with NPX-Certified Examiners: 1:30
- Break :10
- Hands-on exercise – focus on resolving an architectural issue in a live Nutanix environment: :40
- Break :10
- Design Exercise – Focus on 3-tier-to-Web-scale migration and 2nd hypervisor/solution stack 1:00

NDR Solution Design Presentation: Judgment Criteria and Knowledge Categories

The NDR solution design presentation will be used to verify design authorship and candidate competency in the knowledge categories specified in this guide. In cases where a solution design has more than one architect, the presentation will also verify that the candidate before the examiners has the appropriate level of competency in all required categories; the performance standard being that any candidate must demonstrate understanding of every aspect of a submitted solution design and the rationale behind every design decision, even if certain components of the design (e.g., the backup solution or network infrastructure) were the primary responsibility of another team member.

This portion of the NDR will also validate that every NPX candidate can clearly articulate the benefits of Web-scale and provide clear examples of how solution design is influenced by hyper-convergence and the new technologies and operational models it supports in the datacenter.

The knowledge categories validated in this portion of the NDR are:

Consultation skills

- Discovery of business requirements
- Identification of risks and risk elimination or remediation
- Identification of assumptions and constraints and removal or accommodation in the solution design
- Incorporation of Web-scale technologies and operational models
- Evaluation of organizational/operational readiness
- Migration and transition planning

Conceptual/Logical Design Elements

- Scalability
- Resiliency
- Performance
- Manageability and Control Plane Architecture
- Data Protection and Recoverability
- Compliance and Security
- Virtual Machine Logical Design
- Virtual Networking Design
- Third-party Solution Integration

Physical Design Elements

- Resource Sizing
- Storage Infrastructure
- Platform Selection
- Networking Infrastructure
- Virtual Machine Physical Design
- Management Component Design
- Datacenter Infrastructure (Environmental and Power)

NDR Hands-on Exercise: Judgment Criteria and Knowledge Categories

The Hands-on Exercise will be used to verify that every NPX candidate has a practical working knowledge of the Nutanix Platform and how to support application performance on a Nutanix cluster. In this exercise candidates will be challenged to identify and troubleshoot a performance issue that is being caused by a flaw in the solution architecture. The examiners will choose the application to run on the 2nd solution stack/hypervisor pre-selected by the candidate. The candidate will be asked to make recommendations to improve the design if the root problem is identified. During this exercise the candidate will be judged in the following knowledge areas:

- Application performance
- General troubleshooting methods
- Nutanix platform performance and troubleshooting
- Solution design skills related to application performance

Success with the hands-on exercise will require a well-structured, methodical approach to troubleshooting (e.g., RCA-based, or Kepner-Tregoe-based), an understanding of how solution components interact to deliver application services to end-users, and the ability to access components and interpret information collected at all levels of the solution stack. Completion of the exercise will also require the ability to make corrective configuration changes to the infrastructure based on the candidate's interpretation of the collected data.

NDR Design Exercise: Judgment Criteria and Knowledge Categories

The Design Exercise will be in the format of an interactive role-play. The candidate will be presented with documentation and diagrams describing a traditional, 3-tier datacenter environment supporting a large enterprise. The exercise will require the candidate to act as a consultant tasked with designing and migrating the customer's existing business to a Web-scale solution built on Nutanix. As stated previously the candidate will be required to provide a conceptual/logical design for the new customer environment utilizing a vendor solution different than the one used in the submitted NPX Program Application (e.g., if the application contains a Hyper-V or KVM-based solution the Design Exercise will call for vSphere). During the Design Exercise candidates will be presented with the following objectives:

- Establish business requirements driving the solution design
- Identify risks and propose ways to eliminate or remediate them
- Recognize constraints and remove or account for them in the solution
- Provide a strategy for migrating the existing environment to a Nutanix Web-scale infrastructure
- Use the deployment of Web-scale infrastructure to introduce new technologies and improved operational models (e.g., DevOps)

Successful candidates will have excellent communication and presentation skills. The exercise will require whiteboarding and the ability to describe the components and benefits of a Web-scale solution clearly and succinctly. Candidates will be required to demonstrate an efficient, well-structured approach and produce a conceptual/logical design in the allotted time. The design must addresses the business needs of the customer while reducing complexity/costs and offering improvements in operational efficiency.

3: Support and Resources for NPX Candidates

The NPX Program is committed to producing and vetting the best Enterprise Architects in the world; consummate professionals who understand the technologies of today, the Web-scale future, and how to make that future real for the Global 2000. Achievement of this goal will require a significant commitment of resources from people who are already accomplished technologists and consultants, and that level of commitment from exceptional people deserves an equal commitment of resources and expertise from Nutanix.

These resources include full-day NPX Solution Design Workshops offered quarterly, full-day NDR Preparation Workshops offered before every NPX Design Review, and assignment of an NPX Mentor for all qualified applicants. Candidates seeking admission to the NPX Mentor Program are required to send a written request and CV to npx@nutanix.com.

Candidates preparing for the NPX Program may find the following resources valuable:

Nutanix Bible: http://stevenpoitras.com/the-nutanix-bible/

Web-scale 101: http://go.nutanix.com/webscale-101-hyper-converged-infrastructure-guide.html

Nutanix on YouTube: https://www.youtube.com/user/Nutanix

nu.school on YouTube: https://www.youtube.com/channel/UCJupSMWQRKQTvkb2CfkW0Eg

Additionally, blogs maintained by the NPX Program Developers are good sources of information and insight into all things related to Web-scale and emerging technologies:

Magnus Andersson:
http://vcdx56.com

Jonathan Kohler – Consulting Architect
https://vdoogle.wordpress.com/

Artur Krzywdzinski – Consulting Architect
http://vmwaremine.com/category/nutanix/#sthash.dpIRFUDB.dpbs

Josh Odgers – Senior Solutions and Performance Engineer
http://www.joshodgers.com/

Steven Poitras – Principal Solutions Architect
http://stevenpoitras.com/about/

Bas Raayman – Lead Systems Engineer
http://basraayman.com

Samir Roshan – Senior Systems Engineer
http://thinkingloudoncloud.com/about/

Derek Seaman – Senior Solutions and Performance Engineer
http://www.derekseaman.com/

Michael Webster – Senior Solutions and Performance Engineer
http://longwhiteclouds.com/

NPX Program Q&A and FAQ

Any questions regarding the NPX Program can be directed to npx@nutanix.com or you may access the NPX Program Forum to view the program FAQ and pose questions to the community.

NPX Program Registration and NPX Program Application

A link for downloading the NPX Program Application was included in your NPX Program Welcome Message. The NPX Program Design Review Schedule provides NDR dates and locations as well as the due date for program applications. The schedule can be found in the NPX Program Forum hosted on the Nutanix NEXT Community Website.

NPX Program Language Availability

The NDR is conducted in English only at this time.

NPX Program Fees

The NPX Program and NPX certification is offered free of charge to qualified applicants. Candidates are responsible for travel and other costs related to their pursuit of the credential.