

# Kubernetes Platform Design for Red Hat OpenShift

Product Code: CNS-INF-A-WRK-K8

## At-a-Glance

Stage: Design

The Kubernetes Platform Design offers IT teams in-depth and practical guidance to create a comprehensive design for the Kubernetes Platform for Red Hat OpenShift on Nutanix Cloud Infrastructure (NCI). It covers various aspects such as performance, scalability, flexibility, integration, and operational needs. This engagement is beneficial during the Design stage of the hybrid multicloud journey.

## Related Services

- Kubernetes Platform Deployment for Red Hat OpenShift

## Service Scope

The Kubernetes Platform Design is delivered by highly skilled consultants with strong domain expertise and extensive experience to ensure that solution requirements and desired outcomes are clearly identified. This engagement requires collaboration with key customer stakeholders from architecture, virtualization, security, and development operations. Following the design engagement, the consultant develops a Nutanix Design Document for the Kubernetes platform and a configuration workbook that addresses the conceptual, logical, and physical Kubernetes design elements.

## Red Hat OpenShift

For customers who want to deploy Red Hat OpenShift Container Platform (OCP) to on-premises Nutanix Cloud Infrastructure (NCI).

The service includes the following activities:

- Gather and document solution requirements, constraints, assumptions, dependencies, risks, mitigations, and decisions in the design session
  - Review targeted containerized workload use cases
  - Assess Red Hat OpenShift Control Plane, Workers, and infrastructure nodes quantity and capacity requirements based on solution sizing
- Develop NCI architecture, including interoperability, security, and scalability for future growth
- Define integration with AD/LDAP and IPAM/DNS environments
- Design virtual networking for Red Hat OpenShift nodes
  - Plan Container Network Interface (CNI) solution for OpenShift
  - Plan north-south communications for the default OpenShift router
- Develop virtual storage for Red Hat OpenShift nodes and containerized workload design
- Plan Nutanix Container Storage Interface (CSI) integration-based solution for OpenShift
- Design Red Hat Image Registry solution integration

- Plan a secure sockets layer (SSL) certificate strategy
- Develop a validation plan

## Project Management

Nutanix Project Management (PM) oversees Nutanix resources and aligns execution with your goals, scope, and timelines.

Core project management activities may include the following:

- Serve as a single point of contact for all project communication
- End-to-end Nutanix resource management
- Coordinate change window(s) and implementation schedules with customer
- Track and facilitate readiness and prerequisite completion
- Conduct project kickoff/technical readiness meeting(s)
- Integrate customer resources into the high-level project timeline
- Send status update(s)
- Manage timeline(s)
- Deliver created artifacts to the customer
- Facilitate project closeout activities

## Limitations

- For each quantity purchased, design is limited to a single on-premises Kubernetes Platform design in a single physical site
- The design can be deployed multiple times in various environments, such as development, test, and production
- Continuous Integration/Continuous Delivery (CI/CD) pipeline or containerized workload deployment is excluded
- Excludes NCI Cluster design

## Project Management

- Excludes scheduling customer resources and activities
- Excludes detailed project plan (schedule) development and management
- Excludes responsibility for creating, managing, or delivering change management communications

## Prerequisites

- Containerized workload use cases have been identified
- Design sessions require key stakeholders from virtualization, network and security, DevOps, and engineering

## Required Product Licenses

- None

## Delivered Artifacts

Delivered Artifact	Description
Configuration Workbook	Captures all required configuration settings and decisions gathered during the design session to support accurate and consistent solution deployment.
Design Document (standard documentation only)	Captures the customer's solution architecture based on design session outcomes, detailing both high-level and low-level designs. It documents requirements, constraints, assumptions, and risks, and provides clear rationale for design decisions to ensure the solution meets performance, availability, scalability, and other critical objectives.

## Level of Effort

Typically 5 days

### Delivery Type

Delivery Type	Delivery Activities
In-person	<ul style="list-style-type: none"><li>• In-person design session</li><li>• Virtual documentation</li><li>• Virtual project management</li></ul> <p><b>Note:</b> Any in-person project management activities provided solely at Nutanix's discretion</p>

## Related Products

- Nutanix Cloud Infrastructure (NCI)
- Nutanix Unified Storage (NUS)

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