



Citrix Cloud with Nutanix Private Cloud - Hybrid Cloud VDA Deployment Reference

# Nutanix InstantON for Citrix Cloud



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## Introduction

This deployment guide provides instructions for deploying Citrix Virtual Apps and Desktops Service with Nutanix Enterprise Cloud, for a true Hybrid Cloud VDA deployment.

### Overview:

This Deployment Guide provides a technical overview of the Nutanix InstantON for Citrix Cloud. The solution is tested and validated through the Citrix Ready HCI Workspace Appliance Program. The guide will help users deploy a turnkey, hybrid cloud, app and desktop infrastructure in a matter of hours. By enabling the HCI workspace appliance to connect to Citrix Cloud, in order to automate the setup and maintenance of Citrix Virtual Apps and Desktops Service, typical challenges related to the configuration and ongoing management will be greatly minimized.

Nutanix provides a 1-click experience for connecting Nutanix clusters to Citrix Cloud. Once Nutanix cluster is registered with Citrix Cloud as a hosting provider, it becomes a seamless experience for any Citrix admin to provision a large number (in the scale of thousands) of desktops or applications on Nutanix nodes.

### Audience:

This guide is intended to give assistance to people responsible for architecting, managing, and supporting infrastructures, who want to deploy Citrix Virtual Apps and Desktops on Nutanix Appliances. All readers are assumed to be familiar with virtualization technology, storage, servers, hyperconverged infrastructure, and associated components.

### Disclaimer:

This guide is not intended to constitute legal advice. The customer should consult with their legal counsel regarding compliance with U.S., and other country-specific industry laws and regulations, and the intended use of Citrix products and services. Nutanix makes no warranties, express, implied, or statutory, as to the information in this document.

## Deployment

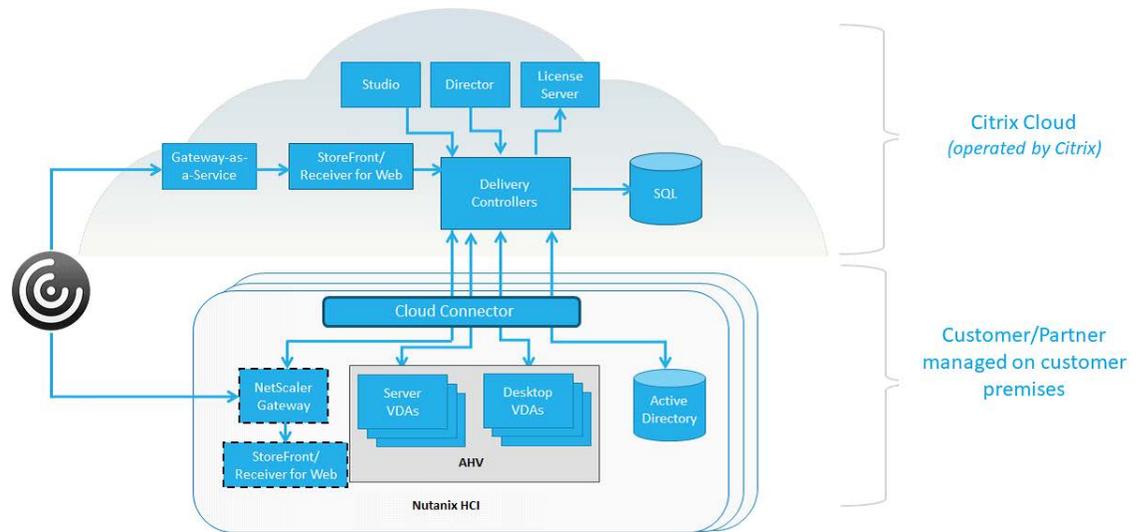
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See Citrix documentation for more information about Citrix Cloud. You can choose to expand the automation method to include additional components such as NetScaler Gateway (VPX) and/or StoreFront.

### Supported Versions, AOS and Third-Party Software

Software	Version
Windows Server	2012 R2 2016
Nutanix AOS	5.5 and later

The following system diagram shows the integration of Citrix Workspace Appliance with Nutanix AHV through the Nutanix AHV MCS plug-in for Citrix Cloud Connector.



## Sign up for Citrix Cloud

Before you can use Citrix Cloud, you can sign up using one of the following options:

- Sign up and create a new Citrix.com account
- Sign up with your existing Citrix.com or My Citrix account
- Join an existing Citrix Cloud account for your company

## Nutanix Prism's Connect to Citrix Cloud

The Connect to Citrix Cloud feature in Nutanix Prism web console leverages the automated installer functionality of Citrix Cloud Connector to establish a secure communication channel between Nutanix and Citrix Cloud. This feature provides single-click integration of the on-premise Nutanix clusters as a resource location with Citrix Cloud environment.

**Note:** In each resource location, you need enough Cloud Connectors to support your required load, plus at least one more to ensure high availability. Citrix recommends at least two Cloud Connectors in each resource location.

This feature helps you configure Citrix Cloud integration settings in the following way:

- Establishes the connection to Citrix Cloud workspace.
- Configures Nutanix cluster as resource location in Citrix Cloud.
- Configures Citrix Cloud Connector VM.
- Registers Citrix Cloud Connector VM to the Active Directory (AD) domain on Citrix Cloud.

Once the integration is complete, VDIs can be created using the Nutanix AHV MCS Plug-in for Citrix XenDesktop 1.1.1.0 or later. The AHV MCS Plug-in is designed to create and manage VDIs in a Nutanix Acropolis infrastructure environment. See the Nutanix AHV MCS Plug-in for Citrix XenDesktop 7.9 or later install guide and release notes for details.

Thus, to begin deploying your VMs and applications, you must perform the following:

- Configure Citrix Cloud integration settings using the Connect to Citrix Cloud feature.
- Install the Nutanix CWA Plug-In for Citrix Cloud Connector

### Connecting to Citrix Cloud

To integrate with Citrix Cloud workspace, perform the following procedure in the Nutanix Prism web console.

#### Before you begin

Ensure that you have created a Sysprep (System Preparation) VM with Windows 2012 R2 / Windows 2016 server as the base image and the VM should be available on the Nutanix cluster.

**Caution:** The Sysprep VM must be in the powered-off state. If you power on the VM, you will lose the Sysprep state and the configuration will fail.

See Microsoft documentation on Sysprep (Generalize) a Windows installation for more information.

1. Log on to the Prism Web Console using your Nutanix administrator credentials.

**Note:** The procedure does not work if Prism Element is launched from Prism Central web console.

2. Click the gear icon and select Connect to Citrix Cloud.
3. Authenticate your connection to Citrix Cloud by using one of the following methods.

**Connect to Citrix Cloud** ?

Enter the Client ID and secret key of Citrix Cloud.

**Enter Manually**

Customer ID

Client ID

Secret Key

**Upload Credential Key**

**Connect**

Figure 301: Connecting to Citrix Cloud

- Enter Manually
  1. Enter your Customer ID for Citrix Cloud.
  2. Enter your secure Client ID for Citrix Cloud.
  3. Enter the downloaded secure client Secret Key.

**Note:** You can find the Customer ID, Client ID, and Secret Key from the API Access page in Citrix Cloud console.

  4. Click Connect.
- Upload Credential Key
  1. Click Upload Key File to browse and select the key file in the CSV format.

You can create or download the key file from the API Access page in Citrix Cloud console (within Identity and Access Management). This key file is used for Citrix Cloud Connector installation.

  2. Enter your Customer ID for Citrix Cloud.
  3. Click Connect.
  4. Select the Resource Location from the drop-down menu.

The drop-down menu displays the resource locations that are created on Citrix Cloud. If you have not previously created any resource locations, enter a name for the resource location that you want to create in the Resource location field.

### Connect to Citrix Cloud

Citrix Cloud needs a connector agent to communicate with the Nutanix cluster. Select the Resource Location and the Connector VM details.

**Citrix Cloud Details** [Change](#)

Client ID

Customer ID

**Ensure High Availability**  
On enabling, two connector nodes will be created for redundancy.

**RESOURCE LOCATION**

**VM MASTER IMAGE**

**CONNECTOR VM NAME**

**SECONDARY CONNECTOR VM NAME (FOR HIGH AVAILABILITY)**

**CONNECTOR VM PASSWORD**

[Show](#)

**Domain Credentials**

Enter the domain credentials to join the connector VMs to the domain.

**DOMAIN USERNAME** [?](#)

**DOMAIN PASSWORD**

[Show](#)

**MACHINE DOMAIN NAME**

**DNS GATEWAY** [?](#) \*Optional

Figure: Configuring Resource Location and Connector VM

5. (Optional) Review Citrix Cloud details. If any change is required, click the Change hyperlink to edit the connection details.
6. (Optional) Select the High Availability check-box to enable or disable high availability for the connector nodes.

By default, high availability is enabled. On enabling high availability, two connector nodes are created for the redundancy purpose.

**Note:** Citrix Cloud recommends that you install two connectors for redundancy and high availability.

7. In the VM Master Image search box, start typing the initial letters of the previously created Sysprep VM image and select the auto-completed option.
8. Enter the Connector VM Name.
9. If high availability is enabled, enter the Secondary Connector VM Name (for high availability).
10. Enter the Connector VM Password.
11. Enter the Domain Credentials to join your enterprise domain to the resource location.
  - a. Enter the Domain Username in the format USERDOMAIN\USERNAME.
  - b. Enter the Domain Password.
  - c. Enter the Machine Domain Name.
  - d. Enter the DNS Gateway.
12. Click Save and Continue.

The connector VM or VMs are configured successfully.

### What to do next

- Verify the connection status.
- Verify if the connector VM or VMs are created from the VM Dashboard.
- Wait for the state of the connector VM or VMs to change from powered off to powered on and then click **Launch Console**. The VM preparation process starts.
- Once the VM starts, install the Nutanix CWA Plug-In for Citrix Cloud Connector to start the application deployment.

#### Viewing Citrix Connection Status

You can view the current status of your Citrix Cloud connection. This helps to verify the registration of the connector VM to Citrix Cloud.

To view details of the Citrix connection, click the gear icon and select Connect to Citrix Cloud. If the connector VM is configured, the connector VM name and its status are listed under Connector VMs.

The Connection Status shows the following statuses:

- Connected - The connector VM is successfully registered with Citrix Cloud.
- Connection in progress - The connector VM is registration with Citrix Cloud is in progress.
- Not Connected - The connector VM is not registered with Citrix Cloud or the Citrix registration has failed.

**Note:** In this case, wait for the connection status to refresh if you have just configured the cloud connection. Otherwise, click Delete Connection to delete Citrix Cloud connection and configure it again. The Delete Connection option deletes the connector VM and unregisters the account from Citrix Cloud.

Preparing to Install the Nutnix AHV MCS Plug-in for Citrix Cloud Connector

The following prerequisites are required for the Citrix Virtual Apps and Desktops Delivery Controller before you install the Nutanix AHV MCS Plug-in for Citrix Cloud Connector.

- The user running the AHV MCS Plug-in for Citrix Cloud Connector installer must have administrator privileges on Citrix Cloud Connector Virtual Machine.
- Citrix Cloud Connector VM must be registered with a resource location in Citrix Cloud tenant.
- The AHV MCS Plug-in for Citrix Cloud Connector must be installed on all Cloud Connectors registered with Citrix Cloud tenant, even if they serve a resource location without the AHV.

Installing and Registering the AHV MCS Plug-In for Citrix Cloud Connector module

**Before you begin:**

- Download and install the Nutanix AHV-MCS Plug-In for Citrix Cloud Connector.msi as described in this topic.
  - Run the .MSI installation file as a user with local administrator privileges or use an elevated command prompt.
1. After obtaining the Nutanix AHV-MCS Plug-In for Citrix Cloud Connector.msi file, double-click it to start the installation wizard. Click Next.

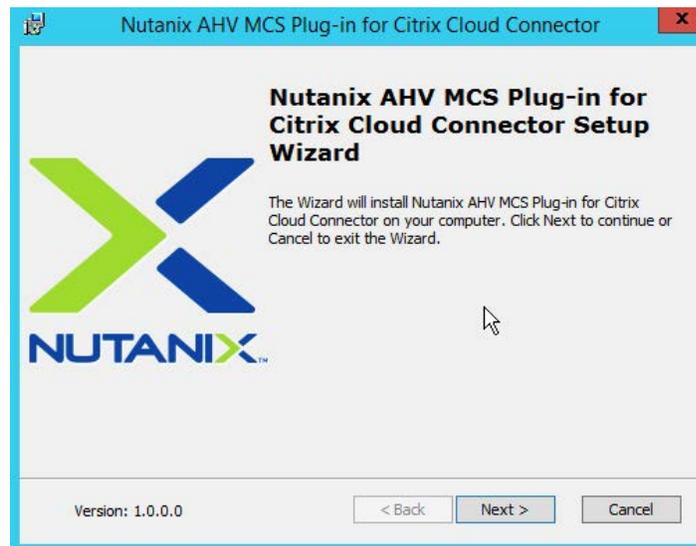


Figure: Install Wizard

2. The End User License Agreement screen details the software license agreement. To proceed with the installation, read the agreement, select I accept the terms in the license agreement and click Next.
3. The Installation Folder screen will show the path where the plug-in will be installed. This is the default path and cannot be changed. Click Next.
4. Click Install to start the installation of the Nutanix AHV MCS Plugin for Citrix Cloud Connector. This step will also register the plug-in with Citrix Cloud and restart the Citrix Remote HCL Server.

#### Validating the Installation and Adding the Cluster VIP Address

1. Login to Citrix Cloud and navigate to the following path to verify whether the installation operation completed successfully: Virtual Apps and Desktops Service > Manage > Full Configuration > Hosting > Add Connection and Resources. The connection name Nutanix AHV will be listed in Connection type menu once the plug-in has been installed on all Cloud Connectors.
2. Select Nutanix AHV and click Next to initiate the Add Hosting Connection wizard.
3. In the Connection Address Field, add the Nutanix cluster virtual IP address (VIP), which will be used for high availability. The VIP address is available from the Nutanix Prism web console Cluster Details.
4. Click Next to fill out other fields if required.

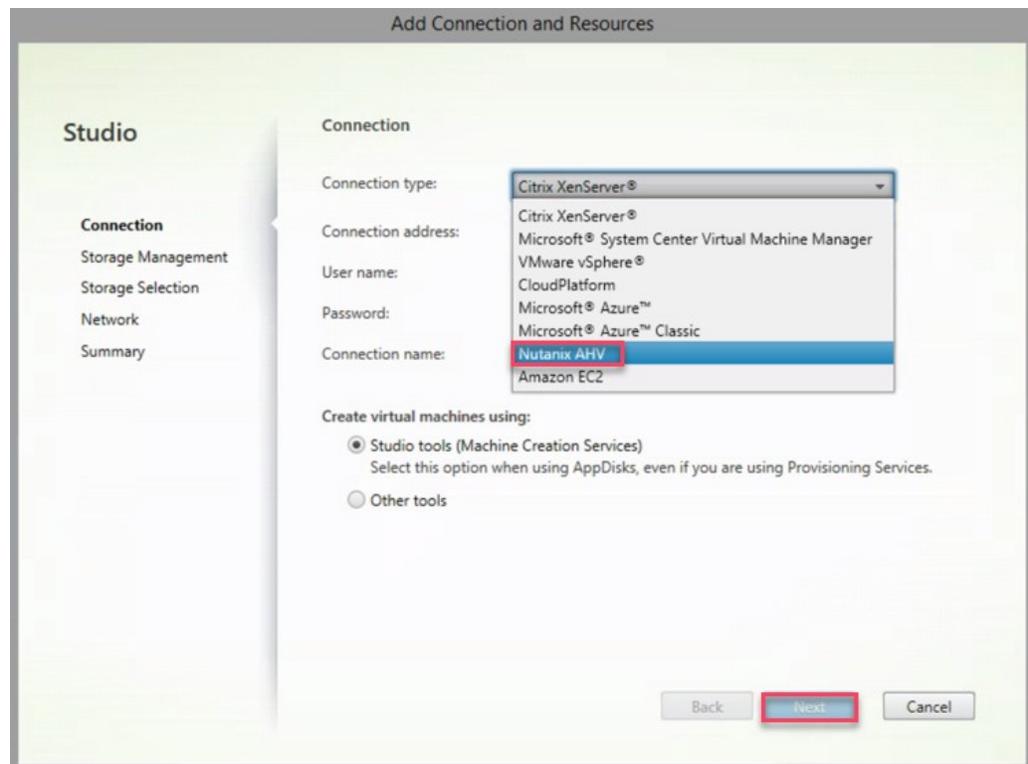
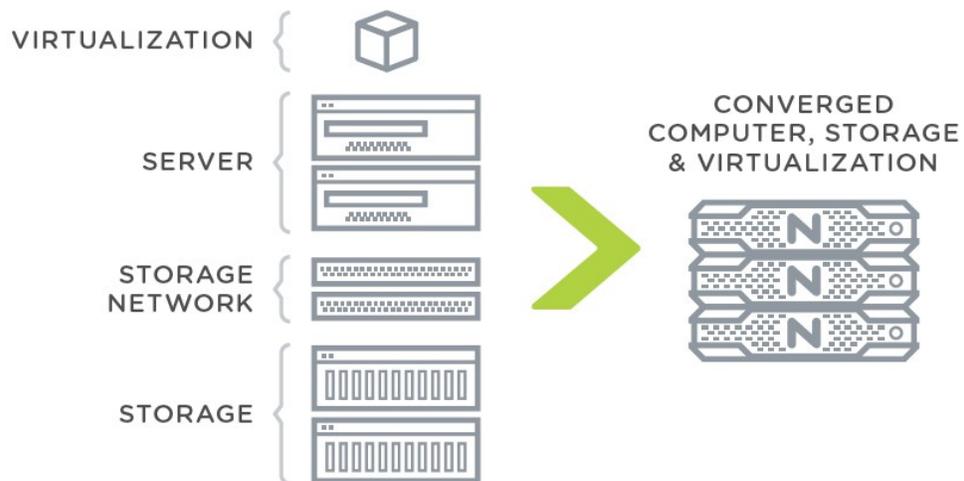


Figure: Validate Installation

## Nutanix Enterprise Cloud OS – Features and Benefits

The Nutanix Enterprise Cloud OS solution converges the entire datacenter stack including compute, storage, storage networking, and virtualization. Complex and expensive legacy infrastructure is replaced by simple 2U appliances that enable enterprises to start small and scale one node at a time. Each server, also known as a node, includes Intel-powered x86 hardware with flash SSDs and HDDs. Nutanix software running on each node distributes all operating functions across the cluster for superior performance and resilience.



**FIGURE 2:** Nutanix converges compute, storage, and virtualization in simple, scalable building blocks

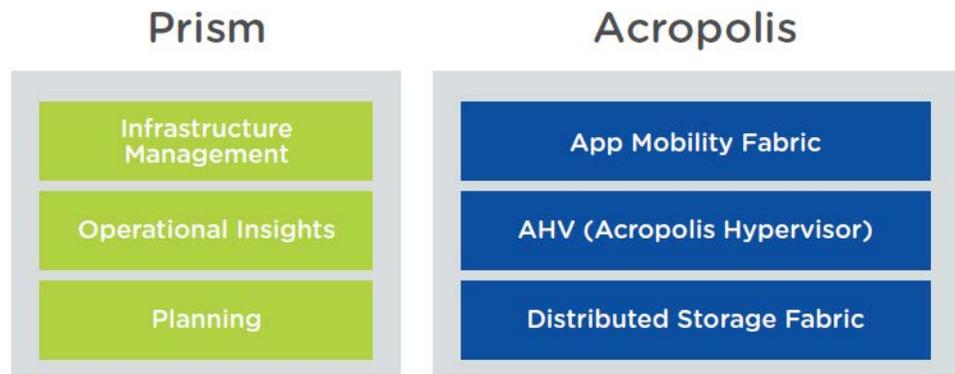
Figure: Nutanix HCI

A single Nutanix cluster can have an unlimited number of nodes. Different hardware platforms are available to address varying workload needs for compute and storage. Nutanix software is hardware agnostic and runs on Nutanix hardware, and also hardware from OEMs such as Dell and Lenovo.

Hardware platforms include “compute-heavy,” “storage-heavy,” and “storage-only” options. All nodes include flash to optimize storage performance, and all-flash nodes are available to deliver maximum I/O throughput with minimum latency for all enterprise applications.

### Prism and Acropolis

Nutanix software has two components: Acropolis and Prism. Acropolis is a distributed data plane with enterprise storage and virtualization services, and the ability for applications to move seamlessly across hypervisors and in the long run cloud providers. Prism is a distributed management plane that uses advanced data analytics and heuristics to simplify and streamline common workflows, eliminating the need for separate management solutions for servers, storage networks, storage and virtualization.



**FIGURE 3:** Key functions of Acropolis and Prism

Figure: Prism and Acropolis

### How Nutanix Software Is Deployed

A Nutanix cluster is 100% software defined. Each node in a cluster runs a hypervisor (VMware ESXi, Microsoft Hyper-V, or Nutanix Acropolis Hypervisor), and the Nutanix software runs as a virtual machine called the Controller VM (CVM) that runs on every node in the cluster. This allows Nutanix systems to be hypervisor agnostic. The CVM includes Prism management functions and Acropolis data plane functions.

### Summary and Conclusion

Nutanix InstantON for Citrix Cloud provides industry’s leading Hybrid Cloud VDA solution, and brings the best of breed. This Hybrid Cloud solution offers maximum security and control, since your Apps & Desktops are deployed in your private data centers. It also provides cloud-like business agility and pay as you grow economics as expected from cloud first technologies. This solution is designed and supported by Citrix and Nutanix and is designed with the Mantra of 1-click Simplicity. This builds on top of the existing Citrix-Nutanix portfolio of supporting Citrix Virtual Apps & Desktops solutions, with support for multiple hypervisors (Nutanix AHV, Citrix XenServer, VMware ESXi & Microsoft HyperV) and multiple provisioning technologies (MCS & PVS).

## Copyright

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Convention	Description
variable_value	The action depends on a value that is unique to your environment.
ncli> command	The commands are executed in the Nutanix nCLI.
user@host\$ command	The commands are executed as a non-privileged user (such as nutanix) in the system shell.
root@host# command	The commands are executed as the root user in the vSphere or Acropolis host shell.
> command	The commands are executed in the Hyper-V host shell.

## Default Cluster Credentials

Interface	Target	Username	Password
Nutanix web console	Nutanix Controller VM	admin	Nutanix/4u
vSphere Web Client	ESXi host	root	nutanix/4u
vSphere client	ESXi host	root	nutanix/4u
SSH client or console	ESXi host	root	nutanix/4u
SSH client or console	AHV host	root	nutanix/4u
SSH client or console	Hyper-V host	Administrator	nutanix/4u
SSH client	Nutanix Controller VM	nutanix	nutanix/4u
SSH client	Nutanix Controller VM	admin	nutanix/4u
IPMI web interface or ipmitool	Nutanix node	ADMIN	ADMIN
SSH client or console	Acropolis OpenStack Services VM (Nutanix OVM)	root	admin
SSH client or console	Xtract VM	nutanix	nutanix/4u
SSH client or console	Xplorer VM	nutanix	nutanix/4u

### Version

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#### About Citrix Ready

Citrix Ready identifies recommended solutions that are trusted to enhance the Citrix Delivery Center infrastructure. All products featured in Citrix Ready have completed verification testing, thereby providing confidence in joint solution compatibility. Leveraging its industry-leading alliances and partner ecosystem, Citrix Ready showcases select trusted solutions designed to meet a variety of business needs. Through the online catalog and Citrix Ready branding program, you can easily find and build a trusted infrastructure. Citrix Ready not only demonstrates current mutual product compatibility, but through continued industry relationships also ensures future interoperability. Learn more at [citrixready.citrix.com](https://citrixready.citrix.com).

#### About Nutanix

Nutanix makes infrastructure invisible, elevating IT to focus on the applications and services that power their business. The Nutanix Enterprise Cloud Platform 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.

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