NUTANIX

NUTANIX PRIVATE CLOUD DESIGN GUIDE:

Deliver Greater Business Value with Nutanix Solutions for End-User Computing

Securely empower your distributed workforce with the apps and data they need to **stay productive**

Why EUC?

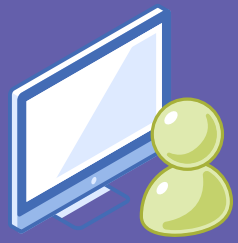
Gone are the days when organizations could hand out a standard black laptop or beige desktop and expect everyone to be happy. End users are increasingly mobile and want greater choice in the devices they use.

Choose your own device (CYOD) and bring your own device (BYOD) initiatives are now common in many enterprises. By pairing flexible device strategies with End-User Computing (EUC), you can deliver the freedom to work from any location with any device that your workforce requires.

EUC encompasses a number of different "virtual" methods and technologies to deliver applications and desktops to end users. For applications, presentation is typically RDSH-based; desktops use either hosted shared desktops (HSD) or virtual desktop infrastructure (VDI) sessions. Desktop-as-a-Service (DaaS) moves application and desktop services into the cloud, reducing the management burden. To meet varying requirements across your user base, you may need to utilize one or all of these methods.

With thousands of EUC customers successfully delivering millions of virtual apps and desktops, EUC is a core part of the Nutanix DNA. Nutanix solutions for EUC accelerate VDI and DaaS deployments by up to 8x and scale linearly from pilot to production—on your choice of cloud—with lower risk and as much as 50% lower TCO than traditional IT approaches.

This guide explores EUC deployment options and provides some guidelines for choosing and architecting an EUC solution on Nutanix.

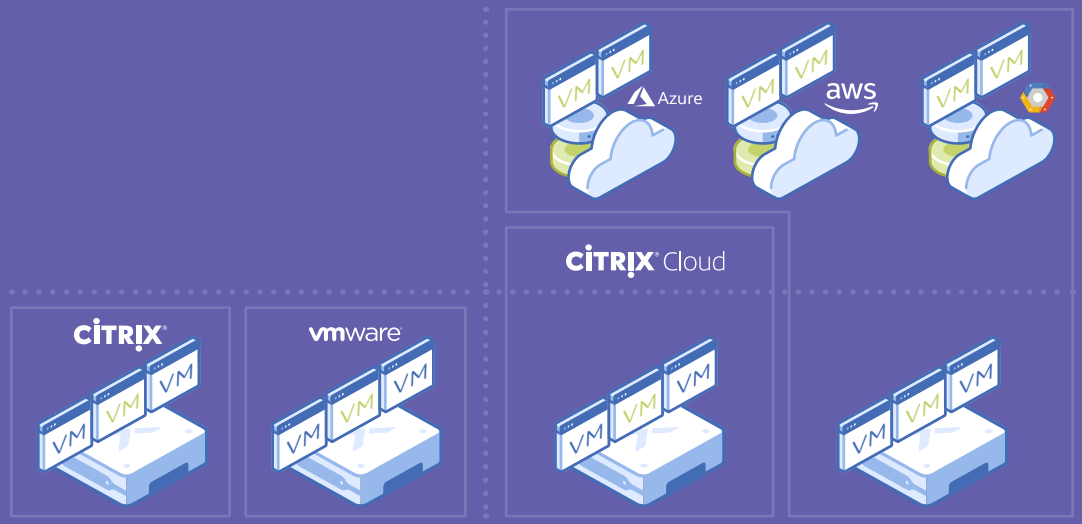


VDI or Daas?

When you think about updating your company's approach to delivering end-user desktops and applications, there are two general approaches: VDI and DaaS.

The main thing that distinguishes one option from the other is where the control plane or "broker" is installed. The broker is the software that handles most of the necessary provisioning and management in a virtual desktop or application environment. It serves as the primary interface for admins and usually offers an API interface for automation via scripting or programming. With VDI, the broker software runs in your datacenter (or in a colocation facility or the cloud via IaaS). With DaaS, the broker is a managed service running in the cloud.

Nutanix offers a range of VDI and DaaS options to more closely address your requirements.



Simplify your VDI experience with Nutanix. Take advantage of one-click simplicity, fast deployments, and lower cost compared to physical desktops.

Note that with Nutanix DaaS solutions, the infrastructure that hosts running user applications or desktops can be in the cloud or on premises.

All Nutanix VDI and DaaS solutions have been optimized to provide:

- **An excellent user experience at scale.** Benefit from linear scaling as needs grow and take advantage of multi-cloud elasticity.
- **High levels of availability and security.** Take advantage of self-healing, easy one-click DR, and integrated network security.
- **Faster time to delivery.** Move quickly from pilot to production; add new apps and users in minutes.
- **Improved operational efficiency.** Start small and scale as needed. As much as 60% lower OPEX and two-thirds less time spent on day-to-day management.

However, there are also a number of differences between VDI and DaaS solutions that will ultimately influence your decision

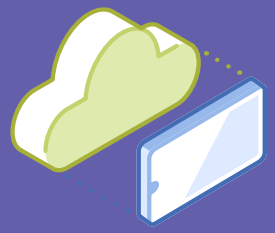
What is EUC?

EUC encompasses the technologies used to deliver, manage, and secure desktops, applications, and data that end-users utilize. EUC solutions empower today's workforce with secure access to desktops, apps, and data using:

- Virtual Desktop Infrastructure
- Desktop-as-a-Service
- Secure access to files
- Other end-user services

Find Out More:

- nutanix.com/euc



Enterprise VDI	Desktop as a Service
On-premises/co-location	Multi-cloud, Hybrid-cloud
Local region	Multi-region
Fixed capacity	Pay for use
Tried and tested/mature	Agile
CAPEX intensive	OPEX driven
Well defined usage	Flexible usage
Longer time to market	Faster time to market
Longer time to innovate	Highly innovative
Fixed stability	High availability and agility
Low elasticity	Elastic by design

Free end users to work from anywhere, on any device—
and free your team from VDI deployment and management.

Find Out More:

- nutanix.com/daas
- The Definitive Guide to DaaS
- Nutanix Xi Frame
- Xi Frame documentation

The following sections explain Nutanix VDI and DaaS options in more detail.

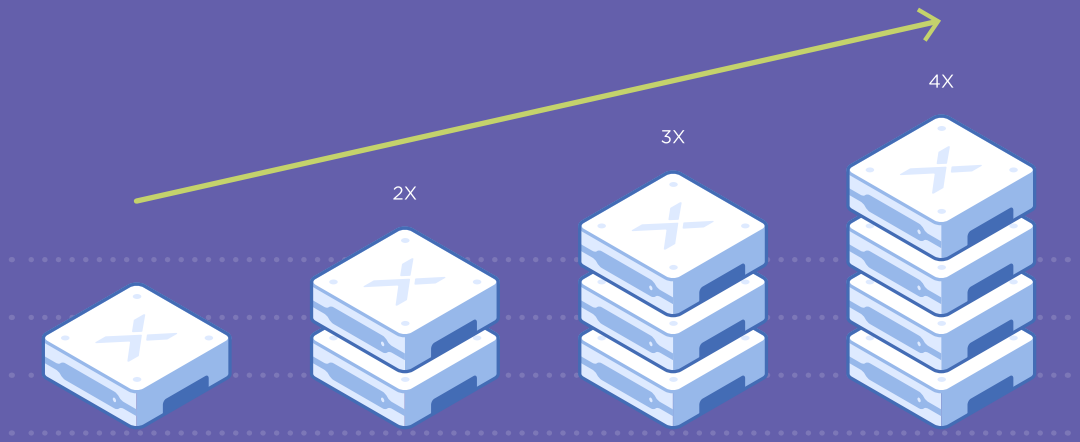
On-Premises VDI

Nutanix supports a wide variety of VDI solutions—Citrix Virtual Apps and Desktops and VMware Horizon are the most popular options. Compared to deploying VDI on traditional infrastructure with separate servers and storage, Nutanix provides a number of substantial advantages.

Nutanix hyperconverged infrastructure (HCI) provides the ideal solution for demanding EUC workloads. In addition to outstanding performance and resiliency, ease-of-deployment and ease-of-use are foundational characteristics of the platform.

Our goal is to provide the best platform for VDI—without imposing any artificial restrictions on VDI architectures. Nutanix supports all of the cloning and provisioning options offered by various VDI brokers; it does not limit scale below the limits published by VDI vendors.

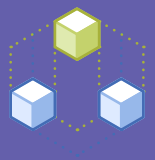
Scaling the number of VDI seats is predictably linear as nodes are added, simplifying planning. A highly scalable design ensures an excellent and consistent user experience.



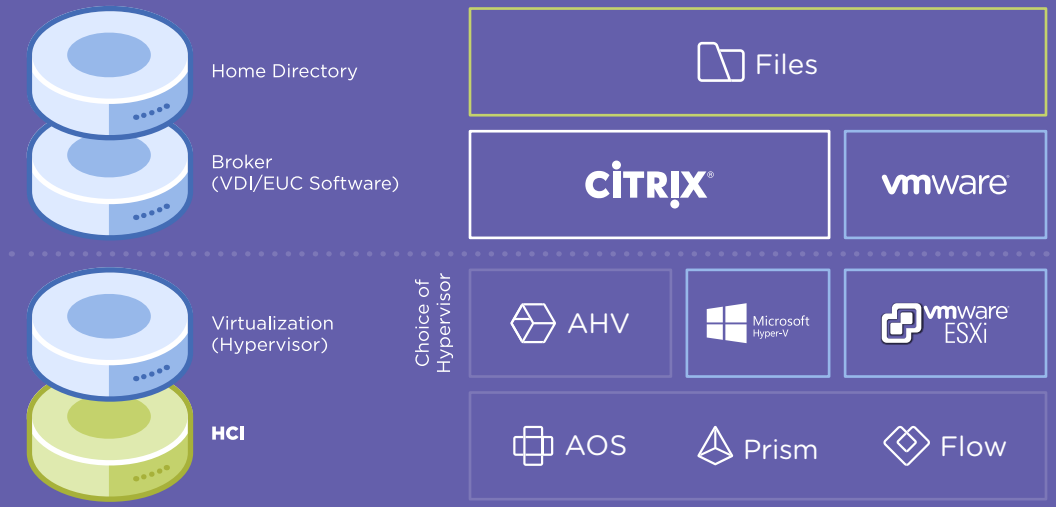
Choose from an on-premises, cloud-based, or hybrid EUC deployment approach to address your needs.

Nutanix includes a range of built-in capabilities that deliver significant benefits for VDI and DaaS environments. Two notable features include:

Nutanix Files. In VDI deployments, there are always requirements to store and protect unstructured data such as user profiles, home directories, and file shares. Nutanix Files is a software-based file sharing solution that supports both NFS and SMB. It can be deployed on a Nutanix cluster to provide highly scalable file shares, eliminating the need for separate NAS appliances or file servers that add infrastructure and management complexity.



Nutanix Flow. Increased security is a major goal of VDI deployments. With an ever-increasing risk of data breaches and other malfeasance, organizations have to be constantly on the lookout for ways to increase security and protect users. Network virtualization with Nutanix Flow allows VM-based security policies to be applied that strictly control inbound and outbound traffic to any VM.



HCI is a superior infrastructure choice for EUC. Nutanix streamlines EUC operations with HCI capabilities other solutions lack.

Find Out More:

- The Definitive Guide to Hyperconverged Infrastructure
- HCI for Dummies

Desktop-as-a-Service

With DaaS, a cloud broker is offered as a service using a familiar Software-as-a-Service (SaaS) model. One of the major benefits of DaaS is that it's a service you consume. All of the design, deployment, and scaling considerations for the broker are handled for you.

Your apps and desktops can run in the cloud along with the broker, so you're not responsible for managing the infrastructure those services consume—which can be substantial for a deployment with hundreds or thousands of seats—and the provider takes responsibility for monitoring and upgrades. As a result, with DaaS you can get your project off the ground faster, and you'll have less ongoing operational effort.

Nutanix offers a choice of DaaS solutions:

- Citrix Cloud
- Nutanix Xi Frame

CITRIX® Cloud

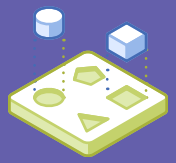
Nutanix has partnered with Citrix to enable a unique hybrid model for DaaS. The Citrix Cloud control plane provides the broker and other necessary services, while applications and desktops are deployed on Nutanix infrastructure in your datacenter(s). This enables you to benefit from the ease of use of Citrix Cloud while user VMs, applications, and data run on infrastructure you own and control. This is ideal for workloads that must run in your datacenter.

Xi Frame

Nutanix Xi Frame provides do-it-yourself simplicity with an automated, fully managed cloud hosted DaaS solution that simplifies the delivery of digital workspaces. Xi Frame delivers Windows or Linux apps and desktops to your end-users via popular web browsers such as Chrome, Safari, Firefox, and Edge.Xi Frame provides faster time to value and removes the barriers to deliver and consume virtual desktops and virtual apps.

Nutanix Xi Frame Delivers Greater Flexibility

Any App
Deliver desktops or complex apps quickly and easily



Any Storage/IAM
Integrate with industry-leading cloud services

Any Infrastructure
Deploy desktops on your choice of public cloud or in your datacenter

Access from Any Browser
User and admin access from any browser and any device

In addition to the DaaS solutions available directly from Nutanix, a number of Nutanix X-Powered service providers offer DaaS services powered by Nutanix infrastructure, further extending your deployment options.

Choosing a Deployment Architecture

There's no single approach to EUC that addresses the needs of every enterprise. There are a variety of possible deployment models to choose from:

- **On premises.** Support all users and applications on premises
- **Cloud.** Support all users and applications from a public cloud
- **Hybrid.** A hybrid approach combining both on premises and public cloud resources

Note that these deployment options can be used with both VDI (you control the broker) and DaaS (broker is a managed service) using the Nutanix solutions described in previous sections.

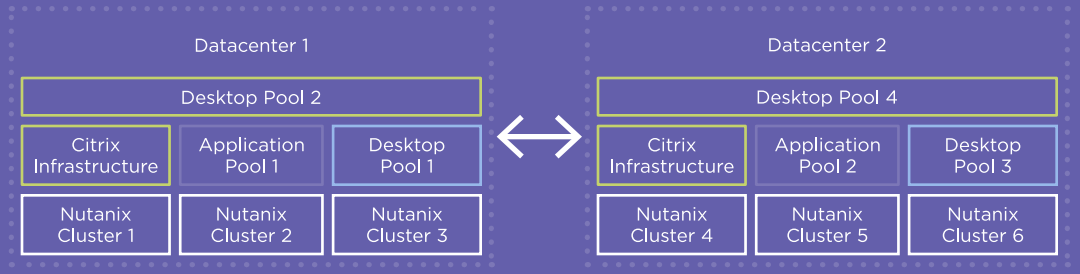
On Premises

An on-premises architecture may utilize a single site or encompass multiple sites. Multiple sites can be used in different ways to meet your requirements. Typically, additional sites are used for:

- **Failover.** In case of a disaster, virtual desktops and applications are re-started from a secondary site.

- **Load balancing.** User connections are distributed across sites, providing higher availability and business continuity.

Nutanix offers a range of replication options to deliver the RTO and RPO you require. Replication allows you to keep the various elements of your deployment in-sync between sites. Along with a multisite broker design or a managed broker, this results in a highly available solution.



Cloud

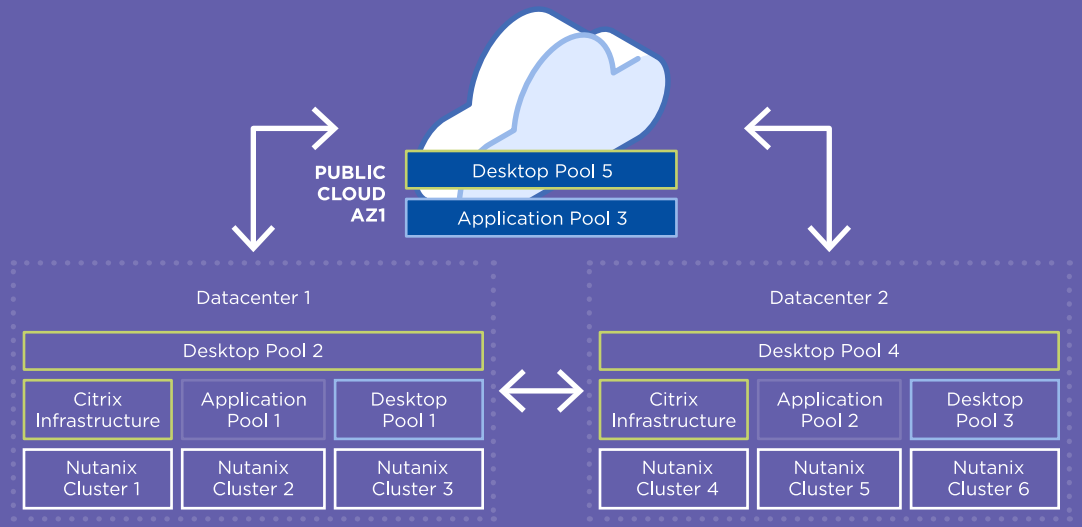
You can deploy an EUC solution in the cloud using either DaaS or VDI. While DaaS seems like the obvious choice, there is nothing that prevents you from doing a full VDI deployment in the cloud based on Infrastructure as a Service (IaaS).

Hybrid

A hybrid architecture can be similar to the multisite on-premises example above except that one or more sites use public cloud resources. There are multiple deployment options based on your goals and requirements:

- **Secondary site in the cloud.** Cloud resources are used instead of a secondary on-premises location.

- **Third site in the cloud.** A multi-site on-premises EUC deployment is supplemented with a cloud deployment. Each location can support active users or serve as a DR target.



Nutanix Platform Strengths for EUC

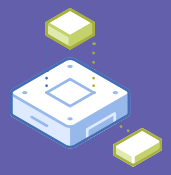
The Nutanix HCI platform has a number of unique advantages for supporting user applications and desktops—in both on-premises VDI deployments and hybrid DaaS deployments where the broker is in the cloud but the apps and desktops run on premises.

Data locality is the key for delivering consistent user experience at any scale. For example, in deployments with non-persistent desktops, you typically have a single disk image or template supporting thousands of users.

In traditional implementations, all VMs must traverse the network to access a single copy of this template disk, creating a bottleneck at scale that affects the user experience.

Nutanix shadow clones and data locality ensure that there's a local copy of the disk image on each node for local VMs to access. This not only distributes access, it also reduces network traffic, delivering a consistent user experience.

Multi-hypervisor. By supporting VMware ESXi, Microsoft Hyper-V, and our native AHV hypervisor, Nutanix allows you to select the right hypervisor to meet your requirements. This flexibility ensures that you are able to build EUC solutions that meet your operational goals, including feature, security, and license requirements.



Flexible architecture. Nutanix gives your team the freedom to build and scale HCI clusters with fewer restrictions. You can mix hardware generations, CPU generations, memory configurations, and storage media types within the same cluster. This means you can adapt your cluster over time to address new use case requirements. Your infrastructure can evolve, rather than having to be ripped and replaced every few years. You'll have fewer clusters to manage and you won't have to create new clusters to address unique requirements.

Getting Started with Nutanix EUC Solutions

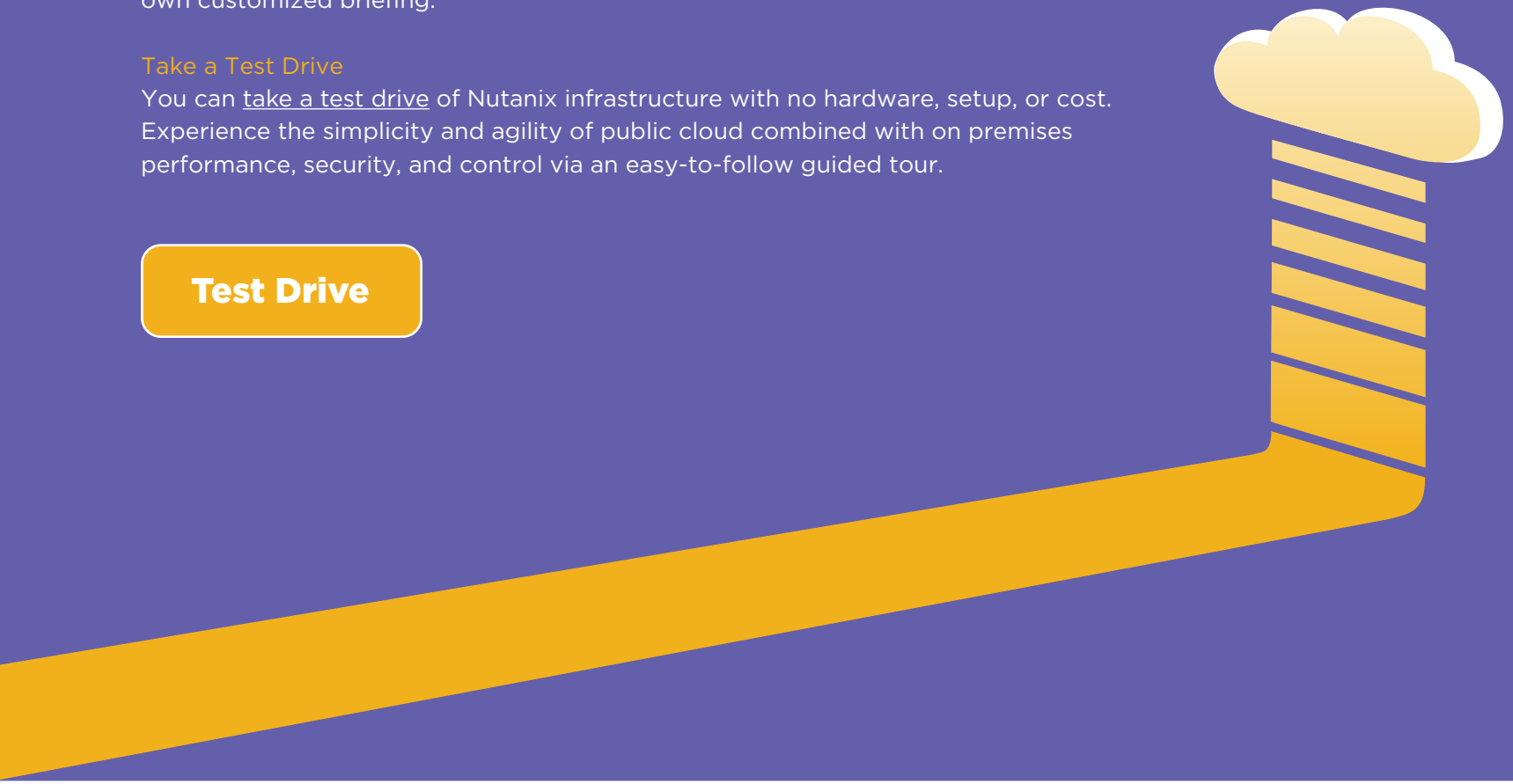
Nutanix provides a range of VDI and DaaS technologies to meet your EUC needs. Nutanix experts have the skill and experience to help you make the right decisions for your organization so you can plan, deploy, and operate an EUC solution with confidence.

To learn more about how Nutanix can help you transform your EUC environment, visit nutanix.com/euc. You can contact Nutanix at info@nutanix.com, follow us on Twitter @nutanix, or send us a request at www.nutanix.com/demo to set up your own customized briefing.

Take a Test Drive

You can take a test drive of Nutanix infrastructure with no hardware, setup, or cost. Experience the simplicity and agility of public cloud combined with on premises performance, security, and control via an easy-to-follow guided tour.

Test Drive



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