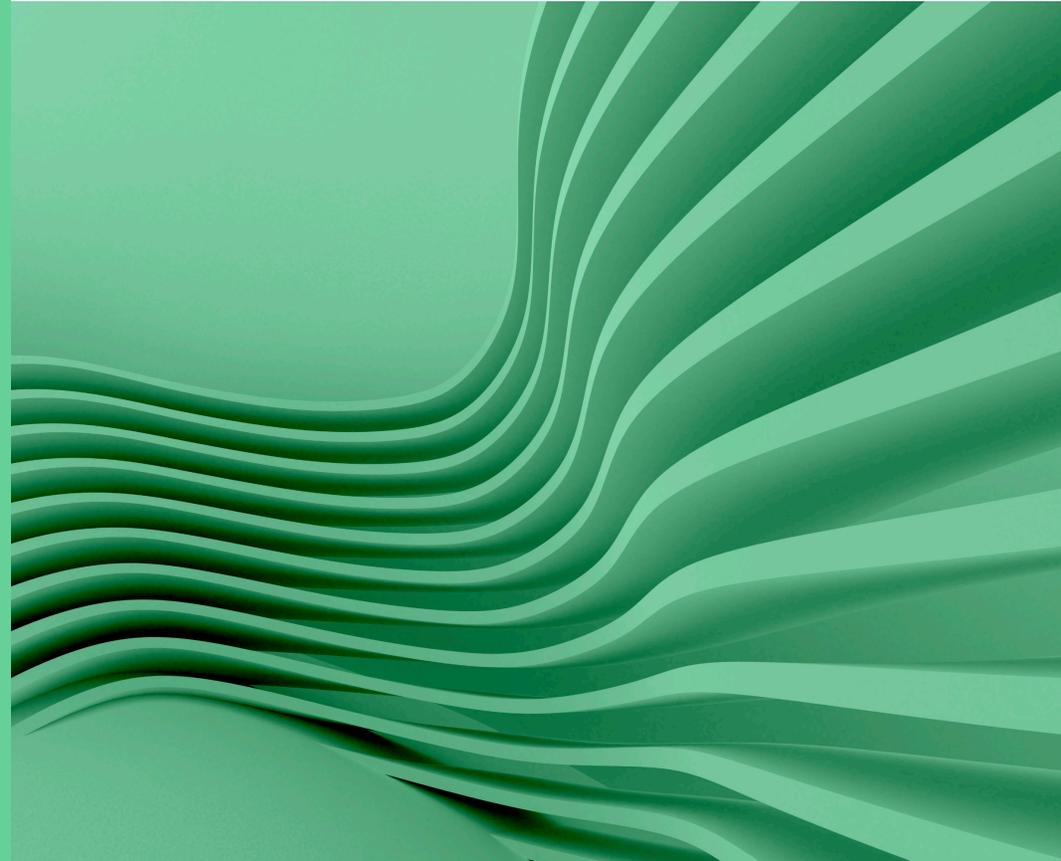


# VDI is moving upstream— are you moving with it?

Five considerations for committing to a long-term enterprise-class VDI solution (and an introduction to NetApp® Virtual Desktop Service, your VDI's soul mate).





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## Introduction

# VDI – it’s not just for task workers anymore

Empowering a modern workforce sounds a little like a Dr. Seuss book: Let them work here, let them work there, let them work safely anywhere. Virtual desktop infrastructure (VDI) has evolved. It used to be a lower-level end-user computing (EUC) architecture that supported transient and lower-tier use cases (think: hourly task workers, new hires, temps, consultants, or occasional “road warriors”). But now it’s the primary EUC backbone for many enterprises.

Enterprises worldwide see the importance of being able to operate without disruption. They need to maintain business continuity, regardless of global status, outages, or location. Remote workforce technology has now reached a point where it can enable massive Fortune 500 companies to function at a high level without brick-and-mortar assets.

But even if natural disasters, construction nightmares, and pandemics have forced us into this dynamic sooner than it would have evolved organically, work-from-anywhere

isn’t going to go away. “There’s pretty much uniform consensus now that the pandemic has permanently shifted the way we work,” says Nicholas Bloom, economics professor, at Stanford University.<sup>1</sup> Twitter, Facebook, and Microsoft have all announced that remote work will be a permanent option for most of their employees.<sup>2</sup> Why should the titans of tech have all the fun?

Now is the time to end the quick fixes and find a permanent hybrid multicloud solution that properly supports your enterprise VDI. Or, as McKinsey more eloquently states, organizations must “use this moment to break from the inertia of the past by dispensing with suboptimal old habits and systems.”<sup>4</sup>

Look, you’ve been dating VDI; now it’s time to make a long-term commitment. Before you propose, here are five considerations for **breaking from the inertia of the past** and implementing VDI at enterprise scale.



# 2x

Globally, the number of employees permanently working remotely is predicted to double in 2021<sup>3</sup>



# Five considerations

1. You want to simplify management for your hybrid multicloud environment
2. VDI at scale can lead to waste at scale
3. Giving VDI the at-home feel
4. Need for speed – don't let poor performance torpedo your VDI
5. Be fine, not fined

## Consideration 1

# You want to simplify management for your hybrid multicloud environment

VDI at enterprise scale means hybrid multicloud. It's more than just a hybrid cloud— you're creating a hybrid workforce. The workplace is dispersed across head office, satellite offices, and home offices, and that means managing an intricate and sprawling web of people, data, and applications. The question is: Have you got the hybrid multicloud skillset to make this happen? The reality is that 80% of cloud leaders point to unskilled or underskilled IT resources as the biggest barrier to achieving cloud success.<sup>5</sup>

Nearly 70% of IT leaders say their organization currently uses multiple cloud platforms.<sup>6</sup> Most enterprises have a multicloud strategy due to political issues or regional financial considerations –VDI workload management needs to be sensitive to both factors.

To minimize the number of skilled administrators required, decrease time-consuming deployment, and manage a hybrid workforce effectively,

enterprises need a management dynamic known as a global control plane. This technology layer is normally software or software as a service (SaaS). It provides a single pane of glass so that you can perform a broad spectrum of administrative tasks regardless of the desktop's physical location. A global control plane is the only way to avoid the massive risk of error, omission, and resource waste that would normally occur in this complex and constantly changing environment. In the world of VDI, this service allows you to provision resources (cloud or on premises) for the VDI workload; deploy them when and where they're needed; manage the ongoing updates, releases, patches, availability, and operations; and deal with user issues. Anywhere in the world, 24/7. It's a tall order, but if you don't have automation and machine logic doing this for you, you'll have to staff your team to do the job.



**“NetApp VDS has made the road to cloud-managed virtual desktops easier with a simple yet cost-effective global control plane. Pratt Brothers, Inc. now has its desired, highly scalable platform to bring their software to customers anytime, anywhere. The high level of NetApp VDS workflow automation management, now functioning as an extension of the Pratt Brothers’ cloud, mitigates its VDI complexity and scaling costs.”**

**Mike Walsh**, Sr. Director,  
Modern Workplace Services, NetApp



## Consideration 2

# VDI at scale can lead to waste at scale

VDI at scale changes constantly. This results in a really dynamic workload. A thousand users could consume hundreds of virtual machines (VMs) at one moment ... and then leave them unused (but costing money) the next. That can stress both your infrastructure and your budget.

Those hundreds of VMs also introduce the risk of a huge waste of cloud resources— for example, if users sign on, leave VMs running, and then do no productive work for long periods of time. For an enterprise-scale VDI project to be commercially successful, there needs to be logic that constantly analyzes, conserves, and reprovisions resources as required, spinning them down when they're unused.

To further compound the issues of scale and availability, enterprise VDI environments have several potential chokepoints across multiple vectors. That means they need tightly integrated monitoring of storage, compute, network, and application resources so that problems in one area can be identified before they affect other areas, causing a waterfall of

disaster. Done right, remediation should be a prescribed, automated, policy-based process that recommends the right mitigation steps to take for each scenario.

**“This solution frees us up to focus on leveraging our industry-specific expertise, and to spend more time on things that add real value to our customers and to our business.”**

**Bill Hopkins**, Technology Manager,  
Brady Ware

## Consideration 3

# Giving VDI the at-home feel

Consistency in a personalized end-user experience is crucial to productivity and the broad acceptance of VDI at enterprise scale. Your employees need to be able to access what they need, when they need it, in the way that they originally set it up. User profile data, personalization files, appearance settings –these describe each user’s world as they see it. And that’s what makes VDI feel like home.

If your couch disappeared from your home one day, you probably wouldn’t be happy. Your couch is, well, yours. You expect it to be there when you’re ready to flop down and binge-watch a TV series. If you must wait for your couch to be built and the cushions made and upholstered before you can sit, you’re going to be frustrated and grumpy. And, after the delay, if you can’t find the remote, or the TV has moved, you’re going to be angry.

VDI should feel like your own familiar, comfy couch– ready for bingeing whenever you are. You want your employees’ experiences to be positive, no matter where they’re working from– laptop, desktop, tablet, phone; in a home office, a coffee shop, or a shared cubicle. Otherwise, your IT administrators will be left with help tickets that result from your employees’ frustrations with inconsistency.



## Consideration 4

# Need for speed – don't let poor performance torpedo your VDI

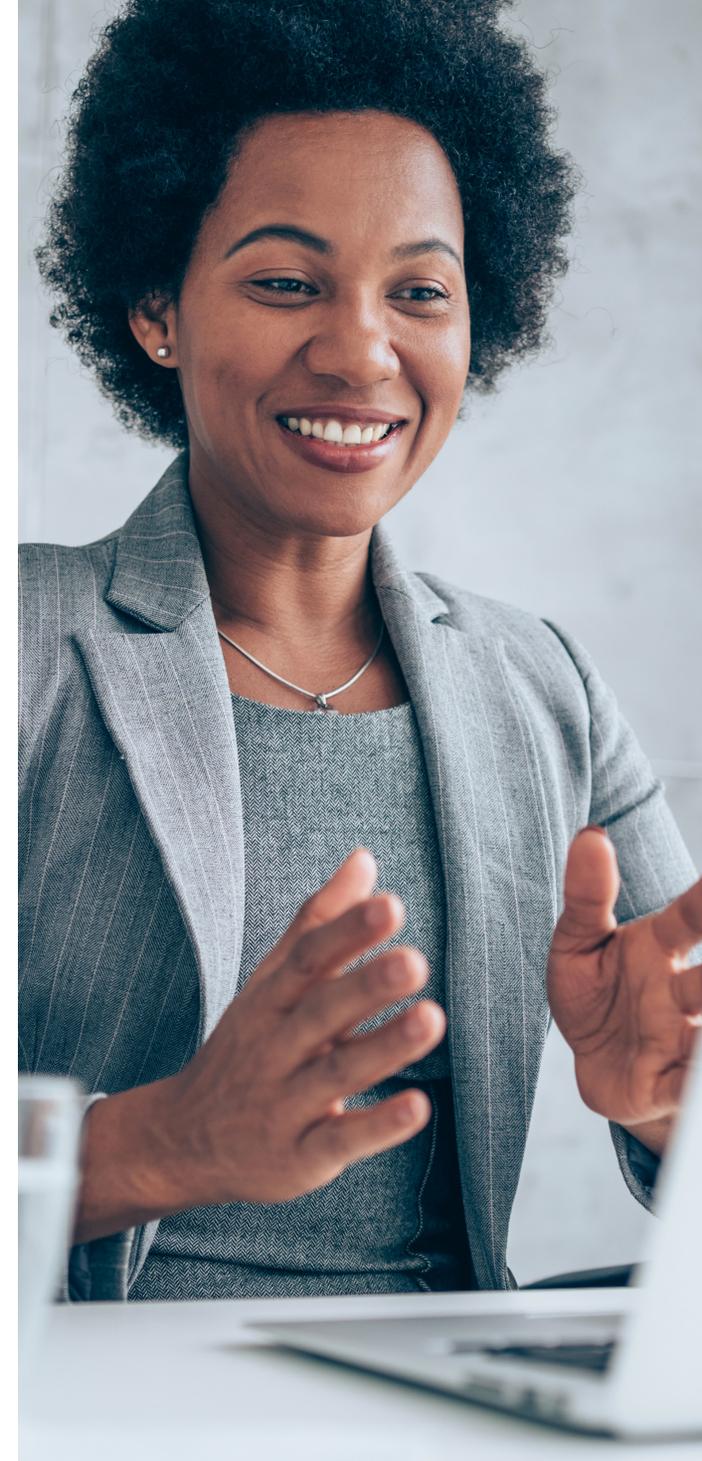
Employees angered by “missing couches” and other poor experiences are simply less productive. If they can't access data and applications quickly, they'll become frustrated, which reduces productivity– and unproductive time costs money. In other words, if your VDI solution performs poorly, so will your employees, which will affect your bottom line. And don't forget the other possibility: user revolt, which can sink even the most well-intentioned VDI deployment project.

Great VDI experiences influence employee productivity and, by extension, the results of your business. If you want increased productivity, improve your VDI performance. An enterprise VDI deployment tends to see great performance when the early-adopter groups are using it without dealing with resource contention. Unfortunately, those performance levels tend to go out the window if you have 5,000 people logged on and the infrastructure

wasn't designed for that kind of load.

In today's workplace, you no longer have 5,000 employees logging in and out on desktops through a wired in-office network. Instead, you have 5,000 employees connecting remotely from a multitude of devices to virtual desktops– which is undoubtedly handled better through a cloud-based topology. Your enterprise must be able to tap into high-performance resources (such as GPU-enabled systems and scalable databases) on demand, for any authorized user, anywhere, anytime. And the ability to perform at scale might depend less on an individual virtual workstation's resources than on the underlying infrastructure that's supporting thousands of virtual desktops.

VDI at enterprise scale means integrated provisioning of enterprise-class infrastructure. This kind of provisioning is too often overlooked because of a “commodity building block”





approach to lower-tier workloads. By taking the commodity approach to cloud resources, enterprises have run headlong into VDI nightmares such as boot storms, login storms, resource contention, and user timeouts at the most inopportune moments. Face it: You wouldn't put 5,000 users in a data center on a string of iSCSI disks that you lumped together in a rack. Why would you do that in the cloud? Organizations that have implemented VDI at scale—successfully— are approaching their cloud infrastructure with the same scrutiny that they've used in private data centers for decades. They're provisioning underlying storage that supports a massive user base. They're also using automation to monitor compute usage, so they can deploy what users need at the moment they need it. And it's paying off.

# 94%

of decision makers admit that technology glitches affect their employees and businesses during remote work.<sup>7</sup>

#### The most common issues include:

-  Frequent disconnects from corporate networks
-  Slow file downloads
-  Long response times from high latency when an app is loading<sup>8</sup>

## Consideration 5

# Be fine, not fined

Data is your everything. It's trends, customers, financials, suppliers, innovations— the secret sauce to your business Whopper. Health Insurance Portability and Accountability Act (HIPAA), General Data Protection Regulation (GDPR), and personally identifiable information (PII) requirements can be intimidating, to say the least. Failing to comply can mean significant fines, personal liability for executives, and bad publicity. But data protection isn't only about ensuring compliance—it's also about protecting your secret sauce recipe.

We've all heard the stories: a laptop left on a plane, stolen from a car, or lost in a zombie attack. In fact, 41% of all data breaches are caused by lost devices.<sup>9</sup>

VDI lets end users access enterprise data without needing to store anything locally on their endpoint device. This approach eliminates the hazards associated with a stolen, dropped, or lost laptop. Instead, your enterprise data remains in the cloud, where it's much more secure. That way you can take the right steps to secure your company's most valuable asset—your data.

Your VDI data in the cloud needs enterprise-grade protection, so that your data is encrypted while at rest and automatically backed up in fine-grain increments. Your systems need to be on the lookout for ransomware. And your users can't keep data in a manner that violates regulatory compliance. It's a lot easier to implement levels of protection if you have a solid, consolidated data footprint. The more unified your VDI solution, the easier it is to secure and monitor.



# Take your enterprise VDI from a lifeline to a lifestyle with NetApp VDS

Daily frustrations such as lagging performance or unavailable applications seem like only glitches in the chaos of 2020. But as the remote work trend sinks in, and more people permanently ditch their desk for their virtual desktop, those glitches will become recurring nuisances. Now is the time to get the enterprise technology stack right.

Implementing VDI has its own challenges: lengthy procurement and deployments; expensive start-up costs; global spread of users; lack of VDI skillsets in your IT department; and complexities in management, orchestration, and security.

NetApp can come to the rescue. With NetApp® Virtual Desktop Service (VDS), we'll help you make the most of your enterprise VDI in your cloud environment (hybrid or multi-cloud) while avoiding the pitfalls.



“During our review of the NetApp Virtual Desktop Service, it was clear from the start that NetApp offered a mature platform capable of meeting our requirements both now and in the future. The executives and support team at NetApp understand what we need to meet our goals, and worked closely with us to develop the right cloud solution for our software. Having standardized on the NetApp Virtual Desktop Service, the technology has proven itself, allowing HCSS to streamline the customer experience now and going forward.”

**Ketul Parekh**, Director of Technology Services, HCSS

VDS is a SaaS-delivered global control plane for virtual desktop infrastructure that blends automation and machine logic with best-in-class cloud storage and data management. It simplifies provisioning, deployment, and management of your virtual desktop environment across your choice of infrastructure, including AWS, Azure, Google, and on premises. And after you're up and running, VDS monitors your cloud usage to minimize spending waste, spinning down unused resources and provisioning needed resources on demand. On average, you can save around 50% of your cloud spending by letting the technology do its job.

Many large enterprises need distributed workspaces – and optimum performance for global users through geographic proximity of resources. These enterprises will benefit even further from the combination of VDS with NetApp Global File Cache. It lets distributed workspaces share centralized, consolidated data regardless of where users are located. And with NetApp SaaS Backup for Microsoft 365 and NetApp Cloud Backup technologies, enterprises can securely store and protect users' critical data– even data in their Microsoft 365 accounts. (Think: Exchange, OneDrive, SharePoint, and Teams ... because Microsoft doesn't actually do that for you.) And all those other things we listed that can go wrong? We've got you covered.



**If this sounds like your VDI management team's dream come true, then try it for yourself. We're giving you a VDS sandbox to deploy up to 50 virtual desktop users free for 30 days. Play nice and share the sand toys.**

[Take me to the sandbox](#)

[Learn more about VDS](#)



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