Expert breakdown: DaaS vs. VDI
In this e-guide:

Making the decision to host your desktop on-site or through a 3rd party service in the cloud is a vital decision that can cut costs, and ultimately drive business success—and there are two main desktop hosting strategies that most organizations use: VDI and DaaS.

So, how do you know which is the best option for your organization? Understanding how VDI and DaaS compare and contrast is more critical now than ever before. Fortunately, this brand-new guide discusses the key components of VDI and DaaS, and the pros and cons of each, to help you decide which is right for your unique environment.
Desktop hosting basics: Defining VDI and DaaS


Desktop hosting strategies such as VDI and DaaS have come to the forefront of enterprise desktop management, and each shop has to decide for itself whether to host desktops in the cloud or on-premises.

From analyst blogs, it seems clear that all of IT is moving to cloud and mobile computing. This is also the marketing position we see from Amazon, Google and even Microsoft. The business reality, however, is that most organizations do not run solely on Apple iPads and cloud services -- Windows applications are a fact of life for the majority of businesses.

For more than 20 years, developers have written apps for Windows, which means IT needs to provide staffers with Windows computers. From beige boxes to laptops and now tablets, most Windows apps run on computers that their users can touch.
At the same time, it is possible to separate software execution from the user interface. Products from Citrix, Microsoft, VMware and a host of other vendors allow Windows applications to run on one computer and display on another.

VDI and desktop as a service (DaaS) put programs in the data center and let workers choose which endpoint devices they use to run them. Similar to the way workers can use a browser to accesses a Web server over a network, they use VDI clients to access desktops over a network.

IT shops must decide whether to host desktops in their own data centers through VDI or in a service provider's data center through DaaS. To make that decision, it's important to know how VDI and DaaS are different, as well as how they are similar. It is also worth knowing why organizations choose one desktop hosting method over the other.

What are VDI and DaaS?

In VDI, a screen and keyboard remain on the user's desk, connected to a client, but his or her applications run in the data center. Most often, user desktops each run in their own virtual machines (VMs) on a hypervisor,
allowing many users to share a single physical host. Other options include a dedicated physical workstation in the data center for each user, and Windows Remote Desktop Session Host servers that multiple users can share.

Once users' virtual desktops run in the data center, they may use a VDI client on nearly any other device to access them. Note that VDI usually requires its own access infrastructure and a virtualization platform.

VDI deployments have been described as an iceberg of complexity. Poking up above the water are the connection broker, the VDI client and a few desktop VMs. Hiding below the surface are the many layers, such as the hypervisor, storage array, network, user accounts, user persona, file sharing, application deployment, VM provisioning and patching. This long list is a combination of the entire virtualization infrastructure and all the components necessary for well-managed physical desktops.

At anything but the very smallest scale, VDI requires specialized skills to design, deploy and operate well; poor management isn't an option. A storage array that doesn't deliver the required performance, for instance, could result in multiple staff complaints about how long it takes to log in.
Connection brokers that are unexpectedly offline for patching will prevent anyone from logging on. VDI may only deliver a desktop, but it's mission-critical because it involves every desktop.

DaaS, on the other hand, is a desktop hosting method that moves the user's desktop onto virtualization hosts in a service provider's data center. Essentially, a DaaS provider builds a huge VDI environment and rents virtual desktops out to customers.

Some people also think of DaaS as a desktop in the cloud, where the National Institute of Standards and Technology cloud definitions apply: self-service, elastic, pooled and customers only pay for usage, not necessarily potential processing capacity. Customers choose how many desktops they want in a particular month, and they are only billed for that number of desktops.

For example, a company can decide that it wants an extra thousand desktops for a month, and at the end of the month, it hands them back to the service provider. The customer only pays for the month's use of the extra desktops.
Providers have a large pool of processing capacity to run desktops for multiple customers, gaining economies of scale for purchasing, deployment and management. This allows for more instant scalability, or elasticity than a dedicated VDI platform. Providers also benefit from averaging the demand over their customers.

**Achieving an agile desktop**

Desktop hosting methods such as DaaS and VDI allow much more flexibility and agility than the standalone laptops and desktops that they usually replace. Employees can access virtual desktops from different locations, while a desktop sits on a desk and can only be used from there. Staffers can access the same desktop environment with the same applications and data access as they go about their day.

Workers can use thin clients at their desks, move to tablets in a meeting and access the same desktop from their home PCs to finish off a report after the kids have gone to bed. A new virtual desktop can usually be provisioned in minutes, rather than the days it takes to get a new PC.
In addition, a virtual desktop is very connected; it is in the same data center as all the servers, unlike a laptop, which must access a lot of data and services remotely. VDI and DaaS also help make a user’s client device expendable because it has no data and needs minimal configuration. If a user’s primary access device fails, gets lost, or if they leave it at home, there are a few other devices they can use instead.

A VDI or DaaS desktop lets staff members work in different ways and from different places, potentially making the staff more productive and valuable.
How DaaS and VDI management differ


DaaS offloads a lot of infrastructure maintenance from your IT team to the cloud service provider, which means that DaaS comes out on top when compared to VDI management.

With desktop as a service (DaaS), the service provider deals with the headache of building and operating virtual machines (VMs) and virtualization infrastructure. Its VDI environment is many times larger than yours would be, and service providers can spread the costs across far more desktops than you could. These economies of scale pay off when dozens or hundreds of customers use a single DaaS provider. All your users need is a reliable, secure network connection to the DaaS provider. This could be over the Internet, or it could be a dedicated link. With DaaS, you do not need to manage virtualization or VDI.

Vendor marketing claims say that DaaS desktops can cost as little as $30 per user per month, and on-premises desktops cost a whole lot more. The reality is that the cost of a DaaS desktop is similar to the cost of a VDI desktop. The benefit of DaaS is that you
don't have to manage the virtual infrastructure. Instead, you can focus on users and applications.

**DaaS and VDI management requirements in common**

Many ongoing DaaS and VDI management tasks are the same, and much of the iceberg of VDI complexity is still present with DaaS. End-user device management, printing and desktop patching are all your responsibility in a DaaS environment.

With DaaS, the provider hosts VMs in its data center, but users still need devices to access those virtual desktops. If employees sit at a desk somewhere, they probably use a PC or a thin client to access their desktops. You must support that device if it fails.

Even if users access their desktops from mobile devices, you must provide support. No matter the reason for blocked access, any loss of productivity is your problem to fix, even if the endpoints don’t belong to your company.

One of the biggest pain points in an end-user computing strategy is printing. Sooner or later, users will want a paper copy of a document. This is fairly easy to accommodate for users in the office and on the corporate network but, with DaaS, printing will work only if you have a routed network connection to your provider. Most VDI products
include some sort of universal printing capability for desktops and laptops that allows workers to use any printer installed on their clients. When you’re looking at DaaS service providers, spend some time looking at how well their universal printing works.

Mobile devices running Apple’s iOS or Google Android operating systems, which usually have fairly limited printing capabilities to begin with, can be a problem as well. The clients for these OSes have similarly limited or nonexistent capabilities. If VDI or DaaS is part of a wider mobility strategy, it may be more appropriate to have users print documents through apps on their mobile devices, rather than through the client.

Preserving the uniqueness of each user’s computing environment is another challenge. A persona is made up of a user’s preferred browser and things such as personal documents they may store on the desktop. In any VDI or DaaS environment, you usually need to provide persistent personas. Simply retaining preferences inside the user’s VM is OK until the VM needs to be replaced — either with a new operating system or maybe just an updated build. Generally, Windows roaming profiles or a third-party alternative manages personas.

To copy personal data onto a file server, the desktops must be joined to your Active Directory (AD) domain. You can use Group Policy Objects to control this process, and domain-joined desktops are usually part of your Windows infrastructure anyway, so
it’s no big deal in a VDI environment. But with DaaS, you will probably need AD and a file server or two inside the DaaS provider’s data center.

Unless workers only use the most basic applications, you will probably want to assemble your own desktop VMs. This is called image management, and it is required for both VDI and DaaS. You may have different images for various groups of users who require specific applications. Keeping these custom images up to date is a regular task, and so is periodically updating software versions.

Patching is another painful reality in modern IT. Your DaaS provider might take care of ensuring that newly deployed desktops are patched, unless you use a custom image (then patching is your job). But once you deploy the VMs, patching is entirely your responsibility.

If you are going to keep the desktops for more than a few days, you will need to update Windows, malware protection and other applications. In VDI, IT usually manages this with mechanisms such as Windows Software Update Services (WSUS).

With DaaS, you may still want to use WSUS to update desktops. The DaaS provider is responsible for the infrastructure to provision, run and access the desktop VMs.
With a VDI environment, these are all tasks for the customer’s IT team. Remember that everything inside the VM is always the customer’s responsibility, whether on VDI or DaaS.

**Who maintains what?**

It is important to understand what you are getting from your DaaS provider and what you are still responsible for. Table 1 gives a good idea of what to expect from in-house VDI versus a DaaS provider.

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Which shops should use DaaS vs. VDI?

http://searchvirtualdesktop.techtarget.com/tip/Which-shops-should-use-DaaS-vs-VDI

There are plenty of reasons to use DaaS vs. VDI -- lower upfront costs, reduced IT maintenance, anytime user access -- but there are also benefits to VDI that make it a great choice for some organizations' desktop infrastructure. How do you know when to use each approach?

With DaaS, you can buy new desktops from a provider on short notice, and then surrender those desktops back, which is one of the huge benefits. You pay only for the desktops you choose to use each month, which makes it ideal for organizations that have surges in their desktop needs. Rather than having a large amount of equipment that you only use occasionally, you can use DaaS to deliver on short-term or seasonal desktop requirements.

Additionally, you can spin up cloud-based desktops for workers to use as part of your disaster recovery plan. This gives users much more flexibility in terms of where they can work and what devices they can use to access their desktops.

When to do DaaS vs. VDI
If your shop wants to do VDI but lacks the in-house expertise to build and operate a complex VDI environment, then you are good potential DaaS customer, too. Instead of building an inadequate VDI platform and not having the experience to operate it, you could rent desktops from a DaaS provider. If you choose to do DaaS, your on-site desktop infrastructure could be as simple as a few thin clients, a print server and an Internet connection, particularly if you build a full server infrastructure with your DaaS provider.

Another good use for DaaS is if you expect a lot of growth in desktop use that will be spread over time. Your DaaS footprint can grow a little every month, but to grow with VDI, you need to plan for your maximum size right from the start. That means you either buy huge excess upfront, or regularly and disruptively upgrade hardware to add capacity to your VDI environment. Either way, with VDI, you have to pay for capacity well before you use it.

If you've moved your entire server infrastructure into a cloud provider's data center, you could benefit from also moving desktops to the same cloud provider. Keeping the desktops near the servers helps with application performance since it minimizes network latency. This is an even bigger driver if you use a community cloud.
Community clouds provide services to a specific set of customers, such as financial services firms or government contractors. In these cases, the community might have specific regulatory compliance requirements that the cloud provider meets. These same specialized requirements will likely apply to the desktops, so placing them in the community cloud is logical.
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