

VDI Gen2: Quick Reference Guide

Top 5 Questions to Ask a VDI Vendor Before Making a Purchase



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Have you been tasked by your organization to find out as much information as possible about desktop virtualization and VDI? Are you currently looking for a solution that fits your organization's desktop needs? Do you know the right questions to ask in order to cut through the marketing and get at the heart of the technology?

Throughout this quick reference guide, we'll discuss some of the most popular questions that we hear from prospects along with questions that we'd suggest you ask every vendor you are looking at or actively speaking with during your research. After all, your VDI purchase is a very important decision to be made, so don't make a move without first evaluating every last detail.

What types of questions should you be asking?



Question #1: Does the VDI solution support offline users? Well, it should.

Find out if the VDI vendor offers the same high-quality user experience regardless of location or device, and regardless of whether the user is online, offline or at a branch location.

According to a 2010 study by Gartner, Inc., the difficulty in handling remote users is a top reason preventing the adoption of VDI technology in the enterprise. Similarly, a recent survey of CIOs found that the top barrier to VDI adoption was that users needed to work while disconnected from the network. As VDI becomes more prevalent, serving branch and offline users becomes that much more important.

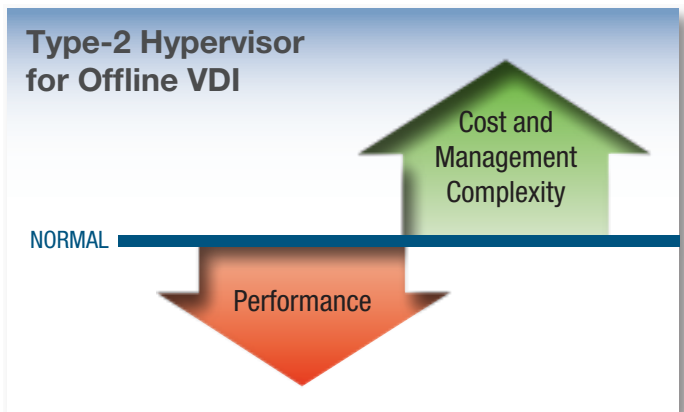
Historically, supporting these offline users had been a show-stopper for VDI. But today, that doesn't have to be the case. It's finally possible to not only provide access, control and security to these users, but you can do it in a way that also delivers a high-quality experience for the end-user. The question is, how?

When you look at VDI solutions today, you are typically forced to choose between one of the three options below:

- The first is a **connected VDI offering**, where the user connects to a server hypervisor in the data center and is served up a virtual desktop image. But without LAN connectivity, this method falls short.
- The second is to use a **Type-1 hypervisor for offline VDI**. A virtual desktop image is operated on top of a client-based hypervisor that's installed on bare-metal. But this solution dictates what type of hardware you can use (requires PCs with certain hardware, chipsets, newer PCs, and won't run on newer portable devices like iPads, tablets, smart phones, etc.). Examples of this type of technology include products such as Citrix XenClient, Virtual Computer NxTop or Virtual Bridges LEAF.

- And the third is to use a **Type-2 hypervisor for offline VDI**. In this environment, your PC operates with a local operating system, applications and user data. On top of that, you install a hypervisor layer that can then run a virtual desktop with its own operating system, applications and user data. But this option degrades performance while increasing cost and management complexity. Examples here include VMware Workstation, VMware View Local Mode and MokeFive LivePC.

Challenges associated with a Type-2 offline VDI solution



But the problem is that VDI is not a one size fits all solution. And having to choose one of these options over another can leave you in a bad state and keep you from achieving success. What's truly needed is a [VDI Gen2 solution](#) which offers a combination of the offline and connected VDI with a single integrated experience that works across any device the user connects to the network (desktops, laptops, thin clients, iPads, tablets, smart phones, etc.). This provides the best of both worlds for the end user, while maintaining a single management paradigm for IT.

VDI Gen2 solutions are the only solutions that deliver seamlessly integrated offline and online VDI, which solves the problem of the offline user. It provides users the flexibility of accessing their desktops while traveling, working at home, working in the office, or working on different devices. And it doesn't matter if the user is connected to the network or not, VDI Gen2 will ensure a consistent, LAN-like delivery of the user's desktop.

Today, 40 percent of all PCs in the workplace are laptop computers. This remote user base is growing quickly and your VDI solution MUST be able to support them. Ask the vendors that you meet with how they support this important group. And then come talk to Virtual Bridges to find out how to do it right!

Question #2: Does the VDI vendor require costly network, storage and desktop upgrades?

VDI – makes managing desktops easier and saves you money. That's it. End of story. Right? WRONG! Sure it works in theory, but in many instances, vendors tack on all sorts of extra, costly requirements. Luckily, things are changing and the newest solutions have shown how to cut out these added costs.

Let's take a quick look at the various elements to see how the costs add up and how you can avoid them.

The goal of VDI is density. VDI deployments are supposed to curtail costs by connecting as many desktops as possible to a single server or CPU. The more desktops you can serve from a single server, of course, the better the cost efficiencies. While the marketing literature of many VDI vendors often promise 15 or more desktops per server, customers often report otherwise in the real world. In truth, first-generation VDI technology often serves just 5 to 8 desktops per core. Ouch!

Then there's the memory. First-generation VDI vendors may suggest that just 512MB of memory will be needed per virtual desktop; however, the customer reality (especially for those running Windows) is much higher. Users may need closer to 1GB of memory for Windows XP and as much as 2GB for Windows 7.

Those memory and server figures can push the average first generation VDI deployment costs as high as \$150 to \$200, greatly eroding the cost savings argument that is a central point of VDI.

And of course, let's not forget storage. When considering storage, customers tend to focus on capacity (terabytes needed). But really, the discussion should be on the number of Input/Output Operations per Second (IOPS) required. IOPS is the single most important metric in VDI desktop performance. When Windows 7 boots up, for example, it causes many reads and writes, which continuously scans the hard drive, making IOPS performance extremely important.

Also important is the type of network connectivity used to connect the storage device to the network, including the type of platform and chassis used. Because a poor storage configuration can be very cost-prohibitive, it can single-handedly undermine a VDI deployment!

Fortunately, there are VDI solutions on the market today that solve these costly challenges. VDI Gen2 has delivered significant advancements in hypervisor performance, memory management, storage, and workload distribution.

Want to cut out the added costs? Look for a VDI solution and approach that does the following:

- **Appropriately size resources** based on the number of users and the type of solution. Then you can determine the appropriate CPU needs.

- **Choose a display protocol** that adequately handles demands. Some VDI solutions can automatically provision the best remote display protocol.
- Evaluate solutions based on **Hypervisor performance**. The Linux KVM hypervisor in particular is tailor made for VDI.
- **Choose a solution that offers in-memory de-duplication** which is extremely useful in optimizing memory for desktop workers.
- **Employ smart workload distribution** and run the same software across desktops as much as possible.
- **Tailor the solution to your desktop workloads** by considering capacity, including static versus dynamic desktops and storage de-duplication, as well as IOPS needs.
- Consider using **local storage hard drives** available on the server instead of using external storage.
- **Leverage the local, low-cost direct attached storage (DAS)** to cache external storage. In fact, that is where the future of VDI deployments lie -- with local attached storage serving as a front end to external storage.

Think all VDI solutions are the same? Think again!

VDI Gen2 Features

- Total Cost of Ownership - # Servers, Cost of Storage + OPEX
- Support for Windows and Linux Guests
- Ease of Deployment and Management
- Native Support for Branch Offices (LAN-Like PC Experience, Business Continuity)
- One Console; Integrated Offline, Online and Branch VDI
- Bi-Directional Sync for User Data

Question #3: Can the VDI vendor scale at the rate you need it to? Can it handle your current servers and desktops and grow with you over the long term? It's all about scalability!

If you're like most companies, it's hard to envision where you may be in five years. However, the last thing you want to do is make a technology investment today that won't support you tomorrow.

With VDI, it's easy to just dip your big toe in and test the waters with a small deployment. It's a great way to start and many vendors even offer trials. But it's critical to make sure that once you get rolling, you can continue to grow. Plain and simple, can the platform scale? How much? Can you scale up and scale down?

The latest VDI Gen2 solutions offer the greatest advancement in scalability due to their cluster architecture and distributed connection brokering. The platform is built to scale. As your organization grows, simply add additional nodes to the cluster.

But scalability isn't just about growth. It's also about supporting high volumes of users at the same time, something that many Gen1 vendors quite frankly have challenges with. VDI Gen2 solutions also tackle this challenge – dynamically routing user sessions to the least busy and memory optimized server, ensuring no single point of failure or choke point and allowing greater availability and scalability.

Education is one of the many industries where supporting a large number of users simultaneously is critical. Dalian University recently turned to Virtual Bridges VERDE VDI Gen2 after learning first hand that VDI Gen1 solutions could not handle their needs.

“We have tried other competitive VDI products and found them very lacking in significant areas which are most important in an educational setting,” said Professor Zhang Wei, Ph.D. and vice president of NII. “VERDE solves one of the most difficult problems encountered in today’s VDI environment – handling a large number of users conducting similar operations at the exact same time. This scenario is very often encountered in a classroom lecture or when large numbers of students are taking the same examination online.”

So as you look at different solutions, make sure to challenge each vendor and make sure they can handle all of your scalability needs. Interestingly, the recent Kaviza/Citrix deal creates quite a few question marks around scale. There’s no planned link between the two solutions, so there’s limited opportunity to scale.

As Gabe Knuth put it on BrianMadden.com, “Citrix states that there is no license upgrade path because the solutions are ‘aimed for different audiences and needs.’ Some people may be alarmed by that, especially if they already have Kaviza and are on the cusp of needing to upgrade to something like XenDesktop. What is Citrix likely to sell if a company comes to them looking for a VDI solution for, say, 300 users? Do they suggest going with Kaviza, the simpler solution and potential ‘easy win,’ or do they go with XenDesktop, which may be too much for that size of a deployment? If a customer chooses Kaviza, then outgrows it in a year, they’ll have to buy an entirely new solution.” Rip and replace!

That’s crazy!!! There’s no need to buy different VDI solutions when there are real solutions that can fit your needs right now and can grow with you down the road.

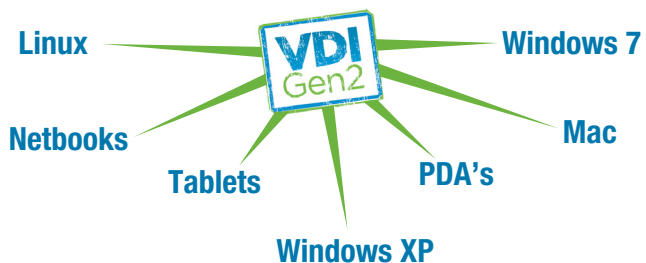
Question #4: Does the VDI vendor provide the option to use both Windows and Linux guest environments?

It's amazing to think that Linux is celebrating its 20th birthday this year. What started off as a niche experiment has recently become a major player in enterprise data centers. Today, it's fair to say that most corporations tap both Linux and Windows applications within the same desktop environment. Plain and simple, if you are one of these organizations and your VDI solution can't support both, you're not set up for VDI success.

What's more, your VDI solution should be able to deliver both Windows and Linux user desktops to all of the most popular endpoint computing devices, including PC, Mac, thin clients, netbooks, tablets, and PDAs. The more users turn to tablets and smart phones, the more you'll see Linux invading the desktop world. Those users need to access their desktops on the go. And you'll need to support them.

VDI Gen2 solutions make it easy to run Windows 7 and Linux in parallel with legacy Windows XP desktops. These solutions leverage a Gold Master that standardizes the operating systems and applications management, while retaining user personalization. It's a huge advancement over VDI Gen1, which frankly, still considers this a Windows only world.

VDI is full of benefits, but your VDI solution must support all of the operating systems that you use. Make sure to ask each vendor about this and see it in action.



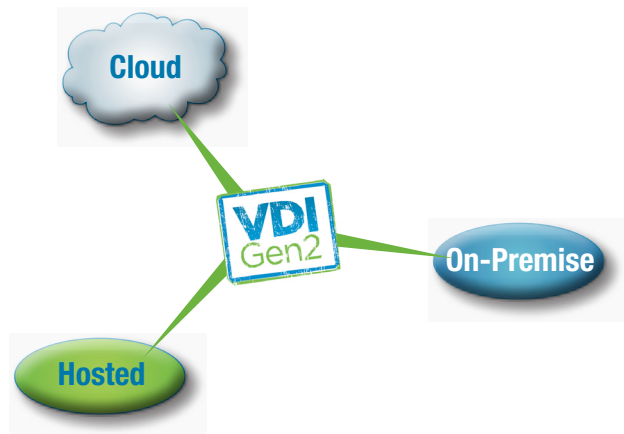
Question #5: Does the VDI vendor offer both hosted and on-premise options, and can they manage your VDI solution in the cloud?

Like scalability, flexibility is key here. You want to make sure you keep your options open. Just because you want to manage your solution on-premise today, that shouldn't preclude you from making the move to the cloud in the future.

Likewise, you may choose to manage various groups of users differently – based on risk, proximity or even availability.

As an example, when you look at risk profiles, you may choose to separate full-time employees from seasonal workers, contractors or partners. You may choose to host trusted employees within your secure corporate perimeter, while it might make sense to host non-employees from a third-party environment.

Choose the right solution, for the right need, at the right time and manage from a single console



With proximity-based scenarios, the hosted model might provide better service and performance for employees who are traveling or working in alternative locations. Likewise, for availability scenarios, you might want to use the hosted provider to ensure business continuity should the primary location go down.

The cloud of course creates new opportunities that you may choose to take advantage of – great performance, ease-of-licensing (MS) together and a lower cost of management from outsourcing to an expert with efficiencies and economies of scale.

The beauty of VDI Gen2 solutions is that you can separate users, but still manage them from a single interface with consistent image, policies and updates. Why lock yourself into a solution that is focused on one management model? Make sure the VDI vendor offers you the flexibility you deserve so that you can choose the right solution, for the right need, at the right time.

A Type-1 solution, in contrast, which is used by Citrix XenClient, Virtual Computer NxtTop, or Virtual Bridges LEAF, runs the virtual desktop in a client hypervisor running atop the hardware on “bare metal.” This method eliminates the physical desktop running Windows, Linux or another operating system on the desktop. There are significant advantages to this solution, including user speed that is close to native hardware performance, savings on license costs since you are not running multiple versions of each operating system and application, and simplified management because you are dealing with fewer versions of the operating system and applications.

Although the Type-2 solution is often chosen for BYOPC situations, that choice can introduce problems, because client devices are now beginning to include a range of devices beyond desktop computers, including Apple iPads, tablet computers, smart phones, and more. In those cases, the Type-2 solution will no longer work – only true integrated offline VDI, as offered by Virtual Bridges, will serve virtually any client computer.

About Virtual Bridges

Virtual Bridges VERDE is the industry's most comprehensive desktop management and provisioning solution that leverages virtualization to deliver desktops either on-premise or in the cloud. The VERDE solution lets enterprises transform their desktop TCO by simplifying desktop management, improving security and compliance by centralizing the administration of desktop images and data, and increasing the organizational agility by quickly providing desktop and application access to users on any client machine (PC, Macintosh, Linux, thin client, home computer or on a portable drive) at any time.

About VDI Gen2

VDI Gen2 solutions provide the following characteristics:

All in One Solution – includes connection brokering, desktop image management, automated provisioning, and management with each element tightly integrated, simplified and purpose-built for VDI.

Scalable, Clustered Architecture – built to scale; there are no single points of failure, and scale-up or scale-out are as simple as additional nodes to the cluster.

Delivers the Dynamic Desktop – builds a fully personalized desktop for each user on demand and as requested; doesn't require expensive third-party tools and/or complex configurations.

Breaks Down the Storage Barrier – keeps capacity requirements in check; patent pending technology dramatically reduces the IOPS; leverages local disk to optimize both read and write IOPS.

Provides Unified Management – single pane window into all virtual desktop provisioning and maintenance activities; provides visibility across on-line, off-line and branch VDI desktops.

Includes Broad Connectivity, Protocol and Device Coverage – designed for the way we work today, not re-engineered; sync technology provisions the best remote display protocol for a rich PC-experience; delivers Windows and Linux desktops to the most popular end point devices such as PCs, Macs, thin clients and even iPads.

Service-Based Pricing & Packaging – offers both hosted and on-premise options; all inclusive pricing.

Virtual Bridges VDI Gen2 is now.

