

Why 2016 will Finally See Elasticity in the Desktop Application Virtualization Market

White Paper: Why 2016 will Finally See Elasticity in the Desktop Application Virtualization Market

At the end of every year there are articles about why the growth in VDI has disappointed again. Every year the number of optimistic forecasters dwindles. We at Sphere 3D believe that we are finally entering the age of virtual environments for desktop applications. Our reasons are mainly due to the concept of Elasticity. The concept in economics is that as the price for a product goes down, the usage goes up. Let's look at the current VDI industry with that lens. Here are the reasons why we believe that virtual, Our Virtual, will rule the desktop this year and in the years to come.

- **The cost of virtual environments will go down;**
- **More apps will be virtualizable;**
- **Virtual environments will be able to scale down as well as up;**
- **The number of potential architectures will go up;**
- **The number of IT staff qualified to do virtual will go up;**
- **The time required to evaluate a VDI opportunity will go down;**

The cost of virtual environments will go down. At the moment, there are several easy ways conceptually to reduce the cost of virtual environments. We say conceptually because they are easy to imagine but hard to do.

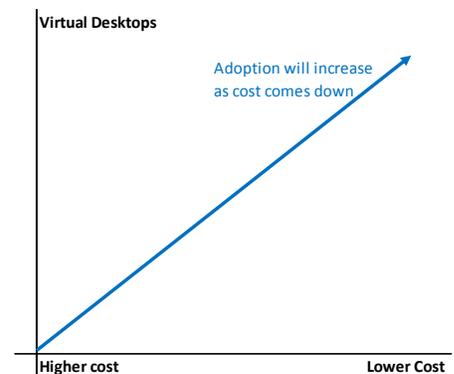
They include:

- Allow virtual desktop or application server to fail over to any VDI appliance...anywhere. At the moment, most VD server implementations are matched with a VD server implementation of the same size and at the same location.

This limitation forces redundancy at each location and overprovisioning. Wouldn't it be more efficient if my Virtual Desktop server downtown could fail over to another Virtual Desktop server in the suburbs or just a portion of the unutilized resources in the suburbs? This ability would significantly reduce the cost of that Virtual Desktop deployment.

- Offload peak usage. Right now Virtual Desktop deployments are designed for peak usage which may be only 10-20% of the total time. Wouldn't it make sense to design for average usage and offload peak to a more efficient and less expensive application delivery system?

- Using the OS more efficiently. Current virtual solutions force each user to start and use a distinct OS. For example, 100 Windows Desktop Application users would use 100 instances of the Windows OS with all the processing power, RAM and storage those 100 OSs entail. Why can't these users share the same OS and significantly improve efficiency and therefore cost?

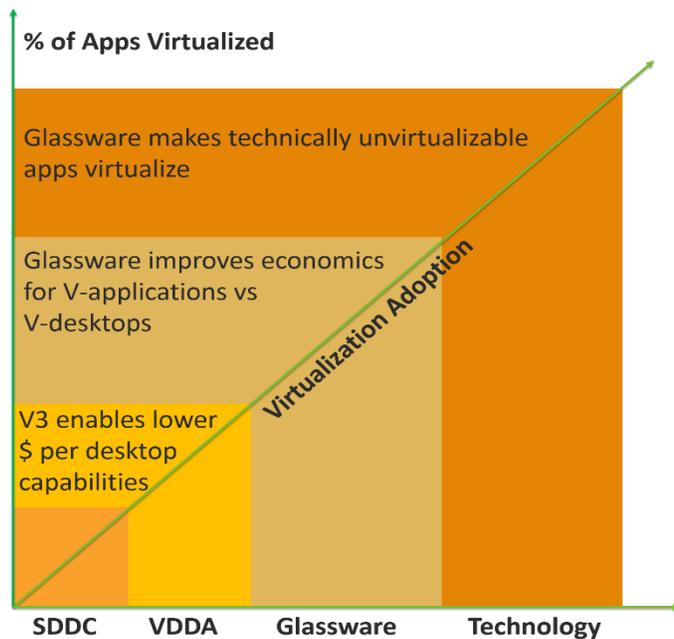


At Sphere 3D over the last several years, we have tried thoughtfully to solve these problems.

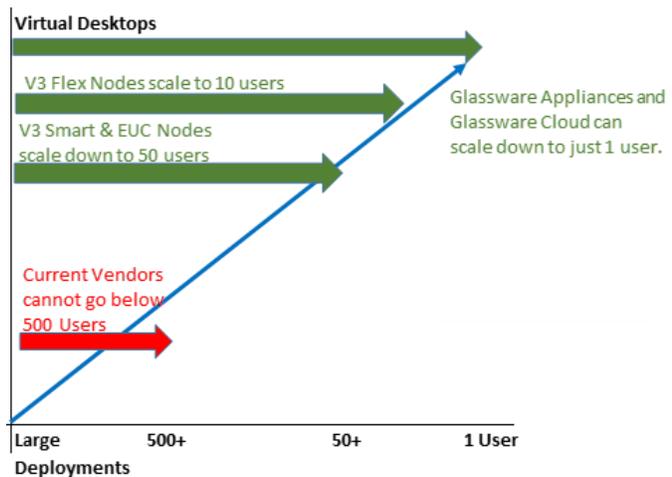
| | Current | V3 | Glassware |
|--------------------|-------------------|-------------------------------------|-------------------------------------|
| Fail Over | Only to same site | Yes, Any server to any server | |
| Offload Peak | No | Yes, Autonomous Resource Scheduling | Yes, You would Offload to Glassware |
| Use OS Efficiently | No | No | Yes, Containerization |

More apps will be virtualizable. Currently many apps are not virtualizable because they are uneconomic to virtualize (use too much system resources) or won't virtualize due to technical reasons. Currently only a very small portion of Line of Business End User Apps are virtualized. Being able to virtualize 90+% of all End User Apps will remove many of the barriers to a virtual environment. No one wants to go virtual but lose the apps that help them run their business.

- V3 to make virtual desktops more cost effective. Reducing the cost of virtual desktops will increase the number of apps that become virtualizable.
- Glassware 2.0 to make uneconomic apps economic. There are certain apps that are too expensive to virtualize using hypervisor technology of any sort. Our proprietary containerization technology with its efficiencies makes these apps cost effective to virtualize.
- Glassware 2.0 to make un-virtualizable apps virtualizable. There are certain apps including legacy XP apps which currently do not virtualize at all due to technical reasons. Glassware virtualizes them allowing 95+% of Windows desktop apps to virtualize.



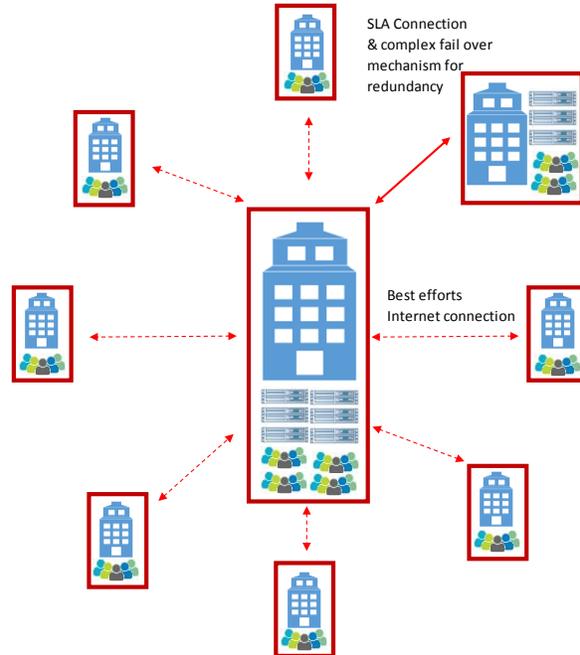
Virtual environments will be able to scale down as well as up. All the vendors market scaling up and linear scaling. This is great for the data center but not all organizations want a data center type deployment. At Sphere 3D we consider the scale up to be the easy part. It's much harder to scale down. After all, the iPhone would not have been such a wonder if it was the size of a brick and cost as much as a car. At Sphere 3D, we call the industry's inability to scale down the elephant farm. While an elephant farm and a rabbit farm both scale linearly in terms of cost to develop, the rabbit farm is cheaper and easier to get started. It's a lot easier to have thousands of rabbit farms than elephant farms.



Glassware 2.0 and V3 have completely democratized the market, allowing small branch locations to utilize a virtual environment. Here's another way of looking at how the ability to scale down increases the size of the addressable market.

The number of potential architectures will go up. At the moment, the inability of current vendors to scale down or fail over site to site has limited the available architectures to data center type deployments only. Here is the architecture that makes up the majority of virtual desktop deployments.

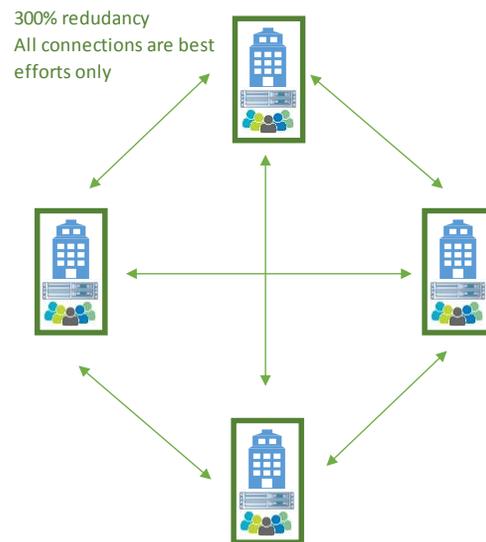
In this architecture most of the virtual servers are deployed in a central location. Redundancy is built in at the central location. There may or may not be a second site connected with a dedicated internet connection secured by an SLA from the ISP. In the event that the main site goes down, then the second site will take over. There are no servers at the other sites. The users at these sites will log in on the internet, through a best efforts connection.



Our technology allows for the following architectures:

- Corporate HQ (data center, diagram shown above).
- Branch Locations (node to node or peer to peer, diagram shown to the right). This architecture is the most reliable for any type of network, Virtual Desktop or otherwise. It can be supplemented with a Corporate HQ.
- Enterprise Cloud (cloud with SLAs). Can be delivered using any V3 Node.
- Home Office Worker (best efforts cloud). Can be delivered using any V3 Node.
- Or any combination of the four.

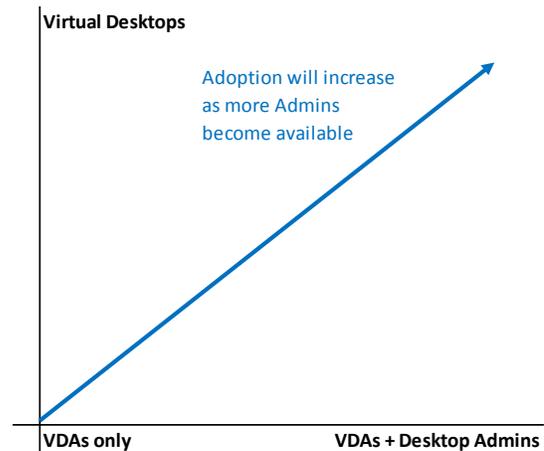
We believe that providing a series of architectures that more closely fits the business needs of virtual desktop customers will significantly increase the number of virtual desktop deployments.



The number of IT staff qualified to do virtual will go up. From our experience in the industry, we've found that a gating item is that there are simply not enough qualified Virtualization Consultants and Virtual Desktop Administrators to implement and maintain new virtual deployments. Making the management of virtual desktops similar enough to physical desktops so that Desktop Administrators or even reasonably sophisticated business people (defined as owning a smartphone, tablet and PC personally) can manage a virtual deployment would solve this problem.

With more qualified individuals to implement and maintain virtual environments, we believe there will be more virtual environments installed.

VDAs or Virtualization specialists need not worry. With V3 and Glassware 2.0's abilities to fine tune an environment, the specialists can spend their time on higher level, value add questions like: what combination architecture to propose to maximize efficiency and cost savings? How to extend the life of a current deployment from 5 years to 10?



The time required to evaluate a VDI opportunity will go down. To date the evaluation process to create an architecture for a VDI deployments can take months if not years and is paid for by the client even if a VDI deployment is not made. The main reason for this long and arduous process is the complexity of the storage architecture and how it works with the compute in VDI. Another reason is that in a traditional VDI network each server can affect the performance of the entire network. With V3 each server performs discretely from every other server. So a performance problem on one V3 server will not affect performance on any other V3 server.

As a virtualization professional or customer who has considered virtualization, have you encountered any of these issues before? Visit sphere3d.com to learn more.

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