How HCI Reduces the Complexity of IT Infrastructure for VDI

The Challenge

To optimize its benefits, VDI must be hosted on a robust IT infrastructure. As traditional three-tier infrastructure scales up, it becomes a complex IT footprint that is difficult to manage and expensive to scale.

The Solution

Hyperconverged Infrastructure (HCI) provides a better hosting platform for VDI, combining servers, storage, and networking into modular building blocks. HCI's distributed architecture is easier to manage and scale over traditional IT architecture.

Key Benefits

Distributed architecture simplifies IT management and scaling

Runs on less expensive industry-standard hardware

Easy management and predictable scalability

Higher desktop density per node*

Flexible scaling options*

Automatic redistribution of workloads*

NOTE: These are benefits that are specific to Pivot3's HCI solution.

As they face the challenges of giving their employees easy access to desktop environments, many companies are discovering the benefits of Virtual Desktop Infrastructure (VDI). Using VDI, companies can consolidate desktop operations and critical data into a centralized virtualized data center. They can easily distribute and manage virtual desktops, which end users can access from any location, on any type of device. VDI improves employee productivity and provides significant operational efficiencies over physical desktops.

But to realize these benefits, organizations must host their VDI platform on a robust IT infrastructure that can support high-density, IO-intensive workloads. As the company adds more virtual desktops, it becomes a challenge to scale up the IT infrastructure to accommodate growth. To avoid the complexity of IT management and scaling, it's necessary to utilize the right infrastructure solution for VDI.

The Limits of Traditional IT Infrastructure for VDI

A traditional three-tier server-to-SAN IT infrastructure is often used to host VDI platforms. But it has several limitations that can compromise VDI performance, scalability, and ROI.

First, traditional IT infrastructure is comprised of three silos – compute, storage, and networking. As the IT footprint scales up to accommodate VDI growth, companies must add additional servers, storage units, and networking bandwidth to each separate silo. The more units they add, the more complex the IT footprint becomes, and the harder it is to manage.

Also, the infrastructure used in traditional IT hosting for VDI is very expensive. It requires a large capital expenditure for the initial IT buildout, and additional costs to buy new servers and storage units as the IT infrastructure scales up to support VDI growth.

Scaling up IT infrastructure for VDI is often an unpredictable and difficult task. It's hard to anticipate how many additional nodes, drives, and storage units the IT footprint will require to support additional VDI users. Many organizations end up buying more hardware than they need, making a large IT investment to support minimal VDI growth.

Finally, in traditional architecture, virtual desktops share a common storage pool. During periods of high IO activity, these storage units can't handle large numbers of random IO requests that are typical of VDI. This often produces latency in the virtual desktop user experience, which can slow down productivity and reduce the ROI of the VDI implementation.

Key Benefits of HCI for VDI

Hyperconverged Infrastructure (HCI) can directly address the problems of IT scalability, eliminating complexities and simplifying infrastructure management.

Simplified Architecture

HCI collapses the silos of traditional IT infrastructure by combining compute, storage, network, and virtualization into modular blocks. This makes it easy to build out an IT footprint for VDI as a distributed scale-out architecture. Using HCI also simplifies IT management and scaling, and eliminates potential bottlenecks that can disrupt VDI performance and reduce user productivity.

Reduced Cost

HCI operates on industry-standard hardware. This provides cost savings over the more expensive traditional IT hardware.

Using HCI for VDI can provide additional cost savings. An HCI solution that utilizes an ultra-low latency NVMe flash storage tier will support up to 3X more virtual desktops per node. Since companies can provision more VDI users on fewer nodes, they have less hardware to buy when building or scaling their IT infrastructure.

Easy Management

HCI allows companies to manage all clusters as a single domain from one user interface. This makes it easy to build and scale out IT architecture for VDI by managing multiple nodes as pre-defined pods of VDI users.

Predictable Scalability

Managing IT infrastructure in pod-based distributed deployments also simplifies scalability. For example, companies can pre-define a certain number of users and nodes per pod (i.e. 1 pod = 10 nodes = 500 users), which makes it easy to predict IT scaling needs. Instead of adding individual nodes to the IT footprint, companies can add pods (or node clusters), based on how many users each pod can accommodate.

Flexible Scaling Options

Many HCI systems have compute and storage bundled together on the same node, and it's impossible to deploy one without the other. HCI t offers flexible scaling options, allowing the company to deploy all-compute or all-storage nodes, according to the needs of their VDI platform.

Distributed Workloads for Better VDI Performance

An HCI architecture that uniformly distributes workloads will help to ensure optimal VDI performance. This type of HCI solution supports scalability by automatically redistributing workloads and data across all nodes in a cluster each time you add a new node. This prevents bottlenecks on the VDI system that can result from isolated single nodes being assigned to handle high-density, IO-intensive data sets.

Simplify IT Management and Scalability with HCI

VDI has become a key technology for deploying highly-distributed work environments, improving productivity, and simplifying IT management. HCI provides a better, more robust solution for hosting VDI over traditional three-tiered architecture.

In general, HCI's architecture is easier to deploy and manage, provides predictable scalability, and is more cost-effective. Companies should also look for an HCI solution that offers higher desktop densities, flexible scaling options, and automated distribution of workloads.

About Pivot3

Pivot3's intelligent infrastructure provides security, resilience and management simplicity at scale. Powered by the industry's only Intelligence Engine, Pivot3 automates the management of multiple, mixed application workloads, delivers industry-leading performance at scale, eliminates unplanned downtime and reduces the cost of traditional IT infrastructure by half or more. To learn more visit Pivot3.com

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