IT Infrastructure Risk Management
How Scale Computing Helps Manage Risk in Infrastructure
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Introduction

When implementing new IT infrastructure there are always risks. These risks include under-provisioning or over-provisioning, hardware incompatibility, software incompatibility, network issues and outages, migration issues, downtime, disaster recovery, vendor reliability, and unexpected costs. These risks can be inflated when ripping and replacing an entire infrastructure, but that doesn’t have to be the case. Hyperconverged infrastructure solutions like HC3 from Scale Computing can reduce or even eliminate risks that have become common with traditional virtualization infrastructure.

Right-Sizing the Infrastructure

Sizing up the right amount of compute and storage resources with room for growth can be a complex process. Scale Computing simplifies this process in two ways. First, system engineers assist your administrators in using an assessment and sizing tool to gather system usage and performance data from your existing environment. This information allows us to provide a right-sized recommendation for your current needs and make recommendations on future needs. This significantly reduces the risk of under-provisioning or over-provisioning the infrastructure.

Secondly, an HC3 cluster can be scaled out very quickly and easily with any appliance configuration. Nodes can be mixed and matched within clusters to scale out both performance and capacity. When it is time to add more infrastructure resources, you can add only what you need rather than being locked into more of the same nodes you started with. You no longer need to overprovision for years of growth when you implement the initial solution. The infrastructure can be quickly and easily scaled out at any time, with no downtime to workloads.

Scale Computing makes sure the solution will fit your needs and we will support it with our ScaleCare support team that consistently has an NPS score of 88+. We are committed to making sure our customers are satisfied with the capacity we provide.

Hardware Compatibility

Unlike traditional virtualization infrastructure architectures that force you to integrate separate components like servers, storage, and virtualization from different vendors, Scale Computing has integrated and pre-validated the hardware before delivering HC3 as an appliance. With Scale Computing, you get a single vendor supporting the infrastructure, including the hypervisor. All of the hardware and software components have been tested together to provide a near turn-key solution that can be up and running in minutes.

With traditional infrastructure design, it might take weeks of implementation and testing by your IT staff to validate the whole infrastructure solution. With Scale Computing, we have done all of that work for you and will support you every step of the way in implementation and migration.
Technical Whitepaper

Workload Migration

When you are implementing a new virtualization solution like HC3, you need to migrate your existing workloads to it from your old infrastructure. These may be physical workloads or virtual workloads, but either way you want to avoid both downtime and data loss. At Scale Computing, we provide options to reduce downtime and we use migration tools that eliminate the risk of data loss.

For critical workloads where downtime must be minimal, we use HC3 Move (based on Vision Solutions Double-Take Move product) which replicates the data from the running workload and only takes the workload offline for a few short minutes during migration cutover. As with the other solutions, there is no risk of data loss, and downtime is minimal. In both cases, if the migration fails for any reason, the original workload can be brought back online and continue running until the failure can be investigated and migration can be performed again.

For non-critical workloads that can handle some downtime, we tend to use free solutions like Clonezilla or that copy the workload in an offline state. There is no risk of data loss with this type of tool however the workload must be offline for the duration of the migration. The only real risk here is that downtime will be longer than anticipated.

Unplanned and Planned Downtime

Downtime can be extremely costly to organizations and as business becomes more and more a 24/7/365 exercise, it can be critical to avoid. Scale Computing has built in high availability into every aspect of the infrastructure to help customers avoid downtime.

Unplanned Downtime

Beginning with some hardware best practices such as providing redundant components in the hardware build, we are able to achieve impressive levels of fault tolerance in our clustering with wide striping of data across the entire cluster and high availability of VMs between cluster nodes. If a node fails, VMs are automatically failed over to other nodes in the cluster. Additionally, our built-in disaster recovery options including failover and failback minimize downtime even for site disasters and failures.

Planned Downtime

Unplanned downtime is the most impactful to business but even planned downtime is undesirable. Planned downtime for infrastructure is often used for updating firmware and hypervisors with an administrator taking hours to perform this process. With Scale Computing, these types of updates are automated and can be done without any workload downtime within an HC3 cluster. Workloads are automatically moved around between cluster nodes, without being taken offline, to update each node. The process has no manual steps other than initiation. Similarly, adding a new node to a cluster requires no downtime and minimal user steps to add the cluster. Most of the process is automated for ease of use.
Disaster Recovery

Implementing disaster recovery is often yet another vendor solution that must be integrated and tested for compatibility. Scale Computing has built disaster recovery into HC3 and also provides disaster recovery as a service (DRaaS) with the ScaleCare Remote Recovery Service. The built-in capabilities include continuous replication, failover, failback, and recovery. When combined with the ScaleCare Remote Recovery Service, disaster recovery planning is documented within a runbook to ensure critical VMs are up and running quickly in the event of disaster.

With replication that can occur as often as every 5 minutes, sends only data that has changed, and is compressed and secured by SSH encryption, VMs can be protected between HC3 clusters or appliances across any distance. Replication is configured on a per VM basis so you can protect some or all of your VMs, whatever fits your DR needs. In the event of failure or disaster, VMs can be failed over to the remote cluster or appliance within minutes. When the primary site is recovered, VMs and data can be restored and failed back, also with only minute of downtime.

For our customers who do not have or do not want to host a DR site of their own, they can use our DRaaS option to replicate VMs directly to our secure hosted facility. The same built-in capabilities simply direct VM replication to the DRaaS facility. Whatever HC3 DR strategy you use, our ScaleCare engineers will always be on hand to help you through your disaster to get you back up and running as quickly as possible.

Vendor Reliability

Scale Computing may not yet be a household name, but we have already built a reputation for our focus on providing solutions for the SMB and midmarket and we have been doing so since being founded in 2007. We now have over 2000 clusters deployed in the SMB and midmarket and even some in the enterprise. A look at our customer success stories will reveal a theme of customer satisfaction based on our ongoing commitment to customer support and success. Scale Computing has over 50 reviews on the Spiceworks community and every review is 5 stars.

Our commitment to customer success has also meant that we have continued to keep all of our product development and support in-house. Our support engineers sit at our headquarters in Indianapolis, Indiana and our development team sits in Silicon Valley. Because of our innovation and unique focus on the SMB and midmarket, we aren’t going to trust our solution to any third parties who are likely in the traditional rut of focusing on enterprise. Our ownership of your whole infrastructure stack means we don’t waste time coming up to speed on how your infrastructure is configured. We provide streamlined, problem-solving support to get you back to business.
As our market continues to grow, we will as well and we will continue growing our customer base on the foundation of our unsurpassed commitment to support and success. Don’t just ask us, but ask our customers why they choose Scale Computing.

**Unexpected Costs**

One of the key principles we base our HC3 design on is simplicity. It is this simplicity that helps reduce many of the extra costs of traditional infrastructures. These costs may come in the form of training, consulting, testing, and troubleshooting.

Simply by reducing the number of vendors involved in the infrastructure, using Scale Computing can significantly reduce the runaround you would typically encounter in an infrastructure supported by several different vendors. There is no finger pointing. With Scale, it is finding solutions and resolving the issue as quickly as possible. Many customers underestimate the hidden cost of vendor run-around until they have a serious issue that is made worse by vendor finger pointing.

HC3 is so simple to deploy and manage that we do not require any training for our users. We walk them through the process of racking, stacking, and configuring a cluster which can be done as quickly as under an hour. The infrastructure is so easy to manage that many customers see a reduction of management hours per week reduced from days to minutes. When it comes to HC3, it would be easier to talk about unexpected savings than unexpected costs.

**Summary**

The risks of moving from one infrastructure to another are largely based on outdated practices of building infrastructure about disparate components from different vendors. These ideas are simply out of date with new, easy to use solutions like HC3 and hyperconvergence. Scale Computing is at the forefront of a hyperconvergence revolution to eliminate the complexity that creates the risks our customers work so hard to avoid.

**Additional Resources**

- [DR Strategies with Scale Computing White Paper](#)
- [How HC3 Lowers the Total Cost of Infrastructure White Paper](#)
- [What's New in HC3](#)