



Avance and Virtualization

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EXECUTIVE SUMMARY

Business organizations are looking to virtualization technology to help resolve a number of challenging issues including increasing overall availability of their IT solutions, optimizing the use of their systems, as well as reducing the costs of administration and management. Small to medium businesses (SMB), due to their limited resources and funding, feel the pressure to adopt this technology strongly.

Although "Virtualization" is a hot catch phrase in the market right now, people are often confused what is really meant and how the use of this technology could really help them with the day-to-day operational issues they face.

These organizations also face the challenge of needing to reduce their overall costs of operations while continuing to offer the same or enhanced services to their customers. Suppliers often tout virtualization as a tool that can help organizations reduce overall costs while continuing to offer IT solutions.

Businesses having less than 500 employees have proven to be very interested in using the same tools that drive the IT infrastructure for large organizations. So, after seeing media stories about successful deployments of virtual environments executed by large and very large companies, they are interested in considering the use of virtualized environments in their own IT infrastructure. They soon find, however, that they don't have the expertise on staff to explore, plan, implement or maintain these types of solutions.

This paper addresses what are the issues, what pain those issues are causing organizations, an ideal solution to those issues and finally points to a product that can help.

WHAT ARE THE ISSUES?

Small to medium organizations are facing a number of issues:

- Growth in the need for automated solutions to their operational problems.
- The immediate need to reduce their overall costs to maintain profitability in a tight economy.
- The need to reduce complexity of their IT solutions to reduce the need for expensive IT expertise.
- The need for IT solutions to constantly be available and reliable.
- Limited staff and expertise to examine new technology, plan for its use and implement solutions designed to address today's issues.

Each of these issues has the opportunity to create pain for organizations. The pain could be reduced efficiency, increased costs or being forced to work with an IT infrastructure that is neither robust nor reliable.

WHAT PAIN DO THESE ISSUES CAUSE?

Let's examine each of these issues to determine why they are causing pain and who is feeling the pain. Later we'll consider what can be done to address the issues and remove the pain.

GROWTH IN THE NEED FOR AUTOMATED SOLUTIONS TO THEIR OPERATIONAL PROBLEMS

Businesses of all sizes now face a need to have IT solutions that are available 24 hours a day, 365 days a year. They've learned that their customers expect to always be able to determine what products and services are available and order desired products or services ask an online service agent questions about them or send detailed questions to the company. Many smaller organizations have neither the staff nor the expertise to set up, manage or deploy online solutions. SMBs are no different.

This creates problems for the IT department. In the past backup, updating system software or testing out new applications was done during off hours. The production systems would be taken off line to allow these activities to take place.

Today, systems must be available all of the time. Going off line at a certain time of the day local time is no longer acceptable to customers coming from other regions. Companies must immediately respond to electronic orders and other requests or lose business to others who are seen as more responsive.

If a company's Website isn't available, customers simply go elsewhere for those products or services. This, of course, means that the company is losing customers and revenue.

THE IMMEDIATE NEED TO REDUCE THEIR OVERALL COSTS TO MAINTAIN PROFITABILITY IN A TIGHT ECONOMY

Problems in the economy haven't spared smaller businesses. So, it is necessary for SMBs to carefully examine what is being done.

It has been said that no matter how efficiently or well the wrong things are being done, they still are the wrong things. The economy is forcing companies to evaluate everything they are doing to determine what is a core service, what should either be done by a partner and what should not be done at all.

Companies of all sizes are focusing much more tightly on their core value and considering scrapping or outsourcing other initiatives.

For smaller companies, this usually means finding and working with partners who bring needed IT expertise, staff or focused technology to the table.

This also means selecting tools that offer intelligence, monitoring and automation to reduce the number of times that humans must respond operational problems.

Companies that don't address the need to contain cost find it increasingly difficult to meet revenue and profit goals.

THE NEED TO REDUCE COMPLEXITY OF THEIR IT SOLUTIONS TO REDUCE THE NEED FOR EXPENSIVE IT EXPERTISE

Complexity of IT systems has increased dramatically from the days of the mainframe. In the past, applications were designed to run on a single, very large computer. Since everything was in one place and everything was designed to integrate tightly with other system components, operational, administrative and hardware related costs could be tightly controlled. The level of staff expertise and the number of staff members required were also tightly controlled.

The desire agility, flexibility and the desire to use industry standard systems whenever possible drove companies to deploy distributed computing solutions because the industry standard systems at that time were neither powerful nor reliable enough to serve the need. This led to IT architects placing each function of a computing solution on its own system.

Small to medium businesses often developed their IT infrastructure based upon industry standard systems and multi-tier distributed application architectures. This approach often forced these companies to deploy their applications on one system, their database on another, their electronic mail on still another and their website on yet another. So, they faced a rack of computers in their computer room rather than a single computer system.

As the concept of a system exploded into banks of systems managing a single function, staff expertise was needed for each of the components, for the network that linked them together and for the technology that provided a secure environment. This was true regardless of the size of the company.

The increasing complexity also increased staff-related costs. Companies soon found that reducing costs was directly tied to reducing overall IT complexity. Cost of ownership studies often point out that staff-related costs account for 50% to 70% of an IT-based solution. Small to medium businesses turned to partners for this expertise rather than trying to build their own IT organization.

Organizations have increasingly turned to virtualization technology to encapsulate the components of each workload so that they can be consolidated back onto fewer, larger systems. The hope is that this consolidation will reduce the number of physical systems that need to be managed. While this approach does make some things easier, it adds the need for the organization to have or have access to staff having virtualization expertise.

All in all, increasing the number and types of expertise required directly creates an impact on the bottom line. SMBs, due to their limited resources and staff, often need help to address this issue.

THE NEED FOR IT SOLUTIONS TO CONSTANTLY BE AVAILABLE AND RELIABLE

Even small organizations find themselves dealing with a worldwide audience today. Customers may be found anywhere in the world where they have access to the Internet. Customers expect systems to be absolutely reliable, always available and expect the company to be extremely responsive when they have questions, want to order something or merely want to talk to a representative about the specifications of the product or service the company offers.

There is no time for unexpected outages or even those that were expected and planned. Any time systems are not available is a time that customers go elsewhere to purchase the products and services they need.

LIMITED STAFF AND EXPERTISE TO EXAMINE NEW
TECHNOLOGY, PLAN FOR ITS USE AND IMPLEMENT
SOLUTIONS DESIGNED TO ADDRESS TODAY'S ISSUES

All staff members of small to medium size businesses are engaged in the day-to-day operations of the business.

Managers ask themselves who has the time or knowledge to sift through new technology and services to determine what could be useful and what can be ignored? They also ask who has the expertise to try out new technology to determine if it creates or solves business problems?

Once a technological approach has been selected, these same managers ask who has time and expertise to map out how to adopt the new technology and then implement the plan.

Small to medium size businesses have a choice of finding, hiring and keeping key IT staff members or finding a partner. Increasingly these companies are seeking out partners that can help.

WHAT WOULD AN IDEAL SOLUTION LOOK
LIKE?

Let's look at what an ideal solution would be to all of these issues and the problems they create. The ideal solution must have the following attributes to be successful:

- It must support the standard off-the-shelf industry standard systems that organizations have selected to reduce overall hardware costs. Including local storage for ease of use and reduced costs.
- It must allow multiple workloads to share the same system to optimize system utilization and reduce the costs imposed by a complex hardware environment.
- It must provide proactive system management. This means it must monitor the environment and automatically address minor issues. It must also automatically "phone home" if problems require immediate staff intervention.
- It must offer high levels of system availability to reduce the costs of downtime
- Workloads and applications must not require re-engineering or modification to achieve stated benefits of availability and manageability.
- It must not require special expertise in virtualization, high availability or systems management in order to provide benefits

STRATUS TECHNOLOGIES' AVANCE

Stratus Avance® software offers the capabilities that address the issues and the problems they create to small and medium businesses (SMB), requiring the most reliable and affordable solution for keeping critical applications up and running. Unlike traditional high-availability (HA) clusters, Avance delivers far superior and more reliable uptime without the cost and complexity of clusters.



Avance works to proactively detect and prevent system outages. Its dual server, real time architecture makes it possible to keep applications on the air even if a component fails. Applications need not be modified or re-engineered.

Avance also works to prevent the most common cause of downtime, human error. Avance software automatically sets up and manages itself — greatly reducing the opportunity for human error and thereby improving the uptime and reliability of your infrastructure. It will even “phone home” if needed. This removes the requirement for on-site IT support. IT experts can address any performance or server-fault issues over the Internet.

It also supports the most common industry standard environments, Windows and Linux. To reduce cost and complexity, Avance provides high availability without also requiring external shared storage to work. Shared storage area network (SAN)-based storage is supported, of course, if desired.

Avance automatically prevents unplanned downtime and data loss by continuously monitoring the server pair for faults. If it detects a server fault, the applications continue to run on the companion server and the systems administrator is automatically notified.

An option, Avance split-site, makes it possible for the parallel servers to be housed in separate facilities, up to three miles apart, to ensure applications continue to run even if one location faces a local disaster.

USER STORIES

Let’s examine an example in which a customer used Stratus Technologies’ Avance as part of their IT solution.

SAM MEDIA LTD.

“ The Stratus Avance solution works and it includes 24/7 monitoring. As an operations director, I don’t have sleepless nights.”

Robert Bos
Regional Operations Director
Sam Media Ltd.

Sam Media Ltd. is in the business of bringing entertainment to subscribers’ mobile phones. The company works with local partners to market and deliver popular content that includes videogames, text-based games, ringtones and wallpapers. With offices in Kuala Lumpur, Amsterdam, Hanoi and Jakarta, Sam Media reaches mobile phone users in 20 countries.

Behind the scenes, that means SMS (short message service) traffic and data messages constantly pass between the company’s servers and its partners’ servers worldwide. Mini-websites — or landing pages, as they’re known to online marketers — are continuously served to potential customers as well. Advertising partners earn a commission every time a mobile phone user subscribes to one of Sam Media’s entertainment offerings. Other partners such as telecom operators also take their share from each SMS sent.

The company was using RAID to mirror data stored on disk, but that only provided limited redundancy. The IT team wanted to extend high availability to the application processing that provides real-time interaction with

Sam Media Ltd.’s partners and also assure the mini-websites, or landing pages, are always up.

The search for a high-availability solution was already in progress when Bos joined Sam Media. As he and the IT staff continued to evaluate products from different vendors, a few main objectives stood out:

- ☒ Deliver high availability to support business- critical subscription management, content delivery and online advertisements
- ☒ Provide uptime assurance beyond the RAID-only data mirroring
- ☒ Use virtualization to create separate servers for test and reporting
- ☒ Keep cost and training requirements to a bare minimum

One issue was that many competitors' products were essentially server clusters that required a storage area network (SAN). The expense was a huge obstacle for a small to medium enterprise (SME) like Sam Media Ltd.

"Other solutions we looked at needed central storage to build a high availability solution. You had this whole box, a storage box, that we don't really need from a capacity point of view," said Bos. "We don't have terabytes of data online. It was overkill for us."

A steep learning curve was another drawback with many solutions. "There's investment not only in the hardware and the software but also in the training and in people. And people are away from their normal daily jobs," Bos noted.

The company uses the Avance HA environment to support the services at the heart of its business, which are based on technologies including the Red Hat Enterprise Linux operating system, a MySQL database and custom-built applications.

Stratus Avance software turns industry- standard computer servers into a highly reliable, very affordable solution that ensures uninterrupted uptime. Built-in predictive features identify, report and handle faults before they cause application outages, data loss or user disconnects. Automatic resource sharing among the x86 server pair lets applications automatically ride through most hardware and software problems, including disk and network subsystem failure.

Sam Media Ltd. engaged IVT, an enterprise IT infrastructure specialist and a Stratus Technologies affiliate in Malaysia, to help with implementation and training.

Although Sam Media Ltd. put Avance high availability into production recently, the company is already satisfied its business objectives have been achieved.

S U M M A R Y

Small to medium organizations are facing a number of issues including the absolute requirement that to use automated systems to address ongoing operational issues. They, like larger organizations, face the need to reduce their costs while offering their customers competitive products and services. Reducing the complexity of their IT solutions is one way to address this need to reduce costs.

These companies also are facing a need to make their IT solutions work all of the time without also requiring that they hire IT experts having skill in high availability solutions, virtualization, system programming or other special skills.

Technology, such as that built into Stratus Technologies' Avance can address the issues and the pain these issues cause. It would be beneficial to ask one of Stratus' partners for a demonstration of the capabilities of the product.



For more information, please visit
<http://www.stratus.com/Products/AvanceHA.aspx>