A TECHNICAL VIEW

Windows Server 2003 is Reaching End of Life — Are You Prepared?

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EXECUTIVE SUMMARY

Windows Server 2003 has led a long and productive life. Microsoft has announced that it is ending support of this operating system on July 14, 2015. The company is presenting a count-down clock on its website hoping to persuade enterprises that moving workloads to a more current operating system would be beneficial to them. Isn't it time to address the impact this move is going to have on your enterprise?

From Microsoft's point of view, this announcement should have caused the majority of enterprises to explore the benefits of its newer software, test it out, plan a migration strategy, execute this strategy and continue to keep up with Microsoft's product launches. Like all manufacturers, Microsoft orchestrates its engineering processes using a "software lifecycle approach." That is, it gathers requirements, builds software development plans, builds the software, tests it, trains its field force on it, announces it, offers time for enterprises to move workloads to the newly announced product and eventually phases out both the availability of and support of older software. Then Microsoft starts the process over again. Enterprises, Microsoft expects, will immediately flock to the newest version of its software to obtain the maximum levels of reliability and productivity as well as to stay within Microsoft's support umbrella. Other suppliers lock in their own product lifecycles with Microsoft's so that the entire software stack can be kept in line.

Enterprises often live by the "if it is not broken, don't fix it" rule.

Enterprises, on the other hand, often live by the "if it is not broken, don't fix it" rule. They see the software lifecycle presented by the supplier differently. They consider the array of new features offered by the new software, match them to their own business requirements and some purposely stay behind rather than expose themselves to the cost, the use of scarce technical resources and the disruption the cycle of constant product updates causes.

Enterprises need to reconsider this logic if they want to keep maintenance costs in check, maintain interoperability with software from other suppliers, make the best use of available technology and to keep their best technical people.

SOFTWARE HAS A LIFETIME

Software, like hardware, has a lifecycle that moves from gathering initial requirements to planning to development to testing to release to production to replacement and eventual end of life. As any software engineer knows from personal experience, it is wise to have a plan to prevent "creeping featurism" that can result in project failure.

SOFTWARE SUPPLIERS' VIEW

Let's review the process software developers use to bring software to market and why products eventually reach end of their productive lives. It points out that while these suppliers might extend the life of an older product to give enterprises an opportunity to carefully move to the newest products, eventually the supplier will no longer offer support, patches or security updates.

Software has a lifecycle that moves from gathering initial requirements to planning to development to testing to release to production to replacement and eventual end of life.

The lifecycle includes the following steps:

1. Gather customer and developer input
2. Create product development, support, training and announcement plans
3. Development
4. Testing
5. Internal training for support and service personnel
6. Announcement
7. Customer training
8. Ongoing operations
   Updates/patches
   - Fix errors
   - Fix security problems
9. Return to step 1 for the next product iteration
10. Phase out availability of product
11. Phase out support of the product

The goal of this process is to bring products to market in a cost effective, supportable way and provide enterprise planners with sufficient information about upcoming products so that they can develop and execute their own product adoption and migration plans. This includes plans to adopt and migrate to supported software products including application development tools, application runtime environments and

frameworks, database management products, management tools, and security products.

Versions During a product's life

Each commercially available product typically lives through a number of product versions. Each new version requires supplier investment in the following steps:

Libraries of functions, development methodologies and the like must be developed or enhanced by product engineering

The supplier's marketing team works to condition the market so that it has a basic understanding of what the product does and who should be interested in it.

As products and ecosystems mature, partners generally have already built their own sales, marketing and support infrastructure to address their own market opportunities.

The supplier's sales team has to reach out to potential customers and partners who have limited to no background understanding of the product to educate them about the product's capabilities and the problems it is designed to address.

The supplier's support team has to establish or train a group of individuals to develop an in-depth understanding of the product, how it works, and how customers are expected to use the product.

By the way, as products and ecosystems mature, partners generally have already built their own sales, marketing and support infrastructure to address their own market opportunities, creating positive synergies for the company's product.

Each time such a transition occurs, suppliers have to plan for increased investment in staff, training, facilities and the like. To reduce costs, suppliers only plan to maintain the enhanced support for old plus new product versions for a limited time.

ENTERPRISE VIEW

Enterprise decision makers are of two minds about this process. On the one hand, they want the new features, the improved performance, the better reliability and, of course the ability to get their IT infrastructure to

do new things. They want access to the newest fixes for problems and security updates.

On the other hand, some enterprises don't want to or can't immediately jump on a new version of a software product that is the foundation for their workloads. Some of the thoughts behind this deliberate hesitation include:

They are in a regulated market and can't change their infrastructure without facing an expensive and time-consuming audit.

Decision makers don't think that the the new features or functions are really needed.

Enterprises sometimes find that the older software and systems environment becomes increasingly fragile and may not be able to continue to support a growing workload.

Decision makers believe that ***any*** change induces disruption and they'd rather not deal with change until absolutely forced to address it by market or business forces.

They've finally gotten a stack systems, systems software, applications, application frameworks, data management tools, storage tools, networking tools, virtualization technology and a few other components to work together and largely do what the enterprise needs. The last thing they want to do is "nudge" something at the bottom of the stack. It could easily come crashing down and impede or destroy the enterprise's operations and revenue.

Some believe that they will save money by not purchasing a cascade of new software licenses, training staff, planning for change, implementing change to a new environment, testing the new environment all while keeping everything going and customers happy.

Unfortunately, this line of thinking has to be balanced with the potential problems it might create.

Enterprises sometimes find that the older software and systems environment becomes increasingly fragile and may not be able to continue to support a growing workload. When help is most needed, they may find that suppliers of all of the individual components of a workload may either not be of help because the team supporting that version of the

product may have been reassigned to support the new product version or the supplier may charge what appears to be an excessive amount of money to address the issues because they have a limited support team for that product version and are "encouraging" customers to move on.

Furthermore, by failing to keep up with the ongoing technology changes, enterprises may discover that they are locked out of a new approach or the use of a new type of technology. This could me that using new software or hardware products would only be possible by re-architecting and re-implementing complete workloads.

An example would be when an enterprise wishes to use a new storage or networking technology but can't because the stack of software they're using doesn't support the new technology. It might be necessary to "go back to the beginning" and rethink everything to bring that new technology in.

While older software and applications may work in the new environment, it might not make the best use of the new systems.

In the end, these enterprises learn that product transitions should be built into their processes and considered a standard part of software and hardware maintenance.

ONGOING ISSUES AND CONCERNS

If we look around the industry today, we see a number of examples of enterprises choosing to stay with an older technology rather than keep up with vendor products.

Some issues that will require careful planning include:

Systems and software have made a transition from 32-bit to 64-bit. Working in this new world offers improved performance, greater scalability and also might require application and product changes. Enterprises are likely to need new versions of development tools, database products and other types of packaged software

While older software and applications may work in the new environment, it might not make the best use of the new computing environment and the supplier of that software might not support it in the new computing environment.

Custom applications may need to be re-architected to be aware of things such as larger integers, pointers, and floating point numbers. These changes are likely to have an impact on file sizes and file formats as well. These are sometimes described as "depreciated services or features". Moving to new services or features can result in better performance or enhanced stability.

Some older graphics, storage, and networking devices may no longer be available or supported. Alternatives for these components should be considered before they become a stumbling block.

Let's consider the impact on desktop environments, server operating systems and server computing environments.

Some older devices may no longer be available or supported.

Desktop environments

Windows XP reached end of life and yet many enterprises continued to rely on it even though Windows 7, 8, and 8.1 were released and Windows 10 is on the horizon. Many stayed with the older product because it did what they needed, had the features and functions they desired and they didn't want to experience phasing out desktop systems and replacing them with newer systems that were powerful enough to support the new software. They often also feared the cascade of software and hardware upgrades that would come with the adoption of new systems, new operating systems, new memory technology, new networking technology and new storage technology.

These enterprises often were willing to limit their flexibility and agility in exchange for funding a transition to new staff computing environments including smartphones and tablets. In some cases the enterprises were already in the middle of moving towards Web-based or Cloud-based computing environments and felt that it was wise to leave the established environment in place during that other transaction.

Often, these decision makers haven't considered all the benefits that come with moving to the newest releases or products. It is easier to get support for the new products than to get support for the aging predecessors. The newer versions often have addressed security, management or performance problems that plagued the earlier products.

There are many suppliers that offer services that can make transitions such as these easier and faster as well.

Server environments

Windows 2003 Server, like its desktop companion, has been replaced by updated server software. As with the desktop environment, many enterprises continued to rely on it even though these new product releases were available. As with the desktop environment, many stayed with the older product because it did what they needed, had the features and functionality they desired and like before, they didn't want to experience phasing out systems and replacing them with newer ones that were powerful enough to support the new software. Like with desktop environments they often feared the cascade of software and hardware upgrades that would come with the adoption of new systems, new operating systems, new memory technology, new networking technology and new storage technology.

Virtualization can create the artificial view that many computers are a single computing resource.

In some cases, like those holding off upgrading desktop environments, enterprises chose to limit their flexibility and agility in exchange for funding a transition to new server computing environments including virtualized and cloud computing environments.

As with client environments, decision makers would be wise to re-think their approach for server operating environments as well. The same benefits come from keeping up with technology. It is easier to get support for the new products than to get support for the aging predecessors. The newer versions often have addressed security, management or performance problems that plagued the earlier products.

Database and other server tools

A new concern is on the horizon for those still living with Windows 2003 Server, the end of life of supported software, such as SQL Server 2005, Exchange Server, etc. While these tools continue to be useful, they tool are facing a limited lifeline.

Enterprises would be wise to consider the implications of an environment in which the operating system, database engine, collaborative software product and an ever-growing number of third party tools are no longer supported or available.

COMPUTING ENVIRONMENTS ARE CHANGING

Organizations must also consider that the basic philosophy of today's enterprise computing has been changing due to the impact of a stack of virtualization tools and the move to a more flexible, adaptable and cost-effective approach to computing the industry knows as cloud computing.

Virtualization

Virtualization is a way to abstract applications and their underlying components away from the hardware supporting them and present a logical or virtual view of these resources. This logical view may be strikingly different than the physical view. The goal usually is one of the following: higher levels of performance, scalability, reliability/availability, agility or to create a unified security and management domain. This virtual view is constructed using excess processing power, memory, storage or network bandwidth. That is, the benefits of a virtualized environment don't come for free.

Network virtualization is hardware and software technology that presents a view of the network that differs from the physical view.

Virtualization can create the artificial view that many computers are a single computing resource or that a single machine is really many individual computers available to support different workloads or workload components. It can make a single large storage resource appear to be many smaller ones or make many smaller storage devices appear to be a single device. It can take a single network and divide it up into several application- or organization-specific networks.

Kusnetzky Group model of virtualization

There are many layers of technology that virtualize some portion of a computing environment. Let's look at each of them in turn.

Access virtualization

Application virtualization is hardware and software technology that allows nearly any device to access any application without either having to know too much about the other. The application sees a device it's used to working with. The device sees an application it knows how to display. In some cases, special purpose hardware is used on each side of the network connection to increase performance, allow many users to share a single client system or allow a single individual to see multiple displays.

Virtual environments are complex and often use resources differently than when the same workloads are executed directly on a physical system.

Application virtualization

Application virtualization is a software technology allowing applications to run on many different operating systems and hardware platforms. This usually means that the application has been written to use an application framework. It also means that applications running on the same system that do not use this framework do not get the benefits of application virtualization.

More advanced forms of this technology offer the ability to restart an application in case of a failure, start another instance of an application if the application is not meeting service level objectives, or provide workload balancing among multiple instances of an application to archive high levels of scalability. Some really sophisticated approaches to application virtualization can do this magical feat without requiring that the application be re-architected or rewritten using some special application framework.

If we examine Docker, it appears to largely fall into another category even though it has some benefits of application virtualization. It should be categorized as a form of processing virtualization — operating system virtualization and partitioning. It is available for Windows, UNIX, and Linux.

Processing virtualization

Processing virtualization is a range of hardware and software technology that hides physical hardware configuration from system services, operating systems or applications. This type of Virtualization technology can make one system appear to be many or many systems appear to be a single computing resource to achieve goals ranging from raw performance, high levels of scalability, reliability/availability, agility or consolidation of multiple environments onto a single system.

Since Virtual Machine software, also known as a hypervisor, falls into this category. Operating System Virtualization and Partitioning is another type of technology found in this category. Linux containers, UNIX LPARs, VPARs and containers also fall into this category.

Network virtualization

Network virtualization is hardware and software technology that presents

a view of the network that differs from the physical view. So, a personal computer may be allowed to only "see" systems it is allowed to access. Another common use is making multiple network links appear to be a single link. This approach makes it possible for the link to present higher levels of performance and reliability. The catch phrase of the day for this capability is "software defined networks."

Storage virtualization

Storage virtualization is hardware and software technology that hides where storage systems are and what type of device is actually storing applications and data. This technology also makes it possible for many systems to share the same storage devices without knowing that others are also accessing them. This technology also makes it possible to take a snapshot of a live system so that it can be backed up without hindering online or transactional applications. The catch phrase of the day for this capability is "software defined storage."

Older applications can be encapsulated using application virtualization technology so that they may continue to serve while new approaches are developed or adopted.

Security for virtual environments

Virtual environments need security! Typically, security is provided by software technology that controls access to various elements in a virtual environment and prevents unauthorized or malicious use. Sometimes this software is pre-installed on a small server and is sold as a "security appliance."

Management for virtual environments

Virtual environments are complex and often use resources differently than when the same workloads are executed directly on a physical system. This means that effective management of virtual environments often requires special software technology that makes it possible for multiple systems to be provisioned and managed as if they were a single computing resource.

It is easy to see that virtualization is an outstanding tool to support highly agile, reliable, scalable and manageable environments.

Cloud computing changes how enterprises view their systems and data centers

Placing functions into an artificial environment is the first step in creating a software-defined environment. A software-defined environment is

crucial if the enterprises wishes to be able to manage resources programmatically and being able to monitor, control and optimize those resources using an API. This means the resource can be made to operate within guidelines, policies and company-defined constraints.

Once resources live in a virtual world, it is much easier to place each resource in the most cost-effective location. Some workloads and resources might be best housed on-premise in the enterprise's own data center. Other resources might be best located in the data center of a cloud service provider, such as Rackspace or Microsoft.

Either way, it is important for enterprise decision makers to thinking differently about workloads and data centers.

It would be wise to work with a partner that has deep expertise in managed services, migration planning and support.

Hotels vs. apartments

Virtualization and cloud computing has combined to force decision makers to look at their IT infrastructure in a different way. In the past, they saw their IT infrastructures very much like an apartment building: Once a workload leased a space, it was likely to live in that space for years, perhaps decades.

A better way to look at the environment today is to consider how a hotel or a conference center works. Like hotel guests or conferences, virtual workloads check in, stay awhile and then leave. The resources they used are then reclaimed and put to use supporting a different virtual workload. The result is that data center efficiency and overall datacenter performance improve and costs for systems, storage and software can be reduced.

Cloud computing environments can be a friend to the enterprise

A number of suppliers see the benefits of working with a stack of software that makes it easier to provision and use computing resources in the same way that hotels and conference centers do. Microsoft offers Azure to support its customer's Windows-centric workloads. Others have created cloud stacks to enable this style of computing for other computing environments in use today. Each presents benefits and challenges.

Many suppliers are suggesting that the use of these cloud-computing environments is an ideal way for enterprises that have decided to implement a step-by-step approach to moving away from software and hardware that has reached end of life.

Older applications can be encapsulated using application virtualization technology so that they may continue to serve while new approaches are developed or adopted.

Virtual systems can be spun up using processing virtualization to support today's workloads while system replacements are considered, purchased and commissioned. The enterprise, by the way, only has to consider replacing or upgrading systems in the data center after the software transition is complete in the cloud provider's data center and workloads are supportable and reliable once again. Some enterprises are likely to leave the updated workloads hosted in the service provider's cloud if that environment is the best match for today's business conditions.

Keeping up with technology can help enterprises face fewer problems, have more reliable systems, and will save money.

If the enterprise looks around, it might discover that custom applications can be replaced by software as a service cloud computing offerings or new off-the-shelf software tools. While this will require some re-training, the costs of developing those custom applications, supporting them, documenting them and training staff are likely to be eliminated or reduced.

IDEAL SOLUTION

Since each enterprise has a different mix of applications, development tools, development environments and business requirements, there really isn't a single ideal solution or panacea. It would be wise to work with a partner that has deep expertise in managed services, migration planning and support, such as Rackspace, to help you complete an assessment of your needs and based on your requirements, help you design the best testing, development and production environment. It is important to discover if that provider has tools and services designed to make the transition easy and if they have already found and implemented solutions to typical problems.

It is also wise to learn if they have a track record of success helping enterprises make the transition from older software to today's products.

Have they helped enterprises move from their old, apartment-like, computing environment to a more agile world?

REVIEW RACKSPACE: ENGAGE A PARTNER WITH PROVEN EXPERTISE AND SUCCESS STORIES

Complex and business-critical workloads, extreme time constraints or legacy environments requiring a complete re-architecting are best handled with the engagement of a service provider that has deep technical expertise to help your business with a "white glove" approach to make it a smooth transition. This is also recommended if you can't do the legwork to complete the testing and certification of the new operating system – while maintaining your current environment and the needs of the business – or need to get your admins trained on the new administrative interfaces.

Rackspace is an example of a service provider that can help in all phases of the planning and implementation process.

Rackspace is an excellent example of a managed cloud provider that has a broad portfolio of services and tools designed to help enterprises in transition. It has a long history of success with Microsoft and its products, and is considered a trusted partner. Just ask, Rackspace can provide customer references and success stories. It's hosting and managed cloud services are backed by its Fanatical Support® and deep expertise in Microsoft technologies.

SUMMARY

Keeping up with technology can help enterprises face fewer problems, have more reliable systems, and save money. It also means that it will be easier and, in all likelihood, less costly than waiting until the enterprise faces a crisis and is forced to move.

Rackspace is an example of a service provider that can help in all phases of the planning and implementation process. Engaging a partner like Rackspace with your assessment and migration strategy gives you access to a deep bench of professional services and hundreds of Microsoft certified specialists that handle all the planning and heavy lifting to get you into a better performing and sustainable environment. And by doing so, enterprises can continue to focus on business as usual while transitions are planned and implemented by Rackspace.

Rackspace is a five-time Microsoft Partner of the Year, a Microsoft Gold Certified Partner, and has extensive expertise in Microsoft technologies. Rackspace runs 85% of all hosted SharePoint licensing and manages over 500,000 seats of Microsoft Exchange – and also offers Hyper-V Server and Microsoft® Cloud Platform to help enterprises virtualize and consolidate servers to maximize their investments. Learn more about their offerings and expertise by clicking here, or contact one of their Microsoft Solutions Consultants via email.

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