

End of support for Windows Server 2003

Support for the popular Windows Server 2003 R2 operating system will expire in July 2015. Many companies do not know what this means for them. Often, they are even unaware that they are still using servers of this generation in their infrastructure.

We and our partner manufacturers assume that over 60 percent of Computacenter customers still use this operating system – though not always across the board. Computacenter assists its customers and points out the opportunities for migration.

Challenges through broad adoption

Effective 14 July 2015, Microsoft is ending support for all editions of the popular Windows Server 2003 operating system, and for the immediate successor, Windows Server 2003 R2. The main challenge is the broad adoption of this operating system generation: Windows 2000 was a fundamentally new kind of operating system when it was introduced. All companies migrated from previous systems (Windows NT or Novell) to Windows 2000 or to Windows Server 2003. During the implementations of Windows

2000, particularly large, distributed infrastructures required multiple adjustments to get around the limitations of the operating system. As a result, the companies that had rolled out Windows 2000 across the board also took the step to Windows Server 2003. Nearly all businesses were operating with Windows Server 2003. Windows Server 2003 was very reliable, so after migrating to Windows Server 2003 companies made only functional updates to partial infrastructures. Companies that introduced a new e-mail

system based on Microsoft Exchange, for instance, updated only the mail servers and Active Directory domain controllers. Similarly, for new functions on the intranet or for databases, only the servers affected were updated. Complete migrations of entire infrastructures were never done. Meanwhile, business globalisation led to a broad distribution of the operating system across entire continents.

A long way: the evolution of Windows infrastructures



Hide and seek in the datacenter

The new technologies and trends presented a further challenge in datacenters. At the change of millennium, servers ran on dedicated hardware, but virtualisation technologies grew more important in the years that followed. Today, most servers run on virtualisation platforms that offer tremendous

benefits including high availability, large-scale storage systems and the abstraction of hardware and operating systems. Under the current trend, automation and processes extend these virtualisation infrastructures to what are known as 'private clouds' throughout the entire lifecycle of the virtual servers.

Today, if companies want to determine where Windows Server 2003 is still in use, it is no longer sufficient to go through the datacenter. Instead, they must use analytical tools to locate all of the servers with this operating system.

Out of support – What are the consequences?

When a software manufacturer discontinues support, this does not necessarily mean that customers can no longer use the software. In the case of an operating system, however, this is critical nonetheless, as it can result in a variety of different consequences:

- no further updates from the specified date. For comparison: In 2013, there were 37 critical patches, and some of the more recent patches involved system vulnerabilities that would have been relevant even for operating systems prior to Windows Server 2003.
- In an enterprise infrastructure, even a single component without support can lead to a complete refusal of support on the manufacturers' part. Even if the faulty system would actually be actually supported.

- In the case of manufacturers of applications and hardware, customers must expect that they, too, will soon discontinue support for applications and drivers that are compatible with Windows Server 2003. This is because the cost of testing this software is immense – and increases with each additional operating-system version that must harmonise with the software. These manufacturers no longer receive any development support from Microsoft, either.

Each company must individually assess the impact in terms of entrepreneurial risk and compliance. Basically, however, companies should urgently avoid keeping business-critical data and processes on unsupported operating systems that are not protected against new security risks. A study on the

impact on the annual financial statement audit opinion has been published by the [Department of Business Administration at Bonn Rhein-Sieg University of Applied Sciences in St. Augustin, Germany](#). Still, definitive statements on this subject can only be provided by business or legal consultants who have reviewed the individual requirements of the particular company involved. Naturally, the necessary consideration of risks, responsible handling of business-relevant data and processes on outdated operating systems and the administration of multiple operating systems also lead to cost increases. The easiest way, which is to conclude an extended support agreement with Microsoft, is expensive and simply postpones a solution to the problem.

A future with a plan

Computacenter has developed a standardised approach for dealing with the end of support for Windows Server 2003. Here, to perform a one-to-one update but also to realise the new potentials, there is a four-step approach with three different target scenarios.



Three target scenarios

Following the analysis, we consider the consolidation options. For every system that needs to be migrated, three target scenarios (in conjunction with the customer strategy) are evaluated: conventional migration, a shift to a private cloud or outsourcing to a public cloud.

1. Conventional

Systems that are migrated one-to-one to existing or new hardware, without using virtualisation options. Still, Computacenter can realise optimisation and savings effects with the possibilities of current Intel® Xenon® processors and new operating systems.

2. Private cloud

Servers that still run on classic hardware can realise great optimisation potentials by migrating to a private cloud. These are new forms of operation, based on virtualisation technologies that benefit from the consolidation of many systems to higher-performing hardware with great stability while at the same time offering a high degree of automation, self-services and billing models.

3. Public cloud

By switching to public cloud solutions, we can keep the cost of new systems transparent. At the same time, this solution offers a high level of reliability and manageable initial investments. Depending on the workload involved – the applications and data – public clouds are also possible for individual enterprise systems with a higher general need for protection. And if, for example, they can convert their applications to PaaS (Platform as a Service) rather than migrate them to the virtual IaaS infrastructure (Infrastructure as a Service), customers can cut administrative costs and improve performance. Of course, the public cloud services must be integrated in a way that will permit seamless working in the corporate network.



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Analysis

In the analysis phase, Computacenter starts with a tool-based inventory of all servers. To do this, we can use either the customer's monitoring or automation tools, for example from the System Center Suite, or the Microsoft Assessment and Planning Tool. The consultants use the tool-based approach to answer these important questions:

- What is the operating-system version on the server?
- What services and software products are installed?
- What are the technical data with regard to processor, RAM and hard drive space/usage?
- What are the performance data for the processor, RAM and hard drive?
- Who is responsible for the server?

Following the tool-based inventory, the following points must be clarified:

- Can the system be combined with other systems? Web services, database services, file and print services, for instance, offer good ways of consolidating multiple systems.
- How critical and business-relevant are the data and processes on the system? Do public cloud solutions come into consideration?
- Could the application run in a PaaS cloud?
- Does the hardware work with a modern operating system and 64-bit architecture?
- Can the operating system and applications be virtualised (private cloud)?

Computacenter also helps find answers to several questions about the company's strategy and infrastructure – for instance, whether private cloud solutions exist, and how the cloud strategy looks in general.

Preparation

The analysis is followed by preparation. Important here is a migration plan, one that must contain the following points:

- Business relevance of the data and processes for adequate prioritisation.
- Are the applications for the modern server version certified (including 64-bit compatible), or do they require updates?
- How can continuity of service be ensured for the application (where necessary)?
- Consolidation planning and target scenario
- Timeline and status in change management

Computacenter questions still other topics as well, namely:

- Does a definition of the server basis exist for the new operating system (in other words: how a standard server must look)?
- How are the systems initially installed (e.g. System Center, Windows Deployment Services, 3rd-party solutions, manually)?
- What methods do client applications use to reach the server?
- Do Active Directory and its schema exist in the correct version, or is an upgrade required here?
- Do virtualisation platforms or private cloud infrastructures exist in the desired version and with the right level of automation?
- Are public cloud services such as Microsoft Azure integrated into the infrastructure?

Depending on the prioritisation, the rollout can begin even if the migration plan still is incomplete, as long as all other preparations have been completed.

Rollout

Before we begin the rollout, we prioritise all of the systems containing business-critical data or processes. If migration of these systems extends beyond 14 July, Computacenter recommends a risk analysis and risk evaluation to meet compliance requirements. Because these vary from one company to the other, they must be examined individually. Depending on continuity planning, Computacenter also reduces the offline phase to a minimum.

Important for the rollout is the question of whether the customer can keep using the systems on a one-to-one basis. Alternatively, we can prepare the applications and data on a second system or in cloud services and then replace these with existing services as seamlessly as possible.

A critical factor for smooth conversion of individual systems are the client applications that access the server services. Seamless access via the network must be provided. If changes to client applications (for example, changing the network share, other print servers, DNS name or IP address of an application server) are required, Computacenter checks whether this can be automated via group policies, software management or scripts.

Before we transfer systems with a greater volume of data to new hardware or to a private or public cloud, our experts check to make sure daily replication of data is possible. This greatly speeds up the actual conversion and has the added benefit that a rollback to the old system is possible in many cases.

Improvement

As we will explain in the following section, there are lots of opportunities available for companies using modern operating systems with up-to-date processor architectures and modern hardware. But often there are still relics in existence: individual areas in the server infrastructure that have not yet been considered. In the improvement phase, the knowledge gained from the infrastructure is consolidated to derive improvement potentials and recommendations. Our consultants have extensive experience in infrastructure and cloud strategies. In these fields, for example:

- Disaster preparation and planning, for Active Directory in particular, involves more than just backups. To act quickly in the event of disruption, it is important to know both the disruptions and the solution scenarios, and to maintain the additional data needed in case of disruption.
- Computacenter can implement automated processes to extend virtualisation solutions into a private cloud. Optionally it is possible to implement per-department cross-charging.
- Best practices change, and our experts analyse the infrastructure to identify optimisation potentials.
- With the Cloud Readiness Assessment, we can determine whether the infrastructure can be connected to public cloud services.
- Implementing authorisation structures is complex. Particularly where services are involved, however, it is also necessary in order to avoid unwanted disruptions.

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Seizing opportunities

Computacenter offers its customers a broad consulting portfolio around the topic of the 'contemporary workstation'. A workstation in a company setting differs from that of a home user, particularly through integration in a manageable infrastructure. Businesses often only use new server operating systems in application-specific scenarios. This fails to take advantage of many of the opportunities that the modern systems have to offer. Here are a few examples:

Green datacenter

More than a concern limited to private households, saving power is growing increasingly important for businesses as well. The datacenter represents a particularly large energy-cost item. Modern Intel® Xeon® processors interoperate closely and benefit

with current Microsoft server operating systems by utilising the processor cores more effectively with processes and deactivating any unneeded cores. In addition, contemporary systems and chipsets are equipped with sensors for on-demand climate control.

Intel® Xeon® processor-based server refresh savings estimator

From 32 to 64 bits

Windows Server 2003 R2 is based on a 32-bit architecture, whereas modern operating systems use a 64-bit architecture in conjunction with current processors. With 64 bits and the memory management that it involves, the systems break free of previous limits and now offer higher performance and greater flexibility in the case of file and print services, remote-desktop services, databases or basic functions such as system logs. Every server application benefits from 64-bit.

Infrastructure services

Modern infrastructure services offer numerous new features, such as:

- network protocols for more performance, greater availability and better management
- file services that are no longer limited by the performance of a single physical server
- standard tools can be used to provide corporate data on mobile devices and remain under control.
- The packing density in databases and virtualisation environments increases: fewer systems are required to provide the same level of performance.

Security and availability

Here, too, modern operating systems offer lots of new features:

- Data can be automatically classified, with automated access protection and encryption as needed.
- New authorisation structures meet complex requirements and conditions.
- Cluster services and their management have been through numerous improvements and support virtualisation technologies across systems.
- The Intel Solid-State Drive Datacenter family provides significantly higher performance for storage and cloud solutions.



Summary

Companies must not ignore the expiring support for Microsoft Windows Server 2003 and Windows Server 2003 R2. Even if there is still no migration strategy at the moment, customers should at least analyse the affected systems and perform a risk assessment. Delaying migration provides no benefits and is even costly and risky.

The people in charge should approach an across-the-board conversion to modern operating systems with the experience that the matter involves. There are numerous other benefits to migration as well. The new

systems and modernised infrastructure can be aligned around the current corporate strategy. Companies should also consider using private and public cloud services. At the same time, modern hardware can significantly improve performance and energy efficiency.

With the wide-ranging expertise of Computacenter, migration can be structured and goal-oriented. We can also apply best practices to help customers use the full potential of new operating systems, hardware and strategies.

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