Drive efficiency with a software-defined data centre
with Windows Server 2016

Rethink operations to boost efficiency and security

Data centre operations seem to earn more scrutiny than budget these days. New applications stretch the operational fabric and create infrastructure backlogs that can slow down business. IT organisations are expected to do more with less, but an aging infrastructure with little automation becomes a hindrance to moving forward. Meanwhile, security breaches make front page news and reputations suffer.

As organisations look beyond server virtualisation to achieve more efficiency, they can use Windows Server 2016 capabilities to meet operational and security challenges, freeing up IT resources to plan and innovate on future solutions that drive business success.

Automate routine data centre operations

If a major goal is to gain scale without adding more cost, one strategy is the appropriate use of automation. IT organisations need to accommodate a growing number of business requests while maintaining existing applications and infrastructure. Organisations that have already wrung all available cost savings from server virtualisation can consider virtualising networking and storage. By doing so, they can reduce costs with less expensive hardware, eliminate complexity and gain the ability to manage by policy, automation and orchestration, versus manual and static configurations.

Substantial operational efficiencies are possible using PowerShell capabilities in Windows Server 2016, which enable IT admins to use one console to automate, deploy, configure, manage and decommission applications, servers, settings and users on one server or many. The enhanced Desired State Configuration environment can save time by defining the desired state and delivering automatic alerting and remediation if things go wrong. This automation helps IT admins offer infrastructure as a service to internal customers on a self-service basis to address the onslaught of deployment and configuration requests.

IT administrators now have new options for virtualised environments, enabling them to select and implement what makes sense to increase efficiencies and reduce cost.

> "What Microsoft achieved with Storage Spaces Direct is nothing short of incredible. Great performance, great flexibility at a great price. With the ability to use NVMe or SSD as a cache and SSD or HDD for capacity, together with RDMA network adapters, all performance needs are covered."
>
> – David Knappett, Technical Architect Alternative Networks

Maximising efficiency

Here are three more ways Windows Server 2016 helps organisations increase efficiency and reduce cost.

Hyper-converged infrastructure

Hyper-efficient infrastructure. The ultimate expression of the software-defined data centre tightly integrates the computing, networking, storage, virtualisation and hardware resources in a compute environment for simplicity and scalability. Windows Server 2016 can help organisations realise the benefits of hyper-converged environments.

Nano Server

Efficient OS. Reduce your data centre footprint with Nano Server, a new remote-administered installation option for private clouds and data centres. Minimise attack surface, increase availability and reduce resource usage.

Cluster OS Rolling Upgrade

Efficient upgrades. Administrators can now upgrade server clusters from Windows Server 2012 R2 to Windows Server 2016 without stopping Hyper-V or Scale-Out File Server workloads.

Gain workload mobility and networking control

Traditional network infrastructures are rigid and complex. Organisations can achieve rapid scale and agility when they move the network control layer from hardware to software to create a software-defined network. Control by policy enables them to centrally configure and manage physical and virtual network devices such as routers, switches and gateways in the data centre and results in automatic load balancing and ability to shift workloads without setting switches. Virtual network elements such as Hyper-V Virtual Switch, Hyper-V Network Virtualisation and Windows Server Gateway become integral elements of the software-defined networking infrastructure. IT can continue to use existing physical switches, routers and other hardware devices, if the devices are compatible with the virtual controllers, while achieving deeper integration between the virtual network and the physical network.

Reduce storage costs

In a highly virtualised environment, the underlying storage system can affect overall performance. A traditional, manually configured storage system can prevent organisations from fully realising the benefits of the software-defined data centre. Software-defined storage capabilities in Windows Server 2016, such as Storage Spaces Direct, Storage Replica, Quality of Service and data deduplication, use policies and automation to increase data centre efficiency and reduce storage management costs.

Help secure your future at the OS level

Cyber criminals are more sophisticated than ever, using clever strategies to breach your data centre and access critical business data. Using disparate tools from multiple vendors to configure solutions only adds to security headaches. With Windows Server 2016, security technologies are built into the virtualisation platform to help secure the basic building block of virtualised computing—the virtual machine. Shielded Virtual Machines are ideal for business critical systems, including domain controllers and certificate servers. The VMs can run only on designated hardware and data stays encrypted, even if a VM is accidentally leaked or stolen by a rogue administrator. Other features, including Credential Guard and Code Integrity, help protect stored credentials and keep rogue binaries from running.

IT departments also struggle to keep hackers off corporate networks. The new Network Function Virtualisation firewall built into Windows Server 2016 helps organisations be more secure and efficient by allowing the firewall to be an integral part of the software-defined networking environment, including automation and orchestration of the firewall settings as the computing environment changes.

Take the next step. Learn more at
www.Microsoft.com/WindowsServer2016

Options for managing your infrastructure

Microsoft offers a variety of infrastructure management solutions to work with any operations model.

Microsoft System Centre 2016

Whether you have a few servers or thousands, System Centre provides efficient deployment and management functionality for your virtualised, software-defined data centre to bring you increased agility and performance.

PowerShell and Desired State Configuration

Define, deploy and manage your software environment through PowerShell scripting and Desired State Configuration, using a single console.

Server management tools

Use Server management tools and a free cloud service, to manage Windows Server instances both on-premises and in Azure.

Operations Management Suite

To manage and help protect workloads in multiple cloud types, you can extend management to Operations Management Suite (OMS) services for visibility and control across Azure, AWS, Windows Server, Linux, VMware and OpenStack systems.

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