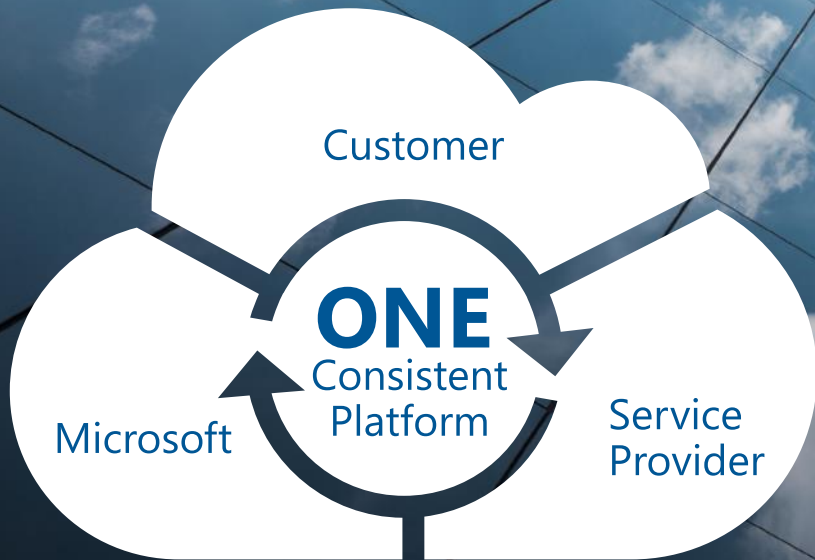


CloudOS

Ovidiu Pismac
MCSE Security, CISSP, MCSE Private Cloud, Server & Desktop Infrastructure
Microsoft Romania
ovidiup@microsoft.com



Microsoft's vision: Cloud OS



Enterprise-grade platform

Hybrid design

People-focused approach

Development

Management

Identity

Virtualization

Data

Microsoft Azure Cloud Leader on IAAS in Gartner

Figure 1. Magic Quadrant for Cloud Infrastructure as a Service, Worldwide



Source: Gartner (May 2015)

Microsoft Leader in PaaS

Figure 1. Magic Quadrant for Enterprise Application Platform as a Service, Worldwide



Microsoft Azure Leader in Cloud Storage



Microsoft Azure Leader in Disaster Recovery as a Service



Microsoft Azure Active Directory



Microsoft Enterprise Mobility Suite -EMS



As of June 2016




Microsoft is a leader in the Gartner 2016 x86 Virtualization Magic Quadrant



Microsoft SCCM – Client Management Tools – leader for 11 years



Microsoft & Gartner

	Leaders Quadrant			
Gartner MQs	 Microsoft	 amazon web services	 salesforce	Google
Application Development Lifecycle Management	●			
Business Intelligence and Analytics Platforms	●			
Cloud Infrastructure as a Service (IaaS)	●	●		
CRM Customer Engagement Center	●		●	
Data Warehouse and Data Management Solutions for Analytics	●			
Disaster Recovery as a Service (DRaaS)	●			
Enterprise Application Platform as a Service	●		●	
Enterprise Content Management	●			
Horizontal Portals	●		●	
Identity as a Service (IDaaS)	●			
Mobile Application Development Platforms	●		●	
Operational Database Management Systems	●	●		
Public Cloud Storage Services	●	●		
Sales Force Automation	●		●	
Social Software in the Workplace	●		●	
Unified Communications	●			
Web Conferencing	●			
X86 Server Virtualization Infrastructure	●			

Gartner client endpoint protection

Magic Quadrant

Figure 1. Magic Quadrant for Endpoint Protection Platforms



System Center Endpoint Protection AV TEST

<https://www.av-test.org/en/antivirus/business-windows-client/windows-10/december-2015/microsoft-system-center-endpoint-protection-4.8-154674/>

The best antivirus software for Windows Client Business User

AV-TEST Product Review Report – Nov-Dec/2015

[Download as PDF](#)

[Back to overview](#)



Version 4.8
Platform Windows 10 (64 bit)
Report 154674
Date Nov-Dec/2015

[Website](#)

Microsoft

System Center Endpoint Protection

During November and December 2015 we continuously evaluated 11 endpoint protection products using settings as provided by the vendor. We always used the most current publicly-available version of all products for the testing. They were allowed to update themselves at any time and query their in-the-cloud services. We focused on realistic test scenarios and challenged the products against real-world threats. Products had to demonstrate their capabilities using all components and protection layers.



Protection

Protection against malware infections (such as viruses, worms or Trojan horses)
[More Information](#)

Protection against 0-day malware attacks, inclusive of web and e-mail threats (Real-World Testing)

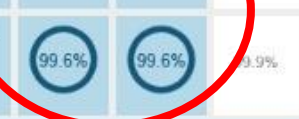
140 samples used

November December Industry average



Detection of widespread and prevalent malware discovered in the last 4 weeks (the AV-TEST reference set)

14,658 samples used



Protection Score ●●●●●● 4.5/6.0

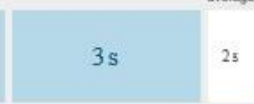
Performance

Average influence of the product on computer speed in daily usage
[More Information](#)

Use cases: visiting websites, downloading software, installing and running programs and copying data

Number of test cases

November December Industry average



Performance Score ●●●●●● 4.5/6.0

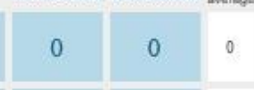
Usability

Impact of the security software on the usability of the whole computer (lower values indicate better results)
[More Information](#)

False warnings or blockages when visiting websites

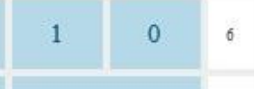
500 samples used

November December Industry average



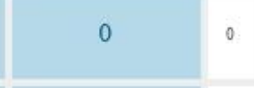
False detections of legitimate software as malware during a system scan

1,301,224 samples used



False warnings concerning certain actions carried out whilst installing and using legitimate software

40 samples used



False blockages of certain actions carried out whilst installing and using legitimate software

40 samples used



Usability Score ●●●●●● 6.0/6.0

System Center Endpoint Protection AV TEST

The best antivirus software for Windows Client Business User

AV-TEST Product Review and Certification Report – Mar-Apr/2016

 Download as PDF

[Back to overview](#)



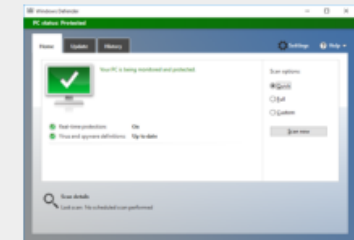
Version 4.8
Platform Windows 10 (64 bit)
Report 161574
Date Mar-Apr/2016

[Website](#)

Microsoft

System Center Endpoint Protection

During March and April 2016 we continuously evaluated 12 endpoint protection products using settings as provided by the vendor. We always used the most current publicly-available version of all products for the testing. They were allowed to update themselves at any time and query their in-the-cloud services. We focused on realistic test scenarios and challenged the products against real-world threats. Products had to demonstrate their capabilities using all components and protection layers.



Protection

Protection against malware infections (such as viruses, worms or Trojan horses)

[More information](#)

Protection against 0-day malware attacks, inclusive of web and e-mail threats (Real-World Testing)

164 samples used

Detection of widespread and prevalent malware discovered in the last 4 weeks (the AV-TEST reference set)

22,795 samples used

	March	April	Industry average
Protection against 0-day malware attacks, inclusive of web and e-mail threats (Real-World Testing)	88.9%	88.0%	97.0%
Detection of widespread and prevalent malware discovered in the last 4 weeks (the AV-TEST reference set)	99.5%	99.8%	99.0%

System Center Endpoint Protection VB100% from 2007- 2016

<https://www.virusbulletin.com/testing/results/recent/vb100-antimalware/microsoft-ff>

The screenshot shows the Virus Bulletin website interface. At the top, there's a navigation bar with 'virus BULLETIN' logo and 'Covering the global threat landscape'. To the right are logos for 'REVERSING LABS' and 'TitaniumCloud™'. Below the navigation bar, there are tabs for 'Blog', 'Bulletin', 'VB100', 'VBSpam', 'VBWeb', 'Consulting', 'Conference', 'Resources', and 'About Us'. The main heading is 'VB100 Results Overview: > Microsoft Forefront'. Below this, it says 'See results for: Microsoft OneCare | Microsoft Security Essentials | Microsoft Windows Defender | MS Forefront (VBSpam)'. There's a 'Test history' section with a grid of green checkmarks, and a red circle highlights the text '26 Pass, 0 Fail from June 2007 (22 tests not entered)'. Below the grid is a 'Compare with...' dropdown. The main table has columns: 'Test', 'Result', 'RAP Average', 'Response (formerly trojans)', 'Worms/Bots', 'Polymorphic viruses', and 'Article'. The table lists several Microsoft System Center Endpoint Protection tests with a 'Result' of '100' and various 'RAP Average' percentages. On the right side, there's a 'Vendor website' link to 'www.microsoft.com/forefront' and a sidebar with 'VB100' navigation links like 'Latest Comparative Recent Test Summary', 'Vendor Test History', etc. There's also an advertisement for 'Looking to make a career move?' and 'Browse the VB job directory'.

virus BULLETIN Covering the global threat landscape

REVERSING LABS TitaniumCloud™ Threat intelligence on over 1B files Detailed Malware, Goodware & Detection info

Blog Bulletin **VB100** VBSpam VBWeb Consulting Conference Resources About Us

VB100 Results Overview: > Microsoft Forefront

See results for: Microsoft OneCare | Microsoft Security Essentials | Microsoft Windows Defender | MS Forefront (VBSpam)

Test history

26 Pass, 0 Fail from June 2007 (22 tests not entered)

Compare with... Go

Vendor website
www.microsoft.com/forefront

Test	Result	RAP Average	Response (formerly trojans)	Worms/Bots	Polymorphic viruses	Article
April 2015 Windows 8 Professional Microsoft System Center Endpoint Protection	100	71.5%				
December 2014 Windows 7 Professional Microsoft System Center Endpoint Protection	100	73.3%				
October 2014 Windows Server 2008 R2 Microsoft System Center Endpoint Protection	100	88.5%				
August 2014 Windows 8 Professional Microsoft System Center Endpoint Protection	100	94.2%				
June 2014 Windows Server 2012 Microsoft System Center Endpoint Protection	100	77.9%				
April 2014 Windows 7 Professional Microsoft Sytem Center	100	73.3%				

Advertisement: Looking to make a career move? Browse the VB job directory for the latest positions in anti-malware

Endpoint Protection - ICSA Labs certified

<https://www.icsalabs.com/vendor/microsoft-corporation>



TESTING SERVICES

CERTIFIED PRODUCTS

HEALTH IT

BLOG

KNOWLEDGE

NEWS & EVENTS

COMPANY

Microsoft Corporation

Microsoft (Nasdaq "MSFT") is the worldwide leader in software, services and solutions that help people and businesses realize their full potential. Microsoft is working to deliver business ready security to help companies achieve their business goals while managing risk and helping ensure that the right people always have access to the information they need to get their jobs done. Microsoft Forefront Security products deliver protection, access, and management solutions, built around user identity and integrated with a highly secure, interoperable platform. Our solutions help to deliver a more contextual and user-centric security solution aligned to the needs of our customers.

Visit <http://www.microsoft.com/>

Technology Program	Vendor	Product Testing Reports ▲	Certification	Product Version	Date	Certification Type	Operating System
Anti-Spyware	Microsoft Corporation	System Center 2012 Endpoint Protection	Anti-Spyware Certification			Corporate	Windows 7 64-bit
Anti-Virus	Microsoft Corporation	System Center 2012 Endpoint Protection	Desktop / Server Anti-virus Detection			Corporate	Windows 7 64-bit
Anti-Virus	Microsoft Corporation	System Center 2012 Endpoint Protection	Anti-Virus Cleaning			Corporate	Windows 7 64-bit
Anti-Virus	Microsoft Corporation	System Center 2012 Endpoint Protection	Desktop / Server Anti-virus Detection			Corporate	Windows 8 64-bit
Anti-Virus	Microsoft Corporation	System Center 2012 Endpoint Protection	Anti-Virus Cleaning			Corporate	Windows 8 64-bit
Anti-Virus	Microsoft Corporation	System Center Endpoint Protection (Defender)	Desktop / Server Anti-virus Detection			Corporate	Windows 10 64-bit
Anti-Virus	Microsoft Corporation	System Center Endpoint Protection (Defender)	Anti-Virus Cleaning			Corporate	Windows 10 64-bit

Endpoint Protection WestCoast Labs CheckMark certified

<http://www.checkmarkcertified.com/enterprise/>

The screenshot displays the WestCoast Labs website's Checkmark Certification page. At the top, the WestCoast Labs logo is visible, followed by a navigation menu with links for 'About', 'Real Time Testing', 'Vendor Services', 'Checkmark', and 'End Users'. Below the navigation is a breadcrumb trail: 'Home > Checkmark Certification > Search'. The main heading is 'Checkmark Certification', with a 'Contact Us' button on the right. The central section is titled 'Checkmark Search' and shows a search result for 'Vendor > Microsoft (Enterprise)'. This result includes the WestCoast Labs Platinum Award logo, the Microsoft logo, and the text 'Microsoft (Enterprise)'. Below this, there are two columns of product information. The left column, titled 'Checkmark Platinum Products', lists 'SCEP' with a sub-item 'Anti-Malware' (checked) and two other items: 'Anti-Malware' and 'Real Time Web Threats (Malicious URLs)'. The right column, titled 'Checkmark Certified Products', lists 'SCEP' with a sub-item 'Anti-Virus Desktop'. At the bottom of the search results, there is a button labeled 'List all Checkmark Platinum Award Vendors'.



National Information Assurance Partnership
Common Criteria Certificate

is awarded to

Microsoft Corporation

for

Microsoft Windows 8 and Windows Server 2012



The IT product identified in this certificate has been evaluated at an accredited testing laboratory using the Common Methodology for IT Security Evaluation (Version 3.1) for conformance to the Common Criteria for IT Security Evaluation (Version 3.1). This certificate applies only to the specific version and release of the product in its evaluated configuration. The product's functional and assurance security specifications are contained in its security target. The evaluation has been conducted in accordance with the provisions of the NIAP Common Criteria Evaluation and Validation Scheme and the conclusions of the testing laboratory in the evaluation technical report are consistent with the evidence adduced. This certificate is not an endorsement of the IT product by any agency of the U.S. Government and no warranty of the IT product is either expressed or implied.

Date Issued: 2015-01-09

Validation Report Number: CCEVS-VR-VID10520-2015

CCTL: Leidos (formerly SAIC) Common Criteria Testing Laboratory

Assurance Level: PP Compliant

Protection Profile Identifier:

General-Purpose Operating System Protection Profile



National Information Assurance Partnership
Common Criteria Certificate

is awarded to

Microsoft Corporation

for

Microsoft Windows 10



The IT product identified in this certificate has been evaluated at an accredited testing laboratory using the Common Methodology for IT Security Evaluation (Version 3.1) for conformance to the Common Criteria for IT Security Evaluation (Version 3.1). This certificate applies only to the specific version and release of the product in its evaluated configuration. The product's functional and assurance security specifications are contained in its security target. The evaluation has been conducted in accordance with the provisions of the NIAP Common Criteria Evaluation and Validation Scheme and the conclusions of the testing laboratory in the evaluation technical report are consistent with the evidence adduced. This certificate is not an endorsement of the IT product by any agency of the U.S. Government and no warranty of the IT product is either expressed or implied.

Date Issued: 2016-01-29

Validation Report Number: CCEVS-VR-VID10677-2016

CCTL: Leidos (formerly SAIC) Common Criteria Testing Laboratory

Assurance Level: PP Compliant

Protection Profile Identifier:

Protection Profile for Mobile Device Fundamentals Version 2.0

Original Signed By

Director, Common Criteria Evaluation and Validation Scheme
National Information Assurance Partnership

Original Signed By

Information Assurance Director
National Security Agency

The value of the Microsoft Virtualization & management platform

Features

The features you need, native to the platform. No additional product/licensing necessary



Technology

The same technology that supports Azure—supporting your business



Integration

Better together with other Microsoft technologies, such as Active Directory, SQL, Exchange, and SharePoint



Third-party

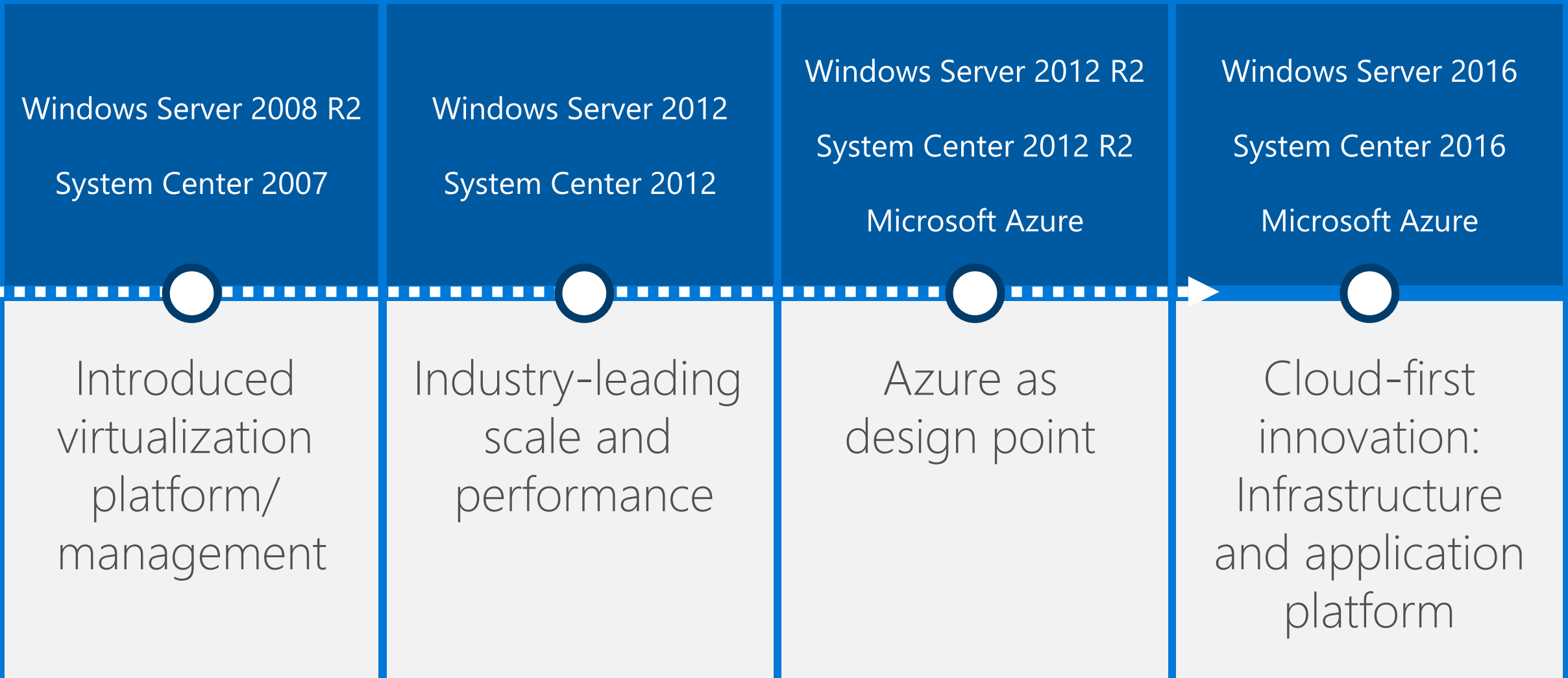
Linux support, along with many third-party vendors: SAP, Oracle, and others



Moving to Hyper-V is the first step to the Cloud with Azure and Azure Stack Using System Center & Operations Management Suite for management at all three layers: physical, virtual and application



Hybrid Cloud Story



Release history and roadmap



Windows Server 2003



Windows Server 2003 R2



Windows Server 2008



Windows Server 2008 R2



Windows Server 2012



Windows Server 2012 R2



Windows Server 2016

2003

2005

2008

2010

2012

2013

2016

Operations Manager

Data Protection Manager

Virtual Machine Manager

Operations Manager

Service Manager Orchestrator

Data Protection Manager

Virtual Machine Manager

Operations Manager

System Center 2012

Windows Azure Services for Windows Server

System Center 2012 R2

Azure Pack

System Center 2016

Azure Stack

Managed server infrastructure with robust web platform

Virtualization & management

Dynamic datacenter

Private cloud and the Cloud Platform

Cloud Platform

10 reasons you'll love Windows Server 2016

- 1.** Active Directory
- 2.** Security
- 3.** Compute
- 4.** Network
- 5.** Storage
- 6.** Remote Desktop Services (RDS)
- 7.** Nano Server
- 8.** Containers
- 9.** PowerShell
- 10.** Server Management Tools (SMT)

10 reasons you'll love Windows Server 2016

SECURITY

1. BitLocker
2. Shielded VMs
3. Compute
4. Network
5. Storage

Software Defined Datacenter

6. Remote Desktop Services (RDS)

APPLICATION PLATFORM

8. Containers
9. PowerShell
10. Server Management Tools (SMT)

MANAGEMENT

Windows Server 2016 Security

Hyper-V (Fabric) Security

Protecting virtual machines

- ✓ Shielded VMs (Server 2012, 2016 guests)
- ✓ Guarded fabric attesting to host health
- ✓ Secure boot for Windows and Linux

Hyper-V platform

- ✓ Nano based Hyper-V host
- ✓ Virtualization Based security

Secure containers

- ✓ Hyper-V containers
- ✓ Containers hosted in a Shielded VM

Infrastructure and application security

Privileged Identity

- ✓ Credential Guard
- ✓ Just In Time administration
- ✓ Just Enough administration

Threat resistance

- ✓ Control Flow Guard
- ✓ Code Integrity (Device Guard)
- ✓ Built in anti-malware
- ✓ Nano Server reduces attack surface

Threat detection

- ✓ Enhanced threat detection

Protect virtual machines

Host Guardian Service

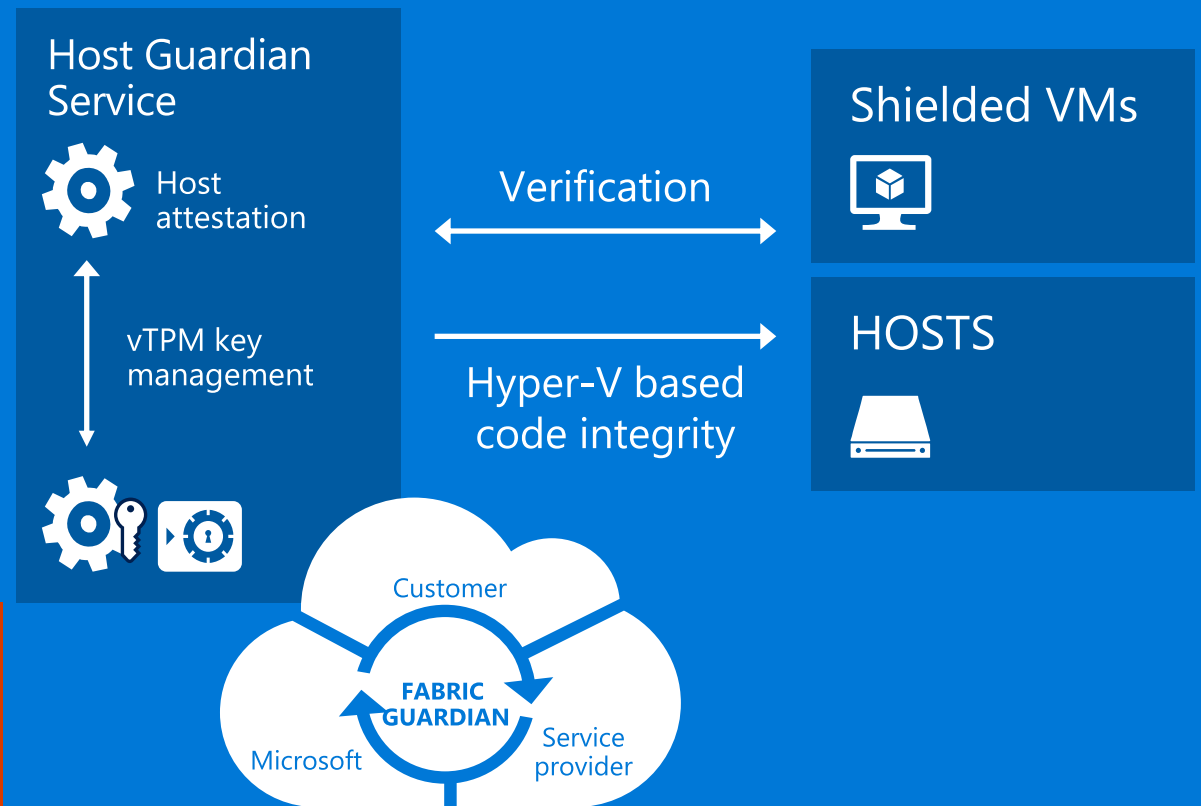


Spotlight capabilities

Host Guardian Service holds keys of the legitimate fabrics as well as encrypted virtual machines

Host Guardian Service runs as a service to verify if it is a trusted machine

Host Guardian Service can **live anywhere** even as a virtual machine



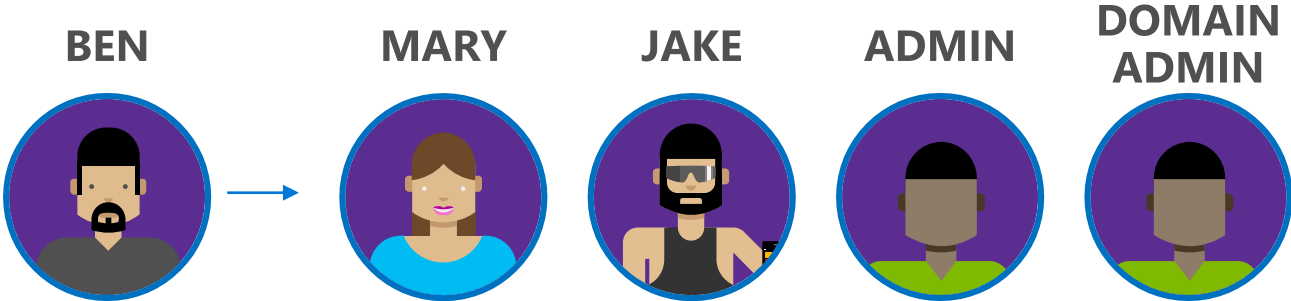
<https://gallery.technet.microsoft.com/shielded-vms-and-guarded-98d2b045>

<https://blogs.technet.microsoft.com/datacentersecurity/2016/06/06/step-by-step-creating-shielded-vms-without-vmm/>

Windows Server 2016 approach

Credential Guard

Prevents Pass the Hash and Pass the Ticket attacks by protecting stored credentials through Virtualization based Security



Just Enough

Administration Limits administrative privileges to the bare-minimum required set of actions (limited in space)

Just Enough and Just in Time administration

Just in Time

Administration Provide privileged access through a workflow that is audited and limited in time



JEA + JIT = limited in time & capability

Protecting Active Directory and Admin privileges

<http://aka.ms/privsec>

2-4 weeks

1-3 months

6+ months

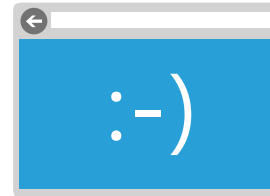
First response to the most frequently used attack techniques

3. Unique Local Admin Passwords for Workstations
<http://Aka.ms/LAPS>

4. Unique Local Admin Passwords for Servers
<http://Aka.ms/LAPS>

1. Separate Admin account for admin tasks

2. Privileged Access Workstations (PAWs)
Phase 1 – Active Directory admins
<http://Aka.ms/CyberPAW>



New deployment option: Nano Server

Just enough OS

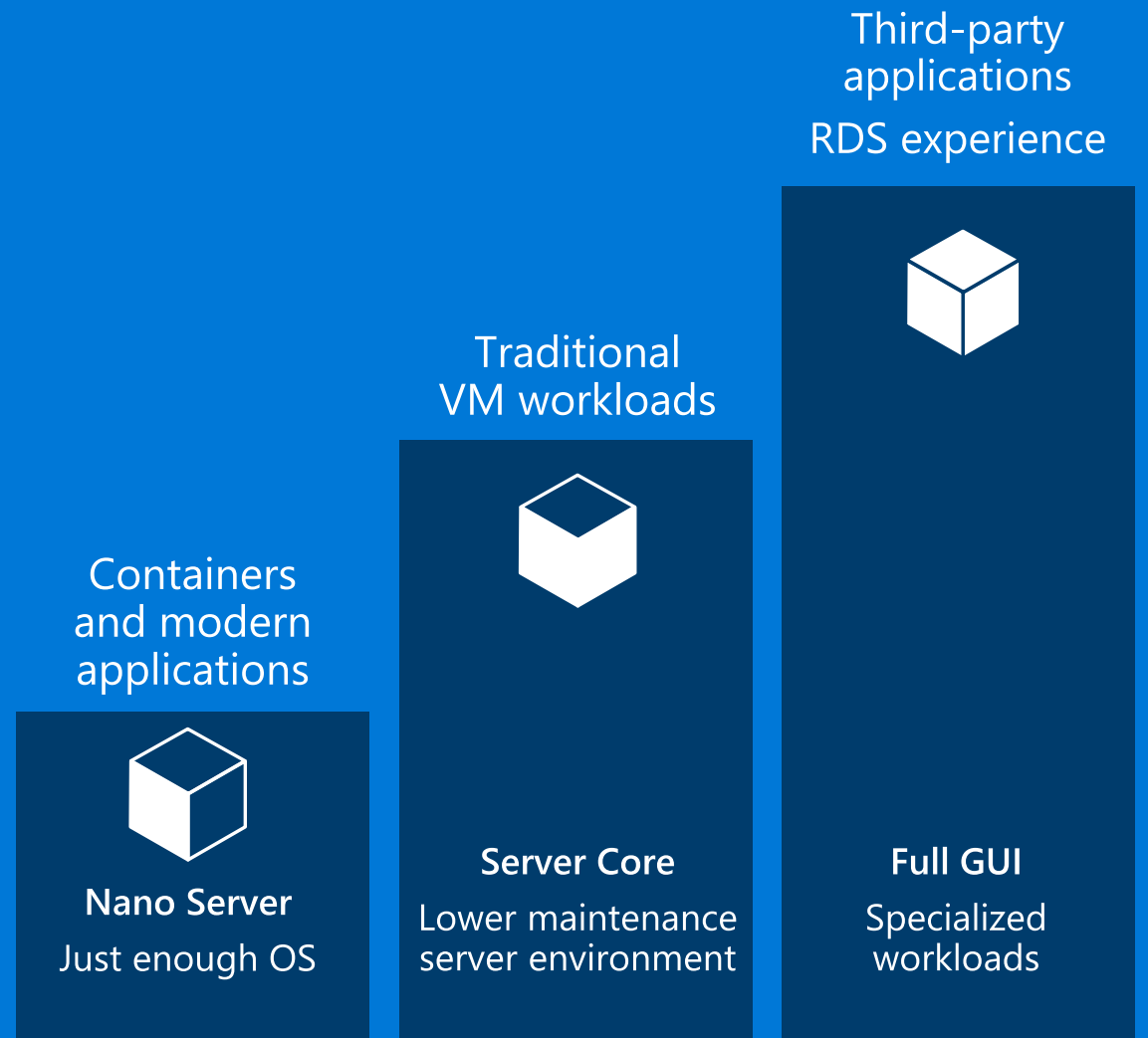
Optimized for modern applications

Higher density and performance

Reduced attack surface and servicing requirements

Next-gen distributed app frameworks

Interoperate with existing server applications



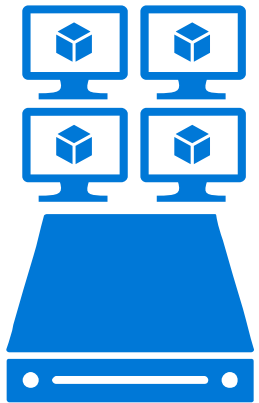
Windows Server 2016 Containers

A new approach to build, ship, deploy, and instantiate applications



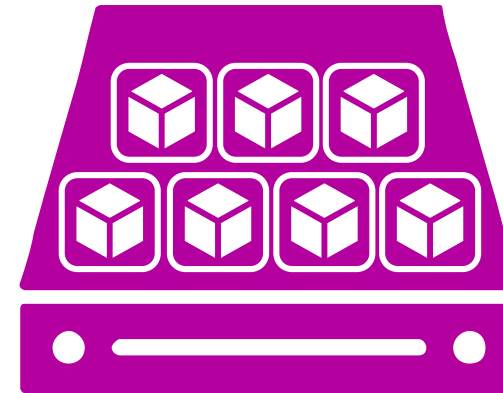
Physical

Applications traditionally built and deployed onto physical systems with 1:1 relationship
New applications often required new physical systems for isolation of resources



Virtual

Higher consolidation ratios and better utilization
Faster app deployment than in a traditional, physical environment
Apps deployed into VMs with high compatibility success
Apps benefited from key VM features; i.e., live migration, HA



Physical/Virtual

Package and run apps within **containers**

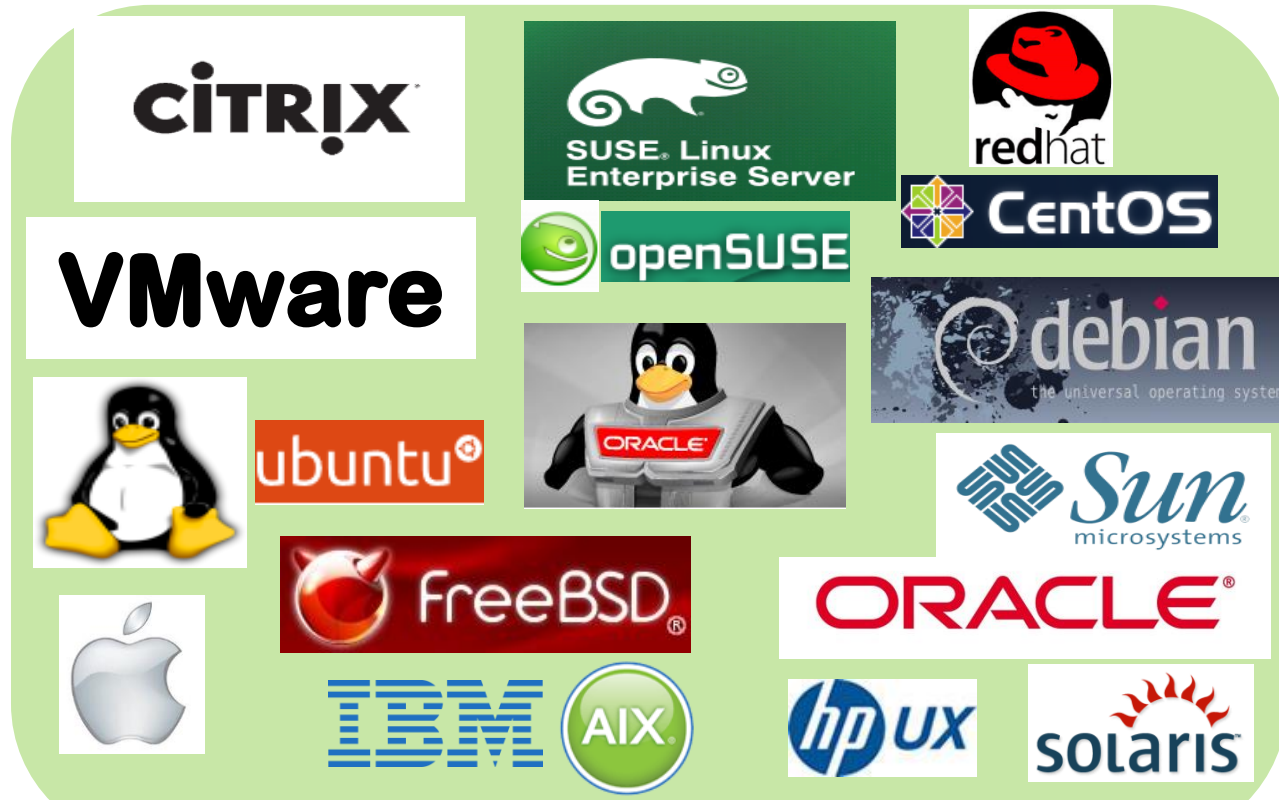
Key Benefits

- Further accelerate of app deployment
- Reduce effort to deploy apps
- Streamline development and testing
- Lower costs associated with app deployment
- Increase server consolidation

Windows Server 2016 Hyper-V Capabilities

- Support for Nano Server
- Virtual Secure Mode
- Nested Virtualization
- VM Compute Resiliency
- Hyper-V Hot Add/Remove Fixed Memory
- Hyper-V Hot Add/Remove Virtual NICs
- Storage Quality of Service
- Production Checkpoints
- Hyper-V Aware Host Anti-Malware
- Multi-Level Storage Tiering
- Instant Fixed Disk Creation on ReFS
- VM Storage Resiliency
- Domain Less Clusters
- Cluster Upgrade & Cluster Node Quarantine
- Multi-Site Clustering
- Hyper-V Backup: Massive Scale Improvements
- Hyper-V Backup: Guest Cluster Support

Microsoft and Interoperability



Microsoft commitment to support Linux – Red Hat, CentOS, SUSE, Open Suse, Debian, Ubuntu, Oracle Linux and FreeBSD 10 on Hyper-V or Azure;

System Center supports administering non-Windows platforms: Linux: Red Hat, CentOS, SUSE, OpenSUSE, Debian, Ubuntu, Oracle Linux; Unix (IBM AIX, HP-UX, Oracle Solaris) and Mac OS X systems

System Center Virtual Machine Manager manages Hyper-V and VMware ESX servers

“DHMC runs both Windows Server as guest operating systems under Hyper-V, as well as Linux. To date, DHMC has virtualized Web servers, sites on Microsoft Office SharePoint® Server, reporting servers, medical applications, domain controllers, file and print servers, Citrix servers, and more.”

Dartmouth Hitchcock Medical Center Case Study

Software defined storage

- Flexible choices across a breadth of storage
- Not just bits, but also choice in integrated solutions
- Reduce storage costs



High performance storage, fraction of the cost

Storage Spaces Direct

Use standard servers with local storage to build highly available and scalable software-defined storage

Storage Spaces Replica

Create affordable business continuity and disaster recovery among datacenters

Storage QoS

Prevent noise neighbors from impacting high priority workloads with a Storage QoS policy

File share



Volume



Virtual disk



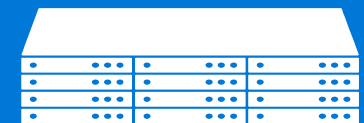
Storage Servers



Storage pool



Enclosure



Physical disks



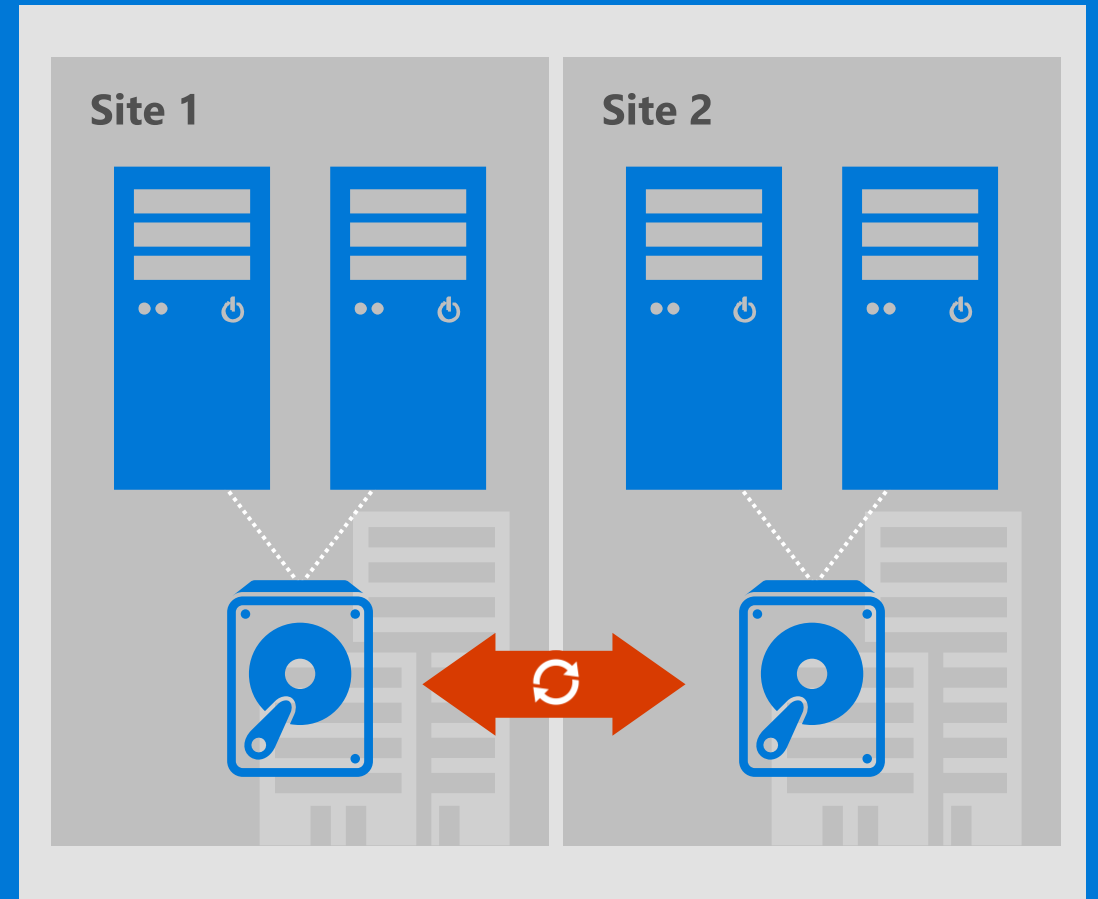
Storage Replica

Synchronous replication: Storage agnostic mirroring of data in physical sites with crash-consistent volumes ensuring zero data loss at the volume level.

Increase resilience: Unlocks new scenarios for metro-distance cluster to cluster disaster recovery and stretch failover clusters for automated high availability.

Flexible: Server to server, cluster to cluster, and stretch cluster. Local disks, Storage Spaces Direct, clustered disks. NTFS, REFS, CSVFS. TCP, RDMA. Synchronous and asynchronous.

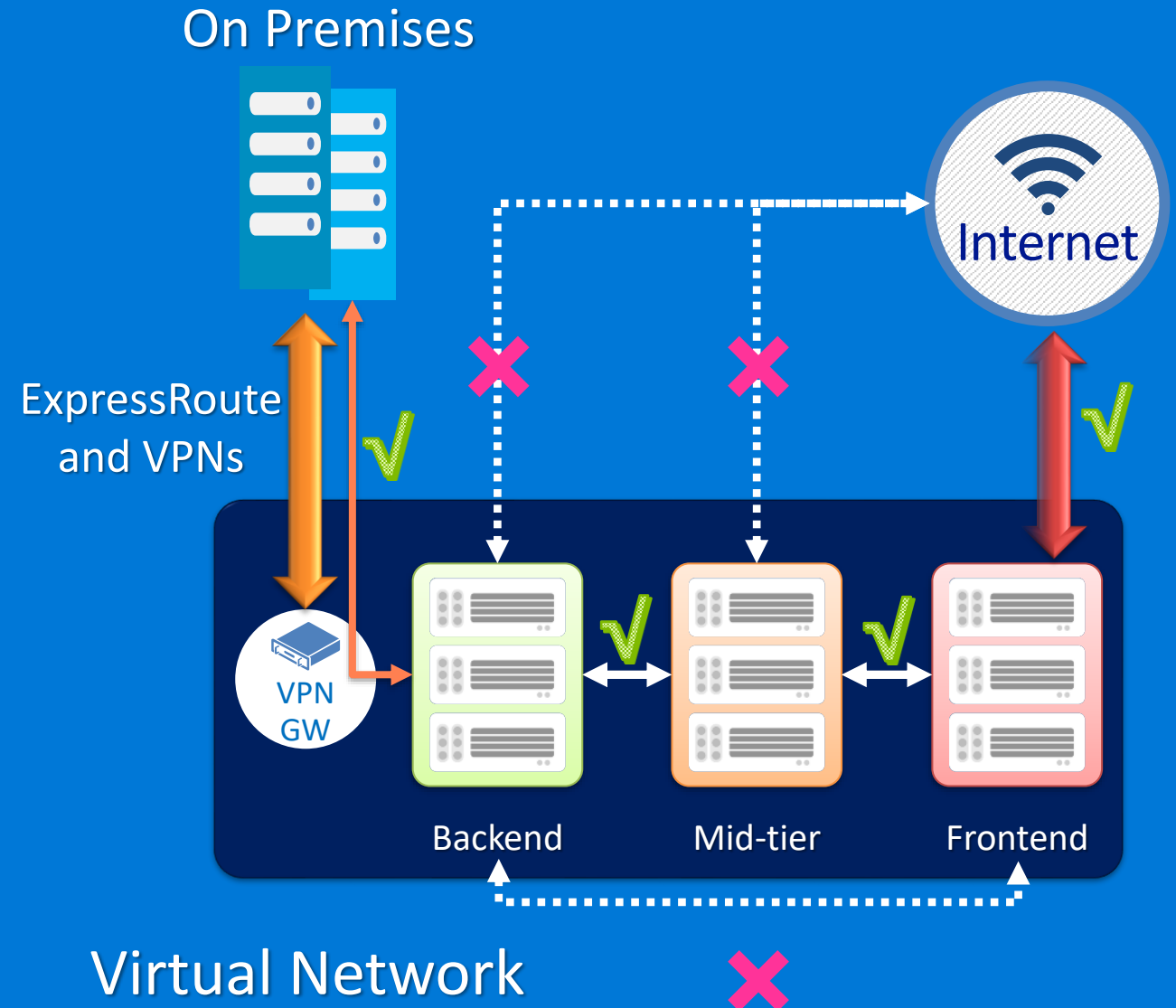
Streamlined management: Graphical management for individual nodes and clusters through Failover Cluster Manager and Azure Site Recovery. Full PowerShell and SMAPI support.



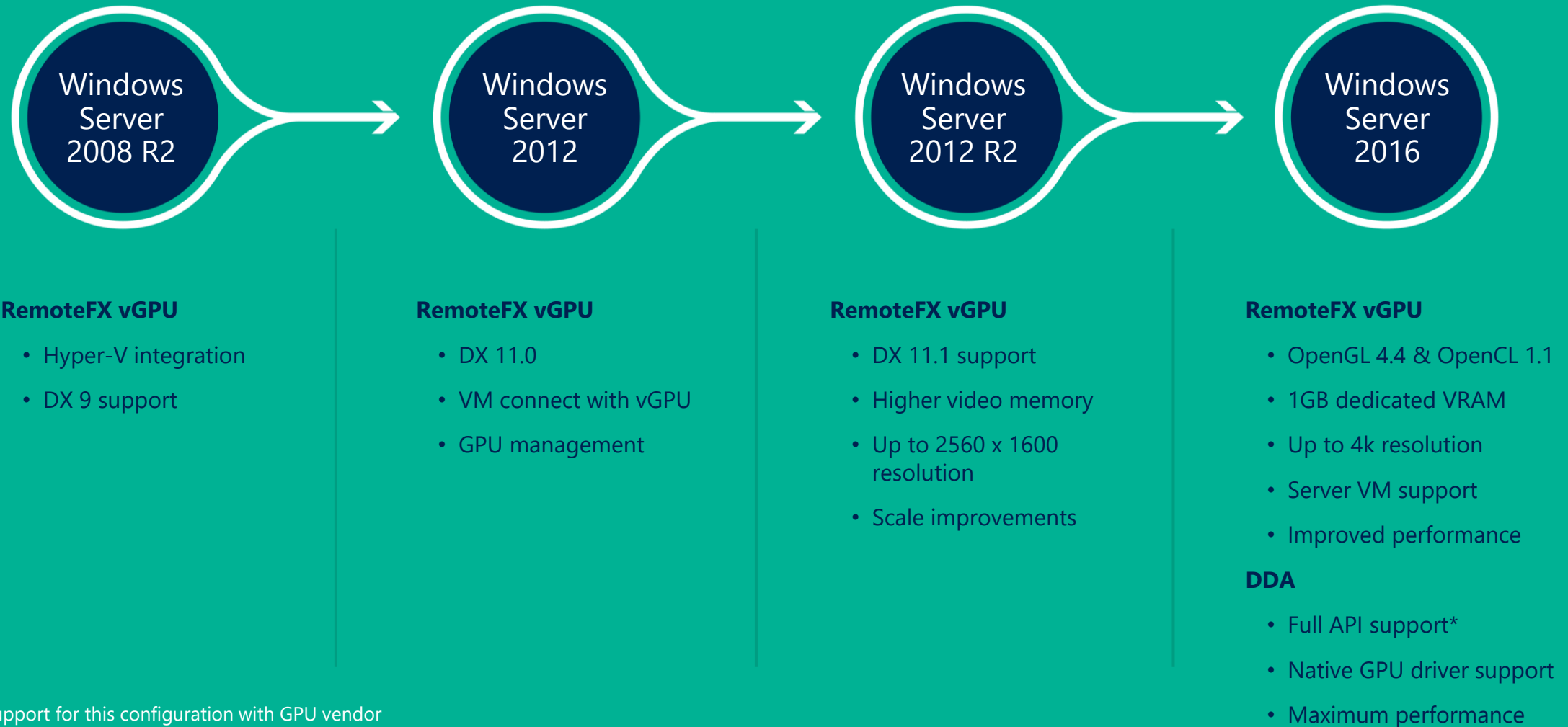
<https://technet.microsoft.com/en-us/windows-server-docs/storage/storage-replica/storage-replica-overview#synchronous-replication>

New Distributed Firewall and Load Balancer

- Segment network to meet security needs
- ACLs on both directions
- Can protect Internet and internal traffic
- Enables DMZ subnets
- Associated to subnets/VMs and now NICs
- ACLs can be updated independent of VMs



Windows Server 2016 RDS graphics virtualization evolution



*Verify card support for this configuration with GPU vendor

Next generation of hybrid cloud: Azure to your datacenter

Several new solutions that will continue to expand the industry's most complete cloud

Microsoft Azure Stack

a next-generation cloud infrastructure that brings Azure IaaS and PaaS capabilities to customers' datacenters

Windows Server 2016 & System Center 2016

the next versions of the popular application platform and management solutions

Microsoft Operations Management Suite

a new hybrid management solution that helps you manage your corporate workloads no matter where or what they run (i.e., AWS, OpenStack, Azure, VMware, Linux, Windows Server)

Visibility – Solution Offerings



E2E on-premise monitoring experience

- ✓ End-to-end monitoring and diagnostics of infrastructure and workloads
- ✓ Alerts, notifications and other controls
- ✓ Strong native support, and incremental 3rd party
- ✓ Integrates with other on-premise systems

System Center

On-demand & hybrid monitoring experience

- ✓ Hybrid extensions (across on-premise and cloud)
- ✓ Transition between day-to-day monitoring and analytics driven diagnostics
- ✓ Better aligned to market requirements
- ✓ Wider and deeper health insights

System Center +
Operations Management Suite (OMS)



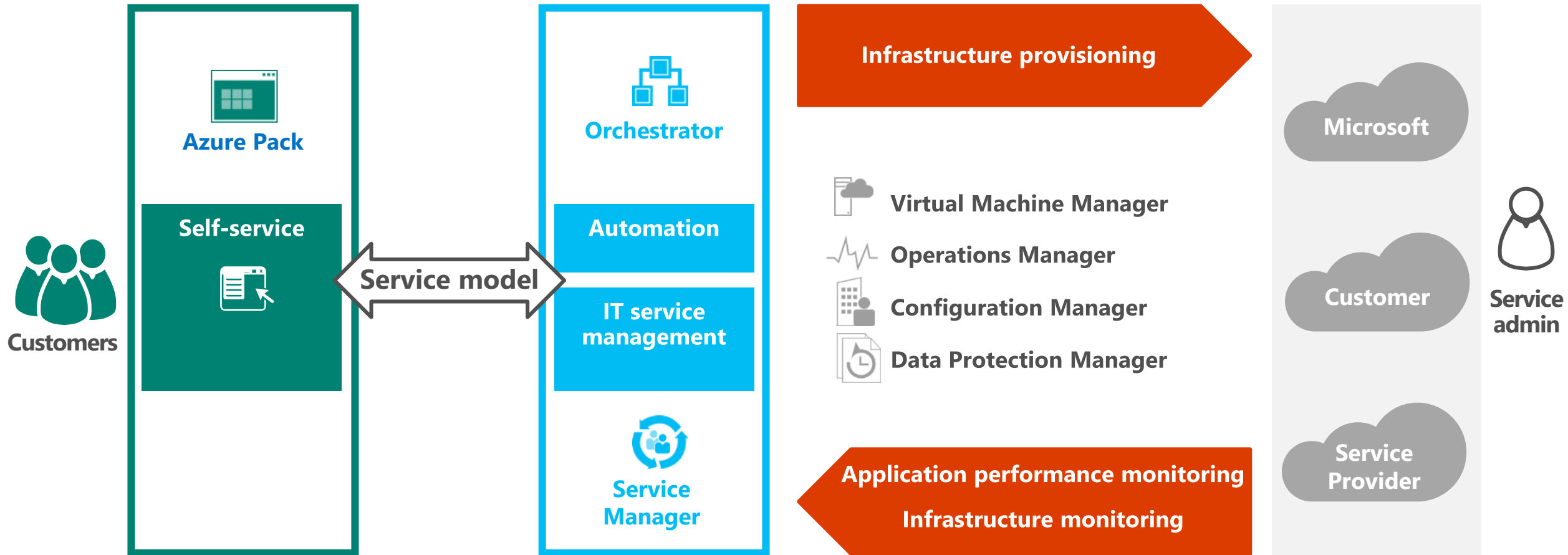
Cloud-inspired & platform agnostic

- ✓ Data analytics
- ✓ Bottomless capacity and elastic scalability
- ✓ No infrastructure to maintain
- ✓ Innovations on-boarded at a faster rate

Operations Management Suite (OMS)

System Center

Unified management for the Cloud OS



Why Microsoft for Management & Virtualization



Low TCO/High ROI

- Lower upfront investment costs
- Lower deployment, management, and maintenance costs
- Extends current IT investments



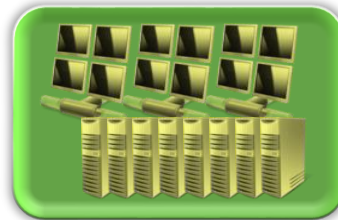
Datacenter to Desktop

- Full range of products and solutions
- Large partner ecosystem



The Platform You Know

- Single management platform
- Use the skills, tools, and processes you already know



End-to-End Management

- Physical, virtual machine and application management
- Interoperate with existing Microsoft infrastructure
- Easily manage a heterogeneous environment



Microsoft Partner Network™

Benefits of System Center

- control physical or virtual on-premise infrastructure
- control cloud infrastructures: Azure, Amazon etc.
- application performance monitoring - **SCOM**
- monitoring of services, applications, network devices –**SCOM**
- asset management, deployment of operating systems and applications, mobile device management, antivirus management, security configuration management – **SCCM & Endpoint Protection**
- backup on disk, tape and Azure for Microsoft and VMware - **DPM**
- Service Desk solution with incident management, problem management, change management, self service -**Service Manager**
- virtual datacenter management on-premise and cloud **Virtual Machine Manager & SCOM**
- orchestration and processes automatization & integration with VMware, HP Open View, IBM Tivoli, CA Unicenter, BMC, Linux/Unix, Symantec - **Orchestrator**

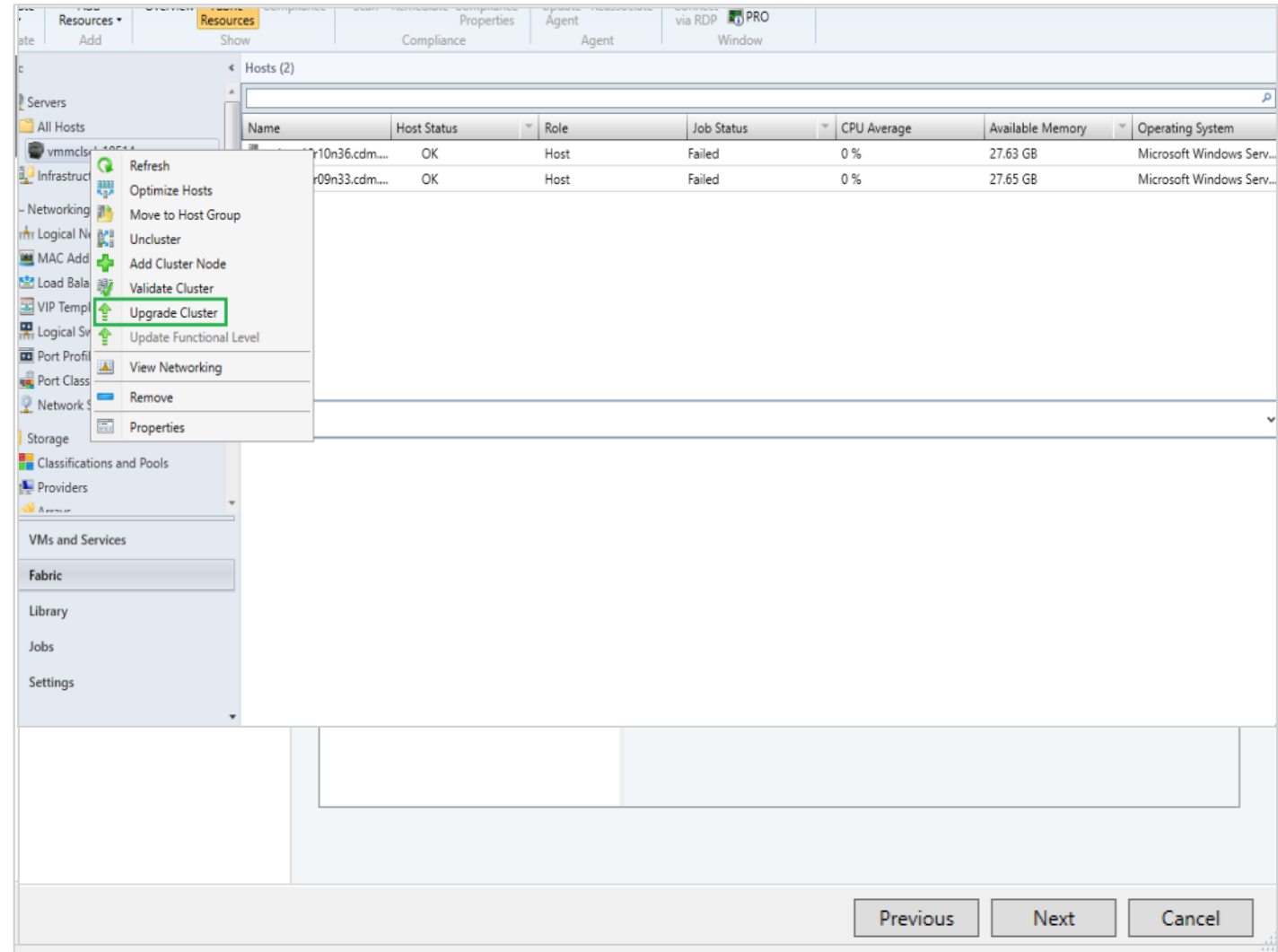
Virtual Machine Manager

Gain control and visibility of core infrastructure

Software-defined datacenter management – Continuously available file-based server application storage with shared storages through enhanced Scale-Out File Server management

Resource provisioning – Unify management by adding Microsoft Azure subscriptions to VMM and perform basic actions on Azure instances. Deploy Storage Spaces Direct, both in hyper-converged and disaggregated topologies. Centrally manage Hyper-V hosts, host clusters, and SOFS with VMM. Single point to manage multiple hypervisor platforms, including support for VMware ESX hosts and vCenter servers

Managing fabric resources and clusters – Centrally monitor end-to-end storage performance and create policies to meet quality of services.



Operations Manager

Comprehensive infrastructure & application monitoring

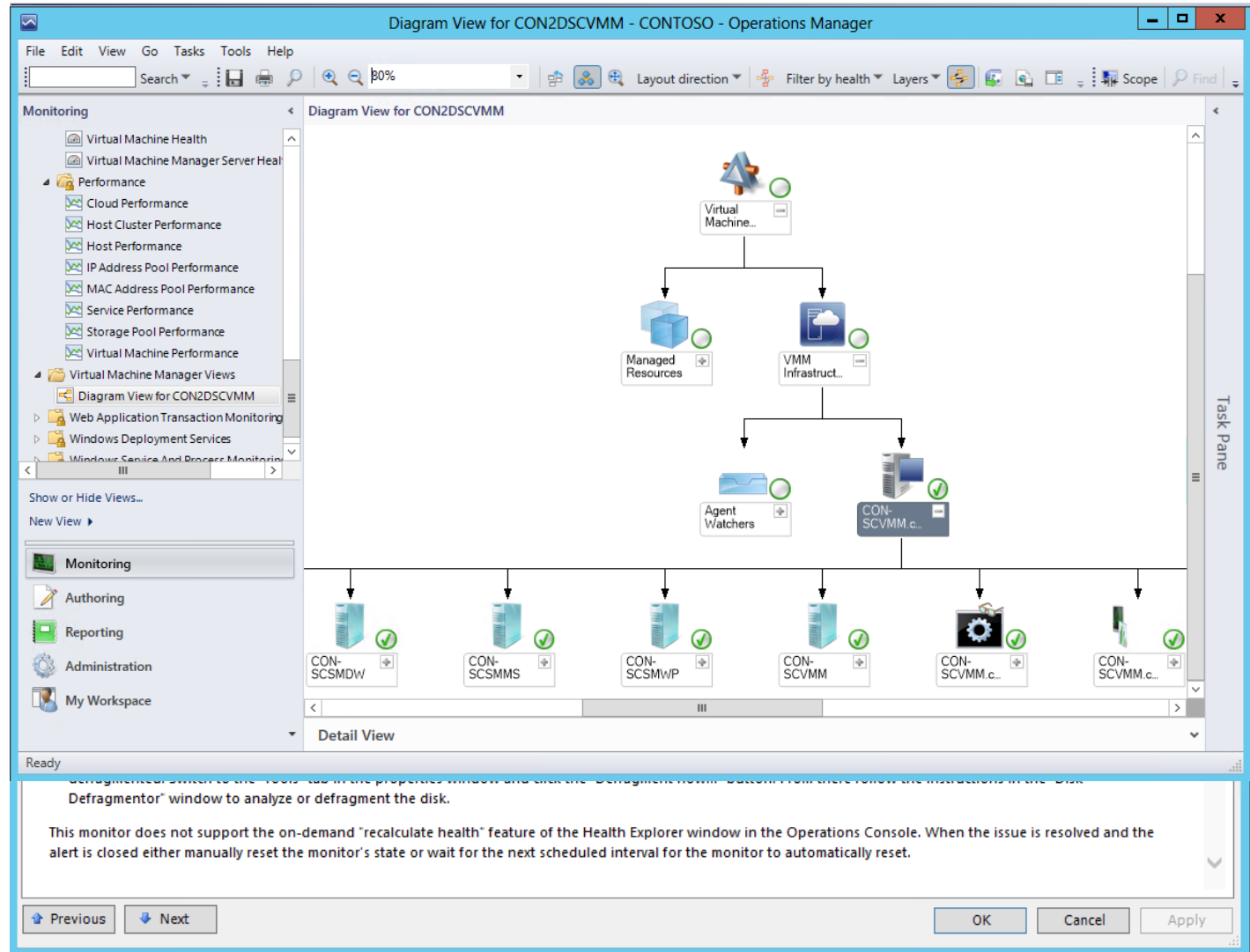
Rich dashboards – Monitors the key elements of the infrastructure: physical, virtual, hardware, software, and within applications and presents the key information through simple visual dashboards

Centralized alerting – OpsMgr collects information about monitored services and raises an alert if there's an issue

Topology views – Visualize key systems and applications across physical and virtual

Maintenance schedule – Schedule maintenance at a future time, schedule maintenance jobs, and view modes from a single screen

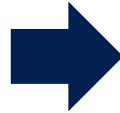
Extend OM with OMS – Configure assessment, alert management, and capacity planning by connecting OM with OMS



Network monitoring in Operations Manager

Advantages of System Center

Network Summary Dashboard – provides a view of important data for the nodes and interfaces of the network



Nodes – A node can be any device connected to a network. Nodes can be switches, routers, firewalls, load balancers, or any other networked device



Network Summary Dashboard - OM_Contoso - System Center Operations Manager 2012

Monitoring

- Discovered Inventory
- Distributed Applications
- Task Status
- UNIX/Linux Servers
- Windows Computers
- Agentless Exception Monitoring
- Data Protection Manager 2012
- Data Warehouse
- Microsoft Audit Collection Services
- Microsoft SQL Server
- Microsoft Windows Internet Informati...
- Microsoft Windows Server
- Network Monitoring
 - Active Alerts
 - Hosts
 - HSRP Groups
 - Legacy Network Devices
 - Network Devices
 - Network Summary Dashboard
 - Routers
 - Switches

Show or Hide Views...
New View >

Monitoring

- Authoring
- Reporting
- Administration
- My Workspace

Ready

Network Summary Dashboard

Nodes with Slowest Response (Previous 24 hours)

Node State	Node Name	Average Response Time (ms)
✓	10.193.220.129	21
✓	10.193.220.211	15.9
✓	10.193.220.141	15.4
✓	10.193.220.174	15.1
✓	10.193.220.242	14.4
✓	10.193.220.228	13.8
✓	10.193.220.210	13.6
✓	10.193.220.135	13.1
✓	10.193.220.226	12.9

Nodes with Highest CPU Usage (Previous 24 hou...)

Node State	Node Name	CPU Usage
✓	10.193.220.129	8%
✓	10.193.220.196	7%
✓	10.193.220.135	6%
✓	10.193.220.132	6%
✓	10.193.220.197	3%
✓	10.193.220.242	3%
✓	10.193.220.141	1%

Interfaces with Highest Utilization (Previous 24 hours)

Node State	Node Name	Interface State	Interface Name
✓	10.193.220.135	✓	IF-10.193.220.135/10128 [Gi0/28] [10.193.220.6] [Link to 43_1217_Ci4506_01(g...
✓	10.193.220.129	✓	IF-10.193.220.129/4 [Gi2/1] [10.193.220.1] [Link to 43_1217_Ci3560_01(g0/28)]
✓	10.193.220.129	✓	IF-10.193.220.129/9 [Gi2/6] [10.193.220.5] [Link to 43_1217_Ci3560_02(g0/28)]
✓	10.193.220.132	✓	IF-10.193.220.132/10128 [Gi0/28] [10.193.220.2] [Link to 43_1217_Ci4506_01(g...
✓	10.193.220.135	✓	PORT-10.193.220.135/1.1 [Gi0/1] [Link to 43_1217_Ci3750_Stack01 [g1/0/28]]
✓	10.193.220.196	✓	PORT-10.193.220.196/1.27 [Gi1/0/27] [Link to 43_1217_Ci3560_01 [g0/1]]
✓	10.193.220.196	✓	PORT-10.193.220.196/1.28 [Gi1/0/28] [Link to 43_1217_Ci3560_02 [g0/1]]
✓	10.193.220.132	✓	PORT-10.193.220.132/1.1 [Gi0/1] [Link to 43_1217_Ci3750_Stack01 [g1/0/27]]
✓	10.193.220.196	✓	PORT-10.193.220.196/2.28 [Gi2/0/28] [Link to 43_1217_Ci3560_02 [g0/13]]

Task Pane

Extensibility via partners

Operations Manager management pack catalog representative partners

<http://pinpoint.microsoft.com/en-US/category.aspx?catid=1&fpf=700004>

Bridgeways

Oracle, DB2, Apache HTTP Server, others

NiCE

Oracle, DB2, Domino, BlackBerry Enterprise Server (BES)

E-View

AS/400

Veeam

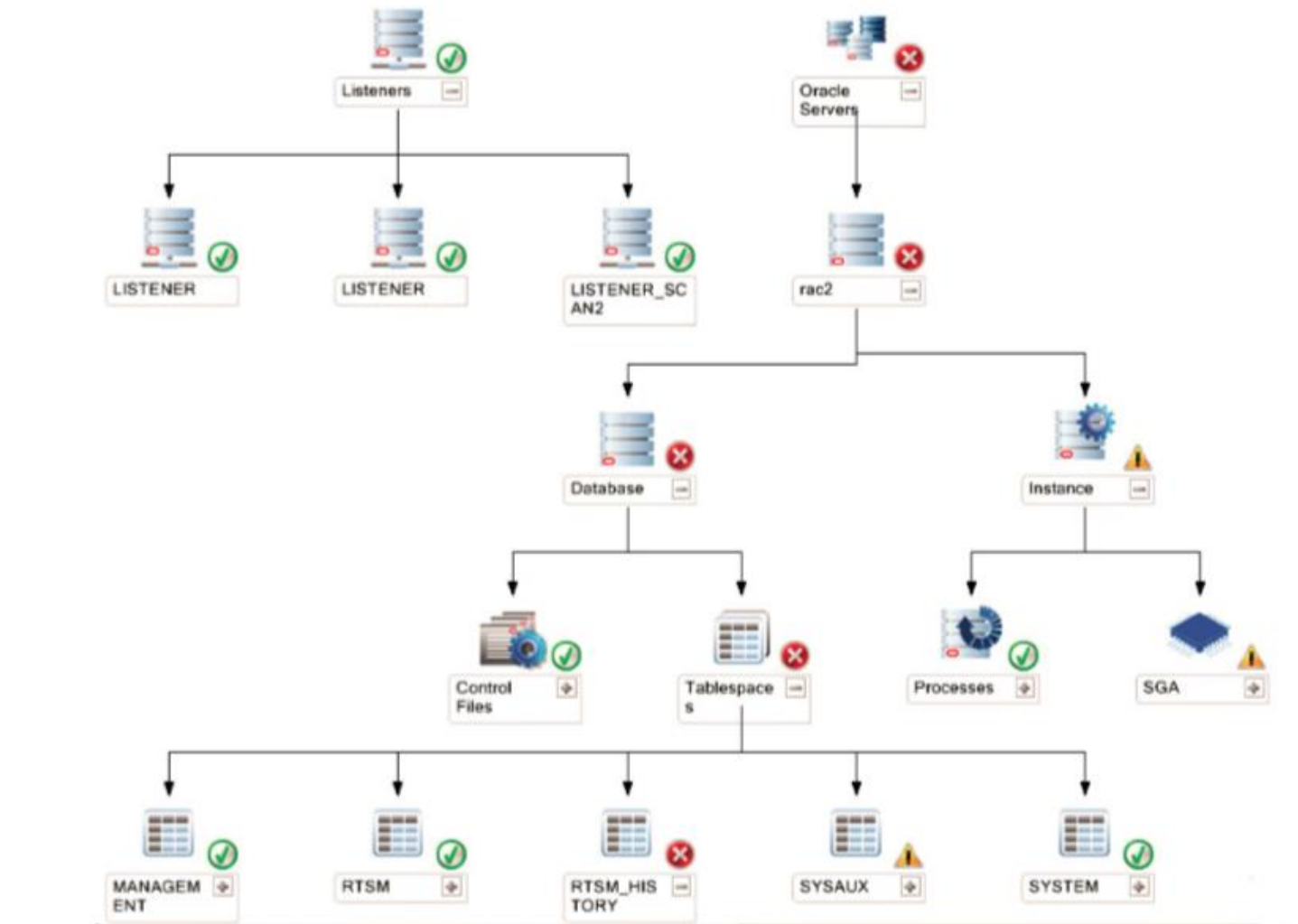
VMware ESX

Extensibility via partners

Oracle monitoring

- Insight how memory, physical design and maintenance affect performance
- Monitor the entire Oracle environment (RAC)
- Understand and manage your Oracle environment like an ecosystem that is constantly changing in terms of physical design, transactions, and memory

You need 3rd party management pack



Extensibility via partners

SAP monitoring

Flexible deployment options and configuration:
management pack's SAP connector can be installed and ran on:

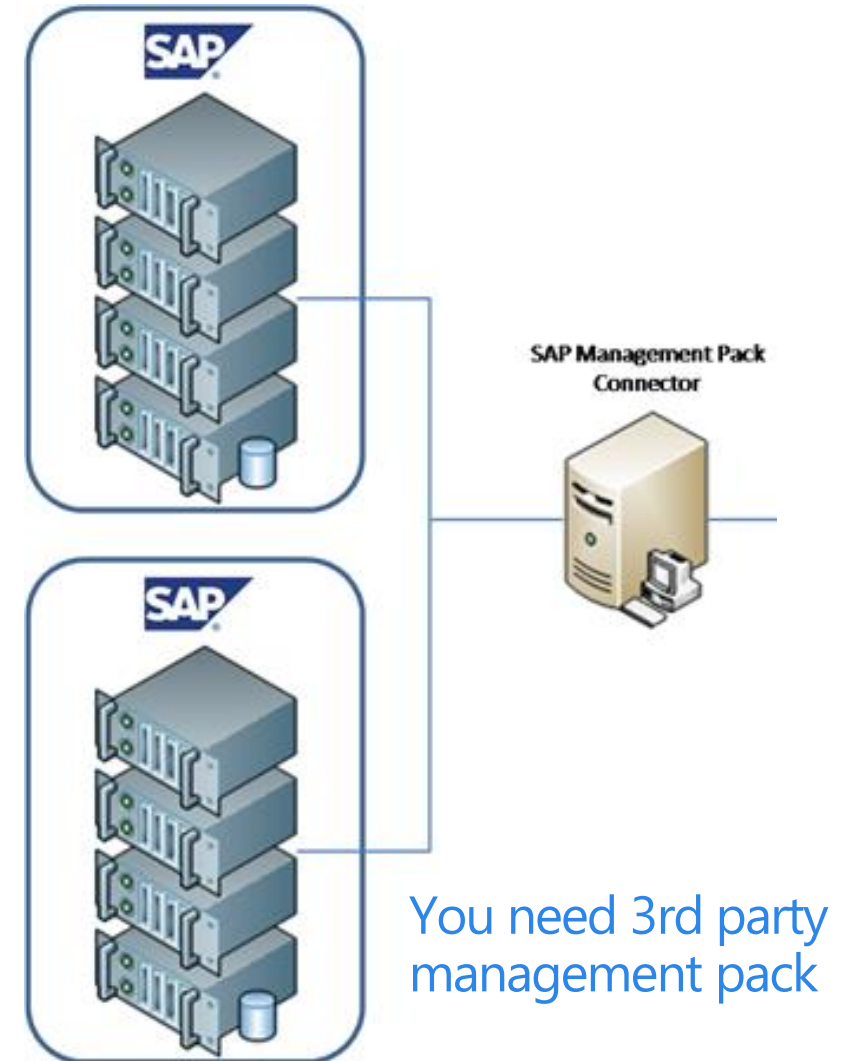
- SCOM Agent or management server machine
- One or more remote Windows servers
- Under the same active directory domain as the management server or outside the domain

Built-in failover functionality

- Automatic failover/restore
- Automatic configuration synchronization

Heterogeneous SAP support

Connect to SAP Systems running on any platform, be it Windows Server 2008, Unix, Linux, iSeries or zOS



Home Folder

Create Service Create Virtual Machine Create Cloud Create Host Group Create VM Network Assign Cloud Overview VMs Services VM Networks Cisco UCSM PowerShell Jobs PRO Window

VMs and Services

- Tenants
- Clouds
 - Cloud10septembrie
 - Cloud-Cisco-Connect
- VM Networks
- Storage
- All Hosts
 - hv-1
 - hv-2
- VMs and Services
- Fabric
- Library
- Jobs
- Settings

UCSAddIn

- Hypervisor Hosts
 - hv-1.virt.local
 - hv-2.virt.local
- UCS Domains
- Add-in Settings

General Firmware Faults

Fault Summary

0 0 0 0

Suppression Status: N/A

Status

Overall Status: ↑ ok

Status

Actions

- Associate Service Profile
- Disassociate Service Profile
- Set Desired Power State
- KVM Console
- Turn on Locator LED

Properties

UCS: cisco (10.62.25.12)
 Slot ID: 2 Chassis ID: 1
 Product Name: Cisco UCS B200 M3
 Vendor: Cisco Systems Inc
 Revision: 0 PID: UCSB-B200-M3
 Name: Serial Number (SN): FCH18077U1M
 User Label:
 UUID: 64c9e26a-435a-11e0-0000-0004f560004f
 Service Profile: org-root/ls-blade-02
 Locator LED:

Summary

Number of Processors: 2 Cores Enabled: 20
 Cores: 20 Threads: 40
 Effective Memory (MB): 262144 Total Memory (MB): 262144
 Operating Memory Speed: 1866 Operating Memory Voltage: regular-voltage
 Adapters: 1
 NICs: 2 HBAs: 0
 Original UUID: e76f3e6d-2628-49fa-98d8-6e5b4abe4677

Part Details

Connection Details

Administrator - vmmsrv.virt.local - Virtual Machine Manager

Home Folder

Create Service Create Virtual Machine Create Cloud Create Host Group Create VM Network Assign Cloud Overview VMs Services VM Networks Cisco UCSM PowerShell Jobs PRO Window

VMs and Services UCSAddIn

- Tenants
- Clouds
 - Cloud10septembrie
 - Cloud-Cisco-Connect
- VM Networks
- Storage
- All Hosts
 - hv-1
 - hv-2

VMs and Services Fabric Library Jobs Settings

UCSAddIn

- Hypervisor Hosts
 - hv-1.virt.local
 - hv-2.virt.local
- UCS Domains
 - cisco (10.62.25.12)
 - Equipment
 - Chassis
 - Chassis -1
 - Blade -1
 - Blade -2
 - Rack-Mounts
 - Orgs
 - root
 - Service Profiles
 - Service Profile Templates
 - Host Firmware Packages
 - default
 - Sub-Organizations

Add-in Settings

General Firmware Faults

Fault Summary

0 0 0 0

Suppression Status: N/A

Status

Overall Status: ↑ ok

Status

Actions

- Associate Service Profile
- Disassociate Service Profile
- Set Desired Power State
- KVM Console
- Turn on Locator LED

Properties

UCS: cisco (10.62.25.12)
 Slot ID: 1 Chassis ID: 1
 Product Name: Cisco UCS B200 M3
 Vendor: Cisco Systems Inc
 Revision: 0 PID: UCSE
 Name: Serial Number (SN): FCH1
 User Label:
 UUID: 64c9e26a-435a-11e0-0000-0004f560007f
 Service Profile: org-root/ls-blade-01
 Locator LED:

Summary

Number of Processors: 2 Cores Enabled: 20
 Cores: 20 Threads: 40
 Effective Memory (MB): 196608 Total Memory (MB): 196608
 Operating Memory Speed: 1866 Operating Memory Voltage: regul
 Adapters: 1
 NICs: 2 HBAs: 0
 Original UUID: 0ae32107-ed89-49d6-b9a1-3d605e9e973c

Part Details
 Connection Details

Monitoring

- Monitoring
 - Active Alerts
 - Discovered Inventory
 - Distributed Applications
 - Task Status
 - UNIX/Linux Computers
 - Windows Computers
 - Agentless Exception Monitoring
 - Application Monitoring
 - Cisco Unified Computing System
 - Management Pack Events
 - State Summary
 - Cisco UCS Instance(s)
 - cisco
 - cisco Alert View
 - cisco State View
 - Diagram

Show or Hide Views...

New View ▶

- Monitoring
- Authoring
- Reporting
- Administration
- My Workspace

Active Alerts (1)

Look for: Find Now Clear

Source Name Resolution

Severity: Critical (1)

Source	Name	Resolution
Chassis 1	F0408 : Power Problem	New

Tasks

Tasks

Alert Actions

- View or edit the settings of this monitor
- Start Maintenance Mode...
- Edit Maintenance Mode Settings...
- Stop Maintenance Mode
- Overrides ▶
- Personalize view...

Subscription

- Create...
- Modify...

Tasks

- Alert Properties
- Close Alert
- Set Resolution State ▶
- Entity Properties
- Health Explorer
- Navigation
 - Alert View
 - Diagram View
 - Event View
 - Performance View
 - State View

Alert Details

F0408 : Power Problem

Source: Chassis 1
 Full Path Name: Cisco UCS Instances\cisco\Chassis 1
 Alert Monitor: F0408 sys_chassis_id Monitor
 Created: 2/27/2015 11:54:47 AM

Alert Description

Power state on chassis 1 is redundancy-failed
 DN: sys/chassis-1
 Acknowledge: no
 Cause: power-problem
 Code: F0408
 Created: 2011-03-07T00:17:14.873
 Id: 49439
 Rule: equipment-chassis-power-problem
 Tags: server

Ready

Storage Monitoring

The screenshot displays the Microsoft Operations Manager (MOM) console interface. The title bar reads "Management Server - om_... - Operations Manager". The menu bar includes File, Edit, View, Go, Tasks, Tools, and Help. Below the menu is a search bar and a "Scope" button. The main area is divided into three panes:

- Monitoring (Left Pane):** A tree view showing the hierarchy of monitored items. Under "Data ONTAP", the "Storage Systems" folder is expanded, listing various components like Aggregates, Alerts, Controllers, Dashboard, Diagram, LUNs, Management Server, Qtrees, SnapMirror Status, Storage Utilization, vFilers, and Volumes. "Management Server" is currently selected.
- Management Server (1) (Center Pane):** A search bar with "Look for:" and "Find Now" and "Clear" buttons. Below it, a table lists the search results. One result is visible: "BZSSCOM1...".
- Tasks (Right Pane):** A list of tasks under the heading "Health Service Tasks". The task "Data ONTAP: Add Controller" is highlighted in yellow. Other tasks include "Check Health Service Startup Configuration", "Computer Management", "Data ONTAP: Manage Controller Credentials", "Data ONTAP: Manage DFM Servers", "Data ONTAP: Run Discovery task", "Data ONTAP: Run PRO Discovery task", "Data ONTAP: Run Virtualization Discovery task", "Disable Audit Collection", "Enable Audit Collection", "Flush Health Service State and Cache", "Get the agent processor utilization", "Get The Pool Member Monitoring a Top Lev", "Get Top Level Instances Monitored By a Poc", "Ping Computer", "Ping Computer (with Route)", "Ping Computer Continuously (ping -t)", and "Ping Computer Diagnostic Task (used by He".

At the bottom of the console, there is a "Show or Hide Views..." section with a "New View" button and a "Monitoring" view button.

Health Service Tasks

- Check Health Service Startup Configuration
- Computer Management
- Data ONTAP: Add Controller
- Data ONTAP: Manage Controller Credentials**
- Data ONTAP: Manage DFM Servers
- Data ONTAP: Run Discovery task
- Data ONTAP: Run PRO Discovery task
- Data ONTAP: Run Virtualization Discovery task
- Disable Audit Collection
- Enable Audit Collection
- Flush Health Service State and Cache
- Get the agent processor utilization

Monitoring

- Data ONTAP
 - Storage Systems
 - Aggregates
 - Alerts
 - Controllers
 - Dashboard
 - Diagram
 - LUNs
 - Management Server
 - Qtrees
 - SnapMirror Status
 - Storage Utilization
 - vFilers
 - Volumes
 - Events
 - Availability Events
 - Configuration Events
 - Performance
 - CPU Utilization
 - I/O Operations
 - I/O Throughput
 - Latency
 - Protocols
 - Virtualization
 - Alerts
 - Events
 - Hyper-V Hosts
 - Hyper-V LUNs
 - Hyper-V VHDs
 - Hyper-V VMs

Reporting

- Reporting
 - Active Directory Server 2008 (Monitoring)
 - Active Directory Server Common Library
 - Application Monitoring
 - .Net Monitoring
 - Application Advisor Reports
 - Client Side Monitoring
 - Problem Analysis Reports
 - Resource Utilization Analysis
 - Client Monitoring Views Library
 - Microsoft Data Warehouse Reports
 - Microsoft Generic Report Library
 - Microsoft ODR Report Library
 - Microsoft Service Level Report Library
 - Network Management Reports
 - OnCommand Data ONTAP Reports
 - OnCommand Data ONTAP Virtualization Report

Reports

- | Name |
|--|
| Data ONTAP Aggregate Committed Space Percentage Report |
| Data ONTAP Controller Average System Latency Report |
| Data ONTAP Controller Committed Space Percentage Report |
| Data ONTAP Controller Rate Of Storage Utilization Report |
| Data ONTAP Controller Storage Efficiency Report |
| Data ONTAP Controllers Availability Report |
| Data ONTAP Group Average System Latency Report |
| Data ONTAP Group Committed Space Percentage Report |
| Data ONTAP Longest SnapMirror Lag Time Report (Unit: Hours) |
| Data ONTAP LUN Average Latency Report |
| Data ONTAP Most Common Alerts Report |
| Data ONTAP SnapMirror Average Lag Time Per Controller Report (Unit: Hours) |
| Data ONTAP Volume Average Latency Report |
| Data ONTAP Volume Storage Efficiency Report |
| Data ONTAP Volume Storage Utilization Report |

SQL and Microsoft apps monitoring

SQL Service Level Dashboard

Service Levels

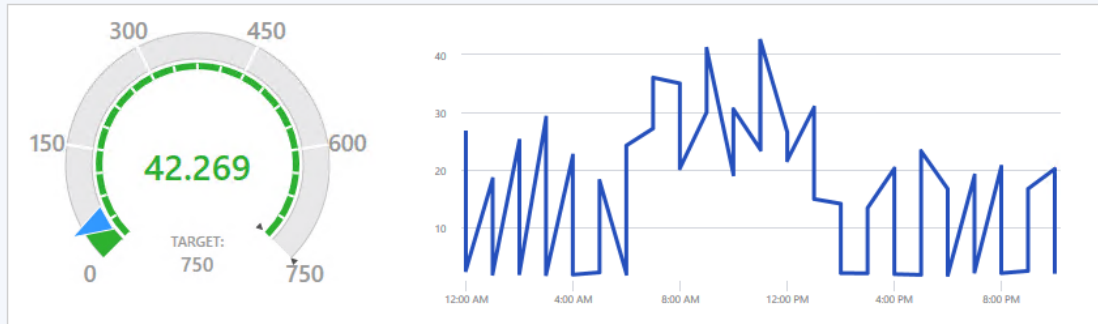
Name: **Contoso SQL Servers (1)**

SQL Computers

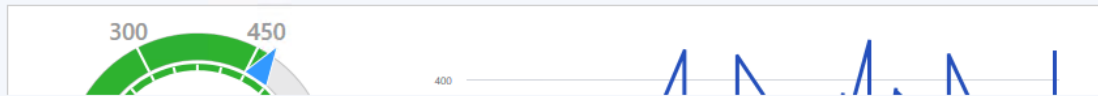
Service Level Objectives

State	Name	Target Class	Instances
✖	Page Faults/sec SLO	SQL DB Engine	13
✔	SQL DB Engine Availability	SQL DB Engine	13
✖	SQL DB Engine Performance	SQL DB Engine	13
✖	Buffer Cache Hit Ratio SLO	SQL DB Engine	11
✔	Memory Grants Pending SLO	SQL DB Engine	11

DB02.contoso.com db02.contoso.com



OMDW DB04.contoso.com



SQL Performance Dashboard

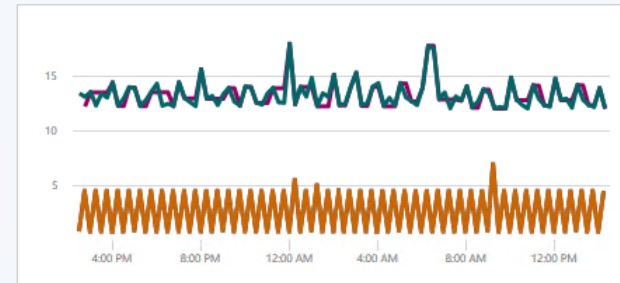
SQL DB Engine State (2)

Icon	Health	Display Name	Maintenance Mode	Path
🚩	⚠	DB01.contoso.com		
🚩	⚠	DPM01.contoso.com		

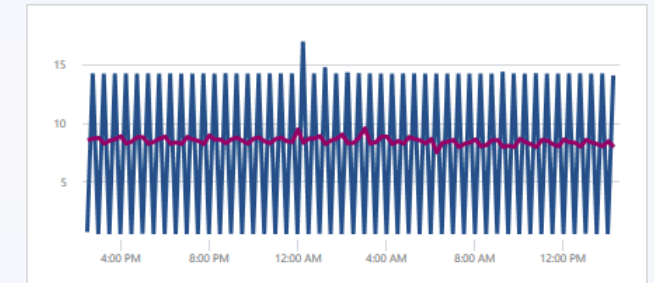
DB Engine Details

Display Name	DB01.contoso.com
Path	DB01.contoso.com
Health	⚠ Warning
Object Display Name	DB01.contoso.com
Principal Name	DB01.contoso.com
DNS Name	DB01.contoso.com
NetBIOS Computer Name	DB01
NetBIOS Domain Name	CONTOSO

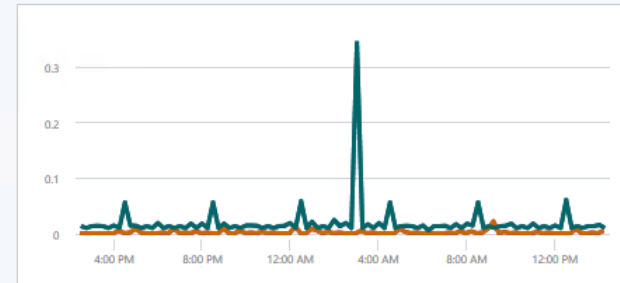
SQL Transactions/sec



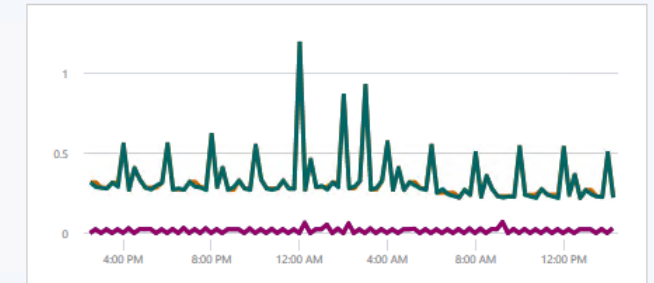
SQL Batch Request/sec







SQL Recompilations/sec



SQL Compilations/sec



Java EE monitoring-supported platforms

		Supported JEE application servers	Supported operating systems matrix				
			RHEL	SLES	Solaris	AIX	Windows
	IBM Websphere	6, 7, 8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	Oracle WebLogic	10gRel3, 11gRel1, 12cR1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
	Redhat JBoss	4, 5, 6, EAP 6, 7, WildFly 8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>
	Apache Tomcat	5, 6, 7, 8	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>

Application visibility across datacenter and clouds

Application Name	Response Time	Health Status	ART ms	ART Trend 10 minutes	Load trans/sec	Load Trend 10 minutes
▼ Azure App: Online Claims Processing	✓	⚠	36		2.9	
Java Application Tier	✓	—	45		0.8	
SQL Server DB Tier	✓	—	3.6		194	
Oracle Database Tier	✓	—	0.7		1.2	
CRM	✗	✓	60,041		0	
Operations Manager	✓	✗	66		0.7	
▶ Corporate ERP System	✓	✓	37		12	
HR Portal	✓	✗	44		0.8	

Microsoft acquired BlueStripe – to be integrated in System Center and Operations Management Suite

Service Manager

IT Service Management with System Center integration

IT Service Management – Service Manager provides incident, problem, change, & release management. Service & request offerings, along with SLA Management, are also in the box

ITaaS – Rich Self Service Portal based on SharePoint providing role-based access to the service catalog

Integration – Connectors simplify and streamline integration between Service Manager and other System Center components

Business intelligence – Powerful data warehouse for rich, integrated reporting

Cloud Services Process Pack – Free download providing pre-built service requests, request offerings, and runbooks

Online meetings – Connect, share, and schedule meetings online with Skype for Business and Lync

The screenshot shows the 'Contoso Portal' interface for a 'Service Offering'. The page title is 'Private Cloud Infrastructure Services' with a sub-header 'Service offering'. A navigation sidebar on the left includes 'Home', 'Help Articles', 'My Requests', and 'My Activities'. The main content area features an 'Overview' section stating it contains offerings for private cloud resource subscriptions and virtual machines. Below this is a list of 'Available requests on Private Cloud Infrastructure Services', including: Cancel Cloud Resources Subscription, Cancel Tenant Registration, Register a Tenant, Request Service, Request Virtual Machine, Subscribe to Cloud Resources, Update Cloud Resources Subscription, Update Tenant Registration, and Update Virtual Machine. Navigation controls for 'Prev' and 'Next' are visible. A 'Help articles on Private Cloud' link is also present. At the bottom, there is a section 'Can't find a request for your need?' with a link to 'Create a general request about this service offering'.

Data Protection Manager

Centralized protection for key VMs and applications

Workloads – DPM protects key workloads, at a granular application level, up to every 15 minutes

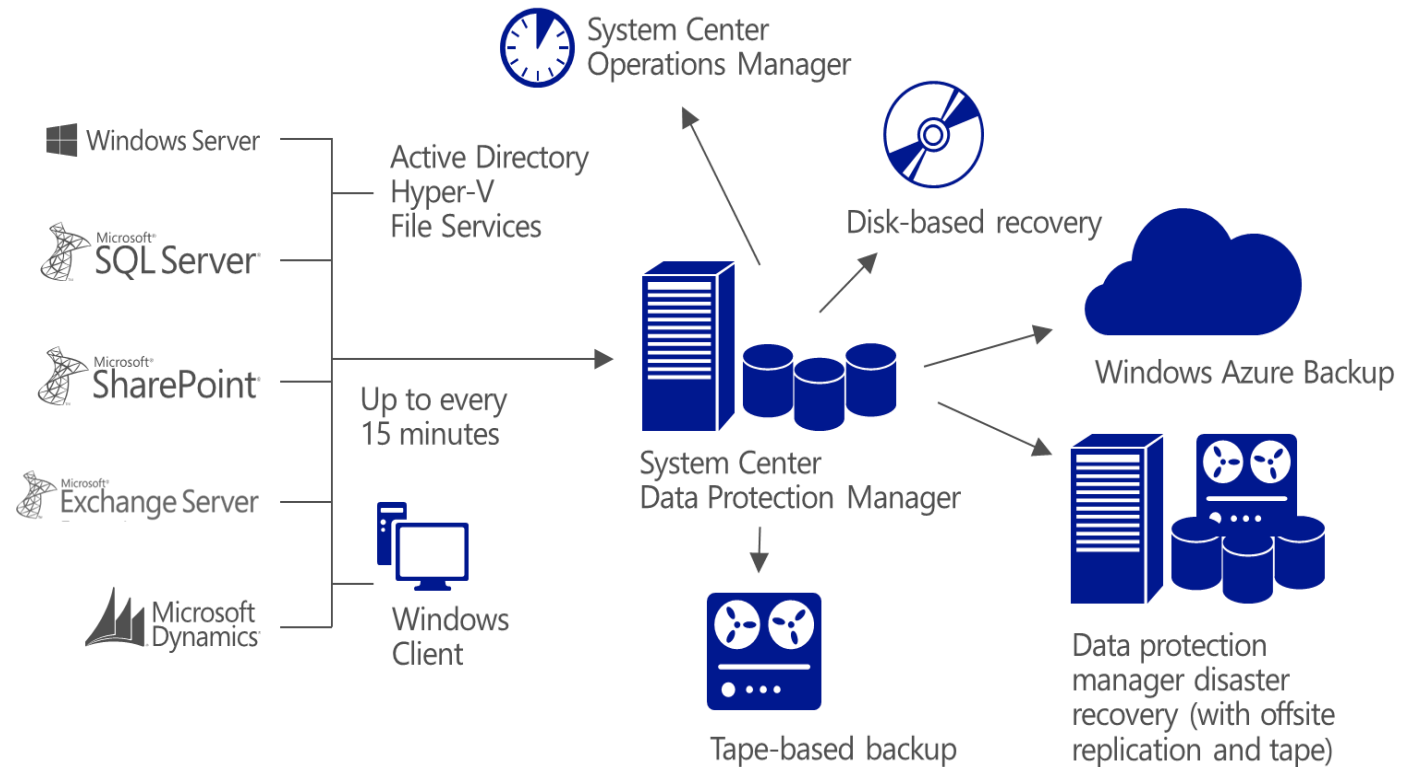
Disk/Tape/Azure – DPM supports protecting short-term to disk, long-term to tape, and Azure for cloud backup

Centralized – With integration with OpsMgr, the central console enables management of all DPM servers from a single location

Scalable – 800 VMs per DPM server, parallel backups, page-file exclusion, Live Migration support

Mixed mode clusters – Protect data in mixed mode clusters during upgrade without interruptions

Encrypted VMs – Backup Virtual TPM enabled VMs VHDs/VHDXs encrypted with BitLocker



DPM 2012 R2 with Update Rollup 11 (25 August 2016) – backup for VMWare 5.5 and 6.0!!!

<https://blogs.technet.microsoft.com/dpm/2016/08/26/four-simple-steps-to-backup-vmware-vms-using-sc-dpm/>

Why OMS?

It's simple

A single portal for all your management tasks. No infrastructure to maintain.

Time to value

Onboard fast. No content to create. Connects to your on-premises datacenter.

Easy to integrate

Add new servers, or connect to your existing management tools within minutes.

Hybrid and open

Manage workloads across Windows and Linux, hybrid and public clouds, Azure and AWS.

Extend System Center

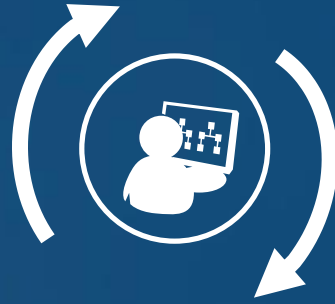
Complements your System Center investment to unleash new management scenarios.

OMS Solutions



Log analytics

Gain visibility across your hybrid enterprise cloud



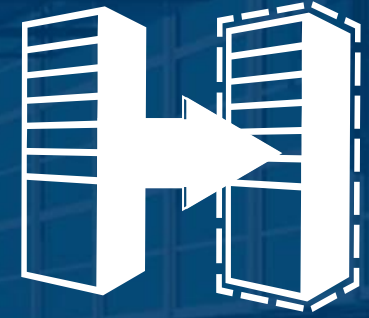
Automation

Orchestrate complex and repetitive operations



Availability

Increase data protection and application availability



Security

Help secure your workloads, servers, and users

Assessments

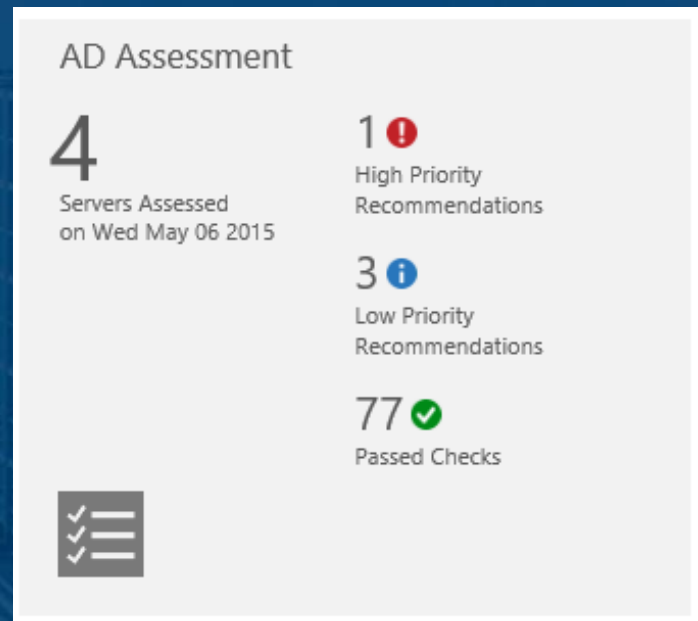
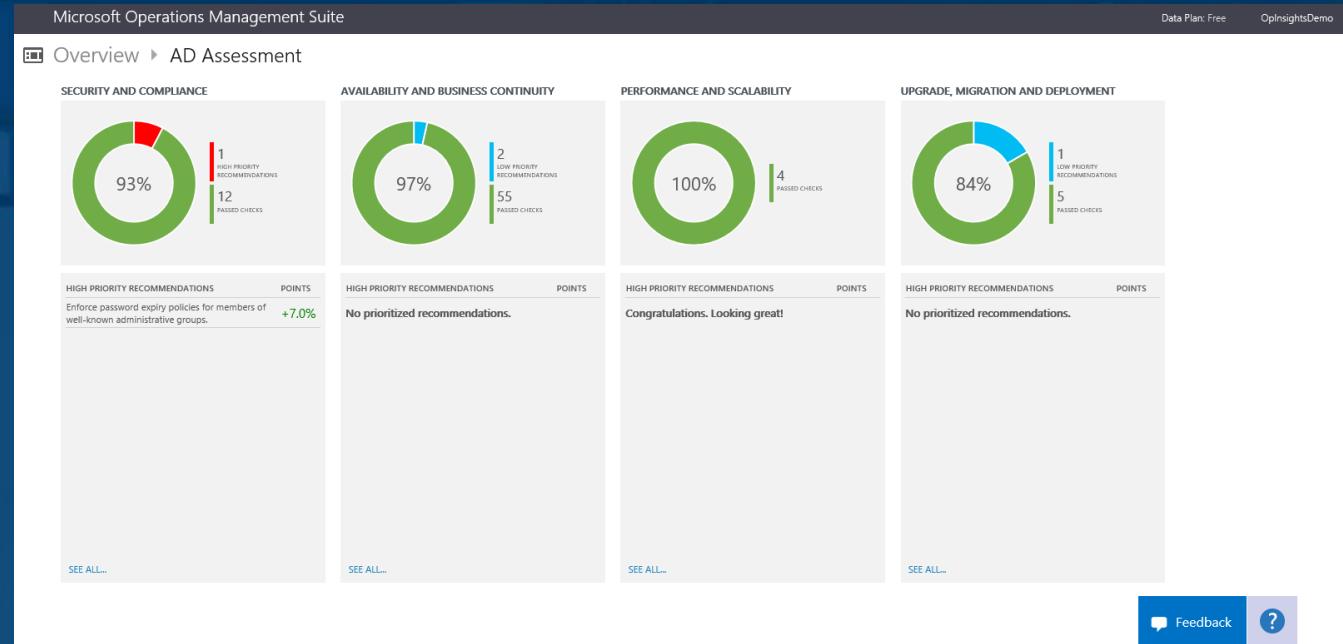
Security and best practices assessments: AD, SQL, malware, change tracking, audit

Solution Packs

Active Directory Assessment

Using best practices and data collection, identify potential issues

- Security and Compliance
- Availability and business continuity
- Performance and security
- Upgrade, migration and deployment

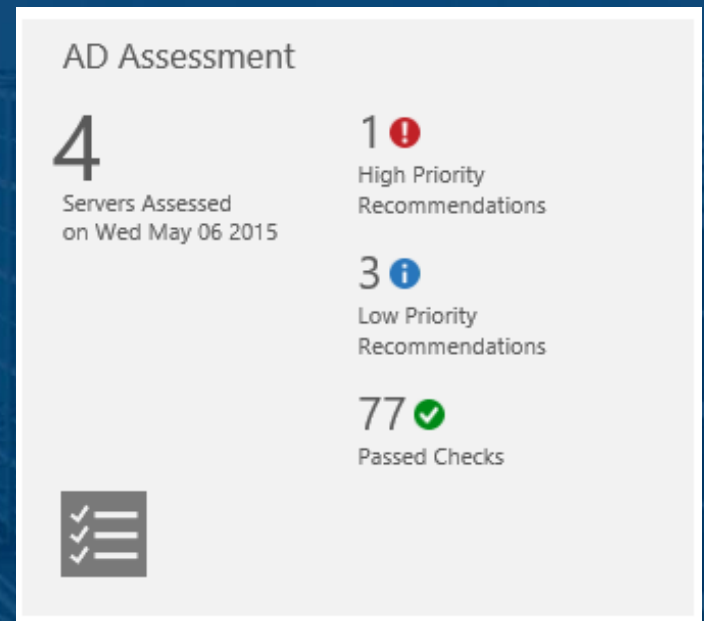
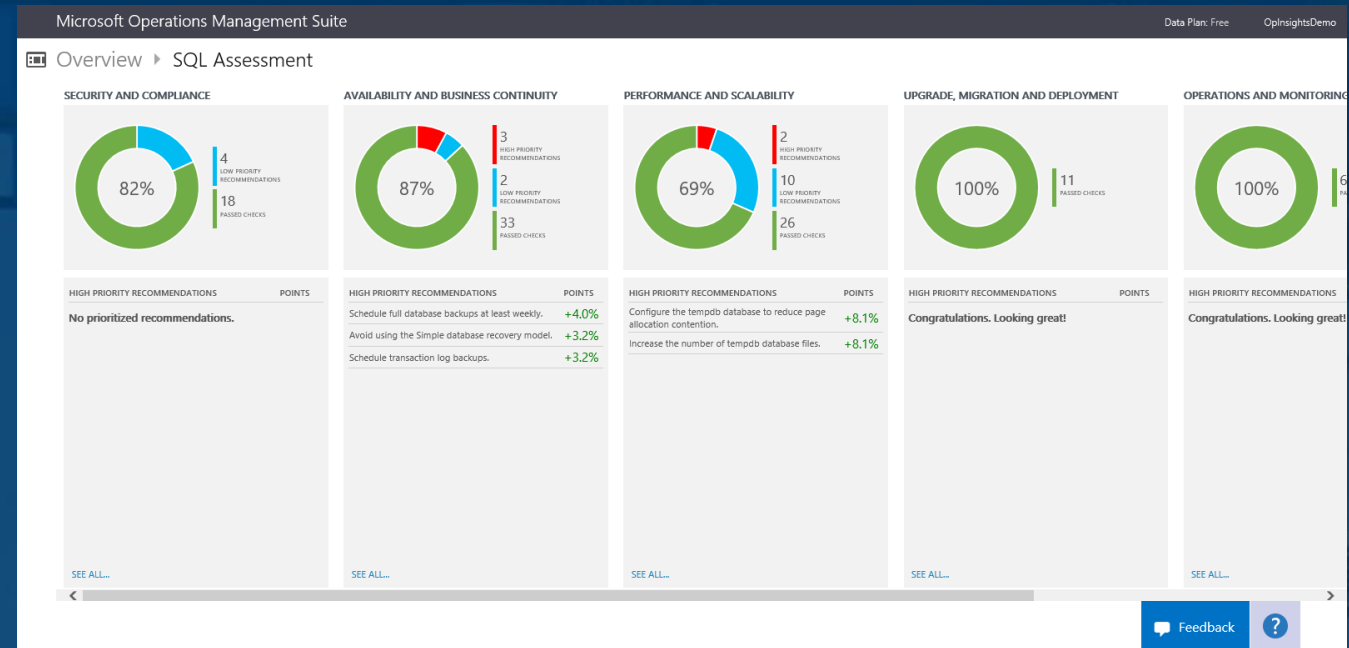


Solution Packs

SQL Server Assessment

Using best practices and data collection, identify potential issues

- Security and Compliance
- Availability and business continuity
- Performance and security
- Upgrade, migration and deployment
- Operations and monitoring
- Change and configuration

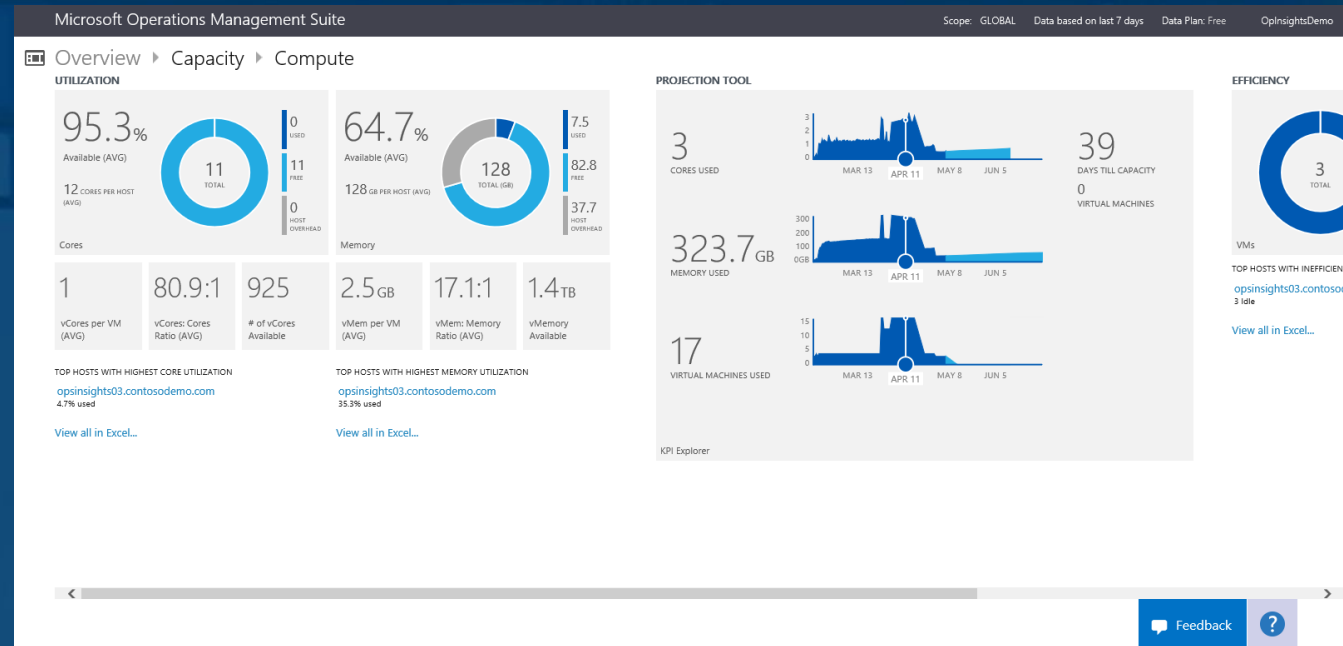


Solution Packs

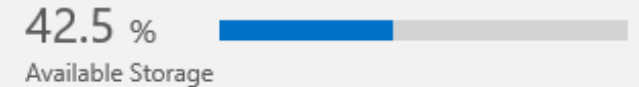
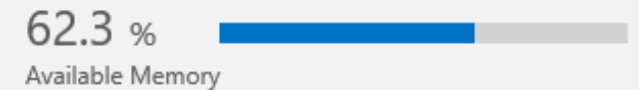
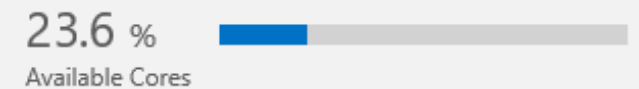
Capacity planning

Plan for future capacity and trends using historical data

- VM utilization and efficiency
- Compute projection
- Storage utilization



Capacity Planning



Protect and extend your datacenter



With Azure Site recovery and Azure Backup

- Automated virtual machine replication
- Protect your critical systems and applications
- Customize disaster recovery plans with easy-to-manage disaster recovery points
- Migrate from physical and virtual to Azure
- Access new scenarios including cloud bursting and dev/test

The screenshot displays the Microsoft Operations Management Suite (OMS) Backup dashboard. At the top, it shows 'Microsoft Operations Management Suite' and navigation options for 'Overview' and 'Backup'. The main section is titled 'Summary: ITPRodBackup' and features two large summary cards: '13 Registered servers' and '126.7GB Total data protected in Azure'. Below these are two columns of descriptive text. The left column discusses the importance of backing up data and mentions Azure Backup's capabilities. The right column emphasizes protecting critical assets across various environments. At the bottom, there are two smaller summary cards: 'Backup ITPRodBackup' showing '13 Servers backed up' and '126.7GB' of data, and 'Azure Site Recovery' showing '2 Registered servers' and '0 Failed jobs in the last 24 hours'.

Microsoft Operations Management Suite

Overview ▶ Backup

Summary: ITPRodBackup

13
Registered servers

126.7GB
Total data protected in Azure

Data is the heart of any organization and backing up this data is a key part of a business strategy. Cloud based backup solutions provide a reliable, inexpensive and scalable solution with zero capital investment and minimal operational expense.

Your data and applications are everywhere - on Servers, Clients and in the Cloud. Azure Backup can

Protect your critical assets wherever they are Your data and applications are everywhere - on Servers, Clients and in the Cloud.

Azure Backup can protect your critical applications including SharePoint, Exchange & SQL; Files and Folders, Windows Servers, Windows Clients and Azure IaaS VMs.

Backup
ITPRodBackup
13
Servers backed up
126.7GB
Backup data

Applications include... and Folders, Win... Azure IaaS VMs.

Azure Site Recovery
2
Registered servers
0
Failed jobs in the last 24 hours

Azure Backup Server

Centralized protection for key VMs and applications

Workloads – Azure Backup Server protects key workloads, at a granular application level, up to every 15 minutes.

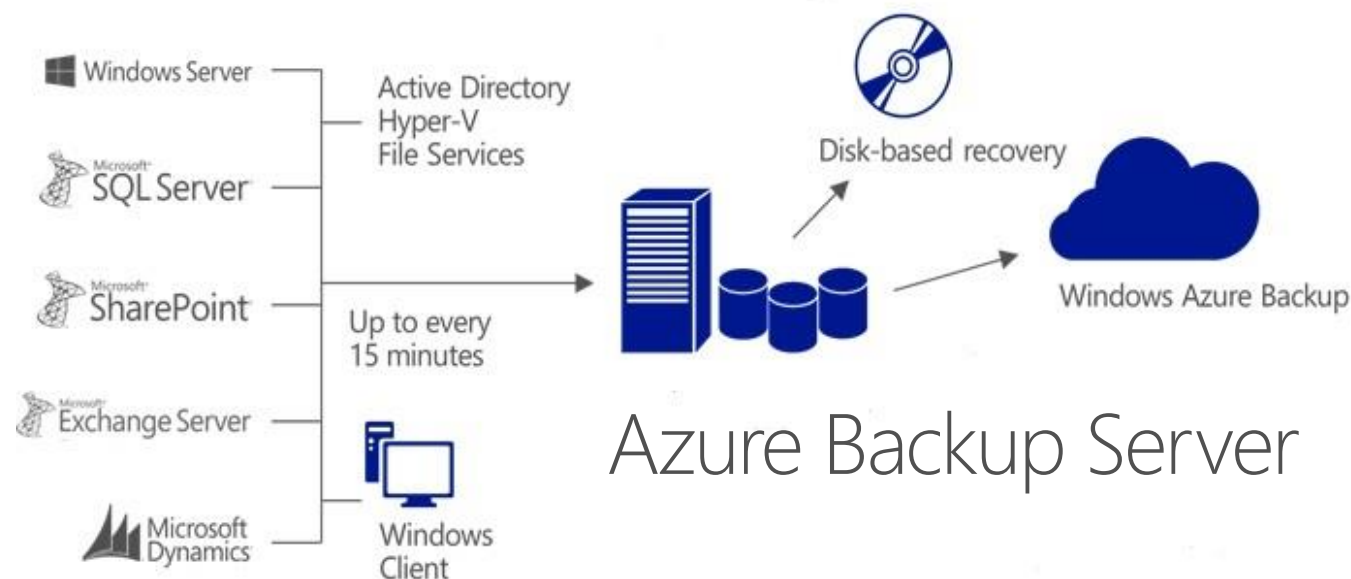
Disk/Cloud – Azure Backup Server supports protecting short-term to disk, and long-term to cloud.

Centralized –integration with Operations Management Suite, the central console enables management of servers from a single location.

Azure Integration – Azure Backup Server supports archiving data up to Windows Azure

Low-Cost DR

Scalable – multiple VMs per Azure Backup server, parallel backups, page-file exclusion, Live Migration support



Azure Backup Server



TestASR

testasr



DASHBOARD

PROTECTED ITEMS

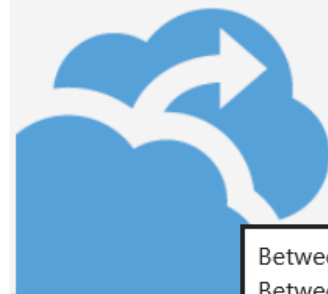
RECOVERY PLANS

SERVERS

RESOURCES

JOBS

EVENTS



A new Azure Site Recovery vault was created!

Follow these steps to get started.

 Skip Quick Start the next time I visit

SETUP RECOVERY

- Between an on-premises VMM site and Azure
- Between two on-premises VMM sites
- Between an on-premises Hyper-V site and Azure
- Between an on-premises site with VMware/physical servers and Azure** NEW
- (Legacy) Between an on-premises site with VMware/physical servers and Azure
- Between two on-premises VMware sites
- Between two on-premises VMM sites with SAN array replication

PROTECT

1 Prepare On-Premises Components ?

Download and copy the registration key file on the server where you plan to deploy the on-premises Configuration Server and Process Server. The installer will setup the necessary components and will register them with the vault.

[Download and install On-Premises Components](#) [Download a registration key](#)

[Learn how to deploy Configuration Server and Process Server](#)

2 Add VMware vCenter Servers ?

[Add VMware vCenter Servers](#)

3 Protect Machines ?

System Center + OMS

Better Together



Monitoring



Provisioning



Protection

- ✓ Centralized log repository
- ✓ Efficient server discovery and agent deployment
- ✓ Web based alert management
- ✓ VM capacity planning and management
- ✓ Integrated disaster recovery for VM workloads
- ✓ Cloud backup and long-term retention

... & many more to come!

