Modern Datacenter with Microsoft Virtualization and Management

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Microsoft’s vision: Cloud OS

- Enterprise-grade platform
- Hybrid design
- People-focused approach

Key areas:
- Development
- Management
- Identity
- Virtualization
- Data
“It has been said that the only sustainable advantage in business is the ability for an organization to learn faster and respond more effectively (also known as business agility).”

– CIO magazine
Datacenter without boundaries

Microsoft System Center
Windows Server

Storage
Network
Compute

Microsoft Azure
Service Provider
PRESS RELEASE

Cisco Doubles Down on Data Center with Microsoft

Investment in Joint Sales, Engineering and Marketing Resources to Accelerate Integrated Solutions for Enterprise and Service Provider Data Centers

WASHINGTON DC – July 15, 2014: Today at the Microsoft Worldwide Partner Conference, Cisco announced a multi-year sales and go-to-market agreement with Microsoft designed to modernize data centers through the delivery and acceleration of integrated solutions.

Building on a rich history of solution development, Cisco and Microsoft will both invest in sales, marketing and engineering resources to drive global alignment, while delivering deeper technology integration across cloud and data center markets. The companies will focus on integrating market leading technologies, including Cisco Unified Computing System™ (UCS), Cisco Nexus® switching and Microsoft Cloud OS solutions including Windows Server, System Center, SQL Server and Microsoft Azure.

Watch Microsoft Executive Brad Anderson on Cisco UCS Market Momentum

Read Blog by Jim McHugh: Cisco and Microsoft: Radically Improving IT Effectiveness Together

Read Blog by Denny Trevett: Cisco and Microsoft: Accelerating Cloud Performance The Network
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 Virtualization & Management Solutions

**PRESENTATION VIRTUALIZATION**
- Windows Server
- Remote Desktop Services

**SERVER VIRTUALIZATION**
- Hyper-V Server 2012 R2
- Windows Server
- Hyper-V

**MANAGEMENT**
- Microsoft System Center

**DESKTOP VIRTUALIZATION**
- Windows Server
- Remote Desktop Services

**APPLICATION VIRTUALIZATION**
- Microsoft
  - Enterprise Desktop Virtualization
  - Application Virtualization
Windows Server 2012 R2 Investments

Windows Server 2012 R2 capabilities

- Server virtualization
- Storage
- Networking
- Server management & automation
- Web & application platform
- Access & information protection
- Virtual desktop infrastructure
Microsoft is a leader in the Gartner 2014 x86 Virtualization Magic Quadrant

Source: Gartner, Inc.
Magic Quadrant for x86 Server Virtualization Infrastructure
July 2014

This graphic was published by Gartner, Inc. as part of a larger research document and should be evaluated in the context of the entire document. The Gartner document is available upon request from Microsoft.

Gartner does not endorse any vendor, product or service depicted in its research publications, and does not advise technology users to select only those vendors with the highest ratings. Gartner research publications consist of the opinions of Gartner’s research organization and should not be construed as statements of fact. Gartner disclaims all warranties, expressed or implied, with respect to this research, including any warranties of merchantability or fitness for a particular purpose.
Microsoft Azure Cloud Leader on IAAS and PAAS in Gartner
Microsoft Azure Leader in Cloud Storage
We are winning virtualization share

x86 Server virtualization share for the past 5+ years

<table>
<thead>
<tr>
<th></th>
<th>Q1 CY2008</th>
<th>Q3 CY2009</th>
<th>Q3 CY2012</th>
<th>Q3 CY2013</th>
<th>Change Since Hyper-V released</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microsoft</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hyper-V Server</td>
<td>0.0%</td>
<td>11.8%</td>
<td>26.0%</td>
<td>31.4%</td>
<td>+31.4 Pts</td>
</tr>
<tr>
<td><strong>vmware</strong></td>
<td>40.1%</td>
<td>46.8%</td>
<td>51.5%</td>
<td>51.0%</td>
<td>+10.9 Pts</td>
</tr>
<tr>
<td>ESX</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: IDC WW Quarterly Server Virtualization Tracker, December 2013. Hyper-V and ESX + vSphere shares based on percent market share among all x86 new hypervisor deployments (nonpaid and paid). x86 hypervisor shipments include those sold on new servers, new nonpaid hypervisor deployments aboard new servers, and new hypervisor sales and nonpaid hypervisor deployments on installed base servers. Share gains for Hyper-V and ESX + vSphere come in part from market share transfers from older products from same vendors.
Confidently virtualize mission-critical workloads with Hyper-V

Oracle on Hyper-V
Run certified Oracle software—with full support—on Windows Server Hyper-V and in Windows Azure, just like you have on Windows Server for years.

SAP on Hyper-V
A new world record for virtualized performance!
Three-tier SAP Sales and Distribution ERP application completely virtualized on Hyper-V as certified by SAP.
Confidently virtualize mission-critical Microsoft workloads with Hyper-V

High levels of performance for key Microsoft workloads

**SQL Server 2012**
64 vCPU support drove 6x performance increase over previous version of Hyper-V
6.3% overhead compared with physical

**Exchange 2013**
Virtualized 48,000 simulated users on a single Hyper-V host across 12 VMs, with low response times

**SharePoint 2013**
Scaled to more than 2 million heavy users at 1% concurrency, across 5 VMs on a single Hyper-V host

---

SharePoint workload scalability on Windows Server 2012 Hyper-V

- **Heavy Users (1% Concurrency)**
- **Average Response Time (Sec)**

8 vCPU, 12GB RAM per WFE VM
## Server virtualization

### IT demands
- Support for demanding, critical business workloads
- Increased flexibility to move resources and workloads
- Leverage existing cross-platform investments

### Windows Server 2012 R2 delivers

#### Enterprise-class scale and performance.
- Best-in-class performance for Microsoft workloads.
- Industry-leading 64 TB VHDX virtual disk with dynamic resize.
- High-performance live migrations with compression or RDMA offload.

#### Virtual machine mobility.
- Industry-first shared-nothing live migration.
- Flexible guest clustering options including shared VHDX files.
- Multi-node Hyper-V Replica with configurable replication frequency.

#### First-class citizen guest support for Linux.
- Full Dynamic Memory support for Linux.
- Linux integration services included in key standard distributions.
Hyper-V scalability

<table>
<thead>
<tr>
<th>System</th>
<th>Resource</th>
<th>Windows Server 2012 Hyper-V</th>
<th>vSphere Hypervisor</th>
<th>vSphere 5.5 Enterprise Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Host</td>
<td>Logical Processors</td>
<td>320</td>
<td>160</td>
<td>160</td>
</tr>
<tr>
<td>Host</td>
<td>Physical Memory</td>
<td>4TB</td>
<td>2TB</td>
<td>4TB</td>
</tr>
<tr>
<td>Host</td>
<td>Virtual CPUs per Host</td>
<td>2,048</td>
<td>2,048</td>
<td>4,096</td>
</tr>
<tr>
<td>VM</td>
<td>Virtual CPUs per VM</td>
<td>64</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td>VM</td>
<td>Memory per VM</td>
<td>1TB</td>
<td>32GB</td>
<td>1TB</td>
</tr>
<tr>
<td>VM</td>
<td>Active VMs per Host</td>
<td>1,024</td>
<td>512</td>
<td>512</td>
</tr>
<tr>
<td>VM</td>
<td>Guest NUMA</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Cluster</td>
<td>Maximum Nodes</td>
<td>64</td>
<td>N/A</td>
<td>32</td>
</tr>
<tr>
<td>Cluster</td>
<td>Maximum VMs</td>
<td>8,000</td>
<td>N/A</td>
<td>4,000</td>
</tr>
</tbody>
</table>

Hyper-V allows the creation of VMs with up to 64 vCPUs & 1TB RAM, in all editions.
# Hyper-V 2012 R2 Key Advantages

<table>
<thead>
<tr>
<th>Capability</th>
<th>Resource</th>
<th>Windows Server 2008 R2 Hyper-V</th>
<th>Windows Server 2012 R2 Hyper-V</th>
<th>VMware vSphere 5.5 Ent Plus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Scalability, Performance, Density</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalability, Performance, Density</td>
<td>Active Virtual Machines Per Host</td>
<td>384</td>
<td>1,024</td>
<td>512</td>
</tr>
<tr>
<td></td>
<td>Memory Per Virtual Machine</td>
<td>64 GB</td>
<td>1 TB</td>
<td>1 TB</td>
</tr>
<tr>
<td></td>
<td>Virtual Processors Per Virtual Machine</td>
<td>4</td>
<td>64</td>
<td>64</td>
</tr>
<tr>
<td></td>
<td>Maximum Nodes Per Hyper-V Cluster</td>
<td>16</td>
<td>64</td>
<td>32</td>
</tr>
<tr>
<td></td>
<td>Maximum Virtual Machines per Hyper-V Cluster</td>
<td>1,000</td>
<td>8,000</td>
<td>4,000</td>
</tr>
<tr>
<td></td>
<td>SR-IOV with Live Migration Support</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Storage</strong></td>
<td>Native 4KB Disk Support</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Maximum Virtual Disk Size</td>
<td>2 TB</td>
<td>64 TB</td>
<td>62 TB</td>
</tr>
<tr>
<td></td>
<td>Encrypted Cluster Storage</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Secure Multitenancy</strong></td>
<td>Open Extensible Switch</td>
<td>No</td>
<td>Yes</td>
<td>Closed</td>
</tr>
<tr>
<td></td>
<td>Resource Metering</td>
<td>No</td>
<td>Yes</td>
<td>Chargeback Req.</td>
</tr>
<tr>
<td><strong>Flexible Infrastructure</strong></td>
<td>1GB Simultaneous Live Migrations</td>
<td>1</td>
<td>Unlimited</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>10GB Simultaneous Live Migrations</td>
<td>1</td>
<td>Unlimited</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>Live Storage Migration</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Shared Nothing Live Migration</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Network Virtualization</td>
<td>No</td>
<td>Yes</td>
<td>VXLAN Req.</td>
</tr>
<tr>
<td><strong>High Availability</strong></td>
<td>Virtual Machine Replication</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Guest OS Application Monitoring</td>
<td>No</td>
<td>Yes</td>
<td>API Only</td>
</tr>
<tr>
<td></td>
<td>Guest Clustering with Live Mig &amp; Dyn Memory</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
</tbody>
</table>
Solutii in Windows Server 2012 R2

- Virtualizare Hyper-V
- Storage: Storage Services: block level deduplication, storage tiering
- Web – IIS
- File Server – modernizare Windows 2003 FS
- Active directory – modernizare Windows 2003 AD
- Solutie de protectia si criptarea datelor Rights Management Services (RMS)
- Solutie de clasificare de informatii Dynamic Access Control
- Solutie de VDI: RDS (Connection Broker)
- Solutie de terminal server si virtualizare de aplicatii pentru terminal server (RDS): RDS (Session Host) si APP-V for RDS (virtualizare aplicatii pe desktop APP-V – disponibila in pachetul MDOP)
- Servicii de networking DNS, DHCP, Remote Access (BGP support)
- Alte servicii: Print, PKI
When Windows Server 2003 was being designed...

Music and Entertainment
- Michael Jackson had the No. 1 selling album "Invincible"
- Limp Bizkit, N'Sync & Backstreet Boys were battling bands
- Napster gets big and gets shut down
- Apple introduced iTunes

News and Business
- Wikipedia was launched
- The human genome sequence was revealed
- Enron was a vibrant company
- The US Congressional Budget Office forecasted a $5.6 trillion budget surplus over next 10 years

Technology
- Average server storage was 20x less than modern server
- Intel released Pentium 4 for Desktop and Pentium III Xeon for Server
- Microsoft launched Windows XP
- MySpace was an idea on a whiteboard
- Digital cameras were novelties

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Security Improvements in Windows 8 / 2012 Server

This data is normalized. The infection rate for Windows XP is significantly higher than the infection rates for both newer versions of Windows. The encounter rate differences between operating systems are significantly smaller.
An overview of Windows Server releases

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Enterprise scalability and performance</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hyper-V network virtualization</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Virtual Desktop Infrastructure</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Web and application server</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>ASP.NET support and management</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Multitenant, high-density websites</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Low-cost, highly available SMB 3.0 file storage</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Windows PowerShell 3.0</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Branch office support</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Improved branch office availability and scalability with BranchCache</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Hybrid applications</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Dynamic Access Control</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>FAX server</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>File and print servers</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Windows Deployment Service and Windows Server Update Services</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
</tbody>
</table>

- ● Feature is not supported
- ○ Feature is only partially supported
- ● Feature is supported

July 2015 End of Support
MAP
The right tool for infrastructure assessment
MAP
Servers
Virtualization

Server Virtualization

Overview
Cloud
Desktop
Server
Desktop

Server Virtualization
Scenarios

Server Consolidation
18 Hosts Required
394 Machines Chosen
390 Machines Virtualized
4 Machines Not Placed

Private Cloud Fast Track
394 Machines Selected
1 Private Clouds
391 Machines Placed
3 Machines Not Placed

Virtual Machine Discovery
44 Hosts
37 Hyper-V
4 VMware
3 Other
766 Guests

VMware Migration
46 VMware Guests Found
39 Consider for Migration
7 Can't be Migrated
0 Not Assessed

Hardware Library
9 Configurations
5 Fast Track
1 Infrastructure with Hosts
3 Host

4 VMware Hosts
Environment

Scenarios

- **Inventory Results**
  - 82% Inventory Success
  - 614 Machines Discovered
  - 501 Successfully inventoried
  - 113 Failed/Not inventoried

- **Windows Environment**
  - 283 Windows Servers
    - 59 Server 2012/R2
    - 159 Server 2008/R2
    - 65 Other Servers
  - 202 Windows Clients

- **Linux Environment**
  - 14 Linux Servers
    - 21% Physical
    - 79% Virtual

Performance Metrics

- **Collection Success**
  - 88% Collection Success

- **Machines**
  - 450 Machines
  - 0:16:50 Duration (Days:Hrs:Min)
  - 79,168 Successes
  - 11,278 Failures

Environment
MAP

Desktops

Overview

Windows 8.1 Readiness
88% Ready
228 Ready for Windows 8.1
31 Insufficient Data

Windows 7 Readiness
85% Ready
220 Ready for Windows 7
39 Insufficient Data

Office 2010 Readiness
157 Office 2010 Ready
43 Office 2010 Installed
1 Not Office 2010 Ready
58 Insufficient Data

Office 2013 Readiness
13% Ready
34 Ready
0 Not Ready

Internet Explorer Discovery
200 Total IE Browsers
4 Internet Explorer 11
36 Internet Explorer 10
51 Internet Explorer 9
49 Internet Explorer 8
40 Internet Explorer 7
20 Other Internet Explorer

Total Clients
259
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
CCTL: Leidos (formerly SAIC) Common Criteria Testing Laboratory

Assurance Level: PP Compliant
Protection Profile Identifier:
General-Purpose Operating System Protection Profile
Microsoft and Interoperability

“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

**Microsoft commitment** to support Linux – Red Hat, CentOS, SUSE, OpenSuse, Debian, Ubuntu, Oracle Linux and FreeBSD 10 on Hyper-V;

**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 2012** manages VMware ESX servers and Citrix XEN Servers
LIS Distribution & Support

- Microsoft developers
- LIS for Hyper-V
- Support issues flow in reverse direction
- Linux distro w/LIS
- Distro vendors
  - Canonical
  - SUSE
  - Red Hat
- Linux community
- MS download center
- Customer servers w/Hyper-V
- Linux kernel main
## Supported Operating Systems

<table>
<thead>
<tr>
<th>Product</th>
<th>Linux</th>
<th>UNIX</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Red Hat</td>
<td>SUSE</td>
</tr>
<tr>
<td>Operations Manager</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Configuration Manager</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Endpoint Protection</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Virtual Machine Manager</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Hyper-V</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Azure IaaS</td>
<td><strong>Future</strong></td>
<td>✓</td>
</tr>
</tbody>
</table>

**Future** indicates that the product is scheduled for release in the future. **No Plans** indicates that the product does not currently support the listed operating system.
# Linux Integration Services

## Key Linux vendors include LIS in their distros

<table>
<thead>
<tr>
<th>Distro</th>
<th>Version</th>
<th>LIS Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Hat Enterprise Linux &amp; CentOS</td>
<td>5.5 - 5.8, 5.9, 5.10</td>
<td>Download LIS from Microsoft</td>
</tr>
<tr>
<td></td>
<td>6.0 - 6.3, 6.4, 6.5, 6.6</td>
<td>LIS built-in and certified by Red Hat</td>
</tr>
<tr>
<td></td>
<td>7.0 (NEW)</td>
<td>LIS built-in and certified by Red Hat.</td>
</tr>
<tr>
<td>SUSE Linux Enterprise Server</td>
<td>11 SP2, 11 SP3, 12, Open SUSE 12.3</td>
<td>LIS built-in</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(NEW)</td>
</tr>
<tr>
<td>Ubuntu Server</td>
<td>12.04, 12.10, 13.04, 13.10, 14.04</td>
<td>LIS built-in</td>
</tr>
<tr>
<td>Debian</td>
<td>7.0 - 7.4</td>
<td>LIS built-in</td>
</tr>
<tr>
<td>Oracle Linux (Red Hat kernel)</td>
<td>6.4, 6.5, UEK R3 QU1, QU2, QU3</td>
<td>LIS built-in and certified by Oracle</td>
</tr>
</tbody>
</table>

## Support strategy

- Linux questions: Contact the Linux vendor
- Issues running Linux on Hyper-V: Contact the Linux vendor or Microsoft
Open Management Infrastructure

- New WMI provider API (MI) with extended Windows PowerShell semantics.
- Open Management Infrastructure (OMI) for Linux and UNIX with the same MI provider API.
- Full implementation of WS-Man on Windows and Linux/UNIX.
- New MI client with integrated Windows PowerShell layer.
Why Microsoft VDI?

Enable users to **access** corporate apps and data from any device/any location

Deliver **great user experience**

Balance user requirements with corporate compliance

Save resources with the flexible **storage options** right to your environment

Reduce time to deploy applications and updates

Centrally administer and manage desktops

Protect against loss and leaks of sensitive corporate data
VDI with Windows Server 2012

Powered by Windows Server 2012

1 platform • 1 experience • 3 deployment choices

Desktop sessions

Pooled VMs

Personal VMs

Corporate Office

Home

Public Location

Firewall

1 platform • 1 experience • 3 deployment choices
Choosing the Right VDI Architecture

- **Sessions**
  - Personalization: ★★★
  - App compatibility: ★★★
  - Ease of management: ★★★★★
  - Cost effectiveness: ★★★★★

- **Pooled VMs**
  - Personalization: ★★
  - App compatibility: ★★★★★
  - Ease of management: ★★★
  - Cost effectiveness: ★★★

- **Personal VMs**
  - Personalization: ★★★★★
  - App compatibility: ★★★★★
  - Ease of management: ★★
  - Cost effectiveness: ★★★
Rich user experience with RemoteFX

RemoteFX for WAN
Dynamically detect network conditions and tune experience

GPU support
Support both physical and software GPUs

USB redirection
Enable access to locally attached devices in remote desktops

Seamless experience
Support multitouch, new Windows Experience, and Start menu/screen integration
<table>
<thead>
<tr>
<th>System Center capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Infrastructure provisioning</strong></td>
</tr>
<tr>
<td>Enterprise-class multi-tenant infrastructure for hybrid environments</td>
</tr>
<tr>
<td><strong>Infrastructure monitoring</strong></td>
</tr>
<tr>
<td>Comprehensive monitoring of physical, virtual, and cloud infrastructure</td>
</tr>
<tr>
<td><strong>Automation and self-service</strong></td>
</tr>
<tr>
<td>Application-owner agility while IT retains control</td>
</tr>
<tr>
<td><strong>Application performance monitoring</strong></td>
</tr>
<tr>
<td>Deep insight into application health</td>
</tr>
<tr>
<td><strong>IT service management</strong></td>
</tr>
<tr>
<td>Flexible service delivery</td>
</tr>
</tbody>
</table>
System Center
Unified management for the Cloud OS

App Controller

Self-service

Service Manager

Orchestrator

Automation

IT service management

Service Manager

Infrastructure provisioning

Virtual Machine Manager
Operations Manager
Configuration Manager
Data Protection Manager

Application performance monitoring
Infrastructure monitoring

Customers
Microsoft
Customer
Service Provider
Service admin
## IT demands

| Effectively manage virtual environments at-scale | Reduce infrastructure complexity | Deliver efficient infrastructure services across customer base | Utilize a single tool for on-premises and cloud provisioning |

## System Center 2012 R2 delivers

<table>
<thead>
<tr>
<th>Enterprise-class virtualization management with robust Linux support</th>
<th>Simplified provisioning &amp; migration</th>
<th>Multi-tenant cloud infrastructure</th>
<th>Extend familiar management to Windows Azure</th>
</tr>
</thead>
</table>
| Support for Windows Server scale & performance:  
  - Dynamic VHDX resize  
  - Dynamic Memory support for Linux  
  - Snapshot running VM  
  - Gen 2 VMs  
  - Fiber-channel SAN connectivity | Windows Server file storage & Storage Spaces management  
  - Automated Hyper-V cluster upgrades with VMM  
  - Service templates & runbooks for System Center components  
  - Protection & recovery across datacenters | Multi-hypervisor clouds  
  - Virtual networks management  
  - Automated standards-based switch configuration  
  - Multi-tenant edge gateway provisioning  
  - Service management automation | Workloads migrated to Microsoft Azure Virtual Machines  
  - Microsoft Azure Integration Pack |

System Center 2012 R2 delivers Enterprise-class multi-tenant infrastructure for hybrid environments. It effectively manages virtual environments at scale, reduces infrastructure complexity, delivers efficient infrastructure services across the customer base, and utilizes a single tool for on-premises and cloud provisioning.

System Center 2012 R2 delivers simplified provisioning & migration with robust Linux support. It provides support for Windows Server scale & performance, including Dynamic VHDX resize, Dynamic Memory support for Linux, Snapshot running VM, Gen 2 VMs, and Fiber-channel SAN connectivity.

System Center 2012 R2 delivers multi-tenant cloud infrastructure, offering multi-hypervisor clouds, virtual networks management, automated standards-based switch configuration, multi-tenant edge gateway provisioning, and service management automation.

Extend familiar management to Windows Azure, including workloads migrated to Microsoft Azure Virtual Machines and Microsoft Azure Integration Pack.
System Center Virtual Machine Manager 2012 R2

Fabric Management
- Hyper-V Bare Metal Provisioning
- Hyper-V, VMware, Citrix XenServer
- Network Management
- Storage Management

Cloud Management
- Update Management
- Dynamic Optimization
- Power Management
- Monitoring Integration
- Application Owner Usage
- Capacity and Capability
- Delegation and Quota

Service Management
- Service Templates
- Application Deployment
- Custom Command Execution
- Image Based Servicing
Accelerated VM Deployment
with System Center 2012 R2 Virtual Machine Manager

VM Templates with Virtual Machine Manager
Allow a standardized, repeatable mechanism to rapidly deploy virtualized operating systems.

Hardware – VMM uses hardware profiles, along with a sysprepped VHD/X file to streamline deployment. VMM will create the sysprepped VHD/X for you.

OS Configuration – Go beyond regular template configuration with granularity around domain join, admin password, product key, but even the Windows Server Roles & Features.

Application Configuration – Add application-level configurations, such as MS Deploy Web Packages, Server App-V, SQL DAC or specific pre or post installation scripts to tailor deployment.
Service Templates

Service template (multi-tier .NET applications)

- **Web tier**
  - Scale out and health policy
  - Internet Information Services (IIS)
    - HW profile
    - OS profile
    - App profile

- **Application tier**
  - Scale out and health policy
  - Application server
    - HW profile
    - OS profile
    - App profile

- **Data tier**
  - Scale out and health policy
  - SQL Server
    - HW profile
    - OS profile
    - App profile
Service Templates with System Center 2012 R2 Virtual Machine Manager

Deployment of Single or Multi-Tier Workloads

Utilizes existing templates as building blocks to form interconnected, multi-tier, multi-VM services.

Services can also be designed to model single-VM configurations.

Tiers can be configured for scale and designed for high availability through availability sets.

Intelligent placement ensures optimal placement of all VMs within each tier of the Service Template at deployment time.

Service Templates enable IT to rapidly roll out multi-VM standardized services that include Windows Servers with roles/features enabled & configured.
Azure Pack - For service providers and enterprises

Azure Pack

Familiar technology
On-prem connect
Azure consistent
Virtualization
Management
Service bus

Multi-tenant cloud
Web PaaS, and IaaS
Templated services
Standard hardware
Automation

VM portability
Web App Portability
OData Integration API
Node.js, PHP, ASP.NET
GitHub, BitBucket etc
Linux support

Microsoft Azure technology in your datacenter

Enterprise class
Easy and cost effective
Open and interoperable

Windows Server + System Center
In your datacenter

Your datacenter

Windows Azure Pack

Admin Portal

Tenant Portal

System Center + Windows Server

Compute, Storage, Network

Customers

IT Admin
Customer-ready services

Management Portal

Self-service user experience / OData REST API

- Web sites
  - Web Platform application Services (PaaS)
- Virtual machines
  - Infrastructure Services (IaaS)
- Service bus
  - Reliable messaging
- Virtual Networks
  - Virtual Networking
- Database
  - SQL Server and MySQL database
**Infrastructure monitoring**

**IT demands**

| Monitor diverse environments | Assure physical, virtual, and cloud infrastructure health | Ensure reliable workload configurations |

**System Center 2012 R2 delivers**

<table>
<thead>
<tr>
<th>Best-of-breed Windows monitoring, robust cross-platform support</th>
<th>Network monitoring and cloud infrastructure health</th>
<th>Best-practice workload configuration</th>
</tr>
</thead>
</table>
| Cross platform monitoring:  
  - Windows Server  
  - RHEL/SUSE Linux  
  - Oracle Solaris  
  - HP-UX & IBM AIX  
  - Cross-platform configuration:  
    - Windows Server  
    - Linux/UNIX | VMM-Operations Manager connector  
  - VMware vSphere health with VEEAM Management Pack  
  - Network topology discovery  
  - System Center Management Pack for Microsoft Azure  
  - AWS Management Pack | Best practice configuration for Windows Server 2012 with System Center Advisor connector |
Windows Server Monitoring
With System Center Operations Manager 2012 R2

**Windows Server Management Pack**

Enables IT to **detect, alert on, and automatically respond** to critical events and performance indicators.

Supports **Windows Server 2003 through to Windows Server 2012 R2**

Automatically adds new views for **Health Monitoring, Operating System Events & Performance**

Within views, there are a number of **state views, performance dashboards, and topologies**, providing granular depth & insight across the **OS, storage, memory** and **CPU**.

![Graphs showing memory utilization](image)
Active Directory Monitoring
With System Center 2012 R2 Operations Manager

Active Directory Management Pack

Provides proactive and reactive monitoring of your Active Directory deployment.

Monitors events that are placed in the Application, System, and Service event logs by various Active Directory components and subsystems.

Monitors the overall health of the Active Directory system, alerts you to critical performance issues and enables context-sensitive actions.

Monitors Domain Controllers and health of clients using AD resources along with health of vital processes that your Active Directory deployment depends upon, including Replication, Trusts, LDAP, SYSVOL, Directory Services and more.

Provides a number of inbox reports & rich views to showcase a variety of AD-related current & historical information.
Network Monitoring in OpsMgr 2012 R2

- Out of the box discovery, monitoring, and reporting
- Server to network dependency discovery
- Multi-vendor support
- Multi protocol support
  - SNMPv1/v2c/v3
  - IPv4 and IPv6
- Deliver robust platform for partners to build on
Network Monitoring

• Port/Interface
  – Up/Down (operational & admin status)
  – Volumes of inbound/outbound traffic
  – % Utilization
  – Drop & Broadcast rates

• Processor
  – % Utilization

• Memory
  – In depth memory counters (Cisco Only)
  – Free memory
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

### Nodes with Slowest Response (Previous 24 hours)

<table>
<thead>
<tr>
<th>Node State</th>
<th>Node Name</th>
<th>Average Response Time (ms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>cmc.odyssey.com</td>
<td>7.5</td>
</tr>
<tr>
<td>✔️</td>
<td>switch4.odyssey.com</td>
<td>2.6</td>
</tr>
<tr>
<td>✔️</td>
<td>Library1.odyssey.com</td>
<td>1.9</td>
</tr>
<tr>
<td>✔️</td>
<td>172.16.231.51</td>
<td>1.6</td>
</tr>
<tr>
<td>✔️</td>
<td>split1921</td>
<td>1.6</td>
</tr>
<tr>
<td>✔️</td>
<td>172.16.231.101</td>
<td>0.7</td>
</tr>
</tbody>
</table>

### Nodes with Highest CPU Usage

<table>
<thead>
<tr>
<th>Node State</th>
<th>Node Name</th>
<th>CPU Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>2621xm.odyssey.com</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Interfaces with Highest Utilization (Previous 24 hours)

<table>
<thead>
<tr>
<th>Node State</th>
<th>Node Name</th>
<th>Interface State</th>
<th>Interface Name</th>
<th>Interface Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>switch1.odyssey.com</td>
<td>✔️</td>
<td>PORT-18</td>
<td>0%</td>
</tr>
<tr>
<td>✔️</td>
<td>switch4.odyssey.com</td>
<td>✔️</td>
<td>PORT-1</td>
<td>0%</td>
</tr>
<tr>
<td>✔️</td>
<td>switch4.odyssey.com</td>
<td>✔️</td>
<td>PORT-2</td>
<td>0%</td>
</tr>
<tr>
<td>✔️</td>
<td>2621xm.odyssey.com</td>
<td>✔️</td>
<td>IF-1</td>
<td>0%</td>
</tr>
<tr>
<td>✔️</td>
<td>switch1.odyssey.com</td>
<td>✔️</td>
<td>PORT-23</td>
<td>0%</td>
</tr>
</tbody>
</table>

### Interfaces with Most Receive Errors (Previous 24 hours)

<table>
<thead>
<tr>
<th>Node State</th>
<th>Node Name</th>
<th>Interface State</th>
<th>Interface Name</th>
<th>Receive Errors/sec</th>
<th>Receive Discards/sec</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔️</td>
<td>switch4.odyssey.com</td>
<td>✔️</td>
<td>PORT-1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Cisco monitoring

Monitoring Overview

Required Configuration Tasks:
- Configure computers and devices to manage
- Import management packs
- Enable Notification Channels
- Upgrade to full version

State and Alerts:
- Computer Health:
  - Critical: 0
  - Warning: 0
  - Healthy: 1
  - Maintenance Mode: 0
  - Unknown Status: 0
- Distributed Applications:
  - Critical: 0
  - Warning: 0
F0408: Power Problem

Key Details:
- Alert source: Chassis 1
- Severity: Critical
- Priority: High
- Age: 18 Days, 4 Hours, 4 Minutes

Alert Description:
Power state on chassis 1 is redundancy-failed
DN: sys/chassis-1
Acknowledged: no
Cause: power problem
Code: F0408

Alert Status:
Once you have identified the problem and taken corrective action, you can select 'Closed' which will remove the Alert from the system once changes are committed.
Summary

Fault Code: F0408
Fault Name: Equipment Chassis Power Problem
Fault Cause: Power Problem

Explanation:
This fault typically occurs when the chassis fails to meet the minimal power requirements defined in the power policy or when one or more power supplies have failed.

Resolutions:
If you see this fault, take the following actions:

- In Cisco UCS Manager, verify that all PSUs for the chassis are functional.
- Verify that all PSUs are seated properly within the chassis and are powered on.
- Physically unplug and replug the power cord into the chassis.
- If all PSUs are operating at maximum capacity, either add more PSUs to the chassis or redefine the power policy in Cisco UCS Manager.
- If the above actions did not resolve the issue, create a show tech-support file and contact Cisco TAC.

Related Links
Get more details on Cisco UCS faults:
Cisco UCS Faults and Error Messages Reference

Management Pack Information
Cisco UCS B-Series Management Pack
### Blade State View - MGV - Operations Manager

#### Monitoring
- Cisco
  - Cisco Alert View
  - Cisco State View
  - Diagram
  - State Summary
  - HW Inventory
  - Chassis
    - Chassis Alert View
    - Chassis State View
    - Diagram
    - State Summary (Chassis)
  - Blade
    - Blade Alert View
    - Blade State View
    - State Summary (Blade)
    - InterfaceCard
    - Inventory
    - Fan Module

#### Blade State View (2)

<table>
<thead>
<tr>
<th>State</th>
<th>Association</th>
<th>Availability</th>
<th>Available Memory</th>
<th>BIOS Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy</td>
<td>associated</td>
<td>unavailable</td>
<td>196608</td>
<td>B200M3.2.2.1a...</td>
</tr>
<tr>
<td>Healthy</td>
<td>associated</td>
<td>unavailable</td>
<td>262144</td>
<td>B200M3.2.2.2.0...</td>
</tr>
</tbody>
</table>

#### Tasks
- State Actions
  - Start Maintenance Mode
  - Edit Maintenance Mode Settings
  - Stop Maintenance Mode
  - Personalize view

#### Navigation
- Alert View
- Diagram View
- Event View
- Performance View
- State View
- Network Vicinity Dashboard

#### Blade Properties of Blade 1
- Display Name: Blade 1
- Full Path Name: Cisco UCS\instances\cisco\Chassis 1\Blade 1
- Description
- Distinguished Name: sys/chassis-1/blade-1
- Model: UCSB-B200-M3
- Revision: 0
- Serial Number: FCH16067R0J
- Vendor: Cisco Systems Inc
- User Label
- Association: associated
- Availability: unavailable
- Available Memory: 196606

#### Report Tasks
- Launch KVM
- Agent Counts by Date, Management Group and Platform
- Alert Logging Latency
- Alerts
- Availability
NetApp Monitoring

![NetApp Monitoring Interface](image-url)
SCOM 2012 R2 – Network Map Design

Vicinity View

Details View

Name: GNT-03-I7-02-46-DD-15
Description: Bridge
Audit Collection Service (ACS)

• Archiving audit collections for forensics and compliance

• Account Management Reports
  - User account created/deleted/enabled/disabled, Security group changes, Changing password, Computer account creation/deletion

• Access Violation
  - Unauthorized access attempts, Account locked

• Policy Changes
  - Audit policy changed, Object SACL changed, Object permissions changed, Account policy changed, Privilege added/removed
Security log consolidation & compliance - SCOM & interoperability

System Center Operation Manager 2007 R2
with Audit Collection Services and:
- Management packs for Cisco, Juniper and other networking devices
- Management packs for Linux OS: SLES 9, 10, RedHat Enterprise 4,5
- Management packs for Unix OS: Solaris 0, 10, HPUX 11i v2 and v3, AIX 5, 6

- The gateway will receive ‘events’ from the non-Windows computers & devices
- The gateway will ‘translate’ the event into a Windows ‘format’
- The event will be picked up by the ACS forwarder and ‘streamed’ into the ACS data stream
Application performance monitoring

<table>
<thead>
<tr>
<th>IT demands</th>
<th>System Center 2012 R2 delivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assure Line of Business (LOB) application SLA</td>
<td>Deep application insight</td>
</tr>
<tr>
<td>Enable rapid application lifecycle</td>
<td>Integrated dev-ops that spans people, process and systems</td>
</tr>
<tr>
<td>Assure great end-user experiences and Microsoft workload health</td>
<td>Cloud-integrated insight in familiar monitoring console</td>
</tr>
</tbody>
</table>

**Deep insight into application health**

```
- Deep application insight
  - .Net and Java monitoring, including line-of-code level traceability
  - Integrated transaction monitoring with BlueStripe
- Integrated dev-ops that spans people, process and systems
  - Faster issue tracking and remediation with System Center-Visual Studio connector
  - Efficient app debugging with Microsoft Monitoring Agent
- Cloud-integrated insight in familiar monitoring console
  - Outside-in monitoring with Global Service Monitor
  - Best practice configurations for MS workloads with System Center Advisor connector
  - Management Packs for Microsoft workloads and third party ISV apps
```
Scale hybrid applications to public cloud using automation

Hybrid applications deliver best of private and public cloud computing

- Benefit from public cloud elasticity and scale
- Ensure governance and compliance requirements continue to be met

Enabled by common identity, consistent virtualization, and seamless networking between Windows Server and Microsoft Azure

Use System Center to:

- Trigger application scale-out based on business demand
- Orchestrate workload mobility with process automation
- Retain governance practices with IT service management
Predictable Performance and Availability of Critical Applications
SQL monitoring

What does out-of-the-box SQL management pack provide?

- Monitors SQL Server components such as database engine instances, databases, and SQL Server Agents
- Integrate the monitoring of SQL Server components into your service-oriented monitoring scenarios
- Dashboard views, diagram views, and extensive knowledge with embedded inline tasks, and views that enable near real-time diagnosis and resolution of detected issues

Download SQL management pack
SQL monitoring

What does out-of-the-box SQL monitoring reports look like?
SQL monitoring

How can users customize their dashboard?

- By using Operations Manager default dashboard view, users can create grid view for monitored components
- Users can have many views as they want for different needs
SQL monitoring
SQL 2012 new monitors and rules

- Collect DB Active Connections count
- Collect DB Active Requests count
- Collect DB Active Sessions count
- Collect DB Active Transactions count
- Collect DB Engine Thread count
- Thread Count monitor
- Transaction Log Free Space (%) monitor
- Transaction Log Free Space (%) collection
- Collect DB Engine CPU Utilization (%)
- CPU Utilization (%) monitor for DB engine
- Buffer Cache Hit Ratio monitor
- Collect DB Engine Page Life Expectancy (s)
- Page Life Expectancy monitor
- Collect DB Disk Read Latency (ms)
- Collect DB Disk Write Latency (ms)
- Disk Read Latency monitor
- Disk Write Latency monitor
- Collect DB Transactions per second count
- Collect DB Engine Average Wait Time (ms)
- Average Wait Time monitor
- Collect DB Engine Stolen Server Memory (MB)
- Stolen Server Memory monitor
- Collect DB Allocated Free Space (MB)
- Collect DB Used Space (MB)
- Collect DB Disk Free Space (MB)
- SQL Re-Compilation monitor
Performance monitors

SPN monitor improved
Support for special symbols in DB names
Improved AlwaysOn seed discovery
Run As configuration changes to support Low privilege for SQL Server 2012 Cluster
Improved performance of AlwaysOn discovery
Custom user policy discovery and monitoring performance optimization
Hided AG health object from Diagram view
Java Tomcat app server support (v5.5, v6 and v7).

Windows and RHEL/SUSE Linux guest OS support.

Multiple instrumented Java frameworks, including web services and database connectors.

Code-level traceability with performance and exception metrics.

Deep application insight for Java Applications
Java EE monitoring-supported platforms

<table>
<thead>
<tr>
<th>Supported JEE application servers</th>
<th>Supported operating systems matrix</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBM Websphere</td>
<td>RHEL</td>
</tr>
<tr>
<td>6.1, 7.0</td>
<td>✔</td>
</tr>
<tr>
<td>Oracle WebLogic</td>
<td>11gRel1, 10gRel3</td>
</tr>
<tr>
<td>Redhat JBoss</td>
<td>4.2, 5.1, 6</td>
</tr>
<tr>
<td>Apache Tomcat</td>
<td>5.5, 6.0, 7</td>
</tr>
</tbody>
</table>
IT service management

Flexible service delivery

IT demands

Enable easy publishing and consumption of IT services
Integrate people, process and knowledge
Efficient resource utilization and SLA tracking

System Center 2012 R2 delivers

Self-service requests for private cloud capacity
- Service catalog, including support for SharePoint 2013
- Cloud Service Process Pack (CSPP)
- Flexible service offerings and service request templates

Industry-standard service management and process workflows
- Automated workflows for incident, problem, change & release management
- Configuration management database (CMDB)

Business and operational insight
- VM-level metering and price sheets
- SLA reporting data warehouse
- Integration with Cloud Cruiser cost analytics solution for chargeback
Flexible service delivery

Access service catalog ➔ Self-service deployment request ➔ Approve request ➔ Process automation ➔ Provision service

CMDB
- Runbooks
- Templates
- Services
- VMs
- Hosts
- Users

Enables standardization and compliance
Business and operational insight with chargeback

Price Sheet

$ Virtual Machine/day
$ Cloud Membership/day
$ Virtual Machine CPU Core/day
$ Virtual Machine Memory GB/day
$ Virtual Machine Storage GB/day
Solutii in System Center

- Solutie de monitorizare servicii, aplicatii, network **SCOM**
- Solutie de asset management, deployment de sisteme de operare si aplicatii, management de telefoane mobile si device-uri, management antivirus **SCCM**
- Solutie de backup pe disk sau tape **DPM**
- Solutie de service desk: incident management, change management, self service **Service Manager**
- Portal de provizionare servicii Azure si Hybrid Cloud **AppController**
- Management datacenter virtual **Virtual Machine Manager**
- Orchestrare si automatizare de procese **Orchestrator** (integrare cu Vmware, HP Open View, IBM Tivoli, CA Unicenter, BMC, Linux/Unix, Symantec)
## Why choose System Center 2012 R2

<table>
<thead>
<tr>
<th>Enterprise-class</th>
<th>Simple and cost-effective</th>
<th>Application focused</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multi-tenant virtual networking, including edge gateway provisioning to bridge physical and virtual networks.</td>
<td>Web-based interfaces to System Center capabilities.</td>
<td>Deep .NET and Java application monitoring and diagnostics.</td>
</tr>
<tr>
<td>Support for VM connectivity into virtual Fiber Channel SAN.</td>
<td>Standards-based top-of-rack network switch configuration.</td>
<td>Standardized app provisioning with service templates.</td>
</tr>
<tr>
<td>Multi-hypervisor support, including Hyper-V, VMware, and Citrix.</td>
<td>Windows Server file-based storage and Storage Spaces support.</td>
<td>Integrated dev-ops with System Center-Visual Studio connector.</td>
</tr>
<tr>
<td>Robust open source support: Dynamic Memory for Linux, Unix/Linux monitoring and configuration.</td>
<td>Extensible service management automation and integration.</td>
<td>Cloud-integrated app and workload insight with Global Service Monitor and System Center Advisor.</td>
</tr>
</tbody>
</table>
Microsoft Security Solutions

Integrated Security
Platform: Active Directory, User Account Control (UAC), Direct Access, Network Access Protection (NAP)

Secure Messaging
Forefront Online Protection for Exchange Server
Antimalware and antispam solution in Exchange 2013

Secure Collaboration
Forefront Protection for SharePoint/OCS-Server

Secure Endpoint
System Center Endpoint Protection

Information Protection
AD Rights Management Services (RMS), Dynamic Access Control
Platform: EFS, Bitlocker

Identity and Access Management
Forefront Identity Manager 2010 R2, Embedded Threat Management Gateway (TMG), Embedded Unified Access Gateway (UAG)

Secure Messaging
Forefront Online Protection for Exchange Server
Antimalware and antispam solution in Exchange 2013

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Forefront Protection for SharePoint/OCS-Server

Secure Endpoint
System Center Endpoint Protection

Information Protection
AD Rights Management Services (RMS), Dynamic Access Control
Platform: EFS, Bitlocker

Identity and Access Management
Forefront Identity Manager 2010 R2, Embedded Threat Management Gateway (TMG), Embedded Unified Access Gateway (UAG)
Solutii de Securitate cu System Center si Windows Server

- Solutie de consolidare de loguri de securitate SCOM Audit Collection Service
- Solutie de compliance & reporting SCCM Desired Configuration Management
- Solutie de audit si risk control Service Manager GRC
- Solutie de criptare si protectia datelor: Windows Server RMS si Dynamic Access Control, Bitlocker, Encrypted File System
- Solutie de autoritate de certificare PKI Windows Server Certificate services

Solutii de Securitate “Forefront”

- Solutie de antivirus statiilor Windows, Linux, Mac OS X si serverelor Windows sau Linux System Center Endpoint Protection si SCCM
- Solutie de identity management Microsoft Identity Manager
- Solutie de antivirus si antispam Forefront Online Protection for Exchange (Exchange 2013 on-premise solution contains antivirus and antispam solution)
- Appliance-uri hardware firewall si SSL VPN Embedded – Forefront TMG, UAG (via Elbacom)
Related Content

https://pinpoint.microsoft.com/Services/12884942946?id=searchResult_Flexpod_architecture

http://www.thomasmaurer.ch/2013/08/automate-your-cisco-ucs-with-system-center-orchestrator/


