



What's new in System Center 2016

White Paper

Product overview for IT professionals

October 2016



Copyright

The information contained in this document represents the current view of Microsoft Corporation on the issues discussed as of the date of publication. Because Microsoft must respond to changing market conditions, it should not be interpreted to be a commitment on the part of Microsoft, and Microsoft cannot guarantee the accuracy of any information presented after the date of publication.

This white paper is for informational purposes only. MICROSOFT MAKES NO WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, AS TO THE INFORMATION IN THIS DOCUMENT.

Complying with all applicable copyright laws is the responsibility of the user. Without limiting the rights under copyright, no part of this document may be reproduced, stored in, or introduced into a retrieval system, or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), or for any purpose, without the express written permission of Microsoft Corporation.

Microsoft may have patents, patent applications, trademarks, copyrights, or other intellectual property rights covering subject matter in this document. Except as expressly provided in any written license agreement from Microsoft, the furnishing of this document does not give you any license to these patents, trademarks, copyrights, or other intellectual property.

© 2016 Microsoft Corporation. All rights reserved.

Microsoft, Microsoft Azure, SQL Server, Visual Studio, Windows, and Windows PowerShell are trademarks of the Microsoft group of companies.

All other trademarks are property of their respective owners.

Contents

| | |
|--|----|
| Introduction..... | 4 |
| Manage your virtualized datacenter with Virtual Machine Manager..... | 5 |
| Monitor your datacenter infrastructure and applications using Operations Manager | 6 |
| Deploy, configure, and keep your Windows and mobile devices up to date using Configuration Manager | 7 |
| Automate your datacenter tasks with Orchestrator and Service Manager Automation | 7 |
| Manage events and incidents with Service Manager..... | 8 |
| Protect your datacenter with Data Protection Manager..... | 8 |
| System Center 2016 and Operations Management Suite | 9 |
| Heterogenous and cloud support | 10 |
| Summary..... | 11 |
| Next steps | 12 |

Introduction

System Center 2016 makes it easy to deploy, configure, manage and monitor your virtualized workloads, software-defined datacenter and hybrid cloud infrastructure. Enabling a comprehensive datacenter management solution support for everything from provisioning the physical and virtual infrastructure to IT process and service management. System Center 2016 offers an array of new capabilities across components (see Table 1).

Table 1: System Center 2016 summary

| Component | Description | 2016 Highlights |
|---|---|---|
| Virtual Machine Manager | Provision fabric, deploy and manage VMs, and deploy multi-tier apps | <ul style="list-style-type: none"> • Support for new and enhanced Windows Server 2016 software-defined compute, storage and networking technologies • Template-based deployment • Secure infrastructure via Shielded VMs and Host Guardian Service support • Nano Server lifecycle support |
| Configuration Manager | Configure, patch and update clients & servers. Anti-malware and security | <ul style="list-style-type: none"> • Comprehensive Windows 10 and Windows Server deployment, servicing and configuration management • Faster and easier to install updates • Native attach to cloud services |
| Operations Manager | Monitor physical, virtual and cloud infrastructure and workloads in real-time | <ul style="list-style-type: none"> • Expanded monitoring for Linux/Unix • Enhanced console experience • Plan and schedule maintenance windows • Seamless management packs discovery and greater fine-tuning of alerts • Attach to Operations Management Suite for supplementary cloud services |
| Orchestrator and Service Management Automation | Automate management tasks using graphical and scripting tools | <ul style="list-style-type: none"> • Ease of authoring, testing and deployment of automation scripts • PowerShell 5.0 support |
| Service Manager | IT process management and self-service | <ul style="list-style-type: none"> • Enhanced performance and user experience • New HTML5 portal |
| Data Protection Management | Backup private clouds, physical machines, clients, and server applications | <ul style="list-style-type: none"> • Resilient Change Tracking (RCT) protection • Protection of Windows clusters, even through migration activities • Backup and recovery for shielded VMs • Storage Spaces Direct support |

The following describes the key capabilities enabled in System Center 2016 in further detail.

Manage your virtualized datacenter with Virtual Machine Manager

System Center 2016 Virtual Machine Manager provides a comprehensive solution for deploying and managing the advanced compute, storage, networking and assurance aspects of your Windows Server 2016-based software-defined datacenters. With Virtual Machine Manager (VMM), you can:

Effectively upgrade, scale and manage your datacenter environment

- ✓ Deploy compute and storage clusters from bare metal machines
- ✓ Manage the lifecycle of the new, minimal-footprint Nano Server-based hosts and VMs
- ✓ Perform rolling upgrade of Windows Server 2012 R2 clusters to Windows Server 2016 clusters with no downtime for the hosted workloads
- ✓ Take application-consistent VM checkpoints (production checkpoints)
- ✓ Change memory and virtual network adapter configuration of a running VM
- ✓ Perform intelligent placement and live migration of VMs
- ✓ Have a scalable installation of up to 25K VMs on 1K hosts

Build highly available storage at low cost

- ✓ Deploy and manage storage clusters with Storage Spaces Direct (S2D) in disaggregated and hyper-converged topology. S2D reduces storage costs by building highly available and scalable storage systems using industry-standard servers with local storage
- ✓ Replicate storage volumes synchronously using Storage Replica (SR) instead of expensive storage-based replication
- ✓ Enforce Quality of service (QoS) for virtual machine storage to avoid the noisy neighbor problem.

Configure the network using software instead of hardware

- ✓ Easily deploy Software Defined Networking (SDN) components such as the Network Controller, Software Load Balancer (SLB) and virtual network gateways using pre-defined and customizable service templates
- ✓ Create and configure virtual networks on demand
- ✓ Control network traffic entering and egressing VMs using port access control lists (port ACLs)
- ✓ Provision SDN Quality of Service (QoS)

Easily deploy applications

- ✓ Easily deploy multi-tier applications using templates with drag-and-drop template authoring
- ✓ Easily scale-in and scale-out applications
- ✓ Utilize custom scripts for application deployment

Enhance the security of your compute infrastructure

- ✓ Create and manage the lifecycle of guarded hosts that provide the infrastructure for Shielded VMs
- ✓ Create Shielded VMs using the VMM console and Windows Azure Pack (WAP)
- ✓ Convert non-shielded virtual machines to Shielded VMs using VMM console and WAP

Monitor your datacenter infrastructure and applications using Operations Manager

System Center 2016 Operations Manager expands the surface area and experience of monitoring infrastructure and applications across public and private clouds. It provides full support for monitoring Windows Server 2016-based software-defined datacenter technologies. With Operations Manager (OM), you can:

Monitor diverse environments

- ✓ Monitor your deployment of Nano Servers and associated workloads, such as DNS workloads
- ✓ Monitor your S2D and SDN deployments
- ✓ Monitor Linux and Unix servers, with up to 1000 hosts monitored per management server
- ✓ Monitor the LAMP stack
- ✓ Monitor Azure, O365, SQL, Exchange, Server OS, DHCP, DNS, NLB, IIS, etc. using new management packs (MP)

Perform enhanced network monitoring

- ✓ Monitor a broad range of network devices with automatic MP generation from published Management Information Bases (MIBs)
- ✓ Live monitor network performance such as loss and latency within and across your datacenters and hybrid cloud infrastructure

Achieve operational simplicity

- ✓ Get dashboard views from any browser using the new HTML5 web console
- ✓ Plan and schedule maintenance windows for workloads without generating spurious alerts in OM console
- ✓ Seamlessly discover, install and update required management packs right from the OM console
- ✓ Tune management packs, and alter the monitors and alerting rules – either at source level or group level – to reduce alert noise
- ✓ Discover third-party management packs, authoring tools, dashboard utilities, etc. right from the OM console
- ✓ Experience a more responsive application console, including the ability to navigate across different views and pivots without having to wait for the data to load
- ✓ Perform in-place upgrade of OM servers

Get rich data analytics

- ✓ Attach to OMS right from the OM console and get log analytics and correlation of alerts
- ✓ Utilize new services for audit collection
- ✓ Visualize data in richer form in OM dashboards

Deploy, configure, and keep your Windows and mobile devices up to date using Configuration Manager

System Center 2016 Configuration Manager (current branch) provides a unified management console with an automated set of administrative tools to deploy software, protect data, monitor health, and enforce compliance across all devices in your organization. New enhancements in Configuration Manager make deploying and managing Windows and Windows Server easier than ever before with new improvements including the support of the latest Windows 10 features, Windows in-place upgrade, more frequent and easier updates, unified end-user portal, and more. With Configuration Manager, you can:

- ✓ Deploy, upgrade, and provision Windows with modern methods such as in-place upgrade and provisioning packages and profiles
- ✓ Keep Windows up to date with new configurable deployment rings, servicing dashboard, and cluster-aware settings
- ✓ Manage Windows in a way that works the best for your organization through the Configuration Manager agent, on-premises MDM, and the cloud when Configuration Manager is connected with Microsoft Intune
- ✓ Enhance Windows management through integrations with Windows Store for Business, Windows Hello for Business, Windows Defender Advanced Threat Protection, and more
- ✓ Get more frequent and easier to install updates directly in the management console to support new Windows, Configuration Manager, and mobile device management capabilities
- ✓ Allow users to access all their applications from a unified end user portal

Automate your datacenter tasks with Orchestrator and Service Manager Automation

You can choose to use System Center 2016 Orchestrator or Service Management Automation to automate your datacenter tasks. Service Management Automation incorporates improved experiences for authoring, testing, debugging and executing runbooks. With System Center automation technologies, you can:

Deploy services and process automatically

- ✓ Create runbooks with native PowerShell scripts and execute runbooks more predictably without heavy pre-compilation steps
- ✓ Utilize an Integrated Scripting Environment (ISE) plugin for authoring and testing runbooks locally
- ✓ Utilize Windows Management Framework 5.0 for authoring runbooks with PowerShell 5.0 scripts

Manage events and incidents with Service Manager

Working closely with customers through the development on System Center 2016 enables sharper focus on areas of development and investment for Service Manager. Through new improvements available today, System Center 2016 Service Manager enables greater ease of use, improved performance and increased scale. With Service Manager, you can:

Easily publish and consume IT services

- ✓ Deploy HTML5 based self-service portal with updated UX and better performance
- ✓ Use Lync 2013 and Skype for business with Service Manager
- ✓ Create rich reports and slice data based on Year, Quarter, Month, and Day using new date dimensions in Service Manager data warehouse cubes

Efficiently integrate people, processes and knowledge

- ✓ Experience up to 10x improvement in console performance when creating/updating work items, up to 2x gain in workflow processing, and up to 4x improvement in incident processing capacity
- ✓ Get Configuration Manager and Active Directory (AD) data through connectors up to 67% and 50% faster, respectively, with Entity Change Log (ECL) log disabling
- ✓ Complete incident workflows up to 50% faster
- ✓ Schedule AD group expansion workflows and get up to 75% faster performance
- ✓ Perform ECL grooming up to three times faster

Protect your datacenter with Data Protection Manager

Windows Server 2016 Hyper-V includes new features that help in reducing overall total cost of ownership of private cloud deployments. System Center 2016 Data Protection Manager has increased support and functionality for protecting workloads and virtual machines deployed in partnership with Windows Server 2016. With Data Protection Manager (DPM), you can:

Reduce the TCO of your backup infrastructure

- ✓ Continue doing VM backup in the presence of Hyper-V node crash or VM storage migration using the new Resilient Change Tracking (RCT) protection technology
- ✓ Maintain Hyper-V VM backup even as Windows cluster upgrade is in progress
- ✓ Backup and recover shielded VMs
- ✓ Protect VMs deployed on Storage Spaces Direct configuration

System Center 2016 and Operations Management Suite

System Center provides comprehensive management of heterogeneous infrastructure and workloads, a rich ecosystem of third party solutions to enrich the management capabilities and user experience and breadth of coverage across multi-vendor systems on-premises and in the cloud. Furthermore, System Center is often deeply integrated with other business-critical systems in users' environments. Microsoft Operations Management Suite (OMS) leverages the power of the cloud to provide rich analytics, elastic compute and storage, scale, operational simplicity, reach from anywhere and any device, and a fast cadence of new services. With System Center 2016, we continue to connect the breadth and depth of System Center and the power of OMS to bring new services and enhanced experiences to customers. The following capabilities are now available:

- **Log Analytics:** Easily attach Operations Manager to OMS and use the Log Analytics service to gain insight and troubleshoot issues faster. You can connect Operations Manager to OMS with a few clicks from the Operations Manager console and start sending data to the service. Expose SCOM alerts through a rich dashboard experience, and leverage inbuilt log search and visualization capabilities to get insights and perform troubleshooting.
- **Network Performance Monitor:** Monitor performance parameters of networks within and across datacenters using OMS Network Performance Monitor. Network Performance Monitor works with and complements the network health monitoring that Operations Manager provides. With Network Performance Monitor, you can determine loss and latency characteristics between any pair of points in your network within or across your datacenter(s), including your assets in the public cloud (Azure/AWS). This information can be used by network administrators for monitoring network characteristics and SLAs, and incorporated in application performance monitoring by application or system admins.
- **System Center Operations Manager Assessment:** Get insights into the health of your System Center Operations Manager deployment and remediation assistance to fix issues with the System Center Operations Manager Assessment solution in OMS. Once you have connected Operations Manager to OMS, you can assess your Operation Manager environment for best practices, identify issues that could potentially impact operations or cause inefficiencies, and get specific recommendations to fix these issues. The System Center Operations Manager Assessment solution continuously monitors your Operations Manager management servers, collects various parameters, applies rules, identifies potential issues and their severity, and provides recommendations to fix these issues. This service leverages crowd-sourced knowledge to help you proactively remediate issues.

Heterogenous and cloud support

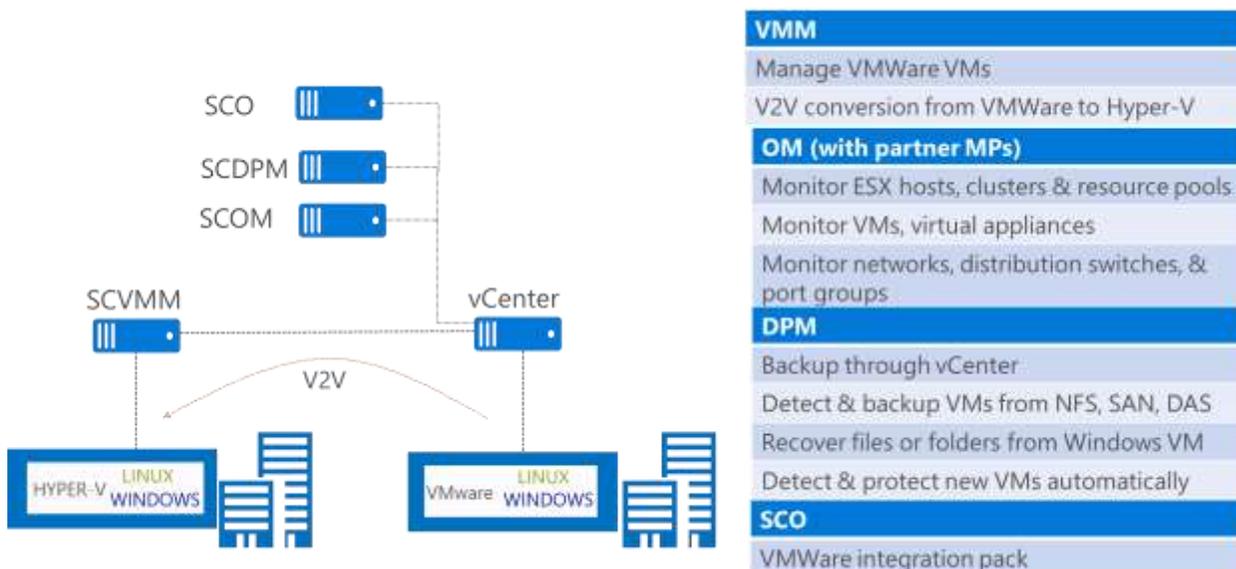
System Center 2016 provides broad support for Linux (see Table 1), including LAMP stack monitoring and VMware, as well as support for monitoring resources and services in Azure and Amazon Web Services (AWS).

Table 2: Linux/Unix support in System Center 2016

| Component | Description | Linux | | | | | | UNIX | | | |
|-----------|---|-------|------|--------|--------|--------|--------|------|-----|-------|---------|
| | | RHEL | SLES | CentOS | Ubuntu | Debian | Oracle | OSX | AIX | HP-UX | Solaris |
| VMM | Deploy and manage VMs | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |
| SCCM | Configure Linux & Unix clients and servers | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| SCOM | Monitor Linux & Unix hosts and workloads (LAMP stack) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ |
| DPM | Backup Linux VMs | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | | | |

System Center 2016 Virtual Machine Manager, Operations Manager, Data Protection Manager and Orchestrator enable interoperability with to VMWare vCenter and provide support for managing VMs and other VMWare resources (see Figure 1).

Figure 1: VMWare support in System Center 2016



System Center 2016 Virtual Machine Manager and Operations Manager also provide support for specific cloud management scenarios of Azure VMs, and monitoring of Azure and AWS services (see Table 3).

Table 3: Azure/AWS support in System Center 2016

| | | |
|---|---|--------------------------------|
| Manage Azure VMs | Add Microsoft Azure subscriptions to VMM and perform basic actions on Azure instances | |
| Monitor Azure resources and services (via Native MPs) | Application Insights | Notification Hubs |
| | Automation | Operational Insights |
| | Backup | Redis Cache |
| | BizTalk | Scheduler |
| | Cloud Service (web and worker roles) | Search |
| | Data Factory | Service Bus |
| | DocumentDB | SQL Azure |
| | Logic App | Storage Accounts |
| | Media Services | Traffic Manager |
| | Mobile Services | Virtual Machines |
| Virtual Networks | Websites | |
| Monitor AWS services (via Partner MPs) | EC2 instances | Elastic Beanstalk applications |
| | EBS volumes | CloudFormation stacks |
| | ELB load balancers | CloudWatch Alarms |
| | Auto Scaling and Availability Zones | CloudWatch Custom Metrics |

Summary

Business needs and technology innovations are converging to offer unique opportunities for IT professionals to better deliver IT resources that meet business requirements. Today's organizations are adopting hybrid cloud to extend their IT infrastructure for better flexibility and scalability. Enterprises are looking for a comprehensive infrastructure management solution that can enable these benefits, including shared resources as well as the elasticity to scale up and down on-demand to meet changing business needs—minimizing downtime and failures while maximizing cost efficiencies. With System Center 2016, you now have the capabilities you need for simplified datacenter management across your hybrid environment.

Next steps

Explore the following reference links to gain more understanding of System Center 2016:

System Center 2016 introduction

<https://www.microsoft.com/en-us/cloud-platform/system-center>

System Center 2016 technical white paper

[http://download.microsoft.com/download/F/E/5/FE51FD4D-AE85-4CBF-A0F4-0381C11E63EF/System Center 2016 technical white paper EN US.pdf](http://download.microsoft.com/download/F/E/5/FE51FD4D-AE85-4CBF-A0F4-0381C11E63EF/System%20Center%202016%20technical%20white%20paper%20EN%20US.pdf)

System Center 2016 technical documentation

[https://technet.microsoft.com/en-us/library/mt445442\(v=sc.16\).aspx](https://technet.microsoft.com/en-us/library/mt445442(v=sc.16).aspx)

Operations Management Suite introduction

<https://www.microsoft.com/en-us/cloud-platform/operations-management-suite>

Evaluate System Center 2016

<https://www.microsoft.com/en-us/evalcenter/evaluate-system-center-2016>

Provide feedback on System Center 2016

<https://social.technet.microsoft.com/Forums/systemcenter/en-US/home?forum=SystemCenterTechnicalPreview>
[feedback](#)