2014

Active Directory, Exchange & System Center Solution Proposal

INFRASTRUCTURE SOLUTION PROPOSAL (HIGH LEVEL)

SHAHAB AL YAMIN CHAWDHURY

Contents

Figures

ACTIVE DIRECTORY

Active Directory is a state-wide authentication directory that supports enterprise systems, provides contact information and scheduling integration, along with providing mechanisms for centralized desktop management as well as BYOD. There are multiple Active Directory (AD) environments in use across several business fields. The purpose of the Active Directory Project is to migrate all of these environments into a single AD forest, which will provide the following benefits:

- Single user name and password
- Password synced between AD and Directory Services
- Reduce overhead through standardization
- Improve services through centralized management capabilities
- Provide foundation for the following AD related services:
    - Exchange
    - SharePoint
    - Lync
- Improve workstation security, end to end
- Central storage provided for individuals and departments
- FTP Isolation by OU, by organization or by user
- Backup and restoration services for central storage
- Server storage space for user documents
- Backed up data on Home and Departmental drives

Lower departmental cost because infrastructure is managed and maintained by central console.
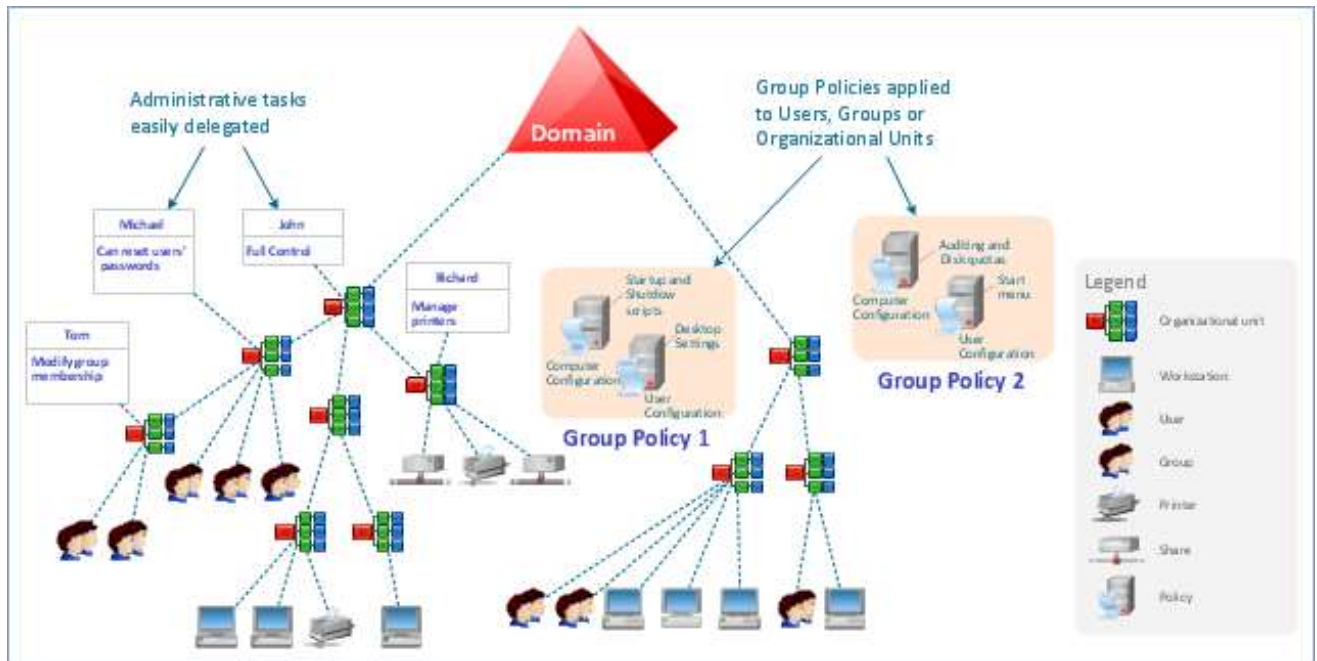
Figure 1: Group Policy and Role Based Access Control

NOTE: Active Directory Role Base Access Control by Groups and Delegation of Access.

- Install a New Windows Server 2012 Active Directory Forest (Level 200):
  http://technet.microsoft.com/en-us/library/jj574166.aspx
- What's New in Active Directory Domain Services (AD DS):
  http://technet.microsoft.com/en-us/library/hh831477.aspx

Exchange top features

Increase user productivity and keep your organization safe, while maintaining the control & compliance you need.

Remain in control

Exchange lets you tailor your solution based on your unique needs and ensures that your communications are always available, while you remain in control, on your own terms—online, on-premises, or a hybrid of the two.
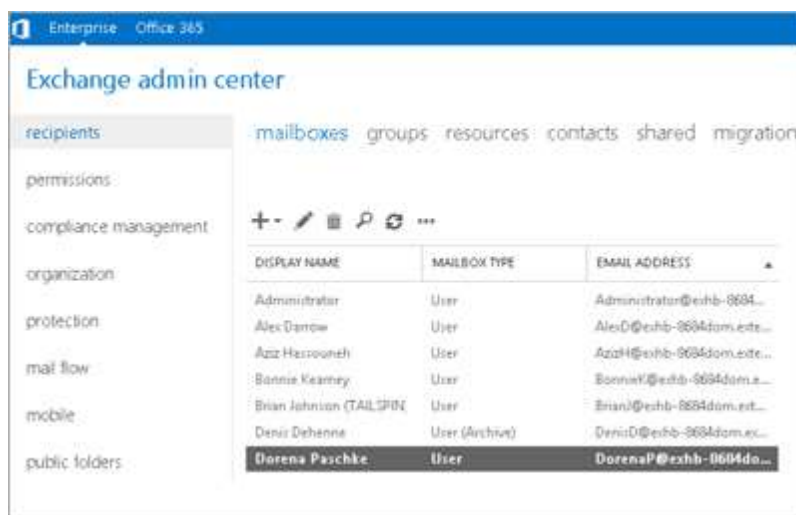
Figure 2 Exchange Server 2013 Admin Center

Move to the cloud on your terms

Exchange provides you with flexible options for moving to the cloud, whether that's onboarding to the cloud overnight or managing a hybrid deployment with mailboxes that are both on-premises and online. Limit user disruption when mailboxes are smoothly moved across environments, and let users share calendars and schedule meetings, regardless of the environment their mailbox is in. Try out upcoming enhancements in the cloud with support for upgrade previews.

Decrease the amount of time spent on management, while maintaining control

Manage powerful capabilities, including Data Loss Prevention (DLP) and site mailboxes, from the Exchange Administration Center —a single, easy-to-use, web-based administration interface. Role-based access control empowers your helpdesk and specialist users to perform specific tasks without requiring full administrative permissions. This streamlined

and intuitive experience helps you manage Exchange efficiently, delegate tasks, and focus on driving your business forward.

Keep important data in one place with Exchange archiving, large mailboxes, and retention policies

Empower your users with a large mailbox to allow them the flexibility to retain email in their primary mailbox or move items to an In-Place Archive. With flexible and powerful retention policies, you can take control of your storage and compliance demands while keeping your users productive.

Do more, on any device

Exchange lets your users be more productive by helping them manage increasing volumes of communications across multiple devices and work together more effectively as teams.
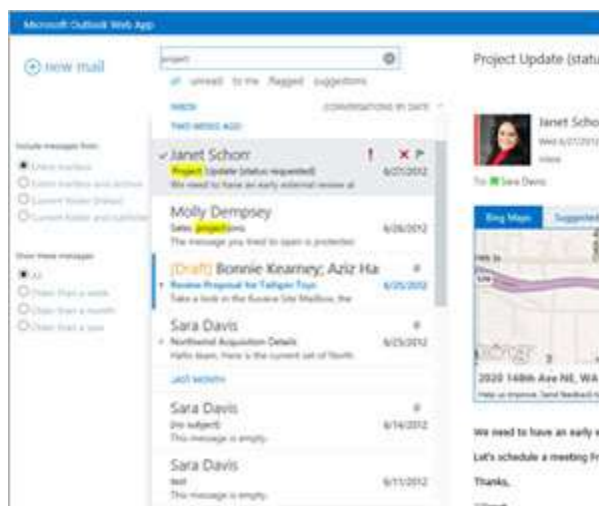
Figure 3 Office Web App

Give your users an intuitive, touch-enabled inbox experience

Get more done from anywhere with a clean, uncluttered inbox that focuses on the relevant and important information.

Allow your users to work better together on teams and projects

Site mailboxes* let users collaborate on projects, get up to speed quickly on teams they join, and share information easily. Co-authoring, document storage, and versioning are provided by SharePoint, while messaging is handled by Exchange, for a complete user experience, including document access.

Customize Exchange by integrating web-based apps for Outlook and Outlook Web App

Help your users spend less time switching between apps and make their communications experience more powerful with an extension model that allows you to provide easy plug-in access to web-based apps within both Outlook and Outlook Web App. With single sign-on to multiple apps, you can reduce complexity for users and give them secure, authorized access for each approved application.

Keep your organization safe

Use Exchange to protect business communication and sensitive information in order to meet internal and regulatory compliance.
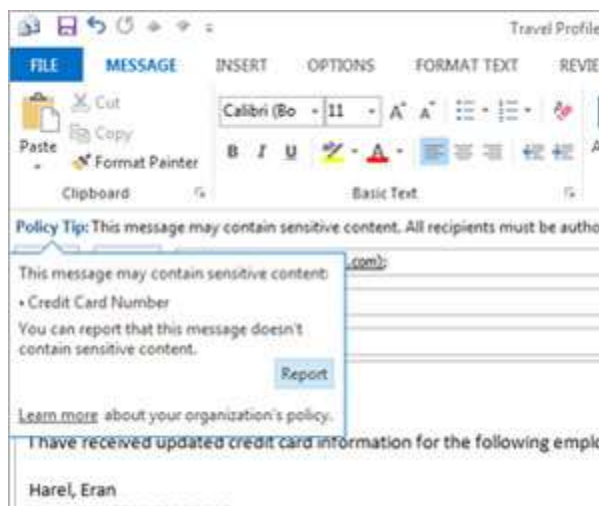
Figure 4 Outlook New Message Window

Eliminate email threats before they reach your network

Exchange actively protects your communications with built-in defenses against viruses, spam, and phishing attacks.

Protect your sensitive data and inform users of internal compliance policies

Prevent users from mistakenly sending sensitive information to unauthorized people. Data Loss Prevention (DLP) features identify, monitor, and protect sensitive data through deep content analysis, and Policy Tips in Outlook inform users about policy violations before sensitive data is sent. Built-in DLP policies are based on regulatory standards such as PII and PCI, plus Exchange can support other policies important to your business.

Let your compliance officers run In-Place eDiscovery across Exchange, SharePoint, and Lync from a single interface

Ensure internal and regulatory compliance by using the new eDiscovery Center* to identify, hold, and analyze your organization's data from Exchange, SharePoint, and Lync. The data always remains in-place, so you never have to manage a separate store of data.

- What's New in Exchange 2013: http://technet.microsoft.com/en-us/library/jj150540(v=exchg.150).aspx
- Exchange Home: http://office.microsoft.com/en-us/exchange/microsoft-exchange-server-2013-email-for-business-email-server-FX103765014.aspx
- Checklist: Perform a New Installation of Exchange 2013: http://technet.microsoft.com/en-us/library/ff805042(v=exchg.150).aspx
- Test Lab Guide: Install Exchange Server 2013: http://social.technet.microsoft.com/wiki/contents/articles/15392.test-lab-guide-install-exchange-server-2013.aspx

System Center 2012 R2

System Center 2012 R2 delivers unified management across on-premises, service provider, and Microsoft Azure environments, thereby enabling the Microsoft Cloud OS. System Center 2012 R2 offers exciting new features and enhancements across infrastructure provisioning, infrastructure monitoring, application performance monitoring, automation and self-service, and IT service management.

- Start your evaluation today
- Read the System Center 2012 R2 Datasheet
- Read the System Center 2012 R2 White Paper
- See how System Center 2012 R2 Configuration Manager and Windows Intune helps manage users and their devices
- Explore what's new with Microsoft's cloud-based solutions

- System Center 2012 R2 evaluation for IT Pros

- System Center 2012 R2 virtual labs

- Evaluation resources for System Center 2012 R2

Benefits

System Center enables the Microsoft Cloud OS by delivering unified management across on-premises, service provider, and Microsoft Azure environments.

Application focused

System Center enables easy workload portability between Windows Server and Microsoft Azure. It helps you deliver predictable line-of-business application SLAs by providing deep insight and diagnostics for your .NET and Java applications. Global Service Monitor and System Center Advisor deliver application health and performance insights from Microsoft Azure. System Center helps you provision your apps faster and repeatably using service templates. Your application developers and operations staff can help you take applications to market faster through built-in System Center-Visual Studio dev-ops integration. Finally, System Center provides your application owners with a unified, self-service view across clouds.

Enterprise-class

System Center 2012 R2 delivers best-in-class management for Windows Server environments that your critical business applications run on. It provides extensive built-in knowledge to help you optimize performance and availability for first-party Microsoft workloads like Exchange, SQL, and SharePoint. System Center helps you bridge physical and virtual networks, thereby enabling flexible workload mobility in hybrid environments. It can help you optimize your investments in SAN storage. System Center also provides robust heterogeneous datacenter management, including multiple hypervisors and Linux support. Finally, System Center enables unified monitoring for your on-premises and Microsoft Azure infrastructure, helping you to extend your existing investments and skill-sets.

Simple and cost-effective

To make it easier to deploy, we deliver service templates and RunBooks for System Center components. You can easily integrate System Center capabilities with your existing management tools through the built-in web-service interfaces and Integration Packs. System Center can help you optimize storage cost-performance for your business-critical workloads by effectively managing Windows Server file-based storage and Storage Spaces. It also provides extensible automation and integration, thereby helping you to operate your infrastructure in a cost-effective and predictable manner.

Infrastructure provisioning

System Center helps you manage virtual and cloud environments with full support for Windows Server capabilities, including industry-leading Hyper-V scale and performance, plus support for VMware vSphere and Citrix XenServer. It also delivers robust support for Linux-based environments, with full support for Dynamic Memory. System Center allows VM connectivity to fibre channel-based SAN so you can virtualize the most demanding workloads and connect them to your highest-tier storage platforms. To drive down storage costs for your business-critical workloads, it enables bare metal provisioning and cluster creation of scale-out file server clusters. System Center enables virtual networking for multitenant environments along with automated provisioning of edge gateways that bridge physical and virtual networks. System Center delivers reliable and cost-effective automation to help you drive operational efficiency. You can also migrate on-premises workloads to Microsoft Azure through the familiar System Center experience. The Configuration Manager component helps you automate physical server deployments, software inventory, and in-guest updates.
Learn more

Infrastructure monitoring

System Center provides best-of-breed Windows Server monitoring and robust cross-platform monitoring support (including RHEL/SUSE Linux, Oracle Solaris, HP-UX, and IBM AIX). You can assure physical, virtual, and cloud infrastructure health with the familiar Operations Manager console. Built-in network topology discovery allows you to monitor the health of your network devices. The connector between VMM and Operations Manager components enables granular monitoring of your private cloud infrastructure resources. The System Center Management Pack for Microsoft Azure allows granular monitoring of Microsoft Azure resources. You can monitor your VMware infrastructure with the VEEAM Management Pack. And you can ensure reliable workload configurations using the System Center Advisor connector for Operations Manager.
Learn more

Automation and self-service

Use service templates for faster and repeatable application and workload provisioning—for example, to define and deploy a SharePoint farm for use by application owners. With the Windows Azure Pack, you can deploy scalable, multi-VM infrastructure services such as SQL clusters for use by application owners. Work with application owners to define the policies that govern the underlying infrastructure services, empowering them while retaining control. To ensure hybrid IT consistency between on-premises and Microsoft Azure environments, System Center provides unified views (through the App Controller component) and supports common deployment artifacts such as VHDs for Windows Server and Linux. Finally, System Center enables dynamic capacity expansion to support application needs

through robust automation workflows (based on PowerShell and the Orchestrator component) and Integration Packs (including Integration Packs for Microsoft Azure and SharePoint).

Learn more

Application performance monitoring

System Center assures LOB application SLAs by providing deep application insight for .NET and Java applications, including line-of-code level traceability to pinpoint and resolve issues that impact application health. Through integration with System Center Alliance partner BlueStripe, System Center can enable transaction monitoring. Achieve a rapid application lifecycle by delivering dev-ops capabilities that span people, process, and systems. Deep Visual Studio-System Center integration makes it possible for developers to work productively with their operations counterparts in a cloud-optimized release cadence. System Center Global Service Monitor gives you outside-in monitoring for web applications through Microsoft Azure-based global points of presence for a 360-degree view of application health.

Learn more

IT service management

System Center offers easy publishing and consumption of IT services by enabling self-service requests for private cloud capacity through a Service Catalog and Cloud Service Process Pack. You get deep integration of people, process and knowledge with a CMDB as well as pre-defined industry-standard workflows for core datacenter processes. You can even measure and increase efficiencies of your operation through granular resource metering for chargeback combined with a data warehouse for SLA tracking and reporting.

Learn more

Consolidated Solution Design (AD, Exchange) – High Level
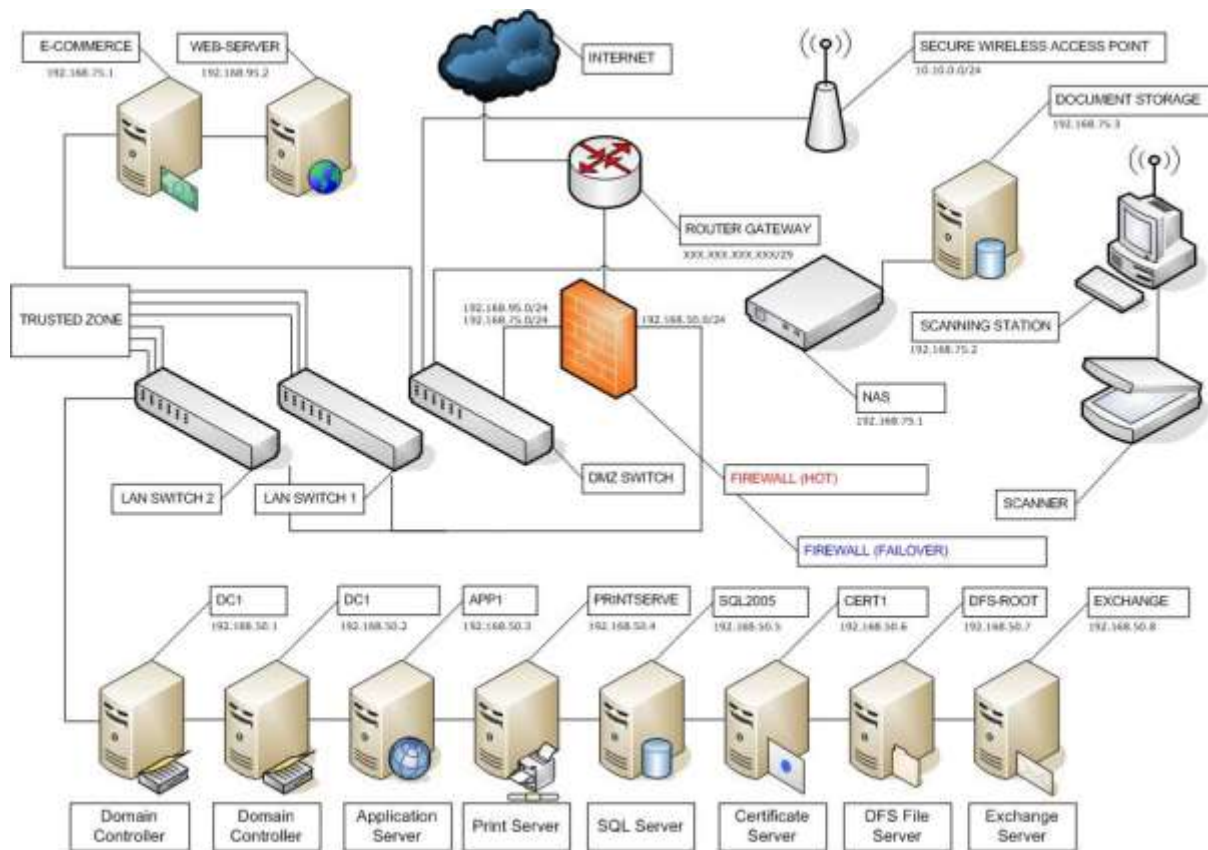

Figure 5 High-Level Infrastructure Diagram

NOTE: Actual design will differ from the provided one

The System Center Family / Components

System Center 2012 is a set of management server components and licenses for endpoints (servers and clients) that are being managed. With System Center 2012, acquiring System Center software and licenses has been simplified.

- System Center management licenses (MLs) give you the right to install and run the management server components.
- MLs are primarily available as bundled suites that include rights to all or some subset of System Center components. Individual System Center components like Data Protection Manager or Operations Manager) are no longer offered.

System Center and SQL Server

All of the System Center products include SQL Server technology. Microsoft's licensing terms for these products allow you to run one instance of the SQL Server technology in one physical or virtual operating system environment (OSE) on one server, but only to support the System Center software. SQL Server client access licenses are not required for that use.

You may also create and store any number of instances of SQL Server technology on any of your servers or storage media solely to exercise your right to run an instance of that technology under any of your software licenses.

You also may run one passive failover instance in a separate OSE for temporary support. You may run that instance on a server other than the licensed server.
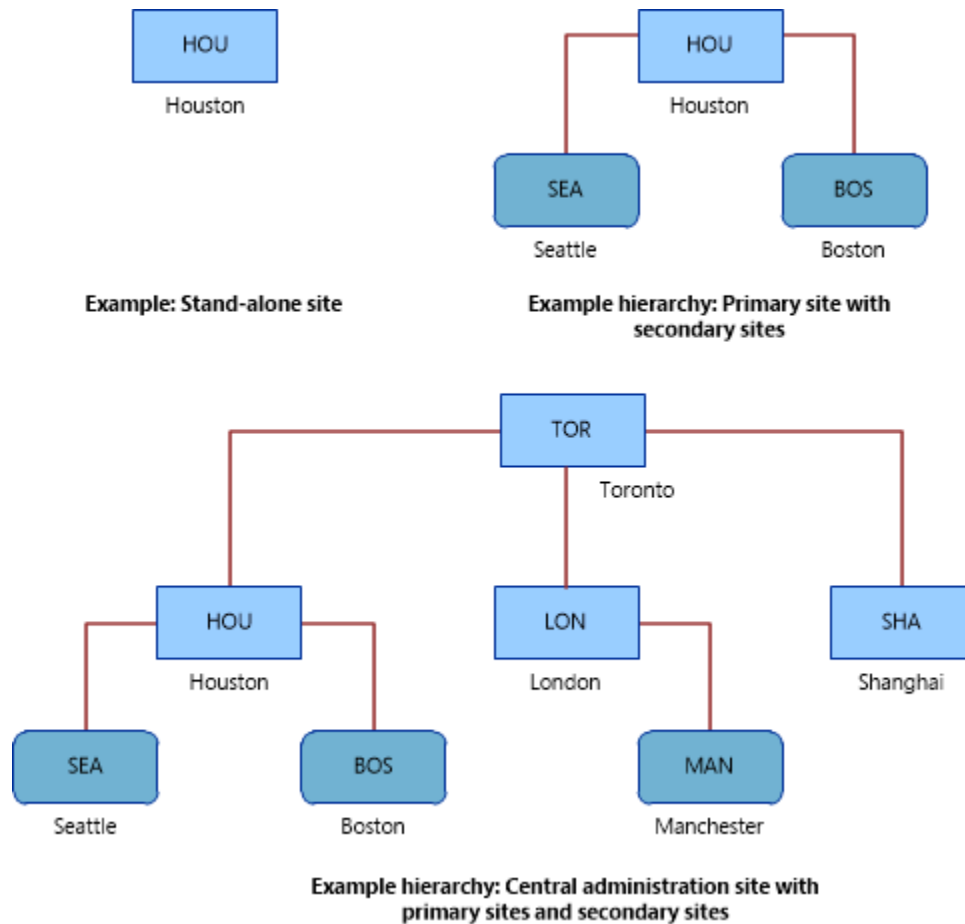
Figure 6: Configuration Manager Primary Site & Secondary Site Architecture

System Center Components

Read the following descriptions for an overview of each System Center 2012 component. For detailed information on implementing these components, see Microsoft's System Center Technical Documentation.

- **App Controller** provides a unified console for managing public and private clouds, as well as cloud-based virtual machines and services. Datacenter administrators can delegate control of applications and virtual machines to application owners through a web-based self-service interface.
- **Configuration Manager** provides software deployment, distribution, update management, and configuration monitoring throughout an IT infrastructure. Configuration Manager automates many tasks associated with software deployment and maintenance while enforcing the organization's software configuration policies and standards.
- **Data Protection Manager (DPM)** enables disk-based data protection and recovery for file and application servers in an Active Directory domain. DPM backs up client systems, server file systems, Exchange databases, SharePoint data, and SQL databases on a continuous basis, allowing an organization to recover a single lost or corrupted file or restore an entire system.

- **Endpoint Protection** is used with Configuration Manager to provide a single infrastructure for client management and security, including malware detection. It gives administrators a central location for creating and applying all client-related policies.
- **Operations Manager** monitors the health of IT services across datacenter and cloud infrastructures. Operations Manager can provide IT departments with reports at defined intervals as well as alerts when immediate attention is necessary. Operations Manager can be used to monitor performance of both server and client applications. Management packs — the sets of instructions that Operations Manager uses to monitor specific applications — are available for most current Microsoft server applications and operating systems, as well as many from third parties.
- **Orchestrator** is a workflow management tool for automating the creation, monitoring, and deployment of IT resources. Orchestrator integrates with Microsoft and non-Microsoft products, allowing administrators to connect different systems without any knowledge of scripting or programming languages.
- **Service Manager** facilitates implementing and automating IT service management (ITSM) best practices across an organization. Service Manager can provide IT departments with processes for incident and problem resolution, change control, and asset life cycle management.
- **Virtual Machine Manager (VMM)** is a server application for administration and management of Microsoft and VMware virtual machine guests and virtual machine hosts. It provides network administrators real-time views of resource allocation and allows rapid reconfiguration.

  Administrators can access VMM through the Administrator Console or through the Windows PowerShell command-line interface. VMM analyzes performance data and resource requirements for both the workload and the host, allowing the administrator to fine-tune placement algorithms to receive optimal deployment recommendations from the software. Tools and wizards simplify converting physical machines to virtual ones (physical-to-virtual, or P2V, conversions) and converting VMware virtual machines to the Microsoft VHD format (virtual-to-virtual, or V2V, conversions). VMM can be configured to allow users without administrator-level access to deploy non-server virtual environments through a self-service web portal.

Management Licenses

To use System Center software, you need the appropriate server MLs for the servers being managed or monitored and client MLs for all the end users or devices being managed. Server and Client MLs are primarily available through bundled suites. The exception is the Configuration Manager client ML, which can be acquired independently.

System Center Server Management License Suites

Server MLs are required for managed devices that run server OSEs. With System Center 2012, server MLs are processor-based. Each license can cover up to two physical processors.

These license suites offer server MLs and software for all of the System Center components. Note that they don't actually have "suite" in the name; the two suites are simply called System Center 2012 Standard and System Center 2012 Datacenter.

System Center 2012 Standard allows the management of up to two OSEs per license. To determine the number of licenses needed, count the number of physical processors on the server and the number of managed OSEs. Take the greater number and divide it by two, rounded up to the nearest whole number.

System Center 2012 Datacenter allows the management of an unlimited number of OSEs per license. To determine the number of licenses needed, count the number of physical processors on the server, divide that number by two, round up to the nearest whole number, and acquire and assign that number of licenses to your server.

System Center Client Management License Suites

Client MLs are required for managed devices that run non-server OSEs and can be licensed per OSE or per user. These license suites offer client management licenses and software for the following System Center components:

- Service Manager
- Operations Manager
- Data Protection Manager
- Orchestrator

The client management license suites are OSE Client ML and User Client ML.

Solution BOM: (Identity Management, Messaging Integration, Network Monitoring Services)
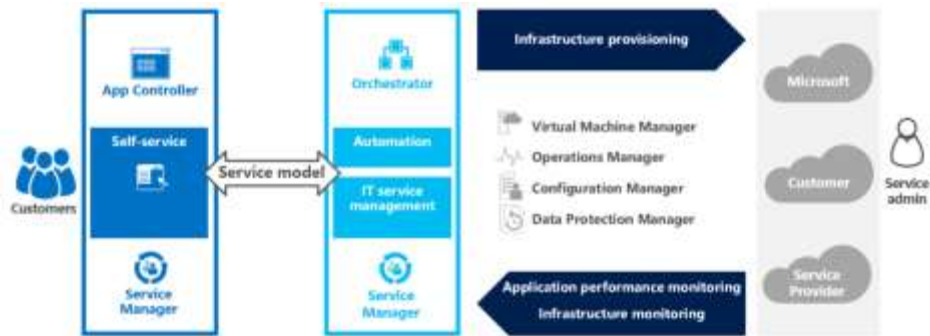
System Center delivers unified management for the Cloud OS.

Why choose Windows Server 2012 R2 and System Center 2012 R2 for your hybrid cloud

System Center 2012 Client Management Licenses
Three Client Management product offerings

Proposed BOM:

Product Name	Quantity	Remarks
Windows Server Standard CAL	2000	AD Server Access Licenses
Exchange Server Standard CAL	2000	Exchange Server Access Licenses
Windows Server 2012 R2 Datacenter Edition	2	BASE VM Server, can house multiple VM's, VM Server for housing AD, Exchange, SCCM, SCOM SCDPM, SCSM
Windows Server 2012 R2 Standard Edition	0	Base OS for the AD (2) & Exchange (4)
Windows Server 2012 R2 Standard Edition	0	Active Directory, and ADC (VM)
Exchange Server 2013 Enterprise Edition	4	Enterprise Grade Messaging Server (VM)
SQL Server 2012 Enterprise Edition Core License	2	SQL Requires Purchase of Min 2 Licenses used by all System Center Components including BI
System Center 2012 R2 Data Center Edition	1	Full System Center Suite Console
System Center 2012 R2 Client Management Suite License	25	SCOM, SCDPM, SCSM, Orchestrator, Server Management Licenses
System Center 2012 R2 Configuration Manager (SCCM)	2000	Network Client/Asset Management Licenses
System Center 2012 R2 Endpoint Protection (SCEP)	2000	Enterprise Antivirus, Centrally managed by SCCM
TOTAL	8034	

Assumptions:

- User base => 2,500
- Plan for=> 3-5 Years for Business/Population Growth @ 10% per year.

NOTE:

- Core CAL and Enterprise CAL Suites will continue to be the most cost effective way to purchase client management products rather than purchasing individual CAL. Please refer to the following link for more information: http://www.microsoft.com/licensing/about-licensing/SystemCenter2012-R2.aspx#tab=2

- System Center Datacenter Edition is for highly virtualized private clouds
- System Center Standard Edition is for lightly or non-virtualized private clouds

User Licenses

User Licenses Description	Software Licenses	SKU	Lic Unit	Lic Reqd	Unit Price (USD)	Extended Price (USD)	Remarks
Server Access License	Windows Server CAL		User	2000	$ -	$	Number of internal users (assumed to be 2000+)
	Exchange Server CAL		User	2000	$		
TOTAL						$ -	

Main Table

Security Zone	Server Role	Server Spec	Server Count-VM	Software Installed	SKU	Lic Unit	Lic Reqd	Unit Price (USD)	Extended Price (USD)	Remarks
DMZ	Domain Controller	1 Core 2 GB RAM x64	1	Windows Server 2012 R2, x64 Datacenter Edition / Active Directory, Primary Domain Controller		OS Device	0 2000	$ - $ -	- -	Max User=5,000; Add 8GB More RAM for support upto 10K Users / PDC, Additional Domain Controller
	System Center Configuration Manager 2012 R2	1 Core 8 GB RAM x64	1	Windows Server 2012 R2, x64 Datacenter Edition / System Center 2012 R2 Datacenter Edition / System Center 2012 R2 CML Suite / SCCM CML / SCEP CML		OS VM Device Device Device	0 1 25 2000 2000	$ - $ - $ -	- - -	Software/Patch Deployment, Assest Monitoring/Metering, Help Desk, Backup, HW & SW Monitoring. / 1 Datacenter holds all components of System Center Suite / Managed Client Machine Monitoring
	VM Server	1 CPU (Octa-Core) 64 GB RAM x64	1	Windows Server 2012 R2, x64 Datacenter Edition		Base-OS	1	$ - $ -	- -	Unlimited VM, will be the base OS for all the VM's
	Exchange Server	1 Core 16 GB RAM x64	1	Windows Server 2012 R2, x64 Datacenter Edition / Exchange Server 2013 Enterprise Edition		OS VM Device	0 4 2000	$ - $ - $ -	- - -	16GB RAM on Each MBX, 2GB on Each CAS
	Integration Services (SSIS)	2 Core 16 GB RAM x64	2	Windows Server 2012 R2, x64 Datacenter Edition / SQL Server 2012, Enterprise Edition		OS VM	0 2	$ - $ -	- -	
	Analysis Services (SSAS)	1 Core 16 GB RAM x64	0	Windows Server 2012 R2, x64 Datacenter Edition / SQL Server 2012, Enterprise Edition				$ - $ -	- -	
	Reporting Services (SSRS)		0	Windows Server 2012 R2, x64 Datacenter Edition / SQL Server 2012, Enterprise Edition				$ - $ -	- -	One SQL Server for SSAS, SSRS and SSIS Server for all
	Monitoring and Administration	1 Core 8 GB RAM x64	1	Windows Server 2012, x64 Datacenter Edition / System Centre Operations Mgr 2012 R2		OS VM Device	0 0	$ - $ - $ -	- - -	For VM Deployment
	TOTAL		7				8035	TOTAL	$ -	

NOTE:
1. HA haven't been reflected in the design or BOM, ZERO HA addressed.
2. Price Quoted here is budgetary (ERP) and non-inclusive of applicable VAT/TAX or landing cost, and undiscounted.
3. Please acquire price from the designated partner.
4. Zero Liabilities address for the quoted price.

- Blog Site: http://mobs-bd.org
- About Me: http://mobs-bd.org/?page_id=109
- Profile @ Microsoft: https://www.mcpvirtualbusinesscard.com/VBCServer/shuvromcse/profile
- YouTube Training Channel: http://www.youtube.com/user/shuvromcse