Cisco UCS C-Series Rack Servers with Intelligent Intel Xeon Processors for Microsoft Exchange Server

Solution Brief
December 2012

Solutions for Small and Medium-Sized Businesses



Highlights

Cisco Unified Computing System™ (Cisco UCS®) C-Series Rack Servers with Intelligent Intel® Xeon® Processors

The solution delivers:

- Balanced performance and capacity
- Increased flexibility
- Highly scalable capacity
- High performance

Integrated Virtualization Support

- Cisco UCS is optimized for virtualization, making it easy to run securely Microsoft Exchange in virtualized environments.

Easy Ongoing Management and Maintenance

- Cisco UCS C-Series Rack Servers can be used as standalone systems or integrated into Cisco UCS with integrated, unified management.

Reduced Risk

- High availability and disaster recovery (DR) can be supported with as few as three servers that are managed identically from a single location.

Lower Total Cost of Ownership (TCO)

- The lower capital and operating costs of Cisco UCS helps reduce total cost of ownership.

Excellent Performance, Scalability, and Flexibility

- A range of Cisco UCS C-Series servers are available to meet your collaboration and other server needs.

Cisco Unified Computing System™ (Cisco UCS®) C-Series Rack Servers and B-Series Blade Servers with intelligent Intel® Xeon® processors deliver messaging flexibility and choice to businesses of every size.

Enterprise messaging and collaboration are critical components of IT infrastructure that directly affect every employee's communications and productivity. This is especially true for small and medium-sized businesses, in which every employee must juggle multiple tasks. Yet size is only one differentiator. The ways that businesses rely on their messaging platform is another consideration. Good messaging platforms:

- Offer easy scalability to support new employees, mergers, and acquisitions
- Incorporate server flexibility to easily support spikes in demand
- Support a bring-your-own-device (BYOD) model, giving employees equal access anytime, anywhere, and on any IT approved device or consumer device
- Reduce risk and bring the organization into compliance with regulatory and legal requirements
- Accelerate the flow of the increasing amounts of data contained in messages
- Reduce capital expenditures (CapEx) and operating expenses (OpEx)

Whether deployed as standalone servers or part of the Cisco Unified Computing System, Intel Xeon processor-equipped Cisco UCS C-Series Rack Servers and

B-Series Blade Servers running Microsoft Exchange Server provide an excellent foundation for corporate messaging solutions. A wide range of rack and blade servers provides the flexibility needed to deliver a cost-effective, standard, tested platform that meets business needs without compromise.

Cisco UCS C-Series Rack Servers Deliver More Than Choice

To adequately support and scale Microsoft Exchange, the computing infrastructure, storage capacity, and storage performance must be flexible and scalable. Cisco UCS C-Series Rack Servers together with solutions from trusted storage partners provide this flexibility and come in a range of computing and memory configurations to meet business needs today and into the future. For companies seeking a smaller implementation, the cost-effective 2-socket Cisco UCS C240 M3 Rack Server with Intelligent Intel Xeon processors can provide a self-contained standalone system with internal storage, enabling deployments to start small and grow with the organization. For larger implementations, a SAN or network-attached storage (NAS) can deliver the flexibility, scalability, and performance needed to support greater demand.

The broad range of performance and scalability capabilities of Cisco UCS C-Series Rack Servers and Intel Xeon processors enables IT departments to select the server that best aligns with business needs. To meet messaging needs in a small or medium-sized business with Microsoft Exchange Server, Cisco recommends one of three pretested configurations (Table 1).

Balanced Performance and Capacity

Companies looking for a fully contained solution with balanced performance and capacity can take advantage of Cisco UCS C240 M3 servers and Intel Xeon processors. With the capability to support up to 24 SFF drives for a maximum internal capacity of 24 terabytes (TB) of data, the Cisco UCS C240 M3 server is an excellent choice for small and medium-sized companies looking for a cost-effective Microsoft Exchange Server deployment that can grow with the company.

Intel Xeon Processor E5 Family

The versatile Intel Xeon processor E5 family forms the core of a flexible and efficient data center. Adaptive performance and built-in capabilities, combined with Intel integrated I/O, help eliminate bottlenecks and increase agility. Microsoft Exchange, either bare metal or virtualized, can take advantage of the Intel Xeon processor E5 family to boost computing and storage performance and streamline messaging operations.

High Flexibility and Scalable Storage

The compact size of the Cisco UCS

Table 1. Cisco UCS C-Series Rack Servers Make Excellent Building-Block Platforms for Microsoft Exchange Server 2007 and 2010

	Balanced Performance and Capacity (Internal Storage)	High Flexibility and Scalable Storage (External Storage)
System	Cisco UCS C240 M3 Rack Server 2 rack units (2RU)	Cisco UCS C220 M3 Rack Server 1RU
Computing	2-socket, Intel Xeon processor E5-2600 family (maximum of 16 cores) - Up to 768 GB of RAM - 5 PCI Express (PCIe) slots - Integrated quad Gigabit Ethernet	2-socket, Intel® Xeon® processor E5-2600 family (maximum of 16 cores) - Up to 512 GB of RAM - 2 PCIe slots - Integrated dual Gigabit Ethernet
Storage	Up to 24 Small Form-Factor (SFF) SAS, SATA, or SSD drives for up to 24 TB of storage RAID 0, 1, 5, 6, 10, 50, and 60 support	SAN or NAS storage from EMC or NetApp

C220 M3 Rack Server makes it an excellent building block for a scalable, flexible Microsoft Exchange Server platform. When combined with shared SAN storage from partners EMC, NetApp, Hitachi Data Systems (HDS), or other third party, the platform can scale to support greater numbers of mailboxes and larger mailbox sizes. As a result, the Cisco UCS C220 M3 server, also with intelligent Intel Xeon processors, is an excellent choice for growing medium-sized companies that need a scalable messaging platform.

Benefits of Cisco UCS C-Series Rack Servers

Cisco UCS C-Series Rack Servers with intelligent Intel Xeon processors can be used as standalone rack servers, or they can be integrated into the larger Cisco Unified Computing System as part of a broader data center unification and private cloud initiative. As members of the Cisco UCS family of servers, they all provide important benefits to the business beyond being excellent Microsoft Exchange Server 2010 platforms.

Integrated Support for Virtualization

Every Cisco UCS C-Series Rack Server or B-Series Blade Server is built with virtualization features as an integral part of the server, enabling excellent support for VMware vSphere and Microsoft Hyper-V hypervisors. This support is particularly important for businesses seeking to consolidate servers or move to a private cloud. Cisco UCS C-Series Rack Servers provide sufficient processing power through intelligent Intel Xeon processors with Intel Virtualization Technology (VT) and internal memory to consolidate multiple Microsoft Exchange Server roles on a single server (Figure 1). In addition, the use of Cisco® virtual interface cards (VICs) provides support for virtual network interface cards (vNICs) and host bus adapters (HBAs) that automatically separate traffic for greater network visibility (down to the level of individual virtual machines), simplified troubleshooting, and enhanced security. As a result, administrators can manage physical and virtual networks identically, with no loss of visibility or capability in virtual networks.

Easy Ongoing Management and Maintenance

Cisco UCS C-Series Rack Servers are designed to work as standalone systems or integrated into Cisco UCS with unified management. Many small businesses find that managing servers initially as standalone systems fits their immediate needs, without sacrificing the ability to move to Cisco's unified management model at a later time. This flexibility is made possible by the wire-once deployment model used

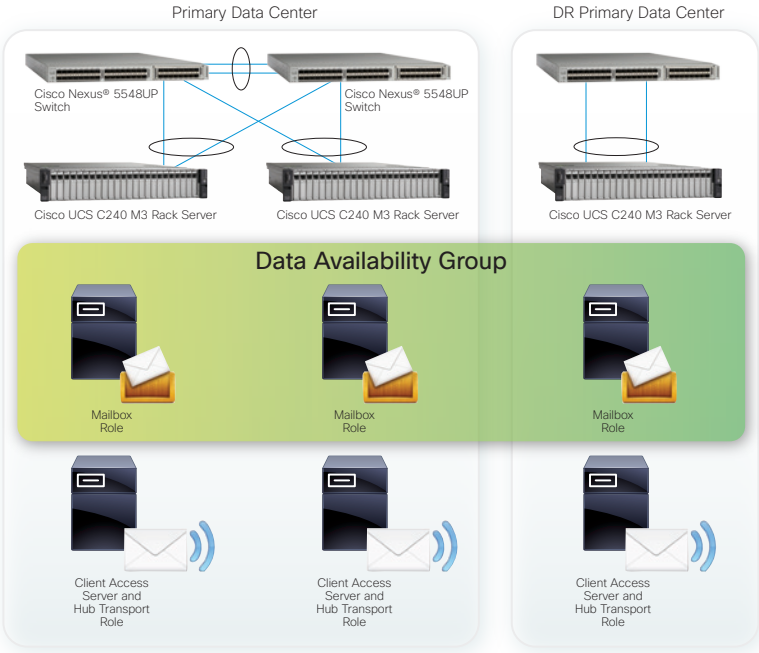

Figure 1. Cisco UCS C-Series Rack Servers Using Microsoft Windows Server Hyper-V and Microsoft Exchange Server 2010

in all Cisco UCS servers. Changing I/O configurations no longer requires installing adapters and recabling racks and switches; all configuration modifications are performed simply, through one interface. If a unified fabric is deployed, fewer interface cards, cables, and upstream network ports are needed, reducing purchasing, power, configuration, and maintenance costs.

Managed as standalone systems, Cisco UCS C-Series Rack Servers include x86 standard management technologies as well as advanced Intel Xeon processor error reporting capabilities and a Cisco innovation, the Cisco Integrated Management Controller (IMC). Administrators can access the server's Cisco IMC through a GUI that is accessible through several mechanisms:

- Through a web browser
- Using a remote keyboard, video, and mouse (KVM) to access the server console screen
- Through vMedia for remote mounting of bootable media
- Through a command-line interface (CLI)
- Through embedded Simple Network Management Protocol (SNMP)

When an organization moves to unified management, all Cisco UCS servers are managed in the same way, through a single management interface. With this unified approach, typically difficult tasks, such as updating the firmware on all servers, are as easy as updating one server. Using Cisco service profiles, IT departments can alleviate the problem of configuration drift. In addition, scaling by deploying additional servers becomes a trivial task that takes minutes rather than hours or days. Cisco UCS unified management is performed by accessing the integrated management server embedded in the Cisco UCS fabric interconnect: Cisco UCS Manager. Much like the Cisco IMC, Cisco UCS Manager can be accessed through an intuitive GUI, a CLI, or an XML API that integrates Microsoft Windows PowerShell with Cisco UCS PowerTool to build on staff knowledge and best practices.

Reduced Risk

The ease of deployment of Cisco UCS using industry-standard Intel Xeon processors reduces risk, helping ensure that Microsoft Exchange Server deployment does not stall during implementation. Also, Cisco pretests configurations and develops Cisco Validated Designs: step-by-step guidelines that can be used to create optimized configurations. In addition, highly reliable Cisco UCS servers can be configured for high availability through the use of data availability groups (DAG) and a redundant, active-active configuration. With as few as three servers, Cisco UCS and Microsoft Exchange Server can deliver redundancy and disaster recovery, with the entire deployment managed from one location (Figure 2).

Lower Total Cost of Ownership

The innovative design of Cisco UCS with cost-effective Intel Xeon processors helps IT departments lower capital and operating costs. With a unified fabric, fewer components and associated management touchpoints

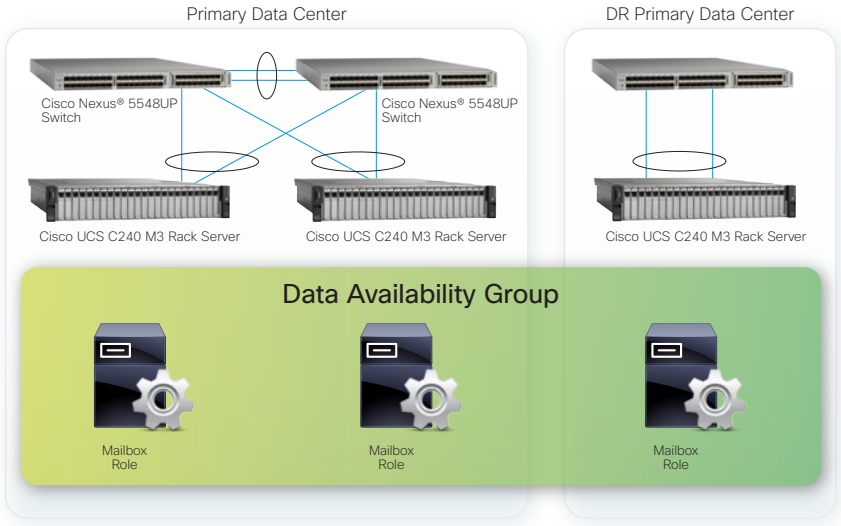

Figure 2. Active-Active Redundancy and Disaster Recovery Configuration Using Data Availability Groups

are needed, simplifying administration and improving IT staff efficiency. The system's wire-once design makes it easy to scale without rewiring the entire network, saving time and money. In addition, a small footprint and efficient power and cooling capabilities help reduce environmental costs. Together, these technology advancements lower acquisition and ongoing maintenance costs for reduced total cost of ownership (TCO).

Excellent Performance, Scalability, and Flexibility

Cisco UCS C-Series Rack Servers are available in several configurations, enabling IT departments to match the right server to the current job. The servers use intelligent Intel Xeon processors to deliver high performance and high reliability to enterprise messaging infrastructure. Management of Cisco UCS C-Series Rack Servers is easy, simplifying the scaling and deployment processes. Because the product family is designed to address the entire spectrum of data center demands, Cisco UCS Manager enables Cisco UCS C-Series Rack Servers and B-Series Blade Servers to be integrated under a single management domain, reducing complexity and increasing efficiency (Figure 3).

Cisco UCS C-Series Rack Servers: An Excellent Platform for Microsoft Exchange Server

Cisco, Intel, and Microsoft are market-leading, innovative companies with combined technology solutions that greatly enhance the performance, scalability, manageability, and cost effectiveness of virtualized data centers. With the combined vision and capabilities of these leaders, companies now have powerful allies for designing and implementing their next-generation data centers. Cisco UCS C-Series Rack Servers, Intel Xeon processors, and Microsoft Exchange Server deliver a

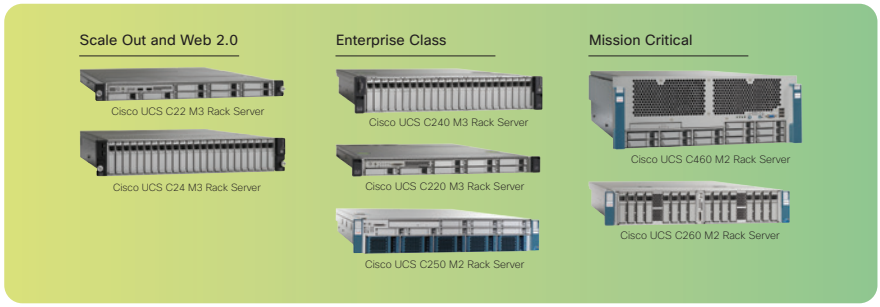

Figure 3. A Wide Range of Cisco UCS Rack Servers Helps Meet Data Center Needs

standards-based, cohesive, standalone or unified messaging environment that easily scales to meet changing business priorities with reduced TCO.

For More Information

- For more information about Cisco UCS C-Series servers, please visit http://www.cisco.com/en/US/products/ps10493/index.html.
- For more information about Cisco UCS, please visit http://www.cisco.com/go/ucs.
- For more information about Microsoft Exchange running on Cisco UCS, please visit http://www.cisco.com/en/US/solutions/ns340/ns414/ns742/ns743/ns751/landing_microsoft.html.
- For more information about the Intel Xeon processor E5 family, please visit http://www.intel.com.

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