# Cisco Unified Communications Manager Appliance: Enabling Today's Unified Workspace

## Overview

Today's workers are increasingly mobile. Whether they are in hotels or airports, on-premises with customers, in the home office or their car, they rely upon a variety of applications and devices that run over multiple networks and operating systems. In order to collaborate effectively, anytime, anywhere, and on any device, workers need a unified workspace that ensures a consistent communication experience — no matter where their work takes them. Savvy businesses recognize the need to support this new workspace, which has moved beyond the desktop, is increasingly complex and varied, and changes definition throughout the course of a day.

IP communications solutions have proven their ability to help organizations address this challenge, enabling them to realize the benefits of transporting voice, data, and video communications across a common IP infrastructure. Now with the Cisco Unified Communications system of voice, video, mobility, and IP communications products, these benefits are greater than ever, enabling Cisco customers and partners alike to deliver a more connected and flexible workspace.

The Cisco Unified Communications Solution takes advantage of IP telephony to unify voice, video, data, and mobile applications on fixed and mobile networks, and help ensure easy-to-use, media-rich collaboration experiences. Instead of simply connecting products, the system provides structure and intelligence that helps organizations securely integrate their communications more closely with business processes, and ensure information reaches recipients quickly, through the most appropriate medium.

Cisco Unified Communications Solutions with built-in network awareness and optimization are "network-centric", enabling them to resolve network concerns that other types of unified communications solutions often overlook, including performance, scalability, reliability, security, and extensibility.

## Cisco Unified Communications Manager

### The Heart of Unified Communications

At the center of the Cisco Unified Communications system is the Cisco Unified Communications Manager. This mission-critical, call-processing component of the Cisco Unified Communications system allows users to easily communicate in any workspace using any media, device, or operating system.

Knowing that the best unified communications options are open and extensible — enabling new, media- and web-rich applications, and integration into existing business applications and processes — Cisco designed Cisco Unified Communications Manager to extend enterprise telephony features and capabilities to packet telephony network devices such as:

- IP phones: Phones that use voice-over-IP (VoIP) technologies to enable calls over the Internet
- Media-processing devices: Gear such as conference bridges that handle media such as video and audio
- VoIP gateways: Network devices that convert voice and fax calls, in real time, between an IP network and the public switched telephone network (PSTN)
- Multimedia applications: Software that integrates different digital elements, such as graphics and audio, to enable applications such as distance-based learning or webcasts

Cisco Unified Communications Manager also includes a suite of integrated voice applications and utilities that further enhance communications and management capabilities by enabling impromptu conferencing, analysis and reporting on call detail records, and real-time application monitoring, to name a few. Organizations are further empowered to extend the benefits of Cisco Unified Communications Manager through open telephony application programming interfaces (APIs) that support integration of additional essential communication services such as:

- Unified messaging: Enables users to access voice, fax, and text messages through a single email or telephone account
- Multimedia conferencing: Supports audio and video conferencing, typically from remote locations
- Collaborative contact centers: Integrates multiple communication tools, such as telephone, email, and the web
- Interactive multimedia response systems: Capable of detecting and responding with prerecorded or dynamically generated audio or video, typically to manage large volumes of interaction

By delivering these features and capabilities as network services — while enabling out-of-the-box deployment, a simple system administration experience, and enhanced security — Cisco Unified Communications Manager reduces the cost and complexity of delivering a more flexible, connected workspace.

## Delivered As An Easily Deployed Solution

### Realize a Lower Total Cost of Ownership

Cisco Unified Communications Manager is based on an appliance deployment environment that is optimized to reduce the cost of operations. In fact, as a complete, easily deployed appliance, Cisco Unified Communications Manager offers several advantages:

- Enables fast and simple deployment
- Removes the need for specialized administrative skills
- Offers simple and flexible management
- Simplifies administrative tasks
- Facilitates rapid, streamlined upgrades
- Delivers robust security

Enables Fast and Simple Deployment

Organizations often underestimate the time and money required to deploy a software solution, resulting in delayed launch and budget overruns. Cisco Unified Communications Manager software comes preloaded on a Cisco media-convergence-server (MCS) platform for fast deployment. A

single image included in the software facilitates automated provisioning of the underlying native operating system as well as the Cisco Unified Communications Manager software. In addition to the preloaded option, customers can choose to install the Cisco Unified Communications Manager software on select third-party servers through an optional DVD kit. Because everything needed to deploy the solution is included in a single download file, even organizations that choose to install the software on their hardware platform of choice will realize an install time almost 50-percent faster than on a non-appliance-based system.

Removes the Need for Specialized Administrative Skills

Although a unified communications system makes it easier for users to access and use disparate communication methods, its design does not always translate into simpler administration. Solutions based on servers often require administrators to possess expertise in multiple components, including firmware, the native operating system, a relational database management system, and the unified communications software itself.

With the Cisco Unified Communications Manager appliance, specialized expertise requirements are minimal. Administrators need no certification — such as Microsoft Certified System Engineer (MCSE) or Red Hat Certified Engineer (RHCE) — or even basic OS administration skills. In fact, no native OS knowledge or training is required to install, upgrade, manage, patch, or provision the appliance. That means organizations can reduce the need for technicians with OS specialization, along with investments in OS training for their personnel — ultimately gaining more staffing flexibility and minimizing training costs.

Offers Simple and Flexible Management

Managing and maintaining separate software and hardware components quickly leads to overburdened IT staff and high operational costs. The integrated nature of the Cisco Unified Communications Manager appliance greatly simplifies administration and maintenance, and reduces management time. For example, administrators never require access to the underlying operating system. Instead, all systems management activities — such as disk-space monitoring, system monitoring, and upgrades — are either automated or controlled through the GUI. To support power users, a command-line interface (CLI) is available for diagnostics and basic systems management, such as starting or stopping services and rebooting the appliance.

To further reduce management complexity, customers can also choose to monitor and manage the Cisco Unified Communications Manager appliance with their own application management tools or those provided by Cisco. For those organizations that prefer their own tools, Cisco supplies APIs that enable tight integration between Cisco interfaces and third-party management applications.

Simplifies Administrative Tasks

After a solution is deployed, ongoing management and maintenance can quickly become burdensome — especially in distributed environments. Because the Cisco Unified Communications Manager can easily be monitored and managed from a remote location, organizations can reduce staffing requirements, downtime, and the costs associated with onsite visits.

The design of the Cisco Unified Communications Manager appliance facilitates the ability to perform remote and automated change management. Instead of using special hardware or software, administrators can manage and monitor the appliance securely through the web using HTTPS or Secure Shell (SSH) Protocol (a CLI accessed through a secure shell). To streamline administrative tasks and reduce the overall time required to manage the installation and upgrade process, administrators can take advantage of an unattended installation option and invoke

upgrades and determine software versions through the browser or CLI. These browser- and CLI-based installations also eliminate the administrative overhead associated with manual reboots, re-logins, disk swaps, and other administrative tasks.

Facilitates Rapid, Streamlined Upgrades

Many organizations schedule upgrades during nonpeak hours to avoid interrupted business operations — a major inconvenience for the IT administrators who need to stay late or come in over the weekend to manage the process. A unique dual-partition mechanism within the Cisco Unified Communications Manager appliance allows administrators to perform software upgrades on a standby disk partition while preserving the current version of the Cisco Unified Communications Manager software. This dual-partition mechanism — combined with the ability to easily and quickly revert to a previous version of the software — significantly reduces the time, burden, and risk typically associated with upgrades. Organizations can either upgrade the image after hours while the system is operational or perform the bulk of upgrade work during normal business hours — all while reducing the time spent performing the upgrade.

Just as important, the integrated nature of the appliance reduces the number of upgrades needed to stay current, resulting in simplified management and less downtime. Organizations running Cisco Unified Communications Manager in a nonappliance mode could potentially install separate software multiple times per year to address each of the four components. With an appliance model implementation, the software elements are bundled into a single package. As a result, administrators deal with only one software element for each minor, major, or maintenance update.

Delivers Robust Security

Because a unified communications system enables such valuable information and interactions, security is paramount. The Cisco Unified Communications Manager offers businesses an inherently more secure and resilient deployment environment than nonappliance models, helping protect the mission-critical media and call-processing application from potentially harmful external software. At the same time, organizations can confidently customize or develop value-added applications using published APIs or the Cisco Unified Application Environment.

**Prevent Unwanted Modifications or Installations**

Preventing undesirable changes or installations to widely used software is one of the critical steps to ensuring uninterrupted, optimized operations. The Cisco Unified Communications Manager addresses this requirement in numerous ways. For example, the appliance OS includes only the components needed to run the application, reducing complexity, improving efficiency, and enhancing security. The appliance itself was designed to prevent changes to unsupported hardware, the operating system, or the database, or installations of unsupported third-party software.

In support of this approach, no external software is allowed on the Cisco media-convergence-server platform, translating into fewer outages due to security exploits or unsupported changes to the operating system or software. To further ensure protection of critical processes, an N + 1 clustered redundancy model — comprising a "hub" publisher and several “spoke” subscribers within the cluster — supports a white-list capability that organizations can use to prevent rogue systems from joining the cluster.

**Protect Against Outside Threats**

In addition to preventing potentially damaging or harmful actions that originate from within the organization, the appliance is designed to protect against outside risks. For instance, without the

local installation of a web browser or mail system, the appliance is less vulnerable to threats such as malware. In addition, organizations do not need to worry about the authenticity of any software installations related to the appliance because Cisco provides and digitally signs all software needed to operate Cisco Unified Communications Manager.

To further boost security, Cisco Security Agent is integral to (and included with) Cisco Unified Communications Manager. It provides protection against a wide variety of threats through the use of specialized security policies created specifically for Cisco Unified Communications Manager. Cisco Security Agent aggregates multiple security functions, combining host intrusion prevention, distributed firewall, malicious mobile code protection, and operating system integrity assurance. As an anomaly detection solution, Cisco Security Agent can enforce appropriate and expected behavior, thereby preventing anomalous behavior that could compromise the integrity and availability of the system.

### Streamline Security Monitoring and Updates

Because of the integrated nature of the appliance model, administrators do not need to separately monitor, schedule, and patch basic input/output system (BIOS), database, native operating system, and Cisco Unified Communications Manager software releases. Instead, they monitor a single site — the Cisco Product Security Incident Response Team site — for information about any relevant exposures. When vulnerabilities are announced, administrators can securely and easily download security patches and install them throughout the enterprise through a web browser or CLI.

## Summary

Today's workers expect to be totally connected at all times, and they demand access to the most effective communications method at any given moment. With unified communications and an IP network, businesses can facilitate collaboration — regardless of where, how, or when users are connected. By adopting or upgrading to the current version of Cisco Unified Communications Manager software, organizations can enable the unified workspace, empowering their employees with a wider choice of communications options that are OS-, device-, and media-independent.

Designed to ensure fast deployment, minimal administration, and secure operations, the appliance delivers benefits that translate into greater efficiencies and profitability for both Cisco customers and authorized channel partners. Rather than dedicating time to handling mundane administrative tasks such as manually loading software or monitoring multiple sites for security advisories, customers can focus on more valuable activities such as implementing enhanced messaging solutions, while partners can help customers design or expand their networks.

Those organizations taking advantage of other products in the Cisco Unified Communications portfolio — including Cisco Unified Communications Manager Business Edition, Cisco Unity® Connection 2.0, Cisco Emergency Responder 2.0, and Cisco Unified Presence — also benefit from the consistent backups, upgrades, security, and servicing enabled by the appliance-model implementation.

Learn more about the new features and capabilities of Cisco Unified Communications Manager at: http://www.cisco.com/en/US/products/sw/voicesw/ps556/index.html

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