

Evaluating Unified Communications Solutions

Comparing Cisco Unified Communications and Microsoft Unified Communications

Introduction

Organizations are seeing significant productivity improvements and impressive return on investment with unified communications. In order to realize the full benefits, organizations are increasingly looking to unified communications solutions that extend beyond delivering basic voice over IP (VoIP). Productivity applications offer a growing number of communication and collaboration capabilities, and as users become more mobile, organizations need to deliver advanced capabilities anywhere users need them. However, not all unified communications solutions are equal, for either end users or the IT organizations that must implement and support them. Interest in Microsoft Unified Communications and the recently announced Communications Server “14” (or Wave 14) stems from promises that a software-only-based communications strategy for business lowers costs and provides greater functionality. Microsoft also asserts that Communications Server 14 is an enterprise-ready telephony solution. This approach is appealing on the surface, but less-mature solutions may have incomplete functionality; may not be reliable enough for most business deployments; and may not deliver on the promised cost savings. This document compares Microsoft Unified Communications, including the available information about Microsoft Communications Server 14, to Cisco® Unified Communications Solutions in critical areas.

Cisco Unified Communications vs. Microsoft Unified Communications

In order to deliver value, a unified communications solution must include robust and feature-rich communications services accessible from a wide range of clients and endpoints, including enterprise telephony, unified messaging, multimedia conferencing, and enterprise instant messaging (IM). Within the context of this complete view of unified communications, we see 10 significant differences between Cisco and Microsoft solutions:

1. **Mature unified communications capabilities:** Microsoft’s unified communications offering demonstrates immaturity in every area, including telephony, conferencing, messaging, and video communications. For example, important basic telephony functions to manage call access and accounting such as Forced Account Codes and Client Matter Codes are missing. The Microsoft Unified Messaging offering also lacks basic end-user capabilities, including message recall, dropped call recovery, and custom keypad mapping. In conferencing, Microsoft’s offering does not provide the breadth of applications for meetings, training, support, and events. Instead, Wave 14 introduces a new client that offers a less-complete meeting feature set than the current client, so customers have to use different web conferencing clients at different times with this new model. For video communications, Microsoft does not support H.264, and Wave 14 lacks transcoding and rate matching — limiting interoperability and frequently causing degradation of video and audio quality as the solution negotiates to the lowest common set of supported protocols.

In contrast, Cisco voice, video, and collaboration capabilities have been developed and refined over the past 12 years. A rich set of functions and a broad portfolio of advanced media endpoints are available to help ensure a smooth transition for users as organizations migrate from high-function time-division multiplexing (TDM)-based systems to high-function IP-based unified communications. In addition, Cisco Unified Messaging and Conferencing Solutions provide industry-leading capabilities that Microsoft does not provide, such as composing and sending a voice message directly from your Microsoft Outlook client, and sharing content in a web conference from Mac- and Linux-based computers. Cisco Conferencing provides a consistent, scalable, feature-rich web conferencing experience whether using on-demand Cisco WebEx™ or on-premises web conferencing.

As video collaboration becomes a requirement, ensuring that all parties can participate at the highest-quality level independent of other endpoint capabilities is crucial for the best possible experience for all attendees. For this reason, Cisco video collaboration solutions enable customers to combine video endpoints with different resolutions (that is, high- and standard-definition) within the same call with video resolutions up to 1080p, showing multiple sites simultaneously (continuous presence). With a rich set of capabilities across telephony, messaging, conferencing, and video collaboration, Cisco solutions deliver a better user experience addressing a wider range of communications needs and usage environments.

2. **Commitment to interoperability:** Microsoft has consistently moved away from industry standards in unified communications. Microsoft Live Communications Server started as largely standards-based, but over the years Microsoft has removed many of those items:
 - Video: Microsoft Office Communicator (MOC) and Microsoft Office Communications Server (OCS) do not use widely adopted, standards-based H.264 video, but instead use a proprietary video codec. In order for MOC to interoperate with standards-based video solutions third-party gateways and MCUs must be deployed, which may significantly increase cost, introduce delay, and reduce quality, or degrade the MOC client to H.263 video, thereby incurring a cost, quality, and user experience penalty. The OCS video conferencing server only supports the proprietary protocol and cannot be used with standards-based video endpoints.
 - Voice and voicemail: Microsoft uses proprietary codecs, which may waste existing endpoint investment because of incompatibility. Microsoft Unified Messaging does not interoperate with other voicemail systems, meaning you cannot forward and reply to messages between Microsoft and non-Microsoft voicemail systems.

Committed to standards, Cisco supports industry-standard protocols and codecs (Session Initiation Protocol [SIP], G.711, G.722, G.729, H.264, and H.323) throughout our telephony and video solutions. This is exemplified in messaging with interoperability with third-party voicemail solutions and industry-leading email environments. It also is exemplified in video, where support for multiple video and audio compression standards, codecs, and protocols as well as transcoding and rate-matching capabilities provide broad connectivity across Cisco and major video vendor environments. And for customization into a specific business environment, Cisco provides a rich set of standards-based application programming interfaces (APIs) for third-party developers. Through the Cisco Developer Network, developers are provided with the fundamental tools and resources required to develop, test, and market their Cisco compatible offers.

3. **Robust, extensible presence and instant messaging:** Presence is indispensable to quickly determine the availability and communications preference of individuals we need to collaborate with. Extensible Messaging and Presence Protocol (XMPP), the leading standard for presence, is an open XML-based protocol that allows near-real-time instant messaging and presence. With dispersed mobile teams, and many businesses communicating regularly outside the firewall, XMPP provides straightforward presence federation between organizations. The Microsoft offering relies on a Microsoft-specific variation of SIP/SIP for Instant Messaging and Presence Leveraging Extensions (SIP/SIMPLE) and does not natively incorporate XMPP, but instead requires a separate gateway. This architecture supports only XMPP federation with OCS. The promise of XMPP delivering presence awareness to any web-enabled application is not supported through this Microsoft approach. Whereas the Cisco approach allows developers to use XMPP for integration of IM and presence into web applications without the need for a thick client on the users' desktops, Microsoft supports integration only by one of the following:
 - Deploying Microsoft Communicator on the users' desktops
 - Employing a third-party custom Silverlight development effort
 - Using a third-party web gateway situated between the browser and OCS/MOC

Moreover, unless the user is currently logged into an OCS client, their presence is presented only as off line. This approach limits the value of presence awareness as it only reflects the availability of the client but excludes the status of other presence sources, such as a user's telephone or schedule stored in their Microsoft Exchange calendar.

Cisco provides the industry's only dual-protocol presence platform incorporating both native SIP/SIMPLE and XMPP — a platform that provides the architectural flexibility to simultaneously aggregate and distribute availability information across endpoints supporting either standard. Third-party XMPP clients can register directly to the server and exchange presence and instant messages. Because the Cisco architectural approach is network-based, presence is always on, allowing others to see if colleagues are on their desk phone or mobile phone or if they have a meeting scheduled on their Microsoft Exchange Calendar - *without that individual's being logged into a Cisco presence client*. Cisco also provides a richer set of instant messaging capabilities, including point-to-point and group chat, offline chat, IM logging and compliance options, and persistent chat, which is included in the same client and server solution, unlike the Microsoft offering, which requires a separate client and server for persistent chat. Cisco presence solutions interoperate with Microsoft Office Communicator, IBM Sametime, and Google Talk, without the need for additional servers in the demilitarized zone (DMZ), saving cost and operational complexity.

4. **Deployment and operational simplicity:** Whether it is a new deployment or an addition to an existing IM deployment, adding Microsoft voice, video, and web collaboration generally requires a complex, distributed server architecture to support its proprietary coding and to coexist with other voice and video investments. Customers deploying OCS voice capabilities must deploy a dual call-control infrastructure unless planning to flash cut to Microsoft voice, a process that significantly increases risk in this mission-critical business capability. A dual call-control infrastructure adds considerable cost, management overhead, and complexity to an organization's unified communications infrastructure.

The Cisco architectural approach is not to deploy discontinuous overlapping call-control platforms, but instead to use the network as a platform for delivering unified communications services, integrating with existing voice systems and simplifying management, and performing upgrades. Adding unified communications capabilities does not change the network architecture itself. Instead, Cisco Unified Communications Solutions take advantage of the services built into the network to help customers experience efficiencies throughout.

5. **Security:** Because Microsoft's offering is based on a homogenous server and PC environment, the same security vulnerabilities that affect other Windows-based systems in the organization will also affect those providing mission-critical voice and collaboration services. Widespread viruses such as SQLSlammer or CodeRed, which wreaked havoc on computer systems of some organizations, have the same potential to bring down voice systems and disable voice calls and E911 services. And, because Microsoft's approach is to use third-party vendors for survivable branch-office appliances, security vulnerabilities could be targeted in the OCS software provided by Microsoft or the appliance software provided by the third-party vendor or a combination of the two, with the potential of creating a significant operational challenge to teams attempting to secure deployment.

In contrast, the Cisco approach to security and patch management concerns encompasses both the network and the entire telephony system, including branch-office survivability. Cisco end-to-end security technology guarantees dial tone in even worst-case denial-of-service scenarios. Security-hardened Cisco solutions stand independent from homogenous computer systems that are subject to Windows-based security vulnerabilities. So in the unfortunate case where a worm strikes an organization, it is highly likely that the Cisco network and Cisco Unified Communications Solutions will still be online.

6. **Contact center:** Microsoft does not offer its own contact center solution, relying instead on partners to provide this critical solution. This situation exposes Microsoft customers to a variety of potential problems and risks with their contact centers - including possible lack of interoperability with other unified communications assets, feature loss or degradation, and disparate management systems and user interfaces. This situation also results in support complexity, because it is hard to know whom to call when a complex call flow breaks down.

In contrast, Cisco offers contact center and self-service (interactive voice response [IVR]) products that are *fully integrated* with other Cisco Unified Communications Solutions, allowing Cisco contact center users to transparently access unified communications functions, and conversely. For example, Cisco IVR and Voice

Portal solutions are integrated with Cisco TelePresence™ Solutions, enabling self-service sessions to transparently escalate to high-definition video-assisted service. Cisco Contact Center and Unified Communications Solutions are built on a *common, secure framework*, enabling end users and operators to enjoy a consistent experience and common administrative tools and interfaces.

7. **High availability:** Voice is a mission-critical capability, and companies cannot adequately function with unreliable, intermittent, or poor-quality voice services. For companies with branch offices, ensuring high-quality and high-availability voice is more complex because unified communications solutions are often centralized at headquarters for cost and administration advantages. To address this challenge, Microsoft has introduced the CS14 Survivable Branch Appliance (SBA). However, this approach is hardly different from the Microsoft OCS 2007 R2, because the SBA is yet another server to administer in a branch office. In fact, the term “Survivable Branch Appliance” hides the fact that support for yet another Windows server in the branch office is required, so the CS14 SBA is not really an “appliance” at all. More servers in branch offices means an increase in complexity in direct proportion to the number of branch offices you have, thereby increasing your total cost of ownership (TCO). The CS14 SBA encourages you to build a series of overlapping and complex parallel networks that increase operational overhead, increase fault isolation, and increase TCO.

With high quality and reliability in mind, Cisco Unified Communications Solutions are architected with built-in redundancy, automatic failover, and remote-site survivability capabilities. If the WAN link fails, remote sites remain functional because of the interaction between Cisco Unified Communications Manager and the local gateway, negating the need for redundant WAN links. Microsoft promotes this function, but the Microsoft solution requires additional appliances - with the associated costs and complexity.

In contrast, by taking advantage of industry-leading branch-office routers from Cisco in branch offices for survivability, conferencing, and public-switched-telephone-network (PSTN) gateway access, TCO is decreased by supporting *one* converged data and telephony network.

8. **Innovative mobile device support:** Businesses today want to connect employees with the information and services they need, when they need it, and through a wide range of mobile devices. As businesses increasingly rely on mobile devices, IT must meet that need with cost control, compliance, and management requirements in mind. Today, Microsoft cannot meet all of these needs, especially for innovative devices such as the iPhone and iPad, which are increasingly adopted by executives and senior management. Although Microsoft Wave 14 may address some of these deficiencies, Cisco’s mobility capabilities are more mature and complete.

For baseline capabilities, Cisco supports the Apple iPhone, as well as Nokia, RIM, Windows Mobile with presence, IM, click to call, and other advanced functions. As an example, to help IT manage costs, Cisco offers Dial via Office to intelligently route mobile calls, thereby removing long-distance or international costs. Further saving costs and increasing call quality in-building, IP soft-phone capabilities on the iPhone and Nokia devices allow you to place and receive calls over a corporate Wi-Fi network or any Wi-Fi hotspot using a VPN. Compliance needs are addressed through Single Number Reach, so businesses can publish one business phone number and ensure corporate voicemail is used, while allowing employees to be reached on multiple alternate devices without releasing the mobile or home-office number. Extending far beyond these baseline capabilities, Cisco today delivers a rich collaborative mobile experience that also includes visual voicemail, transparent call handoff - which moves calls from the desk phone to the mobile device or conversely - and web conferencing from the iPhone, iPad, and RIM devices for live viewing of shared applications and presentations for mobile users. And recently announced, the new Cisco Cius™ business tablet demonstrates Cisco’s vision for mobile collaboration, providing revolutionary capabilities anytime, anywhere, including:

- Wired, wireless, and third- and fourth-generation (3G and 4G, respectively) cellular service for effortless connectivity
- A standard virtual desktop client for easy, secure access to business applications
- An open development platform built on the Google Android operating system

- HD video (720p) and Cisco TelePresence interoperability for immersive video
 - Anywhere access to Cisco collaborative applications
9. **Expert pre- and postsales support:** Microsoft tends to treat voice applications similarly to a consumer software sale rather than a mission-critical capability. Although enterprise customers may have some direct access to Microsoft to address postsales concerns, IT organizations are granted a fixed number of free calls and then must “pay-as-you-go”, making operating expenses less predictable. Microsoft does not offer onsite service or support arrangements directly, nor does it offer Microsoft-certified services through partners. Instead, it relies completely on partners to provide onsite support.
- Cisco’s award-winning technical support services provide IT staff with direct, every-time access to Cisco engineers and Cisco.com resources. Fast, expert response and accountability help ensure rapid resolution of critical problems, an offering that is essential for mission-critical voice services. Whether support is delivered by Cisco directly or through Cisco Certified Partner services, customers have access to comprehensive expertise based on a decade of experience.
10. **Vision:** Although Cisco and Microsoft agree on the vision of multiparty and multimedia communications integrated into business processes, our philosophies diverge from there. In this area, Microsoft points to its developer resources, but neglects to disclose that because the integrations are proprietary, they are subject to modifications. While this is normal as functionality evolves, in the case of OCS it does not necessarily result in a user experience that is more seamless when 3rd party products integrate with OCS. Cisco’s vision is for any-to-any connectivity, with communications embedded in every application that customers use every day. This solution is combined with standards-based flexibility to integrate with other communication endpoints and applications for long-lasting robust and flexible solutions.

Why Cisco?

Cisco began developing IP communications solutions in 1997 and has provided IP communications services and applications longer than any other vendor. Today, more than 85 percent of Fortune 500 companies use Cisco Unified Communications. Cisco Unified Communications is part of a comprehensive solution that offers a high level of security, agility, resiliency, scalability, and quality of experience. With proven strength in enterprise networking, virtualization, and the data center, Cisco can also deliver a next-generation network that supports highly secure collaboration within and across organizations.

For More Information

For more information about Cisco Unified Communications, visit <http://www.cisco.com/go/uc> or contact your local Cisco account representative.



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