

Integrating the Polycom CX5000 with Polycom Video Systems



Contents

| | |
|---|----|
| Contents | 2 |
| Introduction | 3 |
| Scope | 3 |
| Polycom CX5000 and Microsoft RoundTable Equivalence | 3 |
| Abbreviations and Conventions | 3 |
| Achieving Integration: Additional References | 4 |
| Overview of the Polycom CX5000..... | 4 |
| Why Use the Polycom CX5000? | 6 |
| Polycom CX5000 Application Environment | 6 |
| Basic Integration of the Polycom CX5000 with Polycom systems | 7 |
| Polycom CX5000 with Microsoft Office Communications Server and Live Meeting | 7 |
| Polycom CX5000 in a Polycom Video Environment | 9 |
| Overview | 9 |
| Integration Scenarios | 11 |
| Scenario 1: Remote Office Communicator to HDX | 12 |
| Scenario 2: HDX to Polycom CX5000 | 12 |
| Scenario 3: HDX to co-registered Office Communicator and HDX 4000 | 13 |
| Scenario 4 – Multi-point call using HDX MP MCU | 14 |
| Scenario 5: Multiple Office Communicator clients and HDX using RMX | 15 |
| Scenario 6: Multiple Office Communicator clients and legacy video endpoints using RMX | 16 |
| Scenario 7: Sharing Live Meeting 2007 Content with HDX video endpoints | 17 |
| Scenario 8 – Office Communicator transfer to CX700 | 18 |

Introduction

This guide describes deployment options for the Polycom CX5000 Unified Conference Station when used in conjunction with other Polycom video systems. As a Polycom-branded version of the Microsoft® RoundTable™ collaboration and conferencing device, the CX5000 is optimized for use with Microsoft® Office Live Meeting 2007 and Microsoft® Office Communications Server 2007. Because of integration between the Office Communications Server environment and a variety of Polycom visual communications environments, the value of the CX5000 may be extended beyond a pure Microsoft environment to a number of scenarios involving Polycom video systems and endpoints.

This document identifies and illustrates several key scenarios for interoperability between the Office Communications Server environment and the Polycom visual communications environment and the Polycom CX phones for Office Communications Server. The scenarios range from basic with audio only, to advanced with a mix of audio, video, content and escalation (seamless transition) from audio to video. This document does not attempt to address all possible options; once the basic scenarios are described and understood, they may be used as building blocks upon which more complicated scenarios may be built.

Scope

This document is intended to be a descriptive guide. The successful integration of Microsoft and Polycom products relies on a variety of skills and knowledge of both companies' products. There is a vast amount of material available that describes the implementation details of Office Communications Server and its associated applications. This document assumes that all basic setup and deployment of Microsoft systems is described in Microsoft materials, and is not the subject of this document.

Polycom CX5000 and Microsoft RoundTable Equivalence

The Polycom CX5000 is functionally identical to the Microsoft RoundTable device. In this document, any comments about the CX5000 apply equally to the Microsoft RoundTable device. For any environments that may contain legacy Microsoft RoundTable devices, these may be treated as CX5000 devices for the purpose of integrating with Polycom systems.

Abbreviations and Conventions

Following is a list of abbreviations used in this document.

| | |
|---------------|---|
| OCS | Microsoft Office Communicator 2007 server |
| MOC | Microsoft Office Communicator client |
| HDX | Polycom hi definition video endpoint. Starting from executive desktop (HDX4000) to group systems (HDX7000/8000) and boardroom systems (HDX9000) |
| RMX | Polycom hardware MCU, a bridge that can mix SIP H323 PSTN and ISDN |
| IM | Instant message, chat |
| CX100 | Polycom USB speakerphone and microphone. It functions as a personal device |
| CX200 | Polycom USB desktop phone for Office Communicator |
| CX700 | IP phone that connects to OCS |
| CX5000 | Polycom's version of Microsoft Round Table; this USB-connected PC device serves to add 360-degree voice and video to Live Meeting 2007 application and when used only with Microsoft Office Communicator 2007 client functions as a video switched webcam |
| SIP | Session Initiation Protocol |
| H.323 | Legacy video protocol, supported by any polycom endpoint |

Achieving Integration: Additional References

To accomplish the actual deployment of Polycom video systems with Office Communications Server, this document should be used in conjunction with a companion document that describes the detailed configuration changes that are required on the Polycom systems to complete an integrated deployment. The companion document is:

- *Polycom® HDX and RMX™ Systems Integration with Microsoft® Office Communications Server 2007 Deployment Guide, 1.0, April 2009*: This document describes the specific steps required to integrate Polycom HDX and RMX systems with Office Communications Server.

In addition, Polycom has produced documents that address various aspects of the CX5000 device. Key among these documents are:

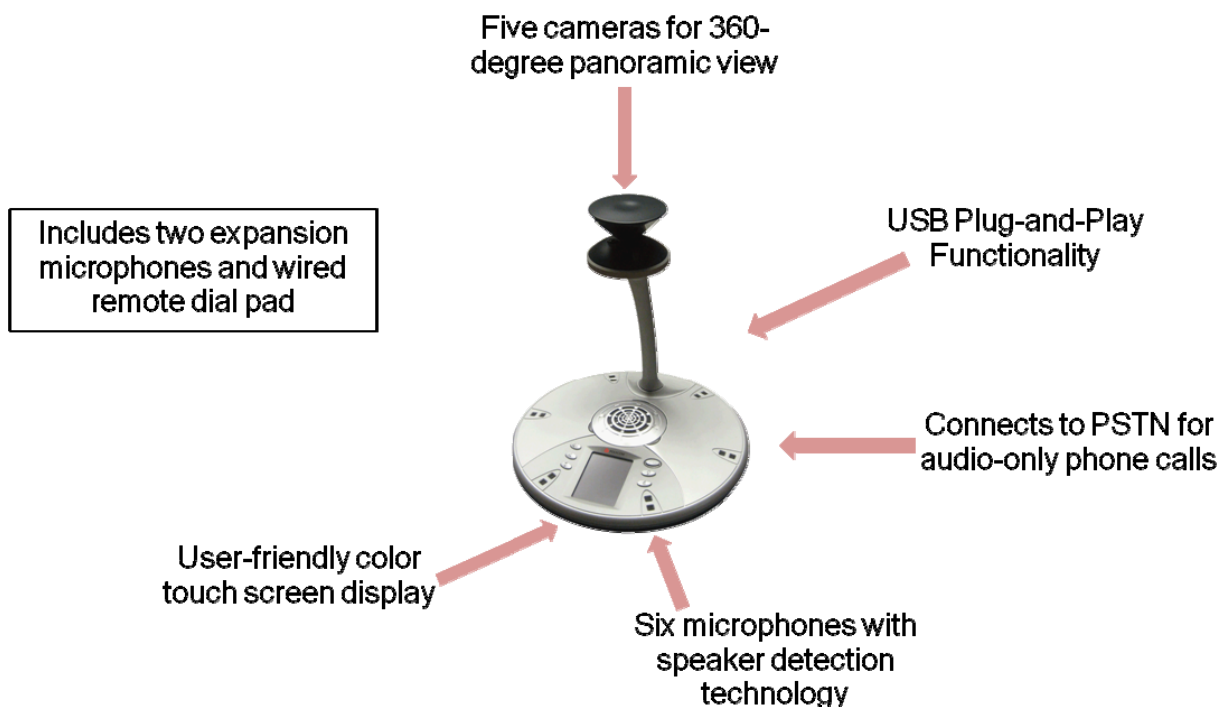
- *Polycom CX5000 Deployment Guide*: This document discusses the management and configuration of the CX5000 device. There are no specific configuration changes that are needed to use the CX5000 within a deployment that integrates with Polycom video systems.
- *Polycom CX5000 Users Guide*: This document details the use of the Polycom CX5000.

Overview of the Polycom CX5000

The Polycom CX5000 Unified Conference Station is primarily a USB peripheral device with several key features of relevance to these deployment scenarios:

- A camera head that provides a 360 degree view of the meeting room and its attendees. The device makes a 360 degree panoramic strip available to other participants.
- Active speaker tracking, in which the device determines who is speaking, creates an “active speaker” view with the speaker centered in the frame and presents this active speaker view to other conference participants.
- An analog audio conference phone for calls to or from the PSTN or a PBX. This capability does not require a PC and only requires a connection the phone network.
- USB plug and play simplicity. Once a Live Meeting client or an Office Communicator client is installed on an associate PC, no other drivers or software are required to be installed.

With the exception of the standalone audio conference phone capability, the CX5000 is a USB peripheral device that requires a PC with appropriate applications to enable it to function and communicate with the rest of the world.



Why Use the Polycom CX5000?

The Polycom CX5000 provides many advantages:

- Adds a compelling and engaging group video experience to a Live Meeting session or to an Office Communicator conversation.
- Active speaker tracking and 360-degree views engage meeting participants ensures that the active speaker is always centered in the active speaker window. Nobody has to guess who is speaking. A panoramic view is shared with all Live Meeting participants.
- Plug and play simplicity. Once OCS or Live Meeting is deployed, there is no other software or drivers that need to be installed.
- The ability to include participants who are not within the organization's boundaries, or the managed video environment. Anybody with a PC can download the Live Meeting client and view the meeting. With a webcam or CX5000, they can participate. Even without a Windows-based PC, Live Meeting lets users participate via a web client. With Office Communicator, any properly federated organizations may share voice and video that extends beyond a single closed organization.
- Minimal administrative and IT oversight. Once Live Meeting or Office Communications Server is deployed users with Live Meeting accounts or Office Communications Server access can be essentially self-sufficient in setting up conferences and using the CX5000.
- The ability to record synchronized audio, video and content during a meeting or training session. Live Meeting allows entire meetings to be recorded including synchronized panoramic CX5000 video, audio and content for later retrieval and review. Playback uses simple VCR-style controls.

Polycom CX5000 Application Environment

As a USB collaboration device, the CX5000 must be used with an appropriate PC client application in all cases. It can be used with two different client applications:

- Microsoft Office Live Meeting 2007
- Microsoft Office Communicator 2007

Live Meeting

When the CX5000 is used with Live Meeting 2007, it is plugged into a PC that is running a Live Meeting client console. Live Meeting is an online meeting space that allows all participants to share audio, video and content. Each participant in a Live Meeting session gains access to the session through his own Live Meeting client console. In this application, all of the Live Meeting participants can receive and view the 360 degree panoramic video from the CX5000, along with the active speaker window

Live Meeting sessions can be set up in two ways:

- Using the hosted Live Meeting service outside the organization.
- Using the conferencing facilities provided by the enterprise's Office Communications Server system.

Regardless of which infrastructure supports the Live Meeting session, this is a closed system and there is no integration with Polycom video systems. In addition, the user interface remains essentially the same in either scenario, thus making the infrastructure implementation choices almost completely transparent to the user. The hosted solution is convenient because an enterprise is not required to have any specific software deployed other than the Live Meeting client. Using Office Communications Server may provide better performance and control of the environment because it is internally managed.

Office Communications Server/Office Communicator client

When the CX5000 is used with a PC with an Office Communicator, it will function in much the same manner as a USB webcam; however, the CX5000 will still track and display the active speaker, centered in the video window. No panoramic video is transmitted. Other participants in the conversation will see only the active speaker window displayed on their PCs. With Office Communicator, video calls to and from HDX systems are supported. This environment may be integrated with various Polycom video systems and endpoints.

Basic Integration of the Polycom CX5000 with Polycom systems

The key thing to understand about the CX5000 is that it is simply a USB device. It is not directly integrating with anything other than its locally attached PC. The question of integrating the CX5000 is better considered by understanding how Office Communications Server and various Polycom systems can be integrated.

The following table summarizes the integration possibilities of the CX5000 with various conferencing options within the Microsoft environment.

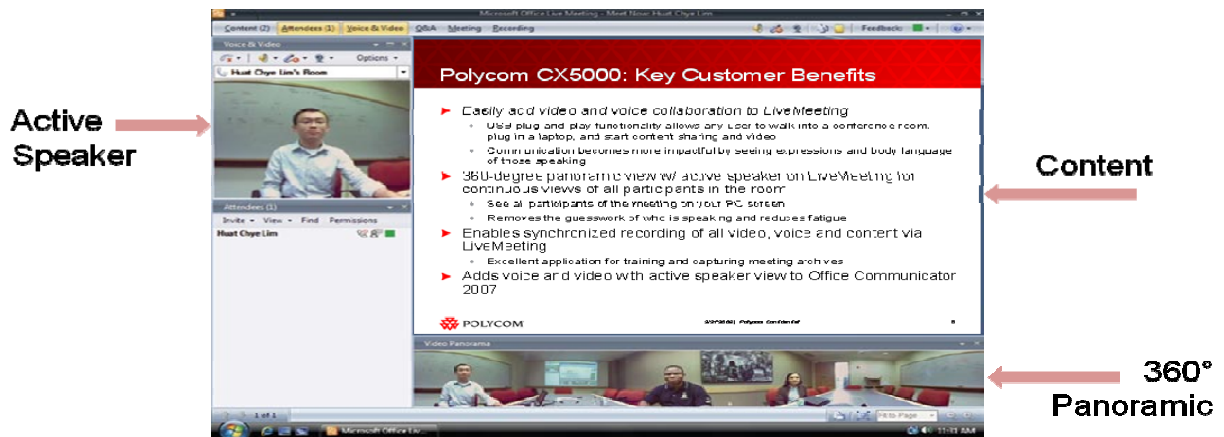
| | Live Meeting Client | | Office Communicator Client |
|--|--|--|-----------------------------------|
| Backend | External Hosted Live Meeting Server | Internal Office Communications Server Conferencing | OCS 2007 |
| Integration with Polycom Video? | No; closed Live Meeting conference environment | No; closed Live Meeting conference environment | Yes; integration possible |
| CX5000 video | Active Speaker and Panoramic View | Active Speaker and Panoramic View | Active Speaker Only |

The remainder of this document describes the various scenarios that can be achieved by integrating the Microsoft environment with Polycom video systems.

Polycom CX5000 with Microsoft Office Communications Server and Live Meeting

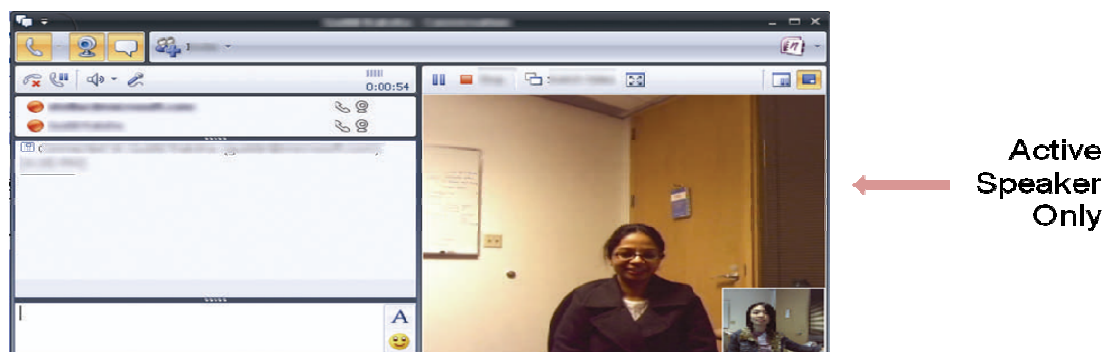
The most basic deployment of the CX5000 is within an exclusively Microsoft environment. This establishes the baseline behavior of the device as it is used.

With Live Meeting, scheduled or ad hoc “meet now” meetings can be set up and participants invited. Conceptually, all participants meet in the Live Meeting online meeting space. The following picture shows a Live Meeting participant’s client console when the CX5000 is being used. Note the 360-degree panoramic view, the active speaker view—which focuses on the individual who is speaking—and the shared content. Audio, video and content are integrated into a single user interface.



Plus audio, all seamlessly integrated into the meeting

With Office Communicator, the communication is typically ad hoc, and generally point-to-point, although additional parties may be added to the "conversation", effectively creating a conference call with audio and video. The following illustration shows the result when the CX5000 is used with Office Communicator. The conversation window appears exactly as it would if the far end was using a simple webcam. The only difference is that if the far end is using a CX5000, the video will always be focused on the active speaker, who will be centered in the video window. Note that no panoramic video view is available.



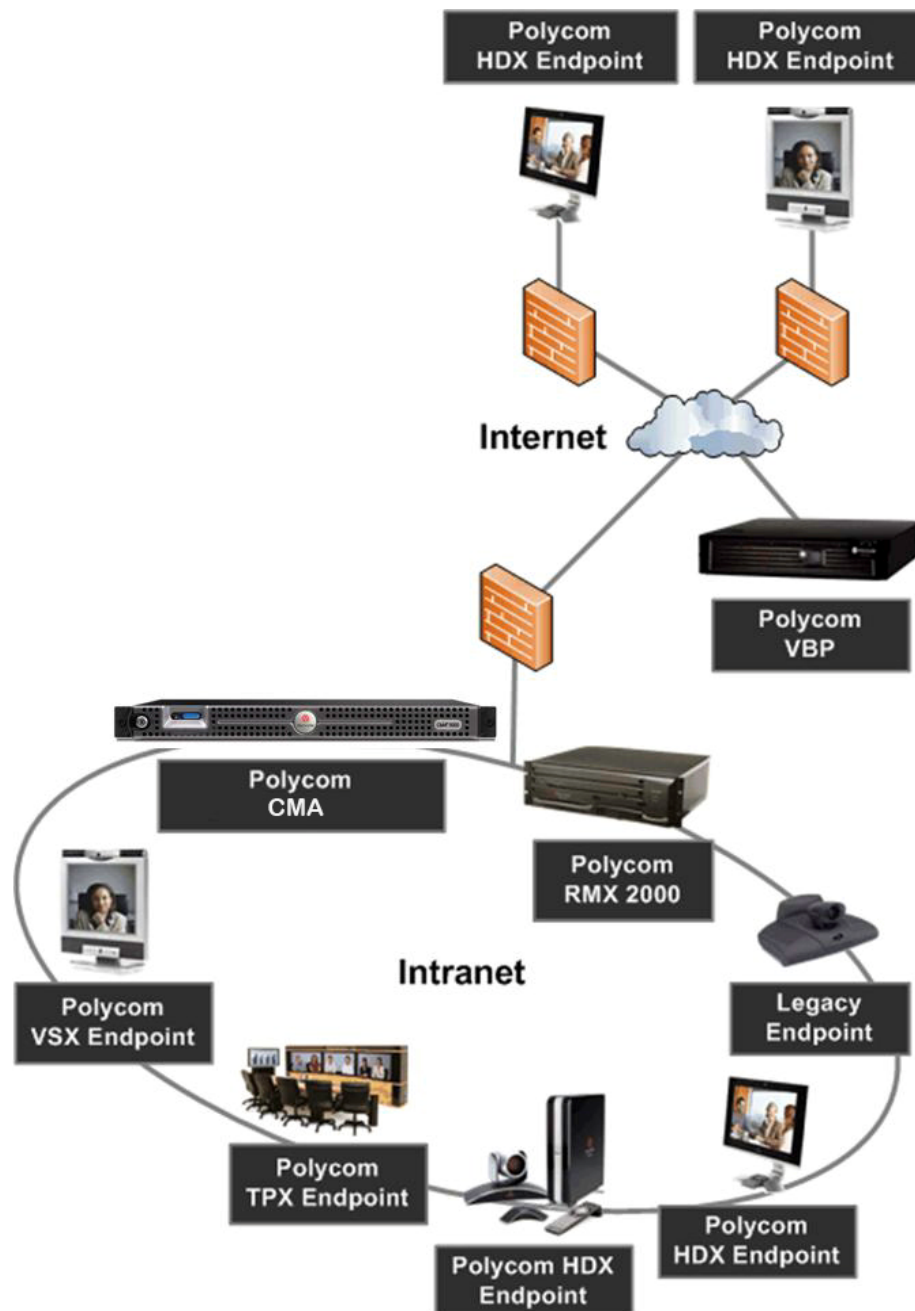
Active speaker video plus audio, IM, presence

Polycom CX5000 in a Polycom Video Environment

Overview

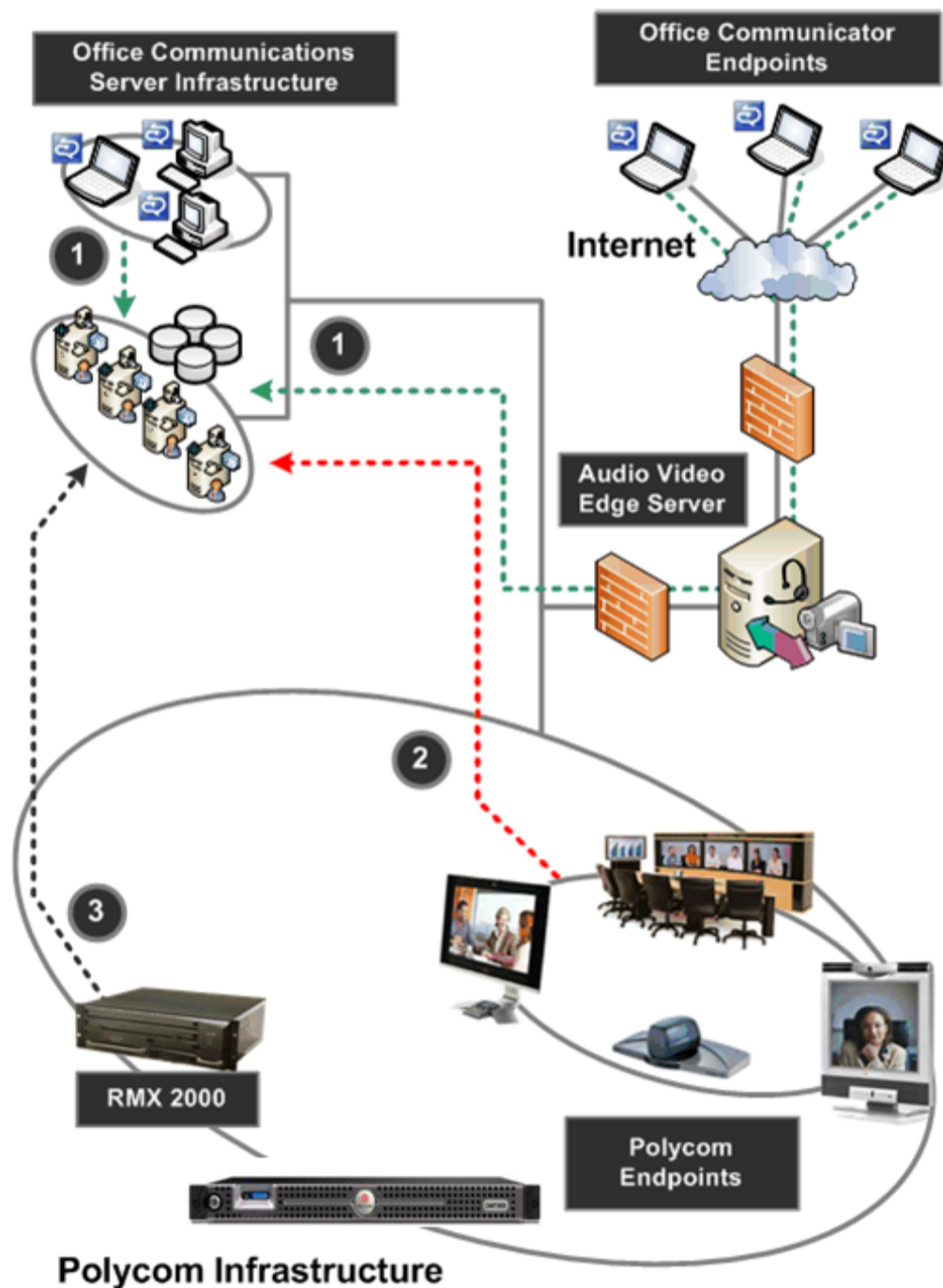
If a CX5000 is used with an Office Communicator client, it is possible to achieve integration with a variety of Polycom video systems. This is accomplished by configuring the Polycom and Office Communications Server environments to integrate with one another.

The following figure illustrates a typical Polycom-based video conferencing solution with no Microsoft integration. Shown are the various Polycom video systems that can be combined into an organization's visual communications solution.



Representative example of a Polycom-based videoconferencing solution

The following figure illustrates the interoperability of a Polycom-based videoconferencing environment with a Microsoft Office Communications Server 2007 environment.



Office Communications Server clients in this environment include:

- Microsoft Office Communicator R1 & R2 client PCs (with headsets or other audio peripherals)
- Polycom CX5000 Unified Conference Stations (connected via USB to a client PC)

- Polycom CX200 desktop phones and CX100 speakerphones (connected via USB to a client PC)
- Polycom CX700 IP Phone (with embedded client connected directly to the Office Communications Server)

Integration Scenarios

This section describes a variety of basic scenarios for integrating Polycom video systems with Microsoft Office Communications Server environments. These scenarios illustrate the user experience for the scenarios.

The following scenarios are considered:

1. Point-to-Point calls:
 - a. Microsoft Office Communicator dials point-to-point to a Polycom HDX 2.5 endpoint
 - b. Polycom HDX 2.5 endpoint dials points-to-point to Microsoft Office Communicator
2. Multi-point calls:
 - a. Using Polycom HDX Internal MCU
 - b. Using Polycom RMX 2000 4.0 MCU
3. Live Meeting Session using People + Content (H.239)

The following general key points should be noted for these scenarios:

- All SIP devices register directly with Office Communication Server, these include the CX700, HDX endpoints and the RMX2000
- All legacy Polycom video endpoints (VSX and older) connect through the RMX2000 as a normal H.323 endpoint.
- The RMX2000 functions as a gateway between SIP and legacy protocols such as H.323, ISDN and PSTN

Scenario 1: Remote Office Communicator to HDX

Scenario 1—Joe is working from a branch office and needs to connect to a Polycom HDX Room System in his Corporate HQ

Joe decides to use his Office Communicator client and the Polycom CX5000 for this purpose.

Point-to-point video is supported from the Office Communicator client on the Office Communications Server system to HDX group system.



Joe (Office Communicator) can see the Pebble Beach HDX system from his buddy list and, seeing it is available, he can start a video call with the HDX from his Office Communicator client.

Scenario 2: HDX to Polycom CX5000

Scenario 2—Joe is working from the Corporate HQ using Polycom HDX4000 and needs to connect to a Conference Room equipped with a CX5000

Point-to-point video is supported using the HDX4000 and CX5000 as the group systems.



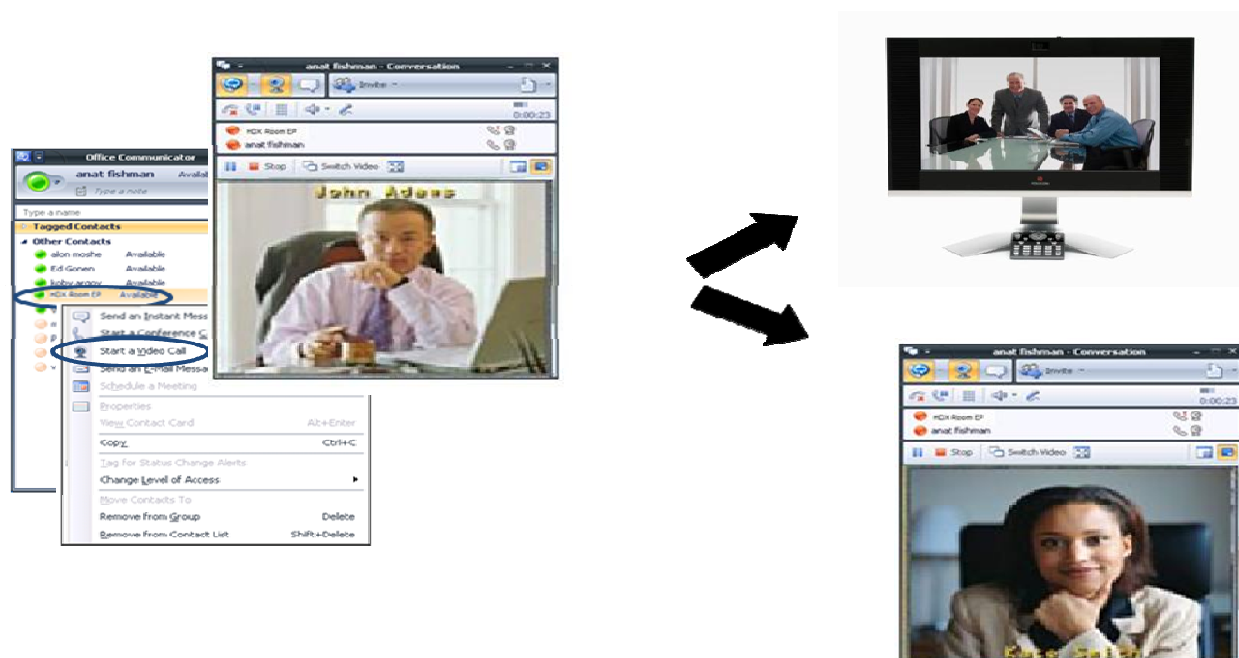
Joe (HDX) dials his boss, Mike, who is logged into his Office Communicator client. Mike has connected a CX5000 to his laptop in the Pebble Beach conference room. The CX5000 acts as a video switched webcam for Mike's Office Communicator. Participants on the HDX can see the active speaker in the CX5000 room. Note that no CX5000 panoramic video is available through Office Communications Server.

Scenario 3: HDX to co-registered Office Communicator and HDX 4000

Scenario 3—Joe connects to Mike using Office Communicator. Mike has an Office Communicator client and a Polycom HDX registered with the same username. Point-to-point video is supported from Office Communicator to multiple devices.

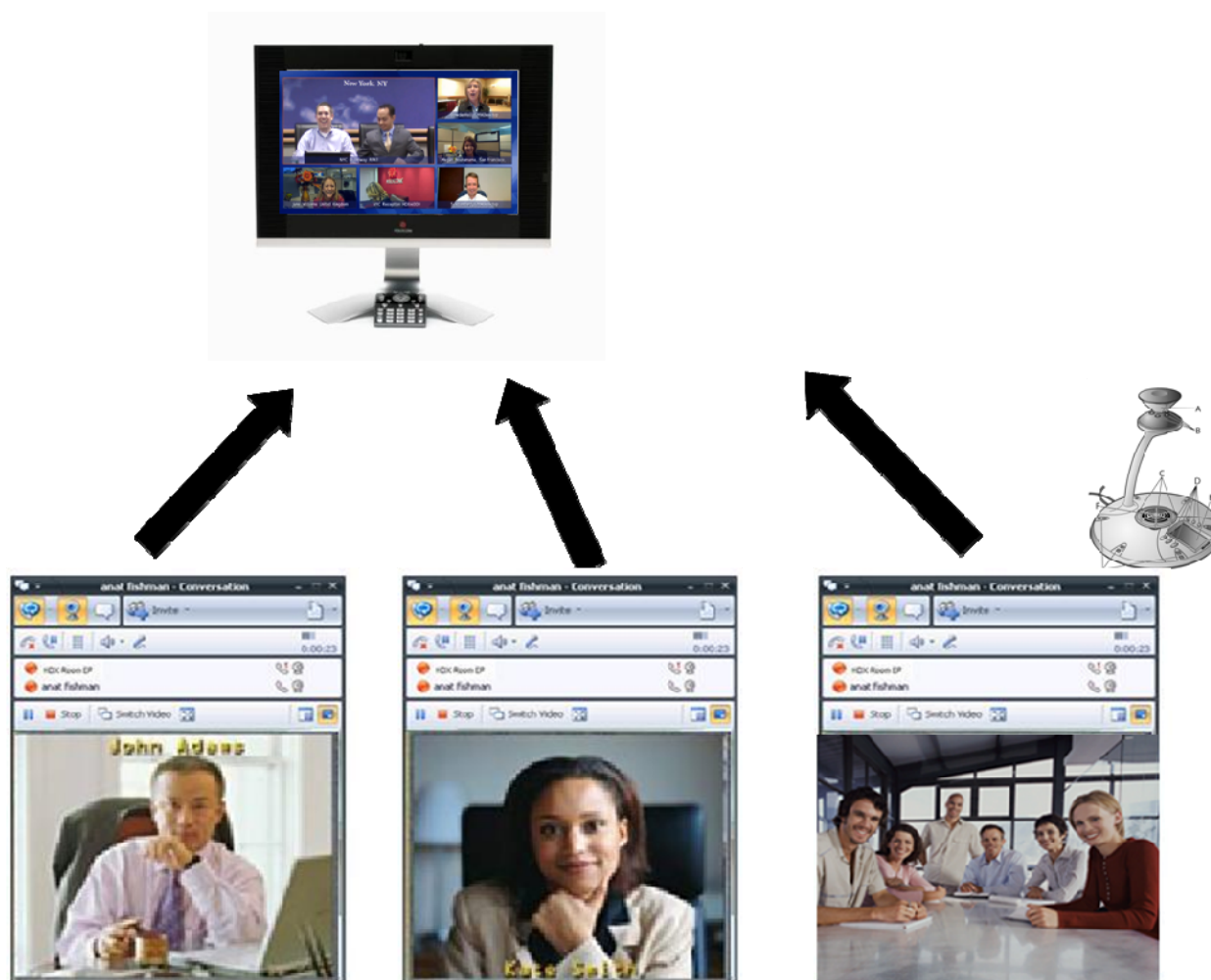
Joe can see in his Office Communicator contact list that Mike is available. Mike has multiple devices—a PC with Office Communicator and a Polycom HDX 4000—registered with the same username (Mike@polycom.com). Calling Mike will result in all of his devices ringing and Mike can select the one on which he wants to accept the call. Mike's contact list can also be shown directly on the HDX system. This simplifies the process of seeing presence for and dialing his contacts.

Note that Joe can use either a webcam for himself or a CX5000 if there are multiple people at his end.



Scenario 4 – Multi-point call using HDX MP MCU

Scenario 4—Multiple parties including Office Communicator users participate in a conference hosted on the HDX MP MCU.

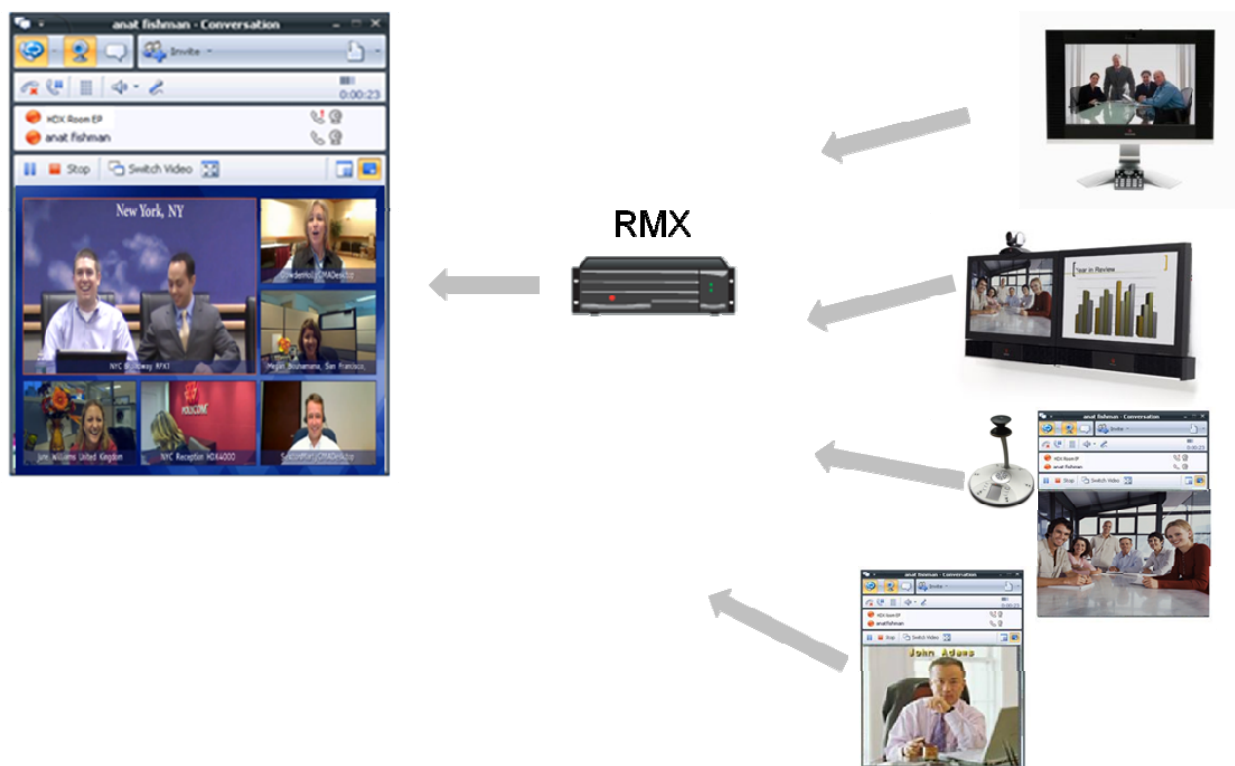


Joe (Office Communicator A) starts a video call with the HDX system (Chardonnay conference room). Jeff (Office Communicator B) starts a video call with the same HDX and so does Mike (Office Communicator C). On the HDX system, the internal MCU is enabled and a multi-point call is established showing all of the participants in a call. If any of the participants are in a room with a CX5000, the view from that room will be the active speaker view.

Scenario 5: Multiple Office Communicator clients and HDX using RMX

Scenario 5—Team call using multiple Office Communicator clients and HDX systems, using RMX2000 virtual conference rooms.

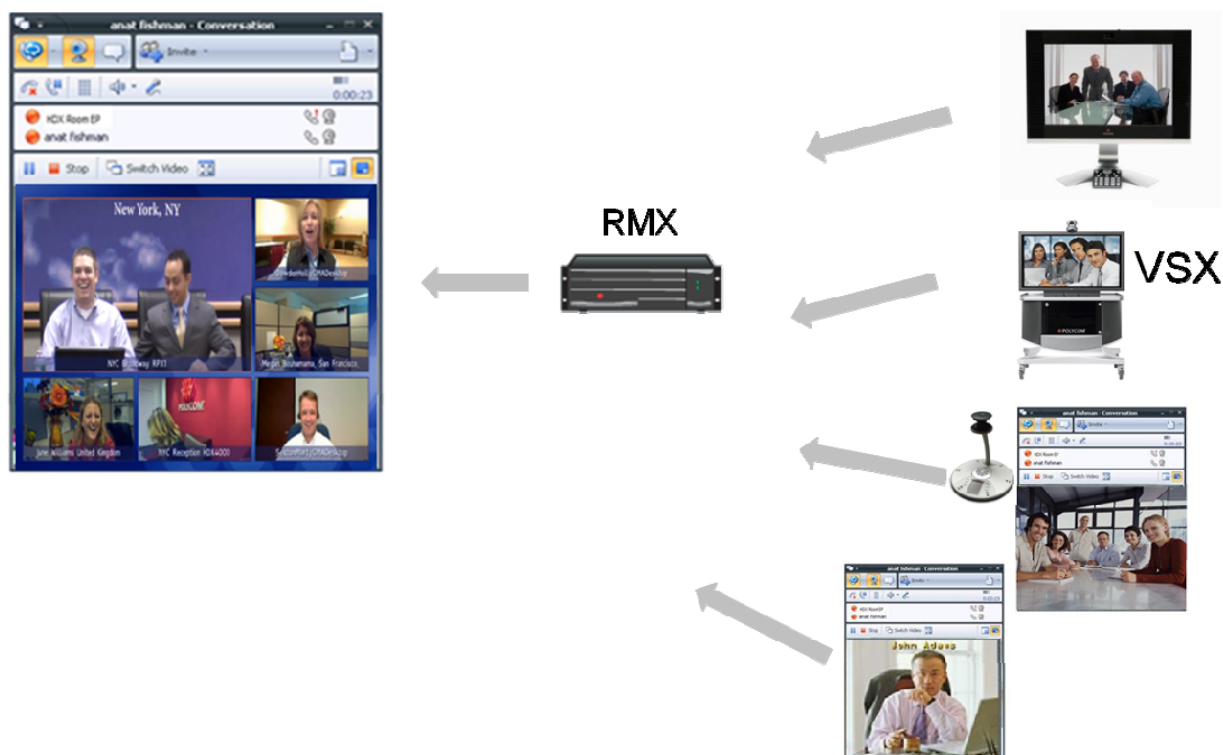
The marketing team needs to join a call; three participants join from Office Communicator clients (using webcams or CX5000 devices). Three other participants use HDX endpoints in the facility. Everybody dials into the same meeting room: 1001@polycom.com. Continuous presence allows all the participants in the call to see each other. For any Office Communicator participants using a CX5000, the active speaker view will be sent.



Scenario 6: Multiple Office Communicator clients and legacy video endpoints using RMX

Scenario 6—Team call using multiple Office Communicator clients and a legacy H.323 video endpoint, using RMX2000 virtual conference rooms.

The marketing team needs to join a call and three participants join from Office Communicator (using webcams or CX5000s). Three other participants use HDX endpoints in the facility and one remote user joins from an H.323 video endpoint. Everybody dials into the same meeting room: 1001@polycom.com. Continuous presence allows all the participants in the call to see each other.



Scenario 7: Sharing Live Meeting 2007 Content with HDX video endpoints

In this scenario, only the content from a Live Meeting session is shared with users on HDX systems. Microsoft Live Meeting 2007, which supports PSOM content protocol, is used for content sharing with other Live Meeting clients; however, Live Meeting does not support the H.239 protocol, which is used by Polycom's People+Content for sharing PC content with Polycom video systems. Polycom HDX endpoints do not support PSOM, so no direct sharing of content is possible between Live Meeting 2007 clients and Polycom video systems. Regardless, an HDX system can “see” content from the Live Meeting session if one of the Live Meeting participants or the presenter shares his Live Meeting application or desktop using H.239 (People+Content). Using this technique, a Live Meeting participant can share the content of his desktop with the conference rooms in which there is no PC connected to the Live Meeting session.

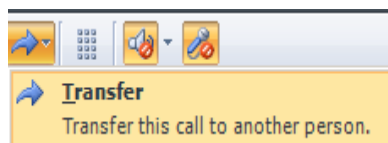


Scenario 8 – Office Communicator transfer to CX700

Joe (Office Communicator A) can see that Larry (Office Communicator B) is available. He starts a chat session with Larry. They decide to speak and then Joe selects the audio icon



to initiate a voice call to Larry. Larry answers and they are now in an audio conversation. Larry realizes that Jeff is the better person to address Joe's question and he transfers the call to Jeff's CX700 phone.



When Jeff answers, Joe and Jeff are connected, and Larry may leave the call.

