Synergy SKY
CONNECT

Whitepaper

Contents

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"It's all very simple. It is an invisible technology with a minimal approach that just works. Meetings start on time now!"

Our Solution

Synergy SKY CONNECT provides a media handling server that performs SIP signaling-based video protocol gateway services to web conference-based cloud platforms. This patent-pending video gateway allows for SIP endpoints, independent of registration, to communicate bidirectionally with both audio and video to the Microsoft Teams platform.

But Synergy SKY CONNECT is more than just interoperability. It also unifies the collaboration experience and administration across your calendars, meetings rooms, and video conferencing platforms. The features of the Synergy SKY management suite, however, are outside the scope of this document. If you're interested in knowing more about the manage suite instead, make sure to take a look at **this page**.

Video has become business-critical

Business video meetings have become critical to all organizations. We witnessed in the past few years a rapid market explosion that forced organizations to adapt to what was available and functional for hybrid work. This introduced more players and technologies. The market is now extraordinarily diverse and most solutions are both proprietary and incompatible.

With the recent rise in popularity of cloud-based video meeting platforms such as Microsoft Teams, the trend has been to gravitate towards single vendor connectivity. These islands of connectivity make it difficult for users to interact with different platforms using technology built for other service platforms. Existing interoperability solutions ("gateways" or "CVIs") have limited scope and face shortcomings in a lot of common use case scenarios.

How to create a collaboration equilibrium

Traditionally, it is not easy for a SIP endpoint (Cisco, Poly, Lifesize, etc.) to connect to a Microsoft Teams meeting. It is a prerequisite that the user knows who booked the meeting and whether a Cloud Video Interop (CVI) product has been configured to allow the user to connect to the meeting from its preferred video meeting room.

Alternatively, the meeting organizer must understand the internal and external participants' access methods to ensure a successful and on-time connection for all users. This is, of course, not something to be expected from an average employee.

Using different CVI providers also introduces different user experiences when it comes to video layout. The layout will depend on the layout from the CVI provider. Furthermore, presentation sharing is not possible with CVI vendors. Microsoft Teams has recently introduced PowerPoint Live in Teams – but this does not work with traditional CVI either.

This complexity and uncertainty lead most organizations to forgo interoperability and reach for the most common, cheap, or convenient solution. These short-sighted decisions hurt the end-users as well as the organizations that have invested in superior endpoint technology and close sales opportunities for premium endpoints and meeting services.

"You need interoperability because you have several meeting platforms already. Why should you have to invest in another meeting platform just to get interoperability with the platforms you already have?"

Synergy SKY CONNECT removes the uncertainty of scheduled meetings and ensures it simply works. It offers a uniform and native Microsoft Teams experience for the invited SIP endpoints regardless of who the organizer is, combined with the features the users expect from a SIP endpoint.

Why SIP endpoints?

There are about 6 million SIP-based video conferencing rooms in the world - Cisco Webex is the industry leader with Poly as number two, among several other endpoint manufacturers.

• SIP endpoints are the most robust, versatile, and feature-rich video collaboration endpoints on the market.

• SIP has been successfully standardized across multiple vendors through the last 20 years and backed up by the Internet Engineering Task Force (IETF).

• SIP endpoints can communicate with multiple vendors.
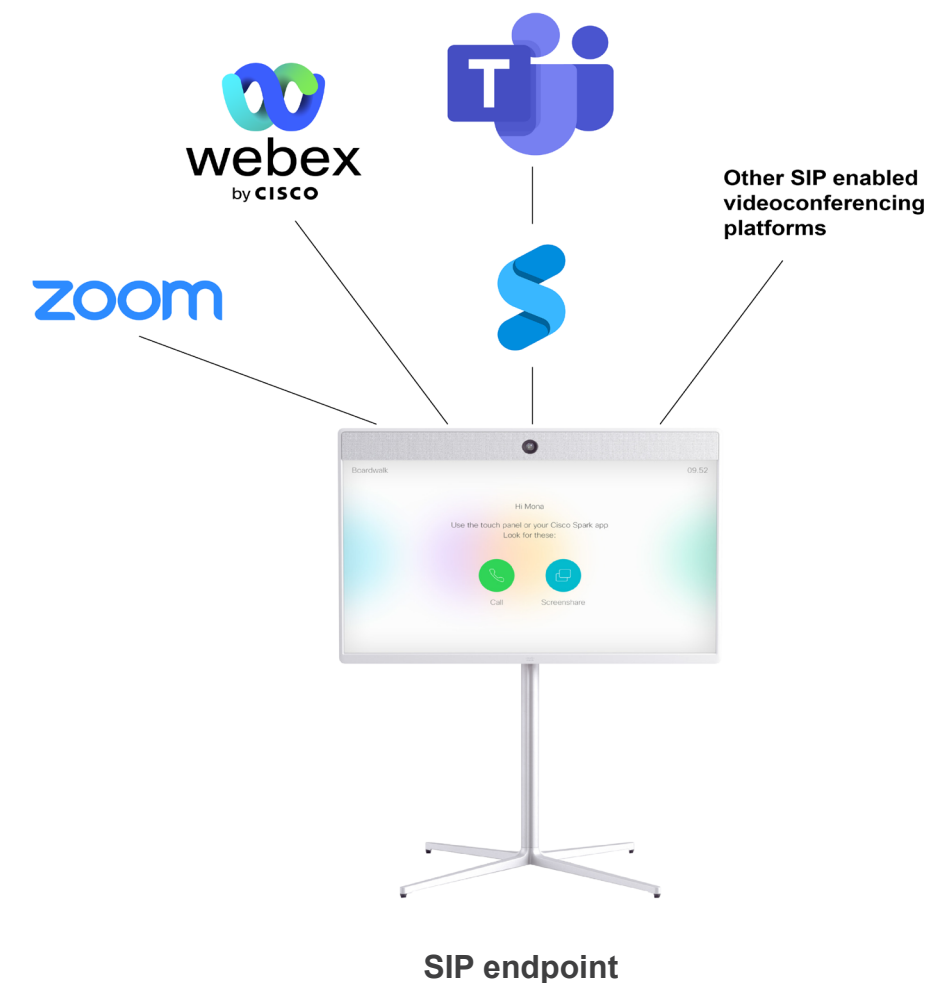
SIP endpoint

How it works

The Synergy SKY CONNECT gateway navigates the media translation between the SIP endpoint and Microsoft Teams using the WebRTC guest facilities. Calendar invitations are handled by the Synergy SKY management suite included in CONNECT. This offers both meetings invite workflow and the end-to-end media flow. This ensures consistent, robust connectivity and call quality, as well as the native Microsoft Teams experience the user would have had in a web browser.

The functional diagram below reflects the components and how they interact to enable the end-to-end user experience from a simple calendar invitation. In this example, the end user sends a Microsoft Teams enabled meeting, adds participants, and selects a meeting room with a SIP endpoint. At this point, the Synergy SKY management suite configured endpoint receives the invitation and begins processing a "green button" to easily join the meeting with One Button To Push / OBTP for Cisco and One Touch Dial / OTD for Poly video endpoints. In this case, Synergy SKY CONNECT capabilities are needed to proceed for a successful end-to-end connection. At meeting time (minus a configurable time buffer) the "green button" is formulated to include the appropriate connection information and sent to the endpoint. At the click of the "green button," the endpoint calls the Synergy SKY CONNECT module via the SIP protocol, where it is translated to a WebRTC connection and establishes the path to the Microsoft Teams service. Once the interoperability negotiation completes, audio and video media flow bidirectionally. The negotiated quality is the one that is available to a WebRTC guest call participant.
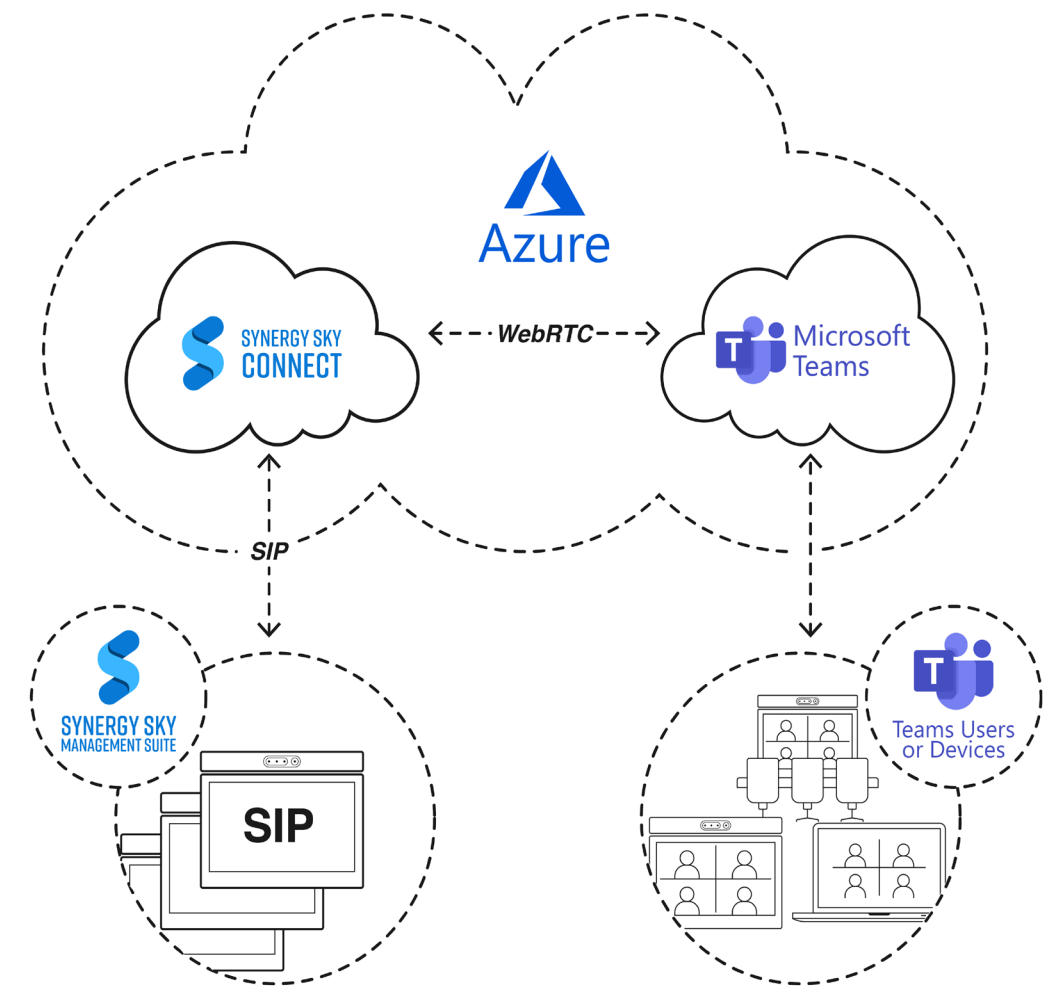
Deployment model

The Synergy SKY CONNECT gateway is available as a public cloud service. The Synergy SKY management suite on the other hand is available for deployment in an on-prem format as well as a private cloud service. This allows the customers to execute a very rapid deployment, in addition to keeping all their data on-prem in their own company network.

Security

The Synergy SKY CONNECT product has been built from the ground up to provide secure control for both media and operational interactions. The platform will support the following security protocols:

Media:

• AES
• SRTP
• SIPS

Interface:

• HTTPS
• SSH

Gateway services that convert calls from one format to another can only secure one leg of the call in each direction. This means that a customer using a public gateway service can only ensure that the call to the gateway is secure and that the connection from the destination service is secure. However, since the Gateway is by nature a man-in-the-middle appliance, the call cannot be guaranteed secure from source to destination. Security schemes such as on-screen key displays, and administrator validation tools are a potential solution to these concerns. These features are not included in the initial product release.

Supported protocols

The primary function of the Synergy SKY CONNECT product is to enable SIP to WebRTC calls. Different endpoints and meeting services support a vast collection of media standards. The initial focus of the product is to support the most popular and common mechanisms to ensure the most robust of implementations. The following media and connectivity standards are supported:

Synergy SKY CONNECT	Standard
Video	H.264
Audio	G.711, Opus, AAC-LC/LD*, G.722* (Roadmap), Siren 14/22 (Roadmap)
Connectivity	SIP, BFCP

Supported devices

	VCS Deployment	Webex Deployment
Cisco C Series	✔	
Cisco EX Series	✔	
Cisco DX Series	✔	✔
Cisco SX Series	✔	✔
Cisco MX Series	✔	✔
Cisco Room Series	✔	✔
Cisco Desk Series	✔	✔
Polycom HDX Series	✔	
Polycom RealPresence Group Series	✔	

Solution requirements

The Synergy SKY CONNECT Service is hosted in Microsoft Azure.

Our servers are currently deployed in two Azure regions:

AzureCloud.westeurope
AzureCloud.eastus

An up-to-date overview of all Azure IP ranges can be found **here**.

Port requirements:
SIP (TCP): 5060/5061
Media (UDP): 55000-55999
API for the Synergy SKY management suite (TCP): 42009

The Synergy SKY CONNECT solution is deployed in conjunction with the Synergy SKY management suite (previously referred to as Synergy SKY Suite). Please consult its deployment guide for details by clicking **here**.

⑤ SYNERGY SKY

Get connected today

- Contact your **Synergy SKY representative**

- Visit the **solution page**

- Watch the **video demo**

- Explore **our documentation**

Get a custom demo

Reach out to see how Synergy SKY CONNECT helps you get the simple, consistent, and reliable meetings you need. We are confident that our solution speaks for itself. Zero obligation, zero plugins, and zero hassle.