



zensar

Cloud Connector

The Key to Seamlessly
Leveraging Multiple Unified
Communication Services

Whitepaper

An  RPG Company

A paradigm shift

Unified communications on the cloud have captured enterprises' attention since the early 2000s alongside traditional phone systems. Technological advancement and economic growth in different business domains have warranted enterprises to seek more and more flexibility in unified communications solutions for their emerging needs. Unified communications vendors have been able to keep pace with the ever-growing and burgeoning demands to some extent. Today, unified communications have moved from offering just telephony systems and instant messaging to enterprise collaboration, bringing the worlds of voice, video, messaging, document sharing, and business application integration into a single IT platform. Unified communications and collaboration (UCC) vendors can now reach out to their clients directly by providing all the collaboration services on the cloud

rather than depending on carrier service providers. With a plethora of options available for customers to choose from and different UCC vendors with numerous customizations available, it is imperative that a standard set of protocols will help enterprises leverage cloud services and reduce costs. In this paper, we discuss the Cloud Connector, a solution that can be hosted as CPaaS (communications-platform-as-a-service) and serve as a common nodal point for different UCC applications to interact, resulting in an increase in value for UCC investment. Many enterprises have divergent UCC platforms deployed for various use cases. Having greater interoperability means seamless connectivity resulting in better collaboration and measurable business results. After all, the purpose of UCC is to enhance collaboration and not impede it.

A hot technology that no enterprise can ignore

Today's UCC solutions are complex, hybrid technologies with physical servers, virtual appliances, cloud-based resources, software applications, dedicated endpoints, and several other elements operating (IM and voice recording, monitoring, etc.) together across a standard network. Since the last two decades, there has been rapid growth in UCC solutions. With a lower bandwidth cost and the need for greater collaboration, UCC has become a hot technology that no enterprise can ignore. Most experts estimate that over 80 percent of organizations either have adopted or have it on their roadmap to adopt UCC technologies. The growing demand for UCC needs has led to various players. Today, there is a web of connectors to talk between each UCC application.

The Cloud Connector is a solution on the cloud that will act as a state controller connecting various UCC applications in the market. Enterprises and individuals registered with this Cloud Connector (on a subscription basis) can talk to other parties regardless

of the UCC application they use as long as both parties register on the Cloud Connector. Currently, the federation plugin is an option to connect to a limited number of UCC applications. But this is a one-to-one mapping for UCC applications. The solution proposed in this paper will be universal, where any UCC application can connect to any other UCC application. The requisite is that the UCC application will provide the necessary application programming interface (API) to connect to the Cloud Connector (CC) sensor nodes.

The Cloud Connector is built using CPaaS. This rich development platform enables developers to quickly build UCC-enabled applications by embedding communication functions into applications. According to a recent survey, cloud-first applications may become more prevalent with time. Currently, 46 percent of organizations' cloud-based applications were purpose-built for the cloud, and 54 percent moved from an on-premises environment.

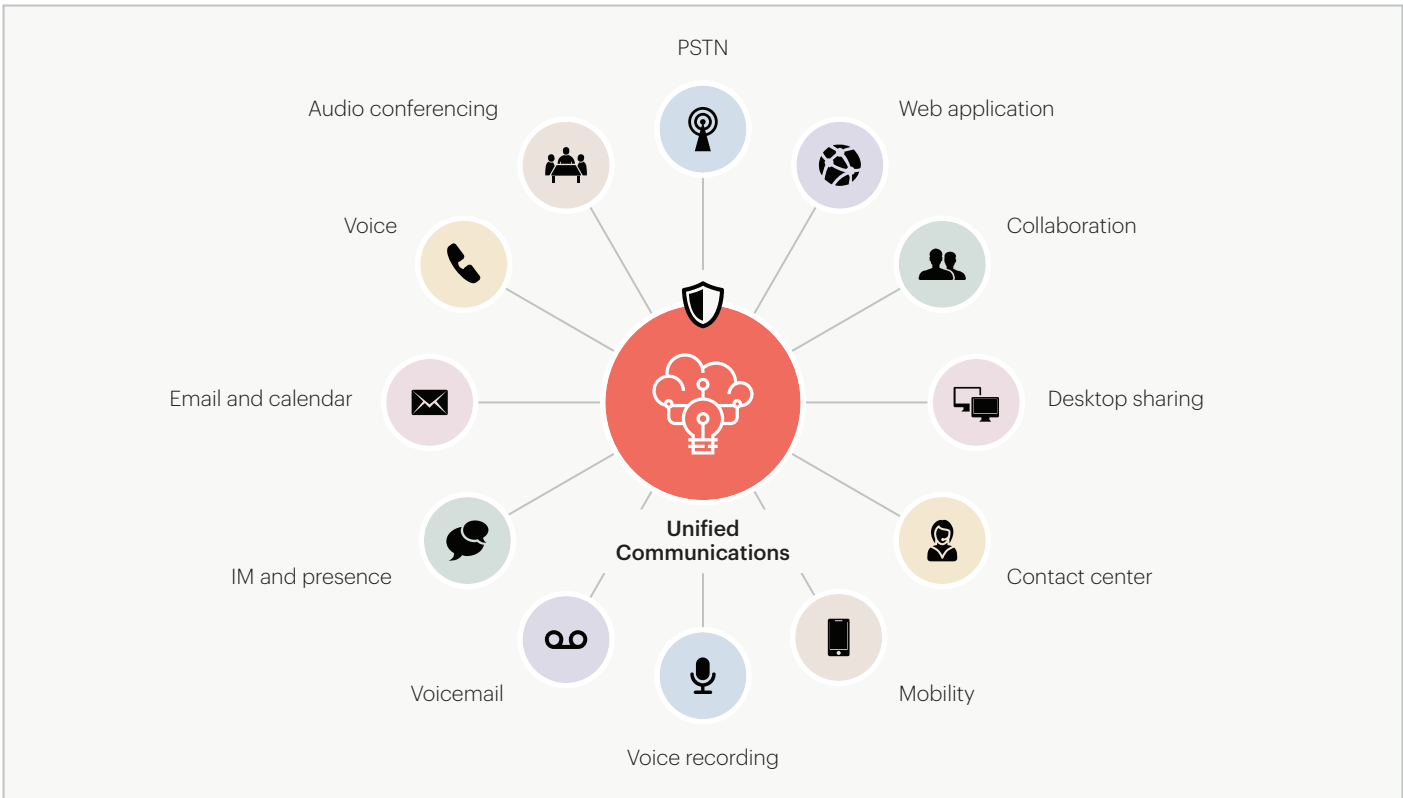


Figure 1: UCC platform

The proposed solution

This paper proposes a cloud-based connector to provide an interface for different UCC applications to inter-operate. This Cloud Connector will leverage the internet for data, voice, and video connectivity across various UCC platforms.

The following figure depicts the high-level view of the enterprise UCC platform connected to the Cloud Connector (CC). CC will be platform-independent and provide standard APIs to interact with different protocols (H.323 and SIP).

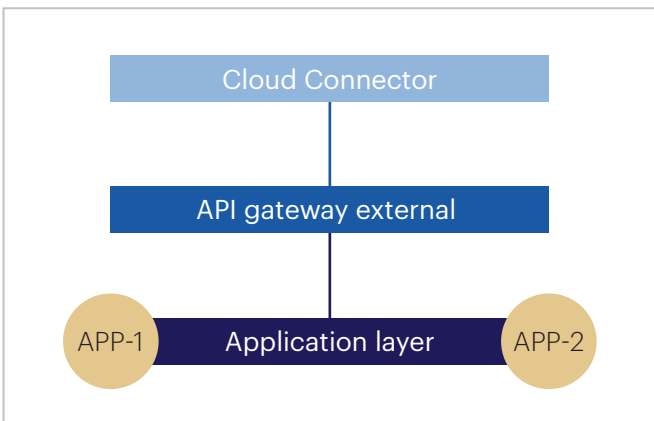


Figure 2: Connected Cloud Connector to the enterprise UCC Platform

The data and instruction sets will flow from the UCC application to CC APIs and activate the session controller to relay IM messages, voice, and video. Several state functions, such as initializer, monitoring, policy manager, database, etc., are part of the Cloud Connector

- Initializer: Create sessions with all header information (IM, video or voice, presence) from input instruction sets
- Session controller: Maintain reference tables for activities related to the sessions
- Database: Store session-related data temporarily (caching files, images, text, etc.)
- Mobility: APIs for connectivity to mobile devices
- Analytics: Provide insights into the activity patterns of the sessions going through CC
- Monitoring: Provide real-time monitoring data for active sessions
- Policy manager: The placeholder for policies and policy settings that gets assigned to UCC users/roles within the organization
- Admin control: Provide administrator control over the usage of CC.

Moreover, other essential elements in the Cloud Connector, such as resiliency, access management, encryption, and operational security, will get administered across the data flow path.

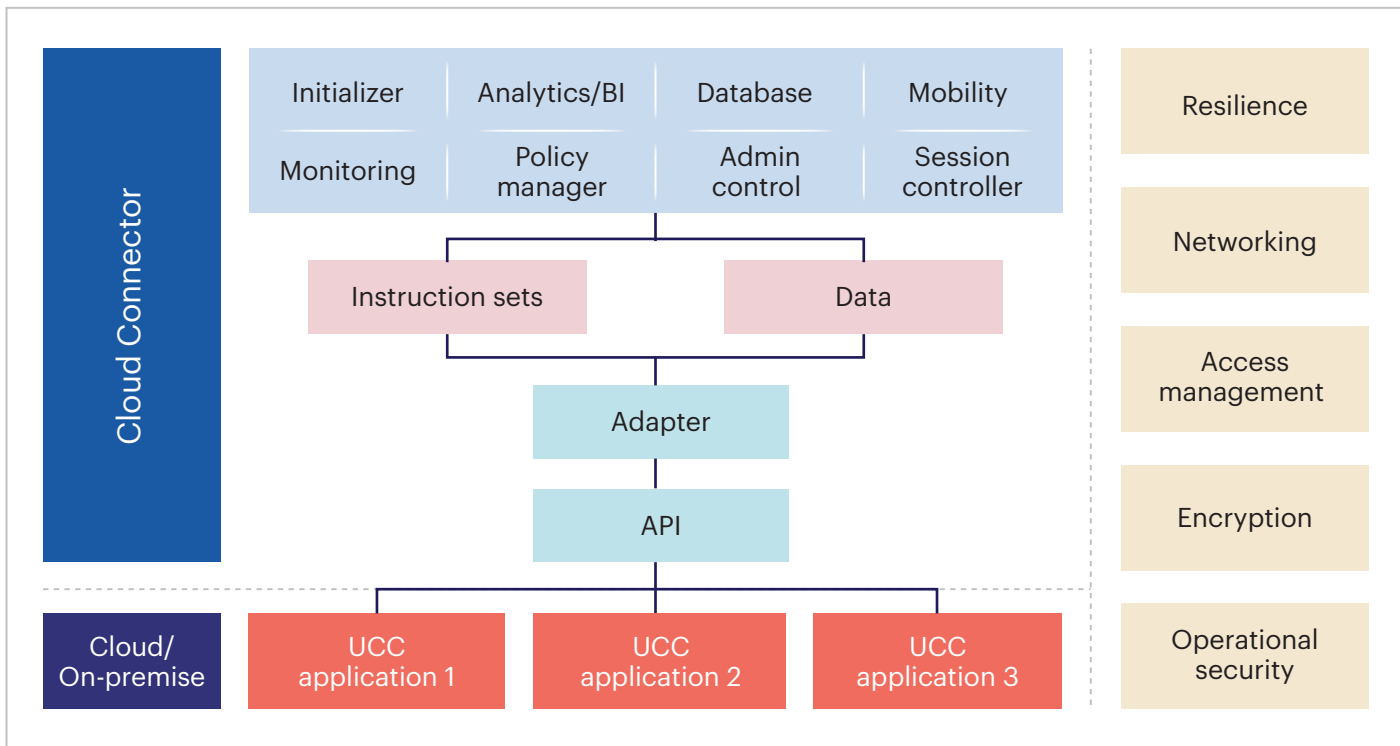


Figure 3: High-level architecture for the projected Cloud Connector

The connectivity between different UCC applications with and without Cloud Connector has been depicted below:

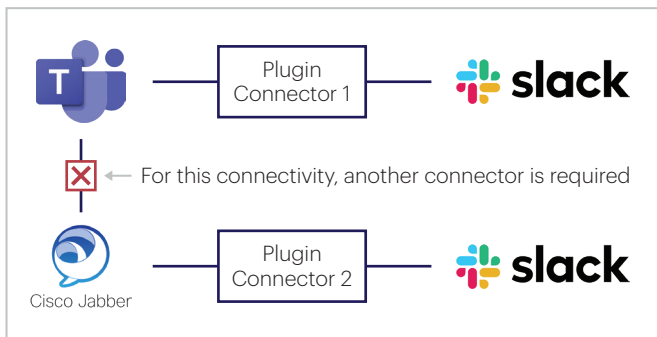


Figure 4: Without Cloud Connector, the UCC applications cannot communicate with each other

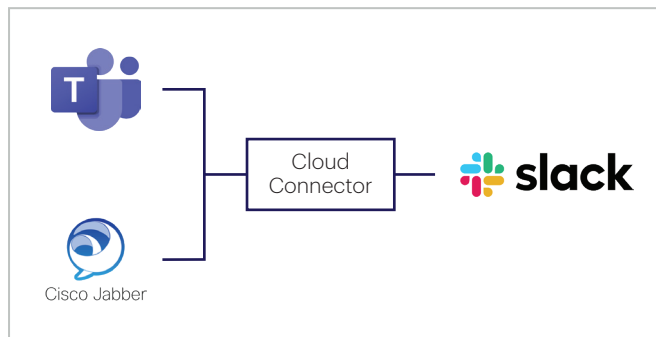
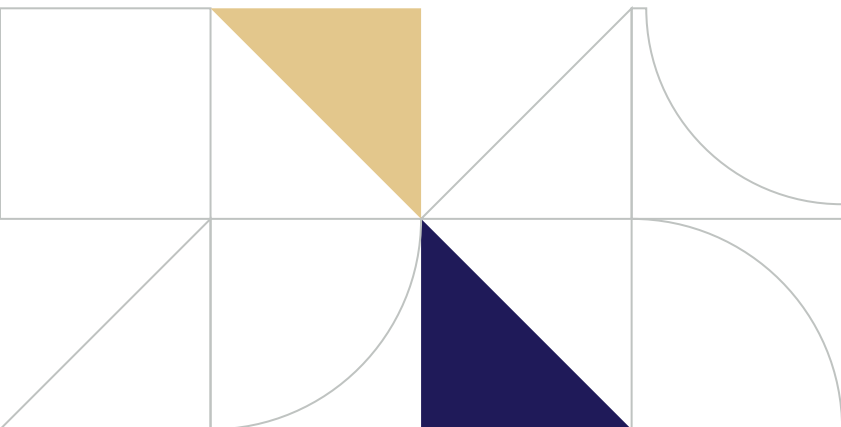


Figure 5: With Cloud Connector, all three UCC applications can communicate with each other



The advantages of Cloud Connector are mentioned below:

Without UCC Cloud Connector	With UCC Cloud Connector
The upfront cost of setting up a third-party integrator is high	Lower CapEx (capital expenditure) and no unpredictable costs since it is pay per usage
Lengthy deployment time for integration. (also limited by one-to-one mapping; for example: to integrate the three platforms such as Microsoft Teams, Cisco Jabber, and Slack, we need two independent connectors to get deployed).	Lesser deployment time since it's a unified connector for all UCC applications (if MS Teams, Cisco Jabber, and Slack are hooked to the Cloud Connector, then communication between all three UCC applications can happen seamlessly).
Limited features while interacting with other UCC applications (for example: video calls from Cisco Jabber to Slack are not possible)	Numerous features as APIs for all UCC functionalities to be available
Staff time required for enterprises to deploy and maintain (upgrades, patching)	Additional staff is not needed as upgrades will be taken care of by the vendor owning the Cloud Connector
Multiple policies (each for a UCC application)	Centralized policy
Restricted in scalability and agility	Flexible in scalability and agility (due to presence in the cloud)

Assumptions

The paper, at this moment, assumes that

- Most of the popular UCC vendors in the market will agree on the standard communication protocols and allow API access for collaboration
- Security aspects of the Cloud Connector will get provisioned to meet minimum industry requirements

A backbone for collaboration

With UCC becoming the backbone for enterprises to collaborate, even more so than ever during pandemic times, the future of UCC is expected to be increasingly cloud-based. While only some businesses can shift immediately to UCaaS, most will take a hybrid approach to their operations by using web connectors to enable elements of their communications strategy into the cloud. This paper will provide a method for centralizing cloud services so that different UCC vendors can communicate and collaborate seamlessly. Regardless of the enterprise's

cloud migration and federation strategy, one thing that has long been true for infrastructure deployments is keeping the number of vendors involved as few as possible for more efficiency. Also, given the diversity of technological advancements in the UCC field, only some vendors will likely have solutions for every communication and collaboration need. Because of this, applications such as the Cloud Connector can enable enterprises to leverage two or more UCC vendors and experience the best of different UCC worlds.

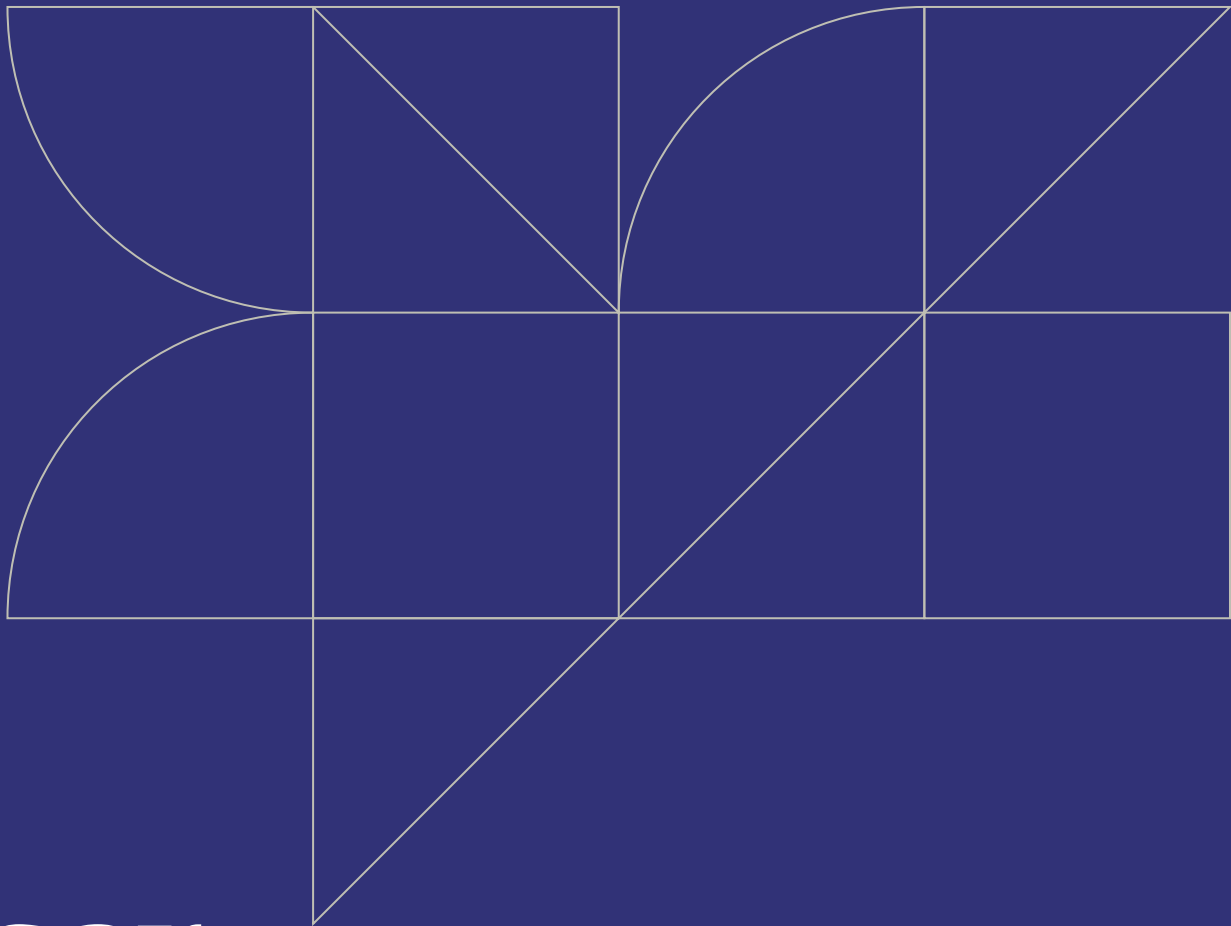
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