

AUDIOCODES APPLICATION NOTE

Getting the Cloud Right: A Practical Guide

Migrating Users to Cloud PBX with AudioCodes CloudBond™ 365

Introduction

Recent Microsoft announcements surrounding enterprise voice for Skype for Business in the cloud have caused significant waves in the market. Cloud PBX and PSTN calling will have a dramatic impact on the ecosystem. Since the online offering does not yet have all the features of Skype for Business Server, it is important that every enterprise evaluates carefully and plans accordingly the users' migration.

If you've already deployed Lync, Skype for Business, or are seriously considering doing so, you may be compelled to start migrating some users who may not need the full feature set of the server to the cloud. The good news is that the migration can be done gradually and AudioCodes can provide the necessary tools for the migration journey. The purpose of this application note is to educate and provide some practical guidance on how the AudioCodes solution set allows for such a migration.

What is Cloud PBX?

If you haven't read the "To Cloud or not to Cloud?" whitepaper ([To Cloud or not to Cloud? A Practical Guide for Embracing the Communications Future](#)), it is important to spend a few words explaining what is the Cloud PBX from Microsoft. In short, it is the set of Call Management features of Skype for Business Online, which is the new version of Lync Online and is the Microsoft hosted version of Skype for Business Server. It is part of Office 365 and is included in selected E-Suite Plans or in stand-alone subscription plans. Cloud PBX includes a subset of the PBX features available in the server edition. It enables outbound and inbound calling through on-premises PSTN Connectivity (using local service providers or local telephony systems) or through a Microsoft PSTN calling plan (available only in select regions).

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Before making any decision, it is wise to check the feature differentiation between the server and the Cloud PBX. As of December 2015, the main features not included online are branch survivability, response groups, location based routing, call admission control, analog devices, common area phones, and integration with on-premises PBX (can be achieved when using on-prem software such as Cloud Connector Edition or Skype for Business Server). Your first step in the migration process is, therefore, to profile your users and understand which ones will be included in the first migration batch.

From the Perspective of National Communications Services, Inc.

Companies and organizations have been using the “cloud” for licensing, data storage, software as a service and backup for several years now. Yet when Microsoft announced last year that they would be offering Cloud PBX, the telephone system, as part of their Office 365 and Azure cloud, it created quite a stir. Research companies are confidently declaring that all organizations are going to move everything to the cloud. As a result, many companies are investigating the advantages and disadvantages of making such a move.

There has been significant confusion around the subject of moving data functions, but especially telecom functions, to the cloud. Therefore, numerous organizations have placed their decisions regarding the matter on hold, with the assumption that the confusion will dissipate as more and more companies make the move. However, for many organizations that confusion is simply not going away fast enough, and unfortunately updates to their communications capabilities are forced to wait. More often than not, they are further limited by their antiquated and non-supported equipment.

National Communications Services, Inc. and AudioCodes aim to clarify these frustrations with “Getting the Cloud Right – A Practical Guide.” Within this whitepaper, we present the facts, while simultaneously highlighting the choice advantages of utilizing an on premise Skype for Business solution: CloudBond 365. This platform will enable some or all end-users to be deployed using on-premises hardware, while simultaneously enabling other end-users to register directly to Cloud PBX – a hybrid approach. This is a sound solution for organizations not ready to move users to the cloud, or who prefer a more phased migration strategy. Alternately, an organization might have needs that are not currently, or may never be, satisfied by the Microsoft cloud offering, and therefore require an on premise solution that can deliver all of their necessary features and capabilities.

National Communications Services, Inc. is an authorized AudioCodes Gold partner, fully capable of supporting their Skype for Business solutions, gateways and telephones, as well as independent cloud-based or on premise deployments. We will gladly answer questions, or make recommendations on what path is best for your organization. We hope you find the enclosed information valuable, and encourage you to be thorough in “Getting the Cloud Right”.

Paul Mitchell

Senior Solutions Architect

National Communications Services, Inc.

Practical Considerations in the Transition to Cloud PBX

The issue at hand is to plan the migration in the best way possible. You need to consider a variety of practical considerations in this regard:

1. Which users do you want to migrate to the cloud? How many people really need all the PBX features? How many people outside the office (on the road) can be satisfied by the cloud features?
2. Do you have an existing on-premises telephony infrastructure that you want to co-exist with or gradually migrate away from? (Call center, PBX, IPPBX, etc.)
3. Do you have devices (faxes, video rooms, analog devices) that you want to continue to use?
4. Do you need to maintain local connectivity to the PSTN (existing contracts, or availability, regulatory and Quality of Service reasons for branch offices)?

To facilitate migration to Cloud PBX, AudioCodes takes a gradual approach and proposes a unique solution that enables the transition of some users to the cloud, but also allows other users to enjoy the full feature-set of the Skype for Business server. This approach ensures the following capabilities in a migration strategy:

- **Enablement of real PBX replacement** capabilities today
- **Connectivity to the Cloud:** sync and federate with cloud users
- **Flexibility:** ability to move users between the server and the cloud as the customer sees fit
- **Scalability:** can scale from several dozens to thousands of users
- **Cost effectivity:** gives you the required ROI
- **Enablement of custom applications** such as call centers, fax servers, productivity enhancements and more

AudioCodes CloudBond 365: Tomorrow's UC Today

AudioCodes CloudBond 365 is a modular solution for the data center, customer premises or the branch. It is a versatile all-in-one Skype for Business appliance designed for hybrid environments that combines the best of the Skype for Business server, the cloud-PBX and the service provider's voice services. CloudBond 365 is available as a hardware box (Standard, Pro and Enterprise Box Editions) or as a Virtual Appliance.

CloudBond 365 provides an integrated solution. It has Skype for Business servers built in, including the front end, mediation, monitoring, edge and reverse proxy servers. The appliance also contains an embedded Windows server 2012 R2 and an embedded SQL Server Standard 2012, as well as additional virtual machines for trusted applications. The CloudBond 365 Box Editions have built in gateway and session border controller (SBC) capability as well as a host of specialized tools including Office 365 and Active Directory connectors, a deployment wizard, and IP Phone management software.

CloudBond 365 connects and syncs with Office 365 and the local Active Directory, allowing for voice enablement and an easy setup of voice policies. Skype for Business users can be registered on CloudBond 365's Skype for Business server Front End or in Microsoft's Cloud PBX and can be moved at any time in both directions, providing tremendous flexibility. For users that were migrated to the Cloud PBX, the appliance provides the required mediation, edge and PSTN/SIP trunking connectivity.

As such, CloudBond 365 is an ideal bridge for a migration to full cloud-based connectivity, allowing companies to migrate at their own pace, moving from a full on-premises PBX infrastructure to a hybrid structure.

CloudBond 365 provides an integrated solution. It has Skype for Business servers built in, including the front end, mediation, monitoring, edge and reverse proxy servers.

CloudBond 365 connects the Cloud PBX users to local PSTN services, allowing for voice enablement and an easy setup of voice policies.

¹Standard Edition has both GW and SBC, Pro and Enterprise Editions have SBC only

CloudBond 365 Comes in Four Configurations:

- **Standard Box Edition (SBE):** a true all-in-one solution, built on top of the popular Mediant 800B Gateway chassis, providing Skype for Business PBX capabilities for up to 200 local users plus mediation/connectivity for additional Cloud PBX users (overall capacity will depend on overall concurrent sessions)
- **Pro Box Edition (PBE):** built on a powerful HP server, this appliance provides Skype for Business PBX capabilities for up to 500 local users plus mediation/connectivity for additional Cloud PBX users (overall capacity will depend on overall concurrent sessions)
- **Enterprise Box Edition (EBE):** the most powerful appliance in the lineup, provides Skype for Business PBX capabilities for up to 5,000 local users plus mediation/connectivity for additional Cloud PBX users (overall capacity will depend on overall concurrent sessions)
- **Virtualized Edition (VE):** software only solution, targeted at service providers

“There is strong market demand for a hybrid solution to integrate with Skype for Business, and we feel that this solution enables our business partners to deliver the Microsoft Unified Communications experience to enterprises worldwide.”

Giovanni Mezgec, General Manager of Applications and Services Marketing at Microsoft, speaking of CloudBond 365

Getting the Cloud Right: A Practical Guide

In practical terms, perhaps the most important thing to do is develop a voice migration strategy. Such a strategy would compose of several stages including assessing corporate requirements (typically in the headquarters), building an infrastructure that meets those requirements, migrating relevant users to the cloud and finally, expanding that migration by assessing the needs of branch offices, building a corresponding infrastructure and migrating branch users to the cloud as required. Let’s take a closer look at each of these stages.

Stage One: Assess – Inventory Assets and User Profiles

In this initial state, it is important that the organization understand its requirements. This is the opportunity to pause and analyze what users are doing, what their needs are and which users can stay local and which can be moved to the cloud. Once the requirements are understood, a hybrid strategy can be developed to build the appropriate infrastructure, adopted to the organization’s needs today and its plans for the future. Here are some steps to consider in the Assessment Stage:

- **Analyze current infrastructure: existing PBX, analog phones and devices, fax usage, common area phones, etc.**
- **Conduct inventory of video systems and integration requirements**
- **Note Contact Center, DECT or other specialized communication tools**
- **Profile users and usage: identify the user community which could live with the current feature set in the Cloud PBX and those need full PBX features**
- **Understand the need for PSTN access in remote branches**

In doing the assessment, the organization will learn which users need to have full PBX features and which can settle for the limited feature set on the cloud. It will know which service contracts it wants to maintain, which equipment is still useful, which analog devices it has and for which it must find a solution, and more. Ultimately, the organization will have a clear view as to its requirements and its migration strategy.

Stage Two: Build a Hybrid Platform and Migrate Information Workers First

With the requirements mapped out, an infrastructure can be built that addresses the needs identified in the assessment stage. AudioCodes' proposed solution is a hybrid platform that is both versatile and flexible, one that can meet not only today's requirements but ensure that the investment made now can be leveraged for the coming years as well.

Once a flexible hybrid platform in place, the users that were profiled in the assessment stage should be reviewed and the first batch of users to be migrated to the cloud should be chosen. CloudBond 365's Management GUI can be leveraged to assign the correct voice policies for online users and easily help move these users to the cloud. The remaining users should have the appropriate policies and rights set to leverage the full voice features of the Skype for Business on-premises server.

During this stage, the following steps should be kept in mind:

- Connect to the existing PBX and phase it out gradually
- Assign information workers (who do not need the full server feature set) to Cloud PBX
- Assign all other users to the Skype for Business Server
- Integrate the inventory of existing communications infrastructure to the Skype for Business Server
- Use local Telco operators' calling services and preserve DID
- Start monitoring usage, user experience and adaptation

Stage Three: Expand Rollout to the Branches

With the platform deployed and the first users moved to the cloud, the organization can begin examining the needs of its remote branches. An assessment similar to the one done in Stage One at HQ may be warranted for the branches as there may be different requirements to consider, including resiliency needs, local regulation and custom applications such as IVR and contact centers. An assessment should be done as to whether a hybrid platform is needed to meet those requirements. Here, too, CloudBond 365 can be ideal as a branch pool appliance.

- For very small branches, assign users to Cloud PBX, unless you have survivability requirements or need Contact Center capabilities
- Deploy Skype for Business connected to Office 365 (you can assign users to Cloud PBX or to the appliance-based CloudBond 365)
- Use local Telco operators' calling services (especially relevant in global locations where Microsoft enterprise voice is not available or local regulations require it)

Common Scenarios

Let's examine common migration use cases for Cloud PBX, leveraging the AudioCodes CloudBond 365 solution.

No Prior Implementation of Lync Infrastructure (Greenfield)

In this scenario, the customer does not have an existing deployment of Lync or Skype for Business and would like to deploy their first Skype for Business users on the Cloud PBX, integrating with their existing PBX infrastructure and leveraging their existing PSTN contracts.

To achieve this desired objective, you have two options:

- Using Microsoft's Skype for Business Cloud Connector Edition – all users move to Cloud PBX
- Using Skype for Business Server technology – implementing a hybrid environment with some users in the Skype for Business server and some users in Cloud PBX.

Cloud PBX with Skype for Business Cloud Connector Edition

Cloud Connector Edition is a hybrid offering that consists of a set of packaged Virtual Machines (VMs) that implement on-premises PSTN connectivity. By deploying a minimal Skype for Business Server topology, users in your organization, will be able to send and receive calls with landlines and mobile phones through the existing on-premises voice infrastructure. (See Diagram 1)

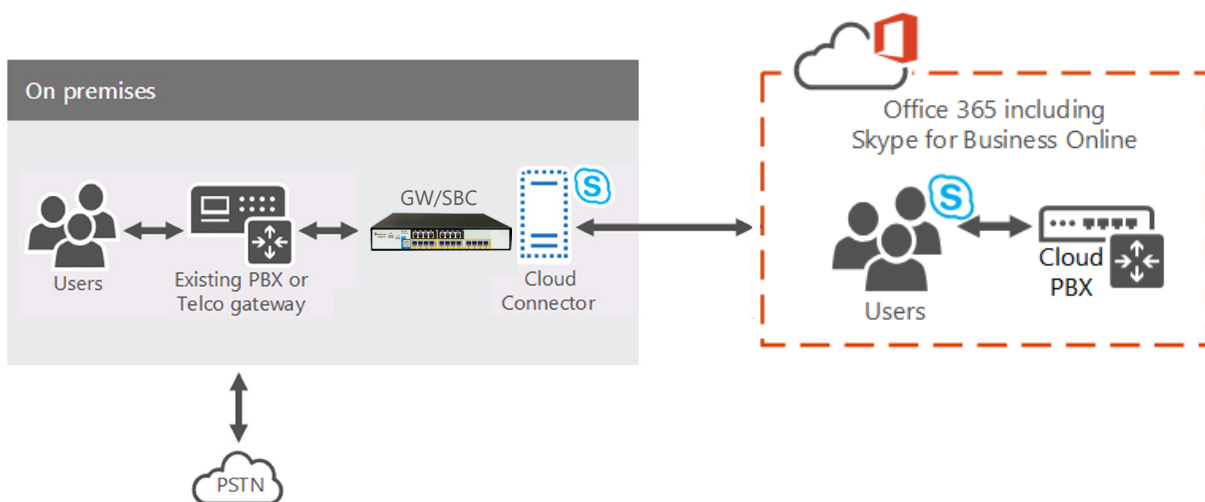
This scenario does not support co-existence with a Lync or Skype for Business on-premises infrastructure and therefore can only be adopted by customers with no prior deployments.

In a multi-site environment, AudioCodes offers the AudioCodes Routing Manager (ARM) for centralized dial plan management providing:

- Centralized enterprise-wide session routing manager
- Centralized and optimized PSTN routing
- Smart manipulation of dial plans
- Advanced routing based on user attributes

For the most up-to-date list of features available on Cloud PBX, please consult the Microsoft website.

Diagram 1: Skype for Business Cloud PBX with On-Premises PSTN: Cloud Connector Edition



Prior Implementation of Lync / Skype Infrastructure: Hybrid with Skype for Business Server

(Also relevant for existing Skype for Business on premises deployments in which the customer wants to migrate some of his users to the cloud while maintaining some of the users on-premises)

Skype for Business Server technology is used for interconnection to PSTN and PBX assets. Implementing this topology, the customer has the flexibility to have some users homed in the cloud on Skype for Business Online and some homed on the on-premises deployment. You can choose this option if you currently have users homed in the cloud or if you want to start migrating users to the cloud.

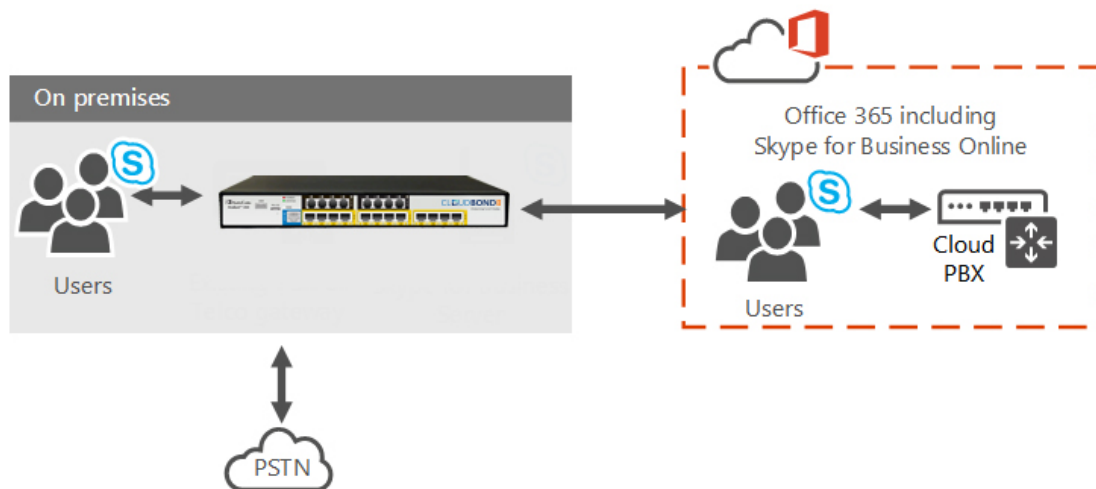
With this option, your Skype for Business Online users get their PSTN connectivity through Enterprise Voice in the on-premises Skype for Business Server deployment, with Skype for Business call control in the cloud, while on-premises users leverage the call control in the local Skype for Business server, taking advantage of the complete list of PBX features available in the server environment.

The AudioCodes CloudBond 365 is an appliance that was designed to facilitate and simplify in one step the deployment of the Skype for Business Server and the required connectivity. It provides the required infrastructure to enable users with Skype for Business voice policies and then migrate them to the Cloud. Leveraging this hybrid approach, users can be registered in the Cloud PBX and the remaining users can be homed in the Skype for Business server in the appliance for full functionality (please consult Microsoft resources for the most up-to-date feature difference between the Cloud PBX and the Skype for Business Server).

The CloudBond 365 includes special utilities which simplify connection with Office 365 and user synchronization and the integration with the on-premises PSTN connectivity. The proprietary software automates the users' policy for Hybrid Voice settings, and allows for an easy way to manage and monitor the deployment and the migration. (See Diagram 2)

IT administrators (or the selected partner or service provider) have the flexibility to move users from online to on-premises and vice versa, simply and quickly, offering easy user life-cycle management, based on changing requirements.

Diagram 2: Simplified Deployment with CloudBond 365



Benefits:

- Simple and cost effective physical (or virtual) appliance
- No other Lync or Skype for Business infrastructure required on-premises
- Migrations can be executed in phases, eventually leading to a complete transition to the cloud
- System can co-exist with existing PBX
- Maintain existing PSTN contracts with local service providers
- Gives time to validate quality, reliability, and the security of the offering
- Analog devices can be registered to the CloudBond 365 which can be accessed by on-line users through which they can also access the PSTN

Additional AudioCodes CloudBond 365 Benefits

CloudBond 365 management tools automate user synchronization and user administration, simplifying the user's life-cycle management

CloudBond 365 is equipped with special connectors:

- Office 365 Connector
- User Management Pack
- AD Connector

These connectors automate user synchronization in a hybrid topology and reduce IT operation costs, simplifying user migration from On- Premises to On-Line.

In the Cloud PBX with an On-Premises PSTN scenario, these tools handle most of the synchronization tasks.

Monitoring and Management

In all of the scenarios described above, the AudioCodes CloudBond 365 can be managed and monitored using the AudioCodes Session Experience Manager (SEM) and Element Management System (EMS). Not only can the CloudBond 365 be monitored and managed, but the entire Skype for Business voice network can be as well. Connecting the local infrastructure (PBX or IPBX) to Skype for Business can be done via the CloudBond 365.

Video Room System

Video room systems can register via the CloudBond 365 and Video Integration Server (which can reside in the CloudBond 365) to connect to a Cisco video terminal or video systems.

Voice Recording

Employees who require voice recording can register to the CloudBond 365 on-premises, allowing for the AudioCodes SmartTAP application to record the calls of all on-premises users. In a scenario in which on-line users go through the on-premises CloudBond 365 to access the PSTN, their calls, too, can be recorded.

Survivability

By having the AudioCodes CloudBond 365 in a full deployment on premises, enterprises are provided with full UC resiliency. If users are registered on-premises, even if the WAN connection goes down, CloudBond 365 can still manage the local PSTN connectivity.

CloudBond 365 is Ideal for Hosters and Service Providers

In addition to all the above benefits, CloudBond 365 is also ideal for Hosters and Service Providers implementing the hybrid and Cloud PBX offering:

- Helping Service Providers to keep customer telephony in the Service Provider network. This is true for both the hybrid topology and if the customer wants to use Skype for Business Online
- Providing a services-oriented interface which simplifies the Skype for Business administration

Summary

A deployment of Skype for Business which mixes on-line and on-premises functionality will lay the foundation for a smooth transition to the full cloud solution down the line. The best way to protect the enterprise's current investments, ensure a full enterprise voice feature set, guarantee that all company branches around the world are serviced and comply with regulations, is with a hybrid solution which offers the best of both worlds and allows the benefits of Unified Communications today with a secure and smooth migration to voice in the cloud when fully available. The AudioCodes's CloudBond 365 is ideally suited to make that happen.

About AudioCodes

AudioCodes Ltd. (NasdaqGS: AUDC) designs, develops and sells advanced Voice-over-IP (VoIP) and converged VoIP and Data networking products and applications to Service Providers and Enterprises. AudioCodes is a VoIP technology market leader, focused on converged VoIP and data communications, and its products are deployed globally in Broadband, Mobile, Enterprise networks and Cable. The Company provides a range of innovative, cost-effective products including Media Gateways, Multi-Service Business Routers, Session Border Controllers (SBC), Residential Gateways, IP Phones, Media Servers, Value Added Applications and Professional Services. AudioCodes' underlying technology, VoIPerfectHD™, relies on AudioCodes' leadership in DSP, voice coding and voice processing technologies. AudioCodes' High Definition (HD) VoIP technologies and products provide enhanced intelligibility and a better end user communication experience in Voice communications.

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