

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

BECK BRANCH LLC,

Plaintiff,

v.

MICROSOFT CORP.,

Defendant.

CIVIL ACTION NO 6:18-cv-311

JURY TRIAL DEMANDED

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

1. This is an action for patent infringement in which Beck Branch LLC makes the following allegations against Microsoft Corp.

PARTIES

2. Plaintiff Beck Branch LLC (“Plaintiff”) is a Texas limited liability company with its principal place of business at 101 E. Park Blvd, Suite 600, Plano, TX 75074.

3. On information and belief, Microsoft Corp. (“Defendant” or “Microsoft”) is a corporation organized and existing under the laws of the State of Washington, with its principal place of business in One Microsoft Way, Redmond, Washington, 98052.

JURISDICTION AND VENUE

4. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

5. Venue is proper in this district under 28 U.S.C. §§ 1391(c) and 1400(b). On information and belief, acts of infringement have been committed in this District. Additionally, Cisco has a regular and established place of business in this District, including, without limitation, 2601 Preston Rd #1176, Frisco, TX 75034.

6. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction pursuant to due process and/or the Texas Long Arm Statute, due at least to its substantial business in this forum, including: (i) at least a portion of the infringements alleged herein; and (ii) regularly doing or soliciting business, engaging in other persistent courses of conduct, and/or deriving substantial revenue from goods and services provided to individuals in Texas and in this Judicial District.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 6,873,620 (Outlook)

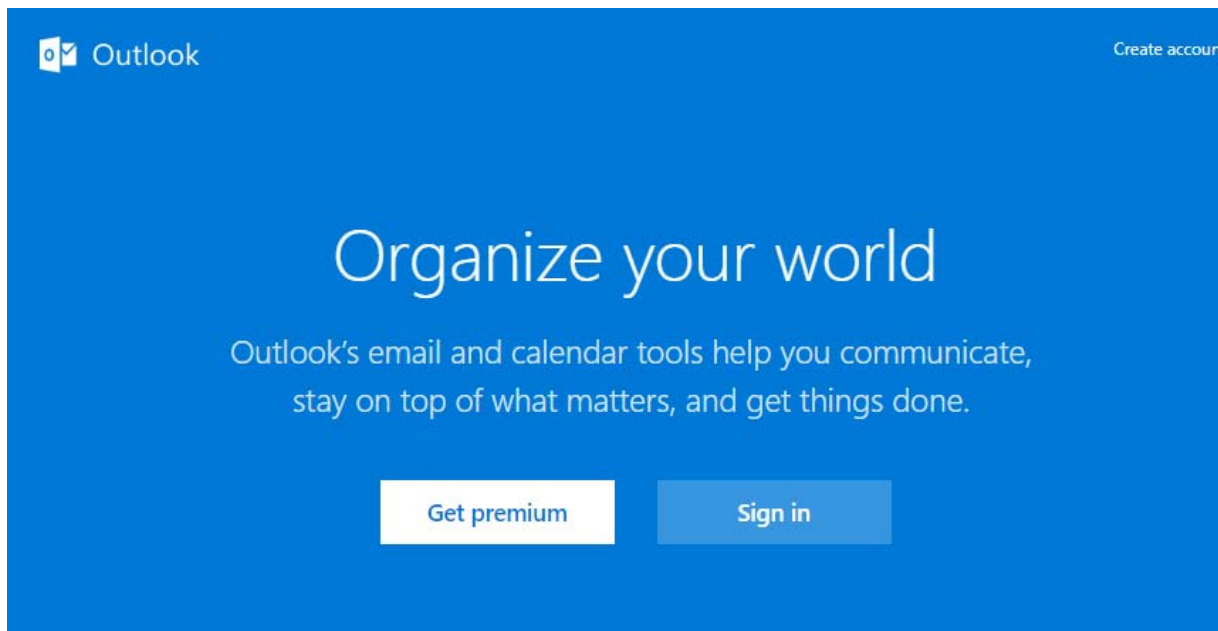
7. Plaintiff is the owner of United States Patent No. 6,873,620 ("the '620 patent") entitled "Communication Server Including Virtual Gateway to Perform Protocol Conversion and Communication System Incorporating the Same." The '620 Patent issued on March 29, 2005. A true and correct copy of the '620 Patent is attached as Exhibit A.

8. Defendant owns, uses, operates, advertises, controls, sells, and otherwise provides products and/or services that infringe the '620 patent. The '620 patent provides, among other things, "A communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols, said communication server comprising: a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway, a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol and a dynamic database identifying the current status of each actual connection between physical devices; and a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices and converting the protocol of said message to a protocol compatible with the network to which said message is being sent wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic therethrough."

9. Defendant directly and/or through intermediaries, made, has made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or services that infringed one or more claims of the '620 patent, including at least Claim 23, in this district

and elsewhere in the United States. By making, using, importing, offering for sale, and/or selling such products and services, and all like products and services, Defendant has injured Plaintiff and is thus liable for infringement of the '620 patent pursuant to 35 U.S.C. § 271.

10. Based on present information and belief, Outlook makes, uses, sells and/or offers for sale a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols. For example, Outlook provides web based electronic mail (e-mail) software to exchange messages between sender (e-mail client) and receiver (e-mail client) using webmail services via the Microsoft Exchange server and/or Outlook.com server. When an e-mail client create and send an e-mail using Outlook software (which when installed on a computer, smartphone or other computing device comprise one or more “virtual devices”), the e-mail client uses the Microsoft Exchange server and/or Outlook.com server to send an e-mail using Simple Mail Transfer Protocol (SMTP) via the Microsoft Exchange server and/or Outlook.com server (“communication server”) to authenticate the sender. The Microsoft Exchange server and/or Outlook.com server converts the protocol from SMTP to Internet Message Access Protocol (IMAP) which is used by e-mail client at receiver’s end to retrieve the messages from the server. The messages between e-mail clients at sender end to the e-mail clients at receiver end are transmitted via the Microsoft Exchange server and/or Outlook.com server (“gateway”).



Source: <https://outlook.live.com/owa/>

 Outlook

[Sign in](#) [Create account](#)

Get the Outlook that's right for you

[Sign up](#) [Sign in](#)



Source: <https://outlook.live.com/owa/>

2 Functional Architecture

The Microsoft Exchange Server system consists of protocols (including extensions to industry-standard or other published protocols) that Microsoft Exchange uses to communicate with other products. The protocols enable the transfer of data between client and server and enable clients to access, interpret, and manipulate data in the **message store**.

2.1 Overview

The Microsoft Exchange system from a protocols perspective, where the server provides protocols for clients, is illustrated in the following figure. The clients that interoperate with the server perform messaging tasks, and ancillary entities provide essential supporting services.

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 20

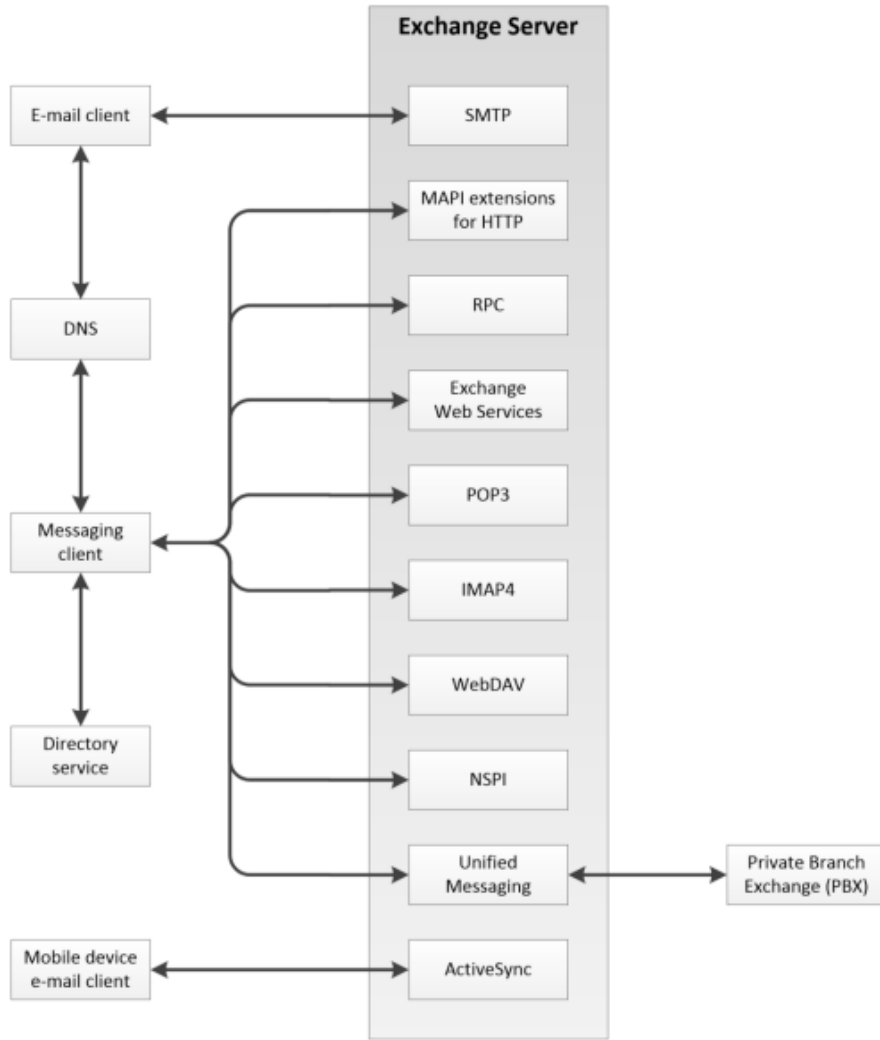


Figure 2: Functional architecture

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Each protocol exposes a set of functionality that pertains to specific classes of operations. For example, the **Simple Mail Transfer Protocol (SMTP)**, the **Post Office Protocol - Version 3 (POP3)**, and the **Internet Message Access Protocol - Version 4 (IMAP4)** constitute a set of Internet Standard protocols that simple e-mail clients use to send, retrieve, and manage e-mail messages; Exchange Web Services offers a standardized interface for middle-tier applications to build value-added services; the **Web Distributed Authoring and Versioning Protocol (WebDAV)** provides a set of interfaces that caters to distributed authoring; and the remote operations (ROPs) along with either the **remote procedure call (RPC)** interface or the MAPI extensions for HTTP provide all of the above as well as direct access to storage and retrieval services.

In the simplest sense, the Exchange server operates under the common client-server architecture, where a messaging client connects to an Exchange server by using one or more of the available protocols. The client performs tasks by issuing a series of requests to the server and processing server responses. Behind the simplicity of the client-server architecture lies functionality from basic storage to accessing, updating, and synchronizing **address books**, appointments, and shared folders.

An Exchange server can be regarded as having two functional elements: a message store and a message processing system. These functions are explained in more detail in section [2.1.1](#) and section [2.1.2](#).

2.1.1 Message Store

The message store provides storage functionality for Exchange servers, as described in [\[MS-OXCSTOR\]](#). From a functional point of view, the message store is a hierarchical storage system consisting of folders and messages. The message store also implements a wide range of methods to access, classify, render, and synchronize data between Exchange servers and clients.

2.1.2 Message Processing System

The message processing system consists of anything not directly related to storage, including the processing that happens when a message is in transit to and from storage. For example, when a new message is received, message processing determines whether the message needs to be placed into storage or whether and where it is routed. Similarly, when a new message is submitted for delivery, message processing retrieves the message from storage and determines whether content conversion is required and whether and where it is routed.

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 21

2.1.3 Communications within the System

2.1.3.1 Between an E-Mail Client and Exchange Servers

Communication between an e-mail client and Exchange servers implements SMTP or SMTP plus Exchange-specific extensions to SMTP, as described in [\[MS-OXSMTP\]](#), for e-mail transmission.

2.1.3.2 Between a Messaging Client and Exchange Servers

In the context of communication between a messaging client and Exchange servers, "messaging client" refers to any generic client that uses the Microsoft Exchange messaging system. A messaging client does not necessarily have to be an e-mail client. As illustrated in the figure in section [2.1](#), messaging clients have a variety of protocol options to communicate with Exchange servers: RPC, MAPI extensions for HTTP, POP3, IMAP4, WebDAV, Web Services, NSPI, and **Unified Messaging**.

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 21

2.2.7 Standards Support Protocol Extensions

Exchange servers support a number of different standard protocols for e-mail (POP3, SMTP, IMAP4, and WebDAV) and directory information (LDAP). The protocol extensions in this table describe extensions to these standards primarily for authentication and authorization.

Protocol extension name	Description	Short name
Internet Message Access Protocol Version 4 (IMAP4) Extensions	Provides an authentication mechanism based on the NT LAN Manager (NTLM) Authentication Protocol , a delegate access mechanism to allow a delegate to access a delegator's mailbox, and support for the IMAP UIDPLUS extension described in [RFC4315] .	[MS-OXIMAP4]
Lightweight Directory Access Protocol (LDAP) Version 3 Extensions	Extends LDAPv3, which enables directory access.	[MS-OXLDAP]
Post Office Protocol Version 3 (POP3) Extensions	Extends POP3, as described in [RFC1939] , which enables the listing and downloading of mail.	[MS-OXPOP3]
Simple Mail Transfer Protocol (SMTP) Extensions	Extends SMTP standards to facilitate authentication and negotiation between a client and a server and to enable the server to close connections that exceed configured thresholds.	[MS-OXSMTP]
SMTP Protocol: AUTH LOGIN Extension	Extends SMTP to support a simple base64 encoding authentication mechanism.	[MS-XLOGIN]
OAuth 2.0 Authorization Protocol Extensions	Extends the OAuth 2.0 Authentication Protocol: SharePoint Extensions and the JSON Web Token (JWT) to enable server-to-server authentication.	[MS-XOAUTH]

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 29

2.7.1 SMTP

SMTP is the key gateway for receiving inbound mail from external servers and non-RPC clients. If inbound SMTP is unavailable, messages cannot be received from other e-mail servers or from SMTP-based e-mail clients. In addition, Unified Messaging relies on SMTP to inject new messages, so some of its functionality can be impacted.

If outbound SMTP is unavailable, the Exchange server cannot route outbound e-mail. Messages will accumulate in the delivery queue, and in extreme cases, this can cause inbound SMTP to reject incoming messages.

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 71

1.1. Transport of Electronic Mail

The objective of the Simple Mail Transfer Protocol (SMTP) is to transfer mail reliably and efficiently.

SMTP is independent of the particular transmission subsystem and requires only a reliable ordered data stream channel. While this document specifically discusses transport over TCP, other transports are possible. Appendices to [RFC 821](#) [1] describe some of them.

An important feature of SMTP is its capability to transport mail across multiple networks, usually referred to as "SMTP mail relaying" (see [Section 3.6](#)). A network consists of the mutually-TCP-accessible hosts on the public Internet, the mutually-TCP-accessible hosts on a firewall-isolated TCP/IP Intranet, or hosts in some other LAN or WAN environment utilizing a non-TCP transport-level protocol. Using SMTP, a process can transfer mail to another process on the same network or to some other network via a relay or gateway process accessible to both networks.

In this way, a mail message may pass through a number of intermediate relay or gateway hosts on its path from sender to ultimate recipient. The Mail eXchanger mechanisms of the domain name system ([RFC 1035](#) [2], [RFC 974](#) [12], and [Section 5](#) of this document) are used to identify the appropriate next-hop destination for a message being transported.

Source: <https://tools.ietf.org/html/rfc5321#section-1>, page 4

11. Based on present information and belief, Outlook makes, uses, sells and/or offers for sale a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway. For example, Outlook and/or its customers utilize Microsoft Exchange server and/or Outlook.com server to send and/or receive e-mails which comprises a knowledge base Directory Service ("Registry") to identify the registered physical devices. Further, the server transmit messages between e-mail clients at sender end to the e-mail clients at receiver end via the Microsoft Exchange server and/or Outlook.com server ("Gateway").

2.7.11 Directory Service

The directory service is responsible for storing mail recipient information and is a primary mechanism for Autodiscover, as described in [\[MS-OXDISCO\]](#). If the directory service becomes unavailable, Autodiscover will be unavailable.

2.8 Coherency Requirements

This system has no special coherency requirements.

2.9 Security

For a comprehensive and current discussion about security and protection for Microsoft Exchange, see [\[MSFT-SAP\]](#).

2.10 Additional Considerations

There are no additional considerations.

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 72

Abstract

The Internet Message Access Protocol, Version 4rev1 (IMAP4rev1) allows a client to access and manipulate electronic mail messages on a server. IMAP4rev1 permits manipulation of mailboxes (remote message folders) in a way that is functionally equivalent to local folders. IMAP4rev1 also provides the capability for an offline client to resynchronize with the server.

IMAP4rev1 includes operations for creating, deleting, and renaming mailboxes, checking for new messages, permanently removing messages, setting and clearing flags, [RFC 2822](#) and [RFC 2045](#) parsing, searching, and selective fetching of message attributes, texts, and portions thereof. Messages in IMAP4rev1 are accessed by the use of numbers. These numbers are either message sequence numbers or unique identifiers.

IMAP4rev1 supports a single server. A mechanism for accessing configuration information to support multiple IMAP4rev1 servers is discussed in [RFC 2244](#).

IMAP4rev1 does not specify a means of posting mail; this function is handled by a mail transfer protocol such as [RFC 2821](#).

Source: <https://tools.ietf.org/html/rfc3501#section-2.1>

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An important feature of SMTP is its capability to transport mail across multiple networks, usually referred to as "SMTP mail relaying" (see [Section 3.6](#)). A network consists of the mutually-TCP-accessible hosts on the public Internet, the mutually-TCP-accessible hosts on a firewall-isolated TCP/IP Intranet, or hosts in some other LAN or WAN environment utilizing a non-TCP transport-level protocol. Using SMTP, a process can transfer mail to another process on the same network or to some other network via a relay or gateway process accessible to both networks.

In this way, a mail message may pass through a number of intermediate relay or gateway hosts on its path from sender to ultimate recipient. The Mail eXchanger mechanisms of the domain name system ([RFC 1035](#) [2], [RFC 974](#) [12], and [Section 5](#) of this document) are used to identify the appropriate next-hop destination for a message being transported.

Source: <https://tools.ietf.org/html/rfc5321#section-1>, page 4

2. Protocol Overview

2.1. Link Level

The IMAP4rev1 protocol assumes a reliable data stream such as that provided by TCP. When TCP is used, an IMAP4rev1 server listens on port 143.

2.2. Commands and Responses

An IMAP4rev1 connection consists of the establishment of a client/server network connection, an initial greeting from the server, and client/server interactions. These client/server interactions consist of a client command, server data, and a server completion result response.

All interactions transmitted by client and server are in the form of lines, that is, strings that end with a CRLF. The protocol receiver of an IMAP4rev1 client or server is either reading a line, or is reading a sequence of octets with a known count followed by a line.

2.2.1. Client Protocol Sender and Server Protocol Receiver

The client command begins an operation. Each client command is prefixed with an identifier (typically a short alphanumeric string, e.g., A0001, A0002, etc.) called a "tag". A different tag is generated by the client for each command.

Source: <https://tools.ietf.org/html/rfc3501#section-2.1>, page 5

2.2.3 Content Conversion Protocols

Protocols and other technologies listed in this table enable clients and servers to convert from the standard-based formats into one or more of the Microsoft Exchange-supported formats.

Protocol or other technology name	Description	Short name
iCalendar to Appointment Object Conversion Algorithm	Converts data between iCalendar services, as described in [RFC2445] , [RFC2446] , [RFC2447] , and Appointment objects and Meeting objects .	[MS-OXCICAL]
RFC 2822 and MIME to Email Object Conversion Algorithm	Converts data between the Internet standard e-mail format, as described in [RFC2822] , and the Message object format.	[MS-OXCMail]
S/MIME Email Object Algorithm	Handles the conversion of arbitrary clear-signed messages and of S/MIME opaque-signed and encrypted messages.	[MS-OXOSMIME]
Rich Text Format (RTF) Compression Algorithm	Compresses and decompresses RTF data, as described in [MSFT-RTF] , to or from one of the supported compression formats.	[MS-OXRTECP]
Rich Text Format (RTF) Extensions Algorithm	Encapsulates additional content formats (such as HTML) within the RTF body property of messages and attachments.	[MS-OXRTEFX]
Transport Neutral Encapsulation Format (TNEF) Data Algorithm	Encodes and decodes Message objects and Attachment objects to an efficient stream representation.	[MS-OXTNEF]
vCard to Contact Object Conversion Algorithm	Converts data between a vCard and an object that represents a person.	[MS-OXVCARD]

Source: [http://interoperability.blob.core.windows.net/files/MS-OXPROTO/\[MS-OXPROTO\].pdf](http://interoperability.blob.core.windows.net/files/MS-OXPROTO/[MS-OXPROTO].pdf), page 26

Further, Microsoft Exchange server and/or Outlook.com server also maintains a knowledge base comprising a registry identifying the phones and devices within the customers' network.

12. Based on information and belief, Outlook makes, uses, sells and/or offers for sale a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol. Upon information and belief, Outlook and/or its customers utilize Microsoft Exchange server and/or Outlook.com server which comprises a logical table to identify the type of connection and selects Microsoft Exchange server and/or Outlook.com server gateway to convert messages from SMTP to IMAP.

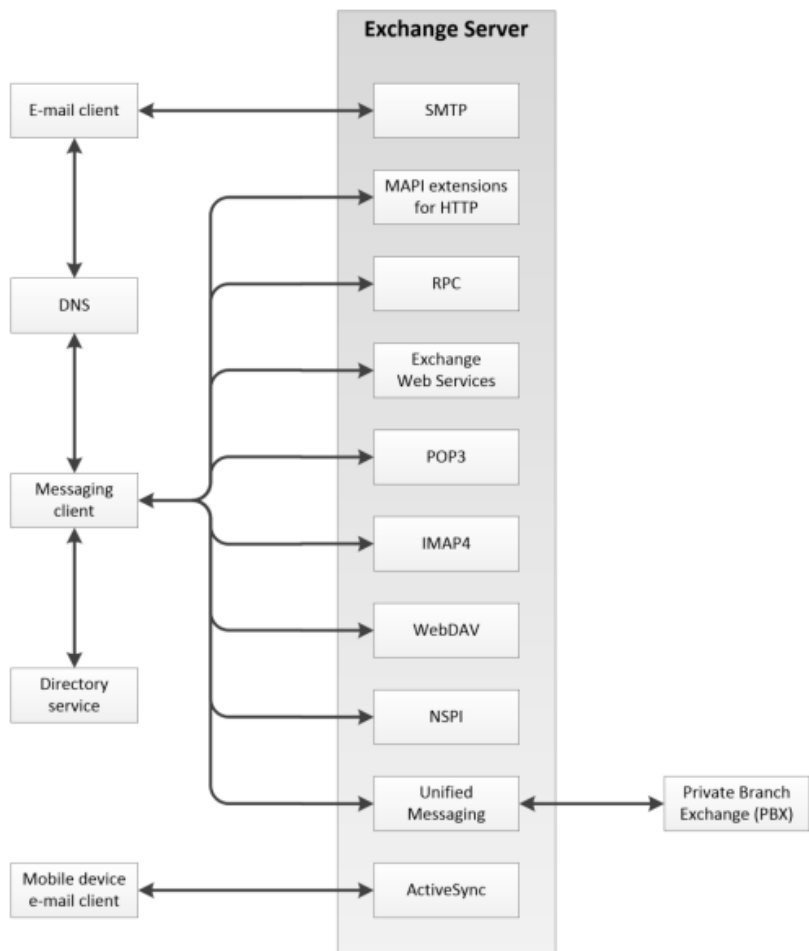


Figure 2: Functional architecture

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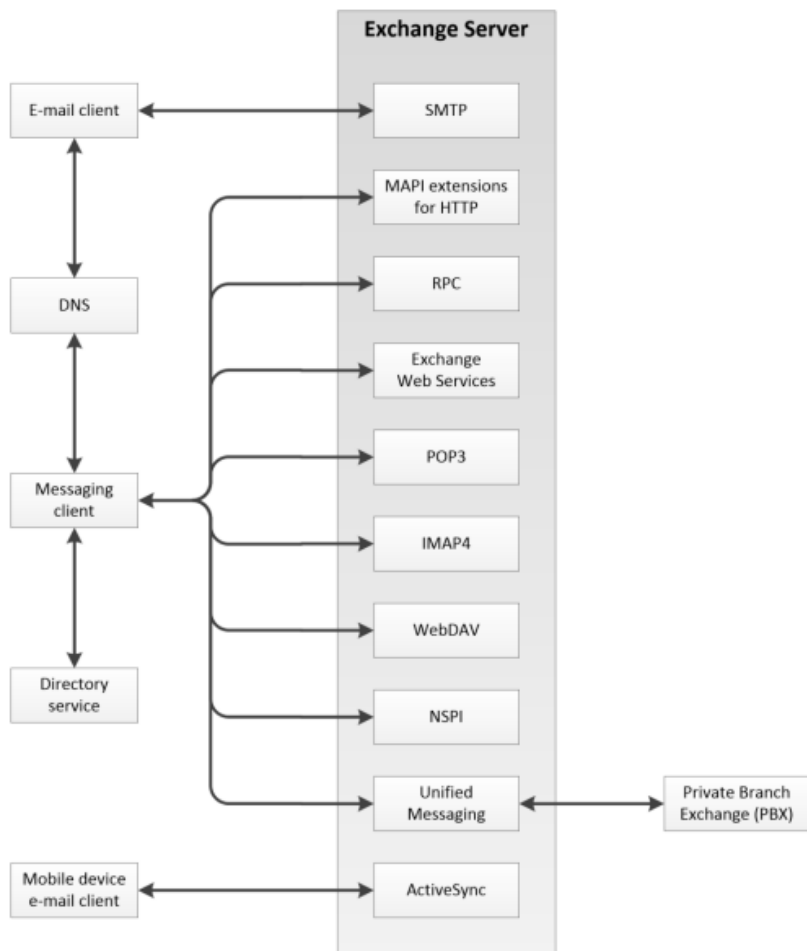


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14. Based on present information and belief, Outlook makes, uses, sells and/or offers for sale a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices. For example, Outlook and/or its customers utilize Microsoft Exchange server and/or Outlook.com server comprising a Virtual gateway which uses the Microsoft Exchange server and/or Outlook.com server as a Gateway for protocol conversion upon receiving the message to be transmitted between e-mail clients at sender end to the e-mail clients at receiver end via the Microsoft Exchange server and/or Outlook.com server (“gateway”).

15. Based on present information and belief, Outlook makes, uses, sells and/or offers for sale a virtual gateway converting the protocol of said message to a protocol compatible with the network to which said message is being sent. For example, Outlook and/or its customers utilize Microsoft Exchange server and/or Outlook.com server comprising a gateway which converts the SMTP protocol of the messages sent from Outlook software at sender’s end (e-mail client) to the IMAP protocol used at receiver’s end (e-mail client).

16. Based on present information and belief, Outlook makes, uses, sells and/or offers for sale a virtual gateway wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic there through. Upon information and belief, Outlook and/or its customers utilize Microsoft Exchange server and/or Outlook.com server which accesses and updates the information stored in the registry based on the communicating virtual devices via the virtual gateway.

17. In the alternative, because the manner of use by Defendant differs in no substantial way from language of the claims, if Defendant is not found to literally infringe, Defendant infringes under the doctrine of equivalents.

18. Defendant's aforesaid activities have been without authority and/or license from Plaintiff.

19. In addition to what is required for pleadings in patent cases, and to the extent any marking was required by 35 U.S.C. § 287, Plaintiff and all predecessors in interest to the '620 Patent complied with all marking requirements under 35 U.S.C. § 287.

20. Plaintiff is entitled to recover from Defendant the damages sustained by Plaintiff as a result of the Defendant's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 6,873,620 (Skype)

21. Plaintiff is the owner of United States Patent No. 6,873,620 ("the '620 patent") entitled "Communication Server Including Virtual Gateway to Perform Protocol Conversion and Communication System Incorporating the Same." The '620 Patent issued on March 29, 2005. A true and correct copy of the '620 Patent is attached as Exhibit A.

22. Defendant owns, uses, operates, advertises, controls, sells, and otherwise provides products and/or services that infringe the '620 patent. The '620 patent provides, among other things, "A communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols, said communication server comprising: a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and

through said gateway, a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol and a dynamic database identifying the current status of each actual connection between physical devices; and a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices and converting the protocol of said message to a protocol compatible with the network to which said message is being sent wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic therethrough.”

23. Defendant directly and/or through intermediaries, made, has made, used, imported, provided, supplied, distributed, sold, and/or offered for sale products and/or services that infringed one or more claims of the ‘620 patent, including at least Claim 23, in this district and elsewhere in the United States. By making, using, importing, offering for sale, and/or selling such products and services, and all like products and services, Defendant has injured Plaintiff and is thus liable for infringement of the ‘620 patent pursuant to 35 U.S.C. § 271.

24. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a communication server acting as a gateway for the transmission of messages between two virtual devices communicating with networks implementing different protocols. For example, Skype provides Skype for Business unified communications platform based on cloud Public Branch Exchange (PBX) for IP based communication. When an SIP Trunking based call is placed to a Public Switched Telephone Network (PSTN) using Skype for Business software (which when installed on a computer, smartphone or other computing device comprise one or more “virtual devices”), the call is routed via the Microsoft Cloud PBX system and PSTN Gateway included in the Skype for Business server (“communication server”). The messages between Skype for Business software and the PSTN are transmitted via the Microsoft cloud PBX (“Gateway”).

Microsoft

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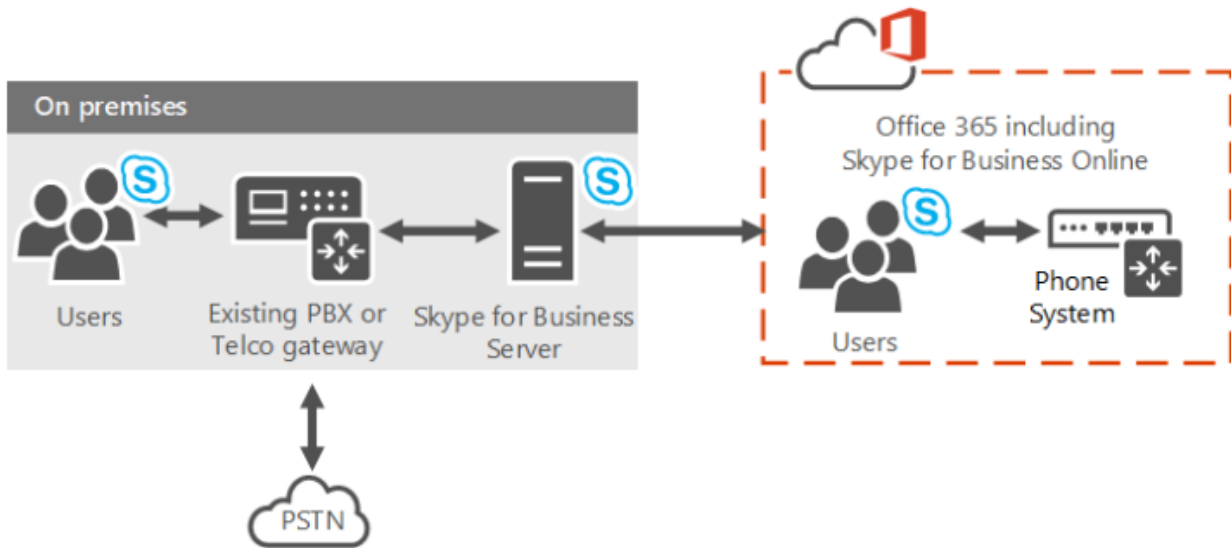
Direct SIP and gateway interoperability with PBX systems. Native interoperability with legacy video teleconferencing systems. Greater control on your network with Software Defined Network support, call admission control, and QoS.

Source: <https://products.office.com/en-us/skype-for-business/server-hybrid>

On-premises PSTN connectivity with an existing deployment

You can implement a hybrid solution using your existing Skype for Business Server deployment and PSTN connectivity. In this topology, users are homed in the cloud on Skype for Business Online instead of being 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 on your on-premises Skype for Business Server deployment, with Skype for Business call control in the cloud.



Source: <https://docs.microsoft.com/en-us/SkypeForBusiness/skype-for-business-hybrid-solutions/plan-your-phone-system-cloud-pbx-solution/plan-your-phone-system-cloud-pbx-solution>



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Skype For Business / Skype for Business Server 2015 / Skype for Business hybrid solutions / Plan your Phone System (Cloud PBX) solution

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Plan your Phone System in Office 365 (Cloud PBX) solution

📅 02/15/2018 • ⌚ 14 minutes to read • Contributors 🌐 🇺🇸 🇩🇪 🇬🇧

Find information on Microsoft's Phone System in Office 365 (Cloud PBX) solutions for enabling call control and Private Branch Exchange (PBX) capabilities in the Office 365 cloud.

Microsoft offers a variety of options for enabling your users to call landlines and mobile phones through the Public Switched Telephone Network (PSTN)—whether their accounts exist in Office 365 on Skype for Business Online or in your on-premises Skype for Business Server or Lync Server 2013 deployment.

This article outlines the different Microsoft voice offerings, and then provides guidance on which options might be the best for you, depending on your organization's current status and future plans. You can use this article along with the Skype for Business Online Voice Solutions poster available as a download in both [Visio](https://download.microsoft.com/download/2/E/E/2EE5C4DE-7F12-475C-A507-37870020F0D3/Plan_Voice_Solution_poster_-_Final.vsd) and [PDF]

(https://download.microsoft.com/download/2/E/E/2EE5C4DE-7F12-475C-A507-37870020F0D3/Plan_Voice_Solution_poster_-_Final.pdf)

Source: <https://docs.microsoft.com/en-us/SkypeForBusiness/skype-for-business-hybrid-solutions/plan-your-phone-system-cloud-pbx-solution/plan-your-phone-system-cloud-pbx-solution>

Connect your existing Skype for Business Server deployment with

Phone System in Office 365. PSTN connectivity is provided through Enterprise Voice on your on-premises Skype for Business Server deployment, but your organization can receive PBX services from the Microsoft cloud. You can retain your users' voice capabilities as you begin to move them to Skype for Business Online. You can move your users at your own pace, knowing that their voice features will continue no matter where they are homed.

In the future, if you decide you can leave your current carrier, you can port your cloud users to Microsoft's full Phone System in Office 365 with Calling Plan, with Microsoft providing all PBX and PSTN capabilities.

For more information about this option, see [Plan Phone System in Office 365 with on-premises PSTN connectivity in Skype for Business Server](#) and [Enable users for Phone System in Office 365 with on-premises PSTN connectivity in Skype for Business Server](#).

Source: <https://docs.microsoft.com/en-us/SkypeForBusiness/skype-for-business-hybrid-solutions/plan-your-phone-system-cloud-pbx-solution/plan-your-phone-system-cloud-pbx-solution>

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PSTN connectivity components in Skype for Business Server 2015

12/20/2016 • 2 minutes to read • Contributors

Learn about SIP trunking and PSTN gateways for Enterprise Voice in Skype for Business Server.

An enterprise-grade VoIP solution must provide for calls to and from the public switched telephone network (PSTN) without any decline in Quality of Service (QoS). In addition, users should not be aware of the underlying technology when they place and receive calls. From the user's perspective, a call between the Enterprise Voice infrastructure and the PSTN should seem like just another SIP session.

For PSTN connections, you can either deploy a SIP trunk or a PSTN gateway (with a PBX, also known as a Direct SIP link, or without a PBX).

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PSTN gateways

Private Branch Exchanges

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SIP Trunking

As an alternative to using PSTN gateways, you can connect your Enterprise Voice solution to the PSTN by using SIP trunking. SIP trunking enables the following scenarios:

- An enterprise user inside or outside the corporate firewall can make a local or long-distance call specified by an E.164-compliant number that is terminated on the PSTN as a service of the corresponding service provider.
- Any PSTN subscriber can contact an enterprise user inside or outside the corporate firewall by dialing a Direct Inward Dialing (DID) number associated with that enterprise user.

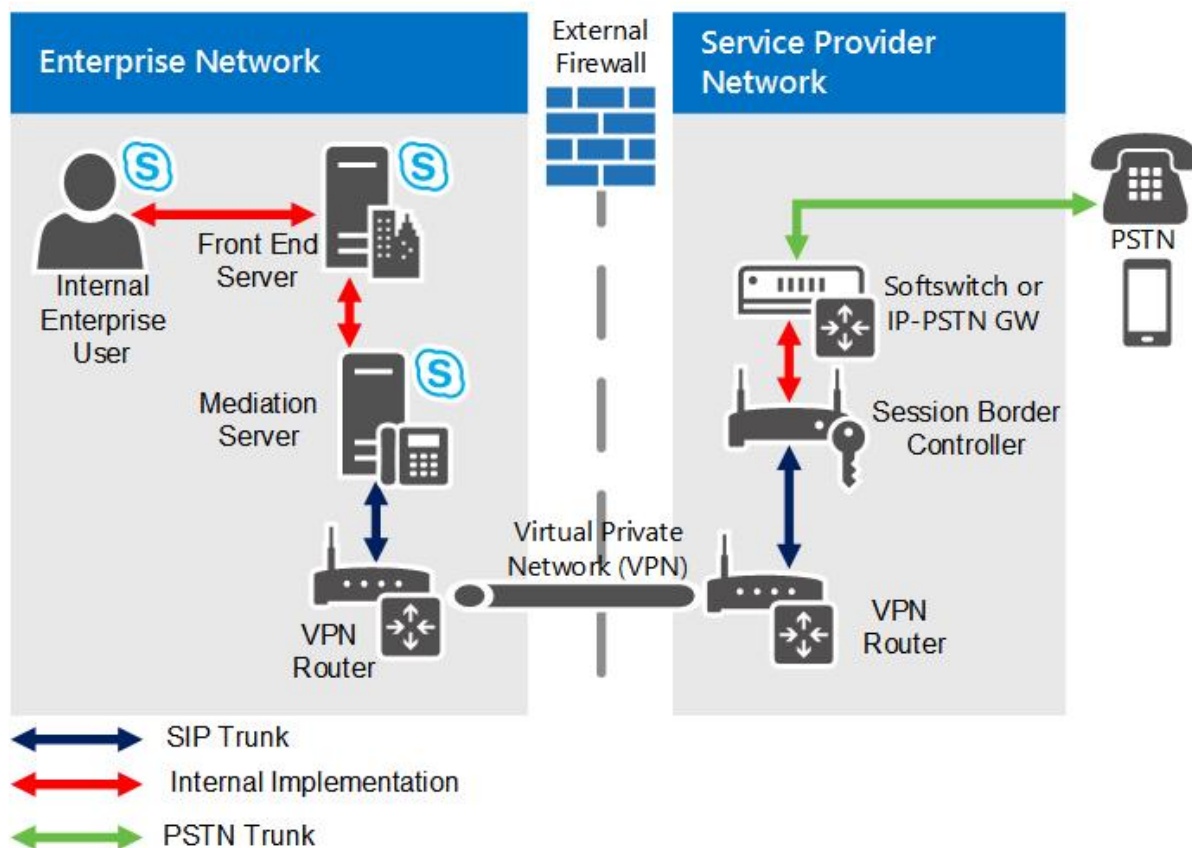
The use of this deployment solution requires a SIP trunking service provider.

PSTN gateways

PSTN gateways are third-party devices that translate signaling and media between the Enterprise Voice infrastructure and a PSTN or a PBX. PSTN gateways work with the Mediation Server to present a PSTN or PBX call to an Enterprise Voice client. The Mediation Server also presents calls from Enterprise Voice clients to the PSTN gateway for routing to the PSTN or PBX. For a list of partners who work with Microsoft to provide devices that work with Skype for Business Server, see [the Microsoft Unified Communications Partners website](#).

Source: <https://docs.microsoft.com/en-us/skypeforbusiness/plan-your-deployment/enterprise-voice-solution/pstn-connectivity>

SIP trunking topology



Source: <https://docs.microsoft.com/en-us/skypeforbusiness/plan-your-deployment/enterprise-voice-solution/sip-trunking>

25. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a knowledge base comprising a registry identifying each physical device registered to deliver messages for transmission between said virtual devices and through said gateway. Upon information and belief, Skype and/or its customers utilize Skype for Business Server SIP trunking functionality which comprises a knowledge base registry to identify the registered physical devices. Further, the server uses Skype Cloud PBX to transmit messages from Skype Business software to the PSTN through PSTN Gateway.

SIP Trunking

As an alternative to using PSTN gateways, you can connect your Enterprise Voice solution to the PSTN by using SIP trunking. SIP trunking enables the following scenarios:

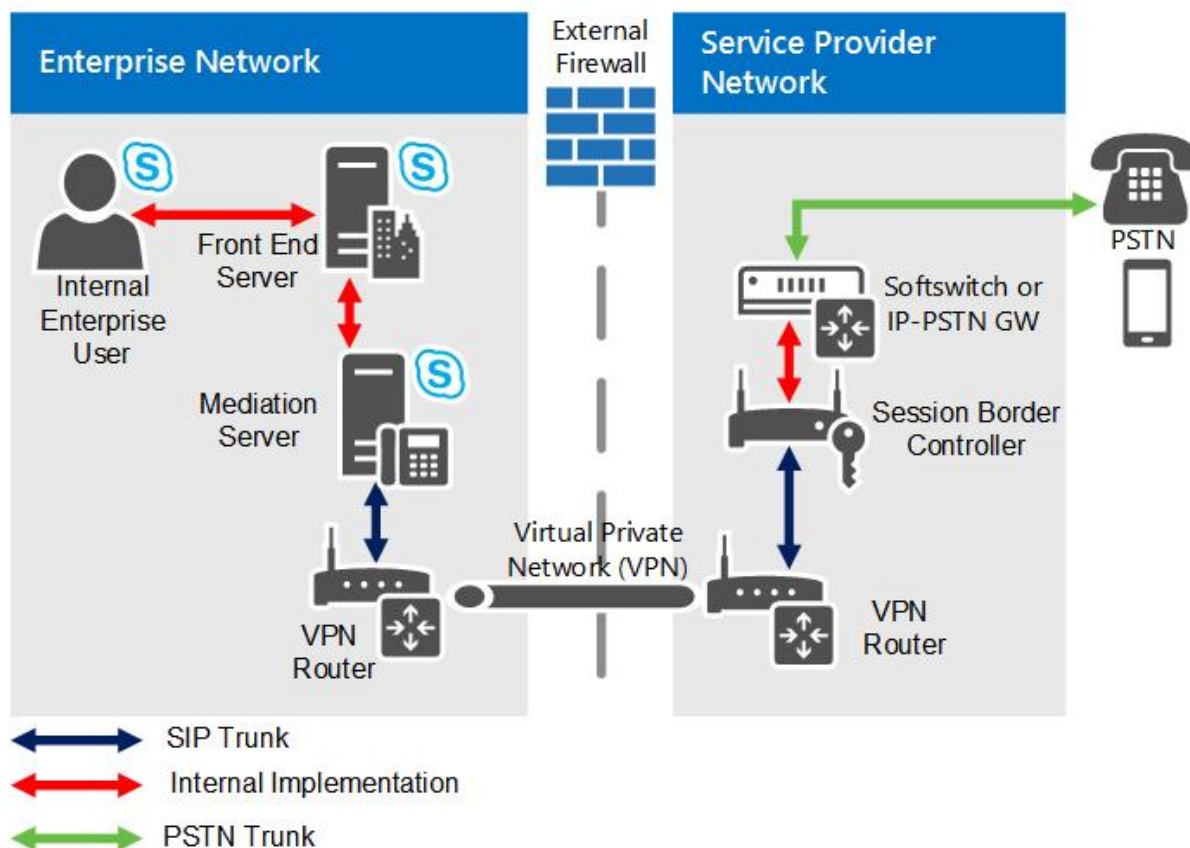
- An enterprise user inside or outside the corporate firewall can make a local or long-distance call specified by an E.164-compliant number that is terminated on the PSTN as a service of the corresponding service provider.
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SIP trunking topology

Source:

<https://docs.microsoft.com/en-us/skypeforbusiness/plan-your-deployment/enterprise-voice-solution/sip-trunking>

Further, Skype for Business Server also maintains a knowledge base comprising a registry identifying the phones and devices within the customers' network.

26. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a logical table identifying each registered connection available between physical devices and protocol conversion information required for each registered connection to convert messages of one protocol to a different protocol. Upon information and belief, Skype and/or its customers utilize Skype for Business Server SIP trunking functionality which comprises a logical table to identify the type of connection and selects PSTN Gateway to convert messages from Session Initiation Protocol (SIP) to PSTN.

SIP Trunking

As an alternative to using PSTN gateways, you can connect your Enterprise Voice solution to the PSTN by using SIP trunking. SIP trunking enables the following scenarios:

- An enterprise user inside or outside the corporate firewall can make a local or long-distance call specified by an E.164-compliant number that is terminated on the PSTN as a service of the corresponding service provider.
- Any PSTN subscriber can contact an enterprise user inside or outside the corporate firewall by dialing a Direct Inward Dialing (DID) number associated with that enterprise user.

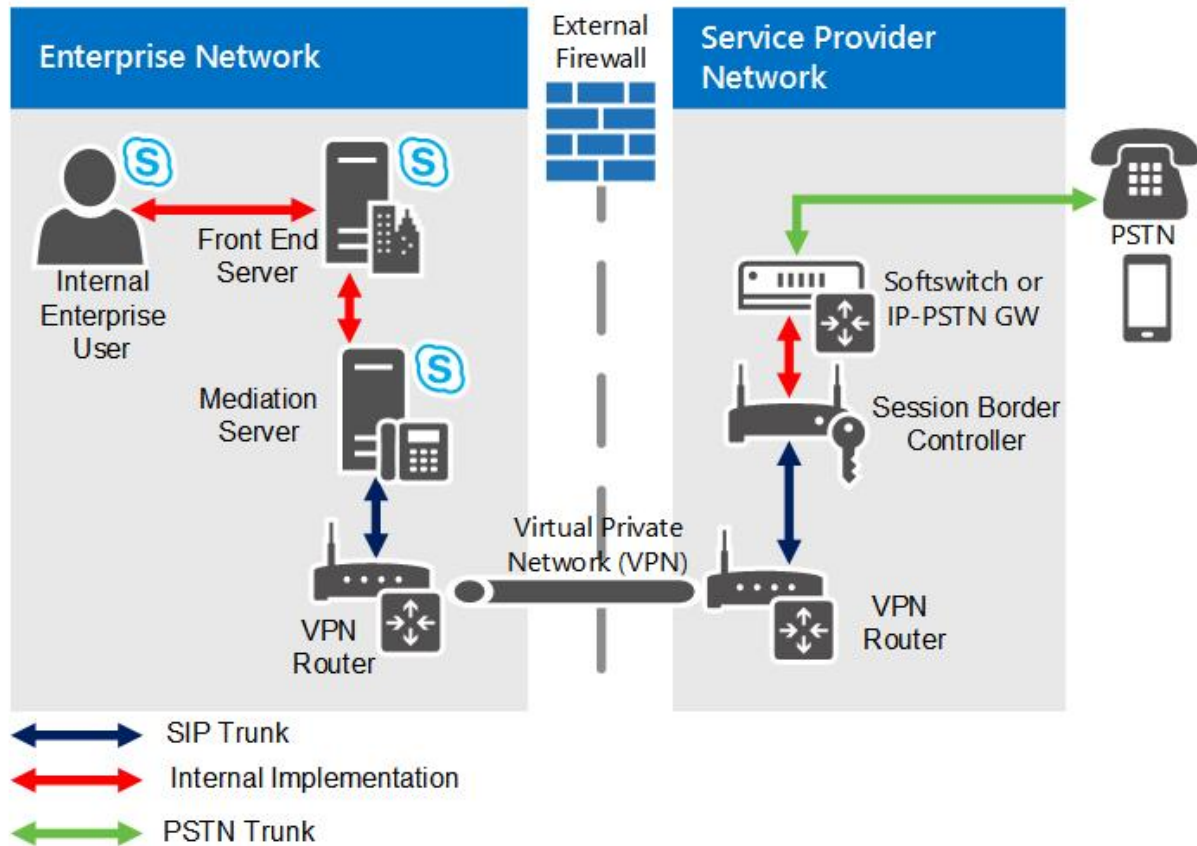
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SIP trunking topology

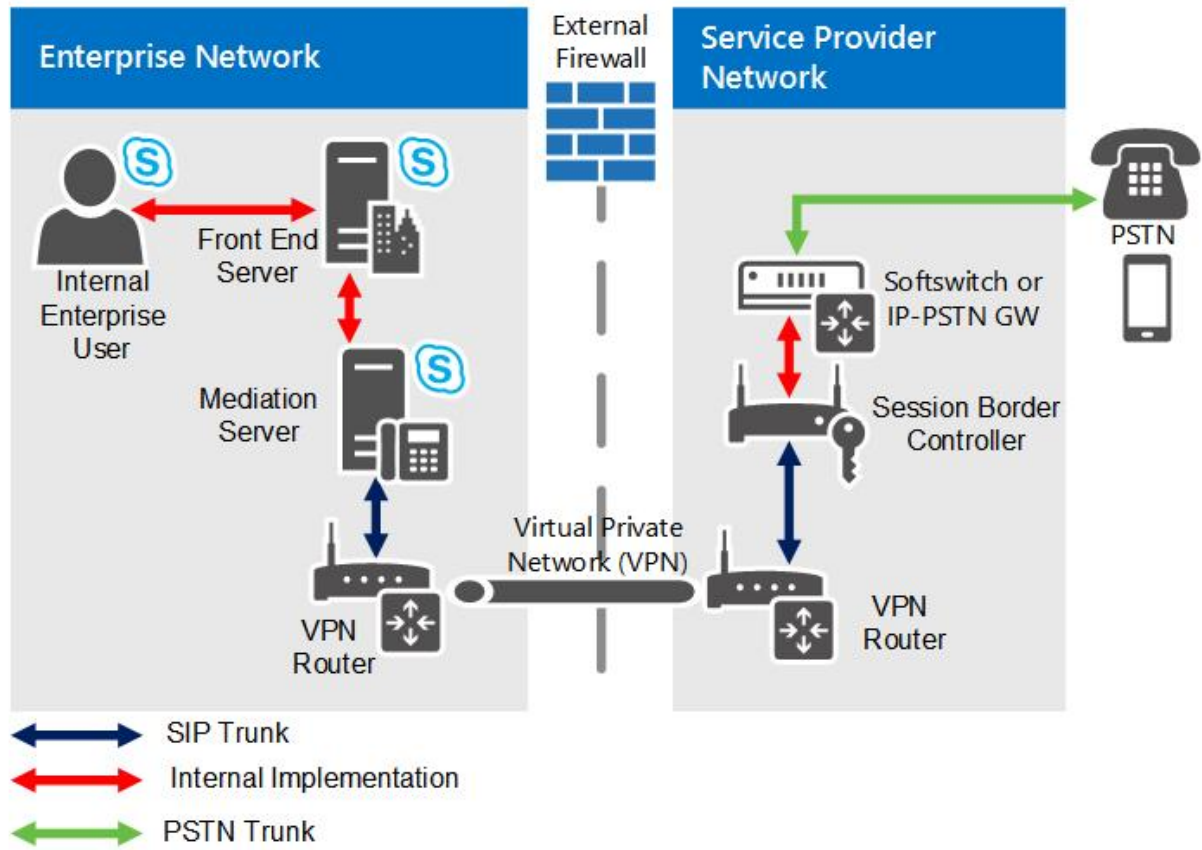


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<https://docs.microsoft.com/en-us/skypeforbusiness/plan-your-deployment/enterprise-voice-solution/sip-trunking>

27. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a dynamic database identifying the current status of each actual connection between physical devices. Upon information and belief, Skype and/or its customers utilize Skype for Business Server SIP trunking functionality which comprises a cloud PBX further comprising a dynamic database to identify the current status of connection between the physical devices (including IP phones, installation computers and the physical PSTN terminals).

SIP trunking topology



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Plan your Phone System in Office 365 (Cloud PBX) solution

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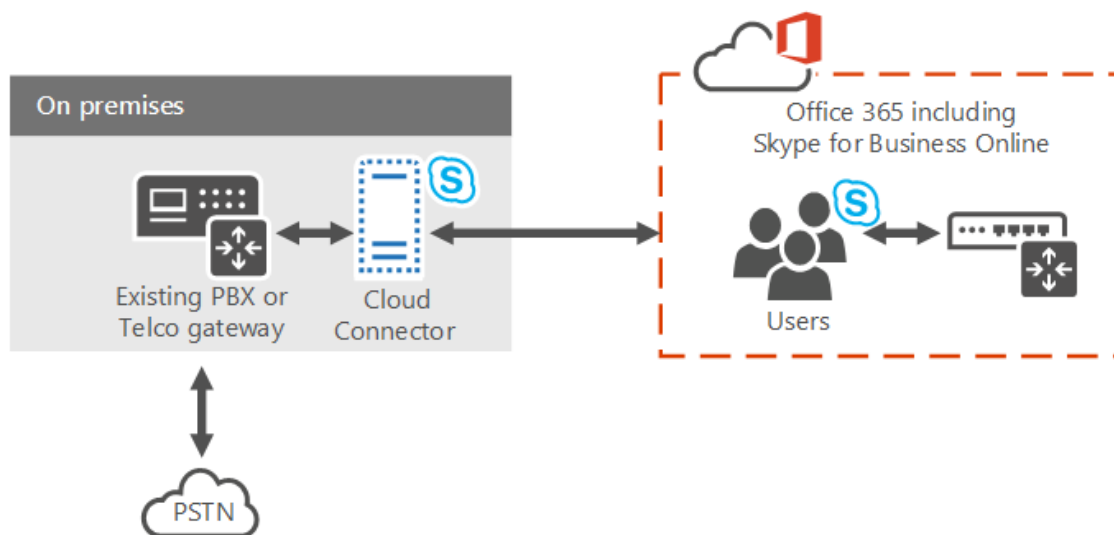
This article outlines the different Microsoft voice offerings, and then provides guidance on which options might be the best for you, depending on your organization's current status and future plans. You can use this article along with the Skype for Business Online Voice Solutions poster available as a download in both [Visio](https://download.microsoft.com/download/2/E/E/2EE5C4DE-7F12-475C-A507-37870020F0D3/Plan_Voice_Solution_poster_-_Final.vsd) and [PDF] (https://download.microsoft.com/download/2/E/E/2EE5C4DE-7F12-475C-A507-37870020F0D3/Plan_Voice_Solution_poster_-_Final.pdf)

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On-premises PSTN connectivity with Cloud Connector Edition

Cloud Connector is a set of packaged Virtual Machines (VMs) that implement on-premises PSTN connectivity with Phone System in Office 365. This hybrid offering is designed for organizations that want to enable their Skype for Business Online users to use their existing on-premises PSTN connection, with Skype for Business call control in the cloud.

With this option, you deploy a set of packaged VMs that contain a minimal Skype for Business Server topology—consisting of an Edge component, Mediation component, and a Central Management Store (CMS) role. These services are configured for hybrid with your Office 365 tenant that includes Skype for Business Online services.



Source: <https://docs.microsoft.com/en-us/skypeforbusiness/skype-for-business-hybrid-solutions/plan-your-phone-system-cloud-pbx-solution/plan-your-phone-system-cloud-pbx-solution>

28. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a virtual gateway accessing said knowledge base for protocol conversion information upon receipt of a message to be transmitted between said virtual devices. For example, Skype and/or its customers utilize Skype for Business Server SIP trunking functionality comprising a Virtual Private Network (VPN) (“Virtual gateway”) which uses the PSTN Gateway for protocol conversion upon receiving the message to be transmitted from Skype’s Skype Business software to the PSTN.

29. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a virtual gateway converting the protocol of said message to a protocol compatible with the network to which said message is being sent. For example, Skype and/or its customers utilize

Skype for Business Server SIP trunking functionality comprising a PSTN Gateway which converts the protocol of the messages sent from Skype Business software to the protocol used within the PSTN.

30. Based on present information and belief, Skype makes, uses, sells and/or offers for sale a virtual gateway wherein said virtual gateway updates the protocol conversion information and the current status information in said knowledge base based on message traffic there through. For example, Skype and/or its customers utilize Skype for Business Server SIP trunking functionality comprising VPN accesses and updates the information stored in the registry based on the communicating virtual devices.

31. In the alternative, because the manner of use by Defendant differs in no substantial way from language of the claims, if Defendant is not found to literally infringe, Defendant infringes under the doctrine of equivalents.

32. Defendant's aforesaid activities have been without authority and/or license from Plaintiff.

33. In addition to what is required for pleadings in patent cases, and to the extent any marking was required by 35 U.S.C. § 287, Plaintiff and all predecessors in interest to the '620 Patent complied with all marking requirements under 35 U.S.C. § 287.

34. Plaintiff is entitled to recover from Defendant the damages sustained by Plaintiff as a result of the Defendant's wrongful acts in an amount subject to proof at trial, which, by law, cannot be less than a reasonable royalty, together with interest and costs as fixed by this Court under 35 U.S.C. § 284

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court enter:

1. A judgment in favor of Plaintiff that Defendant has infringed the '620 Patent;
2. A judgment and order requiring Defendant to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for Defendant's infringement of the '620 Patent as provided under 35 U.S.C. § 284;
3. An award to Plaintiff for enhanced damages resulting from the knowing, deliberate, and willful nature of Defendant's prohibited conduct with notice being made at least as early as the date of the filing of this Complaint, as provided under 35 U.S.C. § 284;

4. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees; and
5. Any and all other relief to which Plaintiff may show itself to be entitled.

DEMAND FOR JURY TRIAL

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Respectfully Submitted,

BECK BRANCH LLC

/s/ Papool S. Chaudhari

Dated: June 27, 2018

By: _____

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BECK BRANCH LLC**