

# IM and Presence

## Legend

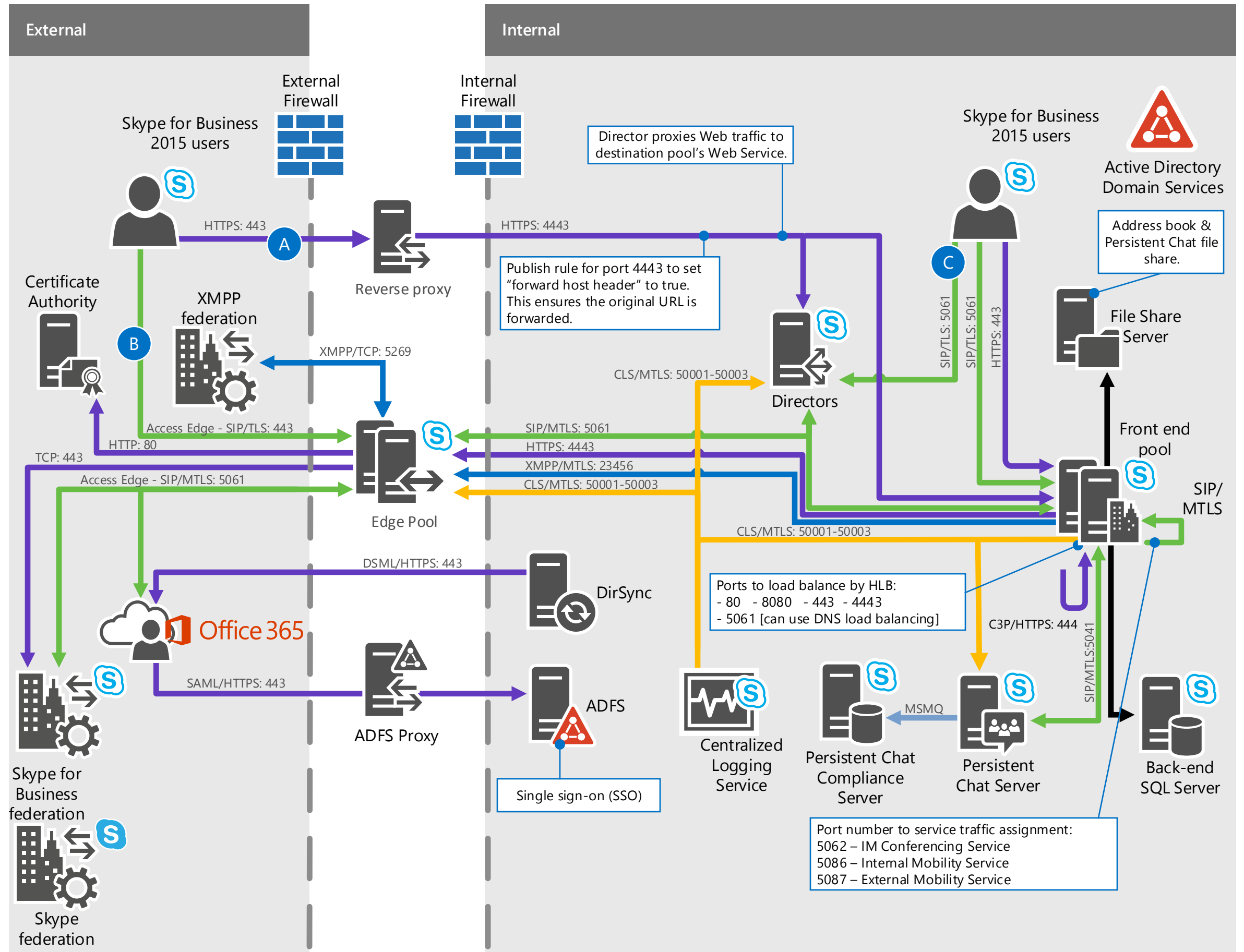
- SIP traffic: signaling and IM
- XMPP traffic
- HTTP(S) traffic
- MSMQ Traffic
- CLS Traffic
- ← Arrow direction indicates which server initiates the connection. Actual traffic is bi-directional.

## Services and Processes

- A** This port is used to connect to Web Services:
- download the Address Book
  - connect to Address Book Web query URL
  - provide distribution list expansion
  - download meeting content
  - connect to the Mobility Service
  - connect to the AutoDiscover Service
  - connect to Dial-in URL
  - connect to Lync Web App
  - connect to CertProvisioningService

- B** External user sign-in process:
1. Client discovers Edge Server:
    - a. `lyncdiscoverinternal.<sip-domain>`
    - b. `lyncdiscover.<sip-domain>`
    - c. `_sipinternaltls.tcp.<sip-domain>`
    - d. `_sipinternal_tcp.<sip-domain>`
    - e. `_sip_tls.<sip-domain>`
    - f. `sipinternal.<sip-domain>`
    - g. `sip.<sip-domain>`
    - h. `sipexternal.<sip-domain>`
  2. Client connects to Edge Server.
  3. Edge Server proxies connection to Director.
  4. Director authenticates user and proxy connection to user's home pool.

- C** Internal user sign-in process:
1. Client discovers Enterprise Pool:
    - a. `lyncdiscoverinternal.<sip-domain>`
    - b. `lyncdiscover.<sip-domain>`
    - c. `_sipinternaltls.tcp.<sip-domain>`
    - d. `_sipinternal_tcp.<sip-domain>`
    - e. `sipinternal.<sip-domain>`
    - f. `sip.<sip-domain>`
  2. Client connects to Enterprise Pool server.
  3. Enterprise pool server authenticates user and redirects connection to user's home server.

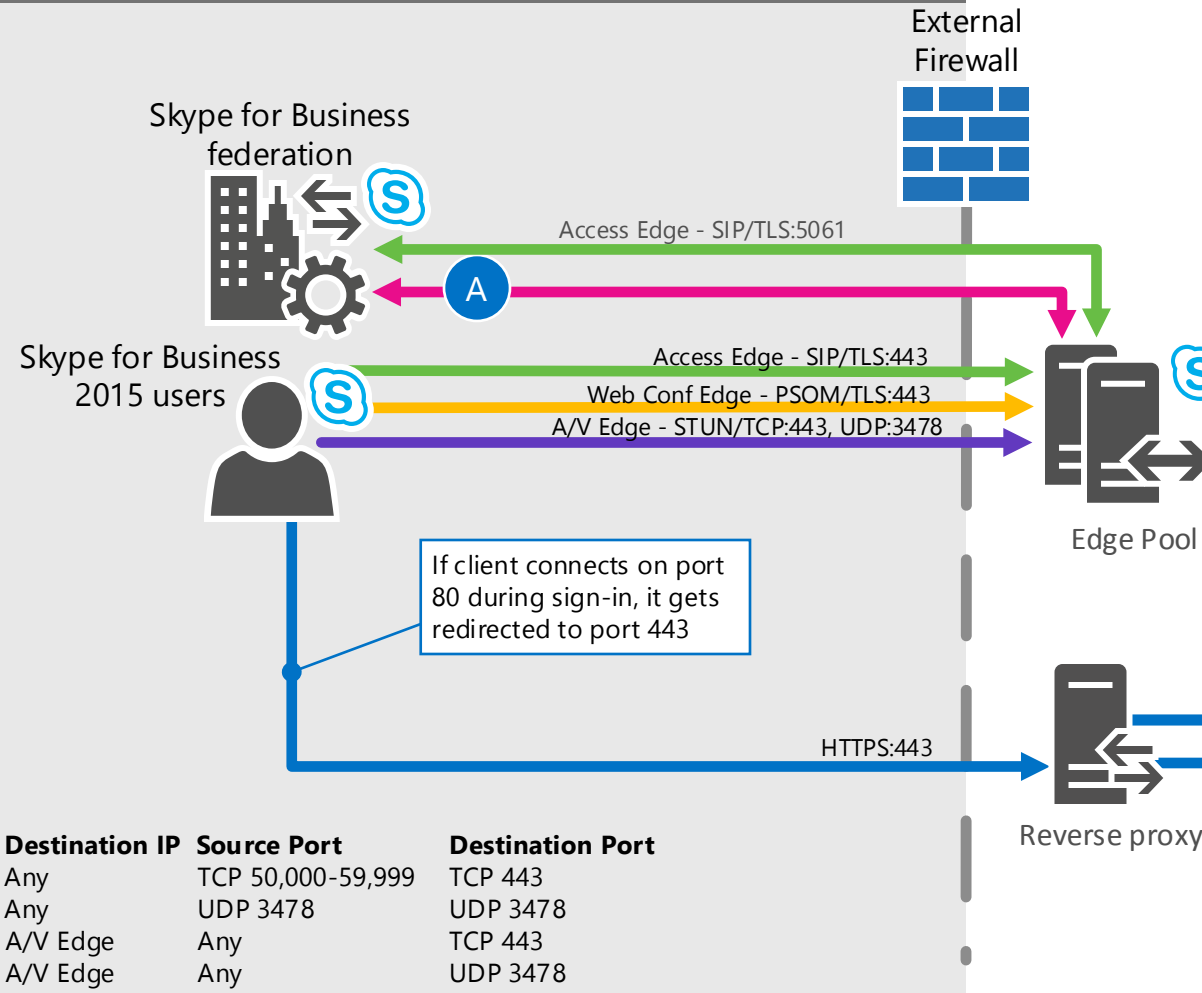


# A/V AND WEB CONFERENCING

## Legend

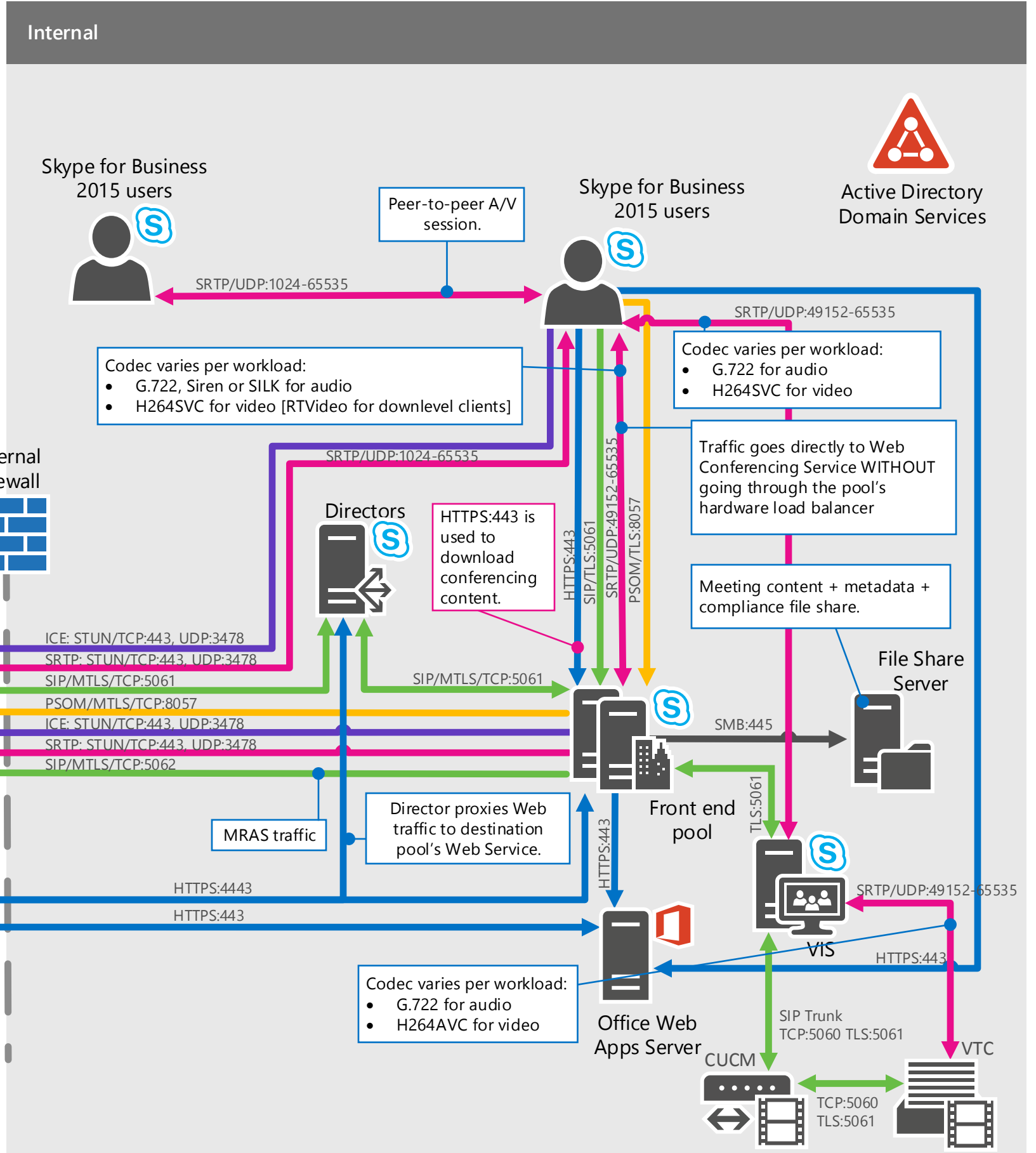
- SIP traffic: signaling
- HTTP(S) traffic
- RTP/SRTP traffic: A/V Conferencing
- PSOM traffic: Web Conferencing
- ICE traffic
- ← Arrow direction indicates which server initiates the connection. Actual traffic is bi-directional.

## External



A

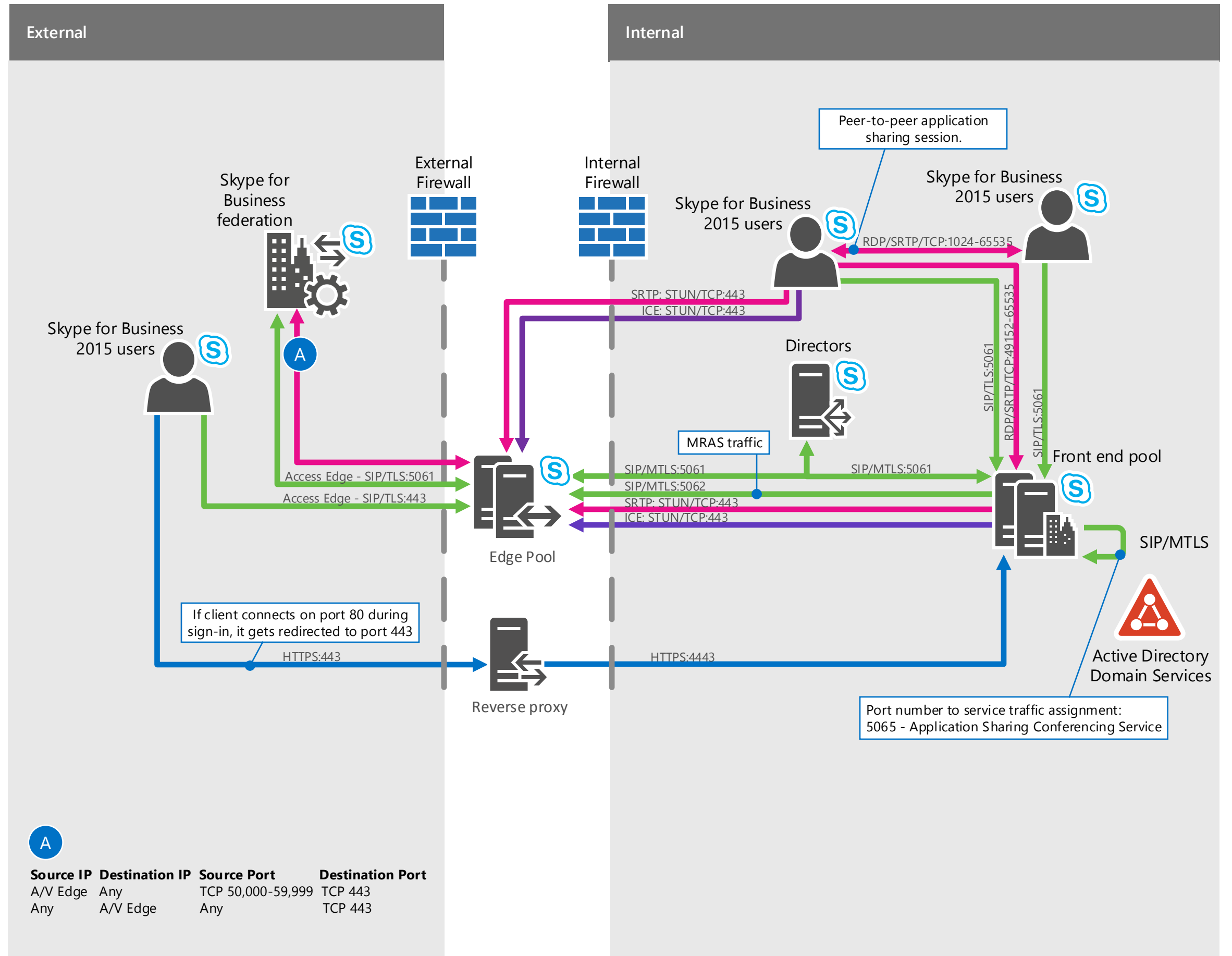
Source IP	Destination IP	Source Port	Destination Port
A/V Edge	Any	TCP 50,000-59,999	TCP 443
A/V Edge	Any	UDP 3478	UDP 3478
Any	A/V Edge	Any	TCP 443
Any	A/V Edge	Any	UDP 3478



# APPLICATION SHARING

## Legend

- SIP traffic: signaling
- HTTP(S) traffic
- RTP/SRTP traffic: A/V Conferencing
- ICE traffic
- ← Arrow direction indicates which server initiates the connection. Actual traffic is bi-directional.



# ENTERPRISE VOICE

## Legend

- SIP traffic
- Call Admission Control (CAC) traffic
- RTP/SRTP traffic: A/V Conferencing
- ICE traffic
- ← Arrow direction indicates which server initiates the connection. Actual traffic is bi-directional.

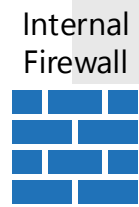
## External

Skype for Business 2015 users



Access Edge - SIP/TLS:443  
A/V Edge - ICE: STUN/TCP:443, STUN/UDP:3478

## Internal



Skype for Business 2015 users



Active Directory Domain Services



## Branch Office

Skype for Business 2015 users

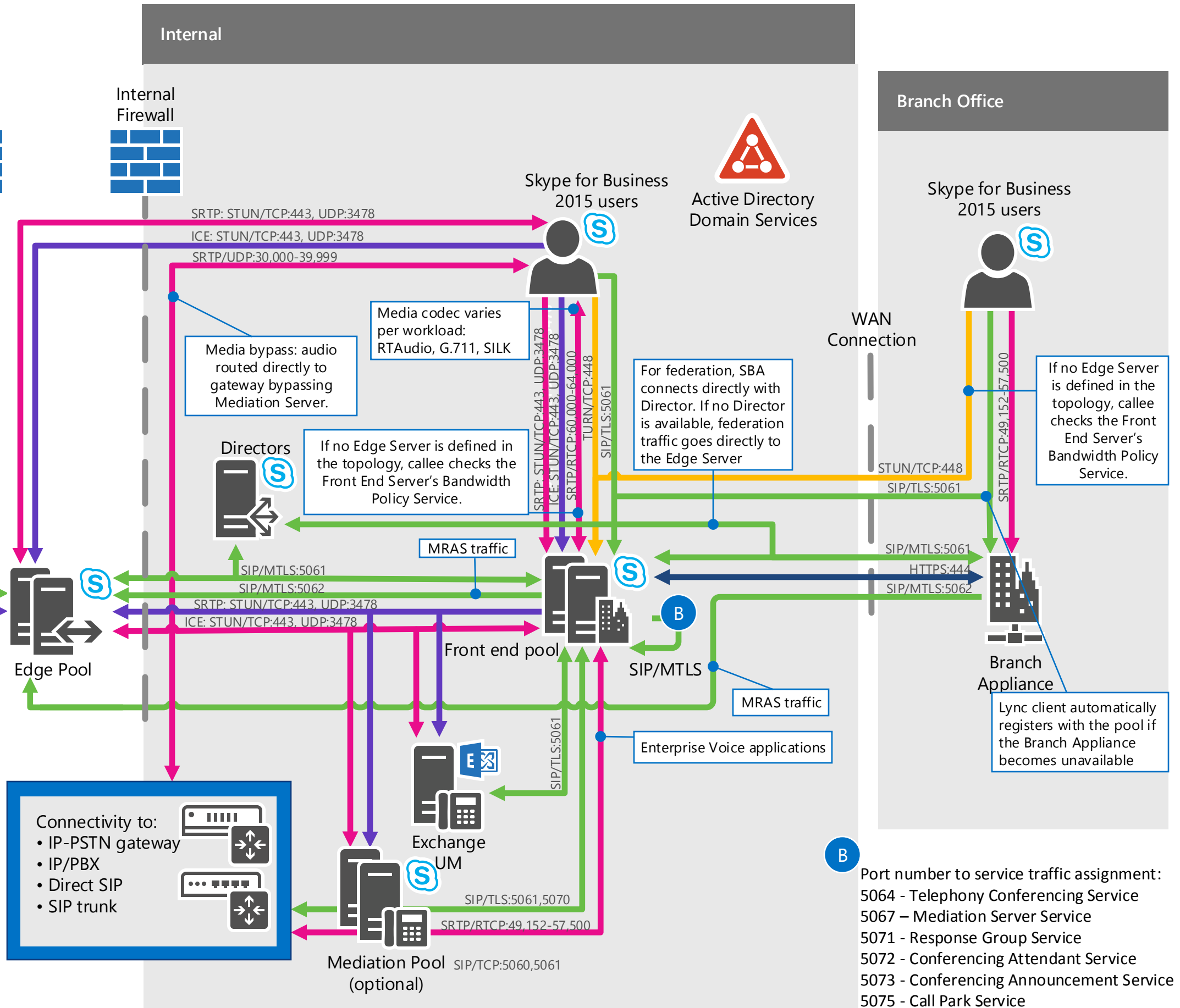


WAN Connection

If no Edge Server is defined in the topology, callee checks the Front End Server's Bandwidth Policy Service.

Branch Appliance

Lync client automatically registers with the pool if the Branch Appliance becomes unavailable



# CERTIFICATE REQUIREMENTS

## Core elements

### Front End Pool



#### Front End Server 1, Front End Server 2

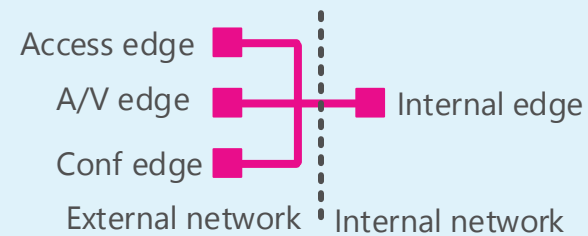
FQDN: pool.<ad-domain>  
Certificate SN: pool.<ad-domain>  
Certificate SAN: pool.<ad-domain>, fe.<ad-domain>, sip.<sip-domain>, lyncdiscoverinternal.<sip-domain>, lyncdiscover.<sip-domain>, admin URL, meet URL, dial-in URL,  
EKU: server  
Root certificate: private CA

### Edge Servers



#### Edge Server 1, Edge Server 2

Internal FQDN: internal.<ad-domain>  
Certificate SN: internal.<ad-domain>  
Certificate SAN:  
EKU: server  
Root certificate: private CA



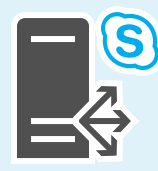
External FQDN: access.<sip-domain>  
Certificate SN: access.<sip-domain>  
Certificate SAN: access.<sip-domain>, sip.<sip-domain>, conf.<sip-domain>  
EKU: server  
Root certificate: public CA

### Persistent Chat Server



FQDN: chatsrv.<ad-domain>  
Certificate SN: chatsrv.<ad-domain>  
Certificate SAN: N/A  
EKU: server, client  
Root certificate: private CA

### Directors



#### Director 1, Director 2

FQDN: dir.<ad-domain>  
Certificate SN: dir.<ad-domain>  
Certificate SAN: dir.<ad-domain>, sipinternal.<sip-domain>, sip.<sip-domain>, lyncdiscoverinternal.<sip-domain>, lyncdiscover.<sip-domain>, admin URL, meet URL, dial-in URL  
EKU: server  
Root certificate: private CA

## Additional elements

### Reverse proxy



FQDN: external Web Service FQDN  
Certificate SN: external Web Service FQDN  
Certificate SAN: external Web Service FQDN, lyncdiscover.<sip-domain>, meet URL, dial-in URL, OwaExtWeb.<sip-domain>  
EKU: server  
Root certificate: public CA

### Branch Appliance



FQDN: sba.<ad-domain>  
Certificate SN: sba.<ad-domain>  
Certificate SAN: sba.<ad-domain>  
EKU: server  
Root certificate: private CA

### Exchange UM Server



FQDN: umsrv.<ad-domain>  
Certificate SN: umsrv.<ad-domain>  
Certificate SAN: N/A  
EKU: server  
Root certificate: private CA

### Office Web Apps Server



FQDN: OwaExtWeb.<sip-domain>  
Certificate SN: OwaExtWeb.<sip-domain>  
Certificate SAN: wacsv1.<ad-domain>  
Certificate SAN: wacsv2.<ad-domain>  
EKU: server  
Root certificate: private CA

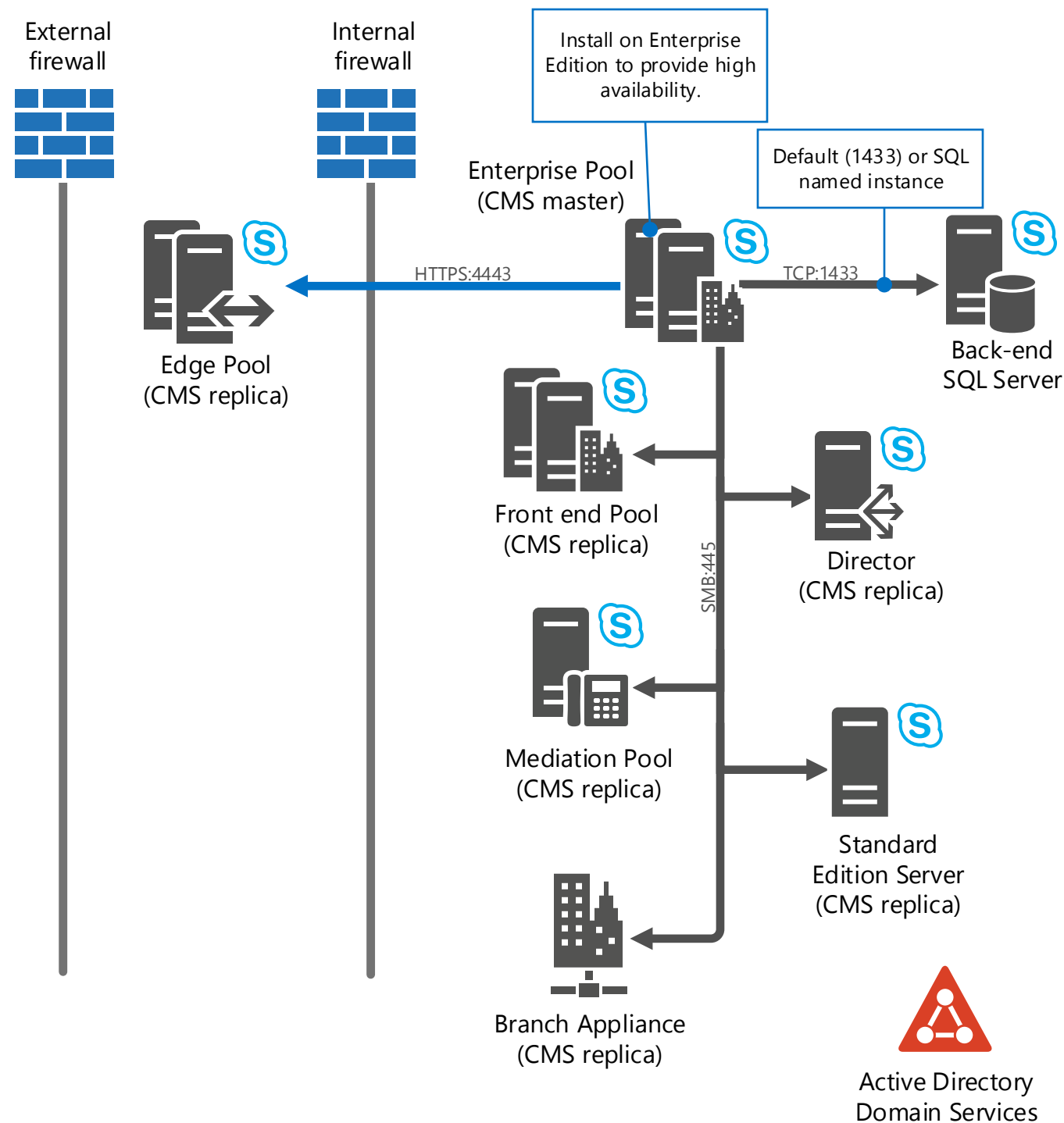
# CMS

The Central Management Store provides a robust, schematized storage of the data needed to define, set up, maintain, administer, describe, and operate a Skype for Business Server deployment. It also validates the data to ensure configuration consistency.

All changes to this configuration data happen at the Central Management store, eliminating "out-of-sync" issues. Read-only copies of the data are replicated to all servers in the topology, including Edge Servers and Survivable Branch Appliances.

The Active Directory Domain Services (AD DS) are still used to store basic user information, such as the user's SIP URI and phone number. User policy information is stored in the Central Management store. The use of Active Directory Domain Services (AD DS) also provides backward compatibility with earlier releases of Lync Server.

To administer servers and services, you use Skype for Business Server Management Shell or the Skype for Business Server Control Panel, which then configure the settings in the Central Management store. The Central Management Server, which runs on one Front End pool or one Standard Edition server in your deployment, replicates the configuration changes to all of the servers in your deployment.



## Legend

- SMB traffic
- HTTPS traffic
- Direction of arrow indicates which server initiates the connection. Subsequent traffic is bi-directional.



## INTERNAL DNS CONFIGURATION

DNS TYPE	VALUE	Enterprise Edition Resolution	Standard Edition Resolution	PURPOSE
SRV	_sipinternaltls._tcp.<sip-domain>	pool FQDN	pool FQDN	internal user access
A/CNAME	lyncoverinternal.<sip-domain>	HLB FE Pool VIP	pool IP address	internal AutoDiscover Service
A	Pool FQDN	individual FE IPs	pool IP address	Internal pool name
A	admin URL	HLB FE Pool VIP	pool IP address	Lync Server Control Panel (LSCP)
A	meet URL	HLB FE Pool VIP	pool IP address	Lync Server Web Service
A	dial-in URL	HLB FE Pool VIP	pool IP address	Lync Server Web Service
A	internal Web Services FQDN	HLB FE Pool VIP	pool IP address	Lync Server Web Service
A	external Web Services FQDN	Reverse proxy public IP address	Reverse proxy public IP address	Proxied to Lync Server Web Service

## EXTERNAL DNS CONFIGURATION

DNS Type	VALUE	RESOLUTION	PURPOSE
SRV	_sipfederationtls._tcp.<sip-domain>	Access Edge FQDN: access.<sip-domain>	Federation and public IM connectivity
SRV	_sip._tls.<sip-domain>	Access Edge FQDN: access.<sip-domain>	external user access
SRV	_xmpp-server._tcp.<sip-domain>	Access Edge FQDN: access.<sip-domain>	XMPP federation
A	sip.<sip-domain>	Access Edge FQDN: access.<sip-domain>	locate Edge Server
A	Access Edge FQDN: access.<sip-domain>	Access Edge IP address	Edge Server Access edge
A	A/V Edge FQDN: av.<sip-domain>	A/V Edge IP address	Edge Server A/V edge
A	Conf Edge FQDN: conf.<sip-domain>	Conf Edge IP address	Edge Server Conf edge
A/CNAME	lyncover.<sip-domain>	reverse proxy public IP address	external AutoDiscover Service
A	meet URL	reverse proxy public IP address	proxied to Lync Server Web Service
A	dial-in URL	reverse proxy public IP address	proxied to Lync Server Web Service
A	external Web Services FQDN	reverse proxy public IP address	proxied to Lync Server Web Service

## OWA

DNS TYPE	VALUE	Office Web Apps Farm Resolution	Office Web Apps Server Resolution	PURPOSE
A	OWA internal URL	HLB OWA VIP	OWA server IP	internal user access to PowerPoint Presentations
A	OWA external URL	Reverse proxy public IP address	Reverse proxy public IP address	external user access to PowerPoint Presentations

