



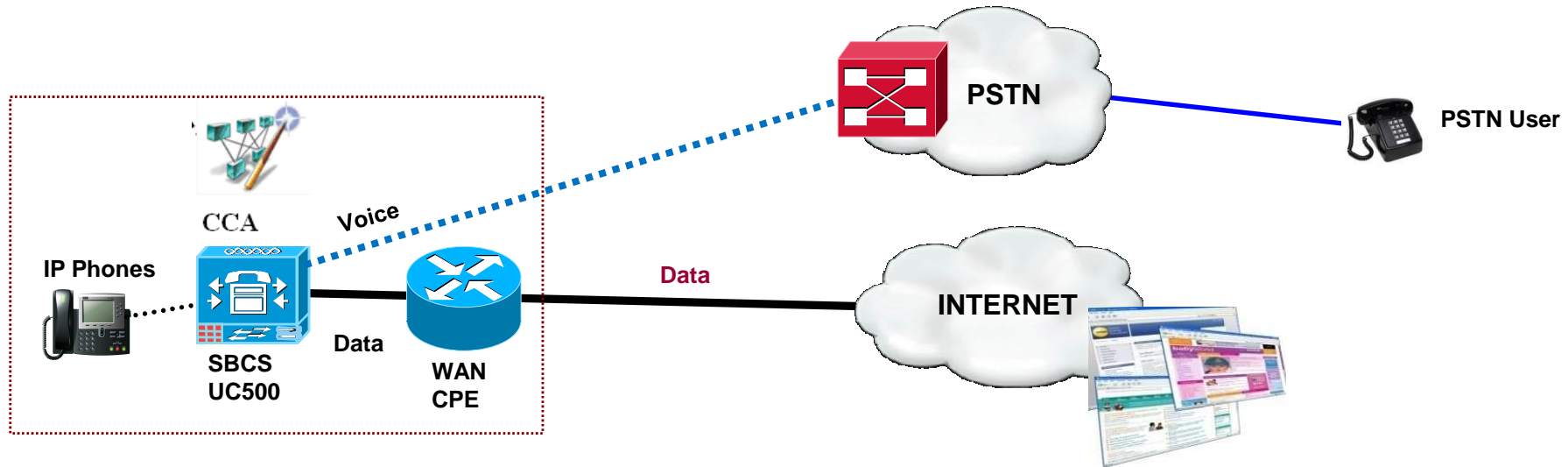
# Managed SIP Trunking with SBCS (UC500)



# What is a SIP Trunk?

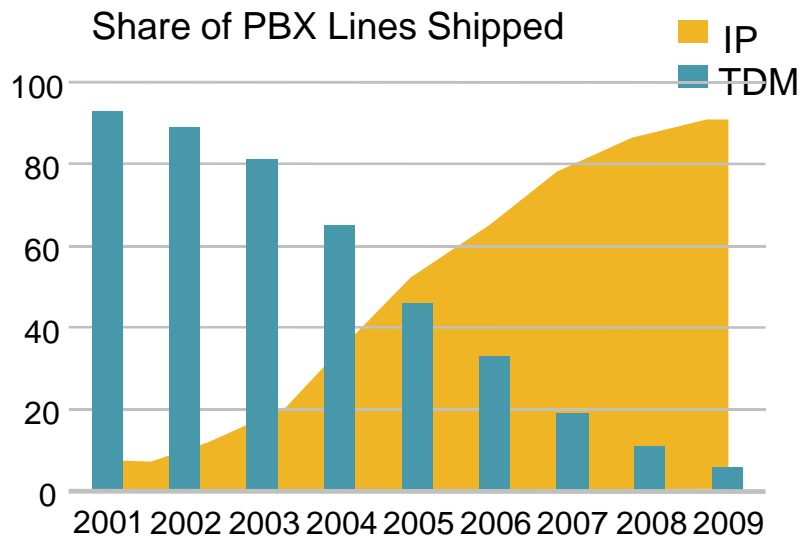


# Traditional PSTN Interconnects

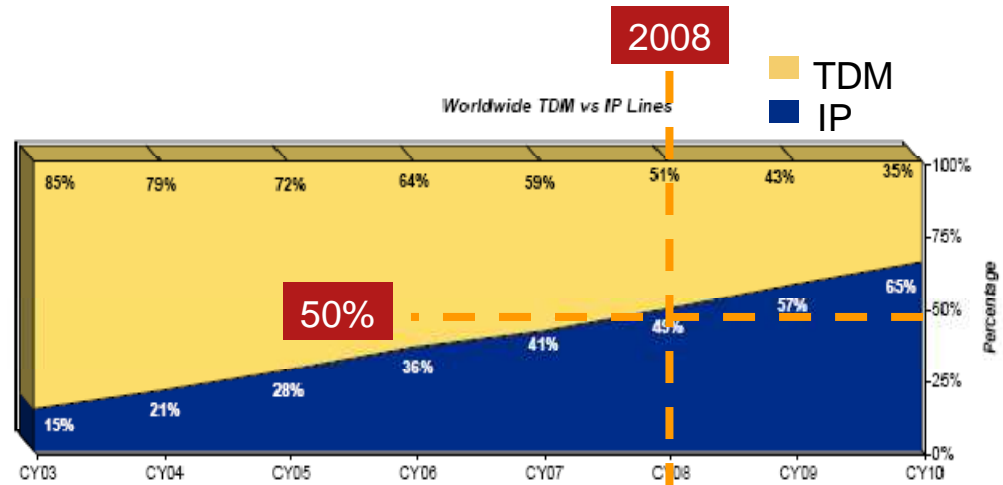


- Traditionally, small businesses have 2 physical interconnects
  1. One for PSTN access (Voice) – usually Analog lines (on FXO) or ISDN PRI (T1/E1) / BRI trunks
  2. Other for Internet access using IP (Data)
- The PSTN interconnects are based on TDM networks and have been around for over 30+ years i.e. reliable

# The PBX has flipped to IP from TDM ...and the Trunks Aren't Far Behind



Source: Synergy

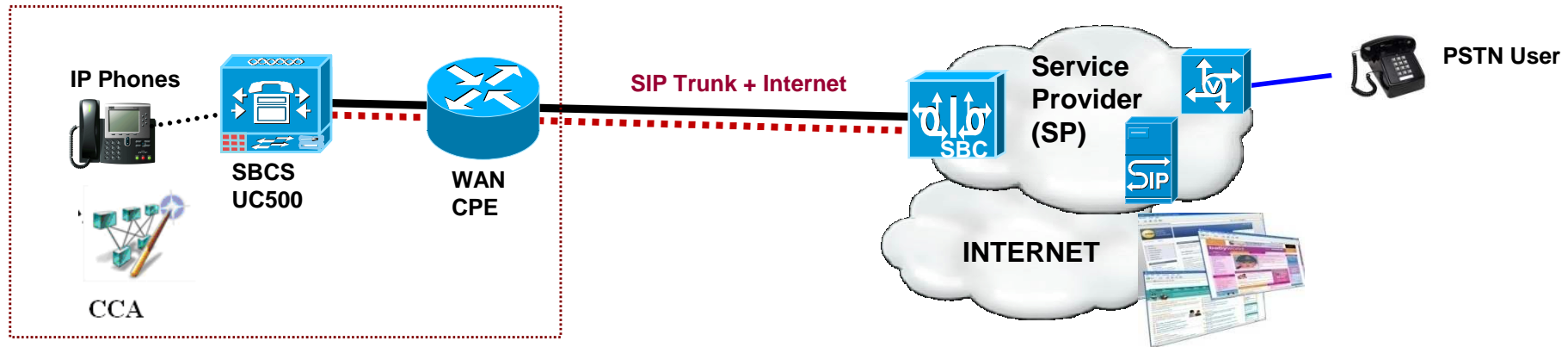


Source: Infonetics, 2007

How many years before 50% of PSTN Trunks are over IP?



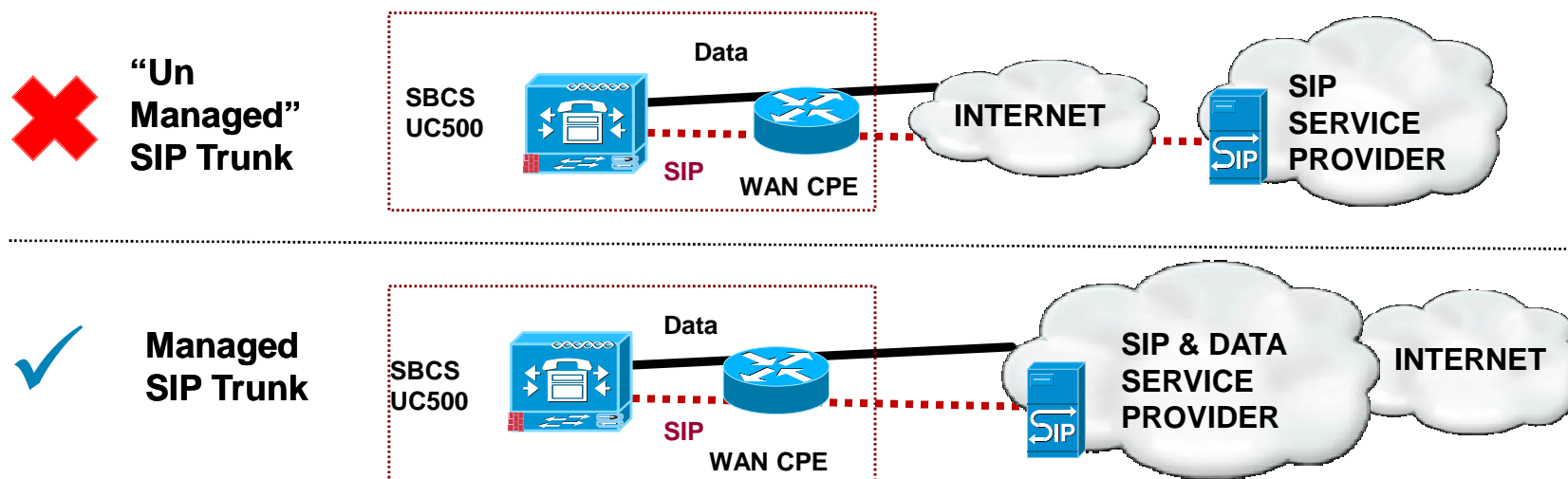
# SIP Trunks for PSTN access



- Single IP based interconnect for voice (PSTN) & data using SIP which is standards based VoIP protocol
- Incoming Calls:
  - Porting a Direct Inward Dial number that traditional would ring on a PRI or analog line to the WAN IP Address of the UC500 via a SIP INVITE
- Outgoing Calls:
  - Sending a SIP INVITE from the UC500 to the SP

# Managed SIP Trunks for PSTN Access

- SIP Trunks share the same IP trunk with data → QOS for SIP trunk (VoIP) traffic **MUST** be guaranteed to preserve voice quality
- With unmanaged SIP Trunks, QOS for SIP trunk may not be guaranteed as it traverses another Service Provider network or Internet. This makes troubleshooting and isolation of a problem extremely difficult.
- A managed SIP trunk is **strongly** recommended as it implies:
  - Clear demarc between SP and IP PBX
  - Guaranteed security
  - Service Level Agreement for assured QOS for voice



# Benefits of SIP Trunking



# Why choose SIP Trunks?

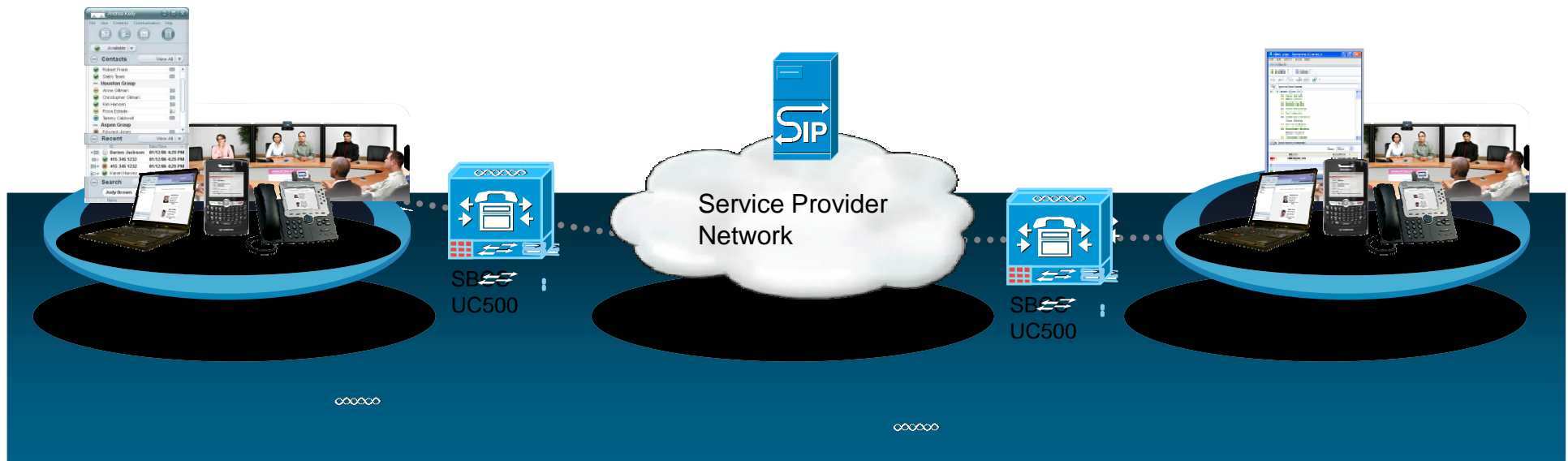
- Industry in general has adopted SIP as the protocol of the future for VOIP networks
- Continued migration globally to VoIP
- Potential for Rich Multi Media communication (More than just voice)

	Customer benefit	Partner benefit
Cost savings from integrated voice/data trunk	✓	
Lower off-net tariffs (PSTN handoff closer to destination)	✓	
Economical DIDs using trunks versus lines	✓	
Sourcing trunks from fewer/global providers	✓	
Potential for rich multimedia services such as Video, IM, presence, & mobility services	✓	✓
Lower Expenses in terms of hardware installation and cabling		✓
Insertion strategy for new markets - finder's fees		✓



# Business to Business Collaboration Enabled by... SIP Trunking

- Emerging offerings form Service Providers
- Allows multimedia end-to-end over IP
  - Wideband voice
  - Video
  - Presence / Instant Messaging
  - Services – Fixed Mobile Convergence, Messaging



# SIP Trunks—Good Reasons for Implementing Them

- SIP Trunks offer a roadmap to **Enhanced Services**

- WideBand Codecs

- Calls with SUBJECT lines

- Exchange of Calendaring information during a call

- Multimodal communications: voice, video, chat, file sharing, over the same communications pipe

- SIP Trunks offer the ability to have a voice call over **disparate physical links**

- SIP Trunk can be implemented over a wide variety of IP communications trunks assuming QOS is assured (i.e. Metro Ethernet, T1, DSL, Cable, WiMax, 3G)

- SIP Trunks offer the ability to have **improved redundancy** for communications

- IP links can be built with redundancy of communications methods and fast failover that results in quicker time to repair in case of failure

# SIP Trunks for PSTN Access — What to look out for






Perception	Reality
SIP Trunks can be deployed over <b>any media</b>	<ul style="list-style-type: none"><li>▪ SIP Trunks should only be deployed over media that can provide a <b>guaranteed QoS</b> that is acceptable</li></ul>
SIP Trunks are <b>always cheaper</b> than PSTN trunks for PSTN Access	<ul style="list-style-type: none"><li>▪ SIP trunks are unregulated services and what SPs charge vary widely (unlike TDM offerings)</li><li>▪ If cost benefits do accrue for a customer, it is likely operational or equipment costs, not service costs</li></ul>
SIP Trunks provide the exact <b>same experience</b> for the end users	<ul style="list-style-type: none"><li>▪ SIP Trunks can provide the same experience in many cases, but some cases (i.e. Baudot connections for Deaf users or V.92 speed modem connections) experience is different; fax can be problematic</li></ul>
SIP Trunks are <b>easy to deploy</b> and just work	<ul style="list-style-type: none"><li>▪ SIP is easy to deploy, but interconnection between different vendors' implementations of SIP and different Service Providers' offerings is not yet ironed out</li><li>▪ Current SP offerings are not mature and every provider's offering has to be carefully evaluated and tested</li><li>▪ Number portability can be a significant enabler or drawback</li></ul>
SIP Trunks <b>should always be used</b>	<ul style="list-style-type: none"><li>▪ Evaluate carefully. In some cases TDM trunks make a better choice. Or perhaps a better choice for certain call patterns.</li></ul>

# SIP Trunking and SBCS (UC500)



# Cisco Smart Business Communications

Complete all-in-one IP communications solution

Unified Communications & Network Foundation	Cisco IP Phones	Switching	Wireless	Teleworker
				
UC500	CP79xx	CE500	AP500 WLC 500	C871W

- Optional Integrated WLAN AP on desktop models

- All Cisco IP Phones are supported

- Companion Switch for UC500

- Autonomous APs or Unified Wireless

- VPN, Wired and Wireless Access, IP Phone ext.

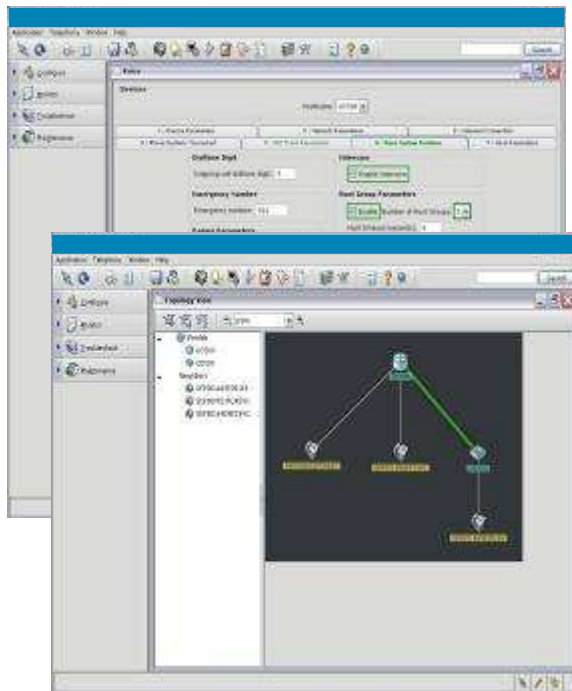


Cisco Smart Assist Features  
Cisco Configuration Assistant  
Cisco Monitor Manager / Cisco Monitor Director  
Business Productivity Apps



# Cisco Configuration Assistant – CCA 1.8

GUI focused on Ease of Setup & Configuration for all Smart Business Communication System Devices



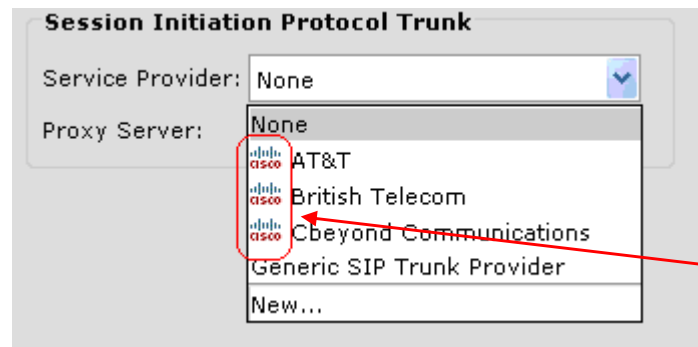
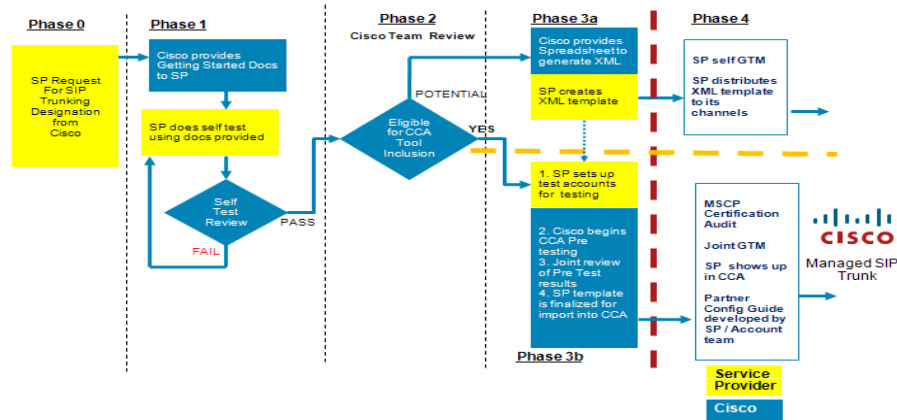
- Configures Voice, Switching, Security, Wireless and Routing
- Local or remote configuration tool
- Interactive topology
- Front panel views
- Drag-and-drop SW upgrades

Cisco Configuration Assistant

# SBCS SIP Trunk Partner Program

## Bringing it all together

### Cisco SBCS SIP Trunk Partner Program Overview



- Currently CCA 1.7 supports **AT&T and Cbeyond**
- **FIVE other SPs (Nuvox, Paetec, XO, Broadview & British Telecom)** are going through the program and will be in CCA 1.9

- Focus on linking SIP Trunk providers with channel partners (VARs)

- SIP Trunk Interop between UC500 and SP is a **KEY** hurdle to overcome for simplified installation

- Using CCA to provide **EASE OF INSTALL** for SIP Trunking

- Select SPs that offer managed SIP trunk services go through a rigorous interop test effort with Cisco and are part of drop down in CCA

# Cisco SBCS SIP Trunk interoperability

- Standards based SIP trunk support (RFC3261) on UC500 / SBCS
- Participate in industry wide SIPConnect Forum
- CCA offers a Generic SIP trunk option to work with any provider (config guide available on support wiki)

*“Two SIP entities should be able to talk to each other, but often this isn’t the case.” John G, New Global Telecom*

- SIP is a standard but there are lot of “dialects” → interop testing is a MUST.
- SBCS Managed SIP trunk partner program is for select SPs that are then part of the drop down





# UC500 SIP Trunk features

- Standards based SIP trunk support (RFC3261 & others)
- Common SIP Trunk Interop features are below:

FEATURE	SUPPORTED
SIP Proxy & Registrar	YES
SIP Outbound Proxy	YES
SIP authentication	YES
Hairpin SIP Call Forward (3xx) / Transfers (REFER)	YES
SIP Domain name	YES
SIP Caller ID / Name Methods	FROM, Remote Party ID
DTMF Methods	RFC2833, SIP Notify
Voice Codecs	G.729, G.711
Fax Methods	T.38, G.711 upspeed
Dialplan Modification	YES
Modify SIP Message headers	YES
QOS / DSCP Marking	YES
Call Admission Control (CAC)	YES

# Resources

[http://supportwiki.cisco.com/ViewWiki/index.php/Category:SIP/H.323\\_trunks - Cisco Unified Communications 500 Series - Cisco Smart Business Communication Systems](http://supportwiki.cisco.com/ViewWiki/index.php/Category:SIP/H.323_trunks - Cisco Unified Communications 500 Series - Cisco Smart Business Communication Systems)

Category: SIP/H.323 trunks - Cisco Unified Communications 500 Series - Cisco Smart Business Communication Systems

Include image if applicable

Back to SBCS Landing Page ↗  
Back to SBCS Solutions Page ↗

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  - 4.1 What SIP Trunk providers are supported on the UC500?
  - 4.2 Does UC500 support multiple SIP trunks?
  - 4.3 What are the maximum number of calls supported over UC500 SIP Trunks?
  - 4.4 Can I register multiple DID numbers to a SIP trunk provider from the UC500 with different username & passwords?
  - 4.5 I heard there is a possible security issue with Cisco CME running on ISRs and UC500 with Cbeyond SIP Trunks?

**Configuration Guides**

- [Configuring UC500 for Generic SIP Trunk provider](#) [U] Upd June 08
- [Configuring UC500 for Cbeyond SIPConnect SIP Trunk service](#) [U] Upd June 08
- [Configuring UC500 for AT&T FlexReach SIP Trunk service](#) [U]
- [Configuring UC500 for for Generic SIP Trunk provider \(VOD\)](#) ↗

**Training & Labs**

- [FIRST LOOK LAB UC500 in PBX mode doing SIP Trunking](#) [U]

Sections on Configuration, Labs, FAQ, etc  
Wiki format to allow collaboration

Config guides for each partner SP and Generic SIP trunk provider along with a Lab

