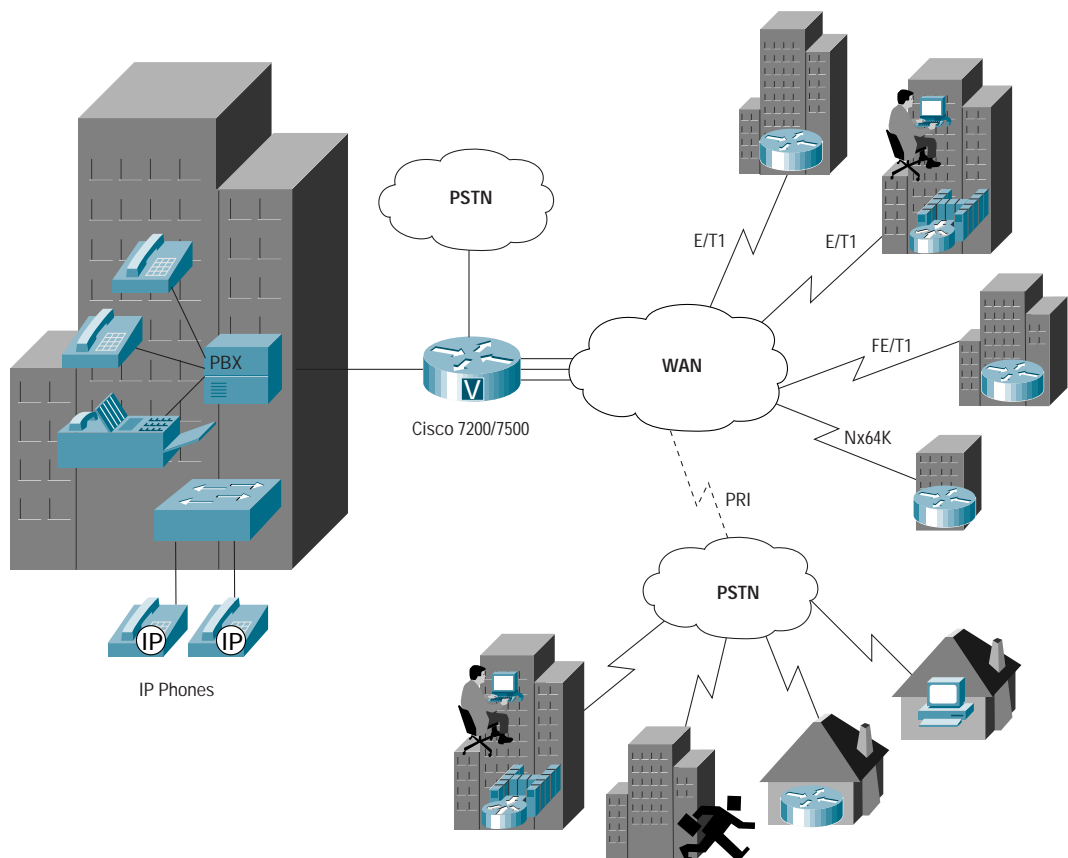


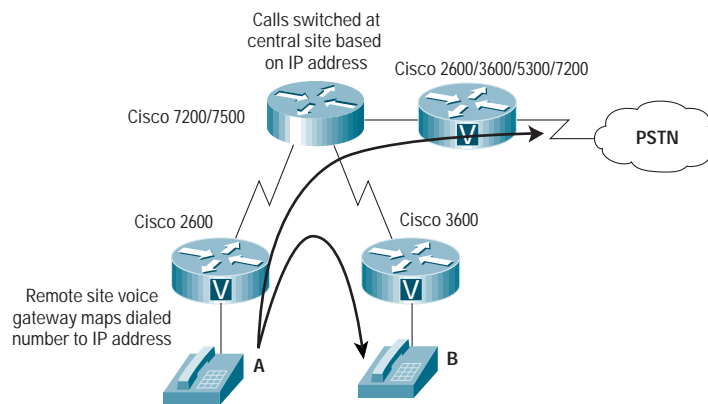
Cisco 7200 Multiservice Series Solutions





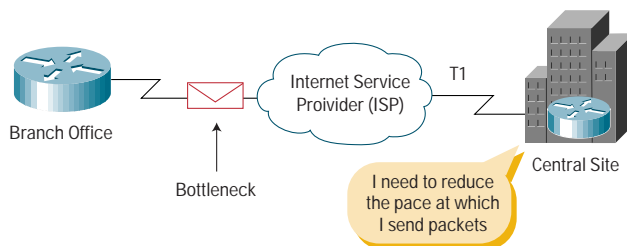
Cisco 7200 as a Voice over Frame Relay (VoFR) Aggregation Device

- Tandem PBX bypass
- VoFR tandem switching
- Scalable VoFR quality of service (QoS)

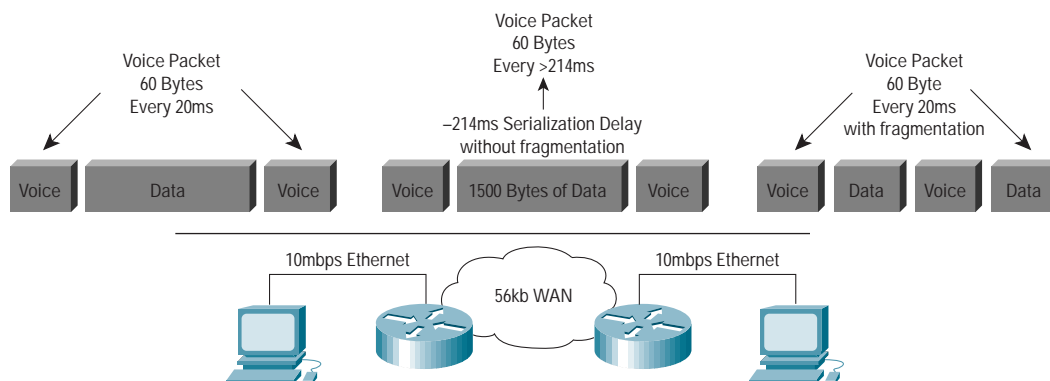


Cisco 7200 as a VoIP Aggregation Device

- Scalable Real-Time Protocol Header compression (CRTP) handling in the Cisco Express Forwarding (CEF) path
- Link fragmentation and interleaving to optimize throughput of voice traffic
- Scalable low-latency queuing for prioritizing voice traffic in the priority queue
- Traffic shaping (Generic and Frame Relay) allows Voice over Frame Relay traffic to meet Committed Information Rate (CIR)

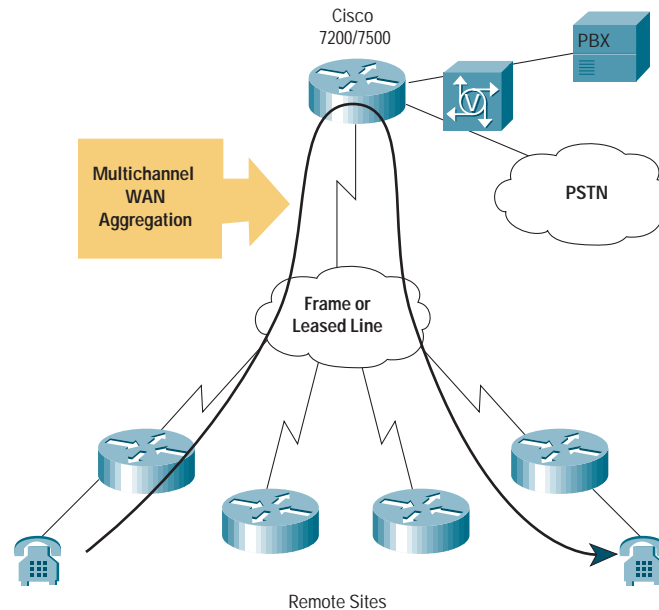


- Fragmentation breaks larger data packets to smaller data packets



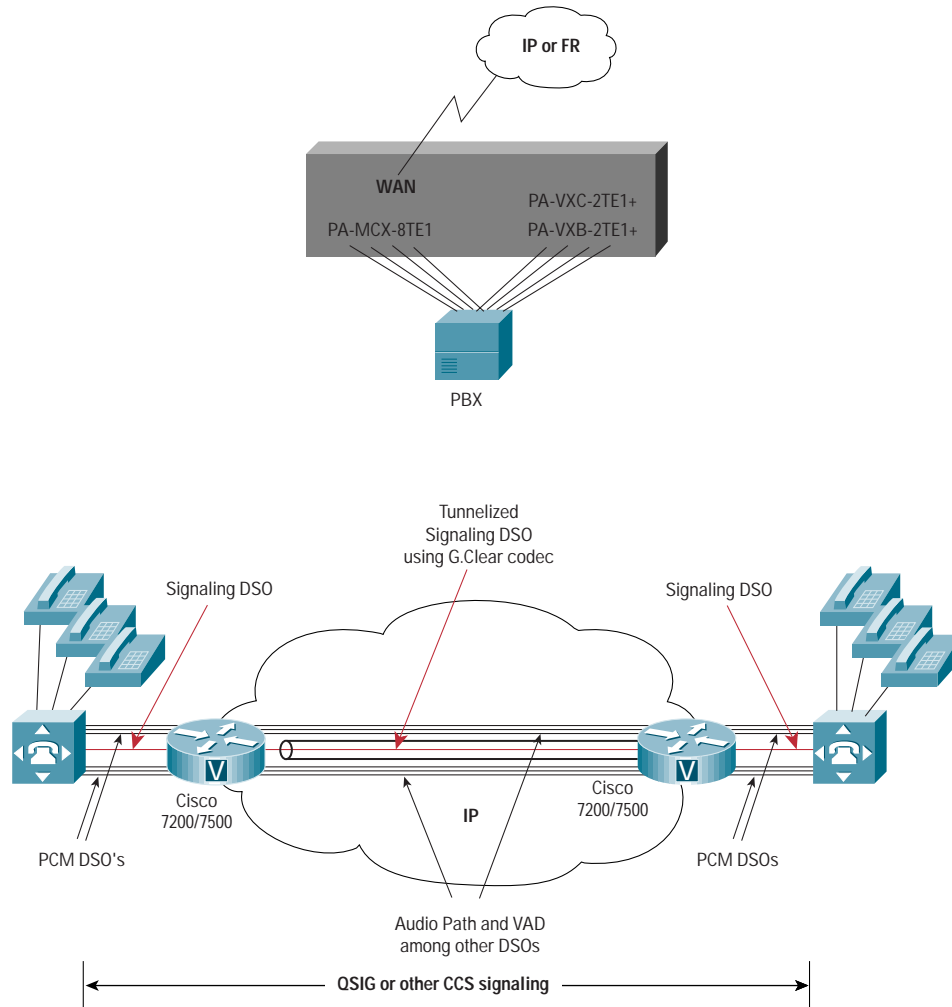
Cisco 7200 as a Packet Voice Gateway

- Termination of VoIP/VoFR to a central site PBX using
- PA-VXx-2TE1+ family of digital signal processor (DSP)-enabled voice port adapters. Benefit: Provides voice gateway functionality and aggregation router functionality on the same platform
- High-performance DSPs provide support for a wide range of high-complexity and medium-complexity codecs:
 - High-complexity codecs—G.729, G.728, G.726, and G.723.1
 - Medium-complexity codecs—G.729a/b, G.726, and G.711

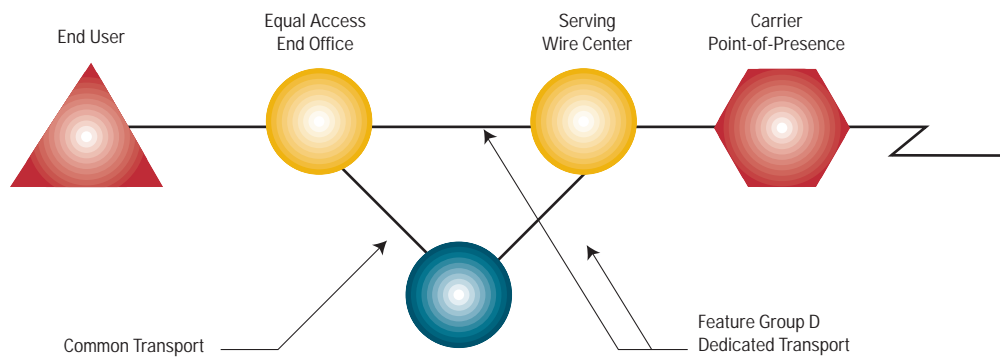


- Support for a wide range of signaling types
 - T1 Channel Associated Signaling (T1 CAS)
 - E1 CAS
 - PRI Q.931 user side
 - PRI Q.931 network side
 - E1 R2
 - Q.SIG
 - Transparent Common Channel Signaling (T-CCS)
 - Feature group D (FG-D)
- PA-VXC-2TE1+ allowing for 120 calls of medium-complexity voice and fax calls
- PA-VXB-2TE1+ allowing for 48 calls of medium-complexity voice and fax calls
- PA-MCX-2/4/8 TE1 (multichannel 2/4/8 T1/E1) port adapter with ability to share DSP resources on DSP-enabled PA via the TDM bus of the Cisco 7200

- DSP farm capability allows for optimal DSP usage by non-DSP-enabled voice port adapters such as the PA-MCX-8TE1

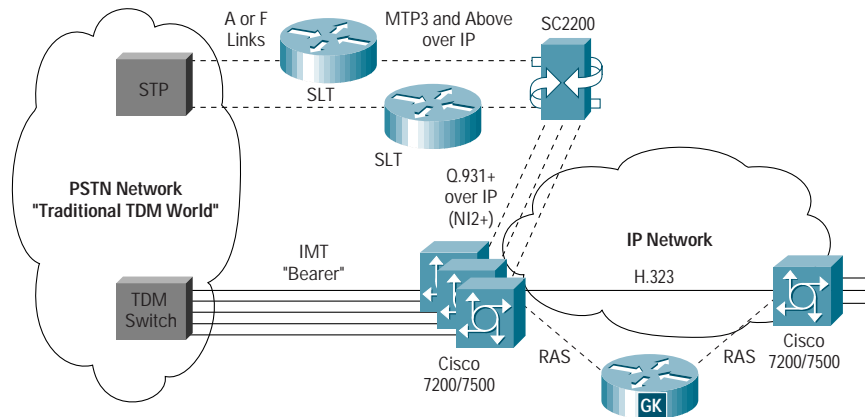


- Transparent Common Channel Signaling (T-CCS) allows proprietary inter-PBX signaling to pass through a Cisco 7200
- Q.SIG support allows the Cisco 7200 voice gateway to terminate PBX signaling to allow inter-PBX communication for Q.SIG-compliant PBXs
- Feature group D support allows the voice gateway to pass ANI/DNIS and allow for alternate carrier selection



Signaling System No. 7 (SS7) Integration

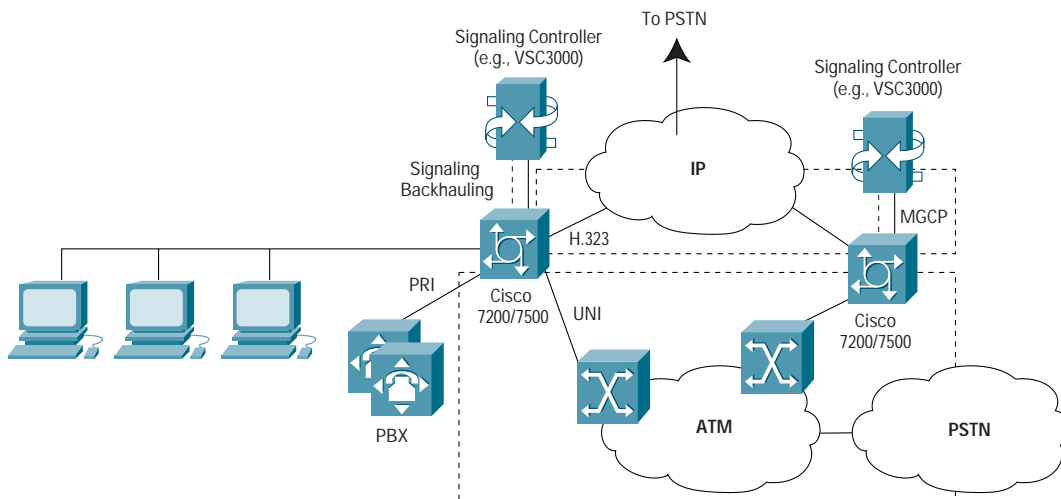
- Cisco 7200 uses the Cisco SC2200 to access the carrier SS7 network
- Q.931 over IP (using NI2+, which is the extension of National ISDN protocol stack to support signaling control for the Cisco 7200 voice gateway)
- Cisco IOS® Software Release 12.2(1)T



MGCP Backhaul

- Signaling is backhauled to a Cisco VSC3000
- Allows separation of call control and media streams,
- to support a scalable architecture with a Virtual Switch Controller (VSC3000) Call Agent controlling multiple Cisco 7200 voice gateways
- Support for standards-based Media Gateway Control Protocol (MGCP), allowing the Cisco 7200 to receive instructions from the VSC3000
- Provides a scalable standards-based solution
- Provides a carrier-class solution

Integrated Access—ATM or IP-Based Solutions



Voice over ATM Solutions

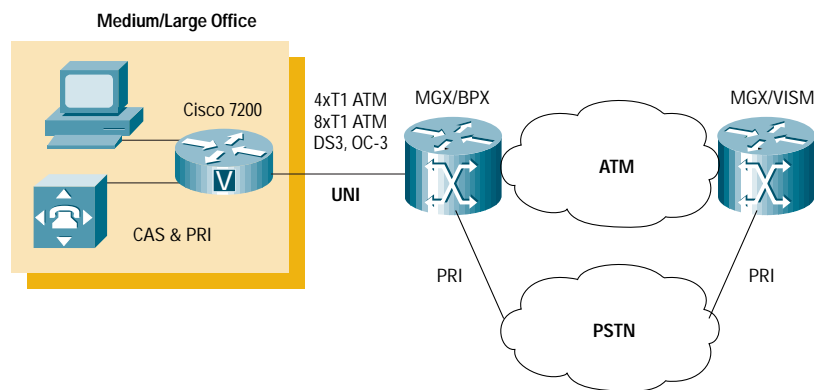
Cisco offers three different Voice over ATM solutions including: AAL2 VoATM, AAL-1 CES, and AAL5 (FRF.11 over AAL5) AAL2 Voice over ATM

The Cisco 7200 voice gateway supports a ATM Forum standards-compliant voice over AAL2 solution. The primary application is to replace a public or private TDM network with an ATM network and offer voice services with ATM quality of service and AAL2 bandwidth efficiency.

- Supports G.711, G.729, and G.726 codecs with voice activity detection and silence suppression
- Supports fax relay and modem passthru
- Requires PA-VXC-2TE1+ and PA-A3 port adapters
- Requires Cisco IOS Software Release 12.2(1)T

AAL1 Circuit Emulation Service (CES)

- Cisco 7200 combines circuit traffic from the CES ports with data traffic from the backplane of the Cisco 7200
- This application is useful where integration of circuit emulation (voice and video) traffic and packet (data) traffic is required over a public or private broadband ATM network
- Requires CES PA-A1 port adapter



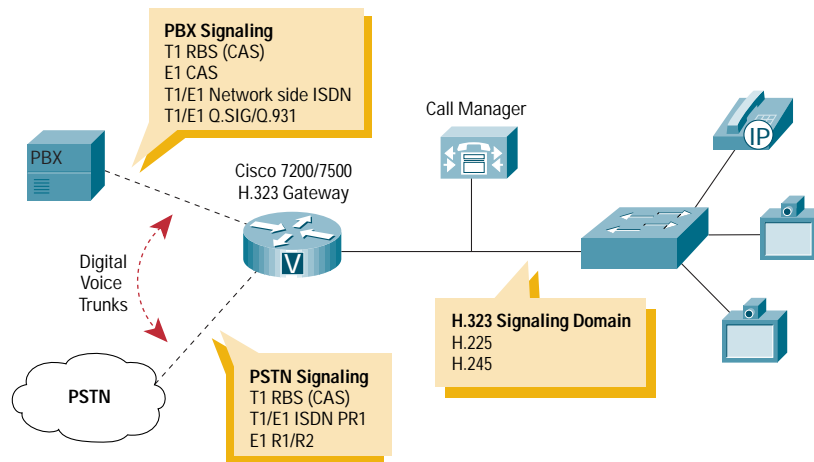
- Has four T1 (1.54-Mbps) or E1 (2.0-Mbps) ports and can support both structured ($n \times 64$ kbps) and unstructured ATM Forum-compliant CES, and a single port of either an OC-3 (155 Mbps) single-mode (SM) intermediate reach or a DS3 (45 Mbps) or E3 standards-based ATM interface

AAL5 (voice over FRF.11 over AAL5)

- The primary application is to terminate Cisco 3810 and
- Cisco 7200 AAL5 voice traffic onto the digital voice port adapter
- Connects central site Cisco 7200 to remote site Cisco 3810s via an ATM network
- Requires PA-VXC-2TE1+ port adapter
- Requires PA-A3 port adapter
- Cisco IOS Software Release 12.1(3)T

VoIP Integration with Cisco AVVID

- Cisco 7200 voice gateway interprets and translates signaling from the PSTN or PBX to H.323
- Cisco 7200 can be used as either:
 - H.323 Gateway
 - H.323 Gatekeeper



For a more dense voice aggregation solution, Cisco also offers the 7200 Rack Density System (RDS) that features front-to-back airflow, cable management and rack mounting and management.



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