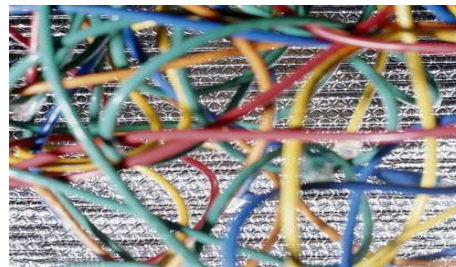




## VoIP SERVICES – TECHNICAL CONSIDERATIONS

Global Crossing a world-leader in deploying voice service applications is committed to assisting customers with their migration to VoIP technologies. In conjunction with the internal considerations you review, Global Crossing offers the following potential technical design considerations that you may want to consider when developing a VoIP implementation.



### VOIP PROTOCOL AND CODEC CONSIDERATIONS

**Determine the proper VoIP protocol for you.**

- For example SIP, H.323, etc.

**Consider what version/RFP of VoIP protocol you will be using.**

- Examples: RFC 3261, RFC 2543, RFC 2543bis, H.323 Version 1, H.323 Version 5, etc.

**Identify what codecs you will be using for your VoIP applications.**

- G.711, G.729, G.729ab, etc.
- Codecs are voice encoding/decoding mechanisms used to convert the voice signal into data packets. Some offer compression, and all utilize different amounts of bandwidth. The most popular are: G.711, G.729ab, G711A-Law, and G.711mU-Law.

**Are you going to implement silent suppression in your network?**

- Silence suppression is a technique that allows a data network carrying voice traffic over the Internet to detect the absence of audio and conserve bandwidth by preventing the transmission of "silent packets" over the network.

**Explore the benefits of private IPVPN access vs. public IP access for your VoIP network equipment.**

**Decide on a "sample size" on your network (milliseconds)?**

- A sample size depicts how frequently the customers network takes a sample of its voice signal. These samples are used to reconstruct the voice audio wave on the terminating side of the call.

### MEDIA END POINT CONSIDERATIONS

(i.e. gateway, or other Audio Stream Source)

**Determine which media end point(s) equipment you will be using for your VoIP network.**

- Media End Points are the piece of equipment that the voice/ audio stream is coming from, i.e. IP PBX, IP router, firewall, proxy, etc. on customer premise. Develop a complete network diagram including all originating and terminating end points with the model of media end points, software versions, and IP addresses to be utilized.

### SIGNALING SERVER CONSIDERATIONS

**Consider which signaling server equipment vendors you will utilize for your VoIP network needs.**

**How many and what type of originating signaling servers does your company have?**

- What is the software version(s) of the originating signaling servers? Enter the version number(s).

### OTHER CONSIDERATIONS

- Identify the proper type of signaling server for your company's needs. Examples include: Servers, Redirect Servers, Gate Keepers, IPPBX's, Hybrid Traditional PBX's, Voice Router, etc.
- Determine what firewall you will be using for your network needs. Is that firewall VoIP aware?
- Will you be using Network Address Translation in your network?.
- Specify the quality of service your VoIP applications should receive in your network. Consider DiffServ, RTP Priority, Excessive Bandwidth, IP Precedence, RSVP, etc.
- Understand your full network bandwidth requirements and the impact of VoIP calling on your LAN/WAN if you were to be sharing bandwidth with data and video applications.
- Understand the amount of simultaneous calls your network has to be engineered to support for all VoIP calling applications.