Small Business

Understanding VoIP

by Dennis Schooley

VoIP wasn't really on my mind when I was channel surfing on a Sunday evening and landed on the show 'Numbers' just as they were explaining VoIP to the uneducated, which of course includes the vast majority of us. I thought it was a great analogy so I thought it would be useful as a means of providing education about a subject that is discussed in the media almost every day.

The VoIP explanation went as follows (paraphrased as well as I can recall it):

"VoIP is like sending a text message, or an email, where information is sent out in tiny packets over servers, except it's talking instead of typing. VoIP, or internet protocol calling, sends your voice out in tiny packets over servers as opposed to the phone lines (POTS - Plain Old Telephone Service)."

They continued the explanation because they were talking about tracing a kidnapper's call that was delivered via VoIP. Obviously they couldn't just pull the 'LUDS', or phone records, like the regular cops on the regular cop shows tend to do in order to chase the bad guys. That's because the call didn't go through only the regular phone system, although it had to end up going through a regular phone line in the end.

"Imagine that the voice packets are like suitcases that have to go from one airport to another but may travel to any number of airports in between the originating and final destinations. Each of those airports for the luggage voyage is like a server used for internet protocol calling. Each airport puts a stamp on the luggage (or its associated paperwork) and then sends it to the next airport, and so on until the luggage finally reaches its final destination. Although it's a tedious process, the route of the luggage can actually be traced back through the various airports on its path to determine where it went along the way before it landed where it

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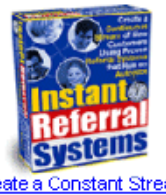

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was supposed to land (or not, as frequent travelers know only too well). Similarly, the voice packets travel through various servers (obviously very quickly) until they land in the ear of the person that is connected to the call."

The TV show didn't explain that the packets need routers and software instructions to get from server to server, just like suitcases need airplanes and baggage handlers to get from airport to airport so that's my personal touch to the explanation. The software instructions also have to ensure that the packets arrive in the right order. It probably doesn't matter that your garment bag arrives on the belt before the suitcase, but it does matter if the voice packets arrival results in Dagwood Steadbum as opposed to Bumstead.

I thought this was a great way to describe what is happening with the transmission of voice calls using internet protocol. If we take it a little bit further, it can also help us to understand the difference between a standard VoIP call for residential type services, versus the 'closed system' type of internet calling offered by various vendors, which are much more reliable and applicable to business usage.

These offerings provide control over which servers handle the calls, which is why they are referred to as 'closed system' internet protocol calling as opposed to 'the big cloud' type of calling that doesn't necessarily control the specific route of the calls.

Those voice calls are competing with all of the other transmitted information and traffic, including about a bazillion emails that travel the internet 'big cloud'. Sometimes the priority of the packets can get detoured or bumped by a packet that is delivering a video snippet for example, which in turn can cause disjointed packet delivery for the voice call, commonly experienced as dropped syllables or words on those calls. The closed system calls, on the other hand, tend to be more reliable, experience less interference, less dropped syllables and words, and certainly provide more security, which is tantamount for business applications. Of course, that control is established because there are more defined software instructions to make it happen from server to server (more baggage handlers - or traffic cops), which is why the costs of these systems are higher - you know you get what you pay for.

Of course, this is a laymen's view of how VoIP calls travel without any reference to the actual technologies behind the creation of the packets, or the process of transmission of same, but nonetheless, I think it helps to provide some basic clarity. It can also help provide explanations to business people that need to make decisions about the age old question - do I or don't I - and the decision shouldn't be based on the disjointed call from Aunt Myrtle in North Dakota who just had to try her new VoIP service last weekend by talking with you for an hour-an-a half about the church bazaar 'because it's free'.

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