SIP-ify the Internet E-mail Base

We are building borders that we will have to destroy.

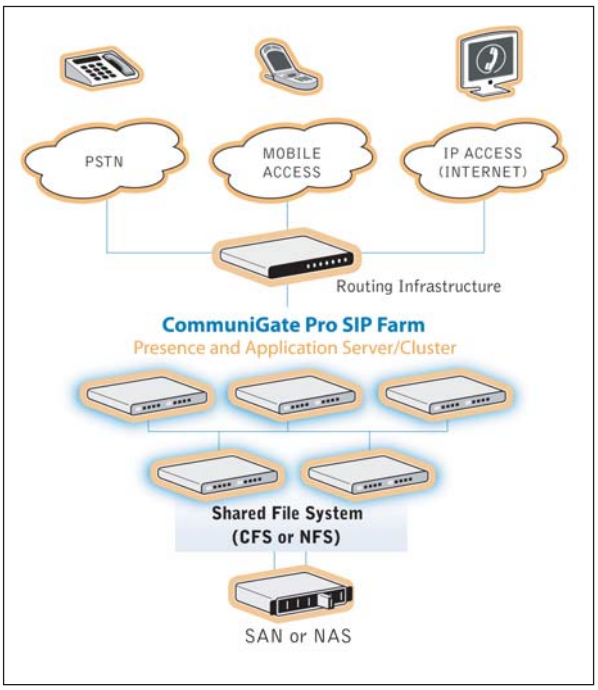
By Jon R. Doyle

Widespread adoption of open standards-based VoIP is expected to take years as most companies begin to deploy new solutions for communications. There continue to be islands of users in proprietary systems, and we are creating more all the time. Think back ten years ago to the explosive growth of e-mail. There were many closed systems, but the advent of standards broke them wide open. Similar to the phone system, e-mail today is based on a set of standards and when you say "drop me an e-mail," you do not need to tell somebody to use a specific service.

What would happen if you handed somebody your business card, which lists your Skype address or your Google address? Essentially, you are forcing your colleague to use a specific technology in order to communicate with you or your business. This has serious and fatal flaws, and as was the case in the early days of e-mail, these models cannot be tolerated in today's business environment.

On my business card, jdoyle@communigate.com is my IP Communications address. Since it is based on the open SIP standard, if you were to type it into Windows Messenger, you would be able to IM me, see my presence, click to call me, and even start up a video conference. Inevitably, this is the natural evolution of true IP Communications: multiple media types, one account, and true portability of "address."

If you believe the promise of IP is to break the old business models, what then are we to make of new companies using new technology to mimic outdated practices? When I think about the models that are cropping up today, I chuckle. Let's look at VoIP providers and peer to peer schemas. Both Skype and Vonage charge you a fee or toll to access the telcos' closed networks; SkypeOut is a prime example of this. Calls within their closed networks, however, are free. So, what happens if these companies are successful in ridding the world of the PSTN someday? What will they charge then, and what will they charge to go from Skype to Vonage then? What changes from what we have today? Why do we continue to build more islands of closed networks?



Let's look at e-mail. It is open, it works through DNS (Domain Name Services) just like Web servers, and there are more than a billion e-mail accounts around the world. What would happen if we just "SIP-ified" all these accounts, meaning that every e-mail address was now also capable of receiving an invite for an IM session, or a direct, end-to-end phone call? Now you have a network on which roughly one quarter of the world's population can communicate without paying tolls. Think about that. The technology is in place now. The DNS servers and the SIP protocol all are designed to enable just such a scenario.

The SIP Advantage

E-mail users today have a common format and an open shared standard with which to communicate: name@domain.com. With SIP communications, this same address is used for all forms of communication, including instant messaging, voice, video, and, of course, e-mail. The address can have "aliases," associating phone numbers, extensions, and dial plans directly with addresses, allowing inbound and outbound calling with standard numeric PSTN and IP phones as well as alphanumeric smart phones and softclients. As an example, you can define a numerical number to jdoyle@communigate.com as you wish and not be defined or confined to what the telco tells you is the address. My 415 area code thus becomes meaningless. But since all forms of communication share this one address, a user can pass out a business card with one common address for all contact methods.

Just like e-mail, VoIP should be open, and SIP is the standard to do this.

So what is missing and why is this not happening as fast as we would like? There are several reasons. For starters, VoIP solutions are often based on closed standards and companies that do deploy open SIP-based solutions do not register their domain with DNS SIP and XMPP SRV records and ENUM entries that are exposed directly for end-to-end Internet calling. Also, many of the technologies on the market today do not carry an Internet pedigree, but are solutions from legacy telephony companies embracing IP, so they do not even have true hooks or solutions for e-mail — an essential ingredient in the tiramisu of unified communications: Multimedia In The Inbox (MITI).

Another issue just like in the early days of e-mail is that a number of VoIP solutions and presence-based technologies do not have the ability to scale because of flawed architectures. Keep in mind, presence alone, for 100 million people, with 10 buddies each on their buddy list, constitutes a massive load. Now imagine each user has a phone, a mobile device, an IM client, and a softphone, all running simultaneously. These numbers are very real indeed when you consider Vodafone's network or SBC's. What will it take to turn all those subscribers on to SIP?

CommuniGate Pro

CommuniGate Pro (CGP) is one of the key technologies that can make the transition to open standards-based IP Communications feasible. With nearly 10 years of product history and the world record for e-mail scalability and

performance (as measured by the SPECmail standardized benchmark for e-mail), CommuniGate Pro recently successfully completed a telco-scale POC (Proof of Concept) for VoIP on an HP Superdome Integrity server, to demonstrate massive signaling for global carriers. And yet, the product also equally scales down from 10-million-subscriber, multi-node clusters to single servers or small clusters for SMBs using exactly the same application, putting CommuniGate Pro in the class of "truly unified communications servers" with only one member, and without any direct competition.

CommuniGate Pro has proven what others find extremely difficult: scaling down a carrier product to run on a laptop or home entertainment box. This opens up some interesting possibilities. Imagine placing CGP in any home or business and creating a SIP backbone with nodes all around the world, acting along with other standards-based SIP servers to create a global, Internet-based VoIP network which completely bypasses the PSTN, or at least only transfers to the higher-cost PSTN when absolutely necessary. The product's architecture also allows it to create a SIP Computing Grid, called SIP Farm. Simply put, CGP can run on a laptop or home server to provide all IP Communications, home PBX/answering machine functions, and even provide multi-party conferencing for use with family and friends, while simultaneously serving SIP-based VoIP subscriber bases of 100 million accounts within telecommunications data centers.

A carrier using CommuniGate Pro SIP Farm is fully redundant and can expand their service capacity on-the-fly by adding nodes to the cluster, while the entire cluster continues to act as a single organism. Regional SIP Farms can be used to keep most calls local to busy calling areas, such as metro regions. If one of those areas experiences an event that knocks a node or cluster offline, traffic can be re-routed to other SIP Farm PAKs in other regions, which are all part of one large cluster with consolidated identity management (all domains and all accounts within one administration menu). This allows any changes, like upgrades or equipment failures, to occur without impact on users. We are accustomed to Internet outages, and scheduled service downtimes for software upgrades and the like; but you never hear your phone company tell you they will be down Saturday for upgrades. That is the elegance of CGP's SIP Farm: One global grid, self healing, and expandable.

Trade In & Trade Up

Due to commoditization of e-mail, large scale providers today do not make a large revenue stream for that service. Therefore, these large e-mail systems are a huge operational expense. Moving in SIP-based IP Communications or replacing these systems with modern platforms is simply cost prohibitive. Add to this burden the ongoing operational expense of managing and maintaining years-old technology that is often overly complex and possessed of a flawed or outdated system design.

CommuniGate Systems is planning to offer these providers a move to IP Communications based on the maintenance of the software and waiving the cost associated with licensing for systems built on legacy Critical Path, Openwave, and Sun's old iPlanet server. With collectively more than 40 percent of the world's users using these legacy systems in tier1 and tier2 carriers around the globe, the first step is making SIP a widespread and open-use network of subscribers. Getting the technology in the hands of the providers, consumers, and enterprises at little to no cost will quickly make the IP Communications network useful.

Conclusion

We will witness a fundamental change in the communications landscape over the next five years, just as we saw in the early 90's with e-mail becoming the standard communication medium for business. Holding users to a location with their phone numbers and then charging them for roaming to other locations is preposterous and will soon be replaced with the mobility and portability of VoIP — where one address can find and follow me no matter where I am, regardless of the network, and irrespective of the access device. IT

Jon Doyle is Vice President of business development at CommuniGate Systems.

What's Happening at CommuniGate?

By Greg Galitzine

In a bold move, CommuniGate is making available a free edition of CommuniGate Pro that will serve up to five users. The CGP Community Edition is designed for small companies and home users. The product will offer a full e-mail server, SIP & Presence Server, IM Server, voice mail, PBX, and conferencing server.

Any person can install this on their home computer, with a domain of their choosing, and become SIP enabled with access to their IP Communications anywhere in the world. That means a small company, or home user can flip open their laptop and connect to a WiFi network at the airport, read e-mail, IM, and receive phone calls, all with their one SIP-based e-mail address.

Enabling true mobility and number portability, CommuniGate's Community Edition allows a user to call a colleague in Paris and ring their laptop soft client in San Francisco.

Small business users will have a wide choice of clients (SIP phones, soft clients, IM clients, browsers, etc.) and they will be able to send and receive all IP Communications via a single account, which is identified by their e-mail address. Communications will be open to every other SIP-based application, and will remain vendor agnostic. The Community Edition will ship with a Flash-based user interface that can do e-mail, IM, and audio calls, a softphone, and will offer out-of-the-package compatibility with many SIP phones like Polycom, Linksys, and others.

CommuniGate Pro will be available to run on home computers, laptops, and eventually could be adopted into the home entertainment environment on devices such as cable and DSL modems as these devices begin to empower the home or family domain for all IP Communications.

Greg Galitzine is the editorial director of Internet Telephony.