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25 IP PBXs
(page 50)

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INTERNET TELEPHONY®

Group Publisher and Editor-In-Chief,
Rich Tehrani
(rtehrani@tmcnet.com)

EDITORIAL
Editorial Director, **Greg Galitzine**
(ggalitzine@tmcnet.com)

Contributing Editor, **Johanne Torres**

TMC LABS
Executive Technology Editor/CTO/VP, **Tom Keating**
(tkeating@tmcnet.com)

ART
Senior Art Director, **Lisa D. Morris**
Art Director, **Alan Urkawich**

EXECUTIVE OFFICERS
Nadji Tehrani, Chairman and CEO
Rich Tehrani, President

Editorial Offices: 203-852-6800
Customer Service: For all customer service matters,
call 203-852-6800.

ADVERTISING SALES
Sales Office Phone: 203-852-6800

Advertising Director - Eastern U.S.; Canada; Israel
Anthony Graffeo, ext. 174, (agraffeo@tmcnet.com)

Advertising Director - Western U.S.; International
John Ioli, ext. 120, (jioli@tmcnet.com)

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SUBSCRIPTIONS

Circulation Director, **Shirley Russo**, ext. 157
(srusso@tmcnet.com)

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EXHIBIT SALES

Sales Office Phone: 203-852-6800
VP of Conferences and Online Media
Dave Rodriguez, ext. 146, (drodriguez@tmcnet.com)

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The VoIP Authority



By Greg Galitzine

Mobile VoIP: The World Is Your Office

Eight years ago, CTI Magazine featured a cover story on Data Race, entitled "The World Is Your Office." Data Race made a product that essentially allowed folks to telecommute using ordinary analog phone lines to access the corporate network, thereby giving them access to e-mail, files, faxes, etc. This product also featured some computer-telephony integration extras, such as a PC-phone GUI and a contact manager. So in 1997, you could use IP to make office-based voice communications resources available to remote workers. It was genuinely big news at the time.

This past month saw announcements from 3Com and Nortel proclaiming partnership agreements with Research in Motion, the company that manufactures the increasingly ubiquitous Blackberry device. Essentially the gist of these agreements is that you can now use a wireless LAN to make office-based voice and data communications available to mobile workers on a campus environment.

The Nortel announcement focused on interoperability and integration between RIM's Blackberry 7270 device and Nortel's Multimedia Communications Server (MCS) 5100, a critical element of Nortel's enterprise IP telephony solution. By integrating these systems, enterprise customers will be able to use the new BlackBerry 7270 to access IP telephony, e-mail, and other business applications via the wireless LAN.

The 3Com/RIM union is similarly focused on giving organizations the flexibility of a BlackBerry handheld that is tied into their existing PBX telephony solution. 3Com's Convergence Applications Suite (and their wireless LAN switch) and RIM's BlackBerry 7270 solution will enable on-campus employees to use always-on applications such as e-mail, VoIP, etc., by integrating advanced SIP standard-based products.

Both agreements illustrate initiatives aimed at delivering secure, full-featured, SIP-enabled business communications over wireless LANs.

Our industry has always focused on providing knowledge workers increasing access to those applications that allow them to be as productive as possible. In 1997, the Data Race solution enabled telecommuters to access PBX functionality from a fixed alternate location, say, a home office. Today's solutions are focused on giving employees full mobility within their WLAN-enabled enterprise campus, allowing them to take advantage of all the applications that are available to them on their IP PBXs as they move from building to building. This means they will be able to leverage presence and wireless VoIP to maintain full control of their telephony environment as they roam away from their desks.

Moving beyond the confines of the WLAN-enabled campus is the obvious next step. Through advances such as mesh networking and WiMAX, truly mobile workers will soon have access to all of their desktop apps while out in the field.

-Greg Galitzine



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By Hunter Newby

ENUM: Let The Market Decide

Today, we will take a look at a few commonly known [ENUM \(define - news - alert\)](#) registries, examine how they operate, and compare their differences. As it is with many things, one particular application of a technology might suit you better than another. There are many reasons for this, one being risk tolerance. The tolerance is usually directly related to the level of expertise any given

organization has with a technology. The greater the expertise level, the greater the comfort, the more willing the organization is to taking risks. With risks, there are certainly rewards, and for the “early adopters” a.k.a. knowledgeable, calculated risk takers, the rewards are great.

We will be taking a look at the VeriSign IP Connect Suite, e164.org, and The Voice Peering Fabric. These companies have different networking backgrounds, which have impacted the way they architected each of their services. Since this is so new there is room for the different uses and implementations of ENUM, but ultimately the market will decide what makes the most sense.

VeriSign IP Connect Suite

VeriSign offers its IP Connect Suite as a means to set up and resolve VoIP calls. The service includes directory (mapping telephone numbers to IP addresses), security (secure authentication and firewalling), and interoperability (mediating H.323 and SIP platforms). The security and interoperability require VeriSign CPE to be deployed to the customer premise. The directory service can be used with or without the CPE.

The directory service is supported by a single data store for location that includes ENUM, SIP and SS7 lookups on that store. The location information is the same — the protocol used to access it results in a different format. The customer can have a single directory service for all of its devices, regardless of whether they support ENUM, SIP, or whatever.

VeriSign views ENUM as a protocol for directory access, not as a platform or directory in itself.

VeriSign states that the ENUM service is both multi-lateral and bi-lateral, meaning providers can peer with all members or only in selectively established situations between two parties (end user enterprises, or carriers). In either scenario, it is the responsibility of the customer to establish the network connections (public or private) for the actual traffic flow to complete the peering relationship. In order for any customer to use the ENUM service, they must have their

ENUM numbers loaded in to the VeriSign central data store. For this ENUM service, VeriSign charges an annual subscription fee per number.

The VeriSign CPE-based services act as a protocol and codec conversion gateway handling media and signaling traffic. There is a monthly fee from VeriSign for the CPE. The customer is responsible for establishing the connectivity between the CPE and VeriSign. VeriSign is carrier agnostic and does not require a specific backbone provider. The service will accept IP over either a private layer 2 connection or a public IP connection. A dedicated layer 2 link to the data store for signaling does not actually carry the voice traffic. For that, the customer must use a separate interconnection method. It is possible for the customer to use a public Internet connection for both signaling and media.

VeriSign is a public company and has many service lines including managing the DNS lookups for the public Internet.

e164.org

The e164.org ENUM service is multi-lateral, non CPE based and free for anyone who wishes to use it. The access method is via the public Internet to the e164.org ENUM database. Users are required to load their ENUM numbers in to the database via a csv file transfer and go through a registration process. Once registered, they have agreed to accept voice traffic sent to them by any other user of the database.

The e164.org service handles media and signaling of the calls but does not provide conversion services. If there are interoperability issues they must be sorted out by the communicating parties. The transport of the call for its actual termination is typically via the public Internet unless both parties agree on an alternative method. Since this service is based on the Internet, then the Internet is the standard choice for transport.

Any network operator can utilize the e164.org ENUM service.

This service is currently in use

and accessible from any public IP connection. e164.org is a private company based in Australia.

The Voice Peering Fabric

The Voice Peering Fabric (The VPF) is a distributed Layer 2 Ethernet peering fabric for VoIP. It acts as a central point

No matter which implementation fits your comfort level, there are some very compelling reasons to use this technology.

for VoIP networks to interconnect and establish VLANs between each other for the purpose of sending and receiving VoIP traffic. This helps to avoid the public Internet and enables private layer 2 Ethernet connections without the need for ordering disparate long haul circuits.

The VPF ENUM registry is a service of The VPF. It is multi-lateral, non CPE based and free to all members of The VPF. The fee to be a member of The VPF distributed Ethernet switch fabric is \$1,500 per 100meg FE port per month. The VPF ENUM members register their numbers via the public Internet then so agree to receive voice traffic from the other members. The VPF ENUM registry handles media and signaling but does not provide conversion services. If there are interoperability issues, they must be sorted out by the communicating parties. The distributed Ethernet fabric handles the call transport between sender and receiver. Although The VPF does accept public IP VPN tunnels as an interconnection (and ultimately transport) method, over 95 percent of its members interconnect to the fabric via Cat5 using Layer 2 Ethernet in one of the VPF facilities located within major carrier hotels.

The VPF ENUM registry is a mirrored database that is recreated in each VPF site to keep local traffic from having to traverse the distributed links to a central database. This improves efficiency and keeps costs low.

The VPF currently has 53 members consisting of interna-

tional wholesale minute providers, CLECs, VoBB service providers, universities and enterprises. The VPF ENUM Registry currently has over four million registered numbers and is carrying on average 10 million minutes per day — a run rate of two billion minutes per year. The fabric and service is accessible from any VPF location via a direct Ethernet connection, through any of its Ethernet transport carrier Alliance Partners, or via a public IP connection. The VPF and VPF ENUM Registry are services of Stealth Communications, a privately held company based in New York.

No matter which implementation fits your comfort level, one thing is clear — there are some very compelling reasons to use this technology and the sooner you do, the more you will save. For more information on any of these services, please visit www.verisign.com, www.e164.org, and www.thevpf.com.

Next month, we'll take a look at who is using these services, how they use it and why. ■

Hunter Newby is chief strategy officer at telx. For more information, please visit <http://www.telx.com>.

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