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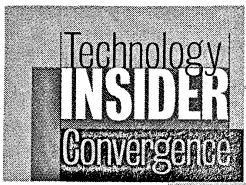


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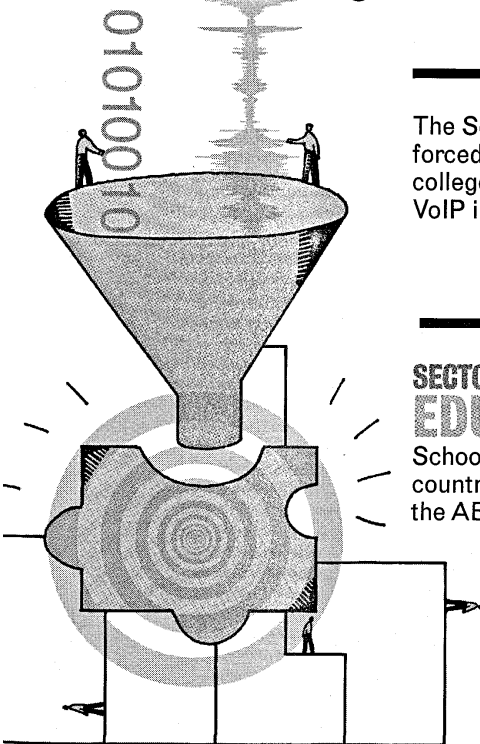
August 12, 2002 ■ Volume 19, N



New applications based on Session Initiation Protocol could spur voice-over-IP migration. Page 41.

The Sept. 11 attacks forced a Manhattan college to speed up its VoIP implementation. Page 45.

SECTOR SPOTLIGHT: EDUCATION
Schools across the country are learning the ABCs of VoIP. Page 46.



RANDY LYHUS

Sun aims to alter Linux landscape

■ BY PHIL HOCHMUTH AND DENI CONNOR

SAN FRANCISCO — While a slew of vendors will make product splashes this week at Linux-World Expo, Sun's jump into the enterprise Linux server market is expected to make the biggest waves.

Sun will unveil two general-purpose, Intel-based servers running its own version of Linux, setting the company apart from rivals such as Hewlett-Packard and IBM that rely more heavily on technology from Linux partners. Sun will differentiate the servers, officially called the Cobalt LX50s (but previously known as Big Bear), by bundling in a bevy of software, including an application server, clustering technology,

a directory, management tools and Java 2 Standard Edition.

"Sun can potentially do Linux better than any other [server] vendor," says Bill Claybrook, an analyst with Aberdeen Group.

"Sun has done a better job of making Unix than anyone. I'm surprised if they didn't do Linux. Combined with Solaris, it could have a good story."

See Linux

WEBLOGS IN THE WORKPLACE

Blogs finding favor in business world

■ BY JOHN COX

Are Weblogs a legitimate business tool, or merely the Internet's latest vehicle for personal indulgence?

Phillip Windley, CIO for the state of Utah, is among those trying to find out. In June he launched a program that encourages 2,000 IT staffers and about 18,000 other state employees to use Weblogging software for what might be called strategic noodling.

For the first 100 state employees who take him up on his offer, the state IT group will pay \$40 for a Weblogging product from UserLand called RactLand. So far, the only rule governing what participants write about is a general guideline from Windley that Weblog contributors should be fully about what they want to post on their URLs, which are accessible to anyone for the time being.

"I have hopes [for this project], but I wouldn't say I have great expectations," Windley says. "If everybody just wrote every day about things such as 'Here's an interesting problem I had today, and here's how I solved it,' we hook up a Google [Web search] appliance, we can do it."



"I'd been looking for a vehicle to communicate ideas about enterprise IT to my staff and to other state employees."

Phillip Windley, CIO, state of Utah

See Blogs,

Deadline nears for execs to sign oath

■ BY JENNIFER MEARS AND TIM GREENE

AUG 14 2002
CEOs of 947 publicly traded U.S. companies — many of them tech giants — that have revenues of at least \$1.2 billion to sign a Securities and Exchange Commission (SEC) document

personally attesting that their companies' most recent financial filings are accurate and complete.

Depending on how the companies align their fiscal years, some executives have until Dec. 27 to file the forms, but failure to sign the documents can result in fines or jail terms for the executives. As of Friday, 114 CEOs had filed.

The list of those who must sign these documents reads like a who's who of computing and communications: Microsoft's Steve Ballmer, Intel's Craig Barrett,

See D-day, page 12

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ER MEARS AND AUG 14 2002 CEOs and CFOs of 947
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News

- **8 Sprint** touts nationwide 3G wireless service.
- **8 Micromuse** to keep eye on application service levels.
- **10 Survey:** Network start-up investments slide for record eighth consecutive quarter.
- **10 Customers** wait and see on **Windows API** openness.
- **12 Tech firms** quibble about stock option accounting.
- **12 EMC** adds advanced features to midrange array.
- **14 Positive Networks** debuts enhanced VPN service.
- **14 Linux** news from **Hewlett-Packard, IBM**.

Infrastructure

- **17 3Com** chief: Network market looking up.
- **17 EDial** brings audio to Webconferencing.
- **18 Dave Kearns:** Microsoft: Muddying the waters.

Net.Worker

- **21 Seattle** dental insurance provider turns to rural community for inexpensive space and qualified workers.

Enterprise Applications

- **23 Wireless** technology reshapes retailers.
- **23 Ecora** putting foot in patch management.
- **24 Scott Bradner:** Can the DMCA hide SSNs?

Service Providers

- **27 FCC** Chairman Powell's comments highlight ambiguity in rules governing any shutdown of WorldCom's Internet backbone.
- **27 Microsoft, PricewaterhouseCoopers** and Nasdaq launch .Net Web service pilot project.
- **28 Johna Till Johnson:** Here's a back-up strategy for a world without WorldCom.
- **30 Special Focus:** ASPs are learning to adapt.

Marc Berube, IS training manager at Travelers in Hartford, Conn., was one who took advantage of the skills assessment program. See page 48.

The Edge

- **31 Ciena** exploits SONET.
- **31** Bucking the downward trend.

Technology Update

- **35** Session Initiation Protocol is key to range of multimedia sessions.
- **35 Steve Blass:** Ask Dr. Internet.
- **36 Mark Gibbs:** Describing software.
- **36 Keith Shaw:** Cool tools, gizmos and other neat stuff.

Opinions

- **38 Editorial:** MPLS is the future, but ATM hangs on.
- **39 Joel Snyder:** Securing the wireless LAN.
- **39 James Kobielus:** Microsoft supports SAML, sort of.
- **62 Backspin:** The cons of the pros.
- **62 'Net Buzz:** More on spam and spam filters.

Management

- **48** Taking stock of skills: Travelers and IBM launched skills assessment programs to guide their IT staffs' career development.



MARK WILSON

Technology INSIDER Convergence

New multimedia applications based on Session Initiation Protocol (SIP) could be the spark for a new wave of voice-over-IP implementations.

Page 41

The Borough of Manhattan Community College (BMCC) was in the midst of a voice-over-IP project when one of its campuses was damaged in the Sept. 11 terrorist attacks. The IT department went into overdrive and rolled out VoIP as a way of getting the school back in business by Oct. 11.

Page 45

Sector Spotlight: Education. Schools across the country are learning the ABCs of VoIP.

Page 46

Joseph Giummo, associate director of IT at BMCC, sped up the school's VoIP project in the wake of Sept. 11. **Page 45.**

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Interactive

Audio Q&A

If you enjoy our interview with 3Com CEO Bruce Clafin on page 17, head online to hear more.

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VoIP: Getting ready

In this online-exclusive story to our Technology Insider on convergence, learn how to start figuring out what your network needs to be able to support IP telephony.

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Columnists

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Microsoft's newest threat: Google Fusion Executive Editor Adam Gaffin alerts you by Microsoft Vice President Yusuf Mehdi, who search engine could pose a problem to MSN.

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Help Desk

Token ring and Ethernet Columnist Ron Nutter helps a user who's trying to give five people with Ethernet cards to a token-ring network.

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Telework Beat

Bridging the IT-telework gap Net.Worker Managing Editor Toni Kistner explores dysfunctional relationship between teleworkers and their managers.

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View from The Edge

Unbridled optimism The Edge Managing Editor Jim Duffy looks at Lucent, whose officials are upbeat — almost — about their prospects for fiscal 2003.

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SIP is a key part in multimedia session

■ BY IAN GROBEL

Session Initiation Protocol is an application-level control protocol for setting up, changing and terminating multimedia sessions between participants on IP data networks.

SIP can enable a range of services, such as Internet telephony, multimedia conferencing, registration and redirection services, and simplify connecting to VPNs.

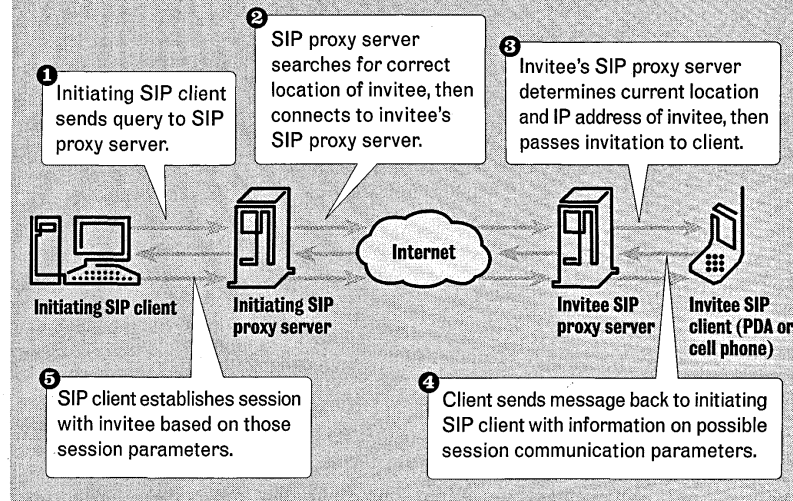
As its name implies, SIP is responsible for session signaling, a necessary exchange of messages to establish a communication session, be it voice, video or multimedia. SIP traces its roots to several Internet Engineering Task Force (IETF) initiatives, and is tightly linked to Web and e-mail technologies and standards.

SIP requires the use of user datagram protocol (UDP) for performance reasons, and TCP is optional. Given the unreliable nature of UDP, SIP contains its own retransmission mechanisms, including a three-way exchange between nodes for the purpose of establishing sessions.

SIP is used to invite participants to a session, while the Session Description Protocol (SDP)-encoded body of the SIP message contains information about what media types the parties can and will use. Once this information is exchanged and

How SIP works

Session Initiation Protocol sets up multimedia sessions between clients on an IP network based on the type of voice, video or data session each participant is capable of.



acknowledged, all participants are aware of the participants' IP addresses, available bandwidth and media type. Then, data transmission begins using an appropriate transport protocol. Throughout the session, participants can make updates (indicating a new set of media types, addition of new parties to the session or other changes), by sending additional SIP messages.

Destinations in SIP are represented with uniform resource indicators (URI), which have the same format as e-mail addresses. This implies the use of DNS to map host and domain names to IP addresses. Support for DNS is a key aspect of the inte-

gration of SIP with Web- and mail-enabled technologies, which are tightly coupled with the URIs and their mappings.

The close connection between SIP and DNS facilitates interoperability with telephone systems and addressing mechanisms, as DNS Electronic Numbering System supports International Telecommunications Union standard E.164 numbering through the efforts of the IETF ENUM Working Group. This lets SIP servers and clients send, receive and route telephone numbers.

SIP components are broadly divided into two groups: user elements and network ele-

ments. The user agent resides on the participant's chosen device (software embedded in a mobile telephony system, PDA/palmtop device, mobile system, or the firmware element of a mobile phone). The user agent contains the client elements. The redirection and proxy server perform routing and tree functions. Both elements connect to network servers. A third network resource server is the registrar, which and receives participant location information.

SIP can enable a range of rich communication forms, including find my services, instant messaging, telephony and videoconferencing, and other services (caller ID, call waiting, hold), multiplayer gaming, real-time authoring and remote whiteboarding. Using SIP also can make connecting to VPNs easier.

With SIP, it also is easy to connect conversational multimedia services to other categories of services, such as instant information, Web browsing, and presence.

Because SIP is an application layer protocol, it is access-independent. It can be reached on any form of network. As an example, SIP can offer service capabilities between fixed networks, a key element in the promise of fixed-to-mobile convergence. This capability will gain momentum as 2.5G and 3G mobile networks roll out across the globe.

Grobel is product manager at Xacct Technologies. He is based in Germany and can be reached at grobel@xacct.com.

Tech Insider

■ See Tech Insider on how SIP is sparking a renewed interest in voice/data convergence. Page 41.

Ask Dr. Internet

By Steve Blass

In setting up our FTP server, we are having a problem with the time-out setting on our Cisco 678. When we use ws_ftp pro and try to connect, it times out. We want to forward all incoming requests for the FTP server to Port 21.

FTP uses two connections and two ports when transferring files. Clients initially open a connection to the FTP port (Port 21) to log on and issue commands to the FTP server. After a file transfer command is given, a data transfer connec-

tion is established on a second TCP port and used for the actual transfer. In active FTP mode, the server opens the data connection to the client based on a PORT command sent by the client. In passive mode the FTP client initiates the data connection by connecting to a nonprivileged port on the FTP server.

According to the Cisco 678 *Cisco Broadband Operating System 2.4 Users Guide*, you should be able to use the following commands to support passive FTP:

```
'set nat entry add ftp.server.inside.address
ftp.server.outside.address 21 tcp'
'set nat entry add ftp.server.inside.address
65534 ftp.server.outside.address 1025-65534'
For a link that can give an explanation of active vs. passive FTP, go to www.nwfusion.com/DocFinder/1732.
```

Blass is a network architect at Changeatwork in Houston. He can be reached at dr.internet@changeatwork.com.