Integrating Telephony, IM, Video And Mobility With Presence

Irwin Lazar

Presence dashboards aim to integrate various forms of real-time communications into a unified view. Are they ready for deployment?

As enterprises have come to increasingly rely on new forms of communications services, such as instant messaging, mobile phones, IP-telephony, and desktop videoconferencing, the reality is that all of these new applications have served to make communications more cumbersome than ever before. Individuals often operate as "communications detectives," using a series of logical guesses in an attempt to pick the optimal communications medium for a given situation.

For example, one may first check their IM buddy list to see if a co-worker is on line before calling. Or one may preface a call with an IM to see if the person on the other end has time to talk. If the person isn't on line, a call to a mobile phone is the likely result, or perhaps leaving voice mail in multiple places while also sending an email that hopefully will be read via a BlackBerry.

In this environment, group communications is nearly impossible, with the result being that most group communications occur during pre-scheduled teleconferences during which a constant struggle occurs to take attendance as people both join and leave the conference.

Given these scenarios, numerous vendors and service providers have introduced the capability to converge disparate communications systems and applications into a single, unified dashboard that enables individuals to see if others are available, and initiate communications via whatever applications or services are available.

The Real-Time Presence Dashboard

Most of us are familiar with the buddy list, having grown accustomed to their use via our experiences with public instant messaging (IM) systems from service providers such as AOL, Yahoo and MSN. The buddy list gives us the ability to watch fellow users, see when they are available (or not), and initiate direct communications with them via the list. Once we have added a person to our buddy list we no longer need to know their user name, we simply click on their name to chat.

Presence dashboards aim to extend this experience by integrating additional services into the buddy list. Typically this includes telephony and video services. For example, using a presence-enabled buddy list, one can see if a co-worker is on the phone, out of the office, or available for a video chat. One can even initiate the communications session by simply clicking on a person's name, then selecting the form of communications to use.

Presence dashboards are often tied into additional collaborative applications such as voice or Web conferencing systems or services, enabling individuals to start conferences by simply selecting a group of people from their buddy list and connecting them to the conference. Conferencing via a dashboard eliminates the confusion that often permeates traditional "meet-me" conferences due to the inability of the conference host to maintain knowledge of who is dialed into a conference bridge. Using the dashboard, the conference host can see who has joined, and note when participants leave.

Presence Dashboard Examples

Presence dashboards are available in a variety of forms, and from a variety of vendors. Some of the most popular are discussed below:

Public Communications Services
Examples of this approach include services such as Skype, Gizmo Project or Yahoo Messenger. Each of these services integrates its own voice, text and video capabilities into a single presence dashboard. Some also support Web conferencing capabilities in their client. None of these services are capable of integrating with existing enterprise communications services. Public communications services are open to anyone who wishes to become a subscriber.

Private Communications Services
Examples of this approach include Tello and Interoute. Like the previously described public

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TABLE 1	Features In Enterprise Presence Dashboards				
	Cisco Unified Personal Communicator	Avaya One-X Desktop Edition	Mitel Your Assistant	Nortel MCS Client	Siemens HiPath OpenScape
Voice	Via UCM 5.0	Via Avaya Communications Manager	Via Mitel 33xx	Via Nortel MCS	Any via SIP gateway
Video	Via UCM 5.0	Via Avaya Video Telephony Solution	Via Video/Data Collaboration Module	Via Nortel MCS	Via Workgroup Portal
Instant Messaging	None	Via Avaya Converged Communications Server	Via Mitel 33xx	Via Nortel MCS	Via Microsoft Live Communications Server
Web Conferencing	Via MeetingPlace	Via Avaya Web Conferencing	Via Video/Data Collaboration Module	Via Nortel MCS	Via Workgroup Portal

Microsoft's LCS 2005 and Office Communicator offer new levels of integration

services, each of these services is designed to integrate voice, text and in some cases, video and Web conferencing, into a single presence dashboard. However these services are not open to the general public. Tello does not provide voice capabilities, rather voice services are provided via SIP-based integration with an enterprise's existing IP-telephony infrastructure.

Enterprise Telephony Systems
Examples include Cisco Unified Personal Communicator, Avaya One-X Desktop Edition, Mitel Your Assistant, Nortel Multimedia Communications Server Client and Siemens HiPath Open-Scape. All of these solutions provide a single buddy list for managing all forms of real-time communications, including voice, video and instant messaging. Some provide additional capabilities such as the ability to interface with Web conferencing systems, integration with popular desktop applications such as Microsoft's Outlook, and even mobile clients capable of running on smart phones, Black-Berrys or Windows Mobile-enabled devices.

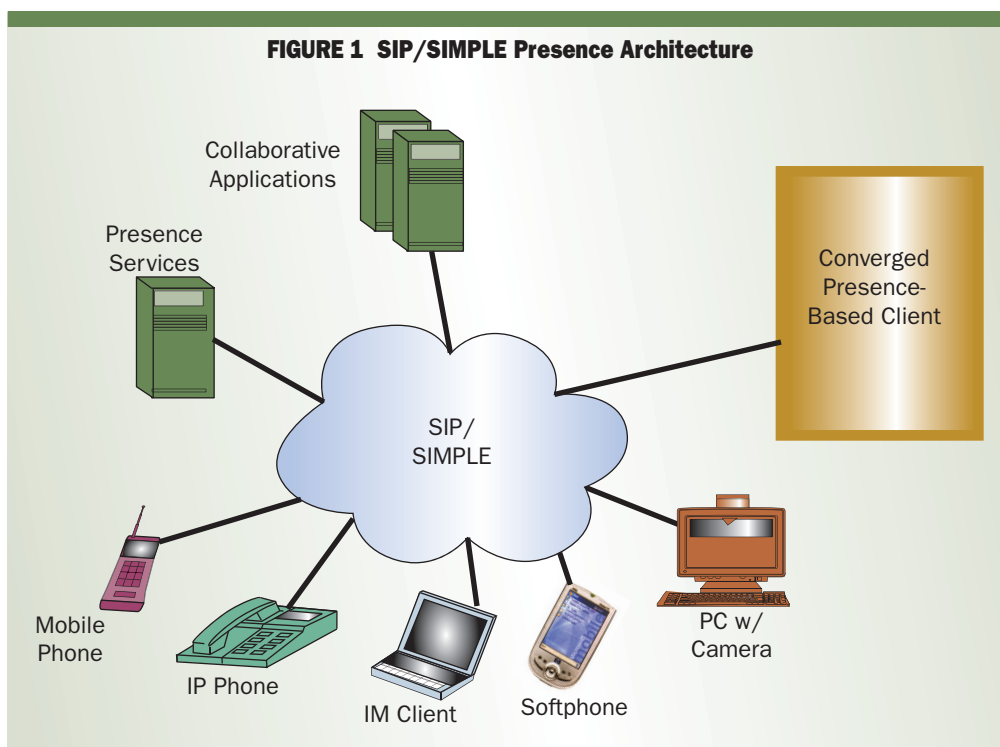Product capabilities and architectures vary greatly in this class. Table 1 provides a sample set of features.

Enterprise Collaboration Applications
Examples of these include Microsoft Live Communications Server with the Office Communicator Client, and IBM Lotus Sametime.

Each of these applications historically has provided a desktop buddy list, but only to support instant messaging. With the release of Microsoft Live Communications Server 2005 and Office Communicator, Microsoft provides the ability to integrate telephony and video capabilities; both resident in LCS, as well as via integration with systems from third-party partners. IBM Lotus recently unveiled Sametime 7.5, which also supports integration of audio and video with the Sametime client.

What About Mobile Workers?
Mobile workers now have the ability to access presence dashboards via their mobile phones

FIGURE 1 SIP/SIMPLE Presence Architecture

Collaborative Applications

Presence Services

Converged Presence-Based Client

SIP/ SIMPLE

Mobile Phone

IP Phone

IM Client

Softphone

PC w/ Camera

thanks to products offered by numerous vendors including Orative, Traverse Networks, OnRelay and FirstHand Technologies (firmerly SIPQuest), as well as clients from telephony and collaboration vendors including Avaya, Nortel and Microsoft.

Common features include the ability to set busy status, to route calls based on pre-defined rules, and to participate in IM sessions via a mobile phone. However, features and capabilities of these products vary greatly, both among product offerings, as well as by handset operating system. Commonly supported mobile phone operating systems include the Nokia Symbian S60 environment, phones supporting the Java 2 Mobile Edition (J2ME) (e.g., the Palm Treo), Research In Motion's BlackBerry and Microsoft Windows Mobile. In almost all cases, phones must be capable of supporting a data service (e.g. GPRS/EDGE or EV-DO).
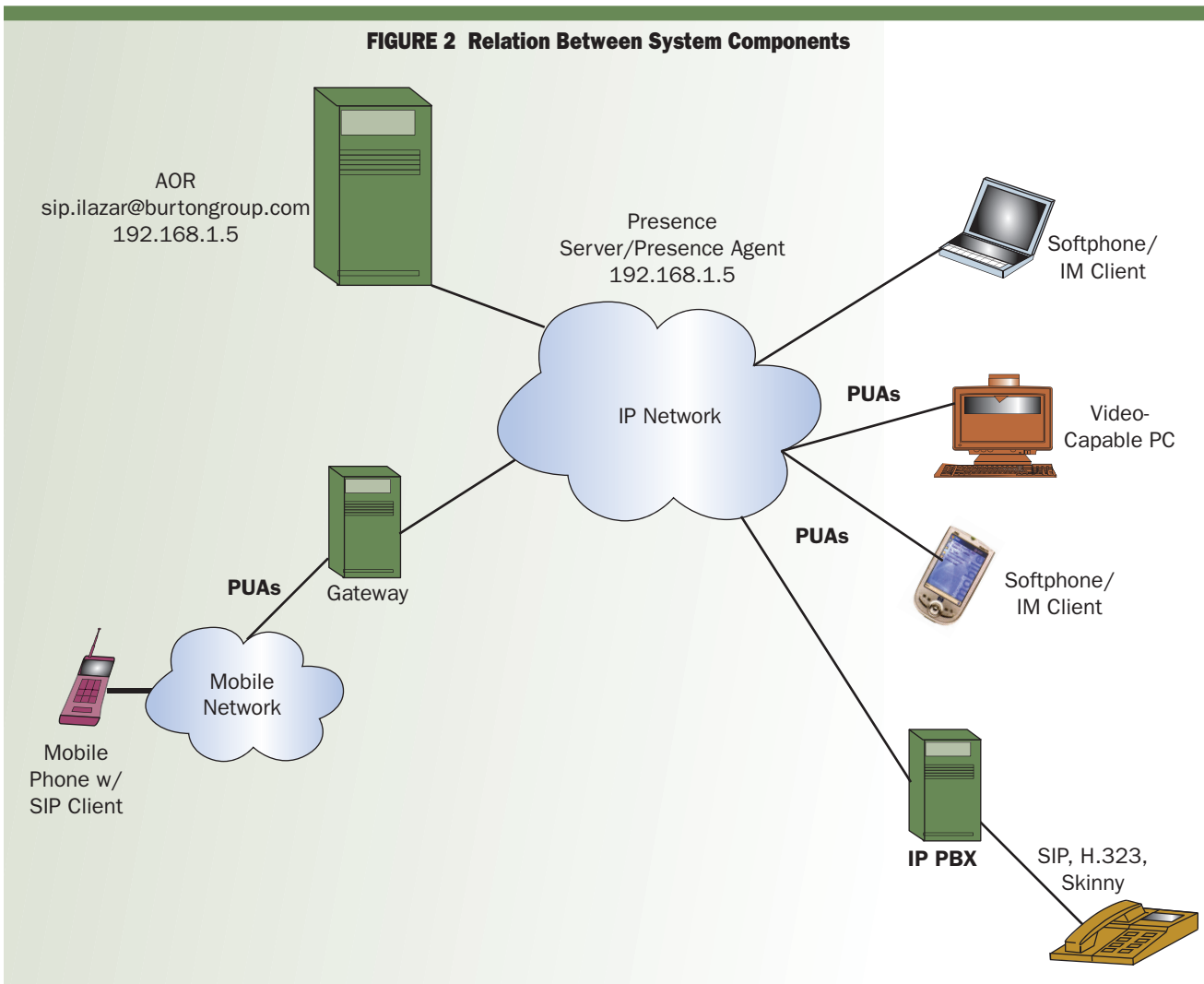
SIP And Presence

As shown in Figure 1, presence dashboards and back-end communications applications typically rely on SIP, the Session Initiation Protocol, and related protocols under the SIP Instant Messaging and Presence Leveraging Extensions (SIMPLE) framework to provide a common language for communications between systems. Additional protocols may include Extensible Messaging and Presence Protocol (XMPP), an open standard protocol used by many instant messaging systems, and Computer Supported Telecommunications Applications (CSTA), which is used by Microsoft in its Live Communications Server platform for telephony system control.

Application developers have leveraged SIP to support persistent communications sessions, such as IM and presence. These sessions function a bit differently than telephony, in that communications must be maintained between endpoints (in the case of IM) or between endpoints and registration servers (in the case of presence). By contrast, in telephony signaling, SIP only serves to set up and terminate the call, but does not maintain any involvement in the call itself.

SIMPLE is based on a concept known as a "presentity" which defines a single person or enti-

FIGURE 2 Relation Between System Components

AOR
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192.168.1.5

Presence Server/Presence Agent
192.168.1.5

IP Network

Softphone/ IM Client

PUAs

Video-Capable PC

PUAs

Softphone/ IM Client

PUAs

Gateway

Mobile Network

Mobile Phone w/ SIP Client

IP PBX

SIP, H.323, Skinny

ty. A presentity may have multiple "presence user agents (PUA)" which are akin to devices such as cell phones or softphones. Using this model, a "present agent (PA)" may keep track of multiple PUAs for a single presentity, to allow various means of communicating presence information for specific devices for each user. This means that a user may run a SIP client on multiple communications devices, such as PDA, laptop and/or mobile phone and have each of these devices register independently with the presence agent. Figure 2 shows the relationship among system components in a SIMPLE environment:

Virtually all vendors of instant messaging platforms have embraced SIMPLE, including Microsoft and IBM. Even the open source Jabber instant messaging platform, which is based on XMPP for message signaling and transfer, supports SIMPLE gateways to enable interconnection of a Jabber-based instant messaging system with a SIMPLE-based system.

Enterprise Recommendations

Presence dashboards offer enterprises significant communications value by giving individuals a common interface into all their communications services. They enable individuals to see in real time the ability of their co-workers and colleagues to engage in communications, and they enable virtualization of communications such that an individual no longer has to think about which phone

Companies Mentioned In This Article
AOL (www.aol.com)
Avaya (www.avaya.com)
Cisco (www.cisco.com)
FirstHand Technologies (www.firsthand technologies.com)
Gizmo Project (www.gizmoproject.com)
IBM Lotus (www.lotus.com)
Interoute (www.interoute.com)
Microsoft (www.microsoft.com)
Mitel (www.mitel.com)
Nokia (www.nokia.com)
Nortel (www.nortel.com)
OnRelay (www.onrelay.com)
Orative (www.orative.com)
Palm (www.palm.com)
Research in Motion (www.rim.com)
Siemens (www.siemenscommunications.com)
Skype (www.skype.com)
Tello (www.tello.com)
Traverse Networks (www.traversenetworks.com)
Yahoo (www.yahoo.com)

Enterprises should plan now for the emerging presence functionalities