Developing a lingua franca for instant messaging

Email started out as a mixed bag of proprietary platforms with little enterprise control over its use. Instant Messaging (IM) has travelled the same path. *David Banes* explains why XMPP is the obvious choice to bring a standards-based approach to IM in the enterprise.

In writing about technical topics, it's easy to lose the reader's attention early by introducing too much detail. So rather than begin this article on the XMPP messaging standard with a jumble of acronyms, I would like to start by listing some high profile users that are making use of the protocol today.

A short but significant list includes Google Talk, which drives all its Instant Messaging and VoIP with XMPP. Then there is Apple iChat and iChat Instant Messaging Server, while in the US AOL employs an XMPP gateway to AOL/ICQ chat. Some major corporate supporters include AT&T, BT, FedEx, the USAF, and JP Morgan, who are all customers of Jabber Inc, an XMPP vendor.

The micro-blogging service that defined the category did at one time integrate with XMPP but they recently 'officially' pulled the plug after scaling and integration issues, moving this from 'buggy' to 'new feature'. Obviously a rebuild is on the cards even though Twitter say that only a small percentage of their users used the XMPP functionality.

Now that I've got your attention it's time to tell you what XMPP (Extensible Messaging and Presence Protocol) is.

This is best done using the XSF's (XMPP Standards Foundation) own words, i.e. "the mission of the XMPP Standards Foundation (XSF) is to build an open, standardized, secure, feature-rich, widely-deployed, decentralised infrastructure for real-time communication and collaboration over the Internet."

This vision is the culmination of 10 years of hard work. It began with an idea and working code from Jeremie Miller in 1998, was refined by the open source community through 1999-2003 as the Jabber protocol, and finally resulted in publication as the XMPP standard by the Internet Engineering Task Force (IETF) in 2004.

XMPP is now an industry standard consisting of core protocol stacks for clients and servers, with XMPP Extension Protocols (XEPs) managed by the XSF.

These extensions add significant functionality to the core protocol and extend the use of XMPP as an XML routing platform. They bring data forms, file transfer, multi-user chat, publish-subscribe mechanisms and even integration with well known web technologies like SOAP.

The XMPP protocol is built as an open standard using XML over IP networking ensuring use of and integration with established protocols and security technologies such as SSL, S/MIME and SASL.

XMPP gives us an open decentralised infrastructure not unlike email (SMTP) in its architecture but with a structured data format (XML) rather than plain text 'line by line' format we're used to in email. There are significant benefits to using XML to transport data, to imagine how just recall how much HTML enhances plain text in email and web pages.

Isn't it just Jabber?

Most people in IT will recognise XMPP as Jabber, an instant messaging protocol that didn't make prime time like ICQ or AIM but sat on the sidelines as a geek or vertical market protocol. These IM success stories mirror some of the early email communities like CompuServe, AOL and CIX, which themselves started out as proprietary communications platforms with large communities.

On the Internet, large communities spring up, often on platforms that aren't interoperable with others. Email is a good example of this phenomenon, where several 'gated' email communities, either public (or in the enterprise like ccMail) were very successful but their value diminished once an email standard was ratified.

Although Microsoft can lay claim to such a large community of Windows users, its email and IM (MSN) platforms have remained proprietary and survive because of its dominant position in the market.

In my view if someone had built good gateways or bridges from Jabber to the popular IM networks, assuming that was even possible, then users may have moved onto Jabber networks because they could bring their 'other network' buddies with them. It's the communities that are important here not the technology.

This is borne out by a couple of things;

- IM clients like Trillion, Adium and Gaim are successful. They allow users to connect to their buddies on multiple public networks, including Jabber.
- OpenFire became one of the most popular Jabber/XMPP servers, partly because it had working gateways for MSN, ICQ etc.

So yes, XMPP is or was Jabber, 'just' another IM protocol in the same way that Internet Email was another protocol when we had several large proprietary email systems.

Add an account for:

- AOL Instant Messenger
- Jabber
- MSN Messenger
- Yahoo! Messenger

- Bonjour
- Facebook
- Gadu-Gadu
- Google Talk
- ICQ
- LiveJournal
- Lotus Sametime
- MobileMe
- MySpaceIM
- Novell GroupWise
- QQ
- SIP / SIMPLE
- Yahoo! Japan

- Zephyr

What we're seeing now is a move towards XMPP as a standard protocol that's been proven to handle IM with ease and is now moving into other areas.

This could be a federation of online social networking web sites or connecting to an Enterprise Service Bus (ESB) like Mule.

Enterprise Instant Messaging (EIM)

EIM has had a very slow adoption, not because IM isn't a valid business tool but because people have preferred to use public IM platforms, like MSN and Yahoo! Messenger.

This comes back to communities and cost. Ask an IT professional whether they want to deploy an EIM platform and you'll get a couple of standard responses; 'why pay for IM when we get it for free' and 'there's no point in looking at EIM unless we can allow or control access to public IM networks'.

Ask users if they want an enterprise IM platform without their public network buddies but with archiving and content monitoring and you'll get a resounding 'No!'. What's the point of EIM with no buddies outside your own domain?

With these attitudes prevailing, there's not been much money for vendors in EIM. There are some exceptions, in cases where a rigorous security policy is applied and business owners have specified IM as a legitimate communications platform. Some organisations also have regulatory requirements to archive communications. Reuters Messaging is a great example, providing instant messaging to the finance community which has stringent regulatory requirements.

Steve Kille, CEO of messaging and directory Isode, said "Military and Government deployments have requirements for immediate information exchange in a secure survivable distributed environment. XMPP provides the open standards for client/server and server/server interoperability, and it is the natural technology choice for this sort of environment. This is reflected in US Government mandates for use of XMPP, and its adoption by NATO."

Companies such as Microsoft (LCS/OCS), IBM (SameTime), Jabber Inc, FaceTime and Akonix have had reasonable success selling IM platforms and security solutions. Others with proprietary IM platforms have shut up shop or sold out.

Jive open sourced OpenFire its XMPP server earlier this year, but their collaboration and community platform Clearspace is tightly integrated with OpenFire. Clearspace shows presence using OpenFire, group chat is being integrated and Jive have a cloud (internet) based XMPP platform that allows file sharing outside Clearspace. File sharing with your own social network is important.

When Google first launched Google Talk the XMPP community waved the flag and pointed at their use of XMPP, however it took a while for Google to bow to 'community' pressure to open up their server(s) and federate with the rest of the XMPP network.

For example OmniPod, which had gateways to public IM networks and ran until 2005 before selling out to MessageLabs.

The big three consumer IM providers, Microsoft, AOL and Yahoo have all launched enterprise versions of their IM platforms the former being the only one with any sort of success, AOL bailed out and Yahoo scrapped it's EIM in 2004 citing difficulties converting consumer use into enterprise business.

Maybe we were all just too far ahead of the curve.

It's only in the last 8-12 months that Cleartext has started getting inquiries for EIM solutions, with security and archiving the main drivers.

It's entirely possible that Microsoft's push with OCS (Office Communications Server) is pushing IT departments to start looking at IM seriously and that XMPP is presenting itself as a good open, secure, standards-based alternative. After all, just like standards-based email, IT administrators all want to ensure that any EIM technology they select is interoperable with other systems.

Back to the future

Since 2004 XMPP has picked up speed and many more developers have embraced the 'geek protocol' for its true value, we've seen projects delivering extensions to the protocol so that it integrates with other technologies.

There's been a big push with software, the XSF currently lists;
- 40+ clients across seven platforms, e.g. Adium, iChat, Psi and Trillian Pro;
- 16 servers both open source and commercial; and
- 30+ software libraries across 17 development languages.

This means that a lot of people are working on XMPP solutions. Some of the most significant include Jive Software, Twitter, Google and Twenty80.

Skype is a high profile IM provider, although XMPP isn't used for all aspects of its system. FaceBook has committed to XMPP support with its own IM service and AOL announced it was moving to XMPP earlier this year.

Also of note is Laconica, the open source, decentralised Twitter clone, which has good XMPP support.

Twitter may be trailblazing now but many of us would back the open systems alternative in the long run.

XMPP is moving out of the 'old school' IM jail that has constrained it for many years and is leaping right over its messaging counterparts into social networks. There have been discussions on the email lists run by the XSF about social network federation for a while now and some of the people on these lists are involved in some of the well known social networking platforms on the net at the moment.

Mickaël Rémond, founder of ProcessOne sees this first hand.

"Social networks realised they need to provide interactive near realtime service and not only chat. XMPP can do both for them: They can build scalable chat systems on top of XMPP that is interoperable with other XMPP networks. At the same time they get a two way channel to push events to the users and get feedback from them," he said.

Some are concerned about XMPP vs SOAP type technologies and whether XMPP may be more suitable for certain types of communication that are currently performed over HTTP. Some of the new functionality is coming from discussions around PEP (Personal Eventing Protocol) as the next-generation transport for advertising things like moods, activities, geolocation, music tunes, and microblogging.

There are also complementary protocols already in use and based on XML. RSS and Atom news feeds are natural companions and easily integrated into the XML routing that XMPP is.

Are you getting the message?

Organisations are getting the message. At Cleartext we are getting enquiries from banks, government departments and professional services companies.

My Google alert on XMPP goes off several times a day now with developers posting to blogs about the subject.

However the big bang came in September 2008 with the acquisition of Jabber Inc by Cisco.

This is significant for several reasons. Cisco has been acquiring messaging-related technologies for a while now (PostPath email server, IronPort email security) and we all know that when a big technology company, like Cisco or IBM, picks up a new platform the technology suddenly has access to a large market and the technology gets an 'it's OK to use' sticker that usually means it'll take off in the enterprise.

Expect to see XMPP embedded in Cisco's products at a human interface and machine interface level within a few product iterations.

"IronPort has certainly benefted from the Cisco acquisition with much better access to many more organizations. This has helped to drive strong results quarter after quarter" said John Martens, general manager of IronPort Systems.

There's no doubt XMPP is heading into mainstream, it's an IETF standard and it stands as good a chance, or better, of becoming THE standard in this technology space, unless of course something else pops out of the net and becomes trendy over night.

I hope this article gives you some insights into the possibilities for XMPP in both real time communication and social networking. One last thing, XMPP does store and forward messaging, just like email, so do we really need SMTP as well?

Further reading.
XMPP Standards Foundation
http://www.xmpp.org
http://wiki.xmpp.org
http://blog.xmpp.org
XMPP (a.k.a. Jabber) is the future for cloud services
http://www.jivesoftware.com/community/blogs/
jivetalks/2008/01/24/xmpp-aka-jabber-is-the-future-for-
cloud-services
Cisco Gets the XMPP Message, Buys Jabber
http://broadcast.oreilly.com/2008/09/cisco-gets-the-
xmpp-message-bu.html
Could Instant Messaging (XMPP) Power the Future of
Online Communication?
http://www.readwriteweb.com/archives/xmpp_web.php
Data portability, the stuff semantic web dreams are made of
http://www.socialmediatoday.com/SMC/33335
XMPP: The Definitive Guide: Rough Cuts Version
By Peter Saint-Andre, Kevin Smith, Remko Troncon
Everything you need to know about XMPP, the open
network protocol that drives real-time communication
today, is contained in this practical book. XMPP: The
Definitive Guide walks you through the thought processes
and design decisions.
http://www.oreilly.com/catalog/9780596157197
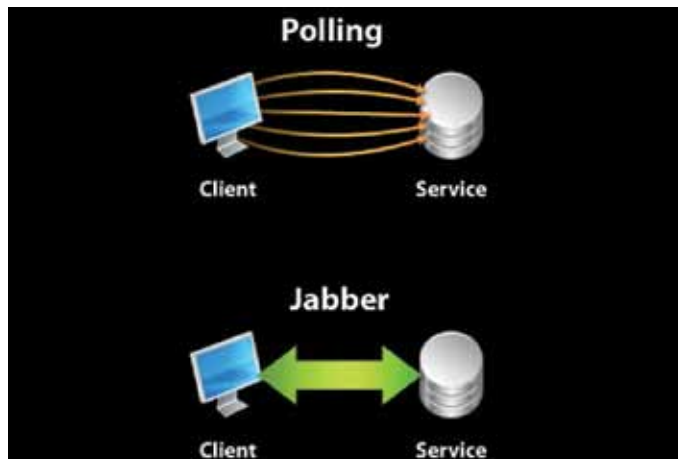
Making IM communicate
Cleartext Managing Director/CEO David Banes, has been elected chairman of the XMPP (Extensible Messaging and Presence Protocol) Standards Foundation.

"Today's instant messaging and social networks are becoming valid replacements for email but many of these have been developed using proprietary protocols. XMPP is an IETF (Internet Engineering task Force) standard and as such is being used to build new platforms, like Google's GTalk and FaceBook's own IM. Some legacy IM networks are moving towards XMPP so that they can participate in an open, federated network, just like email." said Banes

The mission of the XMPP Standards Foundation (XSF) is to build an open, standardised, secure, feature-rich, widely-deployed, decentralised infrastructure for real-time communication and collaboration over the Internet. Banes is well placed to promote the Foundation with more than twenty years experience in messaging and IT security and holding a position on the board of the Internet Industry Association (IIA) he's hoping to help push the XMPP message to the Australia internet industry.

First established in 1999 Cleartext pioneered secure IM with a secure Enterprise IM platform called CipherIM. The company re-launched and moved into Managed Services in 2005. ClearEmail a professional email hosting service was launched in 2006 and ClearEmail MX Managed Email Security in 2007. The company launched ClearEmail EDM in February 2008.

Cleartext delivers messaging and social networking solutions as SaaS (Software as a Service) and via it's application hosting agreements with companies like Jive Software(Clearspace), Jabber Inc(Jabber XCP), Axigen(Email Server) and Attensa(RSS feed server). Cleartext is currently developing new products and services in the business messaging and social networking space.