

PLUGGING PRESENCE AWARENESS INTO MOZILLA THUNDERBIRD

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ABSTRACT

Presence awareness, that is the awareness of what distant colleagues are doing and their availability for interaction, plays a key role for coping with the lack of physical proximity and improving multi-site work. Despite its limited potential for signaling awareness and availability for interaction, email is the form of computer-mediated communication in widest use today and often the place where collaboration emerges. In this paper we present a plugin that uses the XMPP protocol to augment Mozilla Thunderbird mail client with presence awareness, thus reducing the friction of also running an IM system for signaling presence and availability.

KEY WORDS

Presence awareness, Jabber/XMPP plugin, Mozilla Thunderbird extension.

1. Introduction

When collaborators are geographically distributed, presence awareness, that is the awareness of what distant colleagues are doing and their availability for interaction, plays a key role for coping with the lack of physical proximity and improving multi-site work. On the heels of a still growing popularity, synchronous instant messaging (IM) systems are being increasingly brought into the workplace. Previous research [1],[2] has shown that this form of near real-time communication has a number of uses in the workplace, including opportunistic interactions, broadcasting of information or questions, and a “signaling” function in which people negotiate availability for other interactions. Since synchronous messaging provides this lightweight way of ascertaining and negotiating availability, presence awareness has become synonymous with IM, though today it actually spans a number of different communication channels and applications, ranging from VoIP to most advanced groupware platforms.

Despite its limited potential for signaling awareness and availability for interaction, email is the form of computer-mediated communication in widest use today. Email is generally used as an asynchronous communication

medium because there is little expectation that users will read and respond to email promptly when received. However, several recent studies [3],[4],[5] indicate that email is more and more often the place where collaboration emerges. Due to its proven lightweight, flexibility and ease of use, email perfectly supports collaboration and a variety of uses other than communicating (the so-called “email overload” phenomenon [5]) are reported in the literature, such as meeting scheduling, task management and document sharing.

In this paper we present an extensions of Mozilla Thunderbird that uses the Extensible Messaging and Presence Protocol (XMPP) to plug presence awareness into the mail client. According to Booch and Brown [6], the integration of collaborative technologies within the development environment reduces the inherent friction of running and using different tools, thus increasing the developers’ comfort and productivity. Taking a similar approach, here we propose to augment an email client with built-in presence awareness, thus reducing the friction of also running an IM system for signaling presence and availability. Running such a presence-enabled email client, there is no need for a user to continuously switch between two clients to see what the others are doing, whether they are available and choose the best and least obtrusive way to get in touch with them, (i.e., sending either email or IM).

Various similar plugins have been developed to address the issue of signal presence from a mail client. Kmail [7], the open-source mail client of the KDE desktop environment for GNU/Linux [8], integrates Kopete [9], the KDE official multi-protocol IM client. Lately, two commercial mail clients like IBM Lotus Notes [10] and Microsoft Outlook [11] have embedded presence awareness by integrating their own IM service, namely Lotus Instant Messaging [12] and Microsoft MSN Messenger [13]. There is also a third-party plugin developed for Ms Outlook: AIM Sync [14] allows user to add presence using AOL AIM service [15] instead of MSN Messenger, basically offering the same features.

The remainder of this paper is structured as follows. In Session 2 we discuss the related works and tools. In Section 3 we first present the tool and, then, we show how it works, illustrating a typical usage scenario. Finally, in

Section 4 we draw conclusions and provide future directions of development.

2. Body of Paper

In [16] issues encountered in distributed projects working with email are reported. Long and heated email discussions result stressful because, due to the serial nature of the medium, participants cannot interrupt each other until the whole message is dispatched. Moreover, when using email in the decision-making process, problems arise because people tend to “expect everyone to be as responsive – or at least to overlook the possibility that they aren’t – and to assign deadlines and decision points accordingly.”

Among all the existing email clients and IM protocol we choose to integrate Mozilla Thunderbird and XMPP because they offer great extensibility and ease of development.

Mozilla Thunderbird [17] is a free, open-source and cross-platform mail client for most operating systems. It is built on the Mozilla codebase and, hence, it offers the same extension capabilities offered by its Cross Platform Front End (XPFE), a framework that makes possible the development of fully portable plugins using standards like CSS, RDF and JavaScript.

Jabber is an open and free alternative to closed instant messaging (IM) and presence services like AIM, ICQ, MSN, and Yahoo [18]. At its core is the Extensible Messaging and Presence Protocol (XMPP), an IETF standard that defines a robust, secure, scalable, internationalization-friendly architecture for near real-time messaging and structured data exchange, all of which is pure XML [19]. Since its conception, a guiding principle of the Jabber philosophy has been to keep most of this complexity at the server. Developing a custom presence-enabled system based on XMPP is easy, as you only have to stream your data in XML. Moreover, there is a plethora of high-level XMPP API libraries written in different languages, ranging from Java and C# to JavaScript and Perl, which makes developing with XMPP even easier.

Differently from other IM protocols, in Jabber different clients can connect using the same account. The XMPP protocol allows for multiple points of presence by assigning each client a resource (a specific identifier) and a priority number for each resource. Incoming messages and presence information will be routed to the highest-priority resource, which is known as the primary resource, although messaging a specific resource is possible by explicitly using the form `userid@domain/resource`. This mechanism enables a user to connect with the same

account from multiple locations or devices, but only to receive messages at the selected resource.

Our group has developed JabberPresence [20], an extension that plugs presence awareness into Thunderbird. Using an XMPP API written in JavaScript, our extension allows Thunderbird users to:

- Define multiple Jabber accounts.
- Associate contacts of a buddy list to contacts in Thunderbird address book.
- Display the online status of the contacts.
- Send and receive messages and presence information.

It must be pointed out that you can always send messages from within Thunderbird. Instead, incoming messages will be processed by the plugin when Thunderbird is either the primary resource or it is explicitly indicated as recipient (e.g., `userid@domain/Thunderbird`).

Another strength of using Jabber is that the biggest XMPP servers offer bridges to other proprietary IM protocols, so that you don’t need to run neither multiple IM clients, nor a single multi-protocol client. For instance, you can have your MSN buddies added to your Jabber roster, just as if you were running a multi-protocol client, but instead you are only connected to your XMPP server.

3. Usage Scenario

Stefania is a team manager and she daily uses the Jabber IM client to keep contacts with her collaborators. She thinks it is useful to check at a glance if her collaborators are online, so as to choose whether to send a mail or an instant message. Moreover, Thunderbird is her mail client of choice and, hence, Stefania decides to try out the JabberPresence extension.

After installing the plugin, she configures her Jabber accounts by either clicking on the Jabber Account Settings link in the start page of Thunderbird or selecting the corresponding option under the Tool menu (see Figure 1).

Afterwards Stefania fills out the dialog in Figure 2 to enter one or more of her existing Jabber accounts. Note the Resource and Priority fields, which ensure Stefania that she will receive messages at the primary resource. From now on, when Stefania runs Thunderbird, the Jabber account flagged as default will get connected.

At the first connection, the Roster Import dialog will popup, allowing Stefania to map the buddies in the roster to the proper contacts in the Thunderbird address book (see Figure 3), so that each JID is stored in the contact’s vCard (see Figure 4). Obviously, the Roster Import dialog will also show each time a new contact is added to the roster

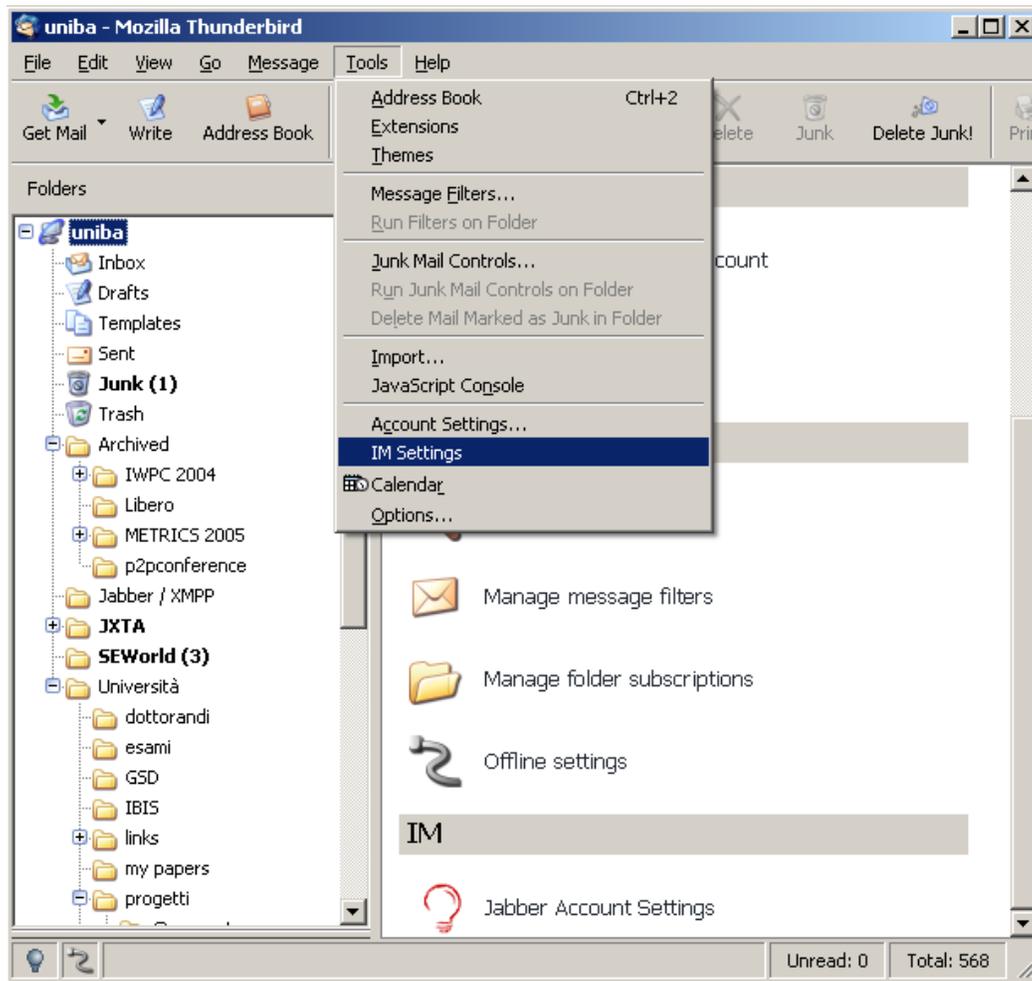


Figure 1. Mozilla Thunderbird with the extension installed

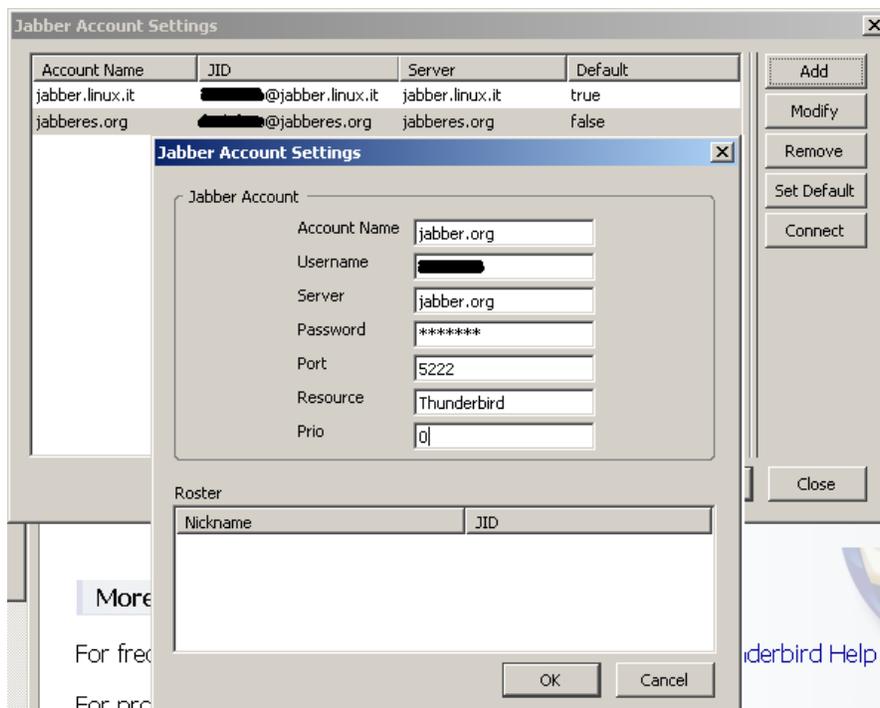


Figure 2. Definition and Management of Jabber accounts

Once the contacts have been imported, Stefania can check the online status of the selected buddies in a list placed in the bottom-left corner of the Thunderbird UI (see Figure 5).

With a double-click, Stefania can send IM to online buddies directly from Thunderbird or, using the context menu, she can compose email to when contacts are offline.

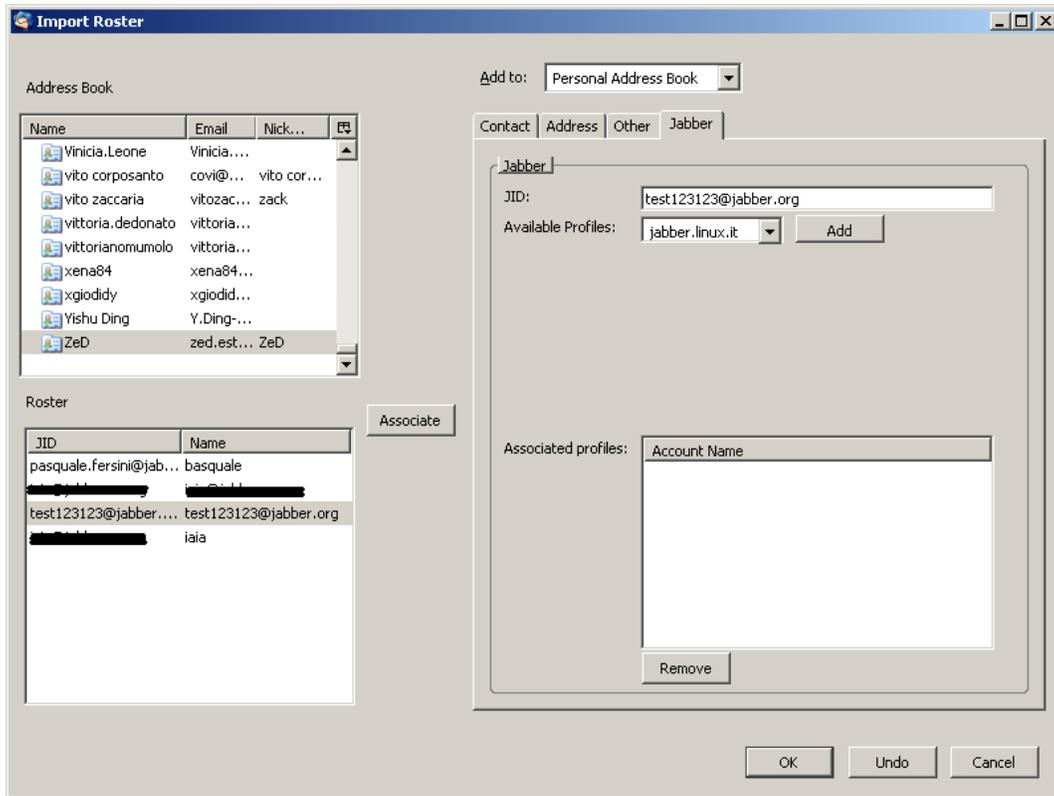


Figure 3. The Dialog to map Buddies to Address Book contacts

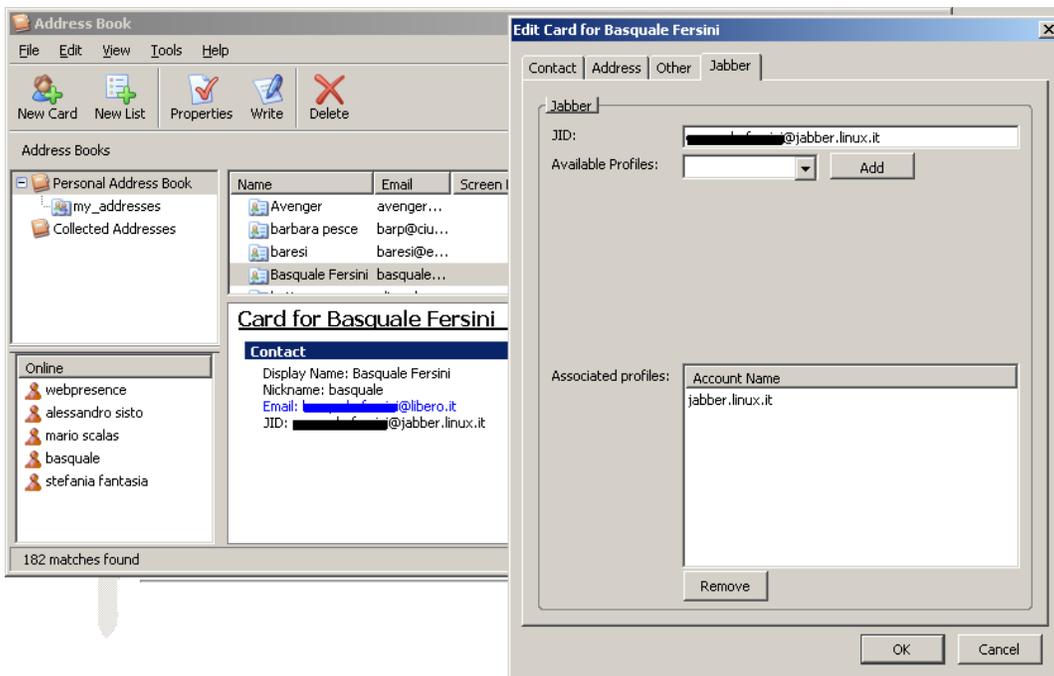


Figure 4. JIDs are added to Address Book vCards

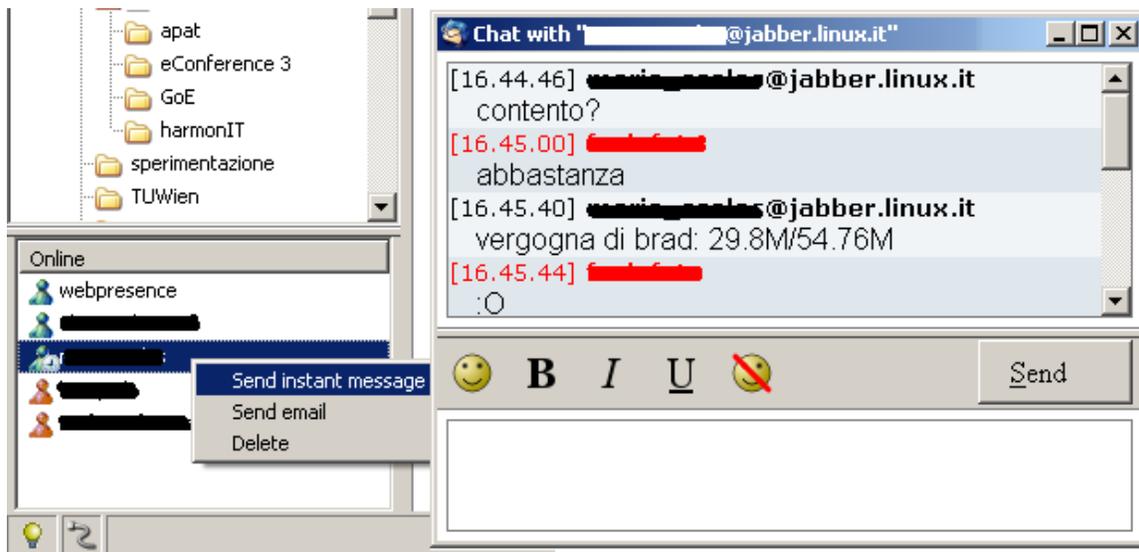


Figure 5. Right-clicking on a Buddy contact opens a context menu

4. Conclusion & Future Directions

This paper has presented JabberPresence, a plugin that uses the XMPP protocol to augment Mozilla Thunderbird mail client with presence awareness, thus reducing the friction of also running an IM system for signaling one's status and availability. By running such a presence-enabled email client, the choice of sending either an email or a IM is always one-click away from users.

JabberPresence is freely available at the Mozilla official extensions-repository site [12]. Since its publishing (about 3 months ago at the time of this writing) it has been downloaded more than 1400 times and evaluated 4.5/5 by the community members. These numbers witness the usefulness of the extension from a real everyday-user perspective.

Following advices gained from the feedback provided by community members, we will improve the tool as follows:

- Presence information will also be visible in the From, To, CC and BCC fields.
- Support SSL secure connection, though this is rather a limit of the XMPP API that we have used.
- Allow the registration of new Jabber accounts.
- Integrate our plugin in the Thunderbird calendar.
- Start a multi-user chat with all the contacts present in an email
- After a chat session, send an email with chat log added to the body or in attachment.

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