

## Re: sending message to PC that is offline

**Source:**

<http://www.tech-archive.net/Archive/Development/microsoft.public.win32.programmer.tapi/2004-04/0135.html>

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In article <ebf3e1ca.0404071927.336aaa0@posting.google.com>, marcuj3341@yahoo.com (hnr) writes:

- >
- > *Suppose someone who is, say, a football fan is subscribed to a service*
- > *run by a company, so that every time a news event happens that fits*
- > *certain criteria, e.g. every time his favorite football team loses,*
- > *the company's server will instantly "notify" his PC, in any way*
- > *whatsoever*
- ...
- > *And suppose I insist that the user will \*NOT\* have to do anything such*
- > *as receive a phone call or SMS, or open a browser first.*

This sort of thing would **\*REQUIRE\*** that the user run some type of software. It **COULD** be done simply by having a browser always open to a Web page, with an automatic refresh interval specified. The page could then be updated by the service and the browser would display the updated information quickly. You could also use e-mail, various IM protocols, or whatnot for similar effects.

- > *The main problem seems to be that the ISPs I know require you (at*
- > *least in case of DSL. maybe in cable too?) to log in with a username*
- > *and a password, and the user's PC automatically terminates the*
- > *connection after a certain, probably user-configurable, idle time,*
- > *just like in analog connections.*

First, this is a characteristic of PPPoE (and I believe PPPoA). To the best of my knowledge, no cable modem systems use this technology, so it's not an issue with them. Also, not all DSL connections use PPPoE or PPPoA; some use static IP addresses. (In theory, some might use DHCP, but I don't believe that's very common.) Second, the automatic logout can be easily overcome by generating network traffic on the client side. Of course, the ISPs have the automatic disconnect for a reason (mainly to save a bit of money by recycling IP addresses, I believe; but there's also some potential security benefit from keeping the computer disconnected, and hence not vulnerable to certain types of attack, when the user isn't actively using the Internet connection). I know of no way, with the current TCP/IP Internet structure, to signal a computer that's

not connected to make a connection — at least, not without adding more hardware (such as a conventional dial-in modem and phone line). In principle, some sort of "wake-up" protocol could be added, but that would require changes to some level of protocols (perhaps the DSL protocols themselves, or perhaps something squeezed in atop them but below or parallel to PPPoE).

In sum, the only way what you want will work, particularly across technologies (DSL, cable modem, etc.), is to assume either an always-up TCP/IP connection or user-side initiation of communications. Looking for a way to "wake up" a computer with a dropped PPPoE connection is simply looking for headaches.

- > *can anyone roughly estimate how likely it is, in average,*
- > *for a given typical PC user with a broadband modem, anywhere in the*
- > *world, at a given point in time to be logged out?*

That'd be hard to estimate, simply because it depends on how common it is for people to shut off their computers when not in use. You'd need a real-life user survey to do that. I don't know if such surveys have been done. Then you'd need to add in an estimate of how many people use DSL vs. cable modems, and how many DSL connections use PPPoE or PPPoA vs. static IP addresses or DHCP. Of course, all of this also applies only to people with some form of broadband access.

- > *Maybe the solution is the Wake-on-LAN (or wake-on-Modem???) , mentioned*
- > *in some of your kind responses.*

No, this won't help. When PPPoE disconnects, the computer no longer has an IP address, so if your architecture involves a central database somewhere sending packets to users by IP address, the packets sent won't even hit the user's DSL modem; they'll either get dropped or be directed to somebody else's computer.

- > *Are there any DSL modems that do the frequency*
- > *filtering in their own hardware (i.e. no separate filter) or in*
- > *software, so that the filtering can be controlled by a driver???* And
- > *if there are, then is it possible to write a driver that tells the DSL*
- > *modem that when there is no socket open, the modem must \*NOT\* ignore*
- > *incoming phone calls,*

I'm not an expert on low-level DSL hardware, but I've never heard of such a beast. Even if there were, if you actually want to set up a service such as you're describing, requiring users to buy new modems to use the service would be a very bad starting point. You'd then also have to track which users need phone calls for notifications, and the phone calls could end up being a major annoyance for users (after all, their telephones would ring). Then you'd have to pay for the phone calls, which would raise the price of the service.

- > *Does the*
- > *answer to the question whether it's always the same address or not*
- > *depend on the ISP? On the user settings?*

The ISP. With PPPoE, the IP address is virtually certain to change fairly frequently. With DHCP, the IP address is likely to change much less frequently. With static IP addresses, the IP address will change very infrequently. Most ISPs support only one of these technologies, although some offer users a choice (typically at different service levels, such as PPPoE for "home" accounts and static IP addresses for "business" accounts).

- > *How typical (generally, in*
- > *the world, for broadband users) is it for a user NOT to have always*
- > *the same address? I mean, how much of a problem may this be?*

It's very common. I recommend you not build a business on the assumption that residential users will have fixed IP addresses.

- > *can I use that IP address even*
- > *when the user is logged out, to "tell" the PC (e.g. my application) to*
- > *log in???*

In a PPPoE context, no. In the case of PPPoE, "logged out" means "has no IP address." In the context of DHCP or static IP addresses, the question is essentially meaningless, because there's no such thing as "logged out" from the network. (Well, I suppose the computer could be turned off but the network connection shut down, which would be essentially the same as a "logged out" PPPoE user.)

In sum, for the sort of service you're describing, the simplest solution is to either provide a custom client or use an existing protocol (HTTP or an IM protocol, for instance) to have the client program (on users' computers) periodically poll a server you operate to discover if there's new information available. Alternatively, the client could simply initiate a connection and keep it open, and the server could tell the client the moment new information comes in. This procedure will make all your concerns about disconnected PPPoE sessions, "waking up" modems, etc., disappear.

In fact, there are already programs and services like what you describe. For instance:

- The XFce weather plugin (<http://xfce-goodies.berlios.de/>) polls a weather Web site to display a summary of the weather on the XFce task bar. (XFce is a desktop environment for Unix-like OSs.)
- The Weather Underground (<http://www.wunderground.com>) Web site automatically refreshes itself every few minutes, so you can leave a Web browser open to see an up-to-date weater report.
- Many stock ticker programs exist that display current stock reports on your desktop. I've never used these, but a Google search turns up

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many hits.

I'm sure there are others. I realize you're describing something that can be personalized and more generalized than these three examples. I wouldn't be surprised if something like that already exists, but I haven't looked for such a beast. In any event, rather than try to build an entirely new Rube Goldberg architecture for your service, I suggest you look into how these existing tools do what they do.

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