



Where in Cyberspace Is Your Computer Now? Accessing your home computer over the Internet

by Sergey Liberman



In our enlightened age, many people enjoy fast Internet connection over DSL or cable from their home. We freely indulge ourselves in HTTP-ing, FTP-ing, SMTP-ing and many more newly naturalized human functions. But once in a while, we find ourselves away from our dear old home computer and... "Funny thing, it looks like my floppy/laptop/corporate server cannot be accessed! Not to worry, it will take me only five minutes/hours to walk/fly back home and get a copy of this file. Hold on, I'll be right back!"

Can You Access Your Home Computer over the Internet?

There are numerous scenarios under which you might need to access your home computer over the Internet, and you have a multitude of options. Your home base could run an HTTP server, such as the one bundled with LabVIEW, or an FTP server, such as the one that comes with Windows NT Workstations or Windows 2000 Pro. You might opt for a freeware solution, such as War FTP Daemon (<http://www.warftp.org>) or remote desktop control software such as VNC (<http://www.uk.research.att.com/vnc>). Alternatively, you could arrange a virtual private network, or do all kinds of other neat things, but because your computer's IP address is typically assigned dynamically by your ISP, you have to ask yourself a question, "Where in Cyberspace is my computer now?"

To answer this question, I wrote a small application that runs in the background on my home computer and monitors all IP addresses assigned to it. As soon as it sees a new address, it sends e-mail to my Web-based mail account (for example, Yahoo or Hotmail) with the latest IP address. Although the mail is sent out

through the SMTP server, which should not require user authentication, some ISPs use POP log-in to authenticate the user. The program supports optional POP authentication, as well as features like exclusion of one or more IP addresses from detection and logging of mail events and errors. All these settings are defined in an INI file that should be edited before launching the program.

The program is written in LabVIEW 6.0.2. It uses an SMTP Mail VI from the Internet Toolkit and a POP Mail VI from the NI Developer Zone. Both rely only on TCP/IP primitives. The program was tested on all 32-bit Windows platforms, as well as Macintosh OS 9. Because all the VIs are written in pure G, the program should easily be portable to other platforms. Under Windows NT, 2000 and XP, when built as an application, the program can be converted to a service, as described by Joel Sumner in *LTR Volume 8, Number 4*.

What About Security?


A few words on security are in order. If you need to use POP authentication, you must provide your user ID and password to the program. Currently these settings are defined along with other settings in the INI file and thus stored as plain text. You might want to consider hard-wiring them into the code or using a binary configuration file. When installing a server on your computer, do not forget to reconfigure your firewall (you do have a firewall, don't you?) so that ports used by the server are open. If you use an FTP server, it is advisable not to configure the same folders for both read and write access. In addition to command-line interface and FTP client programs, you can access your FTP server from the outside through popular Web browsers by entering the following URL:

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ftp://your_login:your_password@your_IP_address:your_port
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The port is not required when the standard port 21 is used. Notice that your log-in information will be shown in the URL history buffer. You can erase it using browser options for clearing history.

Macintosh-Specific Considerations

IP polling can take up to five seconds or longer on some Macintosh systems. Therefore, Macintosh users might need to increase the PollPeriodSec parameter in the included INI file to prevent constant IP polling from locking out the user interface indefinitely. A value of 60 seconds worked fine for testing, but feel free to fine-tune this parameter as necessary. Also, due to the potentially long IP polling period (and the inherent multitasking limitations of the IP functions used), this VI is best suited for deployment on an unattended Macintosh when no other time-sensitive continuous processes are running.

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About the author:

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