In yet another pointer to methods for synchronizing multiple computers, I turn to a recent report about research by a doctoral student in computer science and engineering at University of California at San Diego to produce synchronization software for Linux systems.

According to an article by Doug Ramsey on the UCSD Web site <http://ucsdnews.ucsd.edu/newsrel/science/GoogleCode.asp>, James Anderson has created open-source software called “Tsync” (Transparent synchronization) for automatic synchronization of computers – including PDAs – much like BeInSync and iFolder discussed in previous columns. This tool is not to be confused with “TSync” (note the two capital letters), which is a time synchronization protocol (see for example <http://portal.acm.org/citation.cfm?id=980173>). The software is still in beta-test mode. The author warns, “While it has never lost or corrupted any of our data in tests, the possibility exists that it could. We suggest that you do not trust the only copy of valuable data to Tsync until you have gained confidence in and understand the system.”

Anderson describes his tool as “a user-level daemon that provides transparent synchronization for one or more data volumes (directory trees) amongst a set of computers. Tsync uses a peer-to-peer architecture for scalability, efficiency, and robustness, which ensures that each node remains connected with all other connected nodes. The overlay network also provides a scalable means by which a Tsync node can learn about other hosts, besides the bootstrap host with which it was configured. Tsync uses strong authentication and encryption: hosts authenticate each other using the OpenSSH RSA-key authentication mechanism, and all data is encrypted using the symmetric key cryptography.”

You can download the C++ source code from <http://sourceforge.net/projects/tsyncd/>

The software requires a number of standard Linux libraries including Perl 5.6.0 or later, Perl Frontier, OpenSSH, sendmail or equivalent and others. It also requires all systems to have clocks synchronized to within one second; Anderson recommends using the Network Time Protocol Daemon (ntpd) for this synchronization.

Once the software is configured and the processes are running, changes on one system will be duplicated on the other linked systems automatically.

Anderson’s HOWTO document is at <http://tsyncd.sourceforge.net/>.

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