

FOUR MINUTE GUIDE TO GNU.FREE

by Jason Kitcat

Why?

Research has shown that the Information Revolution is fundamentally altering organisational structures. The repercussions of this are being felt in areas as far ranging as the military, religious groups and political structures. The key change is that civilians are playing a fundamentally more important role in decision making due to improved communications, wider share ownership, politicians dependent on polling and internet co-ordinated pressure groups that exert incredible pressure.

The democratic vote is the most powerful part of the modern political paradigm yet it depends on out-dated technologies such as mechano-optical counters and confusing punch-hole ballot papers. Not only are these systems falsely assumed to be more secure and reliable than any other possible way of conducting a vote but their glacial counting speeds can result in potential constitutional crises. A potential solution is electronic voting with results collate over a network.

How?

Using the cross-platform, network-aware Java technology platform a secure, private, open, reliable and scalable system has been developed. This has been achieved in a pragmatic manner using the several techniques, many of which have been grounded by sound academic research into electronic voting.

Illustrative examples follow:

- **Secure**
All communications are tamper resistant thanks to the use of Message Authentication Codes.
- **Private**
Based on widely accepted work by David Chaum, user details are stored on a separate server to where the votes are registered – making inferring who voted what extremely unlikely. (Impossible is a word we don't use.)
- **Open**
Other electronic voting providers refuse to disclose details as to how their system works, yet this 'security through obscurity' is widely recognised as a fool's approach to security. GNU.FREE and any derivatives are obliged, under the terms of its GNU General Public License (the same that covers GNU/Linux) to always have their source code freely available and modifiable. We feel this openness inherently engenders trust.
- **Reliable**
GNU.FREE uses encrypted, single-use authorisation keys to prevent people voting more than once and also make sure their vote has been registered safely.
- **Scalable**
The GNU.FREE architecture relies on autonomous *regions* which means

that as the number of potential voters grows, more regions can be added without impacting each other.

What?

You may be wondering what all this technology is actually like for the voter. They simply use a voting client program that will run on any machine that supports Java (and virtually every operating system does). This will prompt them to enter details to prove to the system that they are who they say they are. If recognised and if they haven't already voted the program then shows them all the potential candidates. Having selected their choice and confirming it the vote is sent to the Regional server – only once this has been successfully done is the voter informed and the process is over.

More?

The 400 Minute Guide to FREE:

Go to <http://www.j-dom.demon.co.uk/free/> for the full research papers.

Why electronic voting software should be Free Software:

Got to <http://www.thecouch.org/free/docs/wfs.html>

More about the software, the project and downloads:

Go to <http://www.thecouch.org/free/>

Swing Digital:

Go to <http://www.swingdigital.com>