

Better, Faster, Cheaper

Using Free Open Source Software in
a Community Warning System

What is “Free Open Source Software” (FOSS)?

- **“Open Source”** - the internal programming is available for inspection, modification and reuse.
- **“Free”** - Available for use without charge (*although other conditions may apply.*)

Why Would Anybody *Do* that?

“Open source is a development method for software that harnesses the power of distributed peer review and transparency of process. The promise of open source is better quality, higher reliability, more flexibility, lower cost, and an end to predatory vendor lock-in.” (The Open Source Initiative)

Common Examples of FOSS

- Apache (*webserver*)
- Linux (*operating system*)
- Firefox (*web browser*)
- OpenOffice (*office suite*)
- Mailman (*email list manager*)
- Perl, PHP and (*finally!*) Java (*programming languages*)

Benefits of Using FOSS

- **Economy** - *The price is right, and it can't go up.*
- **Flexibility** - *Switching costs are low and changes are easy.*
- **Security** - *“Many eyes on the code” ... security holes can't be covered up or ignored.*
- **Interoperability** - *No incentive for creating “stovepipes”; value based on connectivity, not isolation.*

Challenges of Using FOSS

- Vendor resistance
- Lack of education
 - No “FOSS, Inc.” to promote it.
 - Staff blame management: *“We know how, but they won’t let us!”*
 - Management blames staff: *“We’d love to, but they don’t know how!”*
- “Fear, uncertainty and doubt” (FUD)

Contra Costa County's Community Warning System (CWS)

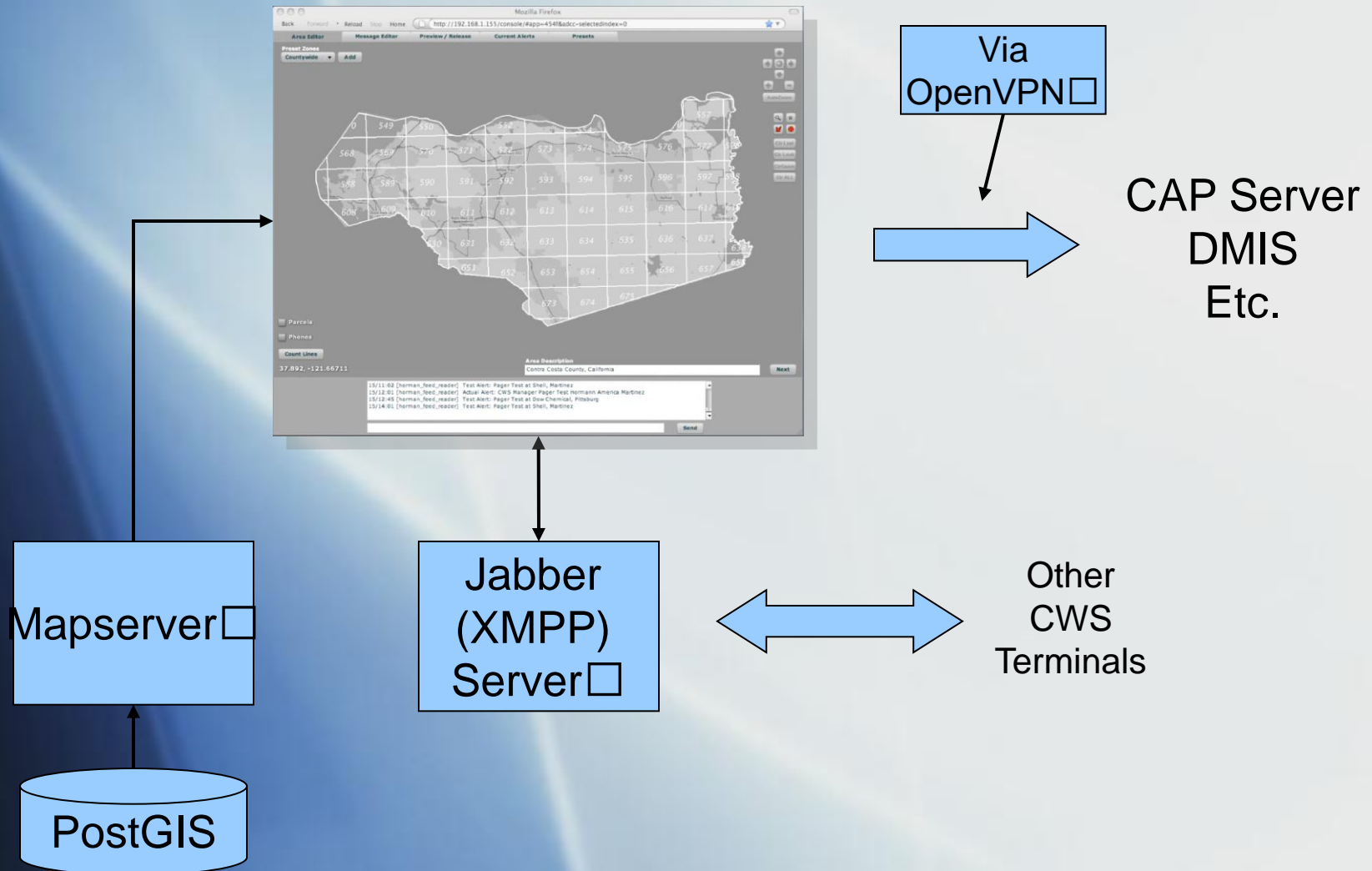
Industry-funded multi-modal public warning system:

- Sirens, EAS, Weather Radio, telephone notification, etc., etc.
- Control system based on the (*open!*) Common Alerting Protocol (CAP)
- Created for hazmat hazards but available for all hazards.

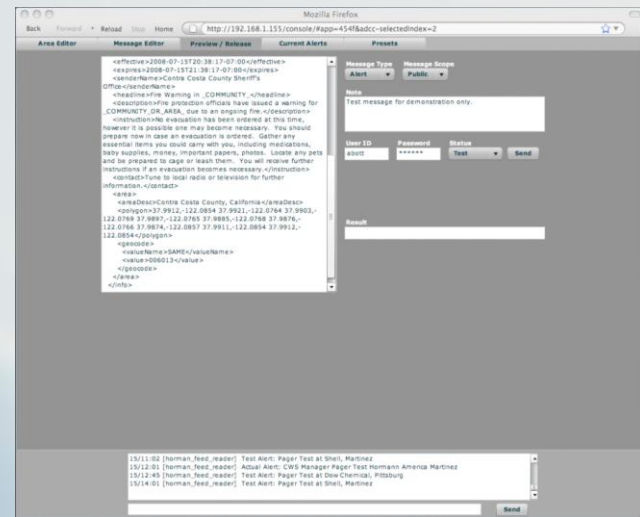
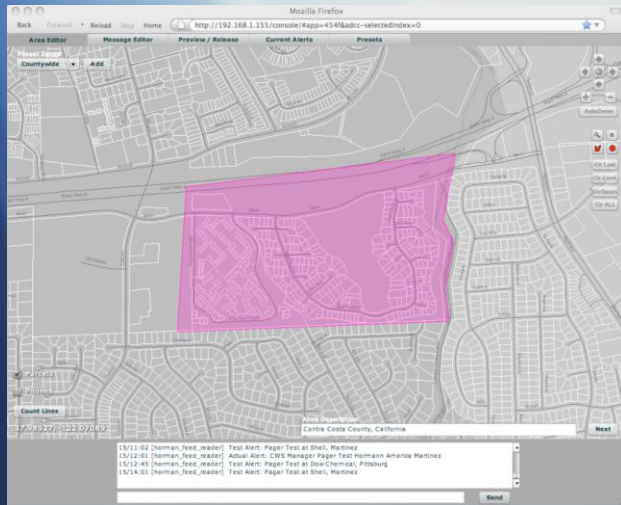
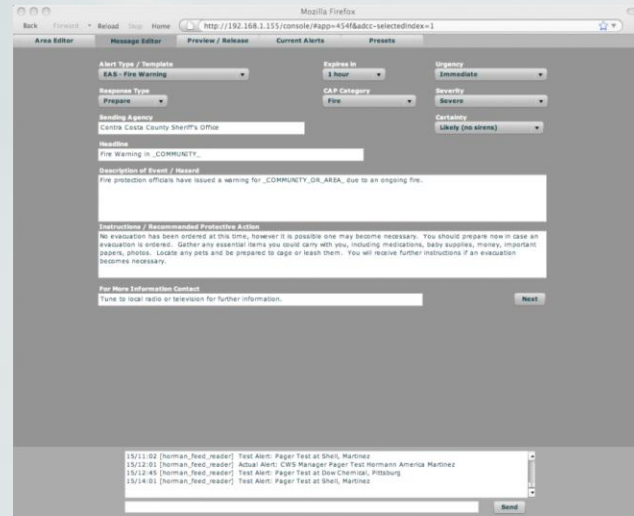
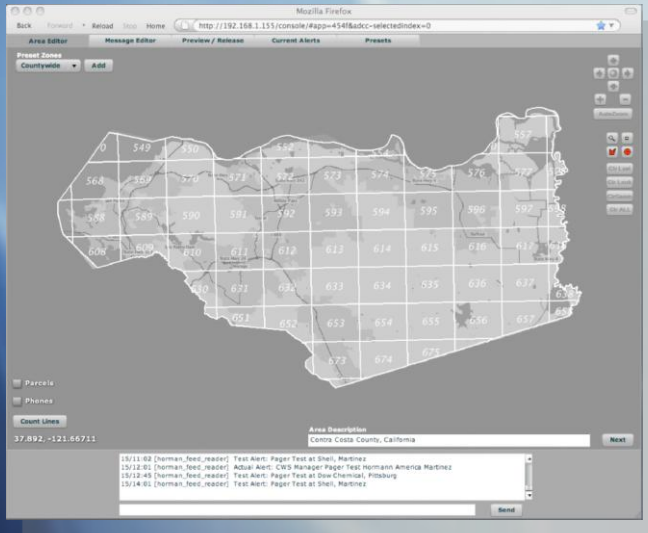
FOSS in the CWS

- Mapserver
- OpenFire (Jabber)
- MediaWiki
- OpenVPN

The CWS Console Application



The CWS Activation Console



Mapserver

- “Web Map Service” (WMS)
- Overlays maps from multiple sources in a single, precisely-registered image.
- Provides frame of reference for defining alert areas

The logo for MapServer, featuring the word "MAPSERVER" in a stylized, outlined font with a light blue and green gradient.

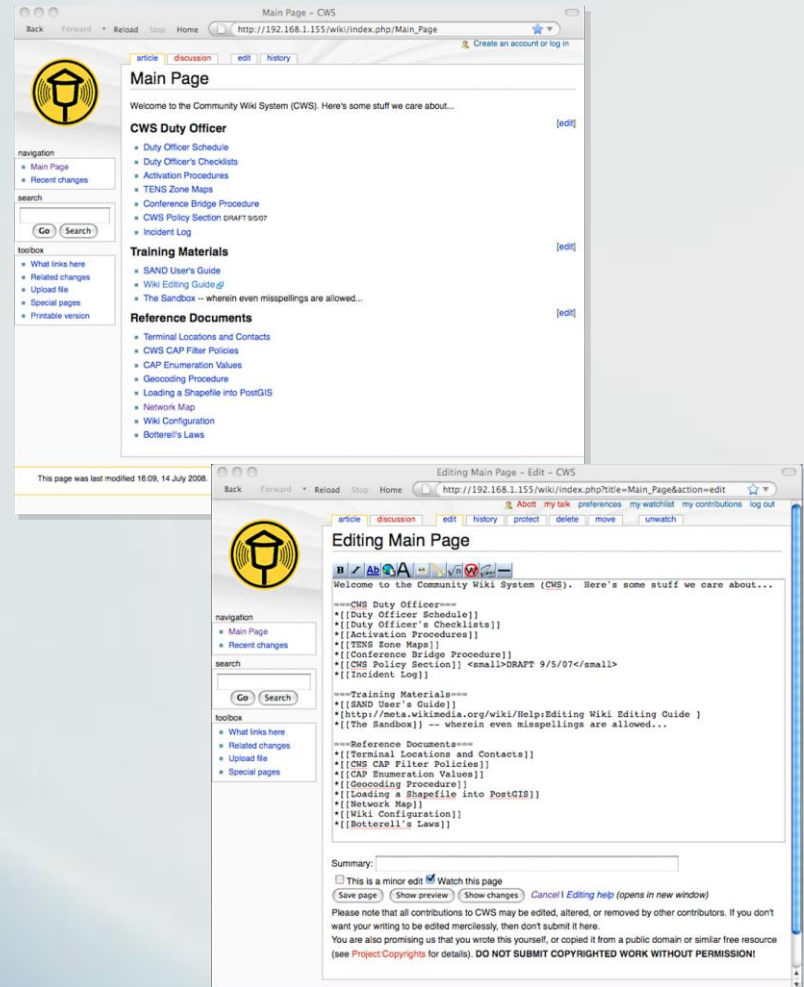
Jabber (XMPP)

- XML-based instant messaging and presence protocol.
- Visual “intercom” among control rooms and ops centers during emergencies.



Wiki

- A simple user-editable internal web service.
- Used for collaborative planning, maintenance of checklists and procedures
- Password protected, various access configurations possible



OpenVPN

- Encrypted connection back to CWS network.
- Allows secure network access from laptops using 3G wireless data connection or other Internet



A screenshot of the OpenVPN website homepage. The browser address bar shows "http://openvpn.net/". The page features the OpenVPN logo at the top left, a search bar at the top right, and a navigation menu with links for Home, About, Downloads, Licensing, and Documentation. A prominent banner on the right side displays the "InfoWorld BOSSIE AWARDS Best of Open Source Software" logo. The main content area includes a "Welcome to OpenVPN About OpenVPN" section with a detailed description of the software's capabilities, such as remote access, site-to-site VPNs, and Wi-Fi security. Below this, there are sections for "OpenVPN combines security with ease-of-use" and "Looking Ahead". On the right side of the page, there are three vertical sections: "COMING SOON!" listing the OpenVPN Tool Box Value Add Package, "WHAT'S NEW" listing the OpenVPN 2.1 release, and "UPCOMING EVENTS" listing an exhibit at Interop, New York 2008.

Other FOSS at CWS

- Ubuntu Linux
- Postgresql and PostGIS
- Apache & Tomcat
- DMIS OPEN

Links

- Mapserver
 - <http://mapserver.gis.umn.edu>
 - <http://geoserver.org> (*another one*)
- Jabber
 - <http://www.jabber.org> (*the protocol*)
 - <http://www.igniterealtime.org> (*OS software*)
- Wiki
 - <http://www.mediawiki.org>
- OpenVPN
 - <http://openvpn.net>