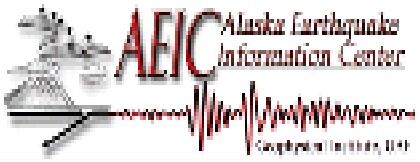

Alaska Earthquake Information Center

University of Alaska Fairbanks

Configuring an iMac as an Earthquake Notification System

AEIC Internal Report 2008-06

by Glenn Thompson

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This is an overview of how to setup an iMac intended for an Emergency Operations Center (EOC). Seven of these iMac's have been deployed at EOC's in Fairbanks, Anchorage, Fort Richardson, Seward, Soldotna, Valdez and Kodiak. There is an identical setup on the iMac that is part of the AEIC display wall. Another iMac, purchased by Bill Witte, was similarly configured for displaying earthquake information in the Reichardt building.

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1 Purchasing

1.1 Buy the iMac at UAF Technology Centre. This involves filling out a purchase order in FrameMaker, getting Roger to sign it, then walking it through the Business Office and getting Roger Smith/Jan Dalrymple to sign it off.

1.2 It is also necessary to buy 3-button mice, miniDVI to DVI adapters, and 24 inch monitors.

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2 Systems administration

2.1 MacOS should already be installed, and the airport (wireless network adapter) should find the GI wireless network. For initial configuration its necessary to enter some locality info and create an admin account (e.g. glenn or mitch).

2.2 Create the eoc account as an adminstrator too under System Preferences -> Users.

2.3 Login as eoc.

2.4 Install X11. Put in MacOS CD 1 and scroll down to "Optional Installs". Select X11 under the Applications list after getting through the agreement stuff.

2.5 Install XCode Tools from MacOS CD1. This is needed to make and compile code for Antelope and other applications. There is a folder 'Xcode Tools' and beneath this just double-click the XcodeTools.mpkg icon.

2.6 Applications -> Utilities -> NetInfoManager. Change shell for all accounts (e.g. eoc) to tcsh.

2.7 System Preferences -> Display -> Arrangement

Swap the positions of the monitors so that the 23 inch monitor is on the left. Then dbevents will start in the right place. The tops of the two screens should be level – this means dbevents will be displayed correctly, but the downside is the center line displaces windows.

2.8 System Preferences -> Software Update

Deselect 'Check for updates'

2.9 System Preferences -> Energy Saver

Options -> Automatically restart after power failure

Sleep ->

Computer to sleep after: Never

HD to sleep after: Never

HD to sleep when poss: Hard drive never sleep

2.10 System Preferences -> Screen Saver -> Never

2.11 Put Applications/Utilities/X11 in the dock at bottom of screen

2.12 Remove unnecessary applications from the dock (drag to trash)

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3 Installing Antelope

3.1 Borrow Antelope 4.9 CD from Mitch.

3.2 Create a shortcut to the Apache server:

sudo chmod 777 /Library/Webserver/Documents

ln -s /Library/Webserver/Documents /Users/eoc/webserver

3.3 Go under System Preferences -> Sharing, Enable Personal Web Sharing (Apache webserver).

3.4 sudo vi /etc/ssh_config, uncomment the line for ForwardX11 and set to yes.

3.5 sudo vi /etc/sshd_config, uncomment the line for X11Forwarding and set to yes.

3.6 cd /Volumes/Antelope_4.9

3.7 ./Install_antelope

3.8 Enter licence information.

Name: Glenn Thompson
email: glenn@giseis.alaska.edu
institution: University of Alaska Fairbanks
department: seismology
address line 1: 903 Koyukuk Drive
city: Fairbanks
state: AK
country: USA
zip: 99775

3.9 Start the install.

3.10 email the file BRTT-license-request to register@brtt.com (using HoTMaiL or Gmail).

3.11 Customize – runs setup_site to configure Antelope for your network (pfecho site.pf)

Seed Network: AK
Institution: AEIC
Originating Institution: Geophysical Institute, UAF
Mail domain: giseis.alaska.edu
Mailhost: kiska

3.12 Apply patches (starts antelope_update).

3.13 Install licence (when it comes from BRTT)

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4 Installing AEIC extensions for EOC Project

4.1 cd to /Users/eoc.

4.2 On the Sun build a current version of setup.tar:

(i) cd /home/glenn/dev/src

(ii) make

(iii) cd /home/glenn/EOC_PROJECT/FTP

(iv) make

4.3 Download setup.tar to /Users/eoc: With Safari, simply go to ftp://giseis.alaska.edu/pub and cd to USERS/glenn/EOC_PROJECT. Download the file, which might end up on Desktop, and move it to /Users/eoc.

4.4 Uncompress setup.tar with tar -xvf setup.tar in an X11 window. This will create a directory tree home/glenn/EOC_PROJECT/FTP/ in the local directory “/Users/eoc”.

4.5 mv home/glenn/FTP/EOC_PROJECT/Users/eoc/* .

mv home/glenn/FTP/EOC_PROJECT/Users/eoc/.* .

4.6 rm -r hom*

4.7 Next we want to test the audio capabilities. To do this simply type the following at the xterm prompt:

test_audio

The announcement should be 'Earthquake In''. (Note: on Bill Witte's computer I had to create a symbolic link /bin/awish to /usr/local/bin/wish to get tcl programs to work. I also downloaded and instaklled ActiveTcl but I think this is obsolete).

4.8 Check that ORBCH in rtexec.pf has the ip address for inverse (137.229.32.208:6510) rather than inverse.giseis.alaska.edu:6510.

4.9 Start the cronjob for run_rtexec:

crontab cronfile

Congratulations! You have successfully completed the installation of Antelope for an EOC.

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5 Installing CISN_Display

5.1 To install CISN_Display, first you need to register the new user at:

http://www.cisn.org/software/cisndisplay.html

To access this, my details are:

username: glenn@giseis.alaska.edu

passwd: pibsih

reg code: LUKR2D (old codes were XYBZ4Q and 6SYN7).

5.2 You will be asked to enter the name and URL of the organisation, and a contact name and email. Address details are optional. This should result in your contact being sent an email. Ask them to forward you this so you can complete their registration for them.

5.3 CISN_Display should be downloaded from the website, and installed under the eoc account.

5.4 Change the configuration/settings for CISN_Display:

Filters:

minimum magnitude 2.0 (this is to show up in event list, 3.0 is needed to trigger an alarm)

maximum event age displayed (days) 1.0

minimum latitude 50.0

maximum latitude 72.0
minimum longitude -179.0
maximum longitude -130.0

Configuration:

maximum loaded events age 3.0
center latitude 61.5
center longitude -149.5
zoom scale 24000000
banner graphic AEIC

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6 Autorebooting

6.1 Enable the cronjob that makes sure rtexec is running whenever eoc is logged in:

cd /Users/eoc
crontab cronfile

6.2 System Preferences -> Accounts

Login Options -> automatically login as eoc
Login Items (eoc) ->

/Applications/CISN_Display/QWClient
/Applications/Utilities/X11

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7 Installing ImageMagick

This is needed for parseShakemapArchive.pl to be able to download and convert JPEGs to GIFs for display by dbevents_aeic (tcl/tk program):

7.1 To download:

Web browser, go to: http://www.imagemagick.org/script/binary-releases.php

Download the file: ImageMagick-universal-apple-darwin8.10.1.tar.gz (15.5 MB).

To get it from Sun:

Web browser, go to: ftp://giseis.alaska.edu/pub/USERS/glenn/EOC_PROJECT/downloads/

7.2 This will probably download to eoc's desktop, and be gunzipped automatically

7.3 mv /Users/eoc/Destop/downloads /downloads

7.4 cd /downloads

7.5 tar -xf Image*.tar

7.6 if .tcshrc has environment variables MAGICK_HOME & DYLD_LIBRARY_PATH & path including MAGICK_HOME/bin set it should work

These are the parameters that should appear in .tcshrc:

setenv MAGICK_HOME /downloads/ImageMagick-6.3.6

setenv DYLD_LIBRARY_PATH $MAGICK_HOME/lib

set path = ($MAGICK_HOME/bin $path)

---

8 How to install LWP::UserAgent

This is needed for parseShakemapArchive.pl to work:

8.1 If its not already in /downloads, download libwww_perl_5.805.tar.gz from CPAN, or from ftp://giseis.alaska.edu/pub/USERS/glenn/EOC_PROJECT/downloads/ .

8.2 cd /downloads

8.3 cp /Users/eoc/libwww*.tar .

8.4 tar -xf libwww*.tar

8.5 rm *.tar

8.6 cd libwww*

8.7 sudo perl Makefile.PL

8.8 sudo make (this step will fail if Xcode Tools not installed at 1.6)

8.9 sudo make test

8.10 sudo make install

8.11 exit

8.12 rm /Users/eoc/*.tar

8.13 /Users/eoc/.tcshrc file should have PERL5LIB setenv to "/opt/antelope/perl5.8.8/lib/site_perl/5.8.8"

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9 Enabling Remote Access

9.1 Go under System Preferences -> Sharing

9.2 Enable Remote Login (ssh).

9.3 Disable Personal Web Sharing (Apache webserver) and FTP Access.

9.4 Setup a sensible machine name under Sharing. Something like "AEIC_Soldotna_EOC", that will be helpful when remote logging in to the machine as a prompt.

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10 GoogleMaps programs: (Optional)

10.1 Copy events.html (from where?) to /Users/eoc/webserver

10.2 Apply for a new GoogleMaps PIN. Use the Google Account g*n@hotmail.co.uk, p*k.

10.3 At the top of every hour, /Users/eoc/webserver/events.xml should be (re)created. But in order to see this, the Apache webserver must be running (it will also tell you which domain address to use in applying for the GoogleMaps PIN above). Make sure it is under System Preferences.
