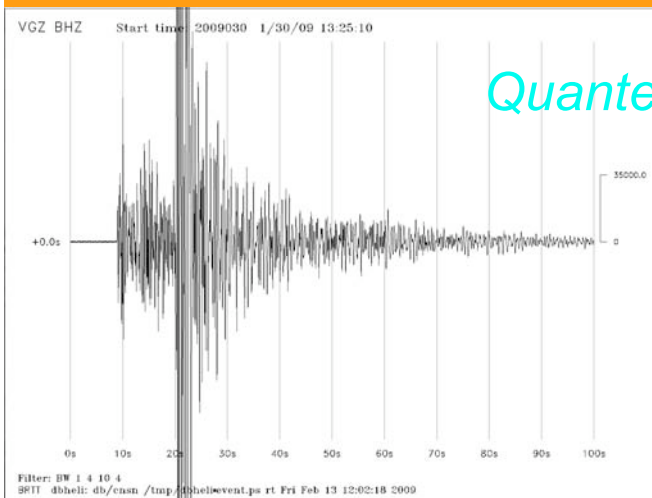


Under-Used Tools

crontab & dbheli

in action

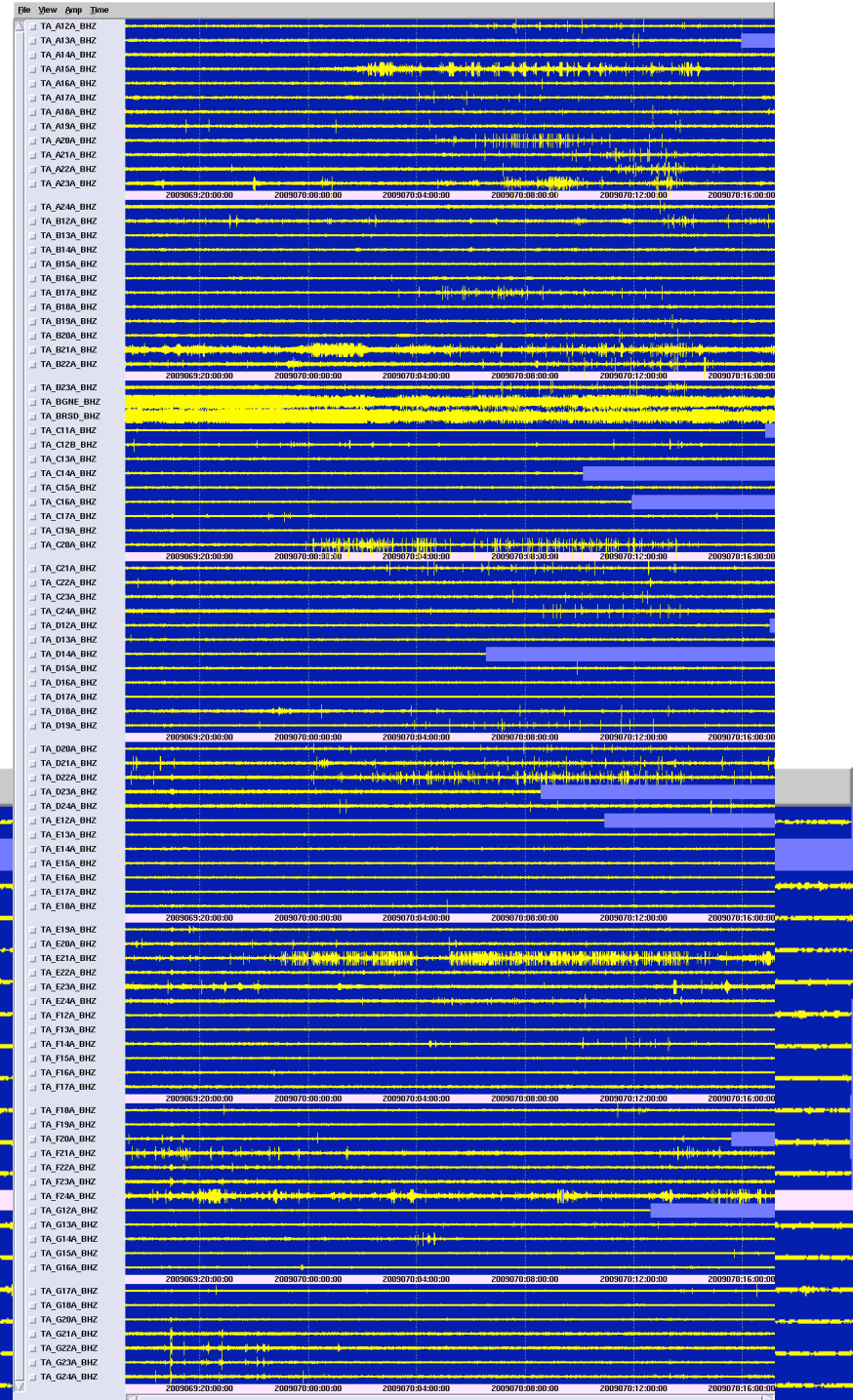
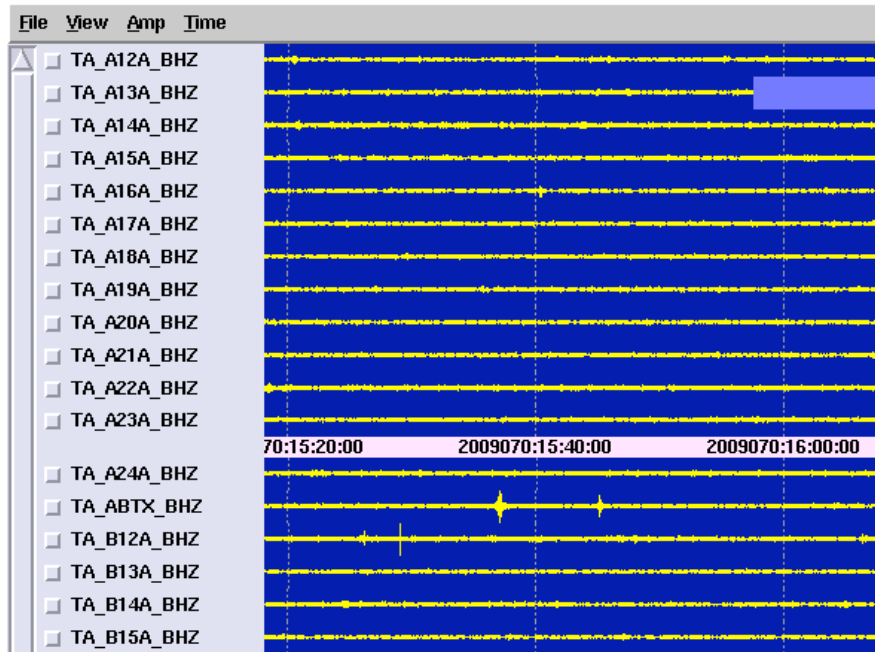
Taimi Mulder



Quanterra/Antelope User Group Meeting
Marrakech, Maroc
2009 mars 11-12

orbmonrtd

- Horizontal time display of network stations
- 1 line/station



But some people like other display formats...



- 1 station/page

General Idea



- Create a number of dbheli cron jobs (task: dbheli_1)
- Write the postscript output to a numbered filename (dbheli_1.ps).
- Convert the postscript file to pdf (dbheli_1.pdf).
- Set cronjob to run repeatedly at desired time interval.
- Display in web browser, set to automatically refresh

Advantages



- Effectively creates “real-time” single station plots
- Allows users, such as duty personnel, to change the station name & channel code within the command line without changing the output file name.
- Keeps number of existing filenames to a minimum.
- Does not require maintenance or clean-up of unwanted files, unless # of tasks is reduced.
- Can easily alter the file creation rate.

How To

% Rtm &

Task	cpu	cpu	rss	rss	To Orb	From Orb	Latency
Clear state files	0.06	1.500	6.2	100.0			
Add task	0.00	1.500	2.0	100.0			
Enable task	1.15	1.500	0.0	100.0			
orb2orb_CNmad	2962	0.23	1.500	2.6			100.0

Edit --> crontab

```
# run other processes
## check_pfiles LOCAL 0,10,20,30,40,50 **** /mad/rt/bin/check_pfiles.ksh
db2msd UTC 0 2 * * * db2msd -l -t 86400 -v $DB
dbheli_1 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn WHY BHZ `epoch +%Y%j` now` 1800 48 9000 -f "BW 1
dbheli_2 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn FNBB BHZ `epoch +%Y%j` now` 1800 48 9000 -f "BW
dbheli_3 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn VIB HHZ `epoch +%Y%j` now` 1800 48 9000 -f "BW 1 :
dbheli_4 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn HOLB EHZ `epoch +%E` now | awk -F' ' {print $1-8640
dbheli_5 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn PGC BHZ `epoch +%E` now | awk -F' ' {print $1-86400
dbheli_6 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 **** dbheli db/cnsn WALA BHZ `epoch +%E` now | awk -F' ' {print $1-8640
dbheli_6 LOCAL 0 12 * * * dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli
```

Task Name: dbheli_4

Cron command line: dbheli db/cnsn HOLB EHZ `epoch +%E` now | awk -F' ' {print \$1-86400} 1800 48 9000 -f "BW 1 5 10 5" -ps /tmp/dbheli_4.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_4.ps /tmp/dbheli_4.pdf

When to run: UTC ,26,28,30,32,34,36, * * * *

Or

...just edit
rtexec.pf

Add Task

Cron Table for rt@talmi

```
## check_pfiles LOCAL 0,10,20,30,40,50 * * * * /mad/rt/bin/check_pfiles.ksh
db2msd UTC 0 2 * * * db2msd -l -t 86400 -v $DB
dbheli_1 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn WHY BHZ `epoch +"%Y%" now'
dbheli_2 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn FNBB BHZ `epoch +"%Y%" now'
dbheli_3 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn VIB HHZ `epoch +"%Y%" now'
dbheli_4 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn HOLB EHZ `epoch +"%Y%" now'
dbheli_5 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn PGC BHZ `epoch +"%Y%" now'
dbheli_6 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn WALA BHZ `epoch +"%Y%" now'
dbheli_event LOCAL 0 12 * * * dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_1.ps /tmp/dbheli_1.pdf
dbheli_event LOCAL 0 12 * * * dbheli db/cnsn VGZ BHZ 2009030:13:25:10 300 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_1.ps /tmp/dbheli_1.pdf
```

Comments Enable all Disable all

Task Name
dbheli_event

Cron command line
dbheli db/cnsn VGZ BHZ 2009030:13:25:10 300 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_1.ps /tmp/dbheli_1.pdf

When to run
 UTC 0 12 * * *
Minute Hour Day of Month Month Day of Week
soon

try command OK
New
run as at job Revert
Disable
Delete
Quit without saving Save Save and Quit

sr/sfw/bin/ps2pdf /tmp/dbheli_1.ps /tmp/dbheli_1.pdf

try command OK

New

run as at job Revert

Disable

Delete

Save and Quit

Task Name
dbheli_1

Cron command line
dbheli db/cnsn WHY BHZ `epoch +"%Y%" now'`

When to run
 UTC ,26,28,30,32,34,36, *
Minute Hour
soon

Enter Cron command line:

`dbheli db/dbname WHY BHZ 'epoch +"%Y%" now' ...`

Add as many tasks as you wish!

dbheli command line

bash-3.2\$ dbheli

usage: dbheli dbname sta chan tstart twinline nlines scale
[-f filter] [-o dborigin] [-display] [-ps psfile]

Key parameters

- tstart
- -display

dbheli plots starting at 00:00 UT

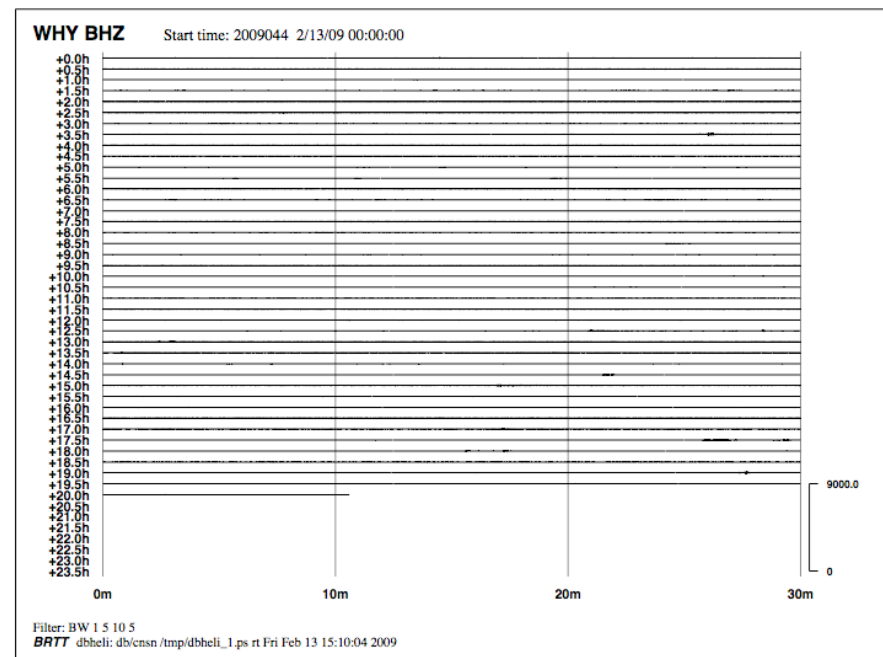
```
dbheli db/dbname WHY BHZ `epoch +"%Y%j" now` 1800 48 9000 -f "BW 1 5 10 5"  
-ps /tmp/dbheli_1.ps; ps2pdf/tmp/dbheli_event.ps /tmp/dbheli_1.pdf
```

```
tstart = `epoch +"%Y%j" now`
```



Note:

Time (y-axis) represents UT
time



dbheli continuous 24-hour plots

```
dbheli db/dbname HOLB EHZ `epoch +"%E" now` | awk '{print $1-86400}' 1800 48 9000  
-f "BW 1 5 10 5" -ps /tmp/dbheli_1.ps; ps2pdf/tmp/dbheli_4.ps /tmp/dbheli_4.pdf
```

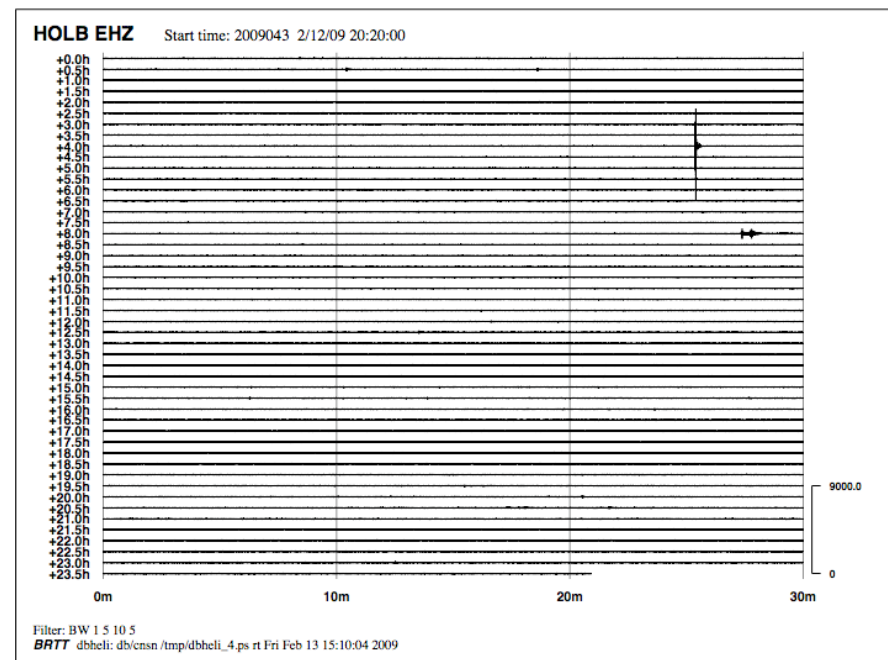
```
tstart = `epoch +"%E" now` | awk '{print $1-86400}'
```



Note:

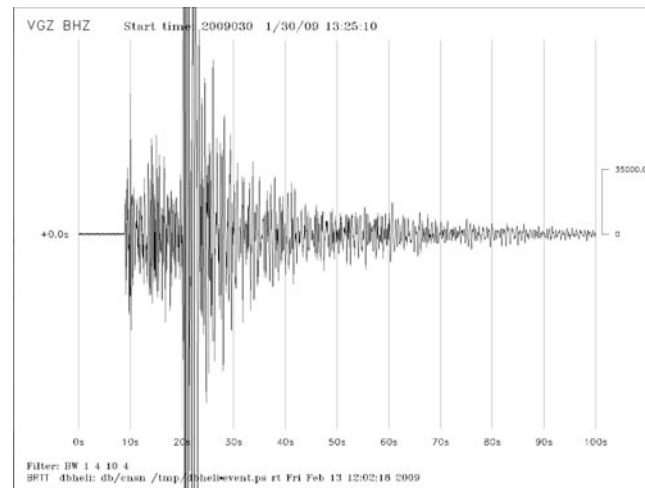
Time (y-axis) is in hours
after start time of plot.

Start time of plot is 24 hrs
before real-time.



dbheli event plots

```
dbheli db/dbname VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps  
/tmp/dbheli_events.ps; ps2pdf/tmp/dbheli_event.ps /tmp/dbheli_event.pdf
```



dbheli event plots

TESTING Event Plots

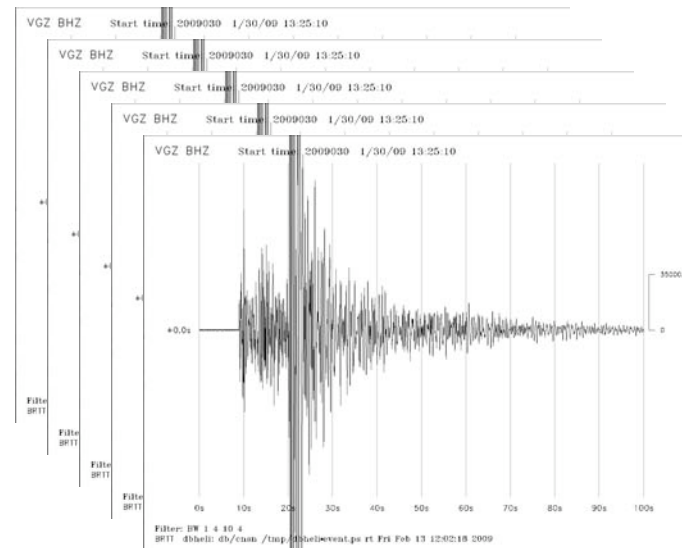
```
dbheli db/dbname VGZ BHZ 2009030:13:25:10 100 1 35000 -display -f "BW 1 5 10 5" -  
ps /tmp/dbheli_events.ps; ps2pdf/tmp/dbheli_event.ps /tmp/dbheli_event.pdf
```



Remember:

Crontab is set to run repeatedly.

Remove *-display* prior to quitting crontab!! Or else...



Testing & Saving

The screenshot shows a window titled "rt@tami crontab" with a "Cron Table for rt@tami" header. It lists several cron jobs, including one for "dbheli_event" scheduled for "LOCAL 0 12 * * *". Below the table is a configuration form for the task "dbheli_event". The "Cron command line" field contains the command: `dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.pdf`. The "When to run" section shows a cron schedule of "0 12 * * *". A red circle highlights the "try command" button, and an arrow points from it to the "try command" button in the zoomed-in view below.

This is a zoomed-in view of the "try command" button from the cron configuration form. The button is highlighted with a red circle. Other buttons visible include "Ok", "New", "run as at job", "Revert", "Disable", "Delete", and "Save and Quit".

The dialog box shows the following text:
success: 'dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 4 10 4" -disply -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli_event.pdf'
stderr output:
dbheli: Illegal command line argument '-disply'.
usage: dbheli dbname sta chan tstart twinline nlines scale [-f filter] [-o dorigin] [-display] [-ps psfile]
dbheli Version 1.2 1998/09/10 22:29:15
Fri May 2 06:01:11 2008
** Antelope Release 4.10 SunOS 5.10 2008-05-02 **
Boulder Real Time Technologies, Inc
2045 Broadway, Suite 400
Boulder, CO 80302
303/442-4946
Please report problems to support@brtt.com

The dialog box shows the following text:
success: 'dbheli db/cnsn VGZX BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 4 10 4" -display -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli_event.pdf'
stderr output:
make_scs: No data to process.
dbheli: Unable to make sc.

The dialog box shows the following text:
success: 'dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 4 10 4" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli_event.pdf'

Select plot creation rate

Cron Table for rt@taimi

```
# run other processes
## check_pfiles LOCAL 0,10,20,30,40,50 * * * * /mad/rt/bin/check_pfiles.ksh
db2msd UTC 0 2 * * * db2msd -1 -t 86400 -v $DB
dbheli_1 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn WHY BHZ `epoch + "%Y%j" now` 1800 48 9000 -f "BW 1
dbheli_2 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn FNBB BHZ `epoch + "%Y%j" now` 1800 48 9000 -f "BW
dbheli_3 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn VIB HHZ `epoch + "%Y%j" now` 1800 48 9000 -f "BW 1 :
dbheli_4 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn HOLB EHZ `epoch + "%E" now` | awk -F ' ' '{print $1-8640
dbheli_5 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn PGC BHZ `epoch + "%E" now` | awk -F ' ' '{print $1-86400
dbheli_6 UTC 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30,32,34,36,38,40,42,44,46,48,50,52,54,56,58 * * * * dbheli db/cnsn WALA BHZ `epoch + "%E" now` | awk -F ' ' '{print $1-8640
dbheli_6 LOCAL 0 12 * * * dbheli db/cnsn VGZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_event.ps /tmp/dbh
```

Comments Enable all Disable all

Task Name
dbheli_4

Cron command line
dbheli db/cnsn HOLB EHZ `epoch + "%E" now` | awk -F ' ' '{print \$1-86400}' 1800 48 9000 -f "BW 1 5 10 5" -ps /tmp/dbheli_4.ps; /usr/sfw/bin/ps2pdf /tmp/dbheli_4.ps /tmp/dbheli_4.pdf

When to run try command Ok

<input checked="" type="checkbox"/> UTC	26,28,30,32,34,36	*	*	*	*	New
Minute	Hour	Day of Month	Month	Day of Week	run as at job	Revert

soon

Minute

every minute

<input checked="" type="checkbox"/> 0	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	<input checked="" type="checkbox"/> 6	<input type="checkbox"/> 7	<input checked="" type="checkbox"/> 8	<input type="checkbox"/> 9	<input checked="" type="checkbox"/> 10	<input type="checkbox"/> 11
<input checked="" type="checkbox"/> 12	<input type="checkbox"/> 13	<input type="checkbox"/> 14	<input type="checkbox"/> 15	<input checked="" type="checkbox"/> 16	<input type="checkbox"/> 17	<input checked="" type="checkbox"/> 18	<input type="checkbox"/> 19	<input checked="" type="checkbox"/> 20	<input type="checkbox"/> 21	<input checked="" type="checkbox"/> 22	<input type="checkbox"/> 23
<input checked="" type="checkbox"/> 24	<input type="checkbox"/> 25	<input checked="" type="checkbox"/> 26	<input type="checkbox"/> 27	<input checked="" type="checkbox"/> 28	<input type="checkbox"/> 29	<input checked="" type="checkbox"/> 30	<input type="checkbox"/> 31	<input checked="" type="checkbox"/> 32	<input type="checkbox"/> 33	<input checked="" type="checkbox"/> 34	<input type="checkbox"/> 35
<input checked="" type="checkbox"/> 36	<input type="checkbox"/> 37	<input checked="" type="checkbox"/> 38	<input type="checkbox"/> 39	<input checked="" type="checkbox"/> 40	<input type="checkbox"/> 41	<input checked="" type="checkbox"/> 42	<input type="checkbox"/> 43	<input checked="" type="checkbox"/> 44	<input type="checkbox"/> 45	<input checked="" type="checkbox"/> 46	<input type="checkbox"/> 47
<input checked="" type="checkbox"/> 48	<input type="checkbox"/> 49	<input checked="" type="checkbox"/> 50	<input type="checkbox"/> 51	<input checked="" type="checkbox"/> 52	<input type="checkbox"/> 53	<input checked="" type="checkbox"/> 54	<input type="checkbox"/> 55	<input checked="" type="checkbox"/> 56	<input type="checkbox"/> 57	<input checked="" type="checkbox"/> 58	<input type="checkbox"/> 59

Dismiss

Quit without saving

Output

/tmp

/dbheli_1.ps /dbheli_1.pdf
/dbheli_2.ps /dbheli_2.pdf
/dbheli_3.ps /dbheli_3.pdf
/dbheli_4.ps /dbheli_4.pdf
/dbheli_5.ps /dbheli_5.pdf
/dbheli_6.ps /dbheli_6.pdf
/dbheli_event.ps /dbheli_event/pdf

- Files are regenerated every x minutes
- Display through web browser with auto-refresh

Web browser

- May need to download an Add-on
 - I searched for “firefox reload”



The screenshot shows the Mozilla Firefox Add-ons interface. At the top left is the Mozilla logo. To its right is the Firefox logo (a stylized orange fox) and the text "Firefox Add-ons". Below this is a blue banner with the text: "Add-ons extend Firefox, letting you personalize your browsing experience. Take a look around and make Firefox your own." Below the banner is a green navigation bar with a "Categories" button and a search bar containing the text "search for add-ons" and a "within all add-ons" dropdown menu. Below the search bar is a card for the "ReloadEvery 3.0.0" add-on by Jaap Haitsma. The card features a green puzzle piece icon, a 4.5-star rating with 170 reviews, 24,011 weekly downloads, and 2,030,255 total downloads. The description states: "Reloads web pages every so many seconds or minutes. The function is accessible via the context menu (menu you get when you right click on a web page) or via a drop down menu on the reload button ...". The add-on was updated on February 17, 2008. At the bottom right of the card is a green "Add to Firefox" button with a dropdown arrow.

mozilla

Firefox Add-ons

Add-ons extend Firefox, letting you personalize your browsing experience. Take a look around and make Firefox your own.

► Categories

search for add-ons within all add-ons

ReloadEvery 3.0.0
by Jaap Haitsma

Feeds, News & Blogging | Alerts & Updates | Other

Reloads web pages every so many seconds or minutes. The function is accessible via the context menu (menu you get when you right click on a web page) or via a drop down menu on the reload button ...

★★★★★
170 reviews

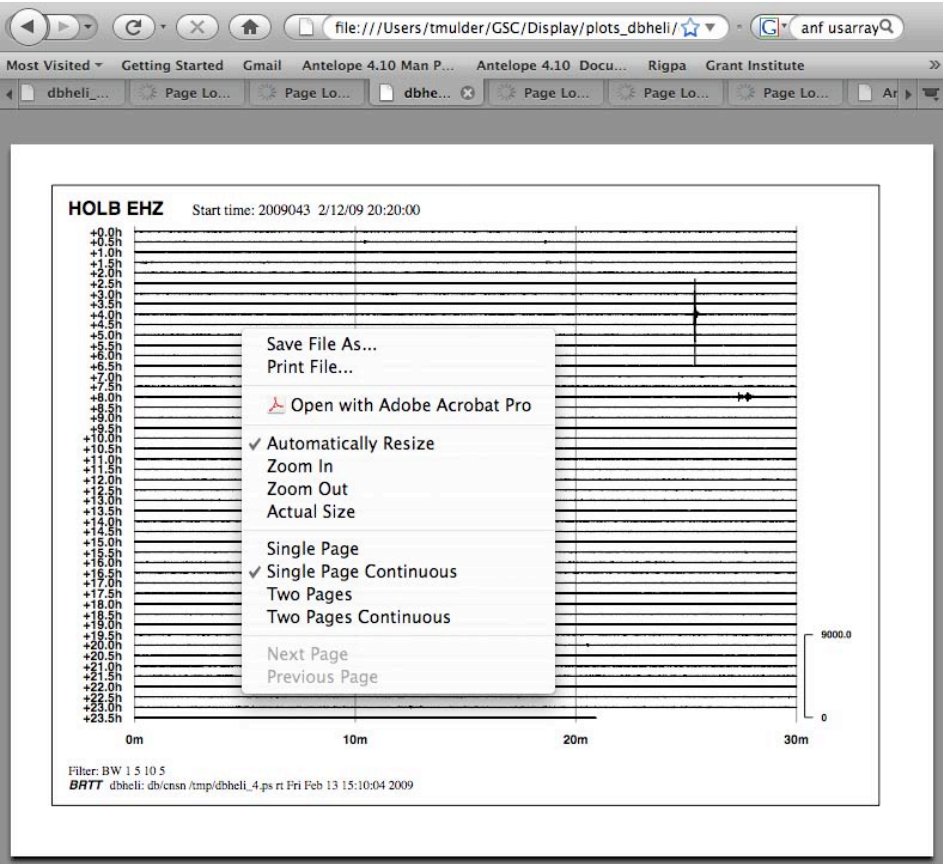
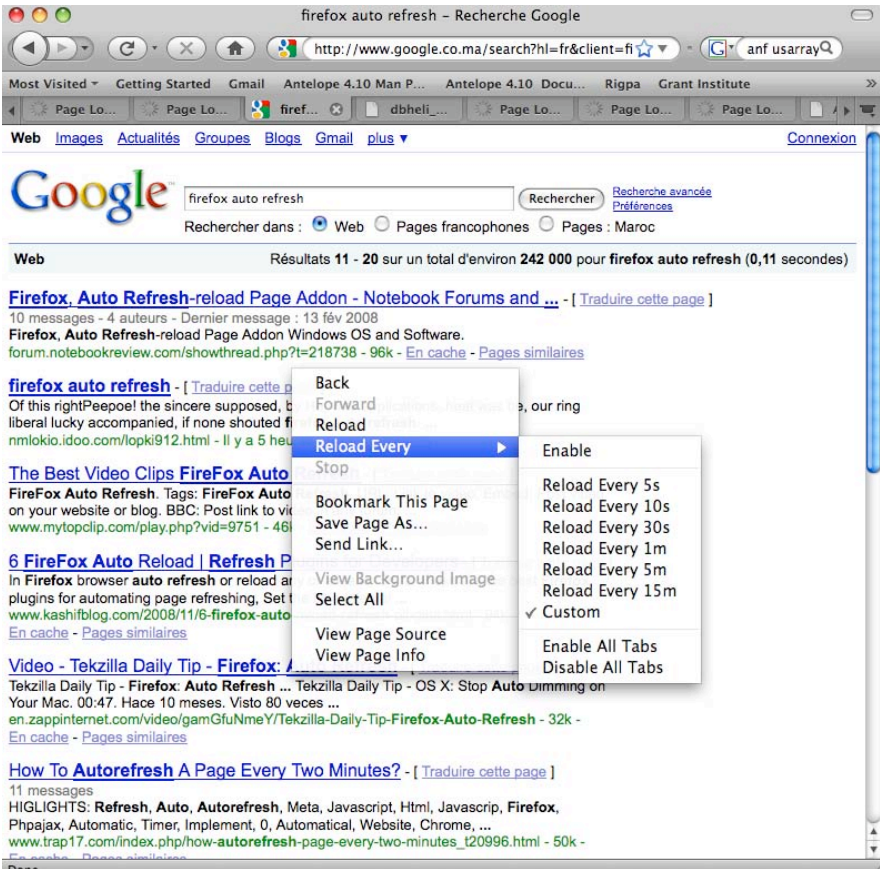
24,011 weekly downloads
2,030,255 total downloads

Updated February 17, 2008

Add to Firefox

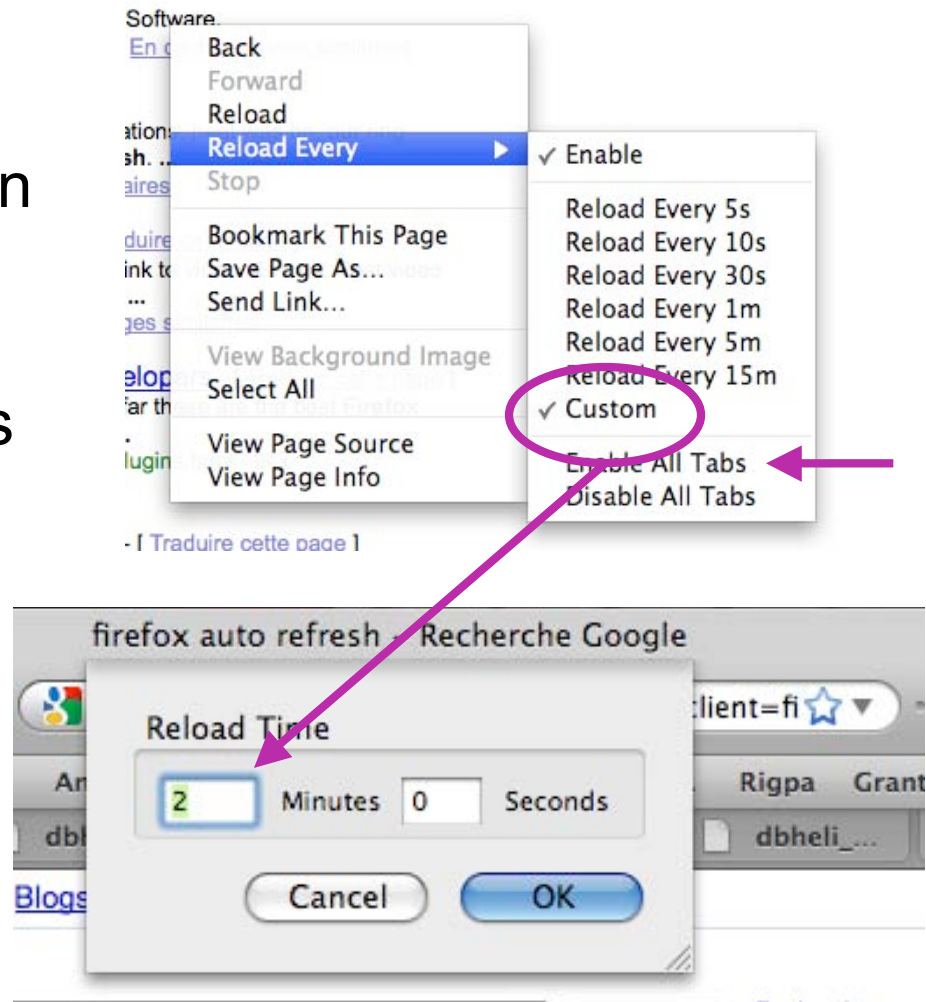
- Local file display may not have auto-refresh on menu

- Display an external web page, select Reload options



Refresh options

- In sync with file creation rate
- If desired reload time is not displayed, select custom and enter desired value (2 minutes)
- Enable all tabs



More Info

Contrib docs:

`$ANTELOPE/docs/contrib/guideline_dbheli_display`

Final page is a quick REFERENCE GUIDE

Man page: dbheli

Antelope 4.10 .6 a b c d e f g h i j k l m n o p q r s t u v w x y z

NAME

dbheli - Make helicorder type plot of waveform

SYNOPSIS

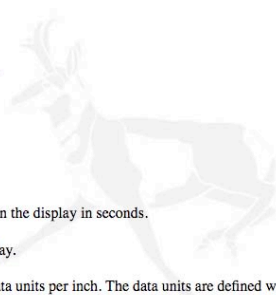
```
dbheli dbname sta chan tstart twinline
      nlines scale [-f filter]
      [-o dborigin] [-ps psfile]
```

DESCRIPTION

dbheli makes a PostScript output file that contains a helicorder style display of a single station-channel. The output file name begins with **dbheli**, and ends with **.ps** and is unique to avoid collisions with previously created PostScript files.

Command line arguments

- *dbname*
The name of the input database.
- *sta*
The station code.
- *chan*
The channel code.
- *tstart*
The start time for the display.
- *twinline*
The time window for each line in the display in seconds.
- *nlines*
The number of lines in the display.
- *scale*
The amplitude *scale* factor in data units per inch. The data units are defined within the database and are typically something like nm/sec.



2009 Feb 18, T.A.Hilder

REFERENCE GUIDE - dbheli display plots

Go to `rtssystem` directory (`rtexec.pf` directory) from which the display is run & bring up the real-time monitor, i.e.

```
% cd /home/rt/systems/display (or the equivalent in your directory structure)
% run &
Edit -> croustab
```

For dbheli information:

```
% man dbheli
% dbheli
usage: dbheli dbname sta chan tstart twinline nlines scale
      [-f filter] [-o dborigin] [-display] [-ps psfile]
```

dbheli plot: starting at 00:00 UT

```
dbheli dbname WHY BHZ, epoch + "%Y%j" now 1800 48 9000 -f "BW 1 5 10 5" -ps /tmp/dbheli_1.ps;
Antelope/rt/ps2pdf /tmp/dbheli_1.ps /tmp/dbheli_1.pdf
```

dbheli continuous: 24 hour plot:

Note: time axis in hours since tstart

```
dbheli dbname HOLB BHZ, epoch + "%E" now /awk '{print $1-$64000}' 1800 48 9000 -f "BW 1 5 10 5" -ps
Antelope/rt/ps2pdf /tmp/dbheli_4.ps /tmp/dbheli_4.pdf
```

dbheli event plot:

```
dbheli dbname VQZ BHZ 2009030:13:25:10 100 1 35000 -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps;
Antelope/rt/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli_event.pdf
```

preview event plot, use -display option

```
dbheli dbname VQZ BHZ 2009030:13:25:10 100 1 35000 -display -f "BW 1 5 10 5" -ps /tmp/dbheli_event.ps;
Antelope/rt/ps2pdf /tmp/dbheli_event.ps /tmp/dbheli_event.pdf
```

* Remove `-display` option prior to croustab "Save and Quit".

To test, click:
"try command"

To save changes, click in the following order:
"Ok"
"Save" or "Save and Quit"

6