

The background of the slide is a photograph of an ornate Moroccan interior. It features a central niche with a person playing a trumpet. The walls are decorated with intricate, repeating patterns, and a large, glowing lantern hangs from the ceiling. The overall atmosphere is warm and culturally rich.

# Event Notification with Antelope Software

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# Getting Started

## Read the man page !

### NAME

`orb_quake_alarm` - configurable email-based alarm module for Antelope

### SYNOPSIS

```
orb_quake_alarm [-p pfname] [-m match] [-r reject]  
                [-n maxpkts] [-S statefile] [-d dbname] [-v]  
                [-V]                orbname [start-time  
                [period|end-time]]
```

### DESCRIPTION

The `orb_quake_alarm` program monitors an orbserver for database rows representing hypocenters, and issues email-based alarms to recipients as specified in the `orb_quake_alarm` parameter file. Multiple alarms are specifiable, each with its own criteria for triggering, based on the contents of the input hypocentral parameters. The trigger conditions for alarms may be specified in terms of polygonal regions itemized in a database in places1.2 schema. Two extension tables for the css3.0 database schema, the `alarms` table and the `alarmcomm` table, optionally track all alarms that are issued as well as the addresses to which they were sent. Furthermore, if requested via the parameter file, `orb_quake_alarm` waits for acknowledgments of each alarm to appear in the database, optionally emailing additional recipients at configurable time-delays if an acknowledgment does not show up in the database in time (This feature allows system operators to configure a "calldown" list of email addresses to contact, to get the attention of the correct staff members with some provision to eliminate single points of failure). To limit the number of superfluous alarms sent to personnel, `orb_quake_alarm` only registers one alarm per event for each alarm-condition that is configured (each `alarmname`, as described in more detail below). A companion extension to the Antelope [mail\\_parser\(1\)](#) utility, documented in the man page [mp\\_oqalarm\\_ack\(3p\)](#), may be used to set up acknowledgment of alarms based on emails sent back to the real-time system (this is designed to allow duty personnel to send alarm-acknowledgment emails from SMS-enabled cell phones). The only required command-line argument for `orb_quake_alarm` is the name (`orbname`) of the orbserver to which to connect. However, most users may want to specify a tracking database with `-d dbname`, in which to save emailed alarms. Without this database, the alarm-acknowledgment and calldown features are

# Execution & Output

# Orb\_quake\_alarm OUTPUT

Run as a process in rtextec.pf

```
orb_quake_alarm orb_quake_alarm -S state/orb_quake_alarm -d db/quake -V $ORB
```

```
$ ls 2008
```

```
001 013 025 037 054 073 088 099 112 126 145 162 174 190 201 212 223 235 249 261 274 286 301
002 014 026 041 056 074 089 100 113 127 146 164 175 191 202 213 224 236 250 262 275 287 302
003 015 027 043 059 077 090 101 114 128 147 165 176 192 203 214 225 238 251 263 276 288 303
005 017 028 045 060 078 091 102 115 130 149 166 177 193 204 215 226 239 252 264 277 289 304
006 018 029 046 063 080 092 103 117 131 150 167 178 194 205 216 227 240 253 265 279 290 305
007 019 030 047 065 082 093 104 118 132 151 168 181 195 206 217 228 241 254 266 280 291 308
008 020 032 048 066 083 094 105 119 133 153 169 182 196 207 218 229 242 255 267 281 293 309
009 021 033 049 067 084 095 106 120 136 154 170 183 197 208 219 230 243 256 270 282 294 310
010 022 034 050 068 085 096 107 121 137 155 171 184 198 209 220 231 245 258 271 283 296
011 023 035 051 069 086 097 108 122 138 157 172 186 199 210 221 232 247 259 272 284 297
012 024 036 052 070 087 098 111 125 143 159 173 189 200 211 222 233 248 260 273 285 298
```

```
$ ls db/2008/310
```

```
alarmid_1524.2008:310:00:00:46
alarmid_1526.2008:310:20:47:34
alarmid_1525.2008:310:00:00:46
alarmid_1527.2008:310:20:47:34
```

## Notification messages: Email text to cell, Email to Inbox

\$ cat 2008/310/alarmid\_1527.2008\310\20\47\34

2008-11-05 12:45 08.448 PST (Wednesday) orbassoc mag, 50.4220,-121.0717, Evid 332036, alarmid 1527

\$ cat 2008/310/alarmid\_1526.2008\310\20\47\34

This is an automatic earthquake solution from the *insert name of your institution here*

Please DO NOT DISSEMINATE this automatic solution.

Lat: 50.4220

Lon: -121.0717

Depth: 0.0000 km

Time: 2008-11-05 20:45 08.448 UT (Wednesday)

2008-11-05 12:45 08.448 PST (Wednesday)

Magnitude: 1.71 ML

6 phases used in solution

This earthquake was:

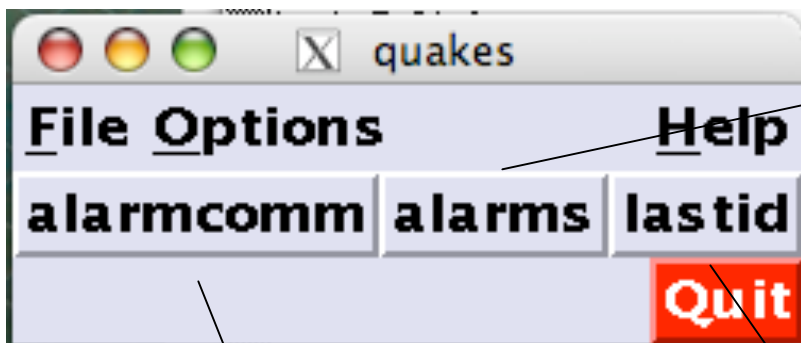
60 km WSW of Kamloops

113 km NNW of Princeton

119 km NNE of Hope

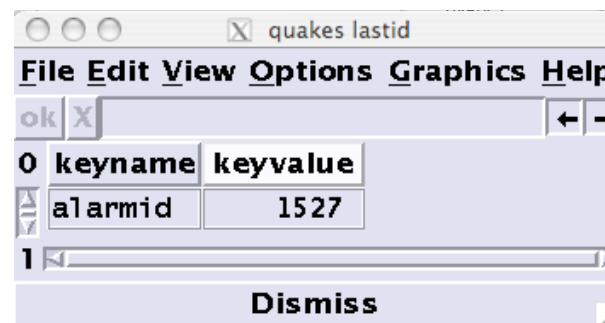
For more information monitor <http://www.earthquakes>  
or call 250-363-6500. Analysts reviewed solutions will be  
posted to the web as soon as they are available.

# db/quakes



alarmid	alarmkey	alarmclass	alarmname	time
1	evld25262	hypocenter	pgc_auto_ema11	2007-10-18 (291) 23:19:45.45331
2	evld25262	hypocenter	pgc_beeper_duty	2007-10-18 (291) 23:19:45.48894
3	evld25506	hypocenter	pgc_auto_ema11	2007-10-20 (293) 20:07:07.21313
4	evld25506	hypocenter	pgc_beeper_duty	2007-10-20 (293) 20:07:07.26270
5	evld25524	hypocenter	pgc_auto_ema11	2007-10-20 (293) 21:05:41.94022
6	evld25524	hypocenter	pgc_beeper_duty	2007-10-20 (293) 21:05:41.96897
7	evld25591	hypocenter	pgc_auto_ema11	2007-10-21 (294) 10:59:59.95693
8	evld25591	hypocenter	pgc_beeper_duty	2007-10-21 (294) 11:00:00.00558
9	evld25711	hypocenter	pgc_auto_ema11	2007-10-22 (295) 10:01:45.31477
10	evld25711	hypocenter	pgc_beeper_duty	2007-10-22 (295) 10:01:45.35354
11	evld46166	hypocenter	pgc_auto_ema11	2007-10-24 (297) 13:50:19.32944
12	evld46166	hypocenter	pgc_beeper_duty	2007-10-24 (297) 13:50:19.47447
13	evld58836	hypocenter	pgc_auto_ema11	2007-10-26 (299) 23:43:05.73394
14	evld58836	hypocenter	pgc_beeper_duty	2007-10-26 (299) 23:43:05.79164
15	evld58838	hypocenter	pgc_auto_ema11	2007-10-27 (300) 00:02:10.65574
16	evld58838	hypocenter	pgc_beeper_duty	2007-10-27 (300) 00:02:10.69604
17	evld58845	hypocenter	pgc_auto_ema11	2007-10-27 (300) 02:21:39.21931
18	evld58845	hypocenter	pgc_beeper_duty	2007-10-27 (300) 02:21:39.30485
19	evld58909	hypocenter	pgc_auto_ema11	2007-10-27 (300) 15:59:06.09137
20	evld58909	hypocenter	pgc_beeper_duty	2007-10-27 (300) 15:59:06.17700
21	evld58960	hypocenter	pgc_auto_ema11	2007-10-28 (301) 03:20:15.23311
22	evld58960	hypocenter	pgc_beeper_duty	2007-10-28 (301) 03:20:15.28296
23	evld59031	hypocenter	pgc_auto_ema11	2007-10-28 (301) 19:42:58.94505
24	evld59031	hypocenter	pgc_beeper_duty	2007-10-28 (301) 19:42:58.96778
25	evld59093	hypocenter	pgc_auto_ema11	2007-10-29 (302) 08:44:03.12104

alarmid	time	recipient	delaysec
1	2007-10-18 (291) 23:19:45.86510	albird@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:46.50105	bal.detr@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:46.87869	bertkwest@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:47.22048	hkaol@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:47.52041	info@seismo.nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:48.10832	jcassidy@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:48.51575	rogersa@pgc.nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:48.94749	smazzott@nrcan.gc.ca	0.0
1	2007-10-18 (291) 23:19:49.31337	woodgol@seismo.nrcan.gc.ca	0.0
2	2007-10-18 (291) 23:19:49.57140	2508582420@txt.bell.ca	0.0
3	2007-10-20 (293) 20:07:07.93421	albird@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:08.58756	bal.detr@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:08.89946	bertkwest@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:09.17530	hkaol@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:09.46307	info@seismo.nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:09.75105	jcassidy@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:10.07487	rogersa@pgc.nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:10.33610	smazzott@nrcan.gc.ca	0.0
3	2007-10-20 (293) 20:07:10.66256	woodgol@seismo.nrcan.gc.ca	0.0
4	2007-10-20 (293) 20:07:10.95002	2508582420@txt.bell.ca	0.0
5	2007-10-20 (293) 21:05:42.29492	albird@nrcan.gc.ca	0.0
5	2007-10-20 (293) 21:05:42.68011	bal.detr@nrcan.gc.ca	0.0
5	2007-10-20 (293) 21:05:43.17773	bertkwest@nrcan.gc.ca	0.0
5	2007-10-20 (293) 21:05:43.45093	hkaol@nrcan.gc.ca	0.0
5	2007-10-20 (293) 21:05:43.73268	info@seismo.nrcan.gc.ca	0.0



Input

# orb\_quake\_alarm.pf

(have patience, this is a bit long)

```
message_expressions &Arr{
    gmt_time          epoch2str(time,"%Y-%m-%d %H:%M %S.%s UT (%A) ")
    local_time        epoch2str(time,"%Y-%m-%d %H:%M %S.%s %Z (%A)", "")
    beeper_mag        ml != NULL ? "ML " . ml : ( mb != NULL ? "Mb " . mb : ( ms != NULL ?
    "MS " . ms : "No mag" ) )
    email_mag         ml != NULL ? ml . " ML" : ( mb != NULL ? mb . " Mb" : ( ms != NULL ?
    ms . " MS" : "insufficient data for automatic solution" ) )
    grname            grname(lat,lon)
}
```



# orb\_quake\_alarm.pf (cont)

```
alarms &Arr{
  hypocenter &Arr{
    beeper_duty &Arr{
      trigger_condition &Literal{
        ndef > 5 &&
        ( %in(Southwestern BC)} ||
        %in(Offshore Vancouver Island)} ||
        %in(Queen Charlotte Islands)} ||
        %in(Canada west) )
      }
    # subject %beeper_mag, %ndef ph, %grname}
    subject %beeper_mag, %ndef ph
    body &Literal{
      %local_time %auth, %lat,%lon, Evid %evid, alarmid %alarmid}
    }
    wait_ack 1
    ack_subject Acknowledgment for alarmid %alarmid}
    ack_body Cancelled by %ackauth at %acktime}
    recipients &Arr{
      2503808599@msg.telus.com 0 # TM - PGC
      2505146724@pcs.rogers.com 0 # JC - PGC
      2508582420@txt.bell.ca 0 # MB - PEP
    }
  }
}
```

# orb\_quake\_alarm.pf (cont)

```
auto_email  &Arr{
    trigger_condition ndef > 5
    wait_ack    0
    ack_subject
    ack_body
    subject      Eq %{email_mag} at %{lat}, %{lon}, %{nearest(1)}
    body &Literal{
```

This is an automatic earthquake solution from the *insert name of your institution here*

Please DO NOT DISSEMINATE this automatic solution.

```
Lat:    %{lat}
Lon:    %{lon}
Depth:  %{depth} km
Time:   %{gmt_time}
        %{local_time}
```

Magnitude: %{email\_mag}

%{ndef} phases used in solution

This earthquake was:

```
%{nearest(1)}
%{nearest(2)}
%{nearest(3)}
```

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or call 250-363-6500. Analysts reviewed solutions will be  
posted to the web as soon as they are available.

```
}
```

# orb\_quake\_alarm.pf (cont)

```
recipients &Arr{
    jeakins@ucsd.edu          0
    kentlindquist@lindquistconsulting.com 0
    taimimulder@gmail.com    0
    muriel.naguit@gmail.com  0
    dwijendra@adpc.net       0
}
}
}
```

```
placedb ./cities_canadawest_short
placedb_branchcut_deg 360
```

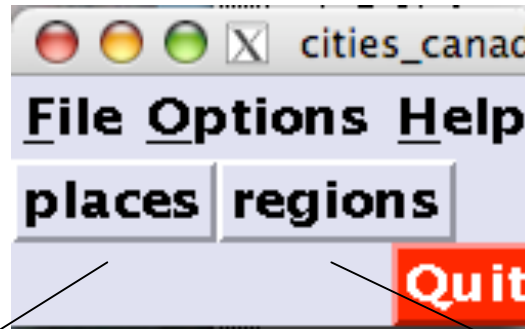
```
max_ack_wait_sec 10800
```

```
alarm_dbfilenames %Y/%j/alarmid_{alarmid}.%Y:%j:%H:%M:%S
```

```
pf_revision_time 1138395427
```

# places database

Schema: places1.2



A screenshot of a database view titled "cities\_canadawest\_short places". The table contains the following data:

lat	lon	place	placetype	state	lddate
49.0500	-122.2830	Abbotsford		BC	2006-03-22 (081) 20:15:02.49424
82.5050	-62.3500	Alert		NT	2006-03-22 (081) 20:28:49.69577
61.2170	-149.9000	Anchorage		AK	2004-11-26 (331) 21:30:11.88127
64.3200	-96.0200	Baker Lake		NT	2004-11-26 (331) 21:30:11.93048
51.1720	-115.5580	Banff		AB	2004-11-26 (331) 21:30:11.97837
52.1500	-128.1170	Bella Bella		BC	2004-11-26 (331) 21:30:12.03330
52.3830	-126.7500	Bella Coola		BC	2004-11-26 (331) 21:30:12.07955
45.7800	-108.5100	Billings		MT	2004-11-26 (331) 21:30:12.12828
49.8330	-99.9500	Brandon		MB	2006-03-27 (086) 20:08:01.60773
51.0500	-114.0830	Calgary		AB	2006-03-22 (081) 20:15:25.37799
50.0170	-125.3330	Campbell River		BC	2006-03-22 (081) 20:15:29.56180
49.1670	-121.9500	Chilliwack		BC	2006-03-22 (081) 20:15:45.31387
58.7600	-94.0900	Churchill		MB	2004-11-26 (331) 21:30:12.40804
67.8330	-115.0830	Coppermine		AB	2006-03-22 (081) 20:16:41.68220
49.6830	-124.9830	Courtenay		BC	2006-03-22 (081) 20:17:05.31440
49.5000	-115.7670	Cranbrook		BC	2006-03-22 (081) 20:17:09.60250
64.0670	-139.4330	Dawson		YT	2006-03-22 (081) 20:17:15.80239
55.7670	-120.2330	Dawson Creek		BC	2006-03-22 (081) 20:17:20.96235
58.4370	-130.0270	Dease Lake		BC	2006-03-22 (081) 20:17:30.43872
48.7830	-123.7000	Duncan		BC	2006-03-22 (081) 20:17:30.46580
53.5500	-113.4670	Edmonton		AB	2006-03-22 (081) 20:17:33.99442
50.4000	-102.0200	Esterhazy		SK	2004-11-26 (331) 21:30:12.83647
64.8360	-147.7100	Fairbanks		AK	2004-11-26 (331) 21:30:12.88467
54.7670	-101.8830	Flin Flon		MB	2006-03-22 (081) 21:26:21.74092
65.1830	-123.4330	Fort Franklin		NT	2006-03-22 (081) 20:33:12.94636

A screenshot of a database view titled "cities\_canadawest\_short regions". The table contains the following data:

regname	vertex	lat	lon
Southwestern BC	1	47.0000	-121.0000
Southwestern BC	2	47.0000	-125.0000
Southwestern BC	3	50.7500	-129.0000
Southwestern BC	4	52.0000	-124.0000
Southwestern BC	5	49.0000	-121.0000
Offshore Vancouver Island	1	47.0000	-125.0000
Offshore Vancouver Island	2	47.0000	-130.0000
Offshore Vancouver Island	3	52.0000	-131.0000
Offshore Vancouver Island	4	50.7500	-129.0000
Queen Charlotte Islands	1	52.0000	-131.0000
Queen Charlotte Islands	2	54.0000	-133.0000
Queen Charlotte Islands	3	54.7000	-133.0000
Queen Charlotte Islands	4	54.7000	-130.0000
Queen Charlotte Islands	5	52.0000	-130.0000
Canada west	1	48.0000	-143.0000
Canada west	2	72.0000	-143.0000
Canada west	3	72.0000	-101.0000
Canada west	4	48.0000	-101.0000
Canada east	1	46.0000	-101.0000
Canada east	2	75.0000	-101.0000
Canada east	3	75.0000	-75.0000
Canada east	4	46.0000	-75.0000

# Finishing notes

Prior related programs have been deprecated:

orb\_quake\_cell

orb\_quake\_email

Man page index:

- [orb\\_quake\\_alarm\(1\)](#): configurable email-based alarm module for Antelope
- [orb\\_quake\\_cell\(1\)](#): email to cell phones reports of earthquakes from origin rows on orb
- [orb\\_quake\\_email\(1\)](#): email reports of earthquakes from origin rows on orb

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