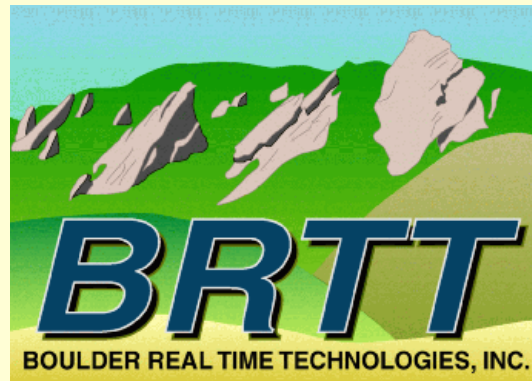




What's New in Antelope



Dr. Kent Lindquist

May, 2014

Baku, Azerbaijan AUG

Overview

- Administrative
 - Recap announcements
 - *Linux* and *Apple*—no more *Solaris*
 - *support@brtt.com*
 - Operational changes at BRTT
 - ISO Download for Customers
 - Tokenized Licenses
- Antelope 5.4 and Peregrine



Administrative



Recap: Solaris, Apple, Linux

- Antelope 5.3 was the last release on Solaris.
 - *Solaris support is over.*
- Uncertainty of Apple hardware future
 - We still fully support Apple
 - Cannot depend on Apple for enterprise-class hardware
 - Antelope 5.4 Needs OSX Mountain Lion (10.8.5) or above
- BRTT fully supports Linux as a platform for enterprise-class systems
 - BRTT fully supports RHEL and CentOS 6.2 in the Antelope 5.4 release



Operational Changes at BRTT: Support

- Improved support responses via email and web
<https://brtt.zendesk.com>
- Always get an automated reply with a ticket number
- Provides BRTT staff with coordinated support response tools
- You can go to the web site to see current and old support requests
- You can access your support requests from any web browser
- Our web site (www.brtt.com) describes this in more detail
- **YOU ABSOLUTELY MUST USE**
support@brtt.com
- **WE WILL NO LONGER RESPOND TO SUPPORT REQUESTS TO OUR INDIVIDUAL ADDRESSES**



Operational Changes



Operational Changes at BRTT: Distribution

- New download site for paying customers
 - http://www.brtt.com/customer_download.html
 - Much more convenient than CD distribution
 - Downloads are logged by customer
 - Makes sure everyone has latest ISO
 - Eases notification upon problems
 - Allows us to make large updates when necessary



Operational Changes at BRTT: Further Licensing Improvements

- Customer ID assigned by BRTT
- Tokenized licenses
 - Human-readable
 - Enhanced *check_license* program
 - *check_license -v*
 - Looks for the first license line applicable to the machine
 - Also runs the new *licsnapshot* program
 - Single-line licenses. *Make sure it's on a single line.*
 - If you modify the license line, it will break
 - Still goes in *\$ANTELOPE/data/pf/license.pf*

key=*****

product=Antelope version=5.4 custid=USA/BRTT/Evaluation

lictype=node serial=**3F82ZQ****

a=netops count=0 expires=2016 Jun 01



Operational Changes at BRTT: Software Audit

- ***For Antelope 5.4:***
 - New naming convention
 - Deprecated: **_dep*
 - Preliminary: **_pre*
 - Experimental: **_exp*
- ***For Antelope 5.5:*** Conducted audit of entire code base
 - *Will implement the audit results for Antelope 5.5, next year*
 - Removing little-used programs and libraries
 - No more *libproj*
 - No more *VOGL* graphics
 - No more *dynamic_controls*
 - Moved *autodrm, dbdoc, init_training etc.* to *contrib*
 - Will remove *dbinfer, heartbeat2db, leak_detector etc.*
 - Hard to maintain unused programs – “attractive nuisance”
 - Focusing our efforts on most-used and critical components
 - Feedback welcome of course



Antelope 5.4



Antelope 5.4

- *orbbrtd*
- Python enhancements
- Antelope Toolbox for *MATLAB*
- *USGS2orb*
- Moment Tensors
- *dbevents_pre*
- Peregrine

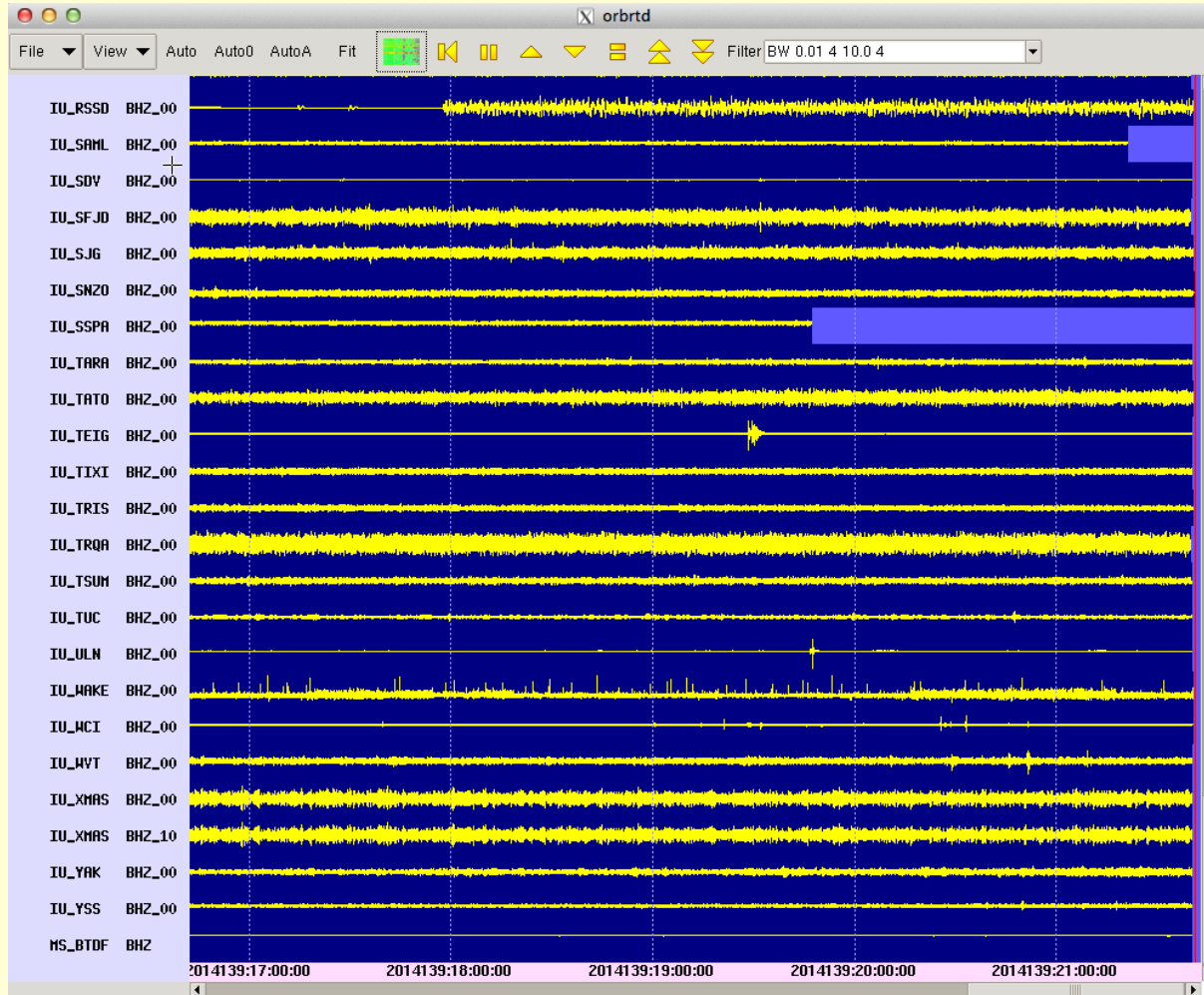


orbstd

- **orbstd** is a complete rewrite of **orbmonstd**
- Rewrite of old TCL/Tk script as a Python script
- Adaptation of *buplot* *bptrace* Tk canvas item extension available in python
- Provides enhanced trace amplitude plotting options (color, log scales, etc.)
- Provides capability to plot color-contoured spectrogram style time-scrolling spectra plots
- Introduces a number of new features, including dynamic automatic channel configurations
- First stage in converting **dbpick** display graphics



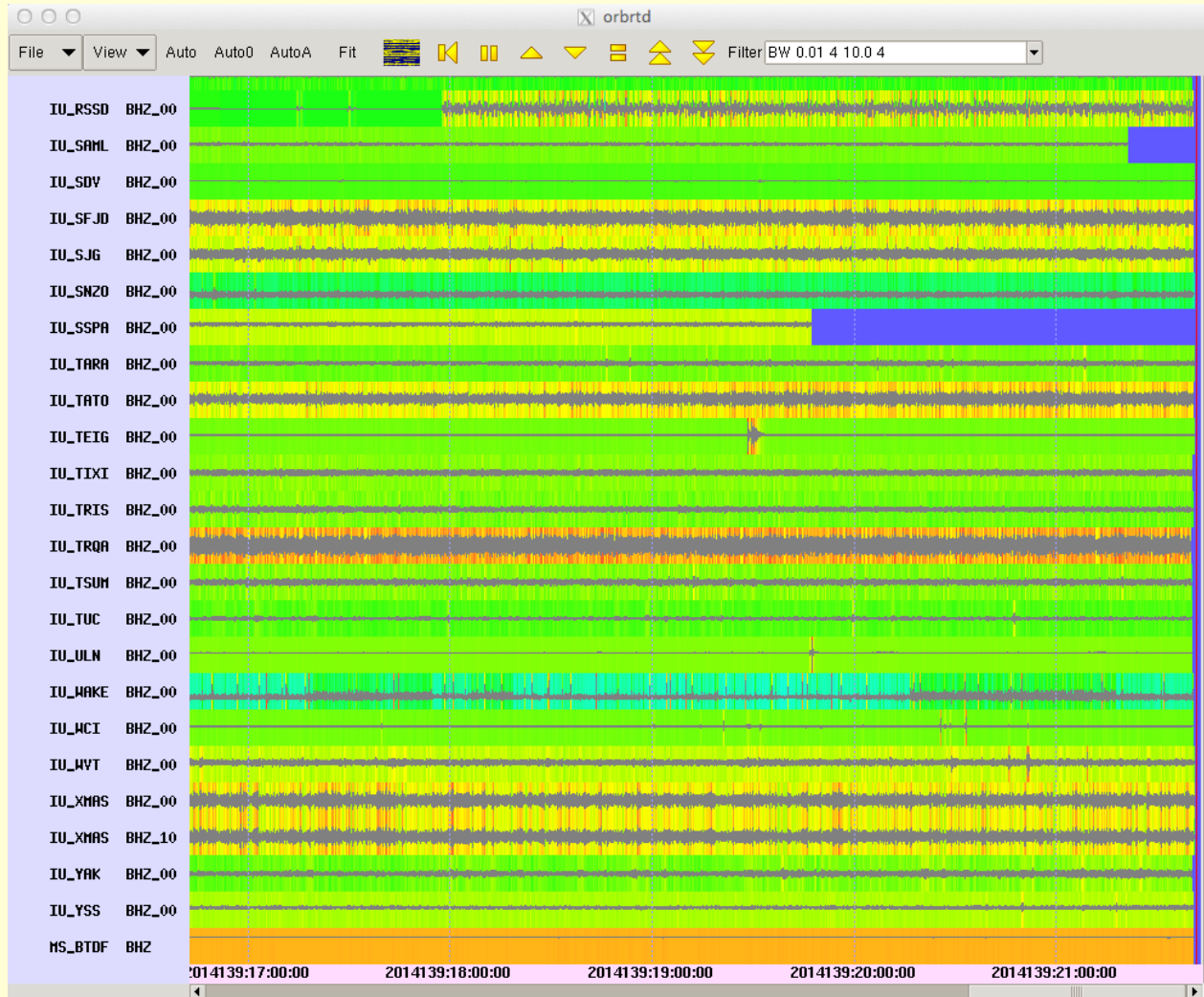
orbtd: scrolling time-series



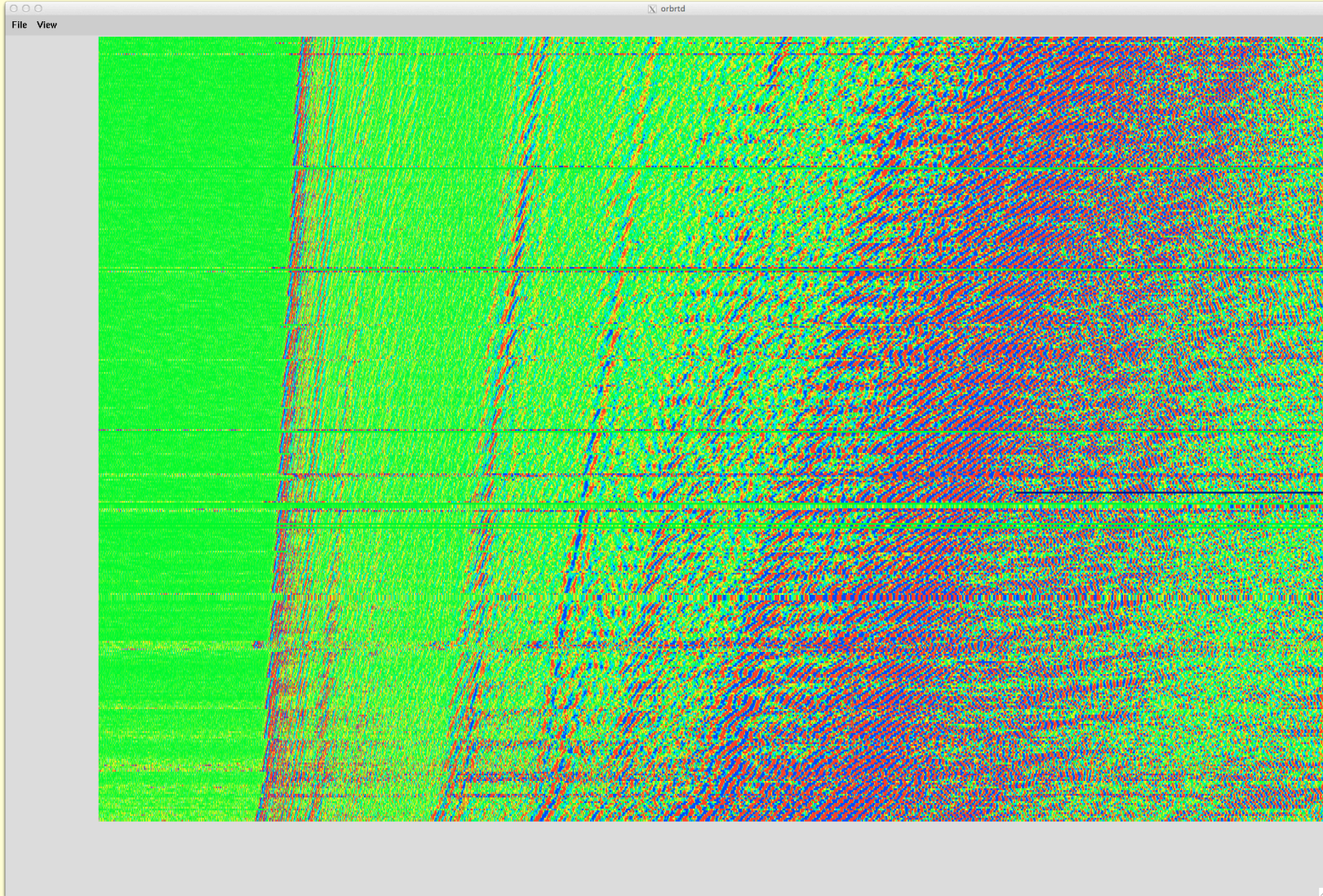
orbtd: color contours



orbtrd: combined plot



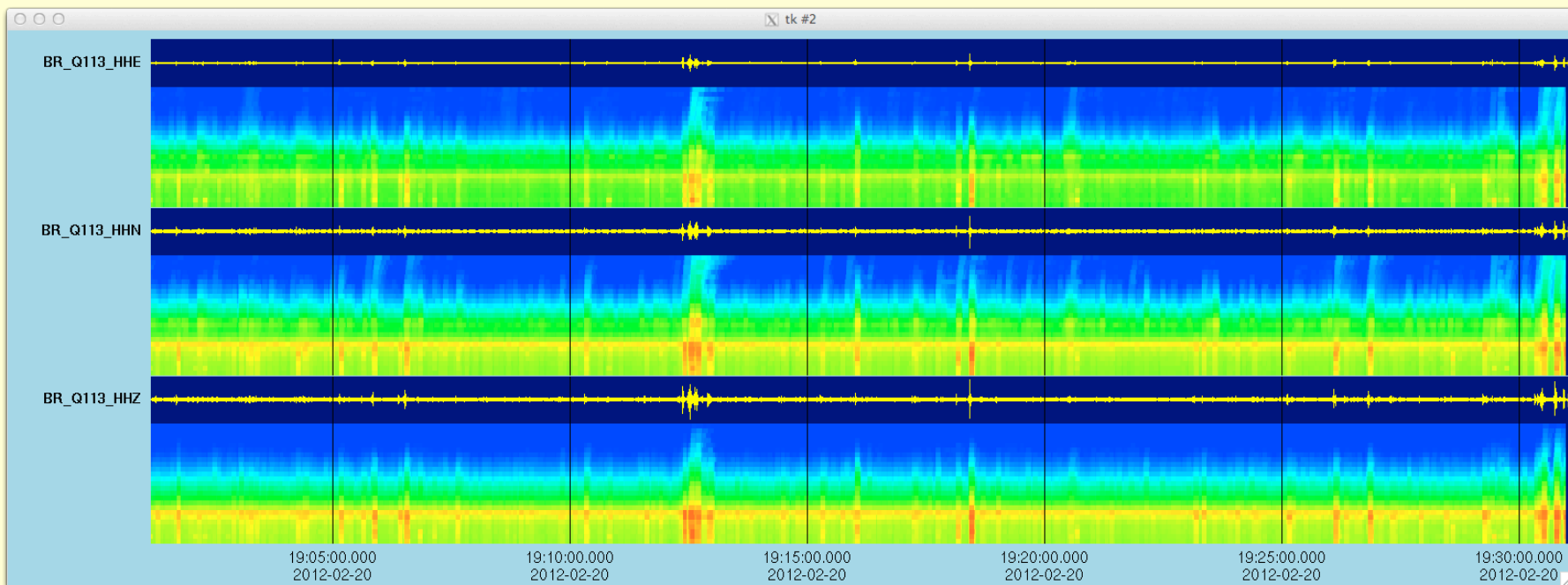
orbtd: colorscale, USArray





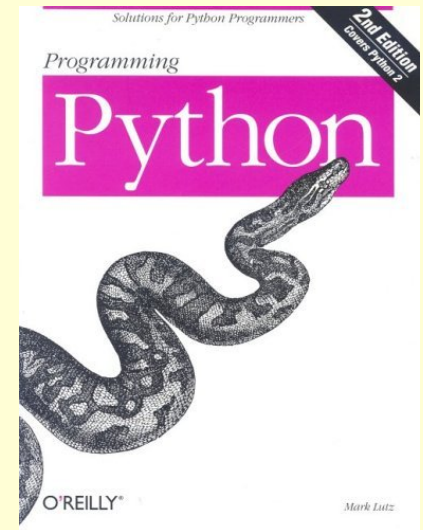
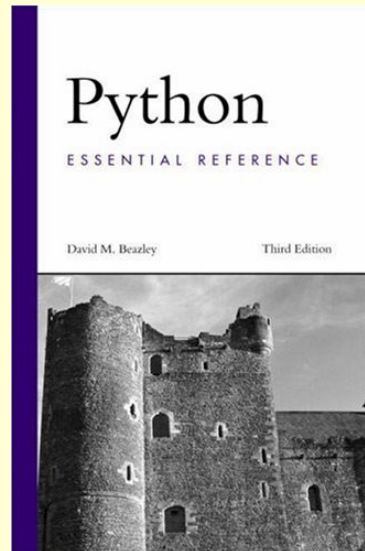
orbtrd spectragrams

[with *Bighorn* structural monitoring package]



Python

- Python: Object-oriented scripting language
 - <http://www.python.org>
 - Dynamic
 - Powerful
 - Extensible
 - Fast



Python

- *Datascope* interface rewritten
 - Interface mostly backwards-compatible
 - Only one idiom – object based
 - Can still use in procedural code
- *Coords* interface rewritten
- Many changes to *buplot* BRTT plotting library
- New *ipa* program for interactive
Antelope Python shell (*ipython* profile)



(“*ipython Antelope*”)

Python *ipa*

```
[marble:~][dev] kent% ipa
```

```
Python 2.7.6 (default, Mar 5 2014, 15:42:38)
```

```
IPython 1.1.0 -- An enhanced Interactive Python.
```

```
...
```

```
IPython profile: antelope
```

```
In [1]: from antelope import datascope
```

```
In [2]: db = datascope.dbopen( '/opt/antelope/data/db/demo/demo' )
```

```
In [3]: db = db.lookup( table = 'origin' )
```

```
In [4]: db.query( datascope.dbRECORD_COUNT )
```

```
Out[4]: 1351
```

```
In [5]:
```

Antelope Toolbox for MATLAB

- Antelope Toolbox for MATLAB (ATM)

- Compiled into Antelope 5.4

- Still need your own copy of MATLAB

- Use *getid* to find supported versions

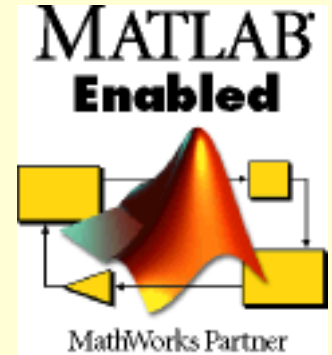
```
% getid matlab  
R2013b R2014a
```

- Turnkey:

```
>> run( '/opt/antelope/5.4/setup.m' )
```

- Starting man-page *antelope_matlab(1)*

- Part of the MATLAB Connections Program



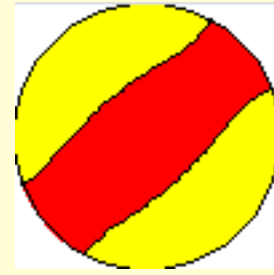
USGS2orb

- Reads Event Catalog from USGS/NEIC web-site
- Puts events in *orbserver*
- Magnitude cutoffs
 - Option to ignore all events below threshold mag
 - Option to archive all events above threshold regardless of association with locally detected events
- *Optionally imports USGS Moment Tensors*



Moment Tensor support

- New Program *USGS2orb* imports moment tensors
- New '*mt*' database table stores them
- New *buplot* capability plots beach-balls



- Integrated into *dbevents_pre* event display

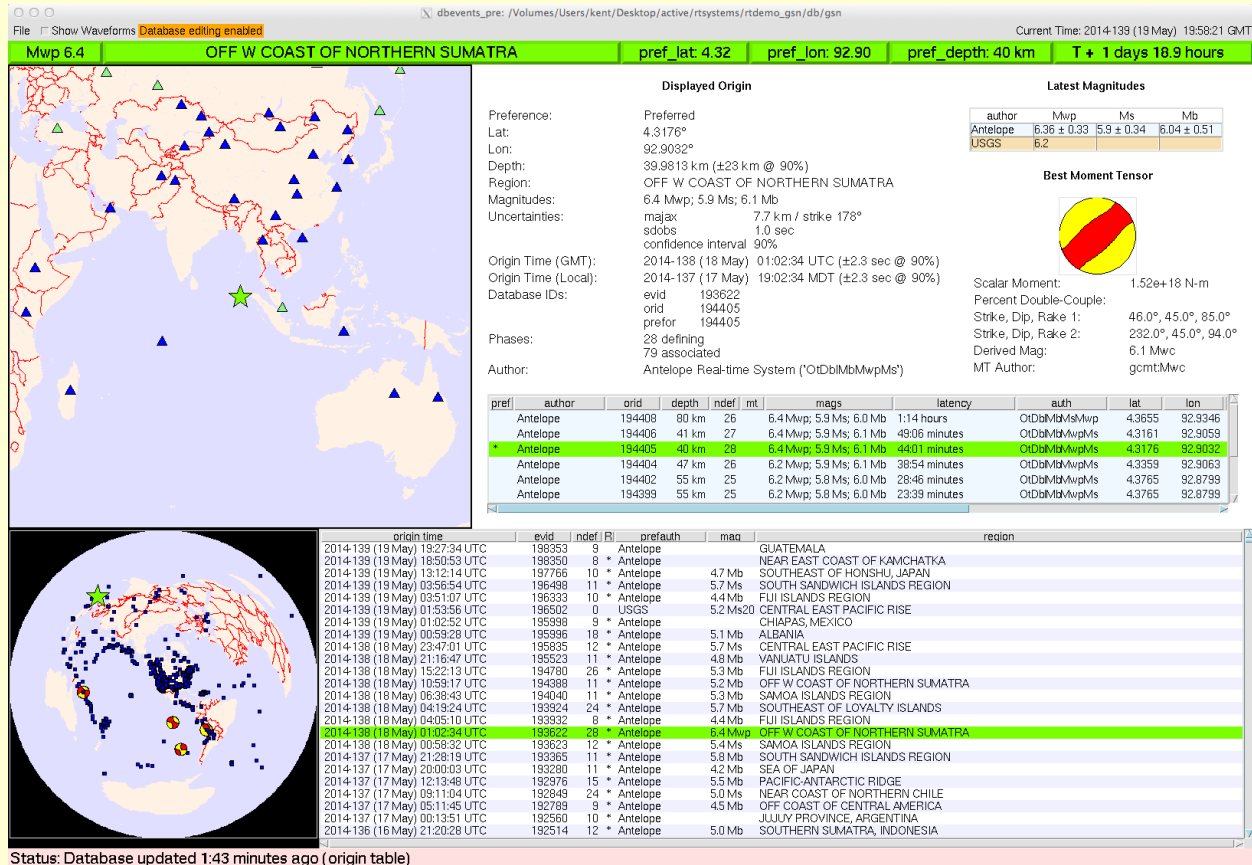


dbevents_pre

- New Event Display program
- Includes Moment Tensor Support
- Top banner for heads-up situational awareness
- Magnitudes comparison table
- Configurable
- Basis for new *dbloc2*



dbevents_pre: Event Display



dbevents_pre: Event Display

Editing Option

Information Panel

Show Waveforms

Clock

Time Since Origin

Heads-up Banner

File Show Waveforms Database editing enabled

Mwp 6.4 OFF W COAST OF NORTHERN SUMATRA pref_lat 4.32 pref_lon 92.90 pref_depth 40 km T + 1 days 18.9 hours

Current Time: 2014-139 (19 May) 19:58:21 GMT

Displayed Origin

Preference: Preferred
 Lat: 4.3176°
 Lon: 92.9032°
 Depth: 39.9813 km (±23 km @ 90%)
 Region: OFF W COAST OF NORTHERN SUMATRA
 Magnitudes: 6.4 Mwp; 5.9 Ms; 6.1 Mb
 Uncertainties: majax 7.7 km / strike 178°
 sddobs 1.0 sec
 confidence interval 90%

Origin Time (GMT): 2014-139 (18 May) 01:02:34 UTC (±2.3 sec @ 90%)
 Origin Time (Local): 2014-137 (17 May) 19:02:34 MDT (±2.3 sec @ 90%)
 Database IDs: evld 193622
 orid 194405
 pref 194405

Phases: 28 defining
 79 associated
 Author: Antelope Real-time System ('O'DbIMbMwpMs')

Latest Magnitudes

author	Mwp	Ms	Mb
Antelope	6.36 ± 0.33	5.9 ± 0.34	6.04 ± 0.51
USGS	6.2		

Best Moment Tensor

Scalar Moment: 1.52e+18 N-m
 Percent Double-Couple: 46.0°, 45.0°, 85.0°
 Strike, Dip, Rake 1: 232.0°, 45.0°, 94.0°
 Strike, Dip, Rake 2: 6.1 Mwc
 MT Author: gcmtMwc

Origins List For Focus Earthquake

pref	author	orid	depth	ndef	mt	mags	latency	auth	lat	lon
Antelope	194408	80	26	6	4 Mwp; 5.9 Ms; 6.0 Mb	1:14 hours		O'DbIMbMwp	4.3655	92.9346
Antelope	194406	41	27	6	4 Mwp; 5.9 Ms; 6.1 Mb	49:06 minutes		O'DbIMbMwpMs	4.3161	92.9059
* Antelope	194405	40	28	6	4 Mwp; 5.9 Ms; 6.1 Mb	44:01 minutes		O'DbIMbMwpMs	4.3175	92.9032
Antelope	194404	47	26	6	2 Mwp; 5.9 Ms; 6.1 Mb	38:54 minutes		O'DbIMbMwpMs	4.3359	92.9063
Antelope	194402	55	25	6	2 Mwp; 5.8 Ms; 6.0 Mb	28:46 minutes		O'DbIMbMwpMs	4.3765	92.8799
Antelope	194399	55	25	6	2 Mwp; 5.8 Ms; 6.0 Mb	23:39 minutes		O'DbIMbMwpMs	4.3765	92.8799

Earthquakes List

origin time	evld	ndef	RI	prefauth	mag	region
2014-139 (19 May) 19:27:34 UTC	198353	9	*	Antelope	5.4 Ms	GUATEMALA
2014-139 (19 May) 18:50:53 UTC	198350	8	*	Antelope	5.8 Ms	NEAR EAST COAST OF KAMCHATKA
2014-139 (19 May) 13:12:14 UTC	197766	10	*	Antelope	4.7 Mb	SOUTHEAST OF HONSHU, JAPAN
2014-139 (19 May) 03:56:54 UTC	196498	11	*	Antelope	5.7 Ms	SOUTH SANDWICH ISLANDS REGION
2014-139 (19 May) 03:51:07 UTC	196333	10	*	Antelope	4.4 Mb	FUJI ISLANDS REGION
2014-139 (19 May) 01:53:56 UTC	196502	0		USGS	5.2 Ms20	CENTRAL EAST PACIFIC RISE
2014-139 (19 May) 01:02:52 UTC	195998	9	*	Antelope	5.1 Mb	CHIAPAS, MEXICO
2014-139 (19 May) 00:59:28 UTC	195996	18	*	Antelope	5.1 Mb	ALBANIA
2014-139 (19 May) 23:47:01 UTC	195935	12	*	Antelope	5.7 Ms	CENTRAL EAST PACIFIC RISE
2014-139 (18 May) 21:28:19 UTC	195323	11	*	Antelope	4.8 Mb	VANUATU ISLANDS
2014-139 (18 May) 15:22:13 UTC	194780	26	*	Antelope	5.3 Mb	FUJI ISLANDS REGION
2014-139 (18 May) 10:59:17 UTC	194388	11	*	Antelope	5.2 Mb	OFF W COAST OF NORTHERN SUMATRA
2014-139 (18 May) 06:38:43 UTC	194040	11	*	Antelope	5.3 Mb	SAMOA ISLANDS REGION
2014-139 (18 May) 04:13:24 UTC	193824	24	*	Antelope	5.7 Mb	SOUTHEAST OF LOYALTY ISLANDS
2014-139 (18 May) 04:05:10 UTC	193932	8	*	Antelope	4.4 Mb	FUJI ISLANDS REGION
2014-139 (18 May) 01:02:34 UTC	193622	28	*	Antelope	6.4 Mwp	OFF W COAST OF NORTHERN SUMATRA
2014-139 (18 May) 00:58:32 UTC	193623	12	*	Antelope	5.4 Ms	SAMOA ISLANDS REGION
2014-139 (18 May) 00:58:19 UTC	193625	11	*	Antelope	5.9 Mb	SOUTH SANDWICH ISLANDS REGION
2014-137 (17 May) 20:00:03 UTC	193280	11	*	Antelope	4.2 Mb	SEA OF JAPAN
2014-137 (17 May) 12:13:48 UTC	192976	15	*	Antelope	5.5 Mb	PACIFIC-ANTARCTIC RIDGE
2014-137 (17 May) 09:11:04 UTC	192849	24	*	Antelope	5.0 Ms	NEAR COAST OF NORTHERN CHILE
2014-137 (17 May) 05:11:45 UTC	192789	9	*	Antelope	4.5 Mb	OFF COAST OF CENTRAL AMERICA
2014-137 (17 May) 00:19:51 UTC	192560	10	*	Antelope	5.0 Mb	JULY PROVINCE, ARGENTINA
2014-136 (16 May) 21:20:28 UTC	192514	12	*	Antelope	5.0 Mb	SOUTHERN SUMATRA, INDONESIA

Status: Database updated 1:43 minutes ago (origin table)

Focus Map

Overview Map

Magnitudes Table

Moment Tensor

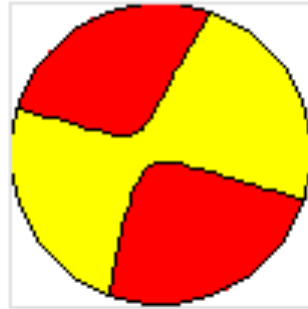
Origins List For Focus Earthquake

Update Status



dbevents_pre: Moment Tensor Support

Best Moment Tensor

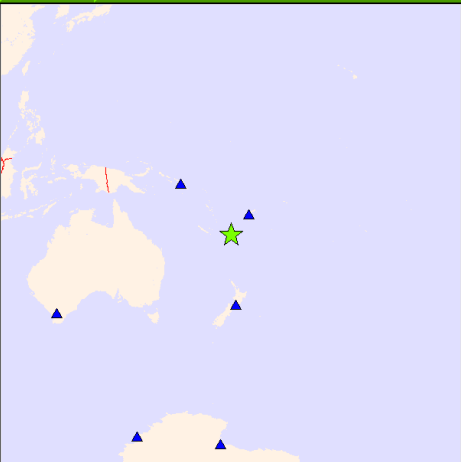


Scalar Moment:	1.73e+18 N-m
Percent Double-Couple:	89.0%
Strike, Dip, Rake 1:	108.8°, 89.2°, -13.3°
Strike, Dip, Rake 2:	199.0°, 76.7°, -179.2°
Derived Mag:	6.1 Mwb
MT Author:	us:Mwb

dbevents_pre: Choice of 'best' MT

File Show Waveforms Database editing enabled Current Time: 2014-133 (19 May) 20:00:30 GMT

Mwb 5.6 **SOUTHEAST OF LOYALTY ISLANDS** pref_lat -22.86 pref_lon 173.23 pref_depth 76 km T + 3 days 19.3 hours



Displayed Origin


Preference: Preferred
 Lat: -22.8638°
 Lon: 173.2261°
 Depth: 75.6728 km (±29 km @ 90%)
 Region: SOUTHEAST OF LOYALTY ISLANDS
 Magnitudes:
 Uncertainties: majax: 23.5 km / strike 58°
 s3obs: 1.1 sec
 confidence interval: 90%

Origin Time (GMT): 2014-136 (16 May) 00:40:26 UTC (±2.2 sec @ 90%)
 Origin Time (Local): 2014-135 (15 May) 18:40:26 MDT (±2.2 sec @ 90%)
 Database IDs: evid: 192478
 orid: 193179
 prefer: 193179
 Phases: 10 defining
 10 associated
 Author: Antelope Real-time System ('OidDb|Mb|Msb|Mwp')

Latest Magnitudes

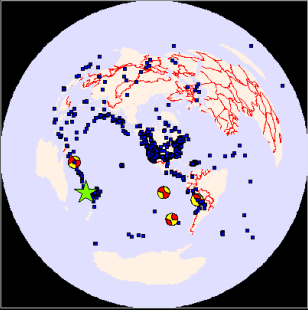
author	Mwb	Mwp
USGS	5.6	5.7

Best Moment Tensor



Scalar Moment: 3.2e+17 N-m
 Percent Double-Couple: 98.0%
 Strike, Dip, Rake 1: 254.9°, 85.2°, -98.5°
 Strike, Dip, Rake 2: 135.9°, 9.7°, -29.4°
 Derived Mag: 5.6 Mwb
 MT Author: us/Mwb

pref	author	orid	depth	ndef	mt	mags	latency	auth	lat	lon	m
USGS	194835	4 km	0	5.6 Mwb		2 days 2.2 hours	USGS.us	-22.5157	173.0175	C	
* Antelope	193179	76 km	10	5.7 Mwp		19:44 hours	OidDb Mb Msb Mwp	-22.8638	173.2261	C	
USGS	193160	8 km	0	5.7 Mwp		13:16 hours	USGS.us	-22.4772	173.0652	C	
USGS	193216	8 km	0	5.7 Mwp		13:16 hours	USGS.us	-22.4772	173.0652	C	



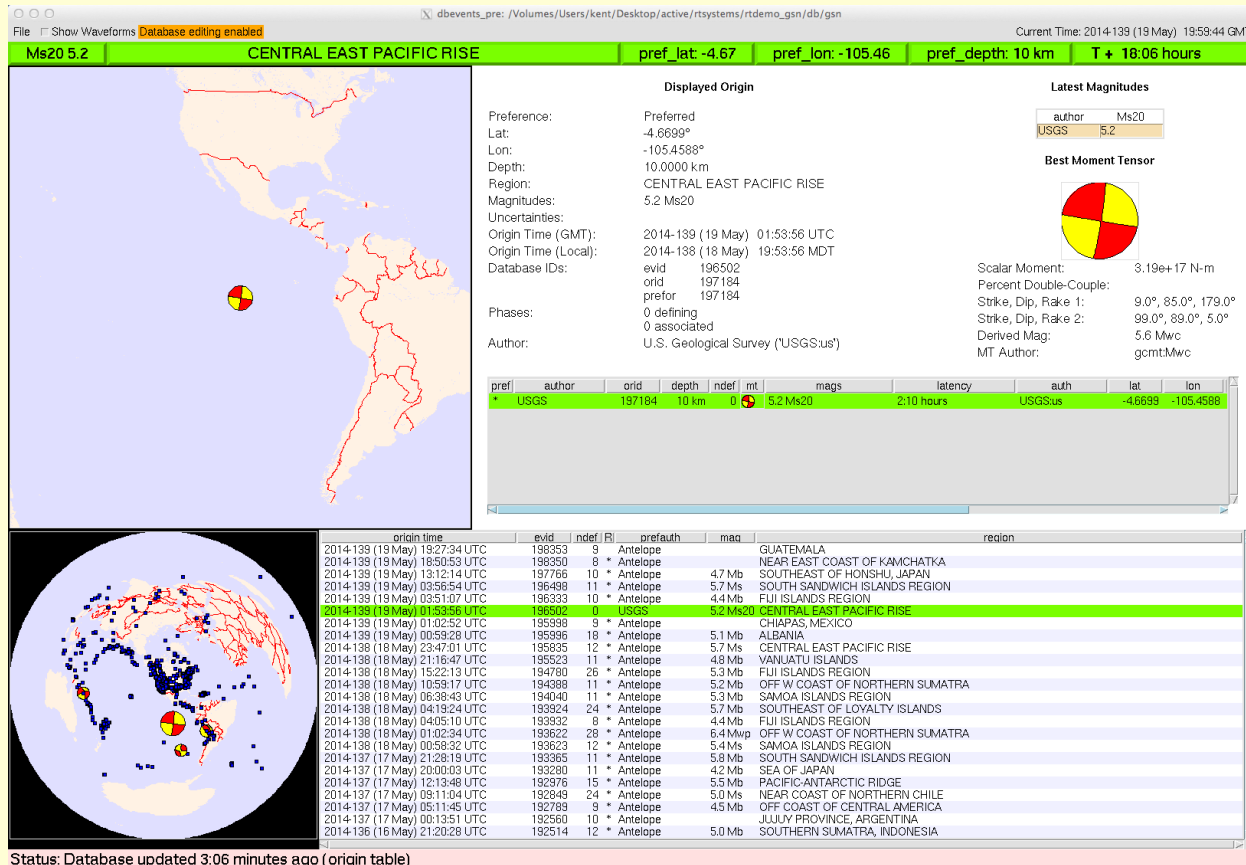
origin time	evid	ndef	R	prefauth	mag	region
2014-136 (16 May) 11:12:02 UTC	192489	9	*	Antelope	5.0 Mb	LEEWARD ISLANDS
2014-136 (16 May) 11:01:40 UTC	192487	29	*	Antelope	6.0 Mwp	LEEWARD ISLANDS
2014-136 (16 May) 10:13:34 UTC	192503	8	*	Antelope	4.7 Mb	SAMOA ISLANDS REGION
2014-136 (16 May) 10:02:06 UTC	192500	11	*	Antelope	5.2 Mb	ANDREANOF ISLANDS, ALEUTIAN IS.
2014-136 (16 May) 06:32:05 UTC	192489	12	*	Antelope	4.9 Mb	PAKISTAN
2014-136 (16 May) 00:40:26 UTC	192478	10	*	Antelope	5.6 Mwb	SOUTHEAST OF LOYALTY ISLANDS
2014-135 (15 May) 22:43:21 UTC	192469	9	*	Antelope	5.1 Mb	OFF COAST OF NORTHERN PERU
2014-135 (15 May) 22:43:19 UTC	194151	0		USGS	5.1 Mb	NEAR COAST OF NORTHERN PERU
2014-135 (15 May) 16:33:11 UTC	192470	11	*	Antelope	5.0 Mb	SAMOA ISLANDS REGION
2014-135 (15 May) 10:16:51 UTC	192466	25	*	Antelope	6.2 Mwp	SULLU SEA
2014-135 (15 May) 08:16:34 UTC	192467	27	*	Antelope	6.5 Mwp	E. CAROLINE ISLANDS, MICRONESIA
2014-134 (14 May) 20:56:14 UTC	192447	23	*	Antelope	6.5 Mwp	E. CAROLINE ISLANDS, MICRONESIA
2014-134 (14 May) 17:23:47 UTC	192457	9		Antelope	5.0 Mb	EL SALVADOR
2014-134 (14 May) 09:48:18 UTC	192406	18		Antelope	5.2 Mb	SOUTH OF PANAMA
2014-134 (14 May) 05:51:47 UTC	192397	0		USGS	5.2 Mb	OFF COAST OF NORTHERN CHILE
2014-134 (14 May) 05:28:25 UTC	192392	0		USGS	5.1 Mb	SOUTH OF PANAMA
2014-134 (14 May) 03:38:19 UTC	192398	27	*	Antelope	5.4 Mb	JUJUY PROVINCE, ARGENTINA
2014-134 (14 May) 01:51:34 UTC	192394	20		Antelope	5.3 Mb	KERMADEC ISLANDS REGION
2014-133 (13 May) 23:03:24 UTC	192417	14		Antelope	4.8 Mb	HOKKAIDO, JAPAN REGION
2014-133 (13 May) 14:41:02 UTC	192389	11		Antelope	5.6 Mb	SOUTH SANDWICH ISLANDS REGION
2014-133 (13 May) 10:38:23 UTC	192385	17	*	Antelope	5.4 Mb	SOLOMON ISLANDS
2014-133 (13 May) 06:35:24 UTC	192404	28		Antelope	6.5 Mwp	SOUTH OF PANAMA
2014-132 (12 May) 23:35:07 UTC	192386	23		Antelope	5.2 Mb	NEAR EAST COAST OF HONSHU, JAPAN
2014-127 (07 May) 13:27:06 UTC	192378	0		USGS	5.0 Mb	NEAR COAST OF NORTHERN CHILE

Status: Database updated 3:53 minutes ago (origin table)



dbevents_pre:

Map display of prefor MT, 'best' MT



dbevents_pre: Magnitudes Summary Table

Latest Magnitudes

author	Mwp	Ms	Mb
Antelope	6.36 ± 0.33	5.9 ± 0.34	6.04 ± 0.51
USGS	6.2		

- Magnitude preference order is specifiable



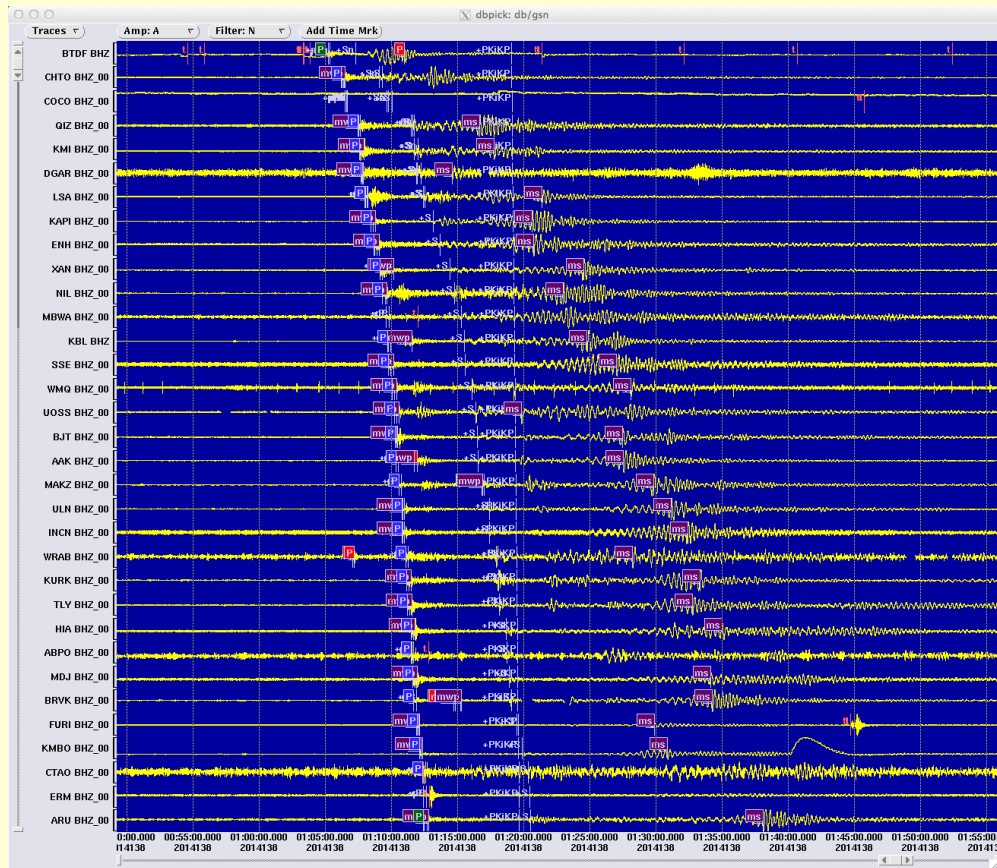
dbevents_pre: Information Panel

Displayed Origin

Preference: Preferred
Lat: 4.3176°
Lon: 92.9032°
Depth: 39.9813 km (± 23 km @ 90%)
Region: OFF W COAST OF NORTHERN SUMATRA
Magnitudes: 6.4 Mwp; 5.9 Ms; 6.1 Mb
Uncertainties: majax 7.7 km / strike 178°
sdobs 1.0 sec
confidence interval 90%
Origin Time (GMT): 2014-138 (18 May) 01:02:34 UTC (± 2.3 sec @ 90%)
Origin Time (Local): 2014-137 (17 May) 19:02:34 MDT (± 2.3 sec @ 90%)
Database IDs: evid 193622
orid 194405
prefor 194405
Phases: 28 defining
79 associated
Author: Antelope Real-time System ('OtDbIMbMwpMs')



dbevents_pre: show waveforms option



dbevents_pre: rudimentary editing

Database editing enabled

Editing has warning-label and off-switch
for kiosk displays

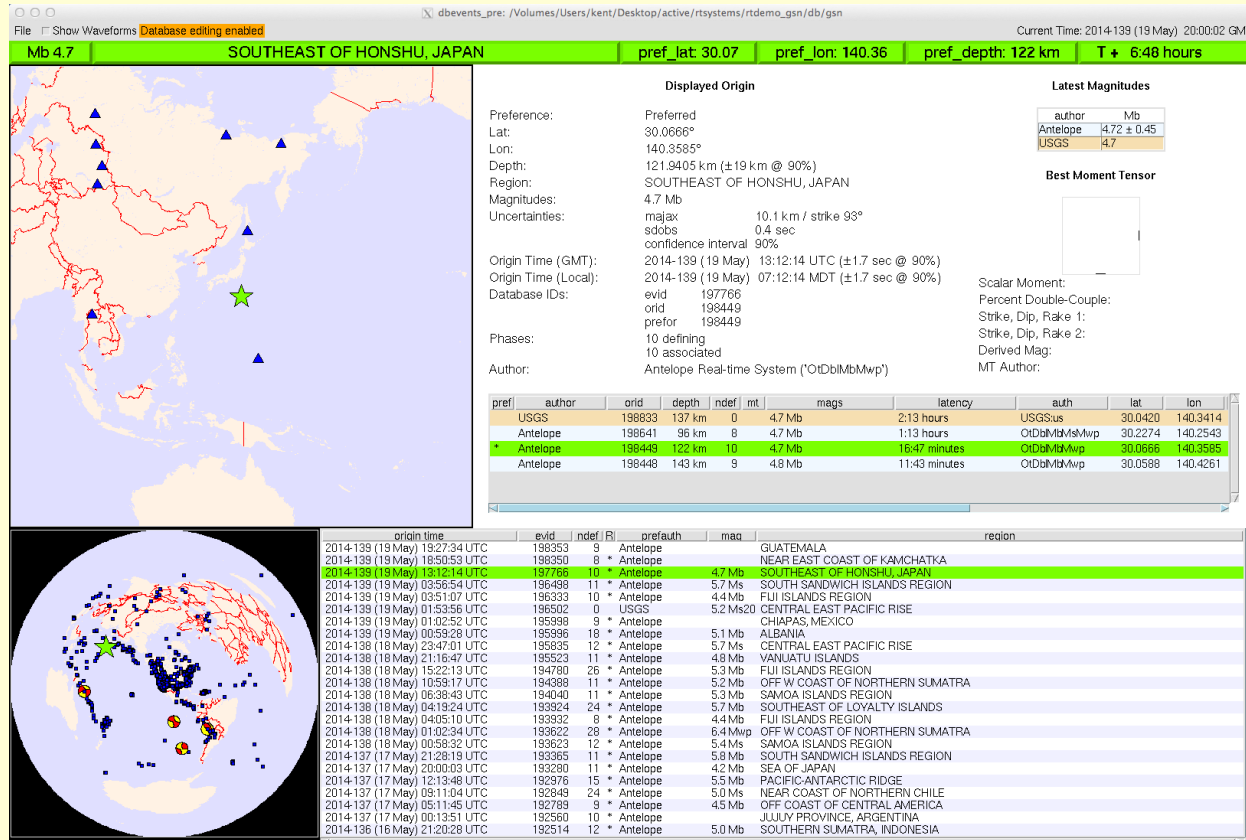
pref	author	orid	depth	ndef	mt	mags	latency	auth	lat	lon	m
*	Antelope	199037	71 km	9			29:00 minutes	OtDbl	15.4840	-90.6894	C
	Antelope	199036	69 km	9			18:48 minutes	OtDbl	15.4658	-90.7033	C
	Antelope	199035	66				8:40 minutes	OtDblMblMwpMs	15.4557	-90.7062	C

Set orid 199036 as prefer
Delete orid 199036 origin row

- Set preferred origin
- Delete undesirable origin



dbevents_pre: Color-coded Authors



Status: Database updated 3:25 minutes ago (origin table)





Bighorn

Strong motion/structure monitoring
version of Antelope also including
web enhancements



Peregrine

Web enhanced version of Antelope



Peregrine

- Web-based Monitoring
- Web-based Information distribution
- Web-based Interaction
- Antelope Base System + Web Infrastructure
 - New program *rtwebserver*
 - New program *rtcachel*
 - Host of supporting *Python* libraries



Peregrine Goals

- Robust Web Presence for users and operators
- Capitalize on informative power of real-time system
- Platform for revealing more about RT system to operators
- Clean integration with real-time system
- Familiar configuration patterns for operators
- Low user-maintenance cost and complexity
- Flexible and Extensible
- Self-contained
- Maintainable software base



What We Did

- Wrote our own web server
- Made it run under a real-time system (*rtexec*)
- Made it look and feel like our existing programs
- Made it connect easily to Antelope
- Wrote a caching daemon to generate products for it
- Added example web-site to GSN demo



rtwebserver

- Self-contained web-server:

```
% rtwebserver -v -P 8000
```

- Written in *Python* and *Twisted*

– *<http://twistedmatrix.com>*

- Runs under *rtexec*

- Parameter-file configures entire site

– *rtwebserver.pf*

- Logs connections to database

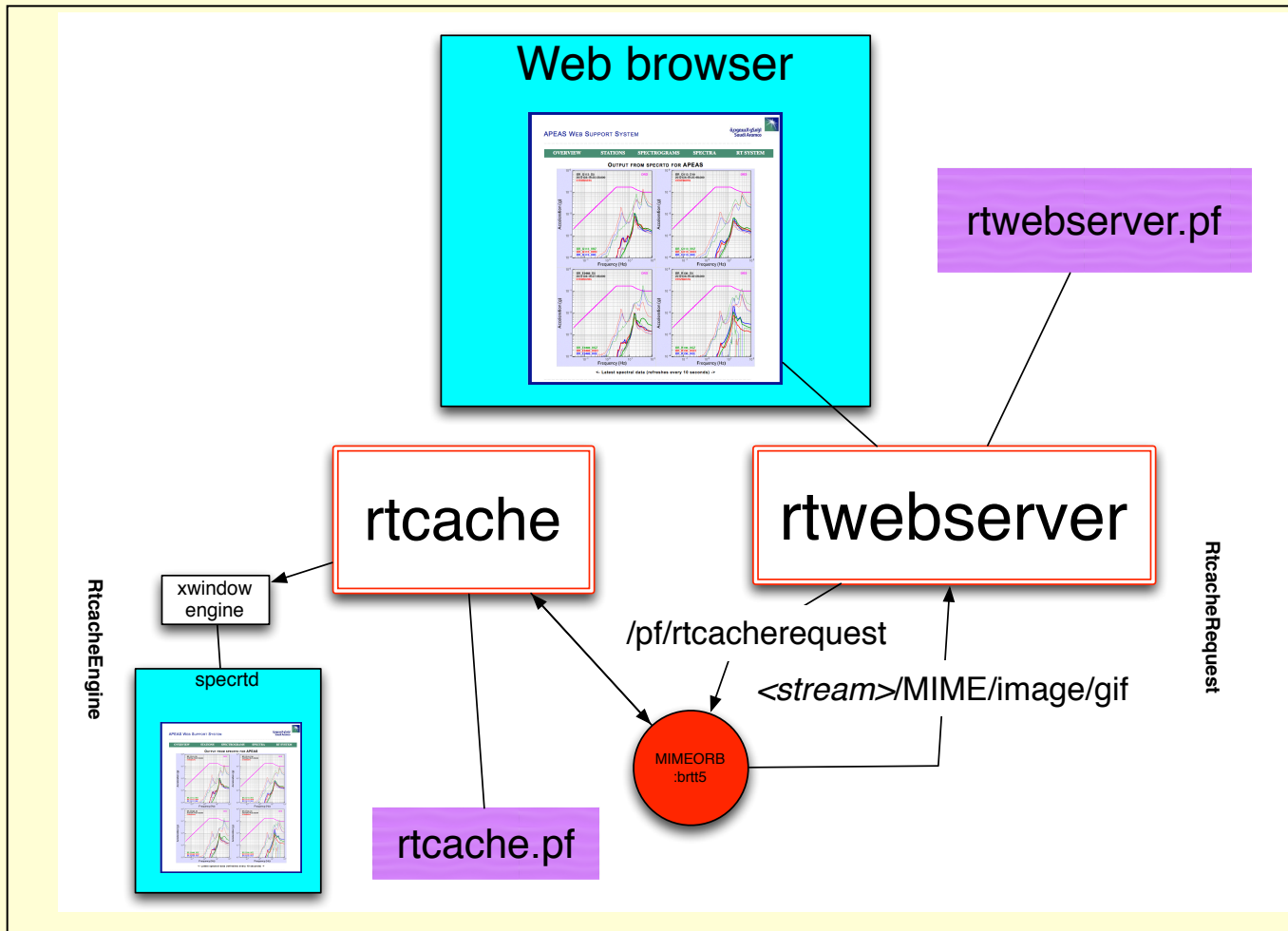


rtcache

- Generalized Caching Daemon
- Pre-builds products for the web server
- For Example:
 - Dynamic X-window screen-shots
 - Strong-motion alarm reports
 - Dbevents or orbrtd output
 - Anything you can code into *Python*
- Exchanges request/response via *orbserver*
- Can show on the web any GUI you can run as X-client



Peregrine Architecture

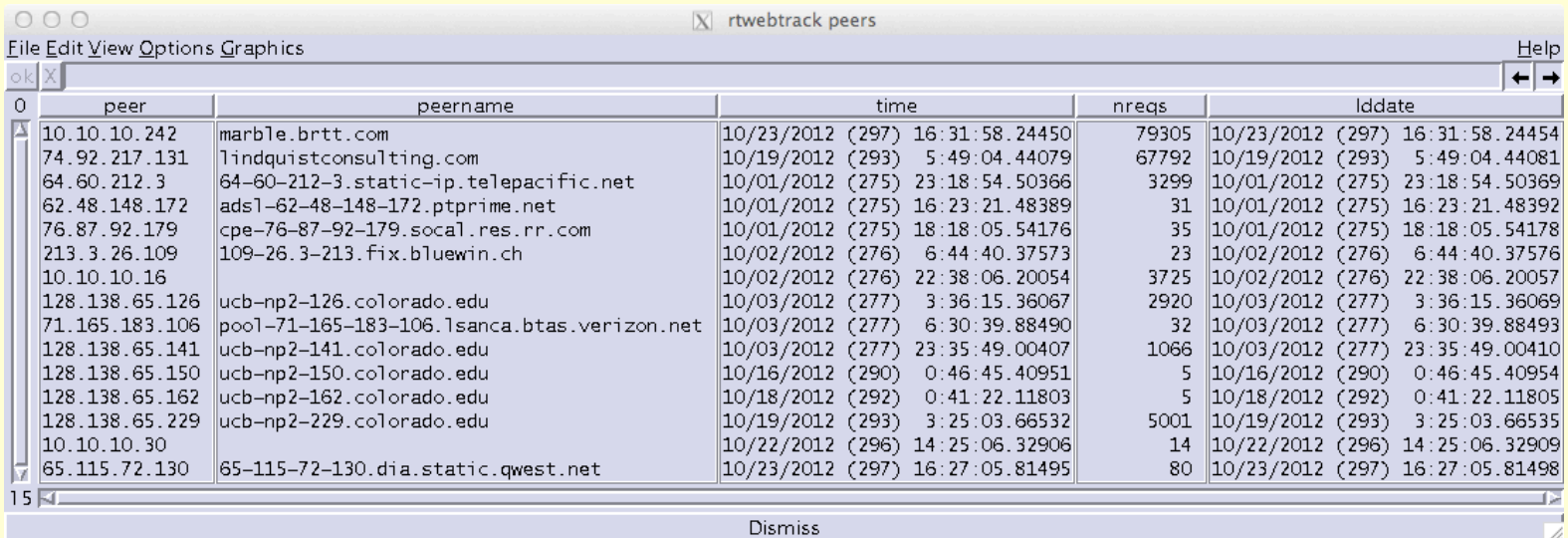


rtwebserver.pf

```
site &Arr{
  pages &Arr{
    index          rpy:webitems/index.rpy  index
    latest         rpy:webitems/latest.rpy
    rtm            rpy:webitems/rtm.rpy
    orbmonrtd     rpy:webitems/orbmonrtd.rpy
    sources       rpy:webitems/sources.rpy
    clients       rpy:webitems/clients.rpy
    dynamic &Arr{
      ximage      rtcache:ximage
    }
    images &Arr{
      brtt_logo.gif  file:webitems/images/brtt_logo.gif
      dots.gif       file:webitems/images/dots.gif
    }
    css &Arr{
      style.css     pf:stylesheet  text/css
    }
  }
}
```



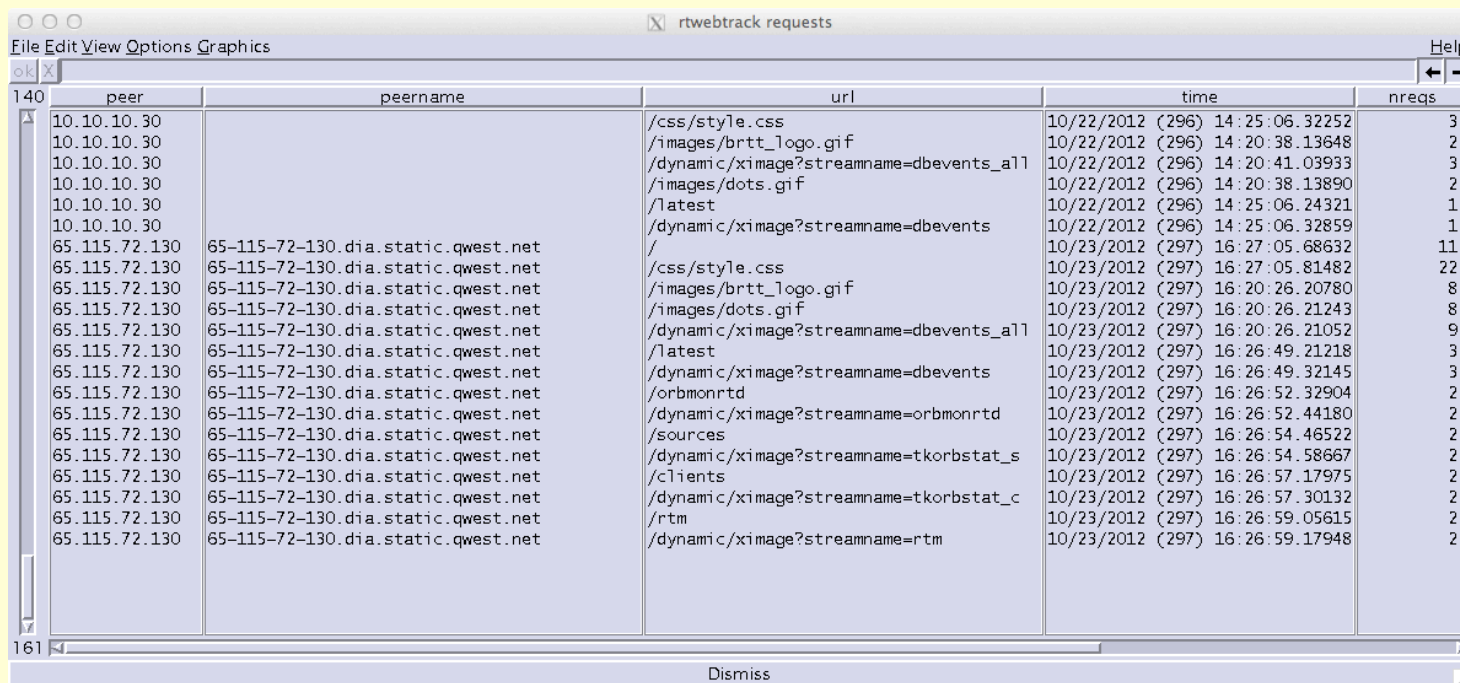
rtwebservice connection logging: who is connecting



peer	peername	time	nreqs	lddate
10.10.10.242	marble.brtt.com	10/23/2012 (297) 16:31:58.24450	79305	10/23/2012 (297) 16:31:58.24454
74.92.217.131	lindquistconsulting.com	10/19/2012 (293) 5:49:04.44079	67792	10/19/2012 (293) 5:49:04.44081
64.60.212.3	64-60-212-3.static-ip.telepacific.net	10/01/2012 (275) 23:18:54.50366	3299	10/01/2012 (275) 23:18:54.50369
62.48.148.172	ads1-62-48-148-172.ptprime.net	10/01/2012 (275) 16:23:21.48389	31	10/01/2012 (275) 16:23:21.48392
76.87.92.179	cpe-76-87-92-179.socal.res.rr.com	10/01/2012 (275) 18:18:05.54176	35	10/01/2012 (275) 18:18:05.54178
213.3.26.109	109-26.3-213.fix.bluewin.ch	10/02/2012 (276) 6:44:40.37573	23	10/02/2012 (276) 6:44:40.37576
10.10.10.16		10/02/2012 (276) 22:38:06.20054	3725	10/02/2012 (276) 22:38:06.20057
128.138.65.126	ucb-np2-126.colorado.edu	10/03/2012 (277) 3:36:15.36067	2920	10/03/2012 (277) 3:36:15.36069
71.165.183.106	pool-71-165-183-106.lsanca.btas.verizon.net	10/03/2012 (277) 6:30:39.88490	32	10/03/2012 (277) 6:30:39.88493
128.138.65.141	ucb-np2-141.colorado.edu	10/03/2012 (277) 23:35:49.00407	1066	10/03/2012 (277) 23:35:49.00410
128.138.65.150	ucb-np2-150.colorado.edu	10/16/2012 (290) 0:46:45.40951	5	10/16/2012 (290) 0:46:45.40954
128.138.65.162	ucb-np2-162.colorado.edu	10/18/2012 (292) 0:41:22.11803	5	10/18/2012 (292) 0:41:22.11805
128.138.65.229	ucb-np2-229.colorado.edu	10/19/2012 (293) 3:25:03.66532	5001	10/19/2012 (293) 3:25:03.66535
10.10.10.30		10/22/2012 (296) 14:25:06.32906	14	10/22/2012 (296) 14:25:06.32909
65.115.72.130	65-115-72-130.dia.static.qwest.net	10/23/2012 (297) 16:27:05.81495	80	10/23/2012 (297) 16:27:05.81498



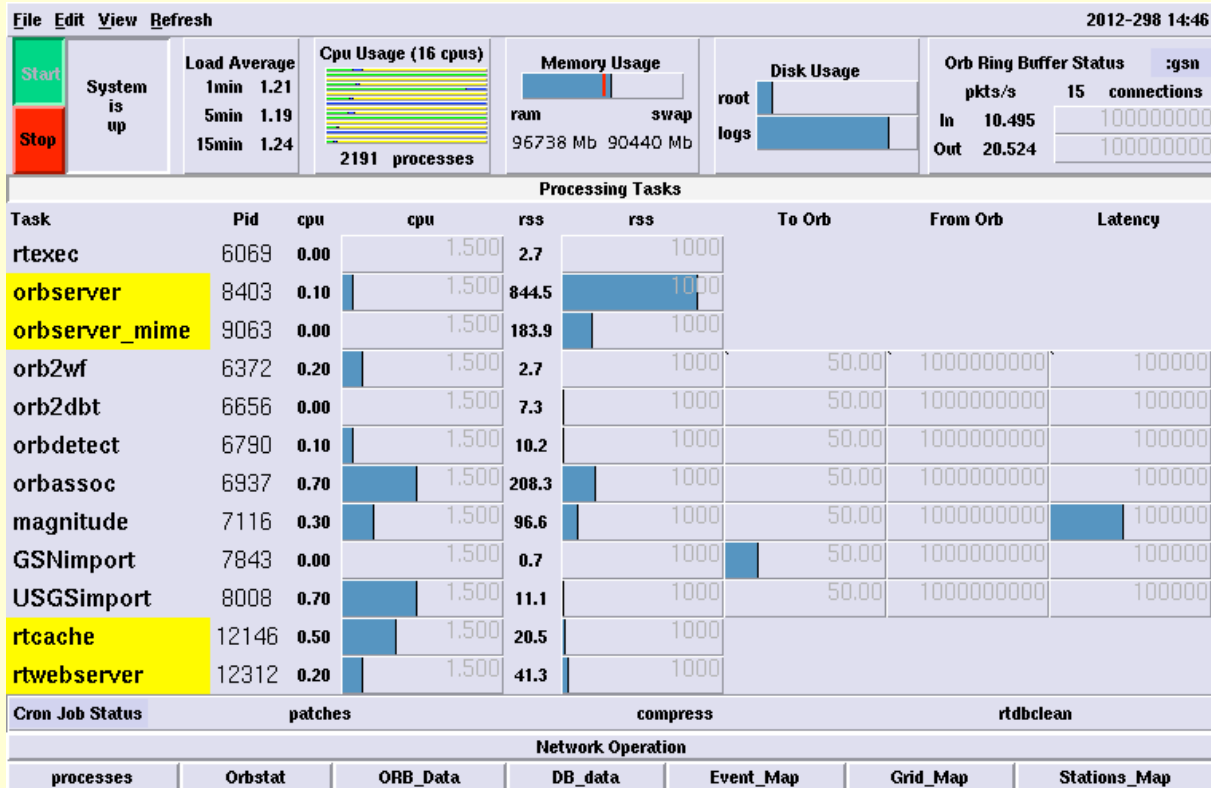
rtwebservice connection logging: what are they asking for



peer	peername	url	time	nreqs
10.10.10.30		/css/style.css	10/22/2012 (296) 14:25:06.32252	3
10.10.10.30		/images/brtt_logo.gif	10/22/2012 (296) 14:20:38.13648	2
10.10.10.30		/dynamic/xiimage?streamname=dbevents_all	10/22/2012 (296) 14:20:41.03933	3
10.10.10.30		/images/dots.gif	10/22/2012 (296) 14:20:38.13890	2
10.10.10.30		/latest	10/22/2012 (296) 14:25:06.24321	1
10.10.10.30		/dynamic/xiimage?streamname=dbevents	10/22/2012 (296) 14:25:06.32859	1
65.115.72.130	65-115-72-130.dia.static.qwest.net	/	10/23/2012 (297) 16:27:05.68632	11
65.115.72.130	65-115-72-130.dia.static.qwest.net	/css/style.css	10/23/2012 (297) 16:27:05.81482	22
65.115.72.130	65-115-72-130.dia.static.qwest.net	/images/brtt_logo.gif	10/23/2012 (297) 16:20:26.20780	8
65.115.72.130	65-115-72-130.dia.static.qwest.net	/images/dots.gif	10/23/2012 (297) 16:20:26.21243	8
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=dbevents_all	10/23/2012 (297) 16:20:26.21052	9
65.115.72.130	65-115-72-130.dia.static.qwest.net	/latest	10/23/2012 (297) 16:26:49.21218	3
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=dbevents	10/23/2012 (297) 16:26:49.32145	3
65.115.72.130	65-115-72-130.dia.static.qwest.net	/orbmonrtd	10/23/2012 (297) 16:26:52.32904	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=orbmonrtd	10/23/2012 (297) 16:26:52.44180	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/sources	10/23/2012 (297) 16:26:54.46522	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=tkorbstat_s	10/23/2012 (297) 16:26:54.58667	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/clients	10/23/2012 (297) 16:26:57.17975	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=tkorbstat_c	10/23/2012 (297) 16:26:57.30132	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/rtm	10/23/2012 (297) 16:26:59.05615	2
65.115.72.130	65-115-72-130.dia.static.qwest.net	/dynamic/xiimage?streamname=rtm	10/23/2012 (297) 16:26:59.17948	2



rtwebserver / rtcache in real-time system



Arbitrary X-client Display on Web

BRTT GLOBAL SEISMIC NETWORK DEMONSTRATION

DBEVENTS **RTD** **SOURCES** **CLIENTS** **RTM**

GSN DEMO ORB SOURCES

File Refresh

Search: /

Sort: /

hostname	pkts	bytes	oldest	newest	latency
IL.PALM_LAB_ORB/SEED	0.001	0.001	100-20.14	100-20.14	15 days 19.9 hours
IL.WEST_LAB_ORB/SEED	2.251	1.119	100-20.37	100-21.03	4 days 2.1 hours
IL.WEST_LAB_ORB/SEED	38.410	20.134	100-00-00	100-14.01	4 days 1.8 hours
IL.WEST_LAB_ORB/SEED	1.110	0.084	100-19.45	100-22.04	2 days 2.4 hours
IL.PITON_LAB_ORB/SEED	28.852	9.418	100-11.25	100-12.28	4 days 3.2 hours
IL.LAB_LAB_ORB/SEED	1.548	0.813	100-18.37	100-09.16	4 days 10.3 hours
IL.SAV_LAB_ORB/SEED	20.397	10.724	100-18.39	100-00.21	4 days 11.3 hours
IL.SAV_LAB_ORB/SEED	2.273	1.198	100-18.37	100-11.88	1 day 4.0 hours
IL.SAV_LAB_ORB/SEED	100.870	57.248	100-18.39	100-11.94	4 days 3.9 hours
CU.TORONTO_LAB_ORB/SEED	2.842	1.495	100-07.15	100-04.51	11.01 hours
CU.TORONTO_LAB_ORB/SEED	97.139	51.095	100-07.17	100-04.54	10.51 hours
IL.WISN_LAB_ORB/SEED	7.279	3.927	100-07.21	100-11.31	4.80 hours
IL.WISN_LAB_ORB/SEED	189.390	99.603	100-07.22	100-11.25	4.28 hours
IL.SAVN_LAB_ORB/SEED	2.593	1.243	100-11.58	100-11.29	4.23 hours
IL.SAVN_LAB_ORB/SEED	84.982	28.447	100-11.02	100-11.00	4.02 hours
CU.MONK_LAB_ORB/SEED	4.015	2.112	100-07.21	100-12.43	3.08 hours
CU.MONK_LAB_ORB/SEED	130.936	68.972	100-07.22	100-12.44	3.08 hours
IL.FERRELL_LAB_ORB/SEED	0.331	0.175	100-14.24	100-12.48	3.08 hours
IL.FERRELL_LAB_ORB/SEED	9.021	1.694	100-08.47	100-12.58	2.93 hours
IL.SARAS_LAB_ORB/SEED	11.124	24.891	100-06.32	100-13.05	2.64 hours
IL.SARAS_LAB_ORB/SEED	2.740	1.405	100-01.32	100-03.01	2.02 hours
IL.SARAS_LAB_ORB/SEED	39.739	20.303	100-21.32	100-13.39	2.12 hours
IL.COOL_LAB_ORB/SEED	1.107	0.593	100-07.11	100-04.00	1.92 hours
IL.COOL_LAB_ORB/SEED	22.429	11.813	100-07.22	100-14.44	1.07 hours
IL.CAR_LAB_ORB/SEED	2.884	1.370	100-07.51	100-05.11	40.03 minutes
IL.CAR_LAB_ORB/SEED	3.143	1.444	100-04.49	100-15.11	40.00 minutes
IL.CAR_LAB_ORB/SEED	184.054	148.051	100-07.53	100-15.12	39.03 minutes
IL.MQZ_LAB_ORB/SEED	3.209	1.488	100-04.50	100-15.12	39.00 minutes
IL.MQZ_LAB_ORB/SEED	9.709	1.951	100-04.50	100-15.14	37.93 minutes
IL.MQZ_LAB_ORB/SEED	3.737	1.868	100-04.47	100-15.14	37.40 minutes
IL.MQZ_LAB_ORB/SEED	3.111	1.408	100-04.47	100-15.14	37.40 minutes
IL.CIE_LAB_ORB/SEED	3.587	1.878	100-04.48	100-15.15	36.13 minutes
IL.CIE_LAB_ORB/SEED	3.176	1.470	100-04.51	100-15.15	36.13 minutes
IL.MNK_LAB_ORB/SEED	3.309	1.884	100-04.48	100-15.17	34.11 minutes
IL.MNK_LAB_ORB/SEED	2.454	1.291	100-07.52	100-05.00	31.58 minutes

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tkorbstat clients display

BRTT GLOBAL SEISMIC NETWORK DEMONSTRATION

DBEVENTS **RTD** **SOURCES** **CLIENTS** **RTM**

GSN DEMO ORB CLIENTS

File Refresh

Search: /

Sort: /

hostname	pkts/s	bytes/s	client command	who	pid	host
23	0.0	0.000	0.000 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10824	
20	0.0	0.000	0.000 /etc/ssh/ssh@.T	rt	10828	
19	20.0	11.481	4.040 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10790	
18	0.0	0.000	0.000 sshd@ --state state/ssh@ --	rt	10737	
14	0.0	0.000	0.000 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10881	
13	0.0	0.004	0.001 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10850	

hostname	pkts/s	bytes/s	client command	who	pid	host
10890	0.0	0.013	0.001 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10848	
10897	0.0	0.013	0.001 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10848	
10892	0.0	0.013	0.001 sshd@ --state state/ssh@ --	rt	10737	
11700	20.0	11.481	4.040 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	11112	
11699	20.0	11.481	4.040 sshd@ --state state/ssh@ --	rt	10897	
11698	20.0	11.481	4.040 sshd@ --state state/ssh@ --	rt	10897	
23	0.0	0.000	0.000 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	11106	
22	0.0	0.000	0.000 sshd@ --maxloginsize 8 -state state/ssh@ --	rt	10994	
21	0.0	0.000	0.000 rta --	rt	10978	


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tkorbstat sources display



RTM System Status on Web



BRTT GLOBAL SEISMIC NETWORK DEMONSTRATION

DBEVENTS
RTD
SOURCES
CLIENTS
RTM

REAL-TIME MONITOR FOR GSN DEMO

File Edit View Refresh
Autelope 5.4
2014-136 15:58

System is up

Load Average
1min: 0.83
5min: 0.92
15min: 1.00

Cpu Usage (8 cpus)

489 processes

Memory Usage

32110 Mb / 4032 Mb

Disk Usage

root

Orb Ring Buffer Status

pkts: 15 connections


in: 11.189

Out: 33.326

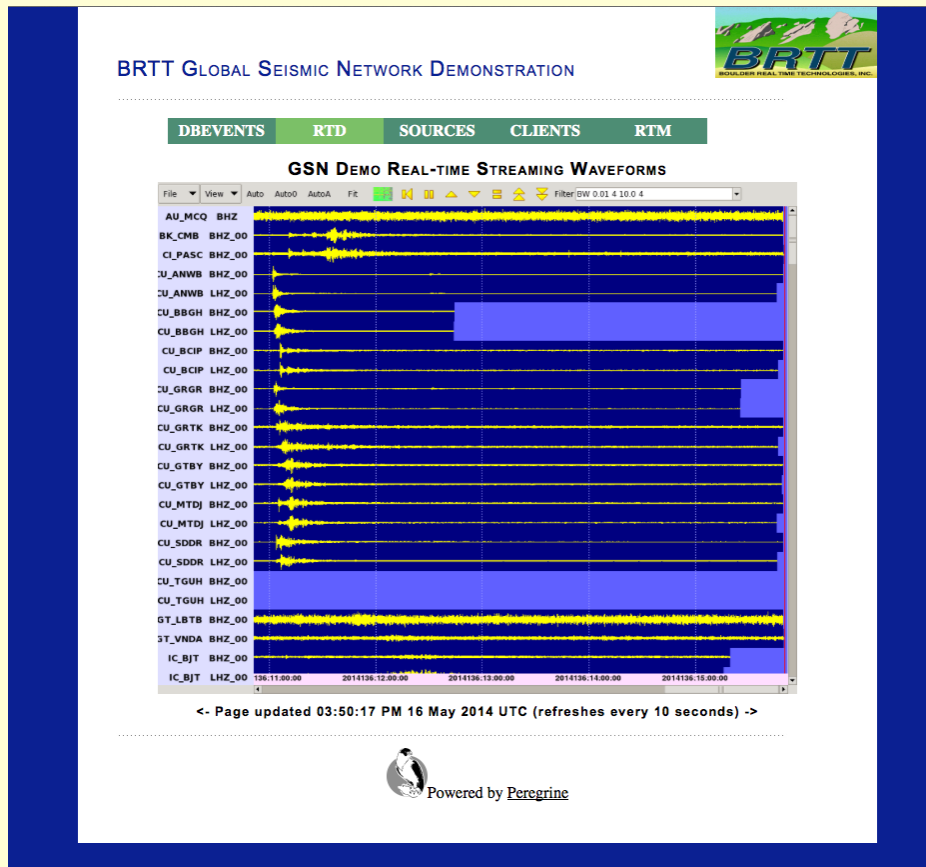
Processing Tasks											
Task	Pid	cpu	cpu	rss	rss	To Orb	To Orb	From Orb	From Orb	Latency	Latency
rtexec	10539	0.00	15.00	1.8	10000						
orbserver	10560	0.38	15.00	21.1	10000						
orbserver_mime	10579	0.00	15.00	50.2	10000						
orb2wf	10597	0.38	15.00	25.3	10000	0.0 kbps	50.0%	11.1 Kbps	1000000000	4:14 hours	20000
orb2dbt	10624	0.10	15.00	7.3	10000	0.0 kbps	50.0%	0.0 kbps	1000000000	1:15 minutes	20000
orbdetect	10650	0.10	15.00	11.6	10000	0.0 kbps	50.0%	11.1 Kbps	1000000000	4:14 hours	20000
orbassoc	10681	1.00	15.00	210.9	10000	0.0 kbps	50.0%	0.0 kbps	1000000000	2:14 hours	20000
magnitude	10737	0.20	15.00	230.4	10000	0.0 kbps	50.0%	0.0 kbps	1000000000	2:14 hours	20000
GSNimport	10790	0.10	15.00	31.7	10000	11.1 Kbps	50.0%	0.0 kbps	1000000000	4:14 hours	20000
USGSimport	10828	0.20	15.00	186.5	10000	0.0 kbps	50.0%	0.0 kbps	1000000000	38:33 minutes	20000
rtcache	10880	14.50	15.00	4990.2	10000						
rtwebserver	11590	0.20	15.00	50.6	10000						

processes
Orbstat
ORB_Data
DB_data
Event_Map
Grid_Map
Status_Map

<- Page updated 03:51:07 PM 16 May 2014 UTC (refreshes every 10 seconds) ->



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Real-time Waveform Display on Web



Latest Earthquakes on Web

BRTT GLOBAL SEISMIC NETWORK DEMONSTRATION

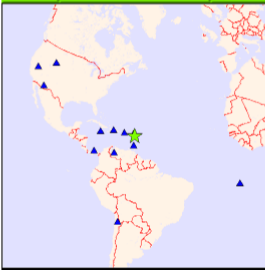


DBEVENTS
RTD
SOURCES
CLIENTS
RTM

RECENT EARTHQUAKES FROM GSN DEMO

Show Waveforms Database editing enabled Current Time: 2014-136 (16 May) 15:50:02 GMT

Mb 4.8
LEEWARD ISLANDS
pref_lat 16.77
pref_lon -61.22
pref_depth 75 km
T + 3.19 hours



Displayed Origin

Preference: Preferred

Lat: 16.7713°

Lon: -61.2217°

Depth: 75.9628 km (±37)

Region: LEEWARD ISLA

Magnitudes: majax
iddbs
confidence interv

Origin Time (GMT): 2014-136 (16 Ma)

Origin Time (Local): 2014-136 (16 Ma)

Database IDs: euid 161601
orig 161602
prefor 161603

Phases: 13 defining
Author: Antelope Real-tir

Latest Magnitudes

author Mb

USGS 4.8


Best Moment Tensor

Scalar Moment:
Percent Double-Couple:
Strike, Dip, Rake 1:
Strike, Dip, Rake 2:
Derived Mag:
MT Author:

origin time	wid	ndof	Pi	prachk	mag	region
2014-136 (16 May) 15:30:33 UTC	161681	18	*	Antelope	4.8 Mb	LEEWARD ISLANDS
2014-136 (16 May) 11:28:28 UTC	161683	22	*	Antelope	4.9 Mb	NEAR EAST COAST OF KAMCHATKA
2014-136 (16 May) 11:02:01 UTC	161686	9	*	Antelope	5.0 Mb	LEEWARD ISLANDS
2014-136 (16 May) 11:01:40 UTC	161640	20	*	Antelope	6.0 Mwp	LEEWARD ISLANDS
2014-136 (16 May) 11:01:30 UTC	161644	9	*	USGS	6.0 Mj	LEEWARD ISLANDS
2014-136 (16 May) 10:33:34 UTC	160302	8	*	Antelope	4.7 Mb	BAMOA ISLANDS REGION
2014-136 (16 May) 10:02:06 UTC	160318	11	*	Antelope	5.2 Mb	ANDREANOF ISLANDS, ALEUTIAN IS.
2014-136 (16 May) 08:30:06 UTC	157676	10	*	Antelope	5.1 Mb	PAKISTAN
2014-136 (16 May) 06:40:06 UTC	153750	10	*	Antelope	5.3 Ms	SOUTH-EAST OF LOYALTY ISLANDS
2014-135 (15 May) 22:43:20 UTC	151177	8	*	Antelope	5.3 Mb	OFF COAST OF NORTHERN PERU
2014-135 (15 May) 22:43:18 UTC	152483	0	*	USGS	5.1 Mb	NEAR COAST OF NORTHERN PERU
2014-135 (15 May) 16:33:11 UTC	147354	11	*	Antelope	4.9 Mb	BAMOA ISLANDS REGION
2014-135 (15 May) 10:17:00 UTC	143540	26	*	Antelope	6.4 Mwp	ILLU BEA
2014-135 (15 May) 09:48:58 UTC	143036	9	*	Antelope	4.8 Mb	NEAR E. COAST OF HONSHU, JAPAN
2014-135 (15 May) 08:17:42 UTC	142270	22	*	USGS	6.6 Mj	E. CAROLINE ISLANDS, MICRONESIA
2014-135 (15 May) 08:16:34 UTC	142269	22	*	Antelope	6.6 Mwp	E. CAROLINE ISLANDS, MICRONESIA
2014-134 (14 May) 20:58:14 UTC	130615	27	*	Antelope	6.5 Mwex	F. CASCHIN ISLANDS, MICRONESIA

Status: Database updated 37:35 minutes ago (tables updated: origin, netmag, mt, event)

<- Page updated 03:50:06 PM 16 May 2014 UTC (refreshes every 10 seconds) ->



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Peregrine Added Cost For Antelope 5.4 Users:

\$ 0.00



Thank You

