

# Sharing seismic catalogs: a new Antelope bulletin server

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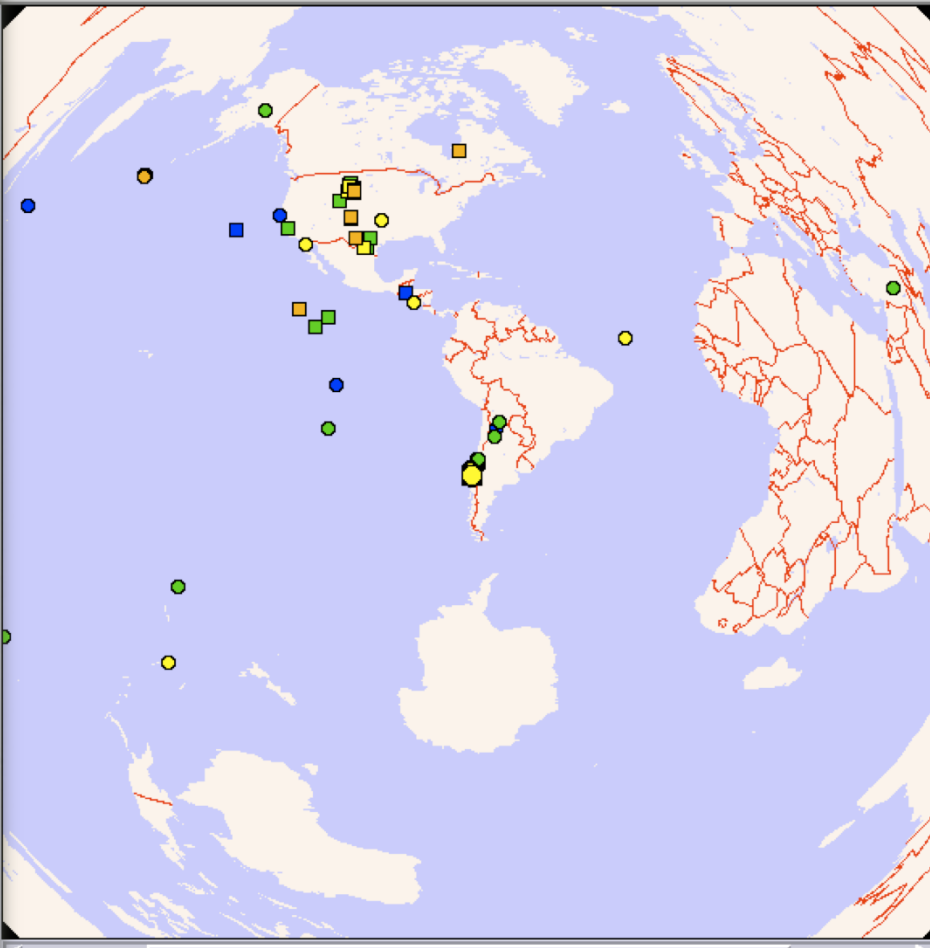
Antelope Users Group Meeting  
Prague, 24 March 2010

# Why external bulletins are needed

ANF - all TA dbevents

File Maps Waveforms

Events Stations NextEvent PrevEvent NextMap QUIT



date	time	R	ml	mb	ms	H	Hw	ndef	region
2010068(03/09)	17:41:59	v						39	WYOMING
2010068(03/09)	18:54:08	v						39	WYOMING
2010068(03/09)	19:33:01	v						47	WYOMING
2010068(03/09)	20:05:34	v						100	WYOMING
2010068(03/09)	20:18:40	v						49	WYOMING
2010068(03/09)	20:20:06	v						21	WYOMING
2010068(03/09)	20:30:09	v						30	WYOMING
2010068(03/09)	20:57:12	v						34	WYOMING
2010068(03/09)	21:41:54	v						36	WYOMING
2010068(03/09)	21:59:24	q				5.0		0	OFF COAST OF CENTRAL CHILE
2010068(03/09)	22:17:35	v						37	WYOMING
2010068(03/09)	22:46:11	v						34	MONTANA
2010069(03/10)	00:19:47	v						32	WYOMING
2010069(03/10)	00:57:27	v						14	TEXAS-MEXICO BORDER REGION
2010069(03/10)	00:57:53	q						0	BAJA CALIFORNIA, MEXICO
2010069(03/10)	01:15:34	Q	4.4					31	OFF COAST OF CENTRAL AMERICA
2010069(03/10)	02:41:48	Q	5.4					156	NEAR COAST OF CENTRAL CHILE
2010069(03/10)	05:19:06	Q	5.1					68	VANUATU ISLANDS
2010069(03/10)	06:04:35	Q						9	OKLAHOMA
2010069(03/10)	06:11:34	Q	4.9					113	ANDREANOF ISLANDS, ALEUTIAN
2010069(03/10)	08:05:27	Q	4.9					111	ANDREANOF ISLANDS, ALEUTIAN
2010069(03/10)	08:07:24	Q	5.2					120	CENTRAL MID-ATLANTIC RIDGE
2010069(03/10)	08:45:23	Q	5.1					123	OFF COAST OF CENTRAL CHILE
2010069(03/10)	09:04:14	Q	5.1					27	NEAR COAST OF CENTRAL CHILE
2010069(03/10)	09:37:59	Q	5.1					66	NEAR COAST OF CENTRAL CHILE
2010069(03/10)	13:17:17	q						0	ANDREANOF ISLANDS, ALEUTIAN
2010069(03/10)	13:45:26	a						14	NORTHERN QUEBEC, CANADA
2010069(03/10)	14:34:09	a						20	NEW MEXICO
2010069(03/10)	14:41:06	a						12	WYOMING
2010069(03/10)	14:55:08	a						21	WYOMING
2010069(03/10)	15:30:44	a						11	WESTERN TEXAS
2010069(03/10)	16:07:44	a						13	EAST CENTRAL PACIFIC OCEAN

2010069(03/10) 09:37:59 5.1 Q 66 NEAR COAST OF CENTRAL CHILE  
lat = -36.8300, lon = -73.4280, depth = 35.0000  
orid = 2793016, nass = 414, evid = 2413005  
auth = QED\_weekly, algorithm = -,  
latency = 8105 hours

Status: Time: 2010069(03/10) 17:59:55 Gmt, 00:04:30 since last update, 01:52:11 since last event

# How to get bulletins into css3.0 format?

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- No one publishes/distributes real-time css3.0 origin information.
- Need to collect information from:
  - Screen scrapes (parsing of tagged HTML)
  - http available text files or xml files
  - ftp
  - RSS
  - Finger

Formats of distributed information and locations for bulletin collection can change with no warning!

# Methods for bulletin collection in Antelope

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- In-house developed scripts
- contrib script(s)
  - `update_weekly_qed`, `scec2db`, `mchedr2db`, etc.

## Drawbacks:

- Repetition of coding
- Lack of maintainability

# What catalog hypocenters are needed?

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## 1 Danny's approach

Select solutions only for events over magnitude threshold

- Good for fully tuned network and/or group with no additional projects and no post-processing or review

## 2 Future direction

Select only published solutions with user specified interest criteria

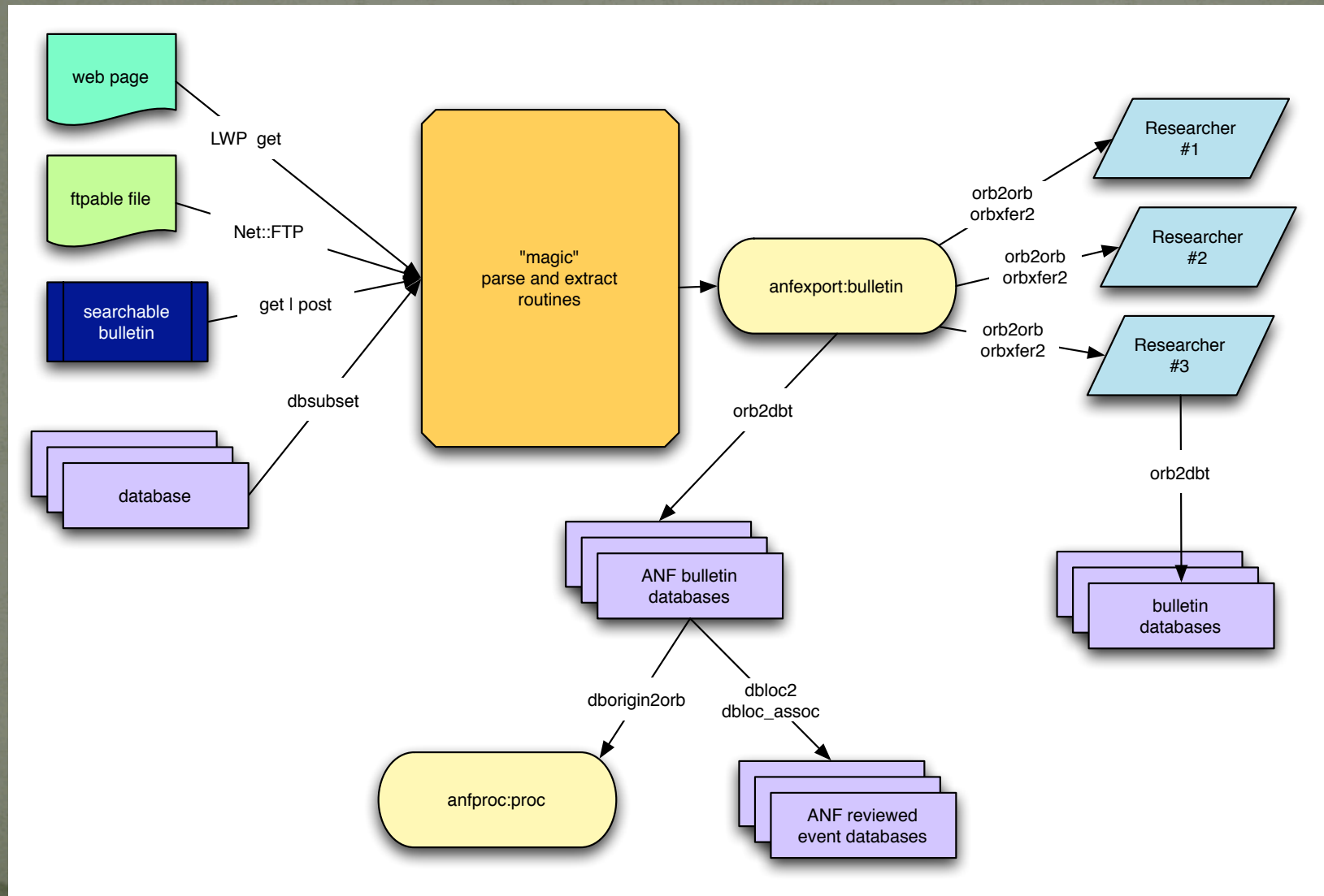
- Good for significant global events, and local/regional

## 3 My approach

Select all published solutions

- Useful for research purposes, detection tuning, analyst re-review of events, and any future reprocessing

# Central bulletin server via Antelope



# Central bulletin server via Antelope

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- Single institution maintains codes for parsing known bulletin distribution points
- Open access point for orb2orb connections of origin information
- Customizable on receiver side for what bulletins to collect

# Bulletins supported

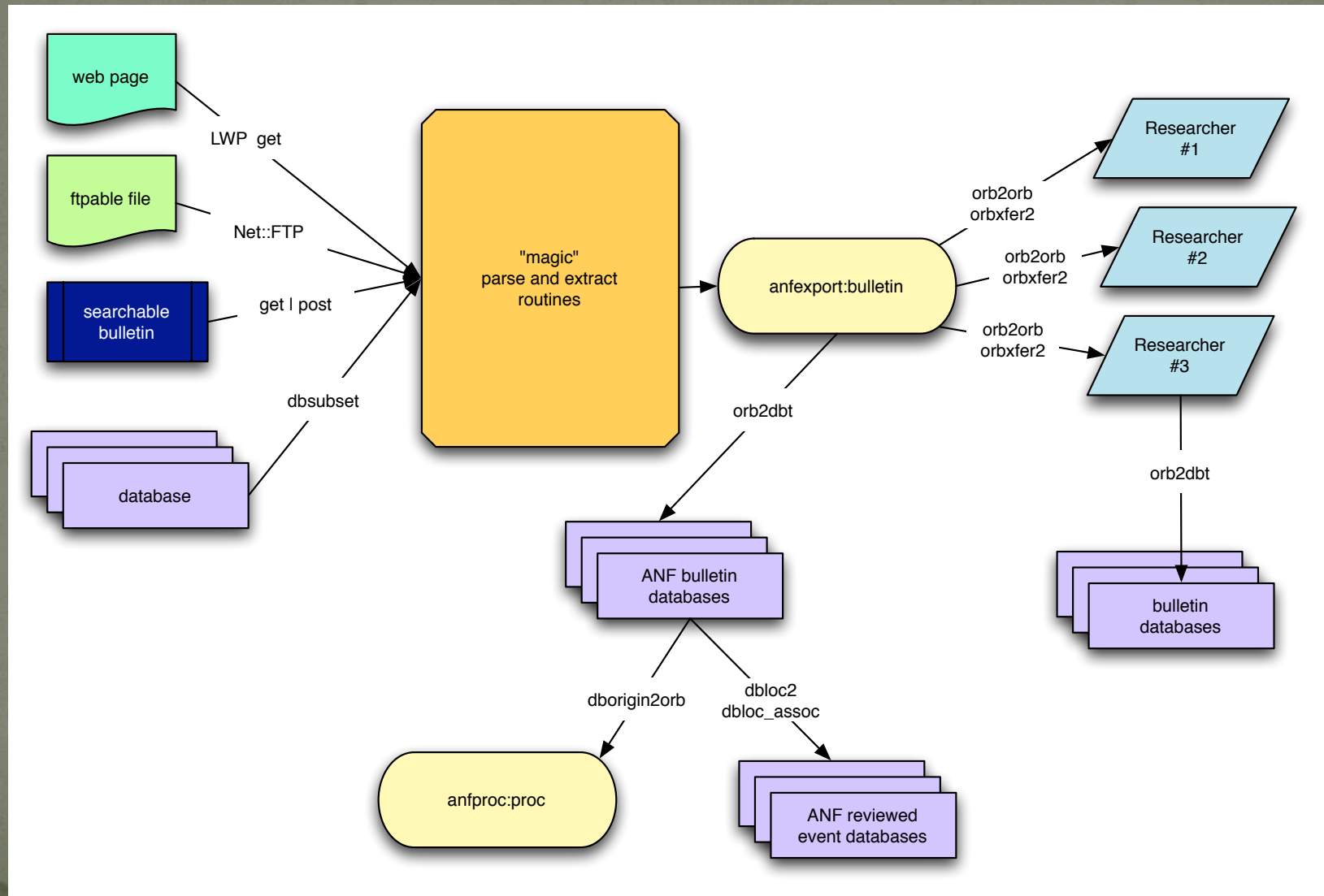
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- **USGS/NEIC (world):** CUBE, QED, QED\_weekly, mines, PDE
- **EMSC (Europe)**
- **NRCAN (Canada):** PGC and GSC
- **US Regional networks:** BC-NESN, Lamont-LCSN, CERI-NMSN, Montana Tech-MBMG, US-PNSN, UNR-NBE, UUSS-Utah, UUSS-Yellowstone, UCSD-Anza, Berkeley-NCSN, Caltech-SCSN, UAF-AEIC
- **ANF (US)**

Pending: Mexico/N. Baja, Puerto Rico, Ecuador, CMT, Geofon(?), others



# Central bulletin server via Antelope

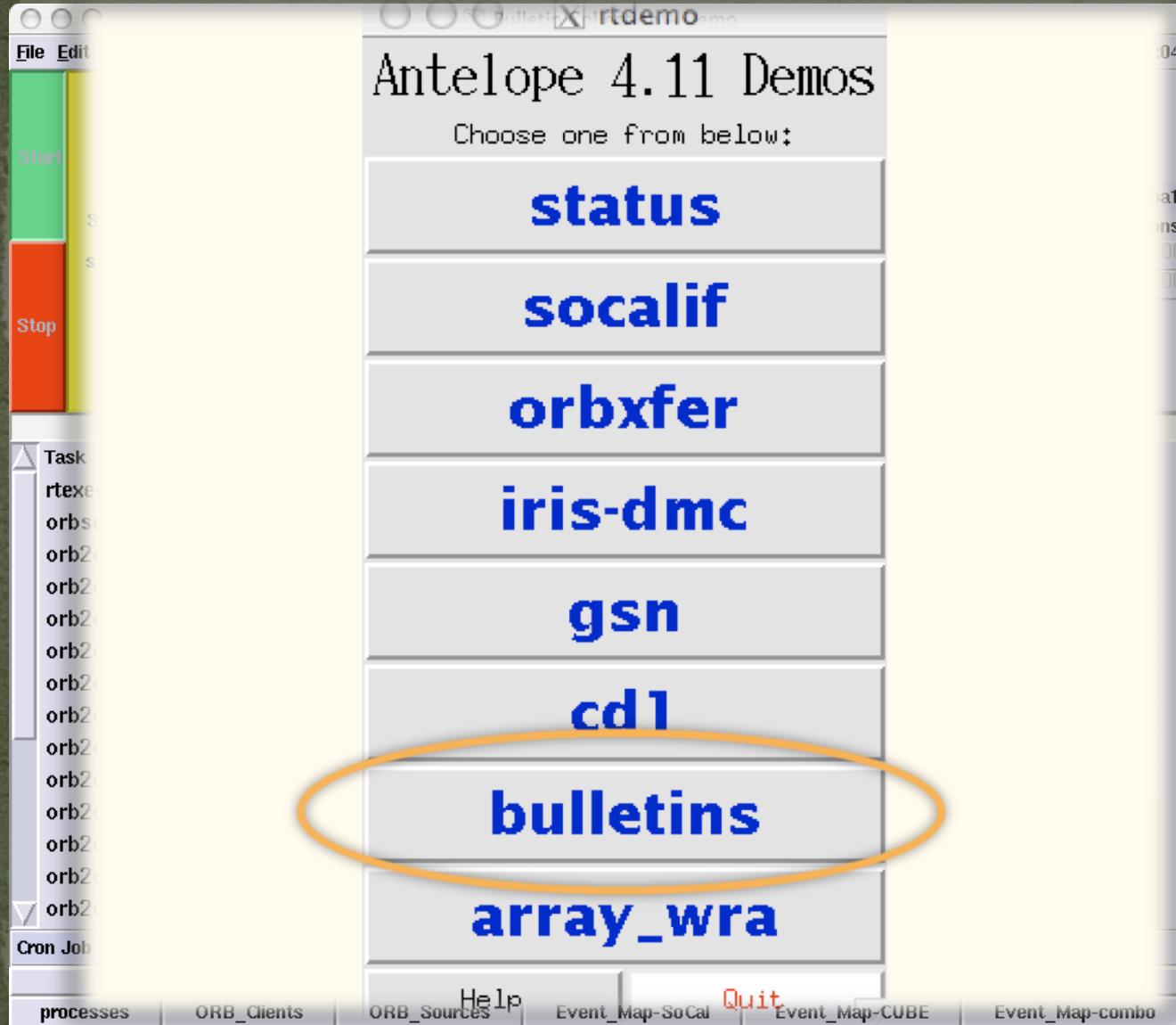


# Contents of anlexport.ucsd.edu:bulletin

## Sources

Srcname	Thread	#pkts	kbytes	pktid	Oldest time	Latest pktid	Latest time	Average kbps	Average latency
/pf/AEIC/finger/orb2dbt	0	132000	56034.0	5090738	062 23:47:29	3139417	069 20:32:34	0.8	13:40 minutes
/pf/AEIC/orb2dbt	0	469102	199441.9	5701052	063 23:27:40	3128277	069 20:28:01	3.1	18:14 minutes
/pf/ANF/orb2dbt	0	51886	17822.8	5100578	063 0:27:48	3128479	069 20:28:13	0.2	18:02 minutes
/pf/EMSC/orb2dbt	0	47700	20248.7	5087818	062 23:44:03	3140619	069 20:44:05	0.3	2:10 minutes
/pf/LCSN/orb2dbt	0	102772	43626.7	5091730	062 23:48:09	3140381	069 20:33:16	0.6	12:59 minutes
/pf/MTECH/A/orb2dbt	0	829080	351944.5	5088858	062 23:46:52	3138735	069 20:32:06	4.7	14:09 minutes
/pf/MTECH/R/orb2dbt	0	97222	41270.7	5087810	062 23:33:33	3140519	069 20:33:27	0.6	12:48 minutes
/pf/NBE/orb2dbt	0	179216	76077.2	5090938	062 23:47:41	3139665	069 20:32:47	1.0	13:28 minutes
/pf/NCSN/orb2dbt	0	283572	120376.3	5103336	063 0:29:19	3132121	069 20:29:50	1.6	16:24 minutes
/pf/NEIC/mines/orb2dbt	0	326	138.2	5151780	063 2:28:17	2856107	069 11:30:06	0.0	9:16 hours
/pf/NEIC/qed/orb2dbt	0	344752	146347.2	5088052	062 23:46:24	3137257	069 20:31:31	2.0	14:44 minutes
/pf/NEIC/qedw/orb2dbt	0	26086	11169.4	6048418	064 11:29:01	2854025	069 11:29:27	0.2	9:17 hours
/pf/NESN/orb2dbt	0	6686	3171.1	5100538	063 0:27:03	3125307	069 20:27:04	0.0	19:11 minutes
/pf/NMSN/orb2dbt	0	363116	154142.7	5091184	062 23:47:54	3140221	069 20:33:04	2.1	13:11 minutes
/pf/NRCAN/GSC/orb2dbt	0	105326	44710.9	5088698	062 23:46:39	3137419	069 20:31:44	0.6	14:31 minutes
/pf/NRCAN/PGC/orb2dbt	0	329014	139666.4	5090174	062 23:47:13	3139217	069 20:32:23	1.9	13:52 minutes
/pf/PNSN/A/orb2dbt	0	39846	16914.6	5087918	062 23:46:01	3140667	069 20:46:02	0.2	13.142 seconds
/pf/PNSN/R/orb2dbt	0	8772	3723.7	5886428	064 5:31:11	3071653	069 18:19:24	0.1	2:27 hours
/pf/SCSN/orb2dbt	0	139916	59394.3	5100802	063 0:28:00	3128943	069 20:28:27	0.8	17:48 minutes
/pf/UUSS/combo/orb2dbt	0	48038	20392.1	5087972	062 23:46:12	3140723	069 20:46:12	0.3	2.522 seconds
/pf/UUSS/utah/orb2dbt	0	358066	151999.0	5101332	063 0:28:39	3130981	069 20:29:17	2.1	16:58 minutes
/pf/UUSS/yellowstone/orb2dbt	0	757096	321387.3	5104570	063 0:29:43	3136765	069 20:30:40	4.4	15:35 minutes

ringbuffer has 6 days 21.2 hours of data  
 2000.000 Mbytes data in 4719590 packets  
 average packet size = 424 bytes



How to collect  
css3.0 bulletin  
from orb?

New rtdemo  
example in  
Antelope 5.0  
release

# Collected bulletins

- Using rtdemo, bulletins will be collected to

```
“catalogs/”
rt@anfanalyst:/export/home/rt/rtsystems/rtdemo/rtdemo_bulletins/catalogs
anfanalyst{rt}63% pwd
/export/home/rt/rtsystems/rtdemo/rtdemo_bulletins/catalogs
anfanalyst{rt}64% ls *origin *netmag
aeic.netmag          mtech.netmag        nmsn.origin          scsn.netmag
aeic.origin          mtech.origin        nrcan.netmag         scsn.origin
anf.origin           nbe.netmag          nrcan.origin         uuss.netmag
combined.netmag     nbe.origin          pnsn.netmag          uuss.origin
combined.origin     ncsn.netmag         pnsn.origin          yellowstone.netmag
emsc.netmag         ncsn.origin        qed.netmag           yellowstone.origin
emsc.origin         nesn.netmag         qed.origin
lcsn.netmag         nesn.origin        qed_weekly.netmag
lcsn.origin         nmsn.netmag        qed_weekly.origin
anfanalyst{rt}65% □
```

- Change \$CATALOGS in rtdemo rtxexec.pf to local save location

# Future directions

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- Program to split/segregate collected bulletins by year
- Additional parsers
- “README” files sent to :bulletin for all institutions to be transferred via orbxfer2
- Resend “old” bulletins previously collected at ANF
- Client-side customization examples – criteria based subset/removal of events that are not of interest?

Try it!!!

Collect from [anfexport.ucsd.edu:bulletin](mailto:anfexport.ucsd.edu:bulletin)