

dbbuild : a new approach to metadata

Daniel Quinlan
BRTT, Inc.

Problem

- Create base database
 - site (station location)
 - sitechan (channel orientation)
 - instrument (responses)
 - sensor (connect response to channel)
- Previous approaches
 - by hand
 - SEED
 - station parameter files

dbbuild

- interactive gui for new configuration
- batch mode to create database from simple input command file

Gather data

- station
 - name
 - lat, lon, elevation
- datalogger info
 - model
 - s/n
 - sample rates
- sensor info
 - model
 - orientation
 - s/n

Master Database Construction

Database Configuration Help

Configuration time Comment

6/08/2004 15:00:00

Network effective time for this configuration

net network name

XX Westward Look Temporary Deployment

Station

sta	latitude	longitude	elevation	station name
SAGU	32.33704	-110.9688	.787	Saguaro Room Antelope Workshop

Datalogger

Quanterra 330 Linear Phase Composite

Pascal_q330_linear

serial number dlsba

Q330_s/n 01_23

Sensor

Streckeisen STS-2 Clear

?	1	2	3	4	5	6
	sts2	serial number	edepth	band	rsptype	loc code
		STS-2_s/n	0.0001	b	V	
		axis	hang	wang	sensor gain	lead
		Z	0	0	1.5e-06	
		N	0	90	1.5e-06	
		E	90	90	1.5e-06	
		sumprate	on	chan	loc	dchan
		50sps	<input checked="" type="checkbox"/>	BHZ		
			<input type="checkbox"/>			
			<input checked="" type="checkbox"/>	BHN		
			<input type="checkbox"/>			
			<input checked="" type="checkbox"/>	BHE		
			<input type="checkbox"/>			

Add

dbbuild

- specify station configuration at a time
- add that configuration to the database
- not a database editor
 - can't change something that is already entered into database

Complications

- orientation angles
- more sample rates
- more than 1 sensor
- loc codes
- different field sta/chan codes
- gains by axis
- preamp
- horizontal components neglected

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		N	0	90	1.5e-06	
		E	90	90	1.5e-06	
		preamp stage				
		50sps				
		on	chan	loc	dchan	
		<input checked="" type="checkbox"/>	BHZ			
		<input checked="" type="checkbox"/>	BHN			
		<input checked="" type="checkbox"/>	BHE			
		<input type="checkbox"/>				
		<input type="checkbox"/>				
		<input type="checkbox"/>				

Add

Batch mode

- simple command language

```
time 6/08/2004 15:00:00.000
net XX Westward Look Temporary Deployment
sta SAGU 32.33704 -110.9688 .787 Saguaro Antelope
datalogger Passcal_q330_linear Q330_s/n 01_23
sensor sts2 0.0001 STS-2_s/n
add
```

Corrections to database

- by hand, eg dbe, dbset
- edit dbbuild batch script, regenerate database
- still some problems because of ids like chanid
- dbbuild automatically keeps a batch script as it adds configurations: db-dbbuild

New dataloggers and sensors

- dbbuild uses a database of dataloggers and sensors in \$ANTELOPE/data/instruments.
- if your datalogger or sensor is not already present, you must develop the corresponding parameter file.
- datalogger parameter file describes the samplerates and corresponding fir filters
- sensor parameter file describes sensor response, instrument axes/orientation

sensor example

```
description      Streckeisen STS-2
dfile            sts2
rsptype          V      # velocity instrument
band             b      # broad band
gtype            sensor
gnom             15e-7
iunits           nm/s
ounits           V
orientations     &Tbl{
Z                0      0
N                0      90
E                90     90
}
response         &datafile(responses/sts2)
```

response example

theoretical	1 anti-alias	paz	pz6seismo
5.92E+07			
5	Poles		
-.3701E-01	0.3701E-01	0.0000E+00	0.0000E+00
-.3701E-01	-.3701E-01	0.0000E+00	0.0000E+00
-0.2513E+03	0.0000E+00	0.0000E+00	0.0000E+00
-0.1310E+03	0.4673E+03	0.0000E+00	0.0000E+00
-0.1310E+03	-.4673E+03	0.0000E+00	0.0000E+00
2	Zeros		
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00
0.0000E+00	0.0000E+00	0.0000E+00	0.0000E+00

datalogger example

```
description      Canadian GD1 Datalogger
dfile gd1
streams          40sps
40sps           40    a/d f1 f2 f3
a/d             &Arr{
samprate        15000
gtype           digitizer
gnom            107374182.4
iunits          V
ounits          counts
sn              datalogger
}
f1              &Arr{
gtype           FIR_decimator
decifac 25
response        &datafile(responses/dsp_gd1.f1)
gnom            1
}
```

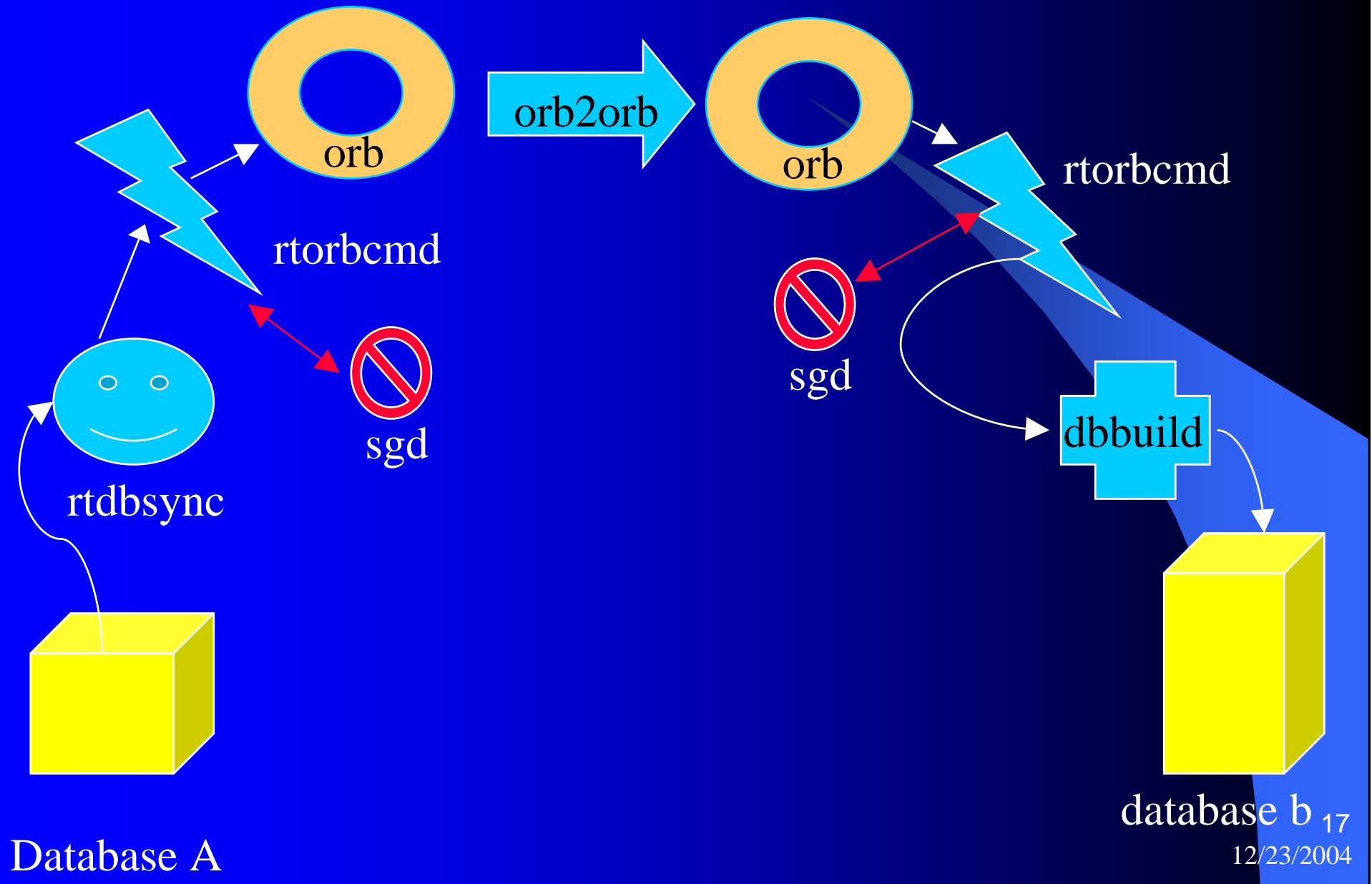
Odds and Ends

- Ending a station
 - close SAGU 6/13/2004 6:45
- Terminating a database
 - raze

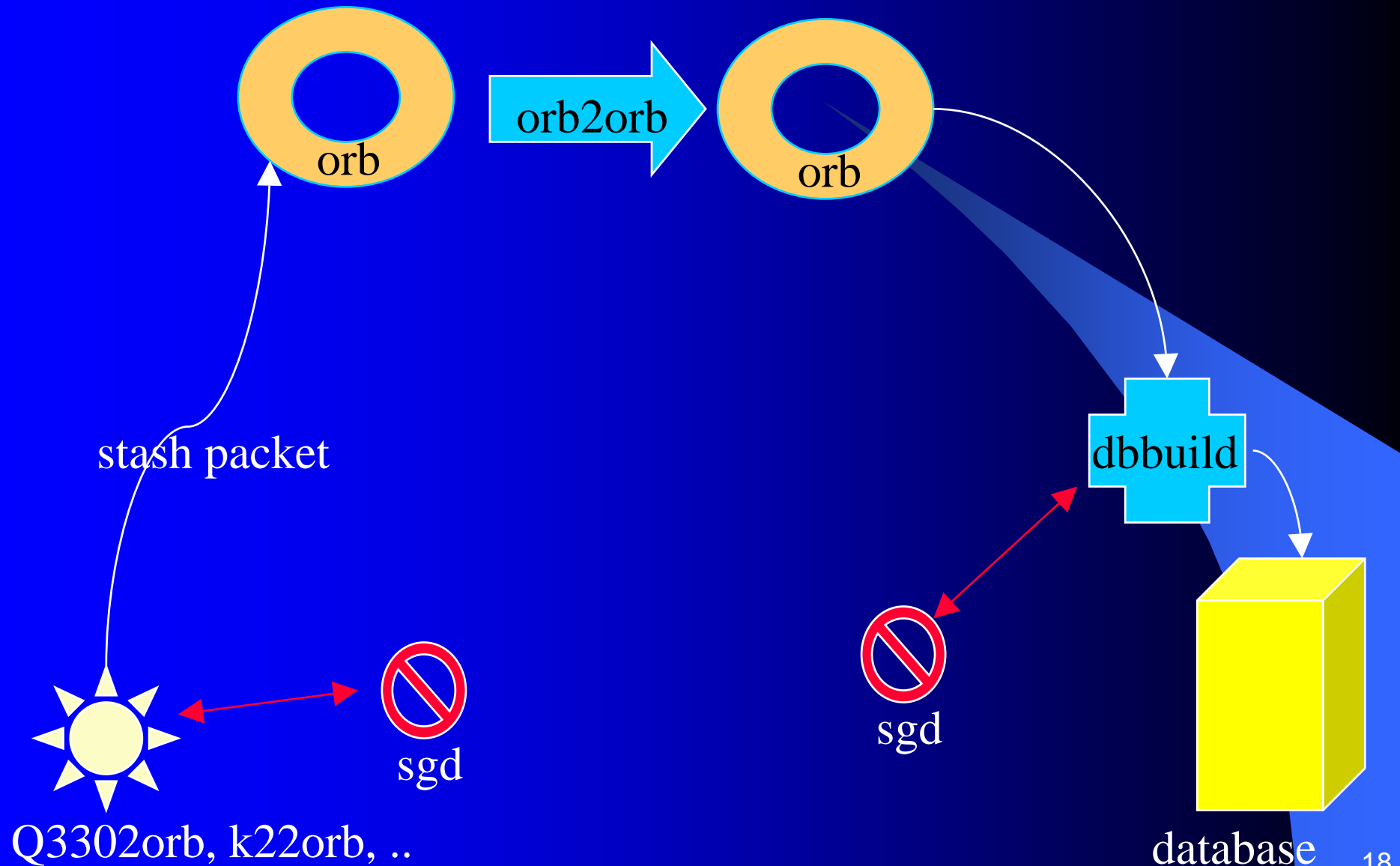
Summary

- new, simple method for generating station database records
- batch mode allows generation of larger configurations
- corrections applied by editing batch file and rerunning
- can easily extend to new data loggers and sensors

Synchronizing Databases I



Synchronizing Databases II



Q3302orb, k22orb, ..

database 18

12/23/2004

More Information

- `dbbuild(1)`
- `dbbuild(5)`
- `dbbuild_batch(5)`
- Try it out!
- `mk_dataless_seed`