

APPENDIX I -How to Build a Batch File

What each field means:

The batch file is one of the main components of your database. It is the basis for **dbbuild** to construct the database. The batch file also serves as a “historical record” of your network configuration, therefore it should contain all the changes and additions associated to every one of your stations. Below you can find detailed description of what each field means on the batch file and examples of batch file contents.

- 1) Network code <net>: Two (2) alphabetical characters assigned by DMC at start of deployment.

Example: XN, YD, PI

Make sure you have a network code. If not, please request it from <http://www.fdsn.org/getcode.html>.

- 2) Station name <sta>: Up to five (5) alphanumeric characters; no special characters allowed:

Example: STA01, NP00, Y2CC

- 3) Location: Latitude, longitude and elevation – in kilometers:

Example: -77.72237 162.27354 0.042

- 4) Staname – A long, descriptive name for the station:

Example: M-mountain Socorro

- 5) Time Start configuration - Make sure the starting time is exactly the same or earlier than the first trace sample for each station:

Example: time 07/26/2004/ 21:00:00

- 6) Datalogger code – this line refers to the type of datalogger you used for the station:

Example of datalogger line in batch file:
datalogger Passcal_q330_linear 0984

Note: For the specific name of different types of digitizers and sensors, go to /antelope/4.8/data/responses & ~/antelope/4.8/data/instruments/dataloggers or ~/antelope/4.8/data/instruments/sensors. There you will find the different response files (and the correct names) to be added to the batch file. If the response file is not in the default directory, please let us know and we will work with you to build the required file.

Example of sensors and dataloggers files: rt130, Passcal_q330_linear, cmg3t, cmg40t, cmg40t_1s, l22, cmg3esp, sts2

7) serialnumber [dlsta] – serial number for the datalogger

Example datalogger: Passcal_q330_linear 0984
(from the example above)

8) Sensor – please select the type of sensor for each station.

The description used for digitizers and sensors will call the associated response file and description from the directories mentioned above.

Example of this line in the batch file:

In the batch file: sensor 128 0 0001
What it means: sensor code emplacement depth serialnumber [loc]

The code must be chosen from the filenames of the sensor parameter files in the dbbuild database. **Dbbuild** uses the corresponding parameter file to fill in other values and configure itself for the chosen sensor. The emplacement depth and serial number are also specified on this line, along with an optional location code.

The location code is merged with the SEED code to create the CSS 3.0 channel code. This is necessary in various situations. For example, if a borehole instrument and a surface instrument both use the same channel names.

code edepth serialnumber [loc] : Amend the edepth, serialnumber, and/or loc code for the sensor code. Note that this syntax does not provide for a case where multiple sensors of the same name are connected to a datalogger.

Antelope has a set of responses for most common sensors and digitizers. However some sensors have specific features (sensitivity, poles and zeros, etc) so make sure the description you select truly describes the instruments on your station. Streckeisen sensor response is very uniform, but Guralp sensors may have some exceptions:

Example:

/opt/antelope/4.10/data/responses/cmg3t

- Standard cmg3t – 120 seconds - Sensitivity 1500 V/m/sec

Other cmg3t descriptions:

/opt/antelope/4.10/data/responses/cmg3t_30sec

/opt/antelope/4.10/data/responses/cmg3t_360sec

/opt/antelope/4.10/data/responses/cmg3t_60sec

/opt/antelope/4.10/data/responses/cm40t :
- Standard 30 sec cm40t; Sensitivity 800 V/m/sec

Other cm40t descriptions:

/opt/antelope/4.10/data/responses/cm40t_1 :
- Guralp 40T-1 1 Hz sensor; sensitivity 2000 V/m/sec

/opt/antelope/4.10/data/responses/cm40t_1_hi
- Guralp 40T-1 1 Hz sensor; sensitivity 4000 V/m/sec

If you are not sure about the description of your sensor you can request the response file from guralp (caldoc@guralp.com). This is where we get the response files for the proper antelope format.

9) Sensor serial number

We are working on developing a system to request data by serial numbers. It will be helpful to track the historical behavior of particular sensors.

Example: sensor 128 0 0001

10) Sensor Orientation - description from the man page for dbbuild_batch :

axis label hang vang [sens [lead [pgain [pstage]]]]

axis2 label hang vang [sens [dlgain [pgain [pstage [lead]]]]]

Default axes are specified in the sensor parameter file. However, instruments may be oriented differently in some circumstances, and it may be necessary to change the label (usually Z, E or N) and the corresponding orientation angles. In these cases the label in this command takes a different form:

old->new

For example, "E->1" to change from the default label "E" to the special label "1".
Optionally, one may enter

- An individual sensitivity sens for this sensor axis
- An individual datalogger gain dlgain for this datalogger input lead
- An optional pre-amp gain pgain
- An optional pre-amp stage pstage (with corresponding response file)
- A lead code identifying which datalogger lead this axis is connected to. This is required when the datalogger gain is to be looked up in a separate serial-number specific parameter file.

Each axis statement specifies settings for the selected instrument and the axis with the currently specified label. To simply associate a sensor axis with a particular set of leads, as when the actual sensitivities and dataloggers gains will be looked up in a serial number specific parameter file, you might use an axis statement like this:

axis N - - - ch2

Example:

Standard Orientation	Non-standard					
axis Z 0 0 - 1 1	axis Z 0	0	-	1	32	
axis N 0 90 - 2 1	axis N->2	325	90	-	2	32
axis E 90 90 - 3 1	axis E->3	55	90	-	3	32

- 11) Sample rate** – taken from the digitizer, this will determine the channel name according to SEED format. You can have more than one sample rate description for the same station. Please refer to the man page for `dbbuild_batch` if you would like more details.

Example: `samplerate 1sps`

- 12) Channel description:** MSEED channel names are defined by the sample rate, instrument (i.e. sensor) type, and channel orientation. Please refer to the Seed Reference Manual V2.4 Appendix A for more detail.

In the batch file defined by a line like:

Example in the batch file: `channel Z EPZ`
 What each field means: `channel axis-label chan loc [dlchan]`

Where :

`channel`: part of the template to defined the channel

`Z` : Axis

`EPZ` : Label (based on SEED convention)

`Loc` : absent in this example, PASSCAL does not require location codes unless there are more than one sensor at the same station, or by PI preference.

- 13) add** - Add the current configuration to the database

- 14) close time** – When the experiment ends, or there is a need for changing the configuration in one or more of the stations in your network, you can use the following statements to define specific configurations during a time frame:

`close sta time` : Turn off the station with code `sta` as of the specified time.

close sensor sensor time : Turn off a particular sensor at the selected station
close datalogger datalogger time : Turn off the datalogger at the selected station

Example: close NP00 12/31/2007 23:59:59

❖ IMPORTANT

When building your database in antelope, please take a moment to identify the response associated to your instrument.

- 1) If you are not sure about the response and you have a GURALP sensor, Table 1 may help you to identify the response file you need to use when building your database. Please contact data_group@passcal.nmt.edu, we will help you if there is any question/doubt about which instruments you have on your experiment.
- 2) If you have an STS2 or any other sensor described under \$ANTELOPE/data/responses, these files haven't been modified and are standard.
- 3) If you have a sensor or digitizer that is not described on ANTELOPE, you will need to find these responses (poles and zeroes) and create the two necessary files in antelope, feel free to contact me at eliana@passcal.nmt.edu if you need any assistance. The two files that need to be created are under:

Poles and zeros: \$ANTELOPE/data/responses

Descriptor file: \$ANTELOPE/data/instruments/sensors

Suggested reading:

Man page for dbbuild_examples, dbbuild