

Configuration file of SHM

The configuration file controls all global parameters of the SHM program. Its default location is `SSH_INPUTS/shm-config.txt`. It is recommended create a private copy and define an environment variable `SSH_USER_PARAM` pointing to it (e.g.: `setenv SH_USER_PARAM $HOME/shm-myconfig.txt`).

Syntax description

Each line consists of two parts: `<keyword>` and `<value>`, separated by one or more blanks (or tabs). Neither `<keyword>` nor `<value>` may contain blanks. All lines starting with '!', '#' or blank lines are ignored. Empty string values must be entered as `<NULL>` or `NULL`.

Variables beginning with `v$` are freely definable, all other names are fixed and hardwired in the program code. `v$`-variables appear in the definition of the MiniSEED read dialog boxes to be able to compose your own station subsets. Names of `v$` variables are not case sensitive, their values are case sensitive.

include statements read prepared parameter subsets from files of the same syntax as this file. Default path of this parameter subset is `SSH_INPUTS`, prepended if the first character is not '/'. The parameters may be overwritten in later statements, e.g. in the main configuration file.

Since version 2.4g all text string and string glist parameters may contain environment variables or internal variables (`v$`-variables) which are translated accordingly.

valid parameters:

`file_version`

Version of parameter file, e.g. 1.0. This is the version number of the parameter file, not related to version numbers of SH or SHM.

`texteditor`

Type: text string. Editor used for displaying text files. Value example: `xedit`

`station_info_file`

type: text string (up to 2.4e), string list (since 2.4g). Station info file, default takes the value as defined in the SH startup file, usually `SSH_INPUTS/STATINF.DAT`. As a string list (separated by blanks, commas or semicolons) it takes an arbitrary number of files which are searched for station information in the specified order.

`filter_lookup_file`

Type: text string (up to 2.4e), string list (since 2.4g). Filter lookup table, default takes the value `SSH_INPUTS/filter_lookup.txt`. As a string list (separated by blanks, commas or semicolons) it takes an arbitrary number of files which are searched for filter entries in the specified order.

`sensitivity_file`

Type: text string (up to 2.4e), string list (since 2.4g). Sensitivity file for data streams. default takes the value `SSH_INPUTS/sensitivities.txt`. A value of old-style uses separate `seedcalib_...` files in `SEED_INPUTS` which have been used before SHM version 2.4. For a syntax description of the file read the [sensitivity file manual](#). As a string list (separated by blanks, commas or semicolons) it takes an arbitrary number of files which are searched for sensitivity/gain information in the specified order.

defpath_filter (since version 2.4g)

Type: string list. List of search paths for filters. Default is a value of ". \$SH_FILTER" (current path and \$SH_FILTER directory).

defpath_command (since version 2.4g)

Type: string list. List of search paths for command procedures. Default is a value of ". \$SH_COMMAND" (current path and \$SH_COMMAND directory).

v\$read_dialog_stations_??

Type: text string. Stations in read dialog box for MiniSEED data. Separate elements by commas, no blanks please. Elements 1 to 30 give names to the 30 station buttons of the dialog box. Elements 31 and 32 ! give names to the two subgroup buttons. Empty names are specified by 3 hyphens '---'. Subgroups (optional) are indicated by brackets around the station list group (like [xyz,abc],[bbb,ccc]). Maximum is two subgroups. Up to 99 (not useful!) different dialog boxes may be defined. Switch them using the Next button of the dialog box. List elements with a value starting with \$ refer to a v\$-variable defining a station subset. Example:

```
v$read_dialog_stations_01 [GRA1, GRA2, GRA3, GRA4, GRC1, GRC2], [RGN, RUE, FUR, MOX, CLL, BRG, WET], GR
v$read_dialog_stations_02 $NW, ---, $SW, ---, ---, $N, $C, $S, ---, ---, ---, $E

!station subsets for above button
v$nw bug, ibbn, tns, bseg, clz, wlf, nrd1, hlg
v$sw bfo, stu, tns, gral, grfo, fur, wlf
v$n rgn, hlg, bseg, ibbn, rue, clz, nrd1, ubba
v$c mox, gral, grfo, tns, bug, clz, brg, c11, wlf, nrd1, ubba
v$s bfo, brg, c11, clz, fur, gec2, gral, mox, stu, tns, tann, wet, wlf
v$e gec2, wet, werd, wern, tann, gunz, neub, manz, rotz, gral, grfo, mox, c11, brg, fbe
```

v\$read_dialog_channels_??

Type: text string. Channel names for the Mini-SEED dialog boxes defined above. If not specified it defaults to LH,BH,HH. Example:

```
v$read_dialog_channels_01 LH, BH, HH
v$read_dialog_channels_02 LH, BH, SH
```

prompt_analyst

Type: boolean (Values: True/False?). Prompt for analysts's initials at startup of SHM. Default is False.

analyst

Type: text string. Analysts initials if not prompted (prompt_analyst set to False). Default is <NULL>.

list_of_analysts

Type: text string. List of valid analyst initials. Enter no blanks in this comma-separated list! Default is <NULL>. Example:

```
list_of_analysts sta, wh, ki, xx
```

minmax_format

Type: text string. Output of minimum/maximum amplitudes in the single trace window as numbers. Specify as C format string (e.g. %5.2f) or enter <NULL> for no output. Default is <NULL>.

filter_type

Type: character. Default filter type for all filter operations. Possible values: F = FFT filters, R = recursive filters.

default_quality

Type: integer. Default quality of phase picks. Possible values between 1='bad' and 9='very good'. Default is 2.

default_event_type

Type: integer. Default type of event. Possible values are:

- ◇ 0 = unknown (default),
- ◇ 1 = teleseismic earthquake,
- ◇ 2 = nuclear explosion,
- ◇ 3 = regional earthquake,
- ◇ 4 = local earthquake,
- ◇ 5 = quarry blast,
- ◇ 6 = mining induced

default_phase_flags

Type: integer. Default flag values set on phases. Possible flags: 0x01 = calibration event, 0x02 = ignore event, 0x04 = telex phase. Recommended: 0 Default is 0.

default_depth_type

Type: integer. Default depth type. Possible values: 0 = undefined, 1 = preset, 2 = estimated, 3 = free depth, 4 = poor quality, 5 = less well constrained, 6 = reliable, 7 = external depth source. Default is 0.

default_loc_quality

Type: integer. Default location quality. Possible values: 0 = undefined, 1 = signal too weak, 2 = incoherent, 3 = no bearing possible, 4 = region only, 5 = reliable. Default is 0.

default_depth

Type: floating point. Default source depth in km. Default is 33.0.

max_cursor_form

Type: integer. Cursorform changes when clicking the middle mouse button. The number of waveform shapes is given here. Possible values: 2 = crosshair, 3 = waveform cursor, 4 = negative waveform, 5 = hilbert transformed waveform, 6 = negative hilbert transformed waveform. Default is 5.

depth_phase_list

Type: text string. List of depth phases used for depth determination. Default is pP,sP,pS,sS.

theo_phase_list

Type: text string. List of preselected phases in the theoretical phase arrival dialog box. Default is P,S,pP,pS,sP,sS,ScS,PcP,PP,SS.

diff_phase_list

Type: text string. Phase differences used for distance determination in option Phase Diff. Default is S-P,PP-P,Pg-Pn

defpath_filter

Type: text string. Path to filter files, default takes the value of \$SH_FILTER.

defpath_events

Type: text string. Path to detection lists, default takes the value of \$HOME.

defpath_gse

Type: text string. Path to GSE files, default takes the value of \$SH_ROOT/sh/data-examples/gse.

defpath_ah

Type: text string. Path to AH files. default takes the value of \$HOME.

defpath_q

Type: text string. Path to q-files. default takes the value of \$HOME.

defpath_evid

Type: text string. Path to evid directory (for event number generation). default takes the value of \$SH_PRIVATE/evid.

defpath_evtout

Type: text string. Path to evtout directory where evt-files are created. default takes the value of \$SH_PRIVATE/evtout.

defpath_data

Type: text string. Path to sfdfile for MiniSEED input.

default_filter

Type: text string. Default filter, applied after Read New. Default is <NULL>.

default_source

Type: text string. Default source (reporting agency) in your evt-files. Default is UNDEF.

phase_ampl_diff

Type: floating point. How far (in s) an amplitude measurement can be away from the phase pick.

refstation

Type: text string. Reference station used in array operations. Default is CENTRE.

list_of_refstations

Type: text string. List of reference stations offered in the dialog box (option Ref. Station ...), maximum 6 stations.

double_click_time

Type: integer. Maximum time difference between two mouse clicks (in ms) to accept it as double click. Default is 200.

min_drag_box_width

Type: integer. Minimum size of trace magnification drag box (right mouse button) in pixels. Default is 7.

x_max_drawlth

Type: integer. Seismograms are drawn in portions of this size (in samples). Default is 4096.

drag_box_rubber_val

Syntax description

Type: integer. For changing the size of an existing drag box the right mouse click must be that close to the right border of the box (in pixels). Default is 10.

top_margin

Type: integer. Top margin of trace display in pixels. Default is 20.

window_border

Type: integer. Window border in pixels. Default is 3.

close_phase_resol

Type: floating point. How close to an existing phase a left mouse click must be to grab it instead of creating a new phase. Unit is pixels. Default is 8.0.

trace_zoom_base

Type: floating point. The trace amplitude zoom ruler has exponential magnification steps. The formula is $\langle \text{zoom} \rangle = \langle \text{trace_zoom_base} \rangle * \exp(\langle \text{ruler} \rangle / \langle \text{trace_zoom_exp} \rangle)$ where $\langle \text{ruler} \rangle$ is the value read from the ruler. Default is 10.0.

trace_zoom_exp

Type: floating point. Description see trace_zoom_base. Default is 3.3333333.

area_zoom_base

Type: floating point. Exponential magnification of the drawing area (ruler in the Setup dialog box). Parameter description similar to trace_zoom_base above. Default is 10.0.

area_zoom_exp

Type: floating point. Description see area_zoom_base. Default is 25.0.

move_wdw_step

Type: floating point. When moving time windows in the main display window (options Window - Move Right/Move? Left) the following value is multiplied to the default step of 50% of the width of the window. Default is 1.0.

calib_wdw_width

Type: floating point. Width of calibration window in s/deg (window opening in Calibration option). Default is 2.5.

calib_wdw_height

Type: floating point. Height of calibration window in s/deg. Default is 2.5.

calib_azimuth_grid

Type: floating point. Grid size for azimuth in the calibration window. Default is 10.0.

calib_slowness_grid

Type: floating point. Grid size for slowness in the calibration window. Default is 0.5.

auto_phase

Type: text string. Name of dummy phases. Default is beam.

event_check_proc

Type: text string. Event check procedure applied to evt-files created with Final Parameters. Default is <NULL>.

screendump_proc

Type: text string. Screendump procedure. Default is screendump.csh.

evtview_proc

Type: text string. Reformatting of evt-files for quick viewing. Default is ev2view.

reformat_proc

Type: text string. Reformatting program to GSE used in Read Other. Default is undefined.

final_proc

Type: text string. Final processing of evt-files (after Final Parameters). Default is undefined. (To be changed to <NULL>).

motif_log

Type: text string. Log file of motif actions for debugging purposes. Default is <NULL>.

top_down_order

Type: boolean. Ordering of traces on display: first on top (True) or on bottom (False). Default is False.

trace_normalisation

Type: integer. Since SHM version 2.4c. This value controls the normalisation of the traces on the display. It replaces the parameter auto_scaling. Possible values are: 0 = use old style auto_scaling value (not recommended), 1 = use constant normalisation for all traces (norm c in SH), 2 = scale traces with the same magnification depending on the maximum value on screen (norm aw in SH), 3 = scale traces separately so that all traces show the same maximum amplitude on display (norm sw in SH). Default is 0.

auto_scaling

Type: boolean. Obsolete since SHM version 2.4c. Scale traces separately (True) or with the same magnification (False). Default is True.

reverse_xors

Type: boolean. Reverse XOR pixels, on some machines necessary for correct colour display. Default is False.

full_phase_names

Type: boolean. Use full phase names (with 'i/'e' before phase name and 'c/'d' after it). Default is False.

own_accelerators

Type: boolean. Use own accelerators for hotkeys, the motif hotkeys have a problem on recent Linux versions. Default is True.

recover_evid

Type: boolean. Since SHM version 2.4c. Controls whether or not the option Recover from EVT-File reads the event ID from the file. If set to True then changes to the analysis made after recovering will be saved under the same event ID. If set to False a new event ID is created. Default is False.

sn_noise_start, sn_noise_end, sn_signal_start, sn_signal_end

Type: floating point. Time windows for determination of signal/noise ratio for the phase in the phase dialog box. The four values give the time in s for the start and end of the noise and signal window relative to the phase onset time. Default values are -13.0, -3.0, -1.0 and 9.0, respectively.

idphases_tol_slow

Type: floating point. Available since SHM version 2.4c. Used in Identify Phase. Maximum slowness tolerance in s/deg in a phase match using epicentres determined by external sources (from Internet). Default is 1.5.

idphases_tol_azim

Type: floating point. Available since SHM version 2.4c. Used in Identify Phase. Maximum azimuth tolerance in deg in a phase match using epicentres determined by external sources (from Internet). Default is 20.0.

spectrogram_width

Type: integer. Available since SHM version 2.4d. Must be a power of 2. Used in Spectrogram. Number of samples in a time window for FFT. See Spectrogram page for details. Default is 1024.

spectrogram_step

Type: integer. Available since SHM version 2.4d. Used in Spectrogram. Number of samples by which the spectrogram time window is shifted in each step. See Spectrogram page for details. Default is 4.

exclusive_agency

Type: text string. Available since SHM version 2.4c. Used in Identify Phase. Restrict search for given epicentres to a specific agency given here. If set to NULL or not specified, all agencies are accepted. Default is NULL.

debug_level

Type: integer. Debug level; 0 = no debug output, 1 = little debug output, 2 = more debug output, ... Default is 0.

The following parameters are usually set in one of the include files. Their value may be overwritten by specifying a new definition after the include statement.

parameter_box_x, parameter_box_y, parameter_box_w, parameter_box_h

Type: integer. Position and size (width & height) of the parameter box in pixel units. Usually set in shm-conf-*-geometry.txt.

phase_box_x, phase_box_y, phase_box_w, phase_box_h

Type: integer, Position and size of phase dialog box. Usually set in shm-conf-*-geometry.txt.

window_main_x, window_main_y, window_main_w, window_main_h

Type: integer. Position and size of main trace display window. Usually set in shm-conf-*-geometry.txt.

single_trace_box_x, single_trace_box_y, single_trace_box_w, single_trace_box_h

Type: integer. Position and size of the single trace window. Usually set in shm-conf-*-geometry.txt.

draw_area_width, draw_area_height

Type: integer. Size (width & height) of the drawing area in the main trace display window. If its size is bigger than the frame of the window (set in the `window_main_?` parameters) then scrollbars are added to navigate on the drawing area. Usually set in `shm-conf-*-geometry.txt`.

`small_menu_font`

Type: boolean. Use a small font for the menu line to fit on smaller displays with screen widths of 1024 pixels. Usually set in `shm-conf-*-geometry.txt`.

`colour_bg_red`, `colour_bg_green`, `colour_bg_blue`

Type: floating point. RGB colour of the main trace display background. Possible values for each of these three variables range from 0.0 (dark) to 1.0 (full colour). Usually set in `shm-conf-*-colours.txt`.

`colour_fg_red`, `colour_fg_green`, `colour_fg_blue`

Type: floating point. RGB colour of the seismogram traces. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_mark_red`, `colour_mark_green`, `colour_mark_blue`

Type: floating point. RGB colour of manually picked phases. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_theo_red`, `colour_theo_green`, `colour_theo_blue`

Type: floating point. RGB colour of theoretical phases. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_auto_red`, `colour_auto_green`, `colour_auto_blue`

Type: floating point. RGB colour of automatically created phases. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_crsr_red`, `colour_crsr_green`, `colour_crsr_blue`

Type: floating point. RGB colour of cursor and rubber window (right mouse button). Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_dialog_fg_red`, `colour_dialog_fg_green`, `colour_dialog_fg_blue`

Type: floating point. RGB colour of dialog box foreground (text). Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_dialog_bg0_red`, `colour_dialog_bg0_green`, `colour_dialog_bg0_blue`

Type: floating point. RGB colour of dialog box text background. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_dialog_bg1_red`, `colour_dialog_bg1_green`, `colour_dialog_bg1_blue`

Type: floating point. RGB colour of dialog box background 1. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_dialog_bg2_red`, `colour_dialog_bg2_green`, `colour_dialog_bg2_blue`

Type: floating point. RGB colour of dialog box text background 2. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

`colour_alert_red`, `colour_alert_green`, `colour_alert_blue`

Type: floating point. Since version 2.4e. RGB colour of alert traces. Values between 0.0 and 1.0. Usually set in `shm-conf-*-colours.txt`.

colour_addfil_red, colour_addfil_green, colour_addfil_blue

Type: floating point. Since version 2.4e. RGB colour of traces with additional Butterworth filter.
Values between 0.0 and 1.0. Usually set in shm-conf-*-colours.txt.

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