

FIELDVIEW

READING DATA INTO FIELDVIEW		
AcuSolve	.Log	Direct Reader
AcuSolve	.fv	Export to FV-Unstructured Format
ANSYS-CFX	.fv	FV-UNS Export
BANFF	[-]	Translator to PLOT3D Format
CFD-ACE	[-]	Translator to PLOT3D Format
CFD++	.fv, .fvb	Export to FV-Unstructured Format
CFDesign	.uns	Export to FV-Unstructured Format
CGNS Structured	[.cgns]	Direct Reader
CGNS Unstructured	[.cgns]	Direct Reader
COBALT	.uns	Export to FV-Unstructured Format
DROP3D	.uns	Export to FV-Unstructured Format
FENSAP	.uns	Export to FV-Unstructured Format
FIDAP	.uns	Contact ANSYS for OEM FIELDVIEW
Fine Turbo	[-]	Translator to PLOT3D Format
Fire	[-]	Contact AVL for FV-UNS Translator
FLOW-3D® Animation	.flsgrf	Direct Reader
FLOW-3D® Restart	.flsgrf	Direct Reader
FLUENT	.cas/.dat	Direct Reader
FLUENT	.uns	Export to FV-UNS
FrontFLOW	[-]	Export to FV-UNS
FV-UNS	[-]	Native FV Unstructured Format
GASP	[-]	Translator to PLOT3D Format
GLACIER	[-]	Translator to PLOT3D Format
HAVOC	.hvc	Direct Reader
KIVA	.uns	Translator to FV-Unstructured Format
LS-DYNA	.d3plot	Direct Reader
NPARC/WIND	.cfl/.cgd	Direct Reader
OVERFLOW	[-]	PLOT3D Format
PATRAN Neutral	[-]	Direct Reader
PLOT3D	[-]	Formatted, Unformatted, Binary, DP 2D, 3D, Multi-grid, IBlank
POLYFLOW	.uns	Contact ANSYS for OEM FIELDVIEW
PowerFlow	.uns	Contact EXA for FV-UNS Translator
PW Common File	[.restart]	Direct Reader
SCRYU	.uns	Export to FV-Unstructured Format
STAR-CCM+	.fvuns	Export to FV-Unstructured Format
STAR-CD	.uns	Export to FV-Unstructured Format
Tetrex	.uns	Export to FV-Unstructured Format
ThermoAnalytics	.uns	Export to FV-Unstructured Format
UH3D Data/Geometry	[-]	Direct Reader
USM3D	[-]	Contact IL for more information
VECTIS	[-]	Contact IL for more information
WIND US	[-]	Contact IL for more information
LEGACY DATA READERS FOR FIELDVIEW		
CFX-4	.dmp	Direct Reader
CFX-TASCFlow	[-]	Translator to PLOT3D Format
FIDAP Neutral	.FDNEUT	Direct Reader (FIDAP 7 & earlier)
FLOW-3D®	.flsgrf.dat	Direct Reader (FLOW3D 8 & earlier)
FLUENT Universal	.unv	Direct Reader (FLUENT 4 & earlier)
FLUENT/RAMPANT	.fvc/.fvd	Export Format (FLUENT 5 & earlier)
Geometry File	[-]	Direct Reader
PHOENICS-BFC	.xyz/.phi	Direct Reader
PHOENICS-non-BFC	.phi	Direct Reader
STAR-CD	09/16/29/33	Direct Reader (STAR 3.05 & earlier)

FVX™ FIELDVIEW EXTENSION LANGUAGE	
READING CFD DATASETS WITH FVX	
read_dataset({tbl})	Reads a CFD dataset into FIELDVIEW
print_dataset_table()	Returns information such as format, grid and geometry ranges
set_transient({tbl})	Specifies a time step or solution time for a transient dataset
sweep_time({tbl})	Sweeps a transient dataset for a range of steps or solution times
MAKING SURFACES, RAKES AND ANNOTATIONS	
create_boundary({tbl})	Creates a boundary surface based on tbl input
create_comp({tbl})	Creates a computational surface based on tbl input
create_coord({tbl})	Creates a coordinate surface based on tbl input
create_iso({tbl})	Creates an iso-surface based on tbl input
create_streamline({tbl})	Creates a streamline rake based on tbl input
read_particle_paths({tbl})	Reads a particle path data file based on tbl input
create_text({tbl})	Creates a text string based on tbl input
create_arrow({tbl})	Creates an arrow based on tbl input
modify(handle, {tbl})	Modify any surface/rake/annotation created w/ FVX
delete(handle)	Delete any surface/rake/annotation created w/FVX
CONTROLLING THE APPEARANCE OF SURFACES AND RAKES	
<i>For all surfaces and rakes:</i>	
geometric_color	Specifies the geometric color
show_mesh	Shows the mesh for a surface (n/a for rakes)
contours	Specifies whether to show contour lines (n/a for rakes)
number_of_contours	Specifies the number of total contours (n/a for rakes)
transparency	Specifies the level of transparency
visibility	Specifies visibility as either on or off
line_type	Specifies the line type as either thin, medium or thick
display_type	Specifies one of the available display types
scalar_range({tbl})	Specifies a minimum and maximum or uses local range
threshold_range({tbl})	Specifies a threshold range to apply
set_streamlines_display({tbl})	Specifies one of the available display types
set_particle_paths_display({tbl})	(same as for streamlines)
set_colortable({tbl})	Specifies a complete custom color table
set_color({tbl})	Defines the RGB values for a single color chip
get_default_color()	Returns the default RGB value for a color chip
create_dynamic_clip({tbl})	Creates and applies dynamic clip planes, line or box style
GETTING INFORMATION FROM CFD DATA	
query(handle)	Returns all information for any surface/rake/annotation
query_transient()	Returns all time step & solution time info, transient data
query_streamline_display()	Returns all information for global streamline display
query_particle_paths_display()	Returns all information for global particle path display
query_colortable()	Returns all RGB values for all color chips
query_default_colortable()	Returns original RGB values for all color chips
get_all_boundary_types()	Returns a table of all boundary types
get_scalar_functions()	Returns a table of all scalar functions
get_vector_functions()	Returns a table of all vector functions
get_surface_scalar_functions()	Returns a table of all face-based scalar functions
get_surface_vector_functions()	Returns a table of all face-based vector functions
get_current_object_handle()	Retrieves the handle of the current object
get_all_object_handles()	Returns handles for all objects
integrate_all()	Returns a table of integration results for all surfaces
integrate_surface(handle)	Returns a table of integration results for surface handle
integrate_partial_surface(handle, {XYZ}, tol)	Returns a table of integration results for partial surface
probe_current_functions()	Returns probe results for specified XYZ table
probe_IJK_current_functions()	Returns probe results for specified IJK table
probe_IJK_scalar()	Returns current scalar for specified IJK table

WRITING AND DISPLAYING RESULTS WITH FVX	
openfile(filename,mode)	Opens a file for reading ("r"/"r+"), writing ("w"/"w+"), appending ("a"/"a+"). Use "b" for binary format.
closefile(handle)	Closes a file, recommended practice
remove(filename)	Deletes a file
rename(oldname,newname)	Renames a file
format(string,arg,...)	Returns formatted version based on arg,...
read(handle,format...)	Reads numbers (“*n”), words (“*w”), line (“*l”), entire file (“a”) or “nnn” for string of nnn characters from file handle
readfrom(filename)	Reads from default system input, optionally filename
write(handle,arg,...)	Writes strings or numbers to file handle
writeto(filename)	Writes to default system output, optionally filename
appendto(filename)	Appends to default system output, optionally filename
graph({tbl})	Creates a 2D XY Plot or histogram based on tbl input
postscript_output()	Creates a postscript (PS) version of the current graph.
OTHER FVX COMMANDS	
dofile(filename)	Executes filename as a standard FVX program
dostring(cmd_string)	Executes the cmd_string as a standard FVX program
dump(tbl)	Dumps summary information for tbl to console
dumpall(tbl)	Dumps detailed information for tbl to console
execute(cmd)	Executes an operating system cmd
fv_script(script_cmd)	Executes a FV SCRIPT cmd (enclosed in " ")
getn(tbl)	Returns the number of entries in tbl
make_panel({tbl})	Creates a user defined GUI based on text input, buttons & sliders
match_one_entry(tbl,match)	Find the first instance of match in a tbl (ie get_scalar_functions)
match_multiple_entries(tbl,match,...)	Find all instances of match in a tbl (ie get_all_boundary_types)
print(arg,...)	Prints the value of arg,...
redraw()	Refreshes the FV graphics window when called
self:set()	Sets input arguments for the make_panel function fields
self:get()	Returns user input arguments for the make_panel function fields
set_auto_redraw()	Forces graphics window refresh after each FVX command
set_preserve_globals()	Changes default to make variables global instead of local
set_view({tbl})	Creates a view RESTART file
strfind(string,pattern,...)	Finds instance of pattern in original string
stop()	Explicit stop of FVX script and entry into debug mode
tinset(tbl, pos, value)	Inserts an element value into tbl at position, pos
tonumber(string[,base])	Converts a string to a number using optional base
tostring(number)	Converts a number to a string
tremove(tbl, pos)	Removes an element from tbl at position pos
type(arg)	Returns the type of arg

FVX DEBUGGING COMMANDS			
assign	Evaluate arg immediately	find	Find reference
brk or b	breakpoint set at current	goto or g [line]	Execute to line
brk or b [line]	breakpoint set at [line]	list [start][number][filename]	
brk or b [function]			defaults are 1 20 current
	breakpoint at [function]	next or n	Single step, skip functions
call	Evaluate arg immediately	print or p	Print value of local var.
clear	Clear all breakpoints	quit or q	Exit FVX script
cont or c	Continue execution	return	Complete func and break
cont to [line]	Continue exec to [line]	step or s	Single step, into functions
dbrk [breakpoint]		stop at [line]	Stop at [line]
	Delete [breakpoint]	stop in [function]	Stop at [function]
delete all	Delete all breakpoints	view or v [start][number][filename]	
dump(tbl)	Displays all entries in tbl		defaults are 1 20 current
dumpall(tbl)	Displays all entries in all nested tables	where	Display current stack call

FV SCRIPT COMMANDS	
ALIGN +X/+Y/+Z/-X/-Y/-Z	Align the dataset one arg for nominal direction,three for isometric view
ANTIALIAS ON/OFF	Turns antialias ON or OFF when rendering in graphics window.
AXIS MARKERS ON/OFF	Turns axis markers ON or OFF when rendering in graphics window.
BACKGROUND position-type	filename Position type is one of Center, Fit, Stretch, filename is background image.
BACKGROUND color n	Sets background color to colorchip defined by n
CENTER [XX YY ZZ]	Center at the Object: World transform level or set Center with optional args
DATASET_SAMPLING results	target sampled_dataset_name results target is dataset number of results dataset sampled_dataset_name will be created
DEMOTION n [n]	Sets demotion mode for future graphics refreshes. Syntax is: DEMOTION 0 (none) DEMOTION 2 3 (Points & Subset No) DEMOTION 1 (Bbox) DEMOTION 4 (Wireframe)
EXIT	Script will end and FIELDVIEW will exit.
EXPORT surf filename	<i>surf</i> is one of: COMP/ISO/COORD/BOUNDARY/STREAM/PLOT/VCORE
INTEGRATE [current][all][sweep]	filename Computes the integral of current scalar over current surface.
INTERPOLATE steps view-restart	Interpolates number of steps between current and view-restart.
KEYFRAME [start end inc]] filename	Play the keyframe animation with optional limits and increment.
LIGHTINGVALUES ambient-light diffuse-light	Controls lighting parameters.
LINKED_SURFACE_SWEEP ON/OFF	Turns the linked surface mode on or off.
MAXIMIZE ON/OFF	Causes graphics window to become full-screen / original size.
OUTLINE ON/OFF	Toggles dataset outline ON or OFF
PANELS ON/OFF	Shuts off display of any subsequent panels or updating of panels.
PAUSE	Causes display of PAUSE dialog box. Must press OK to continue.
PERSPECTIVE ON NN/OFF	Turns perspective ON using NN or OFF when rendering in graphics window
PLOT	Brings up a line plot of the current Computational Surface.
PLOT_SIZE width height	Resizes 2D Plot window to specified width and height.
PRESENTATION ON/OFF	Turns Presentation Rendering on or off.
PRINT GRAPHICS PS/EPS	[BACK/NOBACK][SEND/NOSEND][GRAY/NOGRAY] Creates postscript (PS) or encapsulated postscript (EPS) for the graphics window. Options include BACK (use white background), SEND (directly to printer) and GRAY (use gray background)
PRINT PLOT PS/EPS [SEND/NOSEND] filename	Creates postscript (PS) or encapsulated postscript (EPS) for the 2D Plot window.
PRINT GRAPHICS type filename	Creates graphics file of type: MIFF/BMP/JPEG/TIFF/EMF
PRINT USER [SEND/NOSEND] filename	Calls the user-defined print option. The output filename is optional.
PROBE dataset-number x y z	The "xyz" form will open the Point Probe panel but not create a file.
PROBE dataset-number file1 file2	The "file1"/"file2" form will work like Point Probe Input.
RAISE ON/OFF	RAISE ON forces graphics window in front.
RECORD ON filename	Turns flipbook recording on, saving a MIFF animation to filename.
RECORD OFF	Turns off flipbook recording.
RESET	Resets graphic window to starting viewing direction & perspective defaults.
RESTART type restart-name	
SAVE type restart-name	Causes restart file to be read or saved where <i>type</i> is one of: ALL/ALL_NO_DATA_READ/CURRENT_DATASET/COLOR/COMP/DATA/DYNAMIC CLIP/ FORMULA/ ISO/PREF/ STREAM /PATHS/TITLES/VIEW/PLOT/BOUNDARY/LINE/ COORD/PRESENTATION/VCORE
SELECT type number	Makes type for the specified number current where <i>type</i> is one of: ISO/STREAM/PATHS/TITLES/BOUNDARY /LINE/COORD/ DATASET/VCORE
SELECT COMP grid-number	surface-number Makes comp surface for the specified grid and surface number to be current.
SELECT PLOT plotnum [pathnum]	Makes 2D Plot for the specified plotnum current. Optional path permits selection of specific pathnum within current 2D plot.

FV SCRIPT COMMANDS	
SHINE ON/OFF type	Sets Presentation Rendering property, shine for type of: BOUND-ARY/COMP/COORD/ISO/STREAM/PATHS/VCORE
SHINEVALUES intensity highlight size	Controls shine parameters.
SIZE width height	Specifies size of graphics window upon start-up.
SLEEP number-of-seconds	Suspends script. Permits panel manipulations during sleep.
SPIN number-of-steps	Spins the dataset. One step is equal to 0.1 radians.
STEP OS-command UNSTEP	Identical to SYSTEM command below, but command is executed after every graphics window update.
SWEEP cycles	Sweeps the current surface, dataset, or animate the current rake.
SWEEP BOUNCE/DOWN/UP/DATASET cycles	
SWEEP TIME cycles [SKIP]	[streak_exp_filename] Performs a transient sweep & saves streaklines to filename
SWEEP TIME LOOP cycles loops [SKIP] [streak_exp_filename]	Sweeps a periodic transient dataset for the given number of loops.
SYSTEM OS-command	Allows you to submit commands to the operating system.
TIME STEP dataset current [begin end]	Specifies a time step and range for a transient sweep.
TIME SOLUTION dataset current [begin end]	Specifies a solution time and range for a transient sweep.
TIME SET DELTATIME delta-time	Specifies the delta-time for PLOT3D or FV-UNS transient data.
TIME SET MERGEDTIMES ON/OFF	Creates a merged timeline for multiple transient datasets.
WRITE [text]	Prints blank lines or quoted strings to standard output (xterm for UNIX and the "console" window for Windows).
XDB_WRITE xdb-filename [title [notes]]	Makes ATVIEWER input files! Writes an Extract Database (XDB) file with optional title string, and optional appended notes text file.
XDB_ENABLE xdb-filename [title [notes]]	Makes ATVIEWER input files! Writes a 'swept' Extract Database (XDB) file with optional title string, and optional appended notes text file

COMMAND LINE OPTIONS	
-batch	Runs FV in batch mode
-conn_to value	Sets time-out in value seconds for Client-Server
-create_exterior_fvbnd	Generates a .FVBND file, but only if used with -pN cmd line
-create_wall_fvbnd	Generates a .FVBND file, but only if used with -pN cmd line
-f name	Executes the RESTART <i>name</i> upon starting FV
-fc	Uses PLOT3D/FAST mouse button controls
-fv_aspect ratio	Calculates fv_height from ratio & fv_width to set FV GUI size
-fv_gui_origin xx yy	Places FV GUI at screen location xx, yy
-fv_height hhh	Starts FV GUI with an overall pixel height, hhh
-fv_width www	Starts FV GUI with an overall pixel width, www
-fvx name	Executes the FVX script <i>name</i> upon starting FV
-gamma value	All PLOT3D formulas corrected for gamma=value
-gasconstant value	All PLOT3D formulas corrected for gasconstant=value
-ogl	Forces FV to run using OpenGL visual
-pfv8/16/32/64	Selects FV Parallel license; specifies max. no of processes
-pN, N=0,1 or 2	Generates preprocess files using optional DataGuide feature 0: only grid preprocess file (.fvpre) created 1: grid preprocess (.fvpre) and short results file (.fvres) created 2: grid preprocess (.fvpre) and full results file (.fvres) created
-port nnnnn [none]	Sets explicit port number, nnnnn, or can be set to none
-s name	Executes the SCRIPT, name, upon starting FV
-silent	Suppresses all warning pop-ups during FVX or script runs
-size=mmmxnnn	Sets graphics window to specific pixel dimensions
-stereo_params eye_separation screen distance	Controls stereo display parameters
-stereo_use_display_variable	Controls use of DISPLAY variable for stereo operation
-stereo_window_height height	Permits specification of stereo height for non-standard displays
-x	Run FV in 24-bit X mode

ENVIRONMENT VARIABLES	
FV_2D_TO_3D	Extrude 2D datasets in Z direction for probing/plotting
FV_ACUSOLVE_GRAD	Enable reading of gradients for AcuSolve Direct Reader
FV_ACUSOLVE_NO_EXT_VAR	Disable extended variable reading for AcuSolve Direct Reader
FV_ARB_POLY	Forces robust conversion of arbitrary polyhedrals to tets
FV_CARTESIAN	Treats all structured grids as cartesian
FV_DATA_CHECK	Checks veracity of PLOT3D/FV-UNS files
FV_DEFAULT_PORT	Used to set an alternate for port specification
FV_DPI	Specifies dots per inch for PS, EPS output formats
FV_EMF_DPI	Specifies dots per inch for emf output format (WIN)
FV_EMF_LINE	Customizes line thickness for emf output, range 0 to 1
FV_FEEDBACK_BUFFER_SIZE	Increases buffer size to resolve transparency rendering
FV_HH_STEREO	Sets half height stereo display for HP
FV_HOME	Specifies home location for FV; usually set by fv startup
FV_IGNORE_WALLS	Ignores wall marking for stream- & streakline calcs
FV_LINE_OFFSET	Shifts lines near surface to avoid bleed-thru problems
FV_NO_AUTO_REFRESH	Turns off auto-refresh of graphics window
FV_NO_BNDRY_FILE	FVBND file not written for NPARC/WIND data
FV_NO_DATA_CHECK	Skips checking on boundary & element numbers
FV_NO_FBO	Disables the use of FBO to overcome render problems
FV_NO_GRID_JUMP	Turns off streamline grid jumping (except IBlank)
FV_NO_MAGIC	Turns off mapping native byte-order PLOT3D/FVUNS
FV_NO_MWARP	Resolves mouse control for HP Virtualizer systems
FV_NO_STREAK_WALLS	Ignores wall marking for streakline calcs
FV_NO_STREAK	Turns off automatic streakline calc. for transient sweeping
FV_OLD_INTERP_BEHAVIOR	Uses alternate behavior for script cmd INTERPOLATE
FV_OPENGL_POLYGON_OFFSET	Permits fine tuning for display of lines near boundaries
FV_PLUGINS	Specifies the location of user defined reader plugins
FV_PRINT_DIR	Specifies temp location for intermediate print files
FV_PRINT_NO_AA	Turns off antialiasing for PS, EPS, emf output
FV_PS_CLASSIC	Renders PS and EPS files with false transparency
FV_PS_LINE	Forces correct depth rendering for PS and EPS files
FV_PYTHON_DIR	Specifies the location of libs for python-enabled FVX
FV_SELECT_FUNCTIONS_ONLY	Limits functions created by optional DataGuide
FV_SERVER_CONFIG_DIR	Specifies the location of Client-Server config files
FV_SHOCK_MIN_NODES	Sets minimum nodes for a connected shock region
FV_SHOCK_PRESSURE_CHANGE	Sets dimensionless pressure change for a shock region
FV_SHOW_WALLS	Creates a new boundary type showing streamline walls
FV_SSLINES_EXPORT	Disables sampling during Surface Streamline export
FV_STEREO_ENABLE	Enables stereo mode for WINDOWS
FV_TET_CONV	Forces quick conversion of arbitrary polyhedrals to tets
FV_USE_LONGEST_PATH	Sets length fraction for streamline filament calculation
FV_USE_OLD_DBUF	Forces older rendering method
FV_VISUALID	Forces FV to use the specified X visual ID
FVREG_ACUSIM_OFF	Disable support for regions for AcuSolve Direct Reader

MOUSE/KEYBOARD OPERATIONS	
[M1] 	[M2] 
[M3] 	
[SHFT][M1]	Quick-Pick (UNIX) to select a surface/rake in graphics window
[M1] Double click	Quick-Pick (WIN) to select a surface/rake in graphics window
[S P A C E B A R]	Toggle mouse controls when cursor is in graphics window
[M1] and [SHFT][M1]	Select a range of boundary types or grids in a long list
[CTRL][M1]	Select an individual boundary type or grid in a long list

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