



Complete CFD Visualization

Tecplot 360 gets you answers faster. It enables you to quickly plot and animate all your data exactly the way you want. Automating routine tasks saves you time and effort. Using this one tool, you can analyze complex data, arrange multiple layouts, and communicate your results with professional images and animations.

Analyze Complex Results

- Load your data with support for 32 CFD, FEA, structural analysis, and industry-standard data formats.
- Unique multi-frame environment with multiple pages for reporting and comparing solutions.
- Understand XY, Polar, 2D and 3D plots using unique linking capabilities.
- Animate and step through transient solutions with video player-style controls like forward, backward, loop, bounce, and throttle control.
- Explore with interactive slicing, iso-surface, and streamtrace tools.
- Automatically extract features such as vortex cores, shock surfaces, and other key flow features.

Explore Billion Cell Models

- Leverage multi-core desktop systems with multi-threaded capability.
- Reduce load times of large computational results by up to 100 times with Tecplot's unique Subzone Load-on-demand technology.
- Lower memory requirements by 80% over earlier versions.

Verify Engineering Designs

- Assess your grid quality with 28 grid quality functions including aspect ratios, Y^+ , skewness, orthogonality, and stretch factors.
- Validate computational output with experimental data in by a single plotting environment.
- Estimate the order of accuracy of your numerical solutions with Richardson extrapolation analysis.
- Interactively explore and sweep through flow field to check that flow features align with the grid.
- Compare multiple models simultaneously, including Fluid-structure Interaction (FSI) visualization.

Communicate and Publish Reports

- Copy and paste images directly into Microsoft Office applications.
- Export professional, presentation-quality vector and raster formats.
- Present multiple, time-linked views of your plots with Tecplot 360's unique multi-frame layout workspace.
- Optimize animations for PowerPoint and the Web.
- Create reports using unique multipage layouts.

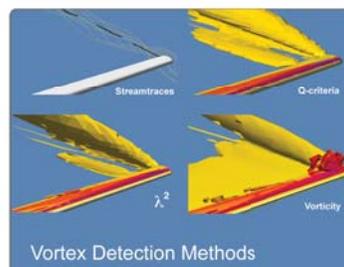
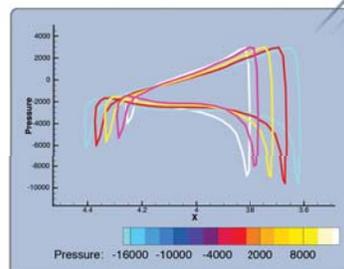
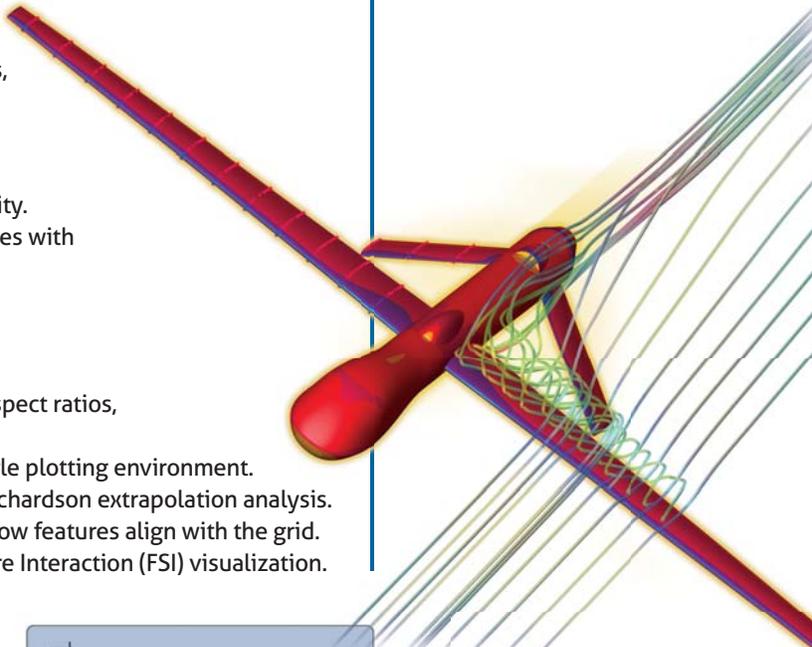
Automate Routine Tasks

- Instantly apply a plot's style attributes and layouts to a different set of data with layout and style files.
- Leverage over 180 macro functions to automate common analysis and plotting tasks.
- Create human readable text based macros by recording on screen actions.



Try
Tecplot 360 EX:

www.tecplot.com/trial





Tecplot 360 EX™ Feature List

Analysis

CFD Analyzer: Examine grid quality, perform spatial integrations, generate particle trajectories, extract flow features, and estimate numerical errors.

Function Calculator: Calculate over 90 grid and flow field functions. Calculate new variables using common math operations. Perform data normalization.

Integrations: Integrate over lines, surfaces and volumes. Calculate volumes, areas, flow rates, forces and moments. Apply weighting options to calculate total pressure. Integrate by time zone or time strand.

Particle Paths: Integrate particle trajectories in steady and unsteady flows. Calculate paths of particles with mass and drag effects.

Feature Extractions: Detect and extract shock surfaces, vortex cores, flow separation and reattachment lines.

Error Analysis: Estimate the order of accuracy of your numerical solutions using Richardson extrapolation analysis.

Finite Element Analysis (FEA): Derive Von Mises Stress/Strain, Principal Stresses/Strains, and Vector Magnitude. Plot the geometry with deformations and exaggerated deformations applied. Animate displacements.

Create, Alter and Transform Data: Alter data or create new data using mathematical expressions. Store mathematical expressions. Create mirror images of data. Create new data as subset of existing data.

Interpolate and Triangulate: Choose from linear, inverse-distance, and *kriging interpolation. *Create sets of triangles from data points defined in a 2D plane.

***Discrete Fourier Transform (DFT):** Transform one-dimensional ordered linear data into the frequency domain for visualization and further analysis.

Exploration

Slicing Tool: Interactively slice 3D data displaying mesh, contours, and vectors on the slice plane. Constrain the extent of a slice to user-defined ranges. Define and use up to eight different slice groups.

Iso-surface Tool: Change iso-surface values interactively. Define and use up to eight different iso-surface groups on one or more variables.

Streamtrace Tool: Interactively seed rakes of streamlines, streamrods, and streamribbons in 2D and 3D. Specify lines to terminate streamlines. Display markers along streamlines spaced by vector magnitude. Place streamline rakes. Auto seed streamtraces on a selected surface.

Contour Tool: Accurately control contour levels on a per variable basis and leverage up to 8 contour groups in a single frame. Interactively add or delete contour lines or levels to refine variable fine structure.

Extraction Tools: Interactively define point or polyline sets to which 2D and 3D surface data is interpolated and extracted for display as a separate plot.

Curve Fits: Use least squares linear, polynomial, power, and exponential curve-fits. Use least squares curve-fit of linear combination of user-specified functions.

Data Blanking and *Clipping: Set multiple constraints (masks) to blank display of data based on local field variables, functions of variables, *grid indices, or *depth from viewing position. *Clip surfaces of 3D volume data to reveal internal variations. Omit zones or peel away surfaces to highlight specific details.

Unsteady Data: Load and explore time-dependent solutions with ease. Use video-like controls. Show multiple views of data through time. See current time step point value on XY plot with Time Marker. Step through and animate solution time across frames with Time Linking.

Time-series Probe: Extract single point or node over time and plot result in new frame as an XY line plot.

Extract Objects Over Time: Extract slices, iso-surfaces, streamtraces, and points from polyline geometries in transient data. Resulting zones are then assembled into a new strand with proper solution times set for each zone.

Automation

Configuration and Batch Files: Set defaults and perform initialization with configuration files and start-up batch files.

Tecplot Macros: Use over 180 macros including loops and other common programming functions. Run macros with the click of a button by registering them in the macro sidebar.

***Python Scripting:** Use Python scripting to perform multiple, repetitive changes.

Collaboration

Cross-Platform Capability: Run Tecplot 360 on machines running Windows 8, 7, or Vista, Mac OS X, and Linux. Interchange Tecplot 360 macro files, layout files, stylesheets, color map files, and data files between all platform types.

Extensible Data Writers: Build custom data exporters to write data in custom formats, or use built-in tools to export Tecplot data in formats compatible with 2006, 2008, or subzone load-on-demand (.szplt) format.

Work with Large Data Sets

Parallel Processing (shared memory): Leverage up to 64 CPUs/Cores for faster computing-intensive operations, such as streamtraces, slices, and iso-surfaces.

Multiple Data Sets: Create and display plots from up to 2048 different sets of data simultaneously.

Multiple Zones & Variables: Include up to 1 million segments/zones per data set, up to 1 million variables (X, Y, Z, U, etc.) per data point.

Multi-Page Layout: Create up to 2,048 plots per page.

Plot Annotation

Text: Place text interactively on plot. Use all your system fonts with TrueType capabilities. Set color, angle, size, font, background color, and justification.

Geometries: Interactively create polylines, rectangular boxes, circles, and ellipses. Duplicate, reposition, resize geometries. Modify geometries interactively and read from a file.

***Images:** Import JPEG, BMP, and PNG files into plots.

Output Formats

Vector-based and Raster Plot Files: Export vector-based files in encapsulated PostScript (EPS), *PostScript, and Windows Metafile formats. Export raster files in *BMP, PNG, JPEG, TIFF, *PostScript bitmap, X-Window and *bitmap formats. Configure image resolution independent of screen resolution.

Animations: Export to Flash (SWF), *FLV, MPEG-4, WMV, and PowerPoint-compatible AVIs.

Data Input

CFD Formats: CGNS; FLOW-3D; ANSYS CFX; FLUENT .cas and .dat format and polyhedral; OpenFOAM; PLOT3D; Tecplot and polyhedral; Enight Gold, *NetCFD.

Data Formats: HDF, HDF5, Excel (Windows only), comma- or space-delimited ASCII, *MatLAB.

FEA Formats: ABAQUS, ANSYS, FIDAP Neutral, LSTC/DYNA input file, LSTC/DYNA, MSC/NASTRAN, MSC/Patran, PTC/Mechanica, SDRG/IDEAS universal, 3D Systems STL.

Line, 2D, 3D, and Polar Plotting

Time and Dates: Display on any axis.

XY Features: Create scatter plots, line plots, bar charts, semi-log plots, log-log plots, error bar plots, splines, curve-fits, and more. Configure tick marks, symbols, legends and more. Work with multiple horizontal and vertical axes.

Mesh Plots: Display 1D, 2D, and 3D grids. Color mesh lines by variable, remove hidden lines.

Contour Plots: Display contour lines, color flood between contour levels, and color fill cells (or elements). Use multiple contour variables to view and analyze interrelationships among several variables simultaneously.

Vector Plots: Display 2D and 3D vectors on planes, 3D surfaces, and in volumes. Display 3D vector components tangent to 3D surface. Specify length, color, line type, and head style. Color by variable.

Polar Plot Features: Create polar line plots (r, theta). Configure angles in radians, degrees or arbitrary units. Select between linear or logarithmic radius.

Fluid-structure Interaction (FSI): Load structural analysis and CFD solutions simultaneously to see material deformation and fluid flow changes in one plot.

*These features will be included in an upcoming 2014 release.

