Tecplot®

Release Notes

Tecplot 10, Release 4

(Including Graphics Card Issues)

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Contents

1 Platform Requirements

Platform	CPU/Model	Operating System	Graphics
Windows	Intel	Windows 95, 98, ME, 2000, NT 4.0, XP	OpenGL
HP	9K/7xx	HPUX 11.0 or newer	OpenGL
HP 64 bit	9K/7xx	HPUX 11.0 or newer	OpenGL
IBM	RS6000	AIX 5.1 or newer	OpenGL or Mesa
Linux	Intel	Linux Kernel 2.4 or newer	OpenGL or Mesa
SGI	R5k, R8k, R10k	IRIX 6.5 or newer	OpenGL or Mesa
SGI 64 bit	R5k, R8k, R10k	IRIX 6.5 or newer	OpenGL or Mesa
SUN	Sparc	Solaris 7 or newer	OpenGL or Mesa
SUN 64 bit	Sparc	Solaris 7 or newer	OpenGL or Mesa
Linux 64 bit	Intel 64 bit	Linux Kernel 2.4 or higher	OpenGL or Mesa
Linux 64 bit	AMD Opteron/Athlon	Linux Kernel 2.4 or higher	OpenGL or Mesa
Macintosh	Macintosh	Mac OS 10.2 or higher	OpenGL or Mesa

2 Configuration Issues

2.1 Windows Configuration Issues

System requirements are outlined in Section 2 "Requirements," in the *Installation Instructions*.

Tecplot relies heavily on OpenGL 3-D graphics, and in particular high-end OpenGL graphics cards. A graphics card and operating system that supports OpenGL should be used; almost all newer graphics cards do. The original release of Windows 95 does not support OpenGL; users will need to upgrade their operating system.

With certain system configurations it is not uncommon to experience problems due to insufficient memory or poorly implemented graphics drivers. If problems arise on your system please attempt the following:

1. Temporarily set the Hardware Acceleration option to None. This can be done by adding the following line to the **tecplot.cfg** file:

   ```
   $!Interface    OpenGLConfig {AllowHWAcceleration = No}
   ```

   If this fixes the problem it is very likely the problem is with your OpenGL driver. It is recommended that you install the latest driver for your graphics card from the manufacturer's Web site. Setting Hardware Acceleration to None may substantially reduce drawing speed, so it should not be the final solution unless nothing else works.

2. Try changing the Color Palette to 16-, 24-, or 32-bit color.

3. If operating on large data sets, you still may run into memory issues. If this is the case, try one of the alternative Graphics Cache settings: Cache Only Lightweight Graphics Objects or Do Not Cache Graphics. From the sidebar, click Performance. From the Display Performance dialog, choose the desired Graphics Cache setting. Click OK. These settings can be placed in the **tecplot.cfg** file with a combination of commands. For Cache Only Lightweight Graphics use:

   ```
   $!Interface
       UseDisplayLists = Yes
       CacheLightWeightDisplayListOnly = Yes
   ```

   For Do Not Cache Graphics use:

   ```
   $!Interface UseDisplayLists = No
   ```

2.1.1 Graphics Card Issues.

This list is frequently updated. Please check the Support section of *www.tecplot.com* for the latest information.

Card: ATI Radeon 9200 (128MB)

Operating System: Windows XP

Graphics Driver Version: 6.14.10.6387 (9/12/2003)
Problem: When interactively drawing a geometry, nothing shows until a redraw. After picking an object, pick handles do not show. Ruler tick mark for current position does not show.
Work Around: Add the following to the tecplot.cfg file:

```
$!Interface OpenGLConfig{IncludeBackBufferDuringFrontBufferDraws = YES}
```

This may not be required for other varieties of Radeon cards, or for drivers newer than that specified.

Card: ATI IGP 320M

Operating System: Windows XP
Graphics Driver Version: 6.14.10.6368. (6/25/2003)
Problem: Tecplot crashes immediately.
Work Around: Use the previous driver version 6.13.10.6094 (06/11/2002). If that is not an option, add the following to the tecplot.cfg file:

```
$!Interface UseStrokeFontsOnScreen=YES
```

This second solution reduces the quality of text on the screen and in image output, so using back 06/11/2002 driver is the best solution.
This may not be required for other varieties of Radeon cards, or for drivers newer than that specified.

Card: 3DFX Voodoo3

Operating System: Windows NT 4.0 (possibly others)
Graphics Driver Version: 4.00.1381.9117
Problem: When selecting or zooming, the rubber-band box that Tecplot normally displays during the mouse drag does not show. It only happens when the Color Palette in the Settings page of the Display Properties dialog is set to 65536 colors.
Work Around: Set the Color Palette to True Color or 256 Colors.

Card: ATI Radeon DDR (32MB)

Operating System: Windows 2000
Graphics Driver Version: 5.13.1.3276 (10/15/2001)
Problem: Phantom triangles appear in the image and eventually Tecplot crashes.
Work Around: Add the following to the **tecplot.cfg** file:

```
$!Interface OpenGLConfig{ForceSmoothShadingForLighting = YES}
```

This may not be required for other varieties of Radeon cards, or for drivers newer than that specified.

Card: Diamond Viper V330

Operating System: Windows 98 (at least)
Problem: Tecplot crashes upon starting when the Color Palette in the Settings page of the Display Properties dialog is set to High Color (16-bit).
Work Around: Set the Color Palette to True Color.

Card: ELSA Erazor II (16MB)

Operating System: Windows NT 4.0 (Service Pack 4, possibly others)
Problem: Tecplot hangs when starting.
Solution: Upgrade to the latest graphics driver and upgrade to service pack 5.

Card: Matrox G200

Operating System: Windows 2000
Driver Version: 5.33.006.
Problem: Tecplot leaves copies of the cursor on the screen. If you exit Tecplot, then reenter, Windows 2000 crashes.
Solution: Update to the latest driver from the manufacturer's Web site.

Card: Matrox G400 (32MB, Dual Head)

Operating System: Windows 95

Problem: Tecplot rulers disappear when the pointer passes over them.
Solution: There is no known solution or work around.

Card: Matrox G450 (Dual Head)

Operating System: Windows NT 4.0 (possibly others)
Problem: Strange colors are sometimes displayed in the Tecplot work area after an exposure event (for example, another application is moved from in front of Tecplot).
Work Around: Upgrade to the latest graphics card driver and change the color palette settings to 24-bit color.

Card: NVidia TNT 2 M64

Operating System: Windows NT 4.0 (possibly others)
Graphics Driver Version: 4.00.1381.0234
Problem: Continuous color flooding looks streaky (it has a constant color along a strip of cells).
Solution: Upgrade to latest graphics driver (Version 4.00.1381.0650), obtained from NVidia's Web site.

2.2 UNIX/Linux Configuration Issues

Tecplot relies heavily on OpenGL 3-D graphics, and in particular high-end OpenGL graphics cards. A graphics card and operating system that supports OpenGL should be used; almost all newer graphics cards do. This release of Tecplot includes versions for many of the UNIX and Linux platforms that have been built using Mesa, an OpenGL clone. The Mesa versions should be used if OpenGL is not available on your computer.

2.2.2 CFD Analyzer and Other Add-Ons on Linux 2.4.
Motif version 2.2 was used for the Linux 2.4 build of Tecplot 10 Release 1. It was subsequently determined that this version of Motif was flawed. Release 2 and 3 are built with Motif version 2.1. As a result, add-ons that were built with Tecplot 10 Release 1 will not function properly with later releases, and must be re-built with Release 2 or 3. Users of CFD Analyzer on Linux 2.4 should contact Technical Support to obtain an updated version.

2.2.3 Browser Help Issues.
By default, UNIX and Linux Tecplot attempt to auto-detect a Web browser for Help. For Help to display properly, Java must be enabled within your browser. Tecplot uses the LaunchBrowser script located in the $TEC100HOME/bin directory to launch the browser for displaying Help. By default it looks for Firefox®, Mozilla®, Netscape® or Konqueror®. You can modify this script to locate and launch other browsers.

2.2.4 Graphics Card Issues.
This list is frequently updated. Please check the Support section of *www.tecplot.com* for the latest information.

Operating System: Sun Solaris

Problem: You must have OpenGL Version 1.3 installed. OpenGL version 1.2.3 has worked for previous Tecplot versions but Tecplot recommends upgrading to the latest version (Without it, you may get an error message about a missing `libglw.so.2`.)
Solution: The upgrade and patches are free and can be located at:
> `www.sun.com/software/graphics/opengl`

From the above link you can locate and download the latest production release. Be sure to install the latest patches.

Operating System: HPUX-11
Problem: Only one side of some 3-D lighted surfaces will appear to be lighted.
Solution: HPUX-11.0 using *fx* series of graphics cards must install the following patches:
> *ftp://ftp.itrc.hp.com/hp-ux_patches/s700_800/11.X/PHSS_22564*
> *ftp://ftp.itrc.hp.com/hp-ux_patches/s700_800/11.X/PHSS_23536*
> *ftp://ftp.itrc.hp.com/hp-ux_patches/s700_800/11.X/PHSS_23546*

The files are "shar" files and can be unwrapped to a text and depot file by running `sh` on each file:
> `sh PHSS_22564`
> `sh PHSS_23536`
> `sh PHSS_23546`

The following is a suggested plan for installing the remaining depot files. (Your system administrator may want to install these in a different manner.)

```
swcopy -x enforce_dependencies=false -s PHSS_22564.depot \* @/tmp/pdepot
swcopy -x enforce_dependencies=false -s PHSS_23536.depot \* @/tmp/pdepot
swcopy -x enforce_dependencies=false -s PHSS_23546.depot \* @/tmp/pdepot
swinstall -s /tmp/pdepot
```

Choose to install everything. To mop up you perform the following steps:

```
swreg -u -l depot /tmp/pdepot
rm -r /tmp/pdepot
```

Operating System: UNIX CDE, use of the Alt key

Problem: The file **$HOME/.dt/C/dtwmrc** contains a group of **DtButtonBindings** settings which need to be changed to prevent the CDE desktop from intercepting Alt key presses in conjunction with the mouse clicks.
Solution: Edit these settings by hand and restart your workspace manager (a restart is required before changes take effect).
Below are the new **DtButtonBindings** settings with the old values commented out. These changes still allow the special handling if applied over the frame decorations.

```
###
#
# Mouse Button Bindings Description
#
###

Buttons DtButtonBindings
{

    <Btn1Down>              root            f.marquee_selection
    <Btn2Click>             root            f.toggle_frontpanel
    <Btn3Down>              root            f.menu   DtRootMenu
    Shift<Btn1Click>        frame|icon      f.lower
    <Btn1Click>             frame|icon      f.raise
    <Btn1Click2>            frame           f.maximize
    <Btn1Click2>            icon            f.restore
    <Btn2Click>             frame|icon      f.raise_lower
    <Btn3Down>              frame|icon      f.post_wmenu
# Original Settings replaced with ones below because Tecplot
# needs the Alt mouse buttons in the windows.
#    Alt<Btn1Click>         frame|icon|windowf.raise
#    Alt<Btn1Click2>        frame|window   f.minimize
#    Alt<Btn1Click2>        icon           f.restore
#    Alt<Btn2Click>         frame|icon|windowf.raise_lower
#    Alt<Btn1Down>          frame|icon|window            f.move
#    Alt<Btn3Down>          window         f.minimize
# The new settings below have "window" removed because Tecplot
# wants them.
    Alt<Btn1Click>          frame|icon      f.raise
    Alt<Btn1Click2>         frame           f.minimize
    Alt<Btn1Click2>         icon            f.restore
    Alt<Btn2Click>          frame|icon      f.raise_lower
    Alt<Btn1Down>           frame|icon      f.move
    Alt<Btn3Down>           f.minimize
```

2.2.5 Display Issues.
On some platforms, drawing of lines in OpenGL may use an optimization technique that avoids drawing of the last pixel. This is most noticeable for text drawn in the work area as some characters will appear to be missing the final stroke of the pen. To resolve this problem add the following to your Tecplot configuration file (**tecplot.cfg**):

```
$!Interface openglconfig
{screenrendering {DoExtraDrawForLastPixel = TRUE}}
{imagerendering {DoExtraDrawForLastPixel = TRUE}}
```

2.2.6 Mesa Versions.

Mesa is an OpenGL-equivalent graphics library which performs 3-D rendering in software. That is, no 3-D graphics hardware is used nor is it necessary. If you are using a platform where both Mesa and OpenGL are available in the Tecplot distribution, and you want to install both, you *must* install the native OpenGL Tecplot version first. Place both versions in the same Tecplot home directory.

In general, the Mesa version of Tecplot is slower, especially when displaying across a network. If you must run the Mesa version and display remotely, you can speed up the rendering for XY Line and 2-D plots by setting the environment variable below. (On some computers, this will also improve the speed of 3-D plotting; however, on others it will dramatically slow 3-D plotting.)

For C shells:

```
setenv MESA_BACK_BUFFER Pixmap
```

For BASH, Bourne, and Korn shells:

```
MESA_BACK_BUFFER=Pixmap
export MESA_BACK_BUFFER
```

2.2.7 Remote Display Issues.

It is possible to run a network license of Tecplot on one UNIX computer and display it on a second computer (an X-server). However, if you are running the OpenGL version of Tecplot, the X-server must have the GLX extensions. If you are displaying on a UNIX system, run **xdpyinfo** to see if your system has the GLX extensions. If you are displaying on a Windows computer, you will need a newer version of X-server software, such as Reflection X 8.04 or later, or Hummingbird Exceed 3D 6.2 or later.

Notes:
- When displayed remotely, Tecplot may exhibit substantially lower drawing speeds than when it is displayed locally.
- OpenGL/GLX may have a memory leak which will slow graphical display performance on your machine over time. This has been observed on a Sun and MAC work station, and when remotely displaying on a Linux machine. It may occur on other machines. If Tecplot seems to be drawing more slowly, reboot your machine. If performance does not improve, please notify Tecplot.

Specific remote display issues are listed below. This list is periodically updated. Please check the Support section of *www.Tecplot.com* for the latest information.

Operating System: Running on Linux Kernel 2.2 or later, displaying remotely

Problem: NVidia graphics drivers return error message reading "Failed to create OpenGL context for Main Work Area."

Solution: Use the **-sgiopengl** command line option.

Operating System: Running on UNIX but displaying remotely on Windows using Reflection X

Reflection X Version: 8.0

Problem: Unreadable text on Tecplot's drop-down menus and dialogs.

Solution: Upgrade to Reflection X Version 8.05.

Operating System: Running on UNIX but displaying remotely on Windows using Reflection X

Reflection X Version: 8.05

Problem: Exporting of images gives the error message "Unable to allocate resources for image export," and reducing the size of the image does not help.

Solution: On the Windows system, Display Properties dialog's Settings page. Set the Color Palette to High Color, 16-Bit Color, or 65536 Colors. This allows you to choose export options like image size.

Solution 2: In your **tecplot.cfg** file, add this command:

```
$!Interface UseOffScreenBitmap = NO
```

To get a high-quality image, this option require you shut down most other Windows applications before exporting. You cannot choose export options like image size.

Operating System: Running on UNIX but displaying remotely on Windows using Hummingbird Exceed 3D

Exceed 3D Version: 6.2
Problem: Exporting of images sometimes fails and Tecplot crashes.
Solution: Upgrade to Exceed 3D Version 7.0.

Operating System: Red Hat

Version: 9.0 or Higher
Problem: The release version of Tecplot built specifically for Red Hat 9.0 will not start properly.
Solution: For an alternative setup, perform the following steps:

1. Install Linux 2.2 or the Linuxm.22 version of Tecplot.

2. Edit **`$TEC100HOME/bin/tecplot`**. Change the top of the file to be:

    ```
    #!/bin/sh
    LD_ASSUME_KERNEL=2.4.1
    export LD_ASSUME_KERNEL
    ```

3. If you still have problems, change the top of the file to be:

    ```
    LD_ASSUME_KERNEL=2.2.5
    export LD_ASSUME_KERNEL
    ```

4. Verify the setup by typing:

    ```
    echo $LD_ASSUME_KERNEL
    ```

Operating System: Mac OS

Version: 10.1.2 and later
Problem: Using XDarwin 4.3, Tecplot does not run.
Solution: Tecplot is unable to run on XDarwin 4.3. For Mac OS X version 10.2 ("Jaguar") and earlier, you may install XDarwin 4.2.0.1, which is also included on the CD. For Mac OS X 10.3 ("Panther"), you must use Apple's X11 X server, which is available as an optional item on your system install disk.

3 New Features and Enhancements

3.1 New Features in Release 4

The following represent changes in Tecplot from 10.0-3-66 to 10.0-4-10

General
*   Plots may appear less accurate, because the default variable derivation method is set to be FAST instead of ACCURATE. Before exporting images, go to the Performance dialog, choose the Misc tab, and select Accurate under Variable Derivation.
*   Zone animation allows animation based on time and or groups of zones.
*   Added ability to use TrueType fonts for text labels for 32-bit Linux platforms. A full description is provided in http://www.tecplot.com/support/tecplot_faqs.htm.
*   Export of vector formats such as EPS or WMF allows user to specify a single frame or the work area to be exported.
*   Enhanced precision of reported spline curve coefficients.
*   Added the ability to access a zone number for a mapping name. The mapping name currently allows access to zone name, independent and dependent variable name, and the X and Y axis number.
*   Added variable status information to Dataset Info dialog.
*   Interpolation within brick cells uses a new algorithm for more uniform results.
*   Added the ability to launch and position the PUBLISH and EDITFRAME dialogs.
*   Added a new flag to allow preplot to output binary data files with foreign byte order: **"-foreignplt"**.

Auxiliary Data changes
- Tecplot now looks for dataset auxiliary data named, Common.UVar, Common.VVar, Common.WVar when determining what auto assignments to give vector variables if they are needed but not yet assigned.
- Added variable and line map auxiliary data. The variable auxiliary data will be on the dataset level at present.
- Added AuxLineMap for Auxiliary Data associated with a line map. Text could be added as &(aux-linemap[1]:date) or &(auxlinemap[activeoffset=1]:date). Within a map name, the keyword "&M#&" can be used to get the Aux Data associated with that map number: &(auxlinemap[&M#&]:date).

Changes to macro language
- Additional dialogs that can be launched from the macro language and TecUtil layer: print preview, everything under the preference menu, loading and saving of colormaps, and the help about Tecplot and Add-Ons.
- Added **$!Interface InitialFieldProbeDialogPage**. This can be set to one of: NodalValues,
- ZoneCellInfo, CellCenteredValues, and FaceNeighbors

Changes for ADK Developers – For most current information, always go to http://www.tecplot.com/support/ tecplot_documentation.htm and choose Browse Online for the ADK Reference Manual.
- Added **TecUtilTextAddKeyEventCallback**
- Added **TecUtilStateChangeGetName**. Used to get the name field for changes to auxiliary data.
- Added **TecUtilColorMapRefresh**.
- Added TecUtilDialogGetColor(). This launches the color palette.
- Changed TecUtilMenuAddOption to set accelerators under Windows. The syntax is **"Label\tAccel"** where
- Accel is one or more of Ctrl+ Shift+ Alt+ followed by an ASCII character. For example, Ctrl+A or Shift+Alt+1.
- Added TecUtilStringListSort function.
- Added two new functions to allow TecIO layer to output data with foreign byte order: TECFOREIGN100 and TecUtilTecForeign.
- Massive revision to menu system (Motif and Windows) so dynamic items added from ADK, MRU, and sidebar options use the same code as the standard menu items. This adds no new functionality right now, but opens the door for many new features.
- Added the ability to query **MS_FRAMELAYOUT** subcommand options.
- Added new TecUtil functions for obtaining Tecplot's major and minor version and revision numbers:
- TecUtilTecplotGetMajorVersion, TecUtilTecplotGetMinorVersion, TecUtilTecplotGetMajorRevision,
- TecUtilTecplotGetMinorRevision.
- Deprecated BitDumpRegion_e and replaced it with a new type ExportRegion_e.
- Additional dialogs can now be launched from the macro language and TecUtil layer: print preview, everything under the preference menu, loading and saving of colormaps, and the help about Tecplot and Add-Ons.
- Added ability to get unique id assigned to line maps from an addon.

3.2 New Features in Release 3

The following section describes the enhancements of Version 10.0, Release 3 over Version 10.0, Release 2.
- **Added R^2 goodness of fit to the Curve Info dialog.**
- **Look and feel interface changes:** The Windows and Motif versions now have a similar look and feel. For Unix/ Linux, the sidebar buttons are resized when the interface font is changed.
- **Tecplot GUI Builder enhancements:** The Tecplot GUI Builder now builds add-on interfaces that are more con-sistent with one another across platforms. The TGB add-on provides a feature for quickly upgrading add-ons to use these new settings. It also has new capabilities to control the size and position of dialog items.
- **Bitmap buttons for add-ons:** Buttons and toggles can now use color bitmaps to build more attractive interfaces.
- **Tooltips:** Added tooltips to Tecplot and add-ons. Tooltips can be turned off with an entry in Tecplot's configura-tion file. For Unix/Linux builds, the positioning of tooltips avoids displaying the tooltip over Tecplot's workarea causing unnecessary exposure events.

- **Add-on control of Tecplot's sidebar and menu system:** Add-ons can create any number of their own sidebars and replace or remove Tecplot's standard sidebar. Additionally, an add-on can customize it's own menu system and programmatically launch most of Tecplot's main dialogs from a customized menu system.
- **Ability to programmatically launch Tecplot dialogs:** Macro commands and TecUtil functions for launching Tecplot dialogs can now launch almost all Tecplot dialogs. The ability to position these dialogs has also been enhanced.
- **Enhanced ADK:** New TecUtil functions for selecting Tecplot's built-in tools from an add-on, querying Tecplot's frame style, undoing the previous operation, querying the current contour levels, and many other operations.
- **Three new 64 bit platforms:** SGI IRIX 6.5, Sun Solaris 2.7, and HPUX 11.0. The 64-bit address space is used to enable larger zones than are possible on 32-bit platforms.
- **Easier customization of Unix help tool:** Unix and Linux Tecplot users now have more control on what browser gets launched to display help. The logic for launching the browser to display the help is now in a customizable script, $TEC100HOME/bin/LaunchBrowser, and works more reliably across multiple platforms.

3.3 New Features in Release 2

The following section describes the enhancements of Version 10.0, Release 2 over Version 10.0, Release 1.
- **Flash Output:** Added an option to export plots in the Flash format.
- **3-D Text:** Text can now have X, Y and Z positions.
- **Environment Variables:** Added the ability to define an environment variable via the Tecplot command line. Use -define envar=value.
- **More Responsive Interface:** Many enhancements to interrupt handling. Interrupt handling is more efficient, making the interface more responsive during lengthy operations.
- **Improved Performance for Data Alterations:** Various optimizations involving recalculation of scratch variables when data is altered.
- **Image Geometries:** Optimizations for operations on image geometries - both in time and space.
- **Improved View Centering:** Changed view center to center to the viewport instead of the frame.
- **Corrected Motif for Linux 2.4:** Reverted to Motif 2.1.30 per notice of serious problems with version 2.2.2 from IST (X-Designer people). Add-ons built against libgui.a supplied with original 10.0-0-7 Tecplot release must be recompiled (linux.24 build only).
- **Improved Plot Attributes Dialog:** Changed Plot Attributes dialog display of zone names and line mapping names that use the zone name to first strip out text formatting.
- **Improved Variable Name Handling:** Enhance binary data file creation to allow commas in variable names. Commas can be used if newlines are used as separators.
- Improved Text Formatting: Changed configure option for text formatting. Option is now called $!Compatibility AllowOldTextFormatting. If set to YES then both old and new formatting will be honored. Must set to NO to see _'s etc. verbatim in text.
- **Enhanced Preferences Dialog:** Added File/Preferences/Misc dialog. This has the Allow Old Text Formatting option.
- **Improved Vector Length Dialog:** Changed up/down arrow behavior for vector length to snap to a "nice" number above/below the current value.
- **Add-On Text Formatting Support:** Added **TecUtilStringConvOldFormatting()** to ADK.
- **C++ Add-On Support:** Many enhancements to aid in construction of C++ add-ons under unix.
- **Improved Support for Add-On Data Journaling:** Added function TecUtilDataSetAddRawJournalCom. Also added function TecUtilDataSetJournalIsValid, a replacement for the now deprecated TecUtilDataSetRequiresSaving.

4 Corrected Problems

4.1 Corrected Problems in Release 4

- Added missing interface shift and interface scale adjustments to the values returned by **TecUtilFieldStyleGetArbValue, TecUtilFieldStyleGetDoubleValue, TecUtilLineMap-**

StyleGetArbValue, TecUtilLineMapStyleGetDoubleValue, and **TecUtilStyleGetLowLevelX**.

- Re-fixed ATI front buffer problem. It no longer requires **$!Interface OpenGLConfig {Include Back Buffer During Front Buffer Draws = <bool>}** as that command resulted in less than optimal performance, especially with larger text drawn to the front buffer.
- Fixes to Plot3DLoader as well as Plot3DFile processing by Preplot.
- Enhancements to Plot3DLoader to take advantage of memory mapped io.
- Fixed Windows bug with **TecGUIListAppendItem()**. Problem was that it was recalculating the max item width every time this function was called, turning it into an **O(N^2)** operation when adding many items in a loop (as Tecplot RS was doing).
- Loosened requirement that all source zone variables used for interpolation are nodal. Now the source variables can be nodal or cell centered and if cell centered Tecplot will derive the nodal values as necessary. The nodal restriction for the destination zone's variables still holds.
- Fixed a problem with dialogs not responding to input focus when displayed on PC X servers. Now the launch instructions come before setting initial focus in the dialog.
- Fixed plotting of FE line segment scatter with points-to-plot set to "All Connected" so that it does not draw nodes that are not part of the node map.
- Fixed Windows bug with tabbed dialogs not remembering their position.
- Fixed sizing of columns in ZoneStyle dialog that would get broken upon changing from XY to 2D/3D. For some reason, sometimes changing the width doesn't take an effect, so forced it with unmanage/manage.
- Fixed problem with middle mouse operations on some unix platforms. Problem introduced with fix for alt key detection on mac's in version 10.0-3-60.
- Fixed Windows bug with **TecGUISelectAllItems()** failing on a list box with just one item.
- Updated ReadTec and consequently **TecUtilReadBinaryData** to read Tecplot 10 binary data files as long as they don't contain cell centered variables.
- Fixed **TecUtilDialogLaunch** to prevent it from recording a **$!LAUNCHDIALOG** command.
- Fixed macro processing to not allow a user to interrupt the processing of config, quick macro, or "dot add" files.
- Fixed macro processing to not allow the macro view to ever be presented for config, quick macro, or "dot add" files.
- Fixed problem with Vectors that don't draw in 3D if using uniform length when relative length is zero.
- Fixed problem with Advanced Quick Edit not always changing text size units.
- Fixed problem with deleting zones leaving the first zone un-enabled.
- Major fix to sub-zone optimization bug introduced in V10 R3. This effects interpolation, slicing, iso-surface, and streamtrace generation.
- Fixed problem with focus not returned to Tecplot when add-on dialog closed.
- Fixed problem with **AuxDataGetLocationAndOffset** returning incorrect location for dataset auxiliary data.
- Fixed problem with using single quotes in variable names.
- Fixed problem with **TecUtilImportGetLoaderInstr** not returning the correct instructions.
- Fixed (Windows only) bug with **TecGUISetSensitivity/Visibility** with spin controls. Windows spin controls were not being correctly displayed when TecGUISetSensitivity/Visibility were called on the parent text field.
- Fixed problem with **TecUtilGeomImageCreate** not placing image in the correct position. ImageCreate now uses the same coordinate system as Get/SetPos.
- Fixed problem with some SetValue commands not returning the correct **SetValueReturnCode_e** result. In particular **SymbolShape_s_SetValue and AsciiShape_s_SetValue** often return **SetValue_Ok** when it should have returned the SVRC set in the function.
- Fixed problem with Motif **TecGUIListSetTopItemNum** (off by 1).
- Fixed Windows TGB bug with multiline text fields on tab pages.
- Fixed problem with smoothing on dataset that has orphaned nodes.
- Fixed text heights in preplot for old ASCII data files (using "window" units).
- Fixed problem with blanking on cell centered data when you activate blanking constraint 1 and 3 and skip 2.
- Fixed problem with mysterious tool tip that shows up when you navigate from the sidebar to the workarea (Windows only).

- Fixed problem with processing of equations when using a sub-range with cell centered data. Tecplot previously did not calculate the results for the entire sub-range (omitting the calculation for the ending index).
- Fixed problem with $!ROTATEVIEW3D command when running on linux AMD systems.

4.2 Corrected Problems in Release 3

The following problems have been corrected since Tecplot 10.0 Release 2:
- Fixed problem with tecplot choosing the wrong visual for off-screen rendering when graphics cards contain a visual capable of stereo output. Tecplot now chooses non-stereo visuals over stereo for off-screen rendering.
- Fixed 3-D light-source rendering for on-screen and image export when a single axis has a negative scale and when all axes have negative scales.
- Fixed bug with multiline Windows TGB labels overwriting nearby controls.
- Fixed bug with TecUtilDataSetAddZoneX - assertion when sharing connectivities for FE data.
- Fixed a problem with multi-selection lists in conjunction with calls to TecGUIListSetSelectedItem or TecGUIListSetSelectedItems. Under Motif these functions would invert the specified items instead of explicitly selecting them. Now the behavior is consistent with Windows and selects the items.
- Changed a Windows TecGUI assertion to allow for de-selecting all items in a multi-selection list.
- Added two new sharing query functions to the TecUtil API to get the set of zones that share either a variable or connectivity with a specified zone: TecUtilDataValueGetShareZoneSet and TecUtilConnectGetShareZoneSet.
- Fixed problem with TecUtilDataSetAddRawJournalCom. String was not initialized to a zero length string thus junk was being passed into CompressPartialAsciiCommand.
- Fixed inconsistent unloading of add-on libraries when exiting Tecplot causing problems with C++ add-on object destructors on some platforms.
- Fixed an over-index problem with bidirectional streamtraces causing occasional crashing.
- Fixed $!Break and $!Continue macro commands failing when used in a loop more than 100 times.
- Fixed variable name resolution when appending a data set with variables loaded by position where the second data file has fewer variables.
- Fixed extracting points from a 3D geometry causing the Y coordinate of the extracted zone to be invalid.
- Fixed the $!System macro command to correctly interpret the operating system return of success or failure.
- Fixed control of initial dialog placement from an add-on.
- Partial fix: Added code to change X:Y ratio in 3D XY-dependent axis mode if that ratio would make the data outside the aspect ratio. More work needed to fix the bug in its entirety.
- Fixed TecUtilTextBoxGetLineThickness to return % in 0-100 range.
- Fixed problem with uninitialized value in TECGEO when writing out geometries. Problem could potentially write out invalid binary tecplot data files.
- Fixed problem with gouraud shading normal cache being out of date when data was edited outside the 3-D plot type.
- Eliminated the assertion in TecUtilDataFaceNbrGetRef that required the Zone parameter to refer to an FE zone.
- Removed problem of auto-presenting the contour details dialog when processing macros (unless a launch specifically requests it).
- Fixed $!Quit in batch mode playback under Windows.
- Fixed problem with TecUtilSaveLayoutX when PostLayoutCommands were not supplied.
- Added TecUtilAddOnSetAllowUnload(). Calling this with FALSE prevents the add-on from being unloaded when tecplot terminates.
- Fixed several errors in probing polar plots.
- Fixed two problems with zone name format expansion. Some places where it was not expanded (mapping legend) and other places it was expanded but shouldn't (Plot Attributes dialog and Mapping Animate dialog).
- Fixed problem with TecUtilContourLevelX and TecUtilContourLabelX where the "action" parameter (SV_LEVELOP and SV_LABELOP) was used incorrectly. You now use SV_CONTOURLEVELACTION and SV_CONTOURLABELACTION respectively.
- Fixed problem with sorting line maps using cell centered variables.
- Fixed bug with cancelling an animation with the Animate Record dialog after the animation was finished with a macro.

- Fixed problem with add-ons that call putenv. Tecplot was crashing on exit because the address given to putenv was subsequently being examined by getenv after the add-on's address space was unloaded.
- Fixed problem with selecting vector arrowhead style from quick edit dialog This caused Tecplot to crash because of an incorrect interface offset.
- Fixed problem with running multiple macro files in batch mode. Problem was that tecplot was resetting the graphics state after macro processing not realizing that there may be more macro files to be processed.
- Fixed slow drawing problems when doing rotations, etc. with a plot containing contour labels but with data not large enough to invoke a coarsened mesh.
- Fixed problem with auto name generation in preplot when the original name contains more than one period.
- Fixed problem with processing of dynamic text containing modern formatting.
- Fixed problem with save of lpk with preview image when in batch mode (Mesa only).
- Fixed Plot3D file generation in preplot to produce binary files with the correct header number (100) instead of 75.
- Fixed problem with rapid button click sequences that can potentially put tecplot in a state where modeless dialogs not to display.
- Fixed problems with using TecUtilZoneRealloc when blanking is turned on.
- Fixed bug with preplot not accepting maximum sized ellipses.
- Fixed undo to work with the reassignment of a layout with a data file.
- Fixed problem with auto grid spacing when axis labels use Point height units instead of frame.
- Fixed problems with TecUtilCreateSimpleZone where the ordering of data was interpreted by tecplot differently than documented.
- Fixed problems with interrupt handling for the Linux platform when using Alt-Tab to switch between windows.
- Fixed problem with -z flag not working anymore (Unix only).
- Fixed bug with EPS preview image not showing.
- Fixed drawing of nearest point probe marker when two lines maps have different scaling on their dependent variable axis.
- Fixed extended curve fit function call TecUtilCurveSetExtendedSettings to properly record when recording is active. Also changed our extended curve fit add-ons to call this function instead of the set-low-level equivalent which does not (and should not) record.
- Fixed problem with simultaneously activating zones that all use global face neighbors. Problem was that individual zones being processed assumed neighboring zones' face neighbors were valid.
- Fixed Windows bug with assertion when F1 is pressed with add-on dialog. F1 is now mapped to the add-on dialog help callback.
- Fixed multiple problems with creation of shared variables while doing a data alter operation. Actually fixed numerous bugs related to creation of shared variables.
- Fixed Windows bug with ESC/F1 key not being processed if a form or tab page has the focus.
- Fixed Tecplot menu bar creation from an add-on so that it doesn't incorrectly use Tecplot's hover help.
- Fixed infinite error messages when editing values for rotation origin if the rotation origin is bad for the current data (which can happen if the origin was good and then the data changed). Windows only.
- Fixed TecUtilAxisGetRange for polar plots (was returning Min/Min instead of Min/Max).
- Fixed calling TecUtilTextIsValid when there is no text. Similarly for TecUtilGeomIsValid.
- Fixed problem with crash on 64-bit SGI platforms when loading png images.
- Fixed assertion when bringing up Windows print render opts and pen plotter settings dialogs (async dialog with sync parent). This would have caused keyboard traversal problems in both dialogs under Windows.
- Fixed TecGUI under Windows to translate CR-NL to NL when getting text field values and vice versa when setting.
- Fixed crash under Windows version if a text field is changed but that field never had its value set by code.
- Fixed bug with TecUtilGeomImageCreate() causing tecplot to assert if the file name is invalid. TecUtilGeomImageCreate() now returns TECUTILBADID if the file does not exist.
- Fixed problem with Tecplot under-indexing a cell centered array while performing a second derivative for ordered zones with an I, J, or K dimension of 3.
- Fixed User interface where it would not allow you to specify the number of minor tick marks to use if the axis was a log scale and auto tickmark spacing was turned off.
- Fixed problem with auto grid spacing when axis labels aligned perpendicular to the axis use point height units.

- Fixed divide by zero crash when pressing the "+" arrow in the animate slices dialog.
- Fixed problem with setting "$!Compatibility AllowDataSharing = No" causing Tecplot to crash
- Fixed Windows bug with TecGUIDialogSetLaunchPosition() causing action area buttons to disappear
- Fixed bugs with erroneous Windows assertion in TecGUIBitmapButtonCreate and TecGUIDialogCreate.
- Fixed bug with erroneous assertion when creating sidebars on the Windows side.
- Fixed display of neighboring zone information in the Face Neighbor page of the probe dialog. Previously Tecplot was displaying the cell number but not the zone number of a face neighbor if the neighboring zone was inactive.
- Fixed problem processing non-printable ASCII codes while drawing text objects. Non-printable characters should have been treated as spaces but instead were being drawn with random characters.
- Fixed Windows TGB bug with radio box text adding spaces to the end and possibly overwriting other controls.
- Fixed Tecplot's error handling with incorrectly shared connectivity in a data file or layout package file.
- Fixed vector drawing code to work around an nVidia driver bug causing Tecplot to crash.
- Fixed problem with interrupting calls to TecUtilProbeAtPosition by add-ons (seen by interrupting a CFD Analyzer calculation).

4.3 Corrections From Earlier Releases

The following problems have been corrected since Tecplot 10.0 Release 1:
- Fixed problem with contour flooding Gouraud shaded primary value or average cell flooded plots. Now Tecplot adjusts the lighting effect and strip usage in conjunction with the "force" options in the light source dialog to produce the desired plot.
- Fixed bug with lack of duplicate add-on warning if an add-on is loaded on the command line.
- Fixed bug with FE derivatives of nodal data when there are isolated nodes (no elements contain the node). The derivative is set to zero at these isolated nodes.
- Fixed problem with &(MAXVAR[n]) when in line plots. Also changed behavior of the Data Set Information dialog to give the min/max values for the variable in all zones referenced by line maps and not bail if the variable is not an axis variable.
- Fixed two problems with TecUtilStateChangedX:
  1. SV_INDEX is no longer unnecessarily required.
  2. Error checking for SV_VARLIST is now correct.
- Fixed problem with parsing of floating point numbers in preplot where the number uses a lower case "e" and no decimal point. Problem existed back as far as Tecplot 7.5.
- Changed macro viewer such that if a break point is hit, the viewer will be launched automatically.
- Fixed problem with splines containing more than 5000 points
- Fixed highlight positioning of the spreadsheet dialog when a probe event occurs and the underlying data is cell centered.
- Fixed cell orientation problem causing strip processing to twist cells.
- Fixed probing of linear FE zones with cell centered data crashing Tecplot.
- Fixed problem with selecting the ASCII toggle in the Write Data File dialog causing Tecplot to crash when there are not zones and only geometries or text.
- Fixed TecUtil bug that would not allow text in grid/point mode via TecUtil calls.
- Fixed view last with 3D text requiring a shift-redraw.
- Fixed problem with state changes not being propagated when add-ons change style in Tecplot.
- Fixed problem with contour legend not showing up if the only multicolor object in the plot is filled scatter symbols where the fill color is multicolor, but the outline color is not.
- Fixed problem with auto-converting of user-supplied axis titles to new V10 format.
- Fixed problem with deleting the secondary variable that is referenced in value blanking (i.e. "VarB").
- Fixed problem with supplying fully formatted var name to equations. Tecplot would previously not match this against existing var names and thus would create a new variable.
- Fixed problem with probe marker being drawn in the wrong location for probe-at via index if you have multiple zones.
- Fixed problem with opening invalid layout retaining the previous layout filename. Previous layout filename is now only retained if the file itself cannot be opened but not on read error.

- Fixed problem with auto-conversion of v9 macro files containing text labels using dynamic text. Tecplot now leaves the dynamic text portion alone during v9-v10 conversion process.
- Fixed polar plot bug where changing range max to greater than range min + theta period would put the range max at range min + theta period instead of adjusting the range min.
- Fixed reading back in layouts and stylesheets with log axes and large ranges by putting coord sys command before range min/max.
- Fixed problem with saving layouts with line plots using FE-volume data.
- Fixed problems encountered when Tecplot macros are interrupted and restarted.
- Fixed problem with export of postscript or wmf with RGB flooding when using primary value in FE data when all RGB components are cell centered.
- Fixed problem with duplicating zones sharing connectivity when AllowDataSharing was set to FALSE.
- Fixed problem with clamping of ParaSplines.
- Fixed problem with writing partial data set (subset of vars) to an ASCII file when some variables have node value location and others have cell value location. The VarLocation field did not account for shifting of variables.
- Fixed memory leak related to FE surface approximations and more than one cell centered variable required by the style.
- Fixed problem with Contour Details dialog that would hang Win2K machines.
- Fixed appending data files containing global face neighbors. The appended data file did not apply the relative zone offset from the previously loaded zones to the global face neighbor zone references.
- Fixed problem with opening layout package file using a relative path in a macro command.
- Corrected an error with splines with cell-centered variables. The sorting now uses the derived nodal variable as the basis for the sort.
- Fixed problem with Tecplot selecting the wrong visual when running on a dual monitor system where graphics capabilities of the two cards is vastly different.