




## **Release Notes**

*Tecplot Focus 2019 R1*

Tecplot, Inc.  
Bellevue, WA  
2019



## COPYRIGHT NOTICE

Tecplot Focus™ Release Notes is for use with Tecplot Focus™ 2019 R1.

Copyright © 1988-2019 Tecplot, Inc. All rights reserved worldwide. Except for personal use, this manual may not be reproduced, transmitted, transcribed, stored in a retrieval system, or translated in any form, in whole or in part, without the express written permission of Tecplot, Inc., 3535 Factoria Blvd., Ste 550, Bellevue, Washington, 98006, U.S.A.

The software discussed in this documentation and the documentation itself are furnished under license for utilization and duplication *only* according to the license terms. The copyright for the software is held by Tecplot, Inc. Documentation is provided for information only. It is subject to change without notice. It should not be interpreted as a commitment by Tecplot, Inc. Tecplot, Inc. assumes no liability or responsibility for documentation errors or inaccuracies.

Tecplot, Inc.  
Post Office Box 52708  
Bellevue, WA 98015-2708 U.S.A.  
Tel: 1.800.763.7005 (within the U.S. or Canada), 00 1 (425)653-1200 (internationally)  
email: [sales@tecplot.com](mailto:sales@tecplot.com), [support@tecplot.com](mailto:support@tecplot.com)  
For more information, visit <http://www.tecplot.com>

Feedback on this document: [support@tecplot.com](mailto:support@tecplot.com)

Tecplot®, Tecplot Focus™, the Tecplot Focus logo, Preplot™, Enjoy the View™, Master the View™ and Framer™ are registered trademarks or trademarks of Tecplot, Inc. in the United States and other countries.

All other product names mentioned herein are trademarks or registered trademarks of their respective owners. For acknowledgements of third-party copyrights and trademarks, see the Tecplot Focus User's Manual PDF installed with the product.

## NOTICE TO U.S. GOVERNMENT END-USERS

Use, duplication, or disclosure by the U.S. Government is subject to restrictions as set forth in subparagraphs (a) through (d) of the Commercial Computer-Restricted Rights clause at FAR 52.227-19 when applicable, or in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.227-7013, and/or in similar or successor clauses in the DOD or NASA FAR Supplement. Contractor/manufacturer is Tecplot, Inc., 3535 Factoria Blvd, Ste. 550; Bellevue, WA 98006 U.S.A.

Part Number: 19-F-04-1 Build 3891 Released: 7/2019

# Additional Resources

In addition to these Release Notes and HTML Help, Tecplot Focus includes access to the following manuals.

- [User's Manual](#) This manual provides a complete description of working with Tecplot Focus features.
- [Scripting Guide](#) This guide provides Macro and Python command syntax and information on working with Macro and Python files and commands.
- [Quick Reference Guide](#) This guide provides syntax for zone header files, macro variables, keyboard shortcuts, and more.
- [Data Format Guide](#) This guide provides information on outputting simulator data to Tecplot Focus file format.
- [Installation Guide](#) These instructions give a detailed description of how to install Tecplot Focus on your machine.

# Welcome to Tecplot Focus 2019 R1

Tecplot Focus 2019 R1 contains many improvements from Tecplot 360 EX 2019 R1 which is largely focused on our users in the geosciences. Read on to see what's new.

## What's New In Tecplot Focus 2019 R1

### Highlights of Tecplot Focus 2019 R1

- **TecIO-MPI write speed improved** by ~15x via output file caching and reducing data exchanges.
- **Extracting slices over time more tightly integrated.** The *Data > Extract > Extract Slices Over Time...* menu option has been removed. Please use *Data > Extract > Extract Slices...* or the *Extract Slices...* button on the *Slice Details* dialog.
- **Saving a layout after extracting primary slices** no longer forces saving the data.
- **Reprise License Manager (RLM)** updated to 12.4.

### Bug Fixes and Enhancements

- New macro preprocessor directives allow macros to skip over newer instructions based on Tecplot revision for future backward compatibility.
- Fixed crash when saving a multi-dataset layout with the IJK Blanking dialog open.
- Contour levels listed in the Contour Details dialog now correctly displays lists for zero-contour-level-groups.
- Added --help command line option.

## What's New In Tecplot Focus 2018 R2

### For Geoscientists

- **Sequential - Viridis & cmocool colormaps.** Which colormap you use to represent your data makes a difference. Sequential – Viridis is the new default. Also,

check out the new cmocean colormaps copyright (c) 2015 Kristen M. Thyng. For more details on the cmocean colormaps visit <https://github.com/matplotlib/cmocean>.

- **Georeferenced images may now be imported into Tecplot Focus.** Georeferenced images can provide important context when viewing geographic model results and work with both 3D and 2D plot types. See the video here: <https://www.tecplot.com/2018/10/17/georeferenced-images-in-tecplot-360/>.

## New Colormaps (and a new Default)!

We've added 19 new colormaps to the selection in Tecplot Focus, including using *Sequential – Viridis* by default. Over the past decade, research has revealed many negative aspects of the *Rainbow*. That same research has offered better colormaps which are perceptually linear or diverging. This change of default may affect the result of scripts. If you really need *Small Rainbow* back you can change the default by adding the following lines (for example) to your *tecplot.cfg* file:

```
$!GlobalContour 1 ColorMapName = 'Small Rainbow'
$!GlobalContour 2 ColorMapName = 'Large Rainbow'
$!GlobalContour 3 ColorMapName = 'Diverging - Blue/Red'
$!GlobalContour 4 ColorMapName = 'Small Rainbow'
$!GlobalContour 5 ColorMapName = 'Small Rainbow'
$!GlobalContour 6 ColorMapName = 'Small Rainbow'
$!GlobalContour 7 ColorMapName = 'Small Rainbow'
$!GlobalContour 8 ColorMapName = 'Small Rainbow'
```

If you have your own custom colormap that you always want available, just drop a \*.map file in the new 'colormaps' directory in the installation.

## Loader Update

- **Excel Add-In** now includes the filename in Zone Auxiliary Data of each created zone, so you can more easily identify from which file the zone originated.

## **Multiselect & Context Menus**

Tecplot Focus now allows you to group select multiple items, such as text and geometries. We've also added brand new context menus for text and geometry objects. Give it a shot by right-clicking when you have a piece of text selected.

## **Platform Support Updates**

We've updated our supported operating systems and plan to drop Windows 8.1 in 2019. Please refer to the install guide for complete details.

## Bug Fixes

- Updated vectors to ignore parent volume vector values if surface values are valid.
- Updated WMF export to use polygons which render more precisely in Microsoft Office products.
- Fixed crash when double clicking on certain parts of the Quick Macro Panel.
- Enabled the ability to exclude Custom Labels when writing a dataset.
- Configuration file now obeys \$!DefaultText assignments.
- Updated web license key URL in the Install License File dialog to point to new My Tecplot portal.
- Altering grid variables now updates face normals.
- Isosurface dialog now allows values larger than 2147480000.
- Switching image clipping in 2D updates the plot immediately.
- Fixed race condition when creating Tecplot's initial temporary directory.
- Allowed layouts to contain zero contour levels.
- License expiration display is always available to the user.

## Bug Fixes & Enhancements in 2018.2.1

- Added option to export animations to a series of individual images.
- Updated MPEG-4 to support high resolution exporting, loading into HTML5 websites and Windows Media Player.
- Fixed crash on Mac when exporting long or high supersample animations.
- Export region default changed to All Frames.

- Added Animation Speed parameter back to WMV export.
- Improved rotational rendering performance when exceeding limits in graphics hardware.

## **Tecplot Focus vs. Tecplot 360 EX**

If you need any of the following features, we suggest you consider Tecplot 360 EX.

- The ability to load data files containing more than 5 million data points
- CFD analysis tools, found on the Tecplot 360 EX Analyze menu, including integration capabilities
- Access to Tecplot's new high-performance subzone data file format, *.szplt*
- The ability to load data in CFD formats such as Fluent, FLOW-3D, EnSight, ANSYS, OpenFOAM, and more through native data loaders
- The ability to load data files containing face-based (polygonal and polyhedral) zones
- Access to the following features while you maintain a valid TecPLUS subscription:
  - Tecplot Chorus, our simulation analytics tool for engineers who work with large numbers of cases
  - PyTecplot, an interface to the Tecplot engine via the Python programming language
  - Tecplot SZL Server, which gives you simple, secure access to your Linux-hosted remote data

TecPLUS is the replacement for Software Maintenance Service (SMS).

## **Usage Data Collection**

To help us better understand how our customers use our products and improve them further, Tecplot Focus includes an analytics feature that reports user activity over the



Internet using the Google Analytics™ platform. This feature tells us which dialogs you use and which controls you manipulate in them. However, to protect your privacy and trade secrets, we do not see names associated with your data (such as variable, zone, or file names) or the actual values of fields in dialogs, nor do we receive any information about you or your organization's identity.

If you do not wish to participate in this program, turn off "Collect Anonymous Usage Data" in the Help menu.

We receive basic information about your operating system, product version, and license at each launch of Tecplot Focus, even if you have opted out of the usage data program. This information is not tied to any usage data collected.

No usage data of any kind is collected if you do not have access to the Internet or if the Google Analytics service is blocked by a firewall.

## Remote Display

Linux systems can use X Windows to display Tecplot Focus on a separate system from the one on which Tecplot Focus is actually running. Your X display software must support the GLX OpenGL Extensions, or you must have the graphics rendered by the host CPU using the Mesa software renderer (`tecfocus -mesa`).

Linux remote users may find performance better using remote desktop software instead of X. In our tests, the [HP Remote Graphics Software](#) was generally the most performant such solution when one or the other systems was Linux-based.

On Windows systems, you can use the included Remote Desktop Connection, which transmits the entire user interface to a remote computer. This allows the rendering to be performed in hardware on the host computer and the results transmitted across the network. On server versions of

Windows, more than one simultaneous session of this type can be supported. [ThinAnywhere](#) is a plug-in that can improve the remote performance of 3D applications over slow networks.

On Mac, use the Screen Sharing feature, which can be enabled in the Sharing control panel (or a third-party equivalent such as Vine Server, which may provide better performance in some situations), and a VNC client, such as Chicken of the VNC.

Remote desktop software is generally not suitable for situations in which multiple remote users need to run GUI applications such as Tecplot Focus on the host system at the same time. In these situations, X on Linux is generally the preferred solution.

## Crash Reporting

Please help us make Tecplot Focus better by submitting a crash report to us in the event that the application terminates unexpectedly.

On Windows, Tecplot Focus creates a crash dump file. You will receive a message indicating that a crash dump file has been created. Click **Yes** in this dialog to open the folder where the file is created. You can then e-mail the most recent *.dmp* file in this folder, along with a description of what you were trying to do, to [support@tecplot.com](mailto:support@tecplot.com).

On other platforms, no crash dump file is created. However, we urge you to send us a report anyway with as much detail as you can remember.

If you have a moment and a desire to be extra helpful, please re-open Tecplot Focus and choose **Enable Diagnostic Logging** in the **Help** menu. Then redo the steps you took to cause the crash. If you are able to reproduce the crash, send the resulting *.mcr* file to us (along with the *.dmp* file if you use

Windows). On non-Windows platforms, you can find the `.mcr` file in `/usr/tmp/tecplot_${USER}/tpa_diagnostics`.

Crash dumps and diagnostic macros are stored in a temporary folder and will be eventually be deleted automatically. There is no need to delete them manually.

## Graphics Drivers

**For best results, please make sure that you are using the latest graphics drivers compatible with your hardware and operating system.** These can be obtained from your graphics adapter vendor's Web site. Old versions may have issues with Tecplot Focus, especially with larger data sets.

- **NVIDIA:** <https://www.nvidia.com/Download/index.aspx>
- **ATI:** <https://www.amd.com/en/support>
- **Intel:** <https://downloadcenter.intel.com/Default.aspx>

## Platform-Specific Notes

The following table outlines the support for various platform-specific features in Tecplot Focus 2019 R1.

	Linux	Mac	Windows
Excel Loader			✓

Refer to the remainder of this section for issues specific to your operating system.

## Windows

Your account must have administrator rights on your computer to install Tecplot Focus, or else right-click the installer and choose "Run as Administrator."

- **32-bit Windows**

32-bit versions of Windows are not supported by Tecplot Focus 2016 R1 and later. You must use a 64-bit version of Windows to run Tecplot Focus.

- **Windows XP End-Of-Life**

Users run Tecplot Focus on Windows XP at their own risk. Microsoft ended support for Windows XP in April, 2014, and Tecplot, Inc. no longer tests or certifies Tecplot Focus on Windows XP. Going forward, we can neither guarantee compatibility nor provide technical support for Windows XP users.

## **Linux**

- **32-bit Linux**

Tecplot Focus is not available in a 32-bit Linux version. You must use a 64-bit Linux to run Tecplot Focus.

- **Ubuntu Linux**

With Ubuntu's new Unity UI, minimizing Tecplot Focus may cause its pull-down menus to become unresponsive when the application is later restored. As a workaround, you may choose "Ubuntu Classic" or "Ubuntu 2D" when logging in, or set your user account to use one of these as the default in the Login Screen control panel.

Tecplot Focus is supported only on LTS (Long Term Support) releases of Ubuntu.

- **Unicode Support**

Recent Linux distributions can take advantage of the Unicode text support incorporated in Tecplot Focus.

- **Temporary Directory**

Tecplot Focus relies on being able to create temporary files in the system temporary directory. On Linux, this directory is typically `/usr/tmp` or `/var/tmp`. If your user account does not have permission to write into the

system temporary directory, you can use a different directory either by setting the `TMPDIR` environment variable in your profile or by setting the `TEMPFILEPATH` in the *tecplot.cfg* file.

- **Menu Shortcuts**

Menu shortcut keys may not work if the `NUM LOCK` is on. You may set the `NUM LOCK` to turn off automatically at boot in your computer's BIOS.

- **SELinux**

SELinux (provided with some Linux distributions) adds an extra layer of security. If you see this error message:

```
./bin/tecplot.shared: error while loading
shared libraries: ./lib/libtec.so: cannot
restore segment prot after reloc:
Permission Denied
```

Enter these two commands, replacing `/path/to/tecfocus/lib` with the actual path of your installed Tecplot Focus *lib* directory (your account needs `sudo` permission):

```
sudo chcon -v -R -u system_u -r object_r -t
lib_t /path/to/tecfocus/lib/
```

```
sudo chcon -t texrel_shlib_t /path/to/
tecfocus/lib/*
```

You can then run Tecplot Focus without disabling SELinux.

- **Remote Display Issues**

If you have a **Network** license, you can run Tecplot Focus on one computer and display it on a second computer (via an X server). The X server must support GLX extensions, or else you must use the `-mesa` option when launching Tecplot Focus to have all OpenGL rendering performed in software on the host. Working

with large, complex files may benefit from the `-mesa` option (see next bullet) even if your X server supports GLX.

When displayed remotely, Tecplot Focus may exhibit substantially lower drawing speeds than when it is displayed locally, especially for text and geometries.

- **Mesa Rendering**

Mesa, an OpenGL-equivalent graphics library, performs 3D rendering in software. It is typically used when hardware acceleration is unavailable or when working with remote display of large data.

The Mesa version of Tecplot Focus is slower, especially for 3D plotting. If you must run the Mesa version and display remotely, you can speed up the rendering for XY Line and 2D plots by setting the environment variable below. On some machines, this may also improve the speed of 3D plotting that does not use translucency. (Mesa translucency performance is known to be very bad.)

```
export MESA_BACK_BUFFER=Pixmap
```

## Mac

- **Keyboard Shortcuts**

Previous versions of Tecplot Focus used the Control key for most keyboard shortcuts, rather than the Mac standard Command key. Tecplot Focus changes these shortcuts to use the Command key under Mac.

Similarly, when rotating a 3D plot, you now hold down the Command key while dragging with the right mouse button. Note that the Alt key may be called Option on some Mac keyboards.

- **Right Mouse Button**

If your Mac's mouse has only a single button, hold the Control key while clicking to access right-click functionality.

- **Middle Mouse Button**

There is no functionality in Tecplot Focus that *requires* a middle mouse button; however, it does provide some shortcuts. Users of single-button mice cannot emulate the middle button, but users of mice with two buttons can hold down Control while right-clicking if their mouse does not support a true middle-button click.

- **32-bit Macs**

The Mac version of Tecplot Focus requires a 64-bit processor. Macs with an Intel Core processor (rather than a Core 2 or later processor) cannot run the Mac version of Tecplot Focus, as they do not support 64-bit code.

To determine the type of processor in your Mac, choose “About This Mac” from the Apple menu. If the processor field displays “Intel Core” or “Intel Core Duo”, you have a 32-bit Core processor and cannot run Tecplot Focus 2106 R1 or later.

- **Remote Display**

As Tecplot Focus now uses the native Mac user interface on the Mac, you can no longer access the application on a remote machine using an X window server. Instead, use the Screen Sharing feature, which can be enabled in the Sharing control panel (or a third-party equivalent such as Vine Server, which may provide better performance), and a VNC client, such as Chicken of the VNC.

It is not possible for multiple users to run Tecplot Focus on a Mac host remotely.

Enjoy Tecplot Focus 2019 R1 and master the view!