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What's New in IDL 6.4

Flexible Data Access. Powerful Visualization Capabilities. Ease of Use.

Welcome to IDL 6.4. This release delivers new functionality and enhancements that ensure you have modern, flexible access to data, powerful visualization capabilities, advanced presentation functionality and improved ease of use. You will see robust additions that allow you to quickly and easily access data over the internet, take advantage of new graphics card capabilities to speed your advanced visualizations and new graphics functionality to power and simplify your data analysis.

Access data from remote servers quickly and easily with HTTP, FTP and OGC WMS/WCS capabilities

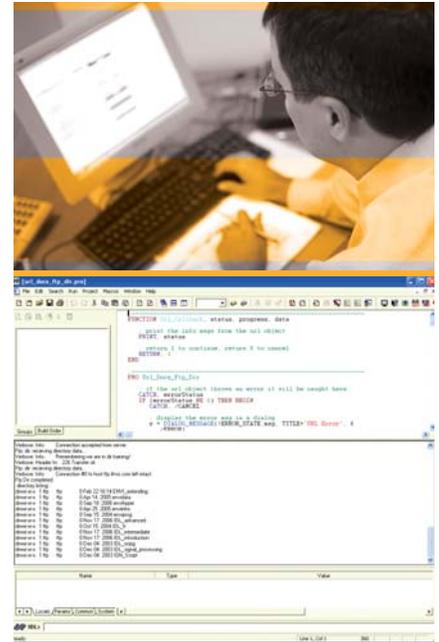
Accessing data from remote servers is a growing need for users who want to share data across the internet, and users frequently search for data transfer utilities to facilitate data transfers. Now in IDL 6.4, IDL users can receive data from remote servers and write data files to a disk at a remote location using the most common protocols. The new IDLnetURL object allows IDL to act as a client to an HTTP or FTP server and gives users the ability to open a connection, send requests and receive responses.

Access to the Open Geospatial Consortium (OGC), the largest standards organization for geospatial data, is a growing need for many IDL users in geospatial markets. IDL 6.4 provides OGC database support as a standard way to query and retrieve remote data in IDL. The new IDLnetOGCWMS and IDLnetOGCWCS network objects allow access to Web Map Service (WMS) and Web Coverage Service (WCS) servers.

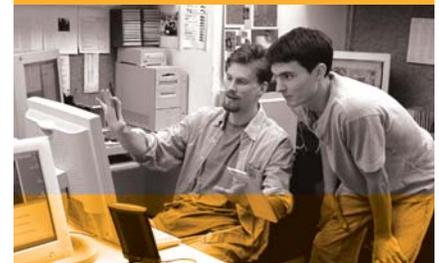
Access the graphics power of modern graphics cards with support for OpenGL Shading Language

New shader functionality implemented in the object graphics of IDL 6.4 allows users to take advantage of the hardware-based, OpenGL Shading Language (GLSL) features that are available on modern graphics cards to speed visualizations. Now, by using a shader program, computationally intensive image processing operations can be off-loaded to a graphics card that supports the OpenGL 2.0 interface, dramatically increasing the speed of graphics rendering. A shader program can perform image filtering operations, complex lighting and shading calculations, interactive blending of multiple textures, animation of object vertices, or any combination of these.

The new IDLgrShader object provides a way to associate a shader program with the existing IDL graphic objects. In addition to the shader object, a small library of pre-built shader objects is also included. These pre-built objects let you quickly add byte-scaling or convolution filtering to an IDL application without having to write any shader code. The objects also let you apply a series of image filtering shaders to an image.



The IDLnetURL object connects, sends requests and receives responses.



Shaders are used to rapidly animate wind vectors on a map of the earth.



Speed your 2D and 3D visualizations with the new 24-bit Z-Buffer Device

The IDL Z-Buffer Device available in IDL 6.4 renders complex 2D and 3D graphics quickly by drawing 2-D or 3-D graphics to a memory buffer prior to rendering them to the display. It implements the classic Z buffer algorithm for hidden surface removal, and the contents of the buffer may then be written to a file, or rendered to a graphics display device. In this release, the IDL Z-Buffer device has been enhanced to support a 24-bit truecolor frame buffer.

Take advantage of iTools enhancements and added functionality that make iTools more robust and easier to use

The IDL Intelligent Tools (iTools) are a set of interactive utilities that combine data analysis and visualization with the production of presentation quality graphics. Introduced in IDL 6.0, the iTools are designed to help you get the most out of your data with minimal effort. They allow you to benefit from the control of a programming language, while accelerating your data analysis through the use of interactive utilities. Compiled completely from user requests, the new enhancements to iTools in IDL 6.4 make iTools more functional and easier to use than ever: Enhancements include:

- Nineteen new or enhanced keywords
- The ability to use any TrueType font available on your system
- A new Image Plane Location property that allows you to specify the exact data location of the image plane
- The addition of Z Values for iMap's graphic layers giving Map Gridlines, Shapefile Polygons, Polylines, and Points visualizations a new Z value. If multiple images are displayed in a stack you can now specify the corresponding Z value for the graphics so that any or all of the images can have graphics drawn on them.

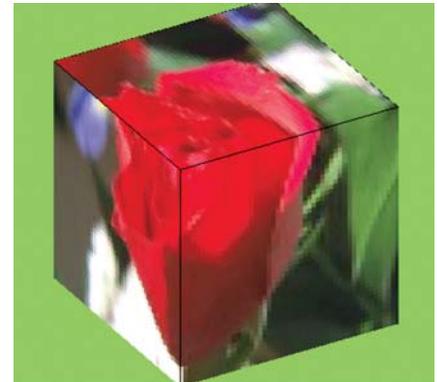
Boost your visualization and analysis capabilities with powerful new image processing functions.

Based on IDL user feedback, IDL 6.4 includes enhancements to IDL's powerful image processing engine including new color mapping functions, new edge detection filters, noise functions and GIF support for transparency and animations.

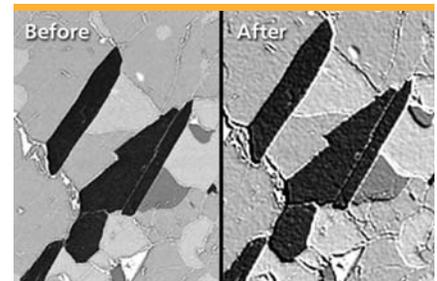
- New Color Mapping functions: COLOR_EXCHANGE, COLOR_RANGE_MAP, COLORMAP_GRADIENT, COLORMAP_ROTATION, and COLOR_CONVERT has been enhanced for more color spaces
- New Edge Detection filters: EDGE_DOG, EMBOSS, LAPLACIAN, PREWITT, SHIFT_DIFF
- New Noise functions: NOISE_HURL, NOISE_PICK, NOISE_SCATTER, NOISE_SLUR
- Plus, GIF support for transparency and animations

Take advantage of additional enhancements, functionality and platform support including:

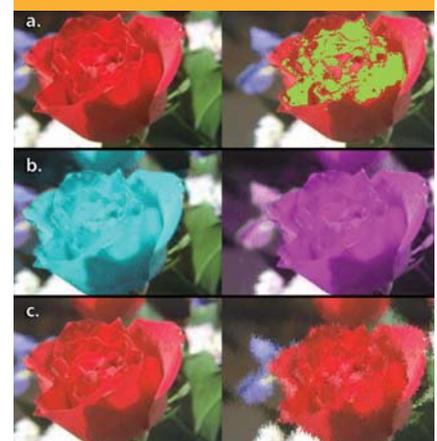
- Support for Windows Vista
- Title bar icons for base widgets in the IDL widget toolkit
- Bridge enhancements including: IDL_IDL Bridge on Linux 64-bit and Windows Vista, and Java Export on 64-bit Windows and 64-bit Linux
- New CDF functions: CDF_EPOCH_COMPARE, CDF_EPOCH_DIFF



A rose rendered in Truecolor (24-bit) warped to the surface of a cube using the Z-Buffer.



Example of EMBOSS image processing routine.



Examples of the COLOR_EXCHANGE, COLORMAP_ROTATION and NOISE_SLUR routines."