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Welcome to CorelDREAM 3D

CorelDREAM 3D provides all the features necessary to create full-color three-dimensional (3D) illustrations. Its Bezier-based modeler uses familiar tools from your favorite two-dimensional (2D) drawing program (like CorelDRAW) to create 3D objects. The program also has a Modeling wizard to guide you through the steps needed to create a 3D object.

After you create an object, you can paint it with colors and textures that have realistic properties such as transparency and reflection. You can even apply real-world textures like wood grain or marble.

To enhance realism and 3D effects, you can add various types of light sources to your scene. By changing a few light source settings, you can change a kitchen scene from a midday scene, to early morning, to late evening.

Because you work in three dimensions, you can view your scene from any angle and at any degree of magnification by placing cameras at different positions in the 3D workspace.

When you're finished with your 3D model, you need to render the image. Rendering is the culmination of a CorelDREAM 3D project. Rendering is like taking a photograph; it reduces a 3D environment to a 2D image. The rendered image is compatible with many popular Windows 2D graphics and page layout programs, so you'll have no trouble making composite renderings with other images or integrating the images with your text.

About Corel Corporation

Corel Corporation is recognized internationally as a world leader in the development of PC-based graphics and multimedia software. CorelDRAW™ is now available in more than 17 languages and has won more than 215 international awards from major trade publications.

We pride ourselves in delivering high-quality graphics, productivity, and multimedia software by actively seeking your input. We use this feedback and respond quickly to you, the users of Corel products worldwide.

Corel ships its products through a network of more than 160 distributors in 70 countries worldwide. Corel is traded on the Toronto Stock Exchange (symbol: COS) and the NASDAQ — National Market System (symbol: COSFF).

For more information about Corel and our products, check out our World Wide Web site at http://www.corel.com.

Enough about us, what do you have to say?

In our continuing efforts to help you get the most from CorelDRAW, we look for new and better ways to document our products. If you've developed a unique effect that you'd like to share with us, please let us know. Send us the details and we may include them — with due credit to you, of course — in future CorelDRAW learning materials. Address your letter to

Documentation Manager
Corel Corporation
1600 Carling Avenue
Ottawa, Ontario, Canada
KIZ 8R7
Fax: (613) 728-9790

Using Help

The CorelDRAW 8 Graphics Suite features new and enhanced documentation to meet your most requested documentation needs. The comprehensive online Help system provides easy access to descriptions and procedures that cover all application features and functions. In addition to online Help, the CorelDRAW 8 Graphics Suite also includes a complete User's Guide.

The documentation set comprises the following:

Online Help

The online Help system enables you to retrieve all the information you need quickly, and then return to your work. Help appears in a separate window on your screen. For quick access, you can keep the Help window displayed on top of the application. You can also print specific topics from the online Help system.

Online Tutors

Online Tutors provide step-by-step instructions on how to complete specific tasks and projects. If you prefer, you can have a Tutor show you how to complete the task.

Tutors range in complexity from instructions about basic tasks to complete projects that involve several tasks. This Help feature is available in CorelDRAW and Corel PHOTO-PAINT™.

Online Hints

Online Hints display information and guidance on the task that you're performing. When you click a tool or an object, the content of the Online Hints window is updated to provide you with relevant information. This Help feature is only available in CorelDRAW.

Context-sensitive Help

The context-sensitive Help displays information that is relevant to the current status of the application and provides information about using commands.

Online ToolTips

Online ToolTips provide information about icons and buttons on the toolbars and the Toolbox. ToolTips display in a balloon when you position the mouse pointer over a button.

User's Guide

The CorelDRAW 8 Graphics Suite User's Guide provides you with comprehensive documentation that you can take away from your desk and read at your leisure.

Documentation conventions

As you read the Corel documentation, you'll notice a number of conventions that you'll probably want to become familiar with first.

Mouse conventions

The following are some conventions for mouse movements you'll see in the documentation:

When you see this ...	Do this ...
Click File, New	Click the File menu with the mouse, and click the word New in the menu.
Click Arrange, Order, To Back	Click the Arrange menu, click Order, and click To Back from the submenu that appears.
Enable a check box	Click the check box to place a check mark or an "X" inside the box.
Disable a check box	Click the check box to remove the check mark or "X."
Select	Click (and drag) to highlight.
Choose Italic from the Weight list box	Click the Weight list box, and click the Italic option.
Click a color in the Color Palette	Click the left mouse button on a color in the Color Palette.

Right-click, and click Paste	Click the right mouse button, and click the Paste command from the submenu that appears.
Drag a color from the Color Palette	Hold down the left mouse button on a color in the Color Palette and move the mouse.

Keyboard conventions

The following are conventions for keyboard actions you'll probably want to become familiar with:

When you see this ...	Do this ...
Press ENTER	Press the ENTER key on your keyboard.
CTRL + SHIFT	Press the Control key and the SHIFT key at the same time.

Using online Help

When you click Help, Help Topics, a dialog box opens that contains options for accessing three different Help features.

❖ To access online Help

1. Click Help, Help Topics.

2. Click one of the following tabs:

   - Contents, to display conceptual and "how-to" information

   - Index, to search by feature names, synonyms, and tasks

   - Find, to perform a full-text search of Help

Accessing context-sensitive Help

Context sensitive Help is accessible from wherever you are in CorelDRAW. You can access context-sensitive Help from the menus, dialog boxes, Roll-Ups, Property Bars, and all other toolbars in CorelDRAW.

The most common ways to access context-sensitive Help are as follows:

To get help on ...	Do this ...
Dialog boxes	Click the Help button, or press F1.
Menu commands	Click the Help button on the toolbar, click a menu, and click a command.
	Or, press F1 when a command is highlighted.
Tools and controls	Click the Help button on the toolbar, and click the item for which you want help.

	Or, click Help, What's This?
	Or, right-click the item, and click What's This?
Roll-Ups	Right-click the Title Bar of an open Roll-Up, and click Help.
Selected objects	Right-click an object, and click Properties. Information about the object's type, fill type, outline type, and any applied special effects appears in the Properties dialog box.

- Use the Status Bar at the bottom of the Application Window to familiarize yourself with the tools. The Status Bar displays details of what buttons, controls, and menu commands do as you move the mouse cursor over them.

Printing Help

You can print specific Help topics or print entire sections of online Help.

To ...	Do this ...
Print an entire section	On the Contents page, click the Print button that appears along the bottom-right side of the window.
Print an overview topic	Click the Print button that appears along the bottom right-side of the window.
Print a How-to topic	Right-click the window, and click Print Topic.

Corel services and support

Corel is committed to providing customers with high-quality technical support. The following sections describe the variety of support services available.

Classic technical support services

1-613-728-7070 (North America only).

Free technical support is available to you for 30 days from the day you place your first call to Corel Technical Support. Corel representatives are available to respond to your call from Monday to Friday, 8:30 A.M. to 7:30 P.M. Eastern Standard Time.

During and after your Classic support period, you can also use the classic services listed as follows.

Basic services

Corel offers the following technical support options, most of which are available 24 hours a day, 365 days a year. These services are useful if you prefer not to pay for support or encounter problems during off-hours.

IVAN (Interactive Voice Answering Network)

The Interactive Voice Answering Network contains answers to commonly asked questions about Corel products and is available 24 hours a day, 365 days a year. It is regularly updated with the latest information, tips, and tricks. You can also request that IVAN solutions be faxed to you. There is no charge for this service beyond the cost of the telephone call.

IVAN (613) 728-7070

Automated FAX on Demand

Corel's Technical Support personnel maintain an automated FAX on Demand system of numbered documents that contain up-to-date information about common issues, tips, and tricks. This service is available 24 hours a day, 365 days a year.

FAX on Demand (613) 728-0826, extension 3080.

You will be asked for a document number and your fax number. The document you request is automatically sent to you. To fax a catalog of documents to yourself, call the Automated FAX on Demand system number and request document 2000.

AnswerPerfect

Customers can now submit support incidents (questions) by e-mail to Corel's Web site for the introductory price of $14.95* US per incident, payable by credit card for English language products only . Corel is committed to responding to AnswerPerfect support incidents within one business day.

Bulletin Board System (BBS)

If you have a modem and communications software package, you can access the Corel BBS. You can download files, troubleshooting information, and utilities. You can also transfer problem files to Customer Support through the BBS.

European BBS (++353)-1-7082700 North American BBS (613) 728-4752

CompuServe

Interact with others and Corel technicians to obtain product information and support. CompuServe is available 24 hours a day, 7 days a week, including

holidays. Corel representatives will respond from 8:30 A.M. to 5:00 P.M. Eastern Standard Time, from Monday to Friday, excluding holidays.

If you have a CompuServe membership, you can access Corel technical information by entering one of the following at the Compuserve prompt:

- GO COREL (for English)
- GO CORELGER (for German)
- GO CORELFR (for French)
- GO CORELNL (for Dutch)
- GO CORELSCAN (for Scandinavian)

World Wide Web Site (WWW)

The World Wide Web address for Corel products on the Internet is http://www.corel.com. At this location, you can quickly search Corel's Searchable Knowledge Base. From the database you can read, print, or download documents that contain answers to many of your technical questions or problems. This site also contains files you can download.

File Transfer Protocol (FTP)

You can download printer files and other files through our anonymous FTP site at ftp.corel.com.

Priority technical support services

For details on the support options available to you after your principal support expires, please contact Corel Technical Support at (613) 728-7070.

- The terms of Corel technical support offerings are subject to change without notice.

Worldwide technical support

Corel customers residing outside North America can contact Corel Technical Support representatives in Dublin, Ireland, or a local Authorized Support Partner. Technical support outside North America is available to you at the following locations. If your country is not listed below, please check the Support section on our World Wide Web site at http://www.corel.com. You can also call (353)-1-7082500 for information about contacting Technical Support.

Priority technical support services

To request an up-to-date listing of Corel Authorized Support Partners worldwide, and a copy of Corel Priority Technical Support Policy, contact Corel Technical Support at (353)-1-7082500.

Latin America

Argentina	(0541) 954-6500
Brazil	011 5505 4725
Chile	562 671-3060
Columbia	57-1-2150411
Mexico	01-800-024-2673

Europe

Austria	(01)-589-241-30
Belgium-French	(02)714-41-30
Belgium-Dutch	(02)714-41-31
Denmark	35-25-80-30
Finland	(90)-229-060-30
France	(1)-40-92-76-20
Germany	01805-2582-11
Hungary	36 1 327 57 37
Italy	02-452-812-30
Netherlands	020-581-4426
Norway	22-97-19-30
Portugal	353-1-708-23-33
Russia	95-361-2000
Spain	91-661-3627
Sweden	0680-711-751
Switzerland-French	0848-80-85-90
Switzerland-German	0848-80-85-90
United Kingdom	0171-298 85 16

Eastern Europe	
Czech Republic	420-2-312-3871
Poland	(0048)-(71)-728-141 ext. 289

Middle East	
Dubai	971.4.523.526
Israel	02-6793-723

Asia Pacific	
Australia	02 9898 6860
Hong Kong	8100-3729
India	91 11 3351948
Japan	03-5645-8379
Malaysia	800-800-1090
New Zealand	09 526 1155
Singapore	1-800-773-1400
South Korea	82-2-639-8778
Taiwan	(886) 2-593-3693

Africa	
South Africa	021-658-4222

- The terms of Corel technical support offerings are subject to change without notice.

Before calling Corel Technical Support

Before calling Corel Technical Support, please have the following information available. This information assists the Technical Support representative in helping you more quickly and efficiently:

- A brief description of the problem, including the exact text of any error messages received, and the steps to recreate the problem.

- The type of computer, monitor, pointing device (e.g., mouse, tablet), printer, and video card (display adapter) in use.

- The version of Microsoft Windows and the Corel product in use. Choose the About Windows 95 command from the Help menu in Windows Explorer to find which version of Windows you are running.

- A list of any programs loaded into RAM (e.g., TSRs). Check the Startup folder in the Programs menu to determine if you are running any other programs.

Customer service worldwide

Corel Customer Service is operated by a number of third-party companies on behalf of Corel. If you would like additional information about Corel products or services, please call one of the telephone numbers listed below. If your country is not listed, please call the general number listed below. General customer service and product information can also be accessed through the World Wide Web at http://www.corel.com.

Country	Call this number
United States	1-800-772-6735
Canada	1-800-772-6735
Argentina	0-800-3-9192
Australia	1-800-658-850
Austria	0660-5875
Belgium	0800 11930
Denmark	800 187 55
Finland	0800-1-13502
France	05 90 65 12
Germany	0130 815074
Ireland	1800-242800
Italy	1678 74791
Japan	03-5645-8567
Korea	82-2-639-8778
Luxembourg	0800-2213
Mexico	1-800-024-2673
Netherlands	06-022-2084
New Zealand	0800-COREL-1
Norway	800 11661

Portugal	05055-3001
South Africa	0800-23-4211
Spain	900 95 35 38
Sweden	020 791 085
Switzerland	155-8224
United Kingdom	0800-581028
General	353-1-706-3912

CorelDRAW™ 8 Graphics Suite concepts

You'll probably find this section about the differences between working with vectors and bitmaps especially informative if you plan on working back and forth between Corel products.

CorelDRAW and CorelDREAM 3D work with vector-based graphics and Corel PHOTO-PAINT works with bitmap images. This section highlights basic concepts you need to understand, to work with vectors, bitmaps, and objects, and presents a brief overview of working with three-dimensional (3D) graphics.

Understanding vector and bitmap images

Computer imaging programs are based on creating either vector graphics or bitmap images. This section presents the basic concepts of a vector-based program like CorelDRAW and outlines the differences between vector images and bitmap images such as ones you work with in Corel PHOTO-PAINT.

If you haven't worked with drawing programs, or if you've worked solely with paint or photo-editing programs, you'll find this section especially informative.

What is a vector image?

Vector images, also called object-oriented or draw images, are defined mathematically as a series of points joined by lines. Graphical elements in a vector file are called objects. Each object is a self-contained entity with properties such as color, shape, outline, size, and position on the screen, included in its definition.

Since each object is a self-contained entity, you can move and change its properties over and over again while maintaining its original clarity and crispness, and without affecting other objects in the illustration. These characteristics make vector-based programs ideal for illustration and 3D modeling, where the design process often requires individual objects to be created and manipulated.

Vector-based drawings are resolution independent. This means that they appear at the maximum resolution of the output device, such as your printer or monitor. As a result, the image quality of your drawing is better if you print from a 600 dots per inch (dpi) printer than from a 300 dpi printer.

What is a bitmap image?

In contrast to vector illustration programs, photo-editing programs like Corel PHOTO-PAINT work with bitmap images. When you work with bitmap images, you can refine small details, make drastic changes, and intensify effects.

Bitmap images, also called raster or paint images, are made of individual dots called pixels (picture elements) that are arranged and colored differently to form a pattern. When you zoom in, you can see the individual squares that make up the total image. Increasing the size of a bitmap has the effect of increasing individual pixels, making lines and shapes appear jagged.

However, the color and shape of a bitmap image appear continuous when viewed from a greater distance. Because each pixel is colored individually, you can create photorealistic effects such as shadowing and intensifying color by manipulating select areas, one pixel at a time.

Reducing the size of a bitmap also distorts the original image because pixels are removed to reduce the overall image size.

Also, because a bitmap image is created as a collection of arranged pixels, its parts cannot be manipulated (e.g., moved) individually.

Why is resolution an important consideration when working with bitmaps?

When you work with bitmaps, the quality of your output is dependent on the decisions you make about resolution early in the process. Resolution is an umbrella term that refers to the amount of detail and information an image file contains, as well as the level of detail an input, output, or display device is capable of producing. When you work with bitmaps, resolution affects both the quality of your final output and the file size.

Working with bitmaps requires some planning, because the resolution you choose for your image will usually move with your file. Whether you print a bitmap file to a 300 dpi laser printer or to a 1270 dpi imagesetter, the file will print at the resolution you set when you created the image, unless the printer resolution is lower than the image resolution.

If you want your final output to look like its on-screen counterpart, you need to be aware of the relationship between the resolution of your image and the resolution of your various devices before you begin to work. Once you do, you'll be on your way to producing consistent results.

Comparing a vector-based image with a bitmap image

Compare the description of vector images to bitmap images. Recall that objects are created as collections of lines in vector graphics, and bitmap images are made of individual pixels arranged in patterns. Of the two formats, bitmap images tend to offer greater subtleties of shading and texture but also require more memory and take longer to print. Vector images give you sharper lines and require less printing resources.

Paint, image processing, and scanning programs generate bitmap images where representing continuous variations in tone is required. Illustration programs (like CorelDRAW), and 3D modeling programs (like CorelDREAM 3D) work with vector images to allow you to create and manipulate individual objects over and over again during the design process.

Working back and forth between applications

If you work with more than one of the CorelDRAW 8 Graphics Suite applications, or if you intend to work back and forth between them, you'll probably find the Application Launcher useful. The Application Launcher button is accessible within each application and allows you to run other programs without having to find their location on your system.

This section provides information about how you can take a document from one application in the CorelDRAW 8 Graphics Suite and work with it in another.

Can I work with a bitmap image in CorelDRAW?

CorelDRAW allows you to incorporate bitmaps into your illustrations and to export bitmaps you create. For simple drawings, you can use the Autotrace command or the Freehand tool to trace around the outline manually.

For more detailed drawings, you can use Corel OCR-TRACE to convert bitmaps into vector graphics that you can edit, scale, print, and so on, without distortion.

Can I work with a CorelDRAW file in Corel PHOTO-PAINT™?

You can open vector-based CorelDRAW illustrations directly in Corel PHOTO-PAINT. Corel PHOTO-PAINT automatically creates a bitmapped version of the original when you open the CorelDRAW illustration.

Can I work with a CorelDRAW file in CorelDREAM 3D?

To work with a CorelDRAW illustration in CorelDREAM 3D, first import the two dimensional (2D) shapes (called the cross-sections) from CorelDRAW into CorelDREAM 3D. In CorelDREAM 3D, you then sweep the shape along the path to form a 3D object. The sweep path is sometimes referred to as the

extrusion path. The shape is now a 3D object you can manipulate like other objects in CorelDREAM 3D.

Can I work with a CorelDREAM 3D file in Corel PHOTO-PAINT?

To work with a CorelDREAM 3D image in Corel PHOTO-PAINT, you need to render the 3D image. Rendering captures a view of your 3D scene and saves it as a 2D image. You can think of a rendering as a photograph of a scene. You can take any number of renderings of your scene from multiple angles or under different lighting conditions, and compare the results.

A rendering is distinct from the scene from which it is taken. The rendered image is a bitmap made up of pixels and does not contain objects. It is a separate file that can be stored in one of the following formats: Corel PHOTO-PAINT (.CPT), .BMP, .TIFF, .TGA, .PCX, and .PSD. To work with a CorelDREAM 3D file in Corel PHOTO-PAINT, you simply open the rendered image.

❖ *To launch another installed application*

1. Click the *Application Launcher.*

2. Click the application you want to run.

Understanding objects

The first step toward creating a 3D illustration in CorelDREAM 3D is to build and assemble the objects that make up your scene. Some basic objects (sphere, cone, cube) are included in CorelDREAM 3D. You can also create your own objects using the Free Form Modeler and the Text tools.

An objects in CorelDREAM 3D is any 3D volume or other item that appears in the universe, including cameras and lights. When objects are grouped, their group is also described as an object. A universe is the 3D workspace shown in the Perspective window, where you can place and position objects. The size, position, and orientation of the universe are fixed.

To create an object, you need to draw cross-sectional shapes and extrusion paths on the appropriate planes in the Modeling window. Each plane in the Modeling window is a separate two-dimensional (2D) drawing environment with a grid. At any given time, you'll work on a single plane. The currently selected plane is called the drawing plane.

Exploring the work area

Documents created in CorelDREAM 3D are called scenes. A scene is a collection of objects, light sources, and cameras, saved in a file. Each new scene has four Perspective windows and one Hierarchy window. When you save a scene, its file name appears in the Title Bars of the Perspective and Hierarchy windows.

You can open multiple scenes and switch between them at any time. You can also copy objects between scenes and view the same scene from different angles by opening it in multiple Perspective windows.

The application commands available through the Menu Bars can also be accessed through toolbars and flyouts.

- The toolbars are optimized for 800 x 600 resolution. Therefore, if you are working in a lower resolution, portions of toolbars will appear cut off.

Using toolbars

Each button on a toolbar represents a command. Some are shortcuts to menu commands; others are commands that are available only as toolbar buttons.

❖ To display or hide toolbars

1. Click View, Toolbars.

2. Enable the check boxes beside the toolbars you wish to display; disable the check boxes beside the toolbars you wish to close.

❖ To dock toolbars

- Drag the Title Bar of the toolbar that you want to dock toward the menus at the top of the application window or to any of the other sides to place it there.

❖ To size floating toolbars

1. Place your cursor over one of the toolbar's edges and wait until it becomes a two-sided arrow.

2. Drag until the toolbar is the shape you want.

- You can only change the shape of floating toolbars. When you dock a toolbar, it becomes horizontal when placed on the top or bottom side of the application window or vertical when placed on the left or right side.

Accessing flyouts

Flyouts are toolbars that are accessible through one tool. A small black arrow at the bottom right corner of a tool indicates that it is a flyout grouped with other tools. You can drag a flyout off its host toolbar by dragging any part outside the

button area. This step doesn't actually remove the flyout from the toolbar, but displays it as a separate toolbar.

❖ **To display a flyout**

- Click the arrow, or click and hold the mouse button down on the tool.

Using Docker windows

A Docker window is a dialog box that contains the same operations as most dialog boxes, e.g., command buttons, options, and list boxes.

Unlike most other dialog boxes, you can keep Docker windows open while working on a document to access the operations you use most frequently, or to experiment with different effects. Docker windows can be docked to any edge of the Application window, or you can undock them. When a Docker window is docked, you can minimize it so that it doesn't use up valuable screen real estate.

The following lists some common operations you can use with Docker windows:

To ...	Do this ...
Open a Docker window	Click View, Dockers, and click the Docker window you want to open.
Undock a Docker window	Drag the top of the Docker window away from the edge of the Application window.
Dock a Docker window	Drag the Docker window to the edge of the application window.
Close a Docker window	Click the "X" button at the corner of the Docker window.
Minimize a Docker window	When a Docker window is docked, click the arrows at the corner of the Docker window.
Maximize a Docker window	Click the arrows at the corner of a minimized Docker window.

Using multiple Workspaces

A Workspace is a specific configuration of settings in the Options dialog box. You can save multiple Workspaces for specific users or specific tasks and then apply them when you require.

❖ **To create a Workspace**

1. Click Tools, Options.

2. Click the New button.

3. Type the name of the Workspace in the Name Of New Workspace box.

4. Choose an existing Workspace on which to base the new Workspace from the Base New Workspace On list box.

5. Type a description of the Workspace in the Description Of New Workspace box if you want to include a description of the Workspace.

The description appears in the Workspace dialog box.

❖ To select a Workspace

1. Click Tools, Options.

2. Double-click a Workspace in the Workspaces available box.

❖ To delete a Workspace

1. Click Tools, Options.

2. Choose a Workspace in the Workspaces Available box.

3. Click the Delete button.

Getting started

C orelDREAM 3D lets you design complex three-dimensional 3D scenes using powerful modelling tools and 3D effects such as shading and lighting. It has everything you need to create realistic 3D models and render them to 2D images. CorelDREAM 3D 8 has enhanced the following key features for greater ease of use:

Flat look user interface

The CorelDREAM 3D 8 user interface has a streamlined, intuitive new flat look.

Multiple Perspective windows

The CorelDREAM 3D Workspace now lets you open multiple Perspective windows for greater efficiency and ease of use. This allows you to view your scene from many different viewpoints at the same time.

Import .3DMF files

CorelDREAM 3D 8 includes a filter for importing QuickDRAW Meta File (.3DMF) files.

Export .3DMF and .WRL files

You can export QuickDRAW Meta File (.3DMF) and Virtual Reality Meta Language (.WRL) files for use in other applications. CorelDRAW and Corel PHOTO-PAINT can now import these file formats.

Other key features in CorelDREAM 3D 8

CorelDREAM 3D makes it easy for you to create three-dimensional scenes with powerful tools, helpful Wizards, and other useful features, including the following:

• Scene Wizard with templates for logo, indoor, outdoor, and photo studio images

• Spline-based 3D modeling including scaling extrusion, lathing extrusion, cross-section extrusion, complex sweep paths and skinning

• The Modeling Wizard, a picture-based assistant that guides you through the basic steps of creating an object

- Freeform, wizard and 3D text tools

- Basic 3D object tools (cone, cylinder, sphere, icosahedra)

- Improved hierarchy view for intuitive management of objects, masters and effects

- Object deformation tools including stretch, shatter, bend and twist, and scale XYZ

- Custom surface mapping including texture, procedural, reflection, transparency, shininess, highlight or bump properties

- Extensive lighting control

- Interactive Camera Dolly for flexible scene navigation

- Queue and spot rendering for previewing an area of a scene, and individual object rendering

- Enhanced rendering options including ambient light, reflected backgrounds, flat shading, Gouraud shading, Phong shading and Ray Tracing

- Alpha channel compositing

- Third party plug-in support (RAYDREAM SDK)

- 3D painting on objects through the use of Paint Shapes

- 1000 True Type fonts

- Drag and drop functionality for placing 3D models or shading characteristics into a scene

- Over 750 professionally designed 3D models

The CorelDREAM 3D Interface

The Scene

A CorelDREAM 3D document is called a scene. A scene is the collection of objects, light sources, and cameras, saved in a single file. Each new scene has two windows — the Perspective window and the Hierarchy window.

When you have saved a scene, its filename appears in the title bars of the Perspective and Hierarchy windows.

CorelDREAM 3D windows

When the application opens for the first time, you see four windows: Perspective window (upper left), Hierarchy window (upper right), Objects browser (lower left), and Shaders browser (lower right). These are the primary work windows. To display one of the windows, choose it from the Windows menu.

Workspace preferences

As you work, you can resize windows, move them around your screen, and customize your workspace. When you quit the application, CorelDREAM 3D remembers your settings and uses them the next time you launch the application. If you like, you can save different workspace layouts in configuration profiles that you can load at any time. To save a workspace profile, set the workspace as you like it and click Windows, Workspace, Save Current.

Perspective window

The primary window in CorelDREAM 3D is called the Perspective window. This window shows a view of the 3D workspace, where objects are created and arranged in three dimensions to create a scene. The workspace itself is called the universe. Objects are 3D volumes or other items, such as lights and cameras, within the universe.

The view of your scene shown in the Perspective window is taken through a camera. You can position other cameras to get different viewpoints of the scene. You can also open multiple Perspective windows to view your scene from many viewpoints at once.

Objects, lights, and cameras are arranged in the main Perspective window to set up scenes. The Edit Object commands can be used to work on selected items up close.

To create or edit an object, you use the Modeling window. When objects are opened for modeling, the Perspective window "zooms in" on the object (to the exclusion of other objects) and transforms itself into the Modeling window. The Main menu changes to the Modeling menu, and the Perspective Toolbox changes to the Modeler Toolbox with the Drawing and Text tools.

You can open the Modeling window by double-clicking an object in the Perspective or the Hierarchy window. Click the Done button at the bottom of the window to switch back to the Perspective window. By default, the Reference view of the Modeler is shown, but you can select another view (drawing plane, top/bottom, front/back, or right/left side) from the View menu.

The Working box, represented by three intersecting planes, is the primary element of the Perspective window. The Working box provides a framework that guides you as you work in a 3D universe with 2D devices — the mouse and monitor.

Each plane of the Working box has a grid. The display of the three grids can be turned on or off by using the Plane Display tool to the left of the Perspective window. The grid representing the active plane is shown in blue-green on the screen. When you move an object in the Perspective window, movement follows the currently active plane.

When the Perspective window is active, a specific set of tools is available. The current zoom ratio (1:1, 2:1, etc.) is shown in the lower left of the window. The status (idle, drawing, shading, etc.) of the application is displayed in the Status Bar.

Object Preview

The Perspective window has five modes to display your objects.

- No Preview
- Bounding Box
- Wireframe
- Preview (Gouraud)
- Better Preview (Phong)

The Better Preview mode shows details of the shape and color of your objects, but takes longer to calculate and draw. To increase application efficiency, you might want to work in Wireframe or Preview mode at the beginning of your project, then switch to Better Preview mode as specific details become important.

Hierarchy window

The Hierarchy window provides a way to manage the contents of your workspace. You can view the hierarchy in Vertical, Horizontal, or Outline views.

Although it is possible to work without using the Hierarchy window, you will find it increasingly valuable as you develop more complex scenes. The Hierarchy window provides information on the scene's construction that is not immediately apparent in the Perspective window; for example, it can show how several elements are grouped.

The Perspective and Hierarchy windows are synchronized: as you add or remove objects from one, the display in the other updates automatically.

The Hierarchy window shows a logical (as opposed to visual) representation of the scene. All objects, cameras, and lights that you bring into the universe are represented by icons in the Objects panel of the Hierarchy window.

The Hierarchy window is organized into three separate panels: Objects, Masters, and Effects. You can use the tabs at the top of the window to switch between panels.

The Objects panel displays all objects in your scene.

The Masters panel displays only Master objects. You use the Masters panel to manage multiple copies of a single object. When you duplicate a single object you create a class of objects that are linked to the master object. To edit an

individual copy, select the copy in the Objects panel. To make a change to all the copies of the object, select the Master object in the Masters panel.

The Effects panel shows any Rendering Effects that you've added to your scene.

Objects browser

The Objects browser is a visual catalog of 3D objects that you can drag directly into your Perspective or Hierarchy windows. The Objects browser will display all CorelDREAM 3D files located in the directories that you load into the browser.

You can have multiple directories open in the Objects browser. To navigate through them, click the tab of the specific directory you want to view. Click the Add Folder icon to add directories to the browser. Click the Remove Folder icon to close the selected directory. Closing a directory does not delete files, it only removes them from the browser.

Shaders browser

The Shaders browser provides an easily accessible catalog of color, texture, and other surface characteristics that you can apply to your objects. Each of these shaders includes various channels: color, reflection, highlights, shininess, transparency, refraction, bumps, and glow. Shaders can be applied individually or collectively. Objects can be shaded by dragging the desired shader from the browser and dropping it onto the object.

You can create your own shaders and add them to the Shaders browser to make them always available.

Toolbars

Toolbars give quick access to many frequently used commands and tools.

You can choose which toolbars you want to see in your workspace and configure them as you want. Click View, Toolbar to display the CorelDREAM 3D toolbars — Standard, Toolbox (Perspective or Modeler), or Zoom. The Toolbox is the Perspective Toolbox when you work in the Perspective window and the Modeler Toolbox when you work in the Modeling window. Because you can save different workspace configurations, you can design different toolbars for different tasks.

The Standard toolbar appears at the top of the window, and the Perspective/Modeler toolbar appears on the left. However, these are floating toolbars; therefore you can move them wherever you like. Position the mouse on the toolbar, but not on a button, and drag it to a position that suits your needs. You can even change the shape of a toolbar by dragging a corner or edge. You can redock a toolbar by placing it at the top, bottom, left, or right of the screen.

To redock a toolbar that you have moved, double click any of the gray areas of the toolbar (not on the title bar or any of the tools themselves).

Thinking in 3D

Three-dimensional (3D) illustration involves more advanced concepts and procedures than two-dimensional (2D) illustration. Projects must be brought through several phases, and different tools and methods are used at each. The following description presents an overview of 3D illustration.

Many real-world objects are structurally complex. Their shapes curve, twist, join, and separate in ways that might seem impossible to recreate in a computer program. Do not be intimidated. CorelDREAM 3D makes constructing such objects easy. You build them one piece at a time.

Before you begin a complex object, examine its components. Keep in mind the way the CorelDREAM 3D Modeling tools work, and divide the object into simple elements. For example, you can "disassemble" a bicycle wheel into an axle, the hub, the spokes, the rim, and a tire. In CorelDREAM 3D, it is easy to model each of these components. Then, using the Positioning and Alignment tools in the Perspective window, you can assemble the pieces into the wheel.

After you build a subassembly, such as a bicycle wheel, you can group the components together. Grouping enables the subassembly to be manipulated as a single object. When you work in this way, there is no limit to the complexity of objects you can build. Finish the bicycle, lean it against a building, put some tables and chairs on the sidewalk, maybe add a fire hydrant or streetlight, and an outdoor cafe is created.

The different objects can also be shaded to provide depth and lighting effects. Shading involves not only colors but textures, like stucco on a building, and surface properties, like shininess.

To enhance realism and 3D effects, light sources can be created in your scene. In fact, lighting is necessary for the same reasons it is required in photography — nothing can be seen without it! With special lighting, your cafe scene can be changed from the middle of the day to the afternoon or evening.

In the middle of the day, the lighting is bright white and comes from overhead. The shadows are short, directly beneath the objects. In the afternoon, the light is warmer, yellow-orange, and comes from a low angle. The shadows stretch away from the objects. At night, the ambient light is dim and bluish. The streetlight creates a puddle of light on the sidewalk, and another light shines out through a window of the building.

Because you are working in three dimensions, you can view your scene from any angle and at any degree of magnification as you develop the scene. In CorelDREAM 3D, different views can be created by placing cameras at different positions in your 3D workspace. For example, a bird's-eye view can be taken

looking straight down at your sidewalk cafe. The cafe can also be viewed from a second floor balcony across the street or from a child's view looking up at the tables and chairs. It is the same cafe, but what appears in the window depends entirely on the selected viewpoint.

After you decide on the best viewpoint, you render the scene. Rendering is the culmination of a 2D-dimensional image. The rendered image, which potentially has a much higher resolution than can be seen on-screen, can be printed directly from CorelDREAM 3D or opened in virtually any graphics application.

If the rendering does not turn out quite right, you can go back into your scene, adjust the viewpoint, lighting, shading, or the shape of objects, and take another rendering.

Working with objects

W orking in CorelDREAM 3D is much like working in a photographer's studio — you set up a scene, then generate a photorealistic picture of it. The first step toward creating a 3D illustration is to build and assemble the objects in your scene.

CorelDREAM 3D provides several different types of 3D objects that you can use to build scenes. Primitive objects are common 3D geometric shapes that require no modeling on your part. Text objects are blocks of 3D text that you type in the Text modeler. Free-Form objects are 3D objects you design using the Free-Form Modeling window.

What happens immediately after you create an object depends on what type of object you create. When you create a Free-Form object, CorelDREAM 3D opens a Modeling window, allowing you to edit the object's shape.

When you create a Text object, CorelDREAM 3D opens it in the Text Modeling window, allowing you to type the text you want, specify its depth, and add bevels.

When you create a Primitive object (e.g., sphere, cone, cube, cylinder), it appears in your scene, where you can move and resize it.

You create objects using the Object Creation tools, which appear in the CorelDREAM 3D Toolbox. Each type of object you can create has its own tool.

- Objects dropped into the Perspective window are placed on the active plane of the Working box, at the point where you release the mouse button. Objects dropped into the Hierarchy window are placed at the center of the universe.

Free-form modeling concepts

You can use the CorelDREAM 3D Free-Form Modeling window to create custom objects. Once you master the concepts and skills behind the Free-Form Modeling window, you will be able to create nearly any form you can imagine.

The Modeling Wizard

The Modeling Wizard is a picture-based assistant that guides you through the basic steps of creating an object. After a few sessions with the Modeling Wizard,

you will better understand the concepts of 3D modeling and the tools of CorelDREAM 3D.

Most of the concepts covered in this section are also covered by the Modeling Wizard. Although the Modeling Wizard's technical descriptions are less thorough, it offers a wider array of examples. You can also examine each example in the Free-Form Modeling window to see how it was created.
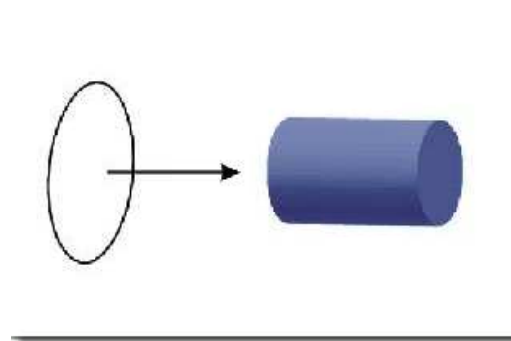
Free-form modeling concepts

The Free-Form Modeling window is based on a simple concept called extrusion. You create an object by drawing a 2D shape, then drawing a sweep path (or extrusion path) perpendicular to the shape. CorelDREAM 3D sweeps the shape along the path to form a 3D object.

Straight Extrusion

The diagram above demonstrates the most basic type of Free-Form object — a straight extrusion. In a straight extrusion, a 2D shape is swept along a straight sweep path, creating a sort of "cookie cutter" effect. By varying the 2D shape and the length of the sweep path, you can create a wide variety of objects using the straight extrusion technique. Note that the 2D shape need not be a single outline — it can consist of several distinct outlines.

Example of straight extrusion.

Scaling

Many real-world objects cannot be modeled using straight extrusion — their forms are more complex. The Free-Form Modeling window allows you to vary your extrusions to create complex objects. One of the most useful variations is the ability to scale a shape as it moves along the sweep path. In the example, the 2D shape shrinks to 50% of its original size as it sweeps along the path.
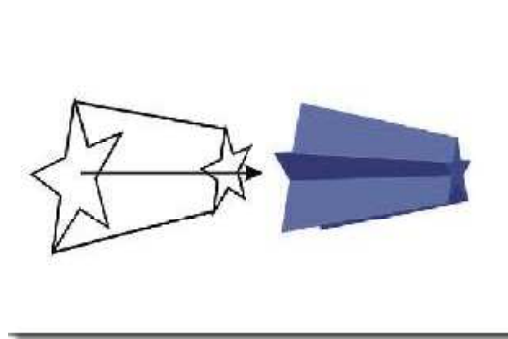
The scaling in this example is very simple — the 2D shape shrinks at a constant rate from the beginning of the sweep path to the end. You can also use scaling to model more complex contours. The CorelDREAM 3D flexible scaling envelope allows you to control scaling with great precision.

Lathing

You can use lathing to model many symmetrical objects. Lathing is a specific application of the scaling envelope. To create a Lathe object, you start with a symmetrical 2D shape — a circle or a regular polygon. You then use the scaling envelope to draw the object's lathe profile. To understand how a Lathe object is formed, imagine spinning the lathe profile 360 degrees around a straight axis to create a solid 3D volume. In the Free-Form Modeling window, the lathe axis is represented by the sweep path.

Example of lathing.
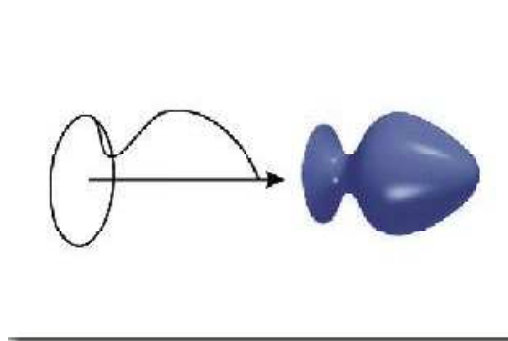
Cross sections

Although scaling and lathing allow you to create a wide variety of forms, to model some objects you must change the 2D shape as it sweeps along the extrusion path. CorelDREAM 3D allows you to create any number of cross sections along the length of the extrusion path. At each cross section, you can change the 2D shape — the Free-Form Modeling window extrudes from one cross section to the next, basing the contours of the object's surface on the

shapes in the cross sections. In this example, the object's surface stretches from the square in the first cross section to the circle in the last cross section.
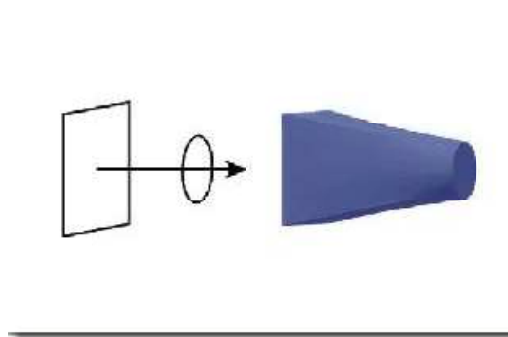
This modeling technique is sometimes referred to as skinning — the Free-Form Modeling window stretches a "skin" over the various shapes in the cross sections.

Each cross section can contain more than one 2D shape. As a result, when you model an object with multiple cross sections, some ambiguity arises — how do the shapes in one cross section correspond to the shapes in the next cross section? The shape numbering feature allows you to specify which shapes should be connected from one cross section to the next. If a particular shape has no corresponding shape in the next cross section, it is not extruded.

In the example, shape numbering is used to create an abrupt transition from one shape to another. The middle cross section contains two shapes — a square and a circle — while the first and last cross sections each contain only one shape. Because the square in the first cross section shares a number with the square in the middle cross section, these two shapes are connected. For the same reason, the circle in the middle cross section extrudes to the circle in the last cross section.
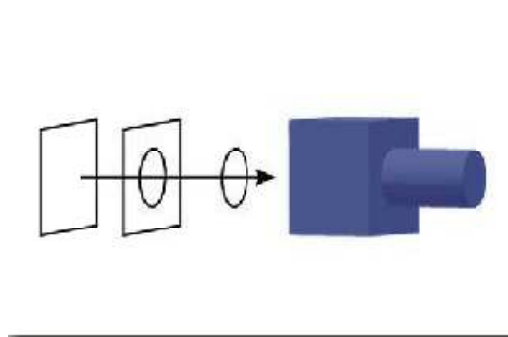
Complex sweep paths

All of the examples so far have used straight sweep paths. If you draw a more complex sweep path, you can model objects with bends and curves.