



Questions and Answers

1. General Product Information

1.1 What is Autodesk® Raster Design 2004?

Autodesk Raster Design 2004 software is the leading raster application for design professionals in any industry who need to use or reuse scanned paper drawings or maps, satellite images, aerial photos, and similar digital design data with their design projects. It is the Autodesk® solution for managing, converting, and editing all types of raster images in AutoCAD® software and AutoCAD software-based products.

1.2 Why do I need Autodesk Raster Design if the basic AutoCAD application has raster functionality?

Only Autodesk Raster Design enables you to modify and save or export images for use with other drawings or applications. As a raster conversion and editing application, it includes many tools to help you work with raster files such as tonal adjustment, palette controls, REM (raster entity manipulation) with SmartPick, Raster Snap, and image Rubbersheeting, OCR (optical character recognition), and vectorization tools with Smart Correct. AutoCAD software only lets you insert, view, and plot raster images.

1.3 What functionality does Autodesk Raster Design provide for me?

The following functionality is included in Autodesk Raster Design:

- **Enhanced Optical Character Recognition:** Recognize machine- and hand-printed text and tables on raster images to create AutoCAD text or multiline text (mtext). Use interactive verification to correct results with dictionary matching. OCR saves manual data entry time and improves accuracy when converting drawings with lots of text.
- **Tonal Adjustment**—Improve the appearance of scanned imagery by bringing detail out of dark areas without affecting highlights.
- **Palette Manager**—Standardize the use of color images, improve efficiency and consistency of color usage in images, and improve control of transparency color selection.
- **Rubbersheeting**—Improve accuracy and get more predictable results from rubbersheeting.
- **Installation and Configuration**—Save time with common, simplified administration tools.

1.4 Why do I need Autodesk Raster Design for mapping or civil engineering?

Autodesk Raster Design software extends the image-viewing capabilities of Autodesk Map™ and Autodesk® Land Desktop, Autodesk® Civil Design, and Autodesk® Survey software with powerful options that are specific to surveying, mapping, and civil engineering. Incorporation of raster imagery—including color maps, grayscale aerial photographs, or scanned drawings—enables you to greatly increase the information presented on a selected site. You can use these tools in all phases of land analysis, design, and management.

Scanned maps, including contour or parcel maps, can be easily converted to vector with interactive line-following commands. When you're working in Autodesk Land Desktop, the contour follower in Autodesk Raster Design can create contour objects directly from scanned maps. When you're working with scanned photographs, the Palette Controls and Tonal Adjustment tools enable you to make tonal and color corrections.

1.5 Why do I need Autodesk Raster Design for building design?

Raster imagery—including color maps, grayscale aerial photographs, and scanned floor plans, sections, and detail drawings—is an excellent way to increase the visual information shown on a building plan. For instance, you can combine scanned paper drawings with proposed walls, doors, and windows in rehabilitation projects when using Autodesk® Architectural Desktop software. In cases where no AutoCAD floor plans exist, you can develop building systems such as the HVAC layout using a scanned floor plan for reference. And, when an object model is required, the interactive vectorization tools and OCR give you the most accurate results.

1.6 Why do I need Autodesk Raster Design for manufacturing?

The OCR functionality in Autodesk Raster Design recognizes machine- and hand-printed text and tables on raster images to create AutoCAD text or multiline text (mtext), using interactive verification to correct results. When used with Autodesk® Mechanical Desktop® or AutoCAD® Mechanical software, Autodesk Raster Design provides vectorization tools with SmartCorrect. These raster-to-vector conversion features take full advantage of the powerful drafting settings in AutoCAD software so you can easily and accurately convert a scanned drawing to a vector drawing. The advanced raster editing tools offer the most cost-effective way to revise scanned paper drawings.

1.7 Why would I edit a raster image instead of converting it?

You can use Autodesk Raster Design 2004 software with AutoCAD 2004 and AutoCAD 2004–based products to revise (raster edit) and interactively convert scanned images of paper drawings. When working with numerous scanned drawings, you can establish internal standards for decision making. You might find a standard such as this helpful:

- If 5 percent or fewer of the graphics will change, make changes by raster editing and adding vector, but save all as raster.
- If 5–40 percent of the graphics will change, make changes as above, but save the hybrid (raster/vector) files.
- If more than 40 percent of the graphics will change, interactively convert the entire drawing to vector.

Full, accurate drawing conversion can be a time-consuming, labor-intensive process, but it may be a project requirement. Autodesk Raster Design 2004 features many enhancements to streamline and optimize this process, enabling you to obtain accurate results and improve productivity over other methods of drawing conversion.

1.8 Does Autodesk Raster Design automatically convert raster images to AutoCAD vector drawings?

Autodesk Raster Design includes semiautomatic and interactive raster-to-vector conversion and OCR features that can produce highly accurate results, meeting the needs of most AutoCAD users. Some scanned drawings may be suitable for automatic converters. The data resulting from these automatic processes may require significant cleanup and geometry verification.

Fully automatic raster-to-vector converters are available from independent Autodesk Registered Developers as stand-alone applications and as add-on applications to AutoCAD

2004 and Autodesk Raster Design software. The Partner Products Catalog (found at www.autodesk.com/partnerproducts) contains information on thousands of products and services that complement Autodesk software.

1.9 How do I plot raster and vector?

Software products based on AutoCAD 2004 can plot raster and vector data. Most plotting drivers available for AutoCAD 2004 print or plot raster images and vector data properly. For specific device support, check with the output device manufacturer.

1.10 When I scan drawings, what file format and resolution should I use?

When scanning a drawing, good formats to use are those that support Group 4 compression such as TIFF and CALS. Typically, drawings are scanned at a resolution between 200 and 400 dpi. A good rule is to make sure that the thinnest line in the drawing is two to three pixels wide.

1.11 When I scan photographs, what file format and resolution should I use?

The TIFF file format is the most universally used and is lossless, meaning that the quality of the image is not affected by the image compression. JPEG, SID, and ECW formats are also widely used because they offer high compression; however, they are lossy, meaning the quality of the image may be obviously affected by the image compression. The resolution of a scanned aerial photograph should be such that the smallest item needed for identification is represented by at least four pixels.

1.12 How do I convert contours or boundaries?

Autodesk Raster Design has three powerful line followers. These vectorization tools are specifically designed for semiautomatic conversion of scanned contour and soils maps. You control every aspect of the vectorization process, including output linetype, color, and action at decision points.

1.13 Are there still two separate files (image and DWG) that make up a hybrid drawing? If so, how do I make my document management system handle it as one file?

When a hybrid drawing (an AutoCAD drawing containing an image) is saved, the image frame is stored in the DWG file. The raster image itself is maintained as a separate file, similar to traditional xrefs. Images cannot be embedded in the DWG file using AutoCAD or Autodesk Raster Design. When working with a document management system, you may find it simpler to manage one file. Because Autodesk Raster Design works in the AutoCAD 2004 software application, you can take full advantage of powerful features such as eTransmit.

eTransmit packs currently open drawings with all associated images, files, and xrefs into a single, secure transmittal set for convenient distribution and management. eTransmit is standards aware. By including the DWS standards file associated with your drawing, you ensure that everyone can operate according to the same standards.

1.14 How accurate is the OCR technology? Do I still need vectorization tools (Vtools) with OCR?

Autodesk Raster Design enables you to select areas of text for recognition with the industry-leading OCR technology. You verify the OCR results with the aid of both a user dictionary and your AutoCAD dictionary. So, your final AutoCAD text (or multiline text) should be completely accurate.

Still, the OCR results depend on the quality of the original text. The technology in Autodesk Raster Design is best suited for machine-printed and hand-printed text. Hand-written text, cursive or script, is generally not suitable for OCR on engineering drawings and maps.

If the text is unclear or if there is too much interfering geometry or image noise, then VTools is your best choice. Although OCR makes the most sense when there is a clean block of text, VTools is more efficient if you need to do only a line or a few characters. In addition, OCR has RUB erasure and VTools has a more sophisticated "smart" erasure mode.

1.15 How can I enhance imagery in the AutoCAD environment without using third-party software?

Autodesk Raster Design has features to make tonal and color corrections on grayscale and color images. With the Tonal Adjustment feature, you use a nonlinear contrast curve to transform the histogram and improve the appearance of scanned photos and satellite imagery. The Palette Controls functionality helps you determine the number of colors a palette color or grayscale image contains, determine which colors are actually used, change existing color entries to map to a different color, combine several color indexes into a single mapped color, compress the palette, and import and export palettes (color tables).

2. Compatibility and Interoperability

2.1 Does Autodesk Raster Design work with AutoCAD 2004 and other AutoCAD 2004-based products?

Yes, Autodesk Raster Design 2004 software is the raster application for AutoCAD 2004 and the industry-specific products based on AutoCAD 2004 software. Autodesk Raster Design 2004 is compatible with AutoCAD 2004, Autodesk Land Desktop 2004, Autodesk Map 2004, Autodesk Architectural Desktop 2004, AutoCAD Mechanical 2004 and Autodesk Mechanical Desktop 2004 software products.

If you are using AutoCAD 2002, you need Autodesk® Raster Design 3, which is still available from Autodesk.

2.2 Can I use data from Autodesk Raster Design 3, Autodesk® CAD Overlay® 2002, and earlier versions?

Autodesk Raster Design 2004 supports all data created with Raster Design 3 and earlier versions of CAD Overlay, including hybrid files created with Image Systems CAD Overlay® ESP, CAD Overlay® GSX, and Softdesk® CAD Overlay® 7.5 and 7.6. Proprietary formats, including RLC, IG4, IGS, and RES, are supported as well. By default, Autodesk Raster Design supports AutoPaste functionality from earlier versions.

2.3 Is Autodesk Raster Design compatible with Microsoft® Windows® XP?

Yes. Autodesk testing has shown that Autodesk Raster Design is compatible with Windows XP Professional provided that the AutoCAD 2004-based software used with Raster Design is also Windows XP compatible.

Please note that earlier versions of AutoCAD and AutoCAD-based software are not supported on the Windows XP operating system.

2.4 Can I use Autodesk Raster Design with my document management system?

By exposing AutoCAD objects to the "outside world," ActiveX® Automation provides a mechanism to manipulate Autodesk Raster Design programmatically either within or outside the application. Once these objects are exposed, you can use many different types of programming languages and environments to access them.

Using ActiveX Automation, you can create and manipulate AutoCAD objects from any application that serves as an Automation controller. Thus, Automation enables cross-application macro programming. With Automation, you can combine the features of many applications into a single application.

2.5 Does Autodesk Raster Design support wavelet format files like LizardTech's MrSID® and ER Mapper's ECW?

Yes, you can insert georeferenced wavelet format imagery, including ECW and MrSID. Your favorite municipal government agency may already be providing data in these popular formats on the Web or on CD, saving time, money, and disk space and reducing transmission time with highly compressed imagery.

2.6 Does Autodesk Raster Design work with Autodesk Inventor® software?

No. Autodesk Raster Design works only with AutoCAD 2004 and AutoCAD 2004-based products.

2.7 Does Autodesk Raster Design work with AutoCAD LT® software?

Autodesk Raster Design cannot be installed on AutoCAD LT, but drawings created using Autodesk Raster Design and AutoCAD or any other AutoCAD-based product can be viewed and edited with the AutoCAD LT product.

2.8 Can I share hybrid files created in Autodesk Raster Design with other AutoCAD users?

AutoCAD software products support raster image insert, display, and plotting. You can share any hybrid file you create or edit using Autodesk Raster Design and AutoCAD products with any other AutoCAD user.

3. Networking

3.1 What network installation options are available?

Autodesk Raster Design supports true client deployment and network deployment, consistent with AutoCAD software.

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