

# Seagate Analysis

## Alignment, Preview, and Printing Issues

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### Overview

This document provides a brief overview of the ways in which Seagate Analysis previews and prints copies of reports and outlines the ways these functions depend on operating systems, fonts, and printers.

This document is a summary of the information available in Seagate Crystal Reports documentation and is not intended to be a comprehensive guide for report preview/printing troubleshooting.

Seagate Crystal Reports and Seagate Analysis (standalone) have similar printing methodologies.

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## Concepts and Terms

To make the most of the information included in this document, it is important to understand some basic printing and operating system concepts and terms. Please familiarize yourself with the following:

**Scalable Font**—A font represented in an object-oriented graphics language such as PostScript or TrueType. Such fonts are called scalable because the representation of the font defines the shape of each character (the typeface) but not the size. Given a typeface definition, a scalable-font system can produce characters at any size (or scale).

**Outline Font**—A scalable font in which the outlines of each character are geometrically defined. The most popular languages for defining outline fonts are PostScript and TrueType.

**True Type Font**—An outline font technology developed jointly by Microsoft and Apple. Because TrueType support is built into all Windows and Macintosh operating systems, anyone using these operating systems can create documents using TrueType fonts.

**Printer Fonts**—Printer fonts are fonts that have been specially created to work with a *specific printer*, and they are often installed when the printer is added to the operating system. However, many printers also store these printer fonts in memory modules in the physical printer, which are accessed by the operating system and software programs when the printer is online. Note that Seagate Analysis does not support printer fonts.

**Printer Devices**—Printer devices refer to the actual hardware that creates the output page. These devices can include printers, fax machines, fax modems, printer capture programs, printer emulators, and so on. It is important to note that not all of these devices create actual paper output. Often, they create electronic media versions of the document being printed, which can then be transmitted to the recipient.

**Printer Drivers**—Printer drivers are the software components that are required by the operating system to properly install, operate, and detect the related printer device. Usually (but not always), these driver files have a specific file extension (\*.DRV) and are located in the Windows system directory.

**Print Spooler**—The print spooler is the part of the Windows operating system that handles all print jobs. In more recent versions of Windows (Win95, Win98, NT), the print spooler is capable of caching multiple print jobs and printing them to the printer device in the “background,” which allows users to continue using other programs during printing.

**Metapage**—A metapage is a graphic representation of the document that is sent to the print spooler for printing. The majority of newer Windows programs utilize metapage technology to handle printing. Depending on the printer settings, the print driver, and operating system settings, this metapage print job may be further manipulated and adjusted prior to final output of the hard copy. Adjusting the metapage print job often results in the printed output varying from the display in the preview window.

## WYSIWYG and the Report Tab in Seagate Analysis

WYSIWYG (What You See Is What You Get) refers to the concept of providing the user with an on-screen view of a document or image that looks very similar to the printed (hard copy) output. Because WYSIWYG is an interpretive process (the screen is not a printer, and not all monitors are capable of displaying at the same resolution as many printers), it is often difficult for software manufacturers to get perfect WYSIWYG output to the screen.

Often, many hardware and software components are involved in the final printed output; these components may not always be available to the software that facilitates document printing. To determine the proper output for the screen, a WYSIWYG print engine requires identification information from system devices and components.

The standalone version of Seagate Analysis uses two components—the printer driver and the screen resolution—to determine how the WYSIWYG preview of a report is created. Screen resolution is used to help in displaying the Preview window at different zoom levels. The printer driver is used to determine how the final document will be sent to the Windows spooler for printing.

To ensure accuracy between the display in the Preview window and the final printed output, adhere to the following guidelines:

1. Set the Preview window to 100% zoom.
2. Design the report on the same printer device that will generate final output.
3. Set the printer device you are designing with as the Windows default printer.
4. Set the printer device font properties to one of the following:
  - Print TrueType Fonts as Graphics
  - Print using TrueType Fonts
  - Always use TrueType Fonts
5. Avoid setting printer device font properties the following:
  - Print using the Font Substitution Table
  - Print using Printer or Built-in Fonts
  - Never use TrueType Fonts

Although these guidelines are recommended (especially if you are distributing reports for use on several different printer devices), it may not be possible for you to follow all of them because of limitations with older printer drivers, or because of personal preferences. In such cases, a marked difference will occur between the display in the Preview window and the final output.

**NOTE**

Seagate Analysis uses screen resolution to assist in generating the WYSIWYG view in the Preview window; screen resolution is **not** used in the printing process, so slight variations may occur between the display in the Preview window and the final output—even if all of these guidelines are followed.

## How Seagate Analysis Prints in the Windows Environment

The client/server version of Seagate Analysis that is bundled with Seagate Info handles printing differently than the standalone version. Printing and previewing in the standalone version is handled locally by the CAPE32.DLL. Printing and previewing in the client/server version is handled through the Java viewer client, which uses some DLLs on the server. The following information relates to the standalone version of Seagate Analysis.

In DOS, before Windows was created, all programs printed directly to the printer port. Although this method resulted in quick, immediate printing, it consumed all the resources of the computer. For example, if you sent a large document to the printer, you were not able to do anything else until the last couple of pages were sent to the printer device's buffer.

When Windows was introduced, this disadvantage was eliminated. The early Windows 3.x operating system included a new system component: the Print Manager. This memory resident program enabled documents to be printed in the "background" while the user continued to use other applications.

The Print Manager, which is now called the print spooler, is part of Windows 95, 98, and NT. It now handles all communication with the printer port, and it effectively eliminates the need to print directly to the printer port. The print spooler coordinates multiple print jobs while letting users work in other applications with minimal interruption (Figure 1).

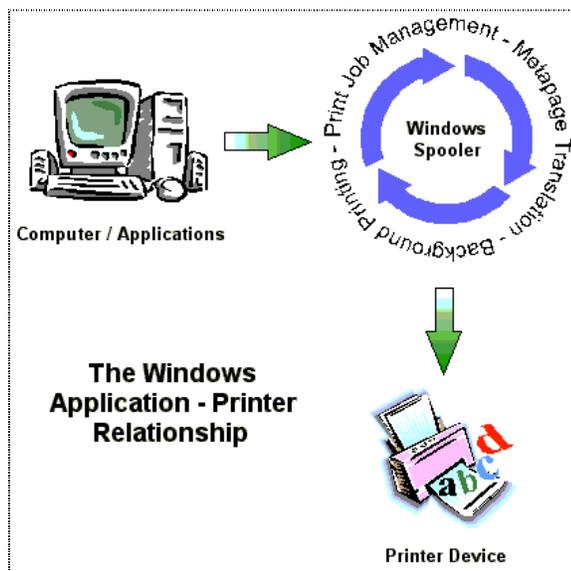


Figure 1: The Application/Printer Relationship

Seagate Analysis uses a two-step process to communicate with the printer device and send print jobs to the Windows print spooler.

When a new document is created, or an existing document is loaded, Seagate Analysis "polls" the printer driver for the following information:

- Paper size

- Page orientation
- Minimum margins (unprintable areas)
- Font metrics

If the printer being used is the current Windows default printer, Seagate Analysis can often gather the following additional information about the printer (dependent on the printer driver and how it responds):

- Color options
- User-defined or custom paper sizes
- Additional paper trays
- Print quality (dpi)

Seagate Analysis uses this collection of information to assist in creating and controlling different aspects of a document. When the report is printed to a printer device, Seagate Analysis generates metapages of the report based on the printer information gathered; it then sends these metapages to the Windows print spooler.

The Windows print spooler handles the entire printing process and communication with the printer device. Seagate Analysis *does not print directly to printer ports*.

## Using the Default Printer with Seagate Analysis

The default printer is the printer that the Windows operating system flags as the printer to “use unless otherwise specified.” All Windows applications will print to the default printer unless these settings are changed manually.

When a document is printed with the default printer, Seagate Analysis can gather additional printer information that is not available when printing on a *specified*, non-default printer. Additional printer information may include the following:

- Custom or user-defined paper sizes
- Duplex (double sided) printing options

Designing a document on a default printer is recommended when it is intended for distribution to a large number of users. A document designed and printed on the default printer will automatically use the user’s default Windows printer wherever it is printed. In this way, it does not matter *what* printer the user has installed as long as the printer is designated as the Windows default printer.

Of course, with this advantage, there are a number of disadvantages to consider. These include, but are not limited to, the following:

- Reports will print differently (in varying degrees) on different printers.
- Some printers do not support all possible printer options. For example, designing a color-intensive report on a color printer, and then printing to a black and white printer will result in a dramatically different output.

- Printer margins may affect report output. For example, designing on a printer that supports 0.5 inch margins, and moving to a printer with minimum 1.0 inch margins may result in more pages, cut off text, “unprintable area” error messages, and so on.

**NOTE**

Seagate Analysis currently has no customized Printer Setup option. To print to a different printer, select it from the File | Print menu dialog box. You will need to print to the new printer before its properties are represented in the Report Tab Preview window (see *the Printing Limitations in Seagate Analysis section*).

## Printers, Printer Drivers, and Fonts

Before starting to design a report, especially one that will be distributed to several people using different printers and operating systems, it is important to understand the relationships between printers, printer drivers, and fonts.

Every printer device requires a printer driver to properly operate within the Windows environment. For the majority of older printers, the operating system’s installation disks/CD will contain current drivers for them. However, with newer printers, especially ones released in the past six months, you should visit the printer manufacturer’s web site to ensure you have the latest drivers available.

Printer drivers control the way print jobs are translated from the Windows print spooler to the printer. Outdated drivers can have a dramatic impact on printer performance, quality, and special printer options available to the user.

Almost every printer driver on the market interprets fonts differently. This is even the case with printer drivers from the same manufacturer. The way one printer driver interprets Times New Roman 10pt can be entirely different from another printer driver.

Because TrueType font files (\*.TTF) are operating system dependent, the same font may print differently between Windows 95 and Windows NT. No recognized “standard” for fonts exists in the market. Printers, software programs, and operating systems often ship with their own versions of fonts (such as Arial, Times New Roman, and so on), and none of them are exactly the same, which can cause varied printing results.

Fonts also include two properties that can drastically affect how they print on different printers: the Font Face, and the Font Script(s).

The name of a font is called the Font Face. For example, Arial, Times New Roman, and Courier are all Font Faces.

A Font Script is a “flavor” of the Font Face. In some Windows applications, these are denoted in the font dropdown list, enclosed in parentheses. For example, Arial (Western), Arial (Baltic), and Arial (Turkish) all denote different Scripts (Western, Baltic, Turkish) within the Arial Font Face. Each Script has slightly different font metric properties, which may result in a slightly different character output on different printers.

For each Font Face, there is normally one font file (such as \*.TTF). A Font Face denotes a “family” of fonts that may or may not contain Scripts.

Seagate Analysis does not support Font Scripts; only Font Faces are supported. The three Font Faces supported in Seagate Analysis include the following:

- Courier
- Times Roman
- Helvetica

These Font Faces are central to the Seagate Analysis program itself when using the Java Virtual Machine. Currently, there is no way to add any additional fonts to Seagate Analysis.

## Tips and Tricks for Better Printing

When designing a report, a number of things will improve the way it prints. Some or all of these options may or may not be available to you depending on your system or printer.

When designing your report for distribution, it is best to adhere to as many of the following guidelines as possible to ensure consistency across different platforms and printers; however, printed output may still vary slightly:

- Design documents on the same printer that will be used to print the report.
- Print the document from the same printer used by the report developer.
- Print the document from a system that runs the same version of operating system as the system used by the report developer.
- Print the document from a system that runs the same version of printer driver as the system used by the report developer.
- Set the printer to be used on all systems to be the same Windows default printer as the one used by the report developer.
- Set the Windows printer settings to be the same as the settings on the report developer's system for all systems used to print the document. Set the printer's Font properties to one of the following:
  - Print TrueType Fonts as Graphics
  - Print using TrueType Fonts
  - Always use TrueType Fonts

Avoid setting the printer's Font properties to one of the following:

- Print using the Font Substitution Table
  - Print using Printer or Built-in Fonts
  - Never use TrueType Fonts
- On all systems, including the one used by the report developer, set the Preview window to 100%.

## Printing Limitations in Seagate Analysis

Seagate Analysis has been designed to be used over multiple platforms as a web tool, which may cause some printing limitations. Known printing limitations in Seagate Analysis include the following (with Track number if applicable):

### Using an outdated version of the Microsoft Java Virtual Machine to Print

Printing capabilities will be limited when using an outdated version of the Microsoft Java Virtual Machine (VM). Check the version the MSJAVA.DLL. Seagate Analysis (standalone) installs version 5.00.3167 if an older version is detected during the installation process. Version 5.00.3167 or higher is required to reliably print and preview a Seagate Analysis document.

**NOTE**

To ensure the best printing results, it is important to use the most current printer driver available for your printer. Many printer manufacturers frequently release updated printer drivers on their web sites.

### Printing to Specific Printers

When running Seagate Analysis in client/server mode (with Seagate Info), it may be difficult to print with some specific printers, such as Epson. To correct any problems installing the latest Microsoft Java Virtual Machine is strongly recommended. (Track 19217)

### Printing Records in Client/Server Mode

When running Seagate Analysis in client/server mode and printing records, users will not be able to specify printing attributes (paper size, margins, orientation, and so on). Only the entire document can be printed—users will **not** be able to print a subset of pages. Charts may have ‘jagged’ (aliased) outlines when printed.

**NOTE**

For optimal quality and control over printing attributes, using either the Info Analyzer or Info Report Designer to print documents is recommended.

### Printing Charts in Client/Server Mode

Printing charts from Seagate Analysis in client/server mode may reduce the clarity of charts and text boxes within the charts (Track 17149).

### Changing Printing Attributes in Standalone Mode

When changing printing attributes (such as paper size and orientation) in standalone mode, the changes are reflected in the Report tab once the document is actually printed. There is no way to view printer attribute changes in the Report tab until the document is printed. (Track 17010)

### Changing Printing Attributes in Client/Server Mode

Printing charts from Seagate Analysis in client/server mode produces a blank chart on some printers. (Track 19218)

### Printing Multiple Copies with the Collate Option Enabled

When attempting to print multiple copies of a document with the collate option enabled, only one copy prints. (Track 19261).

### Page Number Setting in Client/Server Mode

After printing from Seagate Analysis in client/server mode, the page number is always set to the last page in the document (Track 19426).

#### Initiating a Print Job with the Right Mouse Button

Printing a document by right clicking on a \*.RPT file or icon in the Windows Explorer is not supported. It is possible to open a document this way, but documents can only be printed from within the Seagate Analysis program itself (Track 19423).

#### Printing from the Cube Tab

Printing from the Cube tab is always performed by the MSJAVA.DLL in both the standalone version of Seagate Analysis and in client/server mode (unlike the Report tab, which can use the CAPE32.DLL to print).

#### Printing Charts From the Cube Tab

There are three known issues that relate to printing charts from the Cube tab in Seagate Analysis:

1. A blank page prints if the chart is set to view as "Position in the Data Grid." To print the chart properly, select any of the following settings:
  - Position on the right
  - Position on the bottom
  - Position in a free floating window
2. When printing a chart from the Cube tab, the printed chart on paper is proportional to the chart on screen. If the chart is enlarged on screen, it may be cut off when printed out on paper.
3. For some printers (e.g. HP LaserJet 4M plus), the printer option **raster graphics** should be used instead of **vector graphics** to print the chart correctly from the Cube tab.

## Finding More Information

The following reference materials were either used to create this document, or are recommended for further reading on alignment, preview, and printing issues in Seagate Analysis:

*TrueType, Outline Font, and Scaleable Font*, [PCWebopædia](http://www.pcwebopedia.com). Mecklermedia Corporation. Copyright © 1998. Articles on Located at: [www.pcwebopedia.com](http://www.pcwebopedia.com).

*Printer Driver Dependency*. Crystal Decisions Inc., Technical Support White Paper, 1997 (GED).

*Factors Affecting Print Speed in Seagate Crystal Reports*. Crystal Decisions Inc., Technical Support White Paper, 1997 (KRP).

*Alignment, Preview, Printing and WYSIWYG in Seagate Crystal Reports 5 & 6*. Crystal Decisions Inc., Technical Support White Paper, 1997 (KRP)

## Contacting Crystal Decisions for Technical Support

We recommend that you refer to the product documentation and that you visit our Technical Support web site for more resources.

**Self-serve Support:**

<http://support.crystaldecisions.com/>

**Email Support:**

<http://support.crystaldecisions.com/support/answers.asp>

**Telephone Support:**

<http://www.crystaldecisions.com/contact/support.asp>