

**Oracle® Outside In Viewer**

Developer's Guide

Release 8.3.5

**E12845-01**

June 2010

Oracle Outside In Viewer Developer's Guide, Release 8.3.5

E12845-01

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# Preface

This document describes the installation and usage of the Outside In Viewer Software Developer's Kit (SDK).

## Audience

This document is intended for developers who are integrating the Outside In Viewer into Original Equipment Manufacturer (OEM) applications.

## Documentation Accessibility

Our goal is to make Oracle products, services, and supporting documentation accessible to all users, including users that are disabled. To that end, our documentation includes features that make information available to users of assistive technology. This documentation is available in HTML format, and contains markup to facilitate access by the disabled community. Accessibility standards will continue to evolve over time, and Oracle is actively engaged with other market-leading technology vendors to address technical obstacles so that our documentation can be accessible to all of our customers. For more information, visit the Oracle Accessibility Program Web site at <http://www.oracle.com/accessibility/>.

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## Related Documents

For more information, see [http://download.oracle.com/docs/cd/E14154\\_01/index.htm](http://download.oracle.com/docs/cd/E14154_01/index.htm).

## Conventions

The following text conventions are used in this document:

<b>Convention</b>	<b>Meaning</b>
<b>boldface</b>	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
<i>italic</i>	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

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# Introduction

The Outside In Viewer module is part of Oracle's family of OEM technologies known as Outside In, a powerful document viewing and conversion technology that can access the information in more than 500 file formats.

There may be references to other Outside In Technology SDKs within this manual. To obtain complete documentation for any other Outside In product, see [http://download.oracle.com/docs/cd/E14154\\_01/index.htm](http://download.oracle.com/docs/cd/E14154_01/index.htm).

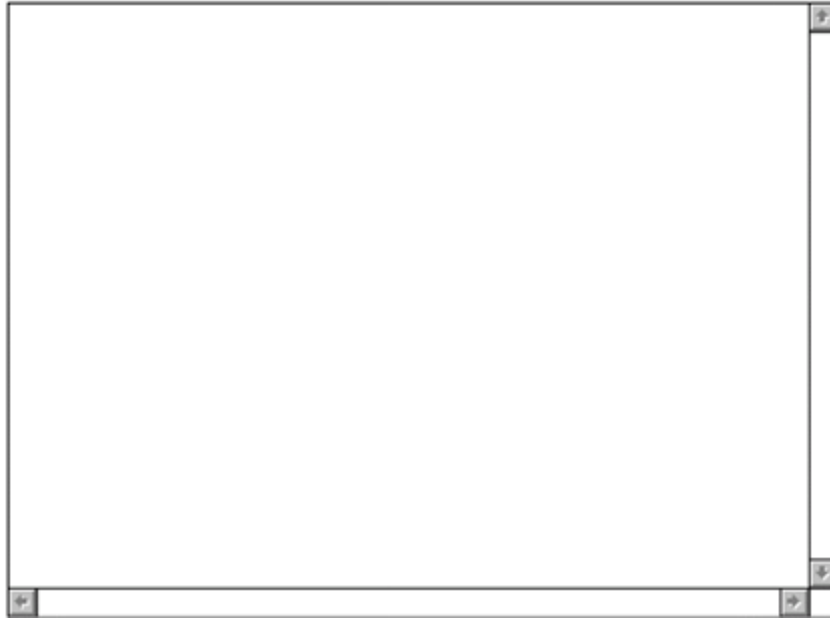
## 1.1 What's New in Release 8.3.5

- The updated list of supported formats is posted at [http://www.oracle.com/technology/products/content-management/oit/oit\\_all.html](http://www.oracle.com/technology/products/content-management/oit/oit_all.html).
- Outside In has added support for Lotus Notes mail, also known as NSF files. This support requires the presence of a Lotus Notes client or a Lotus Domino server and is only supported on Win32. Details can be found in the section [NSF Support](#). There is also a new option associated with this support: [SCCID\\_LOTUSNOTESDIRECTORY](#).
- A new message, [SCCVW\\_GETFILEACCESSDATA](#), is displayed when the technology encounters a file that requires additional information to access its contents.
- A data structure has been updated (as documented in [SCCVWHILITESTYLE81 Structure](#)) to permit formatting of underline highlight style.
- An improved rendering engine, DEVECT, has been added that supports vector drawings, presentations, and charts. It replaces the old engine DEMET.
- The option [SCCID\\_WPMIMEHEADEROUTPUT](#) has been deprecated, and has been replaced by [SCCID\\_WPEMAILHEADEROUTPUT](#).
- The option [SCCID\\_IGNORE\\_PASSWORD](#) allows you to view contents of a password-protected (but not encrypted) Outlook PST file.
- The option [SCCID\\_REORDERMETHOD](#) has had its data values changed to control rendering of bidirectional text.
- A new option, [SCCID\\_SSSHOWHIDDENCELLS](#), toggles display of hidden spreadsheet cells.
- In this release we have added the ability to parse raw XMP (Adobe's Extensible Metadata Platform) data and convert it into document properties. See [SCCID\\_PARSEXMPMETADATA](#).

## 1.2 What Does the Outside In Viewer Do?

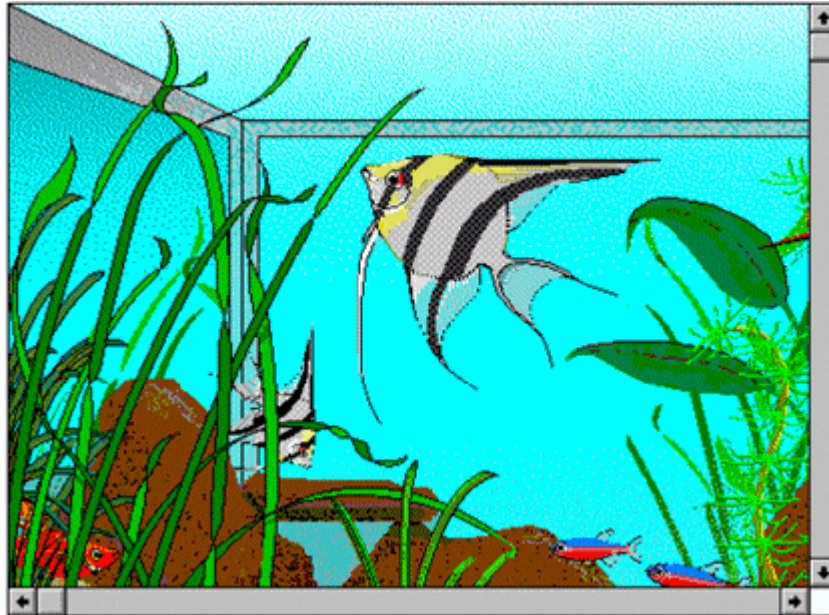
For each supported platform, the Outside In Viewer provides a way to create a rectangular view consisting of a horizontal scroll bar, a vertical scroll bar and a display area. This rectangle is referred to as the **view window**.

*Figure 1-1 View Window*



The view window is blank until the developer sends a `SCCVW_VIEWFILE` message. This message allows the developer to specify a file to be viewed. On some platforms you can specify a bitmap to display when no file is being viewed.

If `SCCVW_VIEWFILE` returns successfully, the display area will contain the top part of the file specified and scroll bars will be enabled, allowing the user to move around the rest of the file.

**Figure 1-2 View Window in Use**

Once a file is being viewed, a whole set of messages can be sent by the developer to the view window allowing the developer to print, copy, search, change the look of, and perform a number of other operations on the view.

Eventually, the developer will either close the file (SCCVW\_CLOSE) and destroy the view window or make another call to SCCVW\_VIEWFILE.

### 1.3 Architectural Overview

The basic architecture of the Outside In Viewer is noted below. There are no supported platform distinctions:

Filter/Module	Description
Input Filter	The input filters form the base of the architecture. Each one reads a specific file format or set of related formats and sends the data to the chunker module through a standard set of function calls. There are more than 150 of these filters that read more than 500 distinct file formats. Filters are loaded on demand by the data access module.
Chunker	The Chunker module is responsible for caching a certain amount of data from the filter and returning this data as a display engine.  It is also responsible for running the filter to rebuild any data not already in the cache that is requested.
Display Engine	The Display Engine is responsible for reading data from the chunker and displaying it in the view window. It is also responsible for all user interface, clipboard and printing for a given data type. There are currently six display engines: Document, Spreadsheet/Database, Bitmap, Drawing, Archive and Hex.  Display Engines are loaded on demand by the view window.
View Window	The View Window controls all of the modules for this product.

## 1.4 Definition of Terms

Term	Definition
Developer	Someone integrating this technology into another technology or application. Most likely this is you, the reader.
Source File	The file the developer wishes to view.

## 1.5 Directory Structure

Each Outside In product has an `sdk` directory, under which there is a subdirectory for each platform on which the product ships (for example, `vw/sdk/vw_win-x86-32_sdk`). Under each of these directories are the following three subdirectories:

- **docs** - Contains both a PDF and HTML version of the product manual.
- **redist** - Contains only the files that the customer is allowed to redistribute. These include all the compiled modules, filter support files, `.xsd` and `.dtd` files, `cmmmap000.bin`, and third-party libraries, like `freetype`.
- **sdk** - Contains the other subdirectories that used to be at the root-level of an `sdk` (common, lib (windows only), resource, samplefiles, and samplecode (previously samples). In addition, one new subdirectory has been added, `demo`, that holds all of the compiled sample apps and other files that are needed to demo the products. These are files that the customer should not redistribute (`.cfg` files, `exportmaps`, etc.).

In the root platform directory (for example, `vw/sdk/vw_win-x86-32_sdk`), there are two files:

- **README** - Explains the contents of the `sdk`, and that `makedemo` must be run in order to use the sample applications.
- **makedemo** (either `.bat` or `.sh` – platform-based) - This script will either copy (on Windows) or Symlink (on Unix) the contents of `.../redist` into `.../sdk/demo`, so that sample applications can then be run out of the `demo` directory.

## 1.6 Copyright Information

The following notice must be included in the documentation, help system, or About box of any software that uses any of Oracle's executable code:

**Outside In Viewer © 1991, 2010 Oracle.**

The following notice must be included in the documentation of any software that uses Oracle's TIF6 filter (this filter reads TIFF and JPEG formats):

**The software is based in part on the work of the Independent JPEG Group.**



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## Windows Implementation Details

The Windows implementation of Outside In Viewer is delivered as a set of DLLs. When a developer uses the Windows LoadLibrary call to load `scvw.dll`, the DLL registers a Window Class named `SCCVIEWER`. The developer can then create windows of this class (using the windows `CreateWindow` call) and use them like any other window. This class of window also accepts a number of Viewer-specific windows messages that implement all of the functions needed for viewing, printing, searching, etc.

This product supports the following platforms:

- Windows (x86 32-bit): Windows 2000, Windows 2003, Windows XP, Windows Vista and Windows 2008, and Windows 7
- Windows (Itanium 64-bit): Windows .Net Server 2003 Enterprise Edition, Windows 2008, and Windows 7
- Windows (x86 64-bit): Windows Server 2003 x64 Standard, Enterprise, Datacenter Editions (64-bit Extended Systems), and Windows 7

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**Note:** The 64-bit version of `scvw.dll` will not load on an AMD-64 system without Visual C++ runtime version 8 installed. This happens because the system is missing the `msvcr80.dll` library, which is required. Users can download the required library from <http://www.microsoft.com/downloads/details.aspx?FamilyId=90548130-4468-4BBC-9673-D6ACABD5D13B&displaylang=en>.

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### 2.1 Installation

To install the demo version of the Viewer SDK, copy the contents of the ZIP archive (available on the Web site) to a local directory of your choice.

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**Note:** This product requires the Visual C++ libraries included in the Visual C++ Redistributable Package available from Microsoft. There are three versions of this package (x86, x64, and IA64) for each corresponding version of Windows.

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These can be downloaded from <http://www.microsoft.com/downloads>, by searching on the site for the packages `vc redistrib_x86.exe`, `vc redistrib_x64.exe`, or `vc redistrib_IA64.exe`. The required version of each of these downloads is the 2005 SP1 Redistributable Package.

The redistributable module that Outside In requires is msvcr80.dll.

The installation directory should contain the following directory structure:

Directory	Description
\docs	Includes release notes and HTML and PDF versions of the manual you are reading right now. The release notes contain information that is potentially more up-to-date than that found in this user guide and should therefore be read before you install the technology.
\redist	Contains a working copy of the Windows version of the technology.
\sdk\common	Contains the C include files needed to build or rebuild the technology.
\sdk\demo	Contains the compiled executables of the sample applications.
\sdk\lib	Contains the library (.lib) files for scca.dll, sccta.dll, scra.dll, sccda.dll and sccfi.dll.
\sdk\resource	Contains localization resource files.
\sdk\samplecode	Contains the source code for the sample application.
\sdk\samplefiles	Contains sample files designed to exercise the technology.

### 2.1.1 NSF Support

Notes Storage Format (NSF) files are produced by the Lotus Notes Client or the Lotus Domino server. The NSF filter is the only Outside In filter that requires the native application to be present to filter the input documents. Due to integration with an outside application, NSF support will not work with redirected I/O nor will it work when an NSF file is embedded in another file. Either Lotus Notes version 8 or Lotus Domino version 8 must be installed on the same machine as OIT. SCCID\_LOTUSNOTESDIRECTORY should be set to the directory containing the nnotes.dll. NSF support is only available on the Win32 platform.

## 2.2 Libraries and Structure

Here is an overview of the files contained in the main installation directory for this product:

### API DLLs

These DLLs implement the API. They should be linked with the developer's application. LIB files are included in the SDK.

File	Description
scca.dll	Content Access module (provides organized chunker data for the developer)
sccda.dll	Data Access module
sccfi.dll	File Identification module (identifies files based on their contents). The File ID Specification may not be used directly by any application or workflow without it being separately licensed expressly for that purpose.
sccta.dll	Text Access module (provides straight text data for the developer)
sccvw.dll	Viewer module (this is the DLL that your application loads, providing control of all viewer functions)

## Support DLLs

File	Description
oswin*.dll	Interface to native GDI implementation (oswin32.dll is the module for Windows 32-bit implementation, and oswin64.dll is the module for Windows 64-bit implementation)
sccanno.dll	Annotation module
sccch.dll	Chunker (provides caching of and access to filter data for the display engine)
sccdu.dll	Display Utilities module (includes text formatting)
sccfa.dll	Filter Access module
sccfmt.dll	Formatting module (resolves numbers to formatted strings)
sccfut.dll	Filter utility module
sccind.dll	Indexing engine
scclo.dll	Localization library (all strings, menus, dialogs and dialog procedures reside here)
sccole.dll	OLE rendering module
sccut.dll	Utility functions (including IO subsystem)
sccvw.dll	The DLL that your application loads, providing control of all viewer functions
wvcore.dll	The GDI Abstraction layer

## Display Engine DLLs

File	Description
debmp.dll	Bitmap (TIFF, GIF, BMP, PCX...)
dehex.dll	Hexadecimal
devect.dll	Vector, Presentation (PowerPoint, Impress, Freelance...)
dess.dll	Spreadsheet/Database (Excel, Calc, Lotus 123...)
dmtree.dll	Archive (ZIP, GZIP, TAR...)
dewp.dll	Document (Word, Writer, WordPerfect...)

## Filter and Export Filter Libraries

File	Description
vs*.dll	Filters for specific file types (there are more than 150 of these filters, covering more than 500 file formats)
oitnsf.id	Support file for the vsnsf filter.
ltscsn10.dll	Support files for the vslwp filter
lwpapin.dll	
ltscsd13.tlb	
lwpapipn.dat	

## Premier Graphics Filters

File	Description
i*2.flt	30 .flt files (the import filters for premier graphics formats)
isgdi32.dll	Interface to premier graphics filters

## Additional Files

File	Description
adinit.dat	Support file for the vsacd2 filter
cmmmap000.bin	Tables for character mapping (all character sets)
cmmmap000.sbc	Tables for character mapping (single-byte character sets). Located in the common directory.
cmmmap000.dbc	Identical to cmmmap000.Bin, but renamed for clarity (.dbc = double-byte character). This file is located in the common directory.

## 2.3 The Basics

All the steps outlined in this section are used in the sample applications provided with the SDK. Looking at the code for the simple sample application is recommended for those wishing to see a real-world example of this process.

For detailed information about all sample applications included with this product, see [Chapter 8, "Sample Applications"](#).

### 2.3.1 What You Need in Your Source Code

Any source code that uses this product should `#include` the file `sccvw.h` and `#define` `WINDOWS` and `WIN32` or `WIN64`. For example, a Windows application might have a source file with the following lines:

```
#define WINDOWS          /* Will be automatically defined if your
                           compiler defines _WINDOWS */
#define WIN32
#include <sccvw.h>
```

### 2.3.2 Options and Information Storage

The technology creates the default options. In the Windows implementations, this is built by the technology as needed, usually the first time the software is run. You do not need to ship this list with your application. The list is automatically regenerated if corrupted or deleted.

The files used to store this information are stored in a `.oit` subdirectory in the following location:

```
\Documents and Settings\[user name]\Application Data
```

If an `.oit` directory does not exist in the user's directory, the directory will be created automatically by the technology. The files are automatically regenerated if corrupted or deleted.

The files are:

- `*.d` = Display engine lists

- \*.opt = Persistent options

---

**Note:** Some applications and services may run under a local system account for which there is no users "application data" folder. In that case, the technology checks for the following environment variables in order: OIT\_DATA\_PATH, APPDATA, and LOCALAPPDATA. If none of those exist or is writable, the technology attempts to write the options files into the executable path of the UT module. The technology can still run if it cannot write the options files. However, performance will be significantly impeded.

---

These file names are intended to be unique enough to avoid conflict for any combination of machine name and install directory. This allows the user to run products in separate directories without having to reload the files above. The file names are built from an 11-character string derived from the directory the Outside In technology resides in and the name of the machine it is being run on. The string is generated by code derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm.

### 2.3.3 Structure Alignment

Outside In is built with 8-byte structure alignment. This is the default setting for most Windows compilers. This and other compiler options that should be used are demonstrated in the files provided with the sample applications in samples\win.

### 2.3.4 Loading the Viewer DLL

The DLL named sccvw.dll is loaded using a LoadLibrary call as follows;

```
g_ViewDllHnd = LoadLibrary("SCCVW.DLL");
```

In this DLL's DllEntryPoint function, it registers a window class that can then be used by the developer to create view windows.

All the Viewer's DLLs must reside in the same directory. Do NOT put them in the Windows or System directory.

All the sample applications #include a file called sclink.c (in the SDK common directory) that implements loading of the sccvw.dll from any directory. Comments in this code explain the problems involved in loading a DLL from a different directory and how these problems are solved in the code.

### 2.3.5 Creating a View Window

A simple example of view window creation code is:

```
g_ViewWnd = CreateWindow("SCCVIEWER",...);
```

All the additional parameters to CreateWindow are totally up to the developer. For instance, the dwStyle parameter can be WS\_CHILD, WS\_POPUP, WS\_OVERLAPPED or any other set of styles.

The view window checks the class of its parent when it is created. If the class of its parent is "MDICLIENT", it will call DefMDIChildProc for default message processing. If the class is something else, it will call DefWindowProc for default message processing. This allows the view window to be used directly as a MDI child window. See the sample MDIVIEW for an example of this.

### 2.3.6 Sending SCCVW Messages

Once the developer has a handle to a view window, any of the SCCVW messages that make up the bulk of this document may be sent to the window (using `SendMessage`). The most likely action at this point would be to send `SCCVW_VIEWFILE` to view a file.

### 2.3.7 Receiving SCCVW Messages

The parent of the view window receives all SCCVW notification messages as Windows messages.

### 2.3.8 Unloading the Viewer DLL

When the developer's application no longer needs the Viewer (usually on exit), it must free the viewer DLL as follows:

```
FreeLibrary(g_ViewDllHnd);
```

Windows does not automatically free DLLs that are loaded using `LoadLibrary`. This step is necessary.

## 2.4 Character Sets

This section provides information about supported character sets.

### 2.4.1 Default API Character Set

The strings passed in the Windows API are ANSI1252 by default.

### 2.4.2 Double-Byte Character Set Mapping

Please note that to optimize performance on systems that do not require DBCS support, a second character mapping bin file, that does not contain any of the DBCS pages, is now included. The second bin file will give additional performance benefits for English documents, but will not be able to handle DBCS documents. To use the new bin file, replace the `cmmmap000.bin` with the new bin file, `cmmmap000.sbc`. For clarity, a copy of the `cmmmap000.bin` file named `cmmmap000.dbc` has also been included. Both the `cmmmap000.sbc` and `cmmmap000.dbc` files are located in the Common directory of the technology.

## 2.5 Runtime Considerations

The files used by this product must be in the same directory as the developer's executable.

## 2.6 Menus

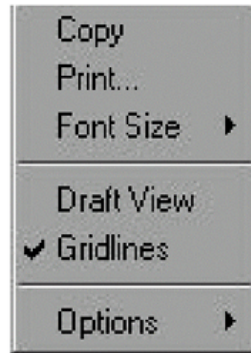
The Viewer exposes a number of menus that developers can use at their discretion. The specifics of menu interactions under Windows are discussed here.

### 2.6.1 Context Menu

In keeping with the current trend in Windows of using the right mouse click to bring up a context menu, the Viewer pops up a view-window-specific context menu when the right mouse button is pressed. The context menu under Windows contains Copy,

Print..., the display engine's menu, and access to the option dialogs. For example, the context menu that appears while viewing a spreadsheet appears in the following image:

**Figure 2-1 Context Menu**



If this meets your application's needs and user interface standards, you can ignore the interaction described in the next section and let the Viewer do all the work. If you wish to handle the right click yourself, this functionality can be overridden by handling the `SCCVW_CONTEXTMENU` message.

## 2.6.2 Menu Interaction

Each type of display engine (Document, Bitmap, Archive, etc.) has functions that are unique to the kinds of files it can view. For instance, zooming, rotation and dithering are functions associated with graphic images, but not with spreadsheets. To handle these specialized tasks, each display engine has a menu that is tailored specifically for it.

When the application receives a `SCCVW_DISPLAYCHANGE` message, it may call `SCCVW_GETDISPLAYINFO`. One of the elements returned by this message is a handle to a pop-up menu. The application may then do whatever it likes with this menu (except destroy it), such as saving it to be popped up at another time.

## 2.7 Default Font Aliases

The technology includes the following default font alias map for Windows. The first value is the original font, the second is the alias.

- Chicago = Arial
- Geneva = Arial
- Helv = Arial
- Helvetica = Arial
- itc zapf dingbats = Zapfdingbats
- itc zapfdingbats = Zapfdingbats
- New York = Times New Roman
- times = Times New Roman
- Times = Times New Roman
- Tms Roman = Times New Roman

This list can be applied with `SCCID_DISPLAYFONTALIAS` and `SCCID_PRINTFONTALIAS` using the flag `SCCVW_FONTALIAS_USEDEFAULTS`.

## 2.8 File Open Modes

Files to be viewed are opened using the `GENERIC_READ`, `FILE_SHARE_READ`, and `FILE_SHARE_WRITE` flags under Windows. This should allow developers to launch an application and edit the file (occasionally, the application launches but the file is read-only) while still viewing the file.

However, if you wish to launch a file you are viewing in its native application, it is recommended that you send `SCCVW_CLOSEFILE` to the view window first.

## 2.9 Changing Resources

Outside In Viewer ships with the necessary files for OEMs to change any of the menus or strings in the technology as they see fit.

Strings are stored in the `lodlgstr.h` file found in the resource directory. The file can be edited using any text editor.

---

---

**Note:** Do not directly edit the `scclo.rc` file. Strings are saved with their identifiers in `lodlgstr.h`. If a new `scclo.rc` file is saved, it will contain numeric identifiers for strings, instead of their `#define`'d names.

---

---

Once the changes have been made, the updated `scclo.dll` file can be rebuilt using the following steps:

1. Compile the `.res` file:

```
rc /fo ".\scclo.res" /i "<path to header (.h) files folder>" /d "NDEBUG"  
scclo.rc
```

2. Link the `scclo.res` file you've created with the `scclo.obj` file found in the resource directory to create a new `scclo.dll`:

```
link /DLL /OUT:scclo.dll scclo.obj scclo.res
```

---

---

**Note:** Developers should make sure they have set up their environment variables to build the library for their specific architecture. For Windows `x86_32`, when compiling with VS 2005, the solution is to run `vsvars32.bat` (in a standard VS 2005 installation, this is found in `C:\Program Files\Microsoft Visual Studio 8\Common7\Tools\`). If this works correctly, you will see the statement, "Setting environment for using Microsoft Visual Studio 2005 x86 tools." If you do not complete this step, you may have conflicts that lead to unresolved symbols due to conflicts with the Microsoft CRT.

---

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3. Embed the manifest (which is created in the `\resource` directory during step 2) into the new DLL:

```
mt -manifest scclo.dll.manifest -outputresource:scclo.dll;2
```



If you are not using Microsoft Visual Studio, substitute the appropriate development tools from your environment.

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**Note:** In previous versions of Outside In, it was possible to edit SCCLO.DLL directly in Microsoft Visual Studio. Outside In DLLs are now digitally signed. Editing the signed DLL is not advisable.

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## UNIX Implementation Details

The UNIX implementation of the Outside In Viewer is delivered as a set of shared libraries.

The Viewer under all supported UNIX X Windows systems is implemented as the SccViewer widget class. The viewer widget is provided in OSF Motif style. The Outside In Viewer must be able to dynamically link against a Motif 2-compatible library named libXm.so.2. On Linux systems, the Outside In Viewer will use libXm.so.1. Please see "[Linux Compiling and Linking](#)" on page 3-21 for more information.

SccViewer widget provides all the functionality you need to view a file. The application sends SCCVW messages to the widget using the widget's XsccViewerAcceptMessage function. The widget returns communication to the application through its callback resource.

This product supports the following platforms:

- HP/UX (RISC 32): 11.0 and 11.i
- IBM AIX (32-bit pSeries): 5.1 - 5.3
- iSeries (OS/400 using PASE): V5R2
- Red Hat Linux (x86): Advanced Server 3, 4, and 5
- SuSE Linux (x86): 9, 10, and Enterprise Server 9.0
- Sun Solaris (SPARC): 8.x - 10.x
- Sun Solaris (x86): 8.x - 10.x

### 3.1 Installation

To install the demo version of the SDK, copy the tgz file corresponding to your platform (available on the Web site) to a local directory of your choice. Decompress the tgz file and then extract from the resulting tar file as follows:

```
gunzip tgzfile
tar xvf tarfile
```

The installation directory should contain the following directory structure:

Directory	Description
/docs	Includes HTML and PDF versions of the manual you are reading right now.
/redist	Contains a working copy of the UNIX version of the technology.

Directory	Description
/sdk/common	Contains the C include files needed to build or rebuild the technology.
/sdk/demo	Contains the compiled executables of the sample applications.
/sdk/resource	Contains localization resource files.
/sdk/samplecode	Contains a subdirectory holding the source code for a sample application.
/sdk/samplefiles	Contains sample files designed to exercise the technology.

## 3.2 Libraries and Structure

On the UNIX platforms, Outside In technologies are delivered with a set of shared libraries. All libraries should be installed to a single directory. Depending upon your application, you may also need to add that directory to the system's runtime search path. See [Section 3.6, "Environment Variables"](#) for more details.

The following is a brief description of the included libraries and support files. Note that in instances where a file extension is listed as .\*, the file extension will vary for each UNIX platform (sl on HP/UX, so on Linux and Solaris, and a or o on IBM AIX).

### API Libraries

These libraries implement the API. They should be linked with the developer's application.

File	Description
libsc_ca.*	Content Access module (provides organized chunker data for the developer)
libsc_da.*	Data Access module
libsc_fi.*	File Identification module (identifies files based on their contents). The File ID Specification may not be used directly by any application or workflow without it being separately licensed expressly for that purpose.
libsc_ta.*	Text Access module (provides straight text data for the developer)
libsc_vw.*	Viewer module (this is the library that your application loads, providing control of all viewer functions)
libsc_vw.o	IBM AIX only! Same as libsc_vw.a, except that this is not a library archive file (used with load subroutine to load the viewer at run time).

### Support Libraries

File	Description
libos_xwin.*	The native GDI implementation
libsc_anno.*	The annotation module
libsc_ch.*	Chunker (provides caching of and access to filter data for the display engines)
libsc_du.*	Display Utilities module (includes text formatting)
libsc_fa.*	Filter Access module

File	Description
libsc_fmt.*	Formatting module (resolves numbers to formatted strings)
libsc_fut.*	Filter utility module
libsc_ind.*	Indexing engine
libsc_lo.*	Localization library (all strings, menus, dialogs and dialog procedures reside here)
libsc_ut.*	Utility functions, including IO subsystem
libsc_xp.*	XPrinter bridge
libwv_core.*	The GDI Abstraction layer

### Display Engine Libraries

File	Description
libde_bmp.*	Bitmap (TIFF, GIF, BMP, PCX...)
libde_vect.*	Vector/Presentation (PowerPoint, Impress, Freelance...)
libde_ss.*	Spreadsheet/Database (Excel, Calc, Lotus 123...)
libde_tree.*	Archive (ZIP, GZIP, TAR...)
libde_wp.*	Document (Word, Writer, WordPerfect...)

### Filter Libraries

File	Description
libvs_*.*	Filters for specific file types (there are more than 150 of these filters, covering more than 500 file formats)

### Premier Graphics Filters

File	Description
i*2.flt	These 30 .flt files are the import filters for premier graphics formats
isunx2.flt	Interface to premier graphics filters

### Additional Files

File	Description
adinit.dat	Support file for the vsacad and vsacd2 filters
cmmmap000.bin	Tables for character mapping (all character sets)
cmmmap000.sbc	Tables for character mapping (single-byte character sets). This file is located in the common directory.
cmmmap000.dbc	Identical to cmmmap000.Bin, but renamed for clarity (.dbc = double-byte character). This file is located in the common directory.

## 3.3 The Basics

All the steps outlined in this section are used in the sample applications provided with the SDK. Looking at the code for the apitest sample application is recommended for a real world example of this process.

### 3.3.1 What You Need in Your Source Code

Any source code that uses this product should `#include` the file `sccvw.h` and `#define` `UNIX`. For example, a UNIX application might have a source file with the following lines:

```
#define UNIX
#include <sccvw.h>
```

and a 64-bit UNIX application might have a source file with the following lines:

```
#define UNIX
#define UNIX_64
#include <sccvw.h>
```

### 3.3.2 Options and Information Storage

The technology creates three sets of information: the default options, a list of available filters and a list of available display engines. In the UNIX implementations, these lists are built by the technology as needed, usually the first time the Viewer is run. You do not need to ship these lists with your application.

These lists are stored in the `$HOME/.oit` directory. If the `$HOME` environment variable is not set, the files are placed in the same directory as the Outside In Technology. If a `.oit` directory does not exist in the user's `$HOME` directory, the `.oit` directory will be created automatically by the technology. The files are automatically regenerated if corrupted or deleted.

The files are:

- `*.d`: Display engine list
- `*.opt`: Persistent options

The names of these option files end in `*.opt`, and are intended to be unique enough to avoid conflict for any combination of machine name and install directory. This is intended to prevent problems with version conflicts when multiple versions of the Viewer and/or other Viewer-based products are installed on a single system. The file names are built from an 11-character string derived from the directory the Outside In technology resides in and the name of the machine it is being run on. The string is generated by code derived from the RSA Data Security, Inc. MD5 Message-Digest Algorithm.

### 3.3.3 Creating a SccViewer Widget

Standard X Toolkit Intrinsics functions may be used to create `SccViewer` widgets. The class pointer is `sccViewerWidgetClass`. The class name is `SccViewerWidget`. You may also set the associated resources at the creation time. The following sample code creates a `SccViewer` widget:

```
Widget testWidget;
Widget main_w;
...
testWidget = XtVaCreatedManagedWidget (
```

```

"MyViewerWidget",
sccViewerWidgetClass,          /* class pointer */
main_w,                        /* parent widget */
XtNscViewerScrollBarWidth, 20, /* set scroll bar
NULL);                          resource*/

```

### 3.3.4 Sending Messages to a SccViewer Widget

The function `XsccViewerAcceptMessage` is provided to handle all SCCVW messages from the application to a `SccViewer` widget. Its syntax is:

```

long XsccViewerAcceptMessage(
    Widget sccViewerWidget, /* the viewer widget */
    unsigned long dwMessage, /* the SCCVW message */
    unsigned long wParam, /* generic parameter */
    unsigned long lParam) /* generic parameter */

```

SCCVW messages are like commands and requests from the application. For example, if you want to view a new file, you simply send a `SCCVW_VIEWFILE` message. The contents of `dwMessage`, `wParam` and `lParam` are described in the Messages section of this manual.

### 3.3.5 Callback from a SccViewer Widget

When a `SccViewer` widget needs to send a SCCVW message back to the application, it calls its callback resource `XtNscViewerCallback`. The callback structure is:

```

typedef struct _SccViewerCallbackStruct
{
    int reason; /* same value as dwMessage */
    unsigned long dwMessage; /* SCCVW message */
    unsigned long wParam; /* generic parameter */
    unsigned long lParam; /* generic parameter */
    long lAppReturn; /* result from application */
} SccViewerCallbackStruct, *SccViewerCallbackPtr;

```

## 3.4 Character Sets

This section provides information about supported character sets.

### 3.4.1 Default API Character Set

The strings passed in the UNIX API are ISO8859-1 by default.

### 3.4.2 Double-Byte Character Set Mapping

Please note that to optimize performance on systems that do not require DBCS support, a second character mapping bin file, that does not contain any of the DBCS pages, is now included. The second bin file will give additional performance benefits for English documents, but will not be able to handle DBCS documents. To use the new bin file, replace the `cmmmap000.bin` with the new bin file, `cmmmap000.sbc`. For clarity, a copy of the `cmmmap000.bin` file named `cmmmap000.dbc` has also been included. Both the `cmmmap000.sbc` and `cmmmap000.dbc` files are located in the Common directory of the technology.

## 3.5 Runtime Considerations

This section provides information about runtime considerations.

### 3.5.1 X Server Requirement

Access to a running X Windows server and the presence of Motif (or LessTif on Linux) are required to convert from vector formats on UNIX systems. Examples of vector graphics files include CAD drawings and presentation files such as Power Point 97 files. Bitmap graphic conversion, handled by the libDE\_BMP.\* engine, does not require access to a running X Windows server. Examples of bitmap file formats include GIF, JPEG, TIFF, and Windows BMP files.

Note that in order to accommodate both systems with and without X servers available, a runtime check for the presence of X libraries is performed. This check looks on the system-specific library path variable for the X libraries. If the X libraries are not found, this product will not perform vector graphics conversion.

Do not forget to set the \$DISPLAY environment variable before running this product when vector graphic conversion is desired. This is particularly important to remember in situations such as CGI programs that start with a limited environment. For example, when running the technology from a remote session, setting DISPLAY=:0.0 will tell the system to use the X Windows server on the console.

### 3.5.2 OLE2 Objects

Some documents that the developer is attempting to convert may contain embedded OLE2 objects. There are platform-dependent limits on what the technology can do with OLE2 objects. However, Outside In will attempt to take advantage of the fact that some documents accompany an OLE2 embedding with a graphic snapshot, in the form of a Windows metafile.

On all platforms, when a metafile snapshot is available, the technology will use it to convert the object. When a metafile snapshot is not available on UNIX platforms, the technology will be unable to convert the OLE2 object.

### 3.5.3 Machine-Dependent Graphics Context

The system uses a machine configuration dependent graphics context to render some images. The number of colors available in the systems graphics context is a particularly important limiting factor. For example, if the video driver for a system running Outside In is set up to display 256 colors, images produced on that system would be limited to 256 colors.

### 3.5.4 Signal Handling

This product traps and handles the following signals:

- SIGABRT
- SIGBUS
- SIGFPE
- SIGILL
- SIGINT
- SIGSEGV
- SIGTERM



Developers who wish to override our default handling of these signals should set up their own signal handlers. This may be safely done after the developer's application has called `DAInit()`.

---

**Note:** The Java Native Interface (JNI) allows Java code to call and be called by native code (C/C++ in the case of OIT). You may run into problems if Java isn't allowed to handle signals and forward them to OIT. If OIT catches the signals and forwards them to Java, the JVMs will sometimes crash. OIT installs signal handlers when `DAInit()` is called, so if you call OIT after the JVM is created, you will need to use `libsig`. Refer here for more information:

<http://java.sun.com/javase/6/webnotes/trouble/TSG-VM/html/signals.html>

---

### 3.5.5 Runtime Search Path and \$ORIGIN

Libraries and sample applications are all built with the `$ORIGIN` variable as part of the binaries' runtime search path. This means that at runtime, OIT libraries will automatically look in the directory they were loaded from to find their dependent libraries. You don't necessarily need to include the technology directory in your `LD_LIBRARY_PATH` or `SHLIB_PATH`.

As an example, an application that resides in the same directory as the OIT libraries and includes `$ORIGIN` in its runtime search path will have its dependent OIT libraries found automatically. You will still need to include the technology directory in your linker's search path at link time using something like `-L` and possibly `-rpath-link`.

Another example is an application that loads OIT libraries from a known directory. The loading of the first OIT library will locate the dependent libraries.

---

**Note:** This feature does not work on AIX and FreeBSD.

---

## 3.6 Environment Variables

There are a number of environment variables that the UNIX implementation of the technology may use at run time. While described elsewhere, following is a short summary of those variables and what they do.

Variable	Description
<code>\$PATH</code>	Must be set to include the directory containing the <code>.flt</code> files. Only applicable to AIX.
<code>\$LD_LIBRARY_PATH</code> (FreeBSD, HP-UX Itanium 64, Linux, Solaris)	These variables help your system's dynamic loader locate objects at runtime. If you have problems with libraries failing to load, try adding the path to the Outside In libraries to the appropriate environment variable. See your system's manual for the dynamic loader and its configuration for details.
<code>\$SHLIB_PATH</code> (HP-UX RISC 32)	
<code>\$LIBPATH</code> (AIX, iSeries)	Note that for products that have a 64-bit PA/RISC, 64-bit Solaris and Linux PPC/PPC64 distributable, they will also go under <code>\$LD_LIBRARY_PATH</code> .
<code>\$DISPLAY</code>	Must be set to point to a valid X Server to view files. See " <a href="#">X Server Requirement</a> " on page 3-6 for more information.

Variable	Description
\$HOME	Must be set to allow the system to write the option, filter and display engine lists. See <a href="#">"Options and Information Storage"</a> on page 3-4 for details.

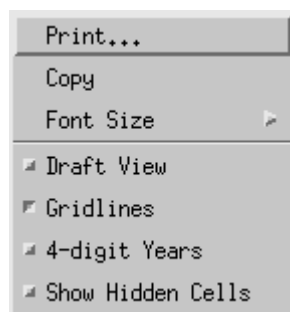
## 3.7 Menus

The Viewer exposes a number of menus that developers can use at their discretion. The specifics of the OEM's interaction with these menus under UNIX is discussed here.

### 3.7.1 Context Menu

The Viewer pops up a view window-specific context menu when the right mouse button is pressed. The context menu under UNIX contains Copy and the display engine's menu. For example, the following is an image of the context menu that appears while viewing a spreadsheet:

**Figure 3–1 Spreadsheet Context Menu**



If this meets your application's needs and user interface standards, you can ignore the interaction described in the next section and let the Viewer do all the work. If you wish to handle the right button click yourself, this functionality can be overridden by handling the `SCCVW_CONTEXTMENU` message.

### 3.7.2 Menu Interaction

Each type of display engine (Document, Bitmap, Archive, etc.) has functions that are unique to the kinds of files it can view. For instance, zooming, rotation and dithering are functions associated with graphic images, but not with spreadsheets. To handle these specialized tasks, each display engine has a menu that is tailored specifically for it.

When the application receives a `SCCVW_DISPLAYCHANGE` message, it may call `SCCVW_GETDISPLAYINFO`. One of the elements returned by this message is a handle to a pop-up menu. The application may then do whatever it likes with this menu (except destroy it), such as saving it to be popped up at another time.

## 3.8 Default Font Aliases

The technology includes the following default font alias map for UNIX platforms. The first value is the original font, and the second is the alias.

- 61 = Liberation Sans

- Andale Mono = Liberation Sans
- Courier = Liberation Sans
- Courier New = Liberation Sans
- Lucida Console = Liberation Sans
- MS Gothic = Liberation Sans
- MS Mincho = Liberation Sans
- OCR A Extended = Liberation Sans
- OCR B = Liberation Sans
- Agency FB = Liberation Sans
- Arial = Liberation Sans
- Arial Black = Liberation Sans
- Arial Narrow = Liberation Sans
- Arial Rounded MT = Liberation Sans
- Arial Unicode MS = Liberation Sans
- Berline Sans FB = Liberation Sans
- Calibri = Liberation Sans
- Frank Gothic Demi = Liberation Sans
- Frank Gothic Medium Cond = Liberation Sans
- Franklin Gothic Book = Liberation Sans
- Futura = Liberation Sans
- Geneva = Liberation Sans
- Gill Sans = Liberation Sans
- Gill Sans MT = Liberation Sans
- Lucida Sans Regular = Liberation Sans
- Lucida Sans Unicode = Liberation Sans
- Modern No. 20 = Liberation Sans
- Tahoma = Liberation Sans
- Trebuchet MS = Liberation Sans
- Tw Cen MT = Liberation Sans
- Verdana = Liberation Sans
- Albany = Liberation Sans
- Franklin Gothic = Liberation Sans
- Franklin Demi = Liberation Sans
- Franklin Demi Cond = Liberation Sans
- Franklin Gothic Heavy = Liberation Sans
- Algerian = Liberation Serif
- Baskerville = Liberation Serif

- Bell MT = Liberation Serif
- Bodoni MT = Liberation Serif
- Bodoni MT Black = Liberation Serif
- Book Antiqua = Liberation Serif
- Bookman Old Style = Liberation Serif
- Calisto MT = Liberation Serif
- Cambria = Liberation Serif
- Centaur = Liberation Serif
- Century = Liberation Serif
- Century Gothic = Liberation Serif
- Century Schoolbook = Liberation Serif
- Elephant = Liberation Serif
- Footlight MT Light = Liberation Serif
- Garamond = Liberation Serif
- Georgia = Liberation Serif
- Goudy Old Style = Liberation Serif
- Lucida Bright = Liberation Serif
- MS Serif = Liberation Serif
- New York = Liberation Serif
- Palatino = Liberation Serif
- Perpetua = Liberation Serif
- Times = Liberation Serif
- times = Liberation Serif
- Times New Roman = Liberation Serif

## 3.9 Changing Resources

All of the strings used in the UNIX versions of Outside In products are contained in a file called `lodlgstr.h`. This file, located in the resource directory, can be modified for internationalization and other purposes. Everything necessary to rebuild the resource library to use the modified source file is included with the SDK.

Along with `lodlgstr.h`, an object file, `sccl.o`, has been provided which is necessary for the linking phase of the build. A makefile has also been provided for building the library. The makefile allows building on all of the UNIX platforms supported by Outside In. It may be necessary to make minor modifications to the makefile so that the system header files and libraries can be found for compiling and linking. There are standard `INCLUDE` and `LIB` make variables defined for each platform in the makefile – simply edit these variables to point to the header files and libraries on your particular system. Other make variables are:

- `TECHINCLUDE`: May need to be edited to point to the location of the Outside In common header files that are supplied with the SDK.

- `BUILDDIR`: May need to be edited to point to the location of the makefile, `lodlgstr.h`, and `scclo.o` (which should all be in the same directory).

Once these make variables are set, simply change to the build directory and type `make`. The resource library, `libsc_lo`, will be built and placed in the appropriate platform-specific directory. To use this library, copy it into the directory where the Outside In product resides, and the new, modified resource strings will then be used by the technology.

Menu constants are included in `lomenu.h` in the common directory.

All dialog boxes are created directly in the viewer code internally and are compiled and linked in the normal compilation process. There are no separate resource files corresponding to the `.rc` files in the Windows code.

Additional viewer resources are defined in `xscv.w.h`, which is included in the code for the sample executables and the viewer.

## 3.10 Xprinter Technology Setup and Description

Oracle has added UNIX printing capability through the Xprinter technology licensed from Bristol Technology. This technology adds several files to the Outside In Viewer. The following sections describe those files and how to customize them for your needs.

### 3.10.1 Overview of Xprinter Components

This section discusses Xprinter components.

#### 3.10.1.1 Font Metric Files

The `xprinter/fontmetrics/afm` directory contains Adobe Font Metric (AFM) files. Since Xprinter uses these files internally, your Outside In applications will not normally access them directly.

#### 3.10.1.2 Printer Description Files

PostScript Printer Description (PPD) files provide Xprinter with model-specific printer information, such as the available ROM fonts, paper bins, supported paper sizes, and available memory. Xprinter uses this information internally. PPD files are located by default in the `xprinter/ppds` directory.

The Outside In technology ships with a set of PPD files for printers that are supported and have been verified with the Xprinter technology. PPD files for other printers can be obtained from the manufacturer of a specific printer. Although they have not been verified with this technology, a new PPD file can be copied into the `xprinter/ppds` directory and this should make that printer available through this technology.

#### 3.10.1.3 Soft Fonts

A soft font is an executable program that can be downloaded to a PostScript to make available a font not in the printer ROM. PostScript soft fonts are located in the `xprinter/psssoftfonts` directory which you will have to create when you add soft fonts to your system. For information about how to add a soft font to your system, please see "[Customizing the Xprinter Environment](#)" on page 3-15.

#### 3.10.1.4 Configuration Files

A configuration file, `psstd.fonts`, is copied to the `xprinter` directory. This file provides mappings of X Window font names to equivalent PostScript font names.

To map color names to their RGB values, Xprinter internally uses the `xprinter/rgb.txt` configuration file.

The `xprinter/xprinter.prolog` file contains the default PostScript prolog used by Xprinter.

The `xprinter/Xpdefaults` configuration file contains system default setup information. The Xprinter Printer Setup widget reads the file. The parameter values specified in this file apply to every other user on the system. For instructions about how to modify this file for your particular printer configuration, please see "[Customizing the Xprinter Environment](#)" on page 3-15.

## 3.10.2 Using the Xprinter Printer Setup Widget

The Xprinter Printer Setup widget provides a standard user interface for selecting certain model-specific printer options such as paper trays, paper size, page orientation, and the spooler command.

The Xprinter Printer Setup widget also does the following:

Reads default configuration information from file `$HOME/.Xpdefaults`, which is your local setup information file

- Presents this information to you and lets you modify these defaults as desired. You may then choose one of these options:
- Save these default changes and store them in `$HOME/.Xpdefaults`
- Cancel the changes
- Provide the change information to your application for subsequent use in configuring the printer

### 3.10.2.1 Using Printer Setup Widget Buttons

The action area of the Printer Setup Widget contains up to six buttons:

- **Apply:** Provides changed configuration information to the application without updating the `$HOME/.Xpdefaults` file.
- **Save:** Writes the current configuration information to your default printer information file `$HOME/.Xpdefaults`.
- **Reset:** Reloads the default configuration from `$HOME/.Xpdefaults`.
- **Cancel:** Closes the dialog and aborts all configuration changes.
- **Options:** Displays the options dialog box that allows you to select a different printer setup. This button is disabled if output is configured to be sent to a file instead of a printer.
- **Install:** Displays the installation dialog box that allows you to add or remove printer devices and printer ports from the `$HOME/.Xpdefaults` file.

### 3.10.2.2 Configuring Printer Setup Options

You can specify the following options on the initial Printer Setup dialog:

- **Output to:** Specify whether to send output to a file or to a printer. If you choose **Printer Specific**, you can send output to any printer type/port combination configured in your `$HOME/.Xpdefaults` file. If the port is `FILE:` (as in this example), Xprinter creates an output file specifically for the specified printer type. If you choose **Generic (File Only)**, print output is sent to an Encapsulated PostScript or generic PCL file.

- **Printer:** This field only appears if you select Output to: Printer Specific. It specifies the name of the default printer type/port to send print output to. Click the Options button to specify a different printer type/port combination.
- **File Name:** This field only appears if you select Output to: Generic (File Only). Type the name of the print file you wish to create. To pipe print output to a command, type a ! character as the first character and then specify the command to pipe output to. For example, to pipe output to the lp command, enter the following:
 

```
!lp -d ps
```
- **EPSF, PCL4, PCL5:** This field only appears if you select Output to: File. Click this button to display a list of output file types and select the desired type. Available types are EPSF (Encapsulated PostScript), PCL4, and PCL5.
- **Orientation:** Specify portrait or landscape.
- **Scale:** To increase the size of the output, specify a value greater than 1.00. To reduce the size, specify a value less than 1.00. For example, a value of 2.00 would double the size of the output; a value of 0.50 would reduce it by half.
- **Copies:** Specify the number of copies to print.

### 3.10.2.3 Adding a New Printer to the List of Printer Choices

To add a new printer to the list of available printers, you must perform the following steps:

1. Define a port, which is an alias for the print command.
2. Associate the port with the printer's PPD file.

#### To Define a New Port

To define a new port using the Printer Setup dialog, perform the following steps:

1. Type the port definition in the Edit Port edit box. Port definitions have the following format:

```
port= print_command
```

The `print_command` is the command for sending output to the printer port. For example, suppose you have two printers: ORION and SIRIUS. Your definitions may look like the following:

```
ORION=rsh bandit "lp -d ps1"
SIRIUS=rsh bandit "lp -d ps2"
```

In this example, both printers are connected to the system `bandit`, so the print command is a remote shell command executed on `bandit`. ORION is a PostScript printer, so the command `lp -d ps1` is executed on `bandit` to print to ORION. SIRIUS is another PostScript printer, so the print command executed on `bandit` to print to SIRIUS is `lp -d ps2`.

2. Click Add/Replace. The new port is now included in the list of current port definitions.
3. Repeat Step 2 for each printer you want to send output to.

#### To Modify an Existing Port

To modify an existing port using the Printer Setup dialog, perform the following steps:

1. Display the Ports dialog. From the Printer Setup dialog, click Install, then Add Printer, then Define New Port.
2. Select the port you want to modify and edit the port information in the *Edit Port* edit box.
3. Click Add/Replace. The modified port is now included in the list of current port definitions.

### To Match a Printer Device to a Port

To match a printer device to a port using the Printer Setup dialog, perform the following steps:

1. Display the Add Printer dialog. From the Printer Setup dialog, click Install and then Add Printer.
2. In the Printer Devices field, select the description that matches the printer you are installing. If no description matches your printer, contact your printer vendor for a printer description (PPD) file.
3. Select the desired port in the Current Port Definitions list box and click Add Selected. The new printer is now included in the list of currently installed printers.

### To Remove an Installed Printer

To remove a printer device/port combination using the Printer Setup dialog, perform the following steps:

1. Display the Printer Installation dialog. From the Printer Setup dialog, click Install.
2. In the Currently Installed Printers list box, select the printer you want to remove and click Remove Selected.

#### 3.10.2.4 Localization Resources

Change the following resource definitions in your application's app-defaults file to translate the Printer Setup widget to another language:

```
*XbPrinterBox.applyLabelString: Apply
*XbPrinterBox.resetLabelString: Reset
*XbPrinterBox.optionsLabelString: Options...
*XbPrinterBox.cancelLabelString: Cancel
*XbPrinterBox.saveLabelString: Save
*XbPrinterBox.installLabelString: Install...
*XbPrinterBox.helpLabelString: Help
*XbPrinterBox.outputLabelString: Output To:
*XbPrinterBox.printerToggleString: Printer Specific
*XbPrinterBox.fileToggleString: Generic (File Only)
*XbPrinterBox.printerLabelString: Printer:
*XbPrinterBox.printerListString: Printer Name:
*XbPrinterBox.reslLabelString: Resolution:
*XbPrinterBox.pageLabelString: Page Size:
*XbPrinterBox.trayLabelString: Paper Tray:
*XbPrinterBox.fileLabelString: File Name:
*XbPrinterBox.orientLabelString: Orientation:
*XbPrinterBox.scaleLabelString: Scale:
*XbPrinterBox.portraitString: Portrait
*XbPrinterBox.landscapeString: Landscape
*XbPrinterBox.copiesLabelString: Copies:
*XbPrinterBox.title: Printer Setup
*XbPrinterBox.optionsDialogTitle: Options
*XbPrinterBox.copyrightDialogTitle: Copyright
```



```

*XbPrinterBox.copyrightOkLabelString: Ok
*XbPrinterBox.optionsOkLabelString: Ok
*XbPrinterBox.optionsCancelLabelString: Cancel
*XbPrinterBox.installDialogTitle: Printer Installation
*XbPrinterBox.installRemoveSelectedLabelString: Remove Selected
*XbPrinterBox.installAddPrinterLabelString: Add Printer...
*XbPrinterBox.installDismissLabelString: Dismiss
*XbPrinterBox.installCancelLabelString: Cancel
*XbPrinterBox.installCurrentPrintersLabelString: Currently Installed Printers
*XbPrinterBox.addPrinterDialogTitle: Add Printer
*XbPrinterBox.addPrinterAddSelectedLabelString: Add Selected
*XbPrinterBox.addPrinterDefineNewPortLabelString: Define New Port...
*XbPrinterBox.addPrinterDismissLabelString: Dismiss
*XbPrinterBox.addPrinterPrinterDevicesLabelString: Printer Devices
*XbPrinterBox.addPrinterCurrentPortDefinitionsLabelString: Current Port
Definitions
*XbPrinterBox.portsDialogTitle: Ports
*XbPrinterBox.portsAddReplaceLabelString: Add-Replace
*XbPrinterBox.portsRemoveLabelString: Remove
*XbPrinterBox.portsSpoolerLabelString: Spooler
*XbPrinterBox.portsDismissLabelString: Dismiss
*XbPrinterBox.portsCancelLabelString: Cancel
*XbPrinterBox.portsPortsLabelString: Ports
*XbPrinterBox.portsEditPortLabelString: Edit Port:

```

### 3.10.3 Customizing the Xprinter Environment

Xprinter allows you to configure options such as paper trays, paper size, and page orientation, so you do *not* need to hard-code these values in your application. You can use Xprinter configuration options to customize your Xprinter environment in the following ways:

- Specify the printer to X Window font mappings
- Customize printer description files
- Modify system and user default printer setup values
- Add a downloadable soft font to your system
- Print Japanese characters

#### Mapping Printer Fonts to X Window Fonts

For compliance with the font-naming scheme recommended in X11, Release 5, Xprinter requires a font name mapping between the names of the available fonts on the printer and the names of the equivalent fonts in the standard XFLD format.

The `xprinter/psstd.fonts` file contains the font mapping for all PostScript printers. This file contains two fields: the face name of the printer font and the corresponding X Window font name.

---



---

**Important:** The `psstd.fonts` file does not list the available fonts on the configured printer. Instead, the list of the available fonts for a printer is read from the printer's corresponding PPD file.

---



---

If your printer contains fonts that are not listed in `psstd.fonts`, you must add an entry for the font in `psstd.fonts` to access the font on the printer. Xprinter uses the font naming convention of X11, Release 5 to specify scalable fonts. A point size of zero represents a scalable font. For instance, if the scalable font Helvetica exists on the

printer, the font name returned from the file would have the following format (assuming a 300 DPI printer):

```
-adobe-helvetica-medium-r-normal--0-0-300-300-p-0-iso8859-1
```

### Customizing Printer Description Files

Xprinter uses the Adobe PostScript Printer Description (PPD) files to describe model-specific features such as the available RAM, fonts, papers trays, supported paper sizes, and other printer-specific information.

Adobe defined the PPD standard so that technologies like Xprinter can be printer independent. Adobe and other printer manufacturers provide PPD files for all PostScript-compatible printers.

Xprinter contains PPD files for about two hundred different printers and plotters. They are installed in `xprinter/ppds`. You can obtain additional printer PPD files from either Adobe or the manufacturer of your printer.

### Modifying Default Printer Setup Values

Xprinter retrieves default printer setup information from the file `.Xpdefaults` in your home directory. If this file does not exist, Xprinter reads the information from the file `xprinter/Xpdefaults`. The Xprinter Printer Setup widget writes modifications to the default setup in `$HOME/.Xpdefaults`. However, it never modifies the default information in the file `xprinter/Xpdefaults`. If the file `$HOME/.Xpdefaults` does not already exist, the Xprinter Printer Setup widget creates it.

Although the most common way to modify the default Printer Setup values is with the Printer Setup widget, which updates `$HOME/.Xpdefaults` automatically, you can also edit this file with any text editor and make changes directly.

You may make the modify the `$HOME/.Xpdefaults` file to do the following:

- Define printer ports
- Match printer types to defined ports
- Specify the default printer
- Specify printer-specific options

### Defining a Port

A printer port is an alias for the print command. It is defined in the `[ports]` section of `$HOME/.Xpdefaults` and appears as part of the Printer Name in the Printer Setup dialog. For example, the following is the first Printer Name in the Printer Setup dialog before you make any changes to `$HOME/.Xpdefaults`:

```
AppleLaserWriter v23.0 PostScript on FILE:
```

In this Printer Name, `FILE:` is the port name. To send output to a printer instead of a file, you must define a port for each printer you want to direct output to. Port entries in the `[ports]` section have the following format:

```
port= print_command
```

The `print_command` is the command for sending output to the printer port. For example, suppose you have two printers: `ORION` and `SIRIUS`. Your `[ports]` section may look like the following example:

```
[ports]
ORION=rsh bandit "lp -d ps1"
SIRIUS=rsh bandit "lp -d ps2"
```

In this example, both printers are connected to the system bandit, so the print command is a remote shell command executed on bandit. ORION is a PostScript printer, so the command `lp -d ps1` is executed on bandit to print to ORION. SIRIUS is another PostScript printer, so the print command executed on bandit to print to SIRIUS is `lp -d ps2`.

If you have a printer connected to your local system, you need to add an entry for it as well. For the local printer, you need to add an entry similar to the following:

```
[ports]
ORION=rsh bandit "lp -d ps1"
SIRIUS=rsh bandit "lp -d ps2"
LOCAL=lp -d ps
```

Your printer port can be any name you choose except `FILE:`, which is the only reserved port name. It causes Xprinter to create a print file formatted specifically for the specified printer type.

You must create an entry in the `[ports]` section for every printer you wish to be able to print to.

### Matching a Printer Type to a Defined Port

Once you've defined a port for each printer, you must tell Xprinter what type of printer is associated with each port. You list device types in the `[devices]` section of the `.Xpdefaults` file. Each entry in the `[devices]` section has the following format:

```
alias= PPD_file driver,port
```

Note that there must be a space between the `PPD_file` and `driver` and a comma between the `driver` and the `port`. The following list describes each part of this entry:

- `alias`: The alias is a descriptive name used to identify the printer. It can be anything you like. The alias is the name of the printer that appears in the printer setup dialog (for example, HP LaserJet III SI PostScript).
- `PPD_file`: The `PPD_file` is the name of the printer description (PPD) file used by the printer, without the `.ppd` extension. Look in the file `xprinter/ppds/filename.map` to identify the PPD file for your printer.
- `driver`: The driver is the type of driver the printer uses. The only valid value is `PostScript`.
- `port`: The port is the printer port as listed in the `[ports]` section of the `.Xpdefaults` file (ORION, SIRIUS, and LOCAL in the example `[ports]` section).

### Printer Configuration Examples

This example demonstrates how to configure the following printers:

Port	Printer Type	Output Type
ORION	HP LaserJet III Si PostScript v52.3	PostScript
SIRIUS	SunPics NeWSprinter20	PostScript
LOCAL	QMS-PS 2200 v52.3	PostScript

1. First, choose an alias for each printer. To make it easy to identify the printer you want to use from the Printer Setup dialog, you might use the following aliases for these printers:

- HP LaserJet PS
- NeWSprinter
- QMS PS

---

**Note:** If you use the Printer Setup dialog to associate ports and PPD files, you cannot specify a printer alias. You must choose an alias from the predefined list that appears in the Printer Devices list box in the Add Printer dialog. The corresponding PPD file is already associated with the printer aliases in this list box.

---

2. Next, identify the PPD file associated with each of these printers. In the `xprinter/ppds/filename.map` file, you can see that the PPD file for the printer on port ORION is `hp3si523.ps`, the PPD file for the printer on port LOCAL is `q2200523.ps`, and the PPD file for the printer on port SIRIUS is `np20.ps`.

In this example, the [devices] section of the `.Xpdefaults` file would be as follows:

```
[devices]
HP LaserJet PS=HP3SI523 PostScript,ORION
NeWSprinter=NP20 PostScript,SIRIUS
QMS PS=Q2200523 PostScript,LOCAL
```

Once you've added these entries to your `.Xpdefaults` file, the following printer choices are available from the printer setup dialog:

```
HP LaserJet PS on ORION
NeWSprinter on SIRIUS
QMS PS on LOCAL
```

### Specifying a Default Printer

Now that you've configured all available printers, you can make one of them the default printer. To make a specific printer the default printer on the printer setup dialog, add an entry of the following format to the [windows] section of the `.Xpdefaults` file:

```
[windows]
device= PPD_file, driver, port
```

You simply need to provide the same information that you used in the [devices] section. Only the format of the entry is different; there is a comma between the PPD\_file and the driver instead of a space.

For example, suppose you want the default printer to be the printer at port ORION. Your [windows] section would look like the following:

```
[windows]
device=HP3SI523,PostScript,ORION
```

The first three sections of your `.Xpdefaults` file looks like the following:

```
[windows]
device=HP3SI523,PostScript,ORION
[ports]
ORION=rsh bandit "lp -d ps"
SIRUS=rsh bandit "lp -d ps2"
LOCAL=lp -d ps
[devices]
HP LaserJet PS=HP3SI523 PostScript,ORION
```

```
NeWSprinter=NP20 PostScript,SIRIUS
QMS PS=Q2200523 PostScript,LOCAL
```

In your default .Xpdefaults file, the [windows] entry looks like the following:

```
[windows]
device=NULL,PostScript,FILE:
```

Since no PPD file is listed (NULL), the default on the printer setup dialog is to print generic PostScript to a file. You can specify the filename and change the type of output to PCL on the Printer Setup dialog.

### Specifying Printer-Specific Options

For each printer defined in the devices section, you can include a section that lists the default printer-specific options for that printer. The options available vary between different printers, but typical options include number of copies, page size, paper tray, and orientation. The following is an example printer-specific section for default printer in the example .Xpdefaults file:

```
[HP3SI523,PostScript]
Scale=0.80
Copies=1
PaperTray=Lower
PageSize=Letter
Orientation=Portrait
DPI=300
```

### Adding a Soft Font

Xprinter can access fonts from two sources: ROM-resident fonts and soft fonts. ROM-resident fonts are built into the printer. To access them, you do not need to add additional information for the printer. Instead, Xprinter determines whether or not a font is resident on a ROM by querying the PPD file for the specified printer.

You can extend the number of fonts available to you by adding soft fonts to your system. When you add a soft font, Xprinter detects it and downloads it as necessary when requested to do so by the application.

To add a soft font to your system, perform these steps in the following sequence:

1. Copy the PostScript Font-Binary (PFB) file from the TypeLibrary diskette to the xprinter/pssoftfonts directory. The TypeLibrary diskette is available from the font vendor.
2. Rename the PBF file to the face name of the font. Typically, TypeLibrary file names are abbreviated. For example, the filename for face name AGaramond-Bold is gdb\_.pfb.
3. Copying the file to this directory makes the file available to Xprinter for downloading to a PostScript printer.
4. Copy the AFM (Adobe Font Metric) file for the font to the directory xprinter/fontmetrics/afm. Again, rename the file to the face name of the font with a .afm extension. Using the example of AGaramond-Bold, the AFM file should be copied to xprinter/fontmetrics/afm/agaramond-bold.afm.
5. Modify the xprinter/psstd.fonts file. This modification is necessary to cause Xprinter to create the X Window font name for the new font and provide the required mapping, as in the following example:

```
AGaramond-Bold, -adobe-garamond-bold-normal--%d-%d-%d-%d-p-0-iso8859-1
```

When Xprinter performs font operations, particularly querying the available fonts and loading fonts, it searches the PPD file for the available ROM fonts. Xprinter also searches the directory `xprinter/pssoffonts` for the available soft fonts.

An Outside In application should not need to consider whether the font originated in the printer ROM or if it is a downloadable soft font. Extending the fonts available to the Outside In application should be completely transparent to the application user.

## 3.11 HP-UX Compiling and Linking

All libraries should be installed into a single directory and the directory should be included in the system's executable path (`$PATH`).

The `libsc_vw.sl` is the only library that needs to be linked with your application. It can be loaded when your application starts by linking it directly at compile time or it can be loaded dynamically by your application using library load functions (for example, `shl_load`).

The shared libraries are dependent on the presence of the X libraries `Xm`, `Xt` and `X11` if vector graphics support is required. It is the application developer's responsibility to ensure that the needed functions from these libraries are present before the Viewer libraries are used.

The following are example command lines used to compile the sample application `apitest` from the `/sdk/samplecode/unix` directory. Note this is only an example. The actual command line required on the developer's system may vary. The example assumes that the include and library file search paths for the technology libraries and any required X libraries are set correctly. If they are not set correctly, the search paths for the include and/or library files must be explicitly specified via the `-I<include file path>` and/or `-L<library file path>` options, respectively, so that the compiler and linker can locate all required files.

```
cc -w -o ../apitest/unix/apitest ../apitest/unix/apitest.c +DAportable -Ae
-I/usr/include -I../common -I/usr/X11R6/include -L/usr/lib -L../demo -lsc_vw
-lsc_fi -lXm -lXt -lX11 -Wl,+s,+b,'$ORIGIN'
```

## 3.12 IBM AIX Compiling and Linking

All libraries should be installed into a single directory and the directory must be included in the system's executable path (`$PATH`).

---

---

**Note:** `$LIBPATH` MUST be set and must point to the directory containing the Outside In Technology.

Outside In technology has been updated to increase performance, at a cost of using more memory. It is possible that this increased memory usage may cause a problem on AIX systems, which can be very conservative in the amount of memory they grant to processes. If your application experiences problems due to memory limitations with Outside In, you may be able to fix this problem by using the "large page" memory model. If you anticipate viewing or converting very large files with Outside In technology, we recommend linking your applications with the `-bmaxdata` flag (for example, `'cc -o foo foo.c -bmaxdata:0x80000000'`). If you are currently seeing illegal instruction errors followed by immediate program exit, this is likely due to not using the large data model.

---

---

The `libsc_vw.a` module is the only library that needs to be linked with your application. It can be loaded when your application starts by linking it directly at compile time or it can be loaded dynamically by your application using library load functions (for example, `load(libsc_vw.o , ...)` and `loadbind`) with the `.o` versions of the libraries provided.

The shared libraries are dependent on the presence of the X libraries `Xm`, `Xt` and `X11` if vector graphics support is required. It is the application developer's responsibility to ensure that the needed functions from these libraries are present before the Viewer libraries are used.

The following is an example command line used to compile the sample application `apitest` from the `/sdk/samplecode/unix` directory. Please note that this command line is only an example. The actual command line required on the developer's system may vary. The example assumes that the include and library file search paths for the technology libraries and any required X libraries are set correctly. If they are not set correctly, the search paths for the include and/or library files must be explicitly specified via the `-I<include file path>` and/or `-L<library file path>` options, respectively, so that the compiler and linker can locate all required files.

Developers may need to use the `-qcplusplus` flag to allow C++ style comments.

```
gcc -w -o ../apitest/unix/apitest ../apitest/unix/apitest.c -I/usr/X11R6/include
-I../common -L../demo -lsc_vw -lsc_fi -lXm -lXt -lX11
```

There is a reason why two versions of some AIX modules have been included in this package. Including the `libsc_vw.o` files on the compiler's command line with a path will cause that path to be hard coded in the executable. The `-L` option does not detect object files, and forcing developers to keep a copy of this file in their own source directory would be clumsy at best. On the other hand, `load` does not work with library archive files, only with object files.

## 3.13 Linux Compiling and Linking

This section provides information about Linux compiling and linking.

### 3.13.1 Library Compatibility

This section provides information about library compatibility.

#### 3.13.1.1 Motif Libraries

On some Linux installations, particularly newer ones, the Motif libraries that are installed are not compatible with the libraries that are used to build the Outside In technology. This is known to be the case with most of the SuSE installations, for example. It is likely that you have a binary incompatibility if you try to build one of the Xwindows-based sample applications included with this product and see an error at compile time that looks like the following:

```
warning: libXm.so.3, needed by ../libsc_vw.so, may conflict with libXm.so.2
```

The proper solution to this problem is to install a compatible Motif library and use it to build your application. Often, the installation discs for your particular Linux platform will have the proper libraries. If your installation discs do not have the libraries, instructions for downloading a binary rpm can be found at <http://rpmfind.net/linux/RPM>.

Remember that if you are doing development, you will also need the proper header files, as well.

The following is a list of the Motif library versions used by Oracle when building and testing the Outside In binaries.

- x86 Linux - OpenMotif v. 2.2.3
- Itanium Linux - OpenMotif v. 2.1.30.

### 3.13.1.2 GLIBC and Compiler Versions

For each Linux platform supported by Outside In, the following table indicates the compiler version used and the minimum required version of the GNU standard C library upon which Outside In depends.

Distribution	Compiler Version	Output Type
x86 Linux	3.3.2	libc.so.6 (2.2.4 or newer)
Itanium Linux	3.3.2	libc.so.6 (2.2.4 or newer)
zSeries Linux	3.3.6	libc.so.6 (2.3.2 or newer)

### 3.13.1.3 Other Libraries

In addition to libc.so.6, Outside In is dependent upon the following libraries:

- libXm.so.3 (in particular, libXm.so.3.0.2 or newer, due to issues in OpenMotif 2.2.2)
- libstdc++.so.5.0.5
- libgcc\_s.so.1
- libXt.so.6

Note that libgcc\_s.so.1 was introduced with GCC 3.0, so any distribution based on a pre-GCC 3.0 compiler will not include libgcc\_s.so.1.

The following table summarizes what is included with the RedHat and SuSE distributions supported by Outside In and what needs to be added/modified to make Outside In run on these systems. Developers may have trouble building with libstdc++.so.5 versions before 5.0.5 due to unversioned symbols. Upgrade to 5.0.5 to correct the problem.

### Libraries on Linux Systems as Distributed (IA32)

Advanced Server 3.0	Support Information
libc.so.6 version	/lib/libc-2.3.2
libstdc++	/usr/lib/libstdc++.so.5.0.3
libgcc_s.so.1	/lib/libgcc_s.so-3.2.3-20030829.so.1
libXm.so.X	libXm.so.2 (OpenMotif 2.1.30-8) libXm.so.3.0.1 (OpenMotif 2.2.2-16)
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has the proper libstdc++.so.5</li> <li>■ Default system install includes libgcc_s.so.1</li> <li>■ Install X libraries</li> </ul>



<b>Advanced Server 4.0</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc-2.3.4
libstdc++	/usr/lib/libstdc++.so.6.0.3
libgcc_s.so.1	/usr/lib/libgcc_s.so-3.4.3-20041213.so.1
libXm.so.X	libXm.so.2 (OpenMotif 2.1.30-11) libXm.so.3.0.2 (OpenMotif 2.2.3-6)
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Install Motif 2.2.3 from distribution media</li> <li>■ Install libstdc++.so.5 (included with gcc 3.2 - 3.3.6)</li> <li>■ Default system install includes libgcc_s.so.1</li> <li>■ Install X libraries</li> </ul>

<b>SuSE 8.1</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc.so.6 (GLIBC 2.2.5)
libstdc++	/usr/lib/libstdc++.so.5.0.0
libgcc_s.so.1	/lib/libgcc_s.so.1
libXm.so.X	libXm.so.3.0.1
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has proper libstdc++.so.5</li> <li>■ Default system install has libgcc_so.1</li> <li>■ Install X libraries</li> </ul>

<b>SuSE 9.0</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc.so.6 (GLIBC 2.3.4)
libstdc++	/usr/lib/libstdc++.so.5.0.6 + old libraries
libgcc_s.so.1	/lib/libgcc_s.so.1
libXm.so.X	libXm.so.3.0.1
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has proper libstdc++.so.5</li> <li>■ Default system install has libgcc_so.1</li> <li>■ Install X libraries</li> </ul>

### **Libraries on Linux Systems as Distributed (IA64)**

<b>SuSE 8.1</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc.so.6 (GLIBC 2.2.5)
libstdc++	/usr/lib/libstdc++.so.5.0.0
libgcc_s.so.1	/lib/libgcc_s.so.1

<b>SuSE 8.1</b>	<b>Support Information</b>
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has proper libstdc++.so.5</li> <li>■ Default system install has libgcc_so.1</li> <li>■ Install X libraries</li> </ul>

<b>SuSE 9.0</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc.so.6 (GLIBC 2.3.4)
libstdc++	/usr/lib/libstdc++.so.5.0.6 + old libraries
libgcc_s.so.1	/lib/libgcc_s.so.1
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has proper libstdc++.so.5</li> <li>■ Default system install has libgcc_so.1</li> <li>■ Install X libraries</li> </ul>

<b>SuSE Linux Enterprise Server 8.0</b>	<b>Support Information</b>
libc.so.6 version	/lib/libc.so.6.1 (GLIBC 2.2.6)
libstdc++	/usr/lib/libstdc++-libc6.2-2.so.3 /usr/lib/libstdc++.so.5.0.0
libgcc_s.so.1	/lib/libgcc_s.so.1
Required to Use Outside In	<ul style="list-style-type: none"> <li>■ Update to &gt;= libXm.so.3.0.2 (OpenMotif &gt;=2.2.3)</li> <li>■ Default system install has proper libstdc++.so.5.</li> <li>■ Default system install has libgcc_so.1</li> <li>■ Install X libraries</li> </ul>

### 3.13.2 Compiling and Linking

All libraries should be installed into a single directory and the directory should be included in the system's executable path (\$PATH).

The libsc\_vw.so module is the only library that must be linked with your application. It can be loaded when your application starts by linking it directly at compile time or it can be loaded dynamically by your application using library load functions (for example, dlopen).

The shared libraries are dependent on the presence of the X libraries Xm, Xt and X11 if vector graphics support is required. It is the application developer's responsibility to ensure that the needed functions from these libraries are present before the libraries are used.

The following is an example command line used to compile the sample application apitest from the /sdk/samplecode/unix directory. Please note that this command line is only an example. The actual command line required on the developer's system may vary. The example assumes that the include and library file search paths for the technology libraries and any required X libraries are set correctly. If they are not set correctly, the search paths for the include and/or library files must be explicitly

specified via the `-I<include file path>` and/or `-L<library file path>` options, respectively, so that the compiler and linker can locate all required files.

```
gcc -w -o ../apitest/unix/apitest ../apitest/unix/apitest.c -I../common
-I/usr/X11R6/include -L../demo -lsc_vw -lsc_fi -L/usr/X11R6/lib -lXm -lXt -lX11
-Wl,-rpath,../demo -Wl,-rpath,'${ORIGIN}'
```

## 3.14 Sun Solaris Compiling and Linking

This product does not support the old Solaris BSD mode.

All libraries should be installed into a single directory.

The `libsc_vw.so` module is the only library that must be linked with your application. It can be loaded when your application starts by linking it directly at compile time or it can be loaded dynamically by your application using library load functions (for example, `dlopen`).

The shared libraries are dependent on the presence of the X libraries `Xm`, `Xt` and `X11` if vector graphics support is required. It is the application developer's responsibility to ensure that the needed functions from these libraries are present before the libraries are used.

The following is an example command line used to compile the sample application `apitest` from the `/sdk/samplecode/unix` directory. Please note that this command line is only an example. The actual command line required on the developer's system may vary. The example assumes that the include and library file search paths for the technology libraries and any required X libraries are set correctly. If they are not set correctly, the search paths for the include and/or library files must be explicitly specified via the `-I<include file path>` and/or `-L<library file path>` options, respectively, so that the compiler and linker can locate all required files.

Developers may need to use the `-xc` flag to allow C++ style comments.

### 3.14.1 Solaris SPARC

```
cc -w -o ../apitest/unix/apitest ../apitest/unix/apitest.c -I/usr/include
-I/usr/dt/share/include -I../common -L../demo -L/usr/lib -L/lib -lXm -lXt
-lX11 -lsc_vw -lsc_fi -Wl,-R,'${ORIGIN}'
```

**Note:** When running the 32-bit SPARC binaries on Solaris 8 or 9 systems, you may see the following error:

```
ld.so.1: simple: fatal: libm.so.1: version `SUNW_1.1.1' not found
(required by file ./libsc_vw.so)
```

This is due to a missing system patch. Please apply one of the following patches (or its successor) to your system to correct.

- For Solaris 8 - Patch 111721-04
- For Solaris 9 - Patch 111722-04

### 3.14.2 Solaris x86

---

**Note:** Your system will require Sun patch 108436, which contains the C++ library `libCstd.so.1`.

---

```
cc -w -o ../apitest/unix/apitest ../apitest/unix/apitest.c -I/usr/include
-I/usr/dt/share/include -I../common -L../demo -L/usr/lib -L/lib -lXm -lXt
-lX11 -lsc_vw -lsc_fi -Wl,-R,'${ORIGIN}'
```

---

---

## Using the View Window

The process of accessing the Viewer, creating the view window and sending/receiving messages is platform-dependent. However, once you have successfully created a view window, the message and structures for viewing files and manipulating the view window are fully portable.

### 4.1 Viewing

Files are viewed by sending the `SCCVW_VIEWFILE` message. This message allows the caller to specify the file to be viewed in a number of ways based on the operating system being used. For instance, under Windows, the developer can specify a path name in Unicode, ANSI or OEM character sets. The message also allows the developer to specify a number of other parameters, including a name to use in display situations (this is helpful if the file is a temporary file and the real file name is known), a flag indicating the file should be deleted when it is closed (again this can be helpful with temporary files), and a parameter that forces the file to be viewed as a text or hex file.

At any time after an `SCCVW_VIEWFILE` call, the developer may call `SCCVW_GETFILEINFO`. This message returns information on the file being viewed and a text string indicating the file's format (for example, WordPerfect 4.2 or Excel 5.0). This message is often called in response to the `SCCVW_FILECHANGE` callback message.

In certain situations the viewer may request that another file be viewed by sending an `SCCVW_VIEWTHISFILE` message to the developer. The developer may ignore this message, in which case nothing will happen, or the developer may create another view window and pass on the request through the `SCCVW_VIEWFILE` message. There are currently two cases where this happens. The first is when the user double clicks on an entry in a view of an archive file. The archive display engine decompresses that file into a temporary file and issues a `SCCVW_VIEWTHISFILE` message to the developer. The second case is when the user double clicks on a non-OLE graphic that is embedded or linked to a file. Again the graphic is extracted to a temporary file and an `SCCVW_VIEWTHISFILE` is sent. These cases represent significant functionality to the user and it is recommended that all OEMs support the `SCCVW_VIEWTHISFILE` message.

- `SCCVW_VIEWFILE`: View a file
- `SCCVW_FILECHANGE`: Notifies developer that the file being viewed has changed
- `SCCVW_GETFILEINFO`: Gets information about the currently viewed file
- `SCCVW_VIEWTHISFILE`: Notifies developer that another file should be viewed

## 4.2 Printing

The full printing functionality of the view window can be reached by sending a single `SCCVW_PRINT` message. This message is totally automatic, handling all dialogs and other user interactions needed to print on any given platform. The viewer follows each operating system's guidelines for how the print UI should work.

If more control over the printing process is required, the `SCCVW_PRINTEX` message may be used. This message allows the developer to override any of the view window's print options and specify extra platform-specific print options while still having the view window do most of the work. For instance, under Windows, the developer may pass his or her own printer DC or specify an alternate `AbortProc` to use.

- `SCCVW_PRINT`: Prints the file currently being viewed
- `SCCVW_PRINTEX`: Prints the file under developer control
- `SCCVW_PRINTSETUP`: Invokes platform dependent print setup dialog

## 4.3 Copying

The Viewer activates copy/paste functionality for each supported platform via the `SCCVW_COPYTOCLIP` message. When the developer calls this message, the view window generates one or more renditions of the area selected in the view and transfers them to the operating system using appropriate system calls. The option `SCCID_TOCLIPBOARD` allows the developer to tailor what is sent to the operating system.

At any time, the developer may call `SCCVW_GETCLIPINFO` to see if anything is selected in the view window. The developer will receive an `SCCVW_SELCHANGE` message when the selection status has changed. Used in conjunction, these two messages can be used to enable or disable a Copy button or menu item.

- `SCCVW_COPYTOCLIP`: Copies current selection to clipboard
- `SCCVW_SELCHANGE`: Notifies developer that the selection state has changed
- `SCCVW_GETCLIPINFO`: Gets the current state of the selection

## 4.4 Menus, Dialogs and Options

The Viewer provides a large array of options that give the developer and the user great control over how files look in the view window, how files get printed, how files are copied to the clipboard and a number of other aspects of the technology. The developer has two avenues available when providing these options to the user.

1. The developer can code his or her own dialogs and menus and call the `SCCVW_SETOPTION` and `SCCVW_GETOPTION` messages directly.
2. The developer can use the menus and dialogs that are part of the Viewer. Menus and dialogs are only available on certain platforms. See the implementation details for your platform for more information.

These courses are not mutually exclusive and developers may mix the viewer technologies menu and dialogs with their own to get just the level of functionality he or she desires.

### 4.4.1 Setting Options Directly

Options can be set with the `SCCVW_SETOPTION` message and retrieved with the `SCCVW_GETOPTION` message. Both of these messages can set either the current value of an option or the default value of an option. The current value is the value that is active in the view window. Setting the current value of an option has an immediate effect on the view window. The default value is the value that a new view window will begin with, setting this value will have no effect on the current view window.

There are cases where the developer may wish to monitor changes to an option for display or user-interaction purposes. The `SCCVW_OPTIONCHANGE` message is sent whenever an option is changed.

### 4.4.2 Dialog Boxes

There are three dialogs that the Viewer makes available to the developer. These dialogs are the display options dialog, the print options dialog and the clipboard options dialog. These dialogs are accessed through the `SCCVW_DODIALOG` message, and are totally automatic. All the developer has to do is call `SCCVW_DODIALOG` with the correct dialog ID and the rest of the interaction is handled by the Viewer.

The IDs used in `SCCVW_DODIALOG` are as follows:

- `SCCID_DISPLAYOPTIONSIALOG`: display options
- `SCCID_PRINTOPTIONSIALOG`: print options
- `SCCID_CLIPBOARDOPTIONSIALOG`: clipboard options

### 4.4.3 Help in Dialogs

Whenever one of the Viewer's dialogs is invoked, the developer may receive `SCCVW_DOHELP` messages along with an `SCCID` indicating which dialog is displayed. The developer may then invoke help information for that dialog. There is no default action for this message, so the developer should either handle the message or set the `SCCVW_DIALOG_NOHELP` bit in the `SCCID_DIALOGFLAGS` option which removes the Help button from all the dialogs.

### 4.4.4 Display Engine Specific Menus

Each type of display engine (Document, Bitmap, Archive, etc.) has functions that are unique to that type of file. For instance, zooming, rotation and dithering are functions normally associated with graphic images, but not with spreadsheets. To handle these specialized tasks, each display engine has a menu that is tailored just for it. This menu is made available to the developer through the `SCCVW_GETDISPLAYINFO` message.

Some operating systems have the concept of a context menu activated by a right mouse click. On these systems, the view window will automatically handle the right click and pop-up the display engines menu plus some other menu items that are OS specific. This feature may be overridden by handling the `SCCVW_CONTEXTMENU` message.

The interaction between the menu, the application and the Viewer is operating-system specific.

- `SCCVW_SETOPTION`: Sets the current or default value of an option.
- `SCCVW_GETOPTION`: Gets the current or default value of an option.
- `SCCVW_DODIALOG`: Invokes a built-in dialog.

- `SCCVW_DISPLAYCHANGE`: Notifies the developer that the display engine has changed.
- `SCCVW_GETDISPLAYINFO`: Gets information about the current display engine including its menu.
- `SCCVW_CONTEXTMENU`: Notifies the developer that a context menu is going to be invoked and allows the developer to override it.
- `SCCVW_DOHELP`: Notifies the developer that the Help button has been pressed in a dialog.
- `SCCVW_ENABLEAPP`: Notifies the developer that the application should be disabled/enabled. Sent before and after dialogs and printing.

## 4.5 Searching

The view window offers basic text searching of documents, spreadsheets and databases. The developer can supply the UI and call `SCCVW_SEARCH` or let the viewer supply the UI by calling `SCCVW_SEARCHDIALOG`. In either case, the `SCCVW_SEARCHNEXT` message may then be called to repeat the search, searching forward or backward.

- `SCCVW_SEARCH`: Search for a text string
- `SCCVW_SEARCHDIALOG`: Bring up a search dialog and search
- `SCCVW_SEARCHNEXT`: Search for the next occurrence of a string

## 4.6 Raw Text and Annotations

During processing of any document, the developer has the option of receiving `SCCVW_RAWTEXTEVENT` messages. This message informs the developer that additional text is available. Once text is available, the developer can use `SCCVW_GETRAWTEXT` to retrieve blocks of raw text for any area of the document. Any text position can be mapped into a viewer position using `SCCVW_MAPPOSITION`. The developer can highlight text, hide text and/or insert icons and bitmaps at defined viewer positions using `SCCVW_ADDANNOTATION`. Once these annotations are added, the developer may use `SCCVW_GOTOANNOTATION` to jump to any given annotation or set of annotations. The developer may also receive `SCCVW_ANNOTATIONEVENT` messages when the user transitions, clicks, or double clicks on any annotation.

The format of a position in the document is a `SCCVWPOS` structure. The `SCCVW_MAPPOSITION` message provides a bidirectional method of translating between an actual character count (`ACC`) and an `SCCVWPOS`. The `SCCVW_FINDPOSITION` message provides the ability to locate a position based on certain input criteria including the current selection positions. `SCCVW_SETSELECTION` allows developer control of the selection. `SCCVW_FINDANNOTATION` provides a powerful method of locating an annotation using numerous options. `SCCVW_DISPLAYPOSITION` can then be used to bring the annotation into view. `SCCVW_CLEARANNOTATIONS` supports selective clearing of previously defined annotations. `SCCVW_HILITESTYLE` allows the developer to define a style that can then be referenced when adding highlight annotations.

Generally, this functionality has been used to highlight and move around search hits in indexing applications or to insert hyperlinks into the document.

To receive `SCCVW_RAWTEXTEVENT` messages, the developer must set the `SCCVW_SYSTEM_RAWTEXT` flag in the `SCCVW_SYSTEMFLAGS` option.



The value of this option is reset to 0 for every new view window, so it must be set every time a new window is created.

- `SCCVW_RAWTEXTEVENT`: Notifies the developer that more text is available.
- `SCCVW_GETRAWTEXT`: Returns raw text blocks.
- `SCCVW_ADDANNOTATION`: Adds an annotation into the view.
- `SCCVW_CLEARANNOTATIONS`: Clears some or all annotations.
- `SCCVW_GOTOANNOTATION`: Go to a certain annotation.
- `SCCVW_ANNOTATIONEVENT`: Notifies the developer that an action has been taken on an annotation.
- `SCCVW_FINDANNOTATION`: Finds an annotation given certain input criteria.
- `SCCVW_FINDPOSITION`: Finds a position given certain input criteria.
- `SCCVW_HILITESTYLE`: Defines an annotation highlight style for later reference when adding annotations.
- `SCCVW_MAPPOSITION`: Maps between an actual character count and `SCCVWPOS`.
- `SCCVW_DISPLAYPOSITION`: Finds an annotation given certain input criteria.
- `SCCVW_SETSELECTION`: Sets the current selection positions.

## 4.7 Drawing Pages

The view window has the ability to draw pages to an arbitrary area of an arbitrary output device. The developer must provide two rectangles, the first (output) is the actual area on the display device that should be filled. The second (format) is the area in twips (Windows) (1440 twips = one inch) or pixels (UNIX) that will be used to determine text positioning and wrapping. For instance, a Windows developer may want a thumbnail of a standard 8.5 x 11 inch page. In this case he would provide a small output area, maybe 85 x 110 pixels, but a 8.5 x 11 inch (converted to twips) format area.

Once it is initialized, the `SCCVW_DRAWPAGE` message can draw any page in the document.

- `SCCVW_DRAWPAGE`: Draws a page to the specified device
- `SCCVW_INITDRAWPAGE`: Initializes the DrawPage process
- `SCCVW_DEINITDRAWPAGE`: De-initializes the DrawPage process

## 4.8 Controlling the Scroll Bars

By default, the view window provides scroll bars for moving around the document, but some developers may have special UI considerations that make this behavior undesirable. The view window provides options and messages that allow the developer to override the view window's scrolling behavior. The `SCCID_SCROLLFLAGS` option allows the developer to selectively remove the horizontal and vertical scroll bars from the view window. The developer may then maintain his own scroll bars or other controls by handling the following notification messages:

- `SCCVW_SETHSCROLLSTATE`: Notifies the developer of a new state for the horizontal scroll bar.

- `SCCVW_SETVSCROLLSTATE`: Notifies the developer of a new state for the vertical scroll bar.
- `SCCVW_SETHSCROLLPOSITION`: Notifies the developer of a new position for the horizontal scroll bar's thumb.
- `SCCVW_SETVSCROLLPOSITION`: Notifies the developer of a new position for the vertical scroll bar's thumb.
- `SCCVW_SETHSCROLLRANGE`: Notifies the developer of a new range for the horizontal scroll bar.
- `SCCVW_SETVSCROLLRANGE`: Notifies the developer of a new range for the vertical scroll bar.
- `SCCVW_SETHSCROLLPAGESIZE`: Notifies the developer of a new size for the horizontal scroll bar's thumb.
- `SCCVW_SETVSCROLLPAGESIZE`: Notifies the developer of a new size for the vertical scroll bar's thumb.

## 4.9 Character Sets and Character Encoding

There are three distinct areas where character sets (international language support) and character encoding (1 Byte, DBCS, 2 Byte) have an important role in the Viewer.

- In the strings passed between the developer and the viewer through this API.
- In the specification of files by the developer in the `SCCVWVIEWFILE40` or `SCCVWVIEWFILE80` structure.
- In the actual viewing of files containing various character sets and encoding.

### 4.9.1 In the API

All strings sent and received by the view window are defined to be in a particular character set/encoding for any given platform.

For example, using `SCCVW_SETOPTION` to set the `SCCID_PRINTJOBNAME` option does not let the developer define the character set or encoding of the string passed. It is pre-defined by the Viewer for the platform on which the software is running.

### 4.9.2 In File Specification

The sole exception to the rule described in the preceding section appears in the `SCCVWVIEWFILE40` or `SCCVWVIEWFILE80` structure, where the developer has a number of options in the character set/encoding of the file/path information. This gives the developer more flexibility in what he/she can pass through this critical API. For example, under Windows, the developer might want to pass an OEM, ANSI or Unicode path to the Viewer.

### 4.9.3 In Viewing

In the current implementation of the Viewer SDK, it is the viewer's responsibility to convert all character sets coming from the filters to an appropriate character set based on the available fonts. The technology includes support for most languages, including those based on DBCS. This creates two basic scenarios concerning character sets and how they are displayed.

- Scenario 1:

If the file was created by an application native to the platform on which it is being viewed, the characters are generally piped directly through the system with no modification. This has the advantage of perfect character mapping even in fonts where the glyphs themselves are different. For example a Word for Windows file being viewed by the Windows version of the Viewer should view with all characters displaying correctly, even characters in symbol sets such as Wingdings.

- Scenario 2:

If the file was created on a different platform or has a private character set (WordPerfect or DCA/RFT for example) the characters are mapped into the native character set using mapping tables. This produces loss of character integrity in a number of cases. These cases include characters that do not have a corresponding character in the target character set (for example, the WordPerfect set has a large number of symbols that do not appear in ANSI or Macintosh character sets) and fonts where the glyph set is different. The technology uses a robust character/font mapping architecture that attempts to locate a font containing the required character glyph when the original font is not available.

While these two cases cover most of the character set interactions you will see, the number of permutations on this subject is huge and space prohibits us from going into the caveats for every file format in this document. If you have specific questions concerning this subject please contact Oracle Support.

## 4.10 API Functions

This section provides information about API functions.

### 4.10.1 VWSetStatCallback

This function sets up a callback that the technology will periodically call into to verify that the file is still being processed. The customer can use this with a monitoring process to help identify files that may be hung. Since this function will be called more frequently than other callbacks, it is implemented as a separate function.

#### Use of the Status Callback Function

An application's status callback function will be called periodically by Outside In to provide a status message. Currently, the only status message defined is OIT\_STATUS\_WORKING, which provides a "sign of life" that can be used during unusually long processing operations to verify that Outside In has not stopped working. If the application decides that it would not like to continue processing the current document, it may use the return value from this function to tell Outside In to abort.

The status callback function has two return values defined:

- OIT\_STATUS\_CONTINUE: Tells Outside In to continue processing the current document.
- OIT\_STATUS\_ABORT: Tells Outside In to stop processing the current document.

The following is an example of a minimal status callback function.

```
VTDWORD MyStatusCallback( VTHANDLE hUnique, VTDWORD dwID, VTSYSVAL
pCallbackData, VTSYSVAL pAppData)
{
    if(dwID == OIT_STATUS_WORKING)
    {
        if( checkNeedToAbort( pAppData ) )
            return (OIT_STATUS_ABORT);
    }
}
```

```
    }  
  
    return (OIT_STATUS_CONTINUE);  
}
```

### Prototype

```
DWORD VWSetStatCallback(VWSTATCALLBACKFN pCallback,  
    VTHANDLE hUnique,  
    VTSYSVAL pAppData)
```

### Parameters

- `pCallback`: Pointer to a the callback function.
- `hUnique`: Handle to the view window.
- `pAppData`: User-defined data. Outside In will never use this value other than to provide it to the callback function.

The callback function should be of type `VWSTATCALLBACKFN`. This function has the following signature:

```
(VTHANDLE hUnique, VTDWORD dwID, VTSYSVAL pCallbackData, VTSYSVAL pAppData)
```

- `hUnique`: Handle for an `hExport`.
- `dwID`: Currently only `OIT_STATUS_WORKING`
- `pCallbackData`; Currently will always be `NULL`
- `pAppData`; User-defined data provided to `VWSetStatCallback`

### Return Values

- `SCCERR_OK`: If successful. Otherwise, one of the error values in `scerr.h` is returned.

Messages are the primary way in which the developer and the view window interact. The implementation of message passing is different for each operating systems supported, but the messages themselves and the structures passed are for the most part generic.

Messages marked with an asterisk (\*) are sent from the developer to the view window.

Messages marked with double asterisks (\*\*) are sent from the view window to the developer.

Many messages pass pointers to structures in their IParam. All structures passed by the SCCVW messages are C structures. The packing of these structures compiled for Windows have 8-byte boundaries, per Microsoft's requirement for Windows applications.

## 5.1 SCCVW\_ADDANNOTATION

\* This message allows the parent to add various annotations to a viewed document.

### Parameters

- wParam: Type of annotation to add, which should be one of the following:
  - SCCVW\_HIDEPARABREAK: Removes a paragraph break. This value is only valid when viewing word processing, spreadsheet/database, or metafile documents. Note: This flag does not just cause the paragraph break to be whited out, but actually removes it from the view.
  - SCCVW\_HIDETEXT: Removes an area of text. This may be useful if the document contains tags or information that is useful to your application but you do not want the user to see. Note: This flag does not just cause the text to be whited out, but actually removes the text from the view.
  - SCCVW\_HILITETEXT: Change the foreground and background color of an area of text.
  - SCCVW\_INSERTBITMAP: Insert a bitmap between two characters. This value is only valid when viewing word processing documents. Note: This flag is only supported on the Windows platform.
  - SCCVW\_INSERTICON: Insert an icon between two characters. This value is only valid when viewing word processing documents. Note: This flag is only supported on the Windows platform.

- SCCVW\_INSERTPARABREAK: Insert a paragraph break between two characters. This value is only valid when viewing word processing, spreadsheet/database, or metafile documents.
- SCCVW\_INSERTTEXT: Insert text between two characters. This value is only valid when viewing word processing, spreadsheet/database, or metafile documents.
- IParam: A pointer to a structure of the type SCCVWHIDEPARABREAK80, SCCVWHIDETEXT80, SCCVWHILITETEXT41, SCCVWINSERTBITMAP42, SCCVWINSERTICON41, SCCVWINSERTPARABREAK80, or SCCVWINSERTTEXT80. Also backwards compatible with SCCVWHILITETEXT40, SCCVWINSERTICON40, or SCCVWHIDETEXT40 and SCCVWHIDETEXT41.

### Return Value

- SCCVWERR\_OK: The annotation was added successfully.
- SCCVWERR\_ALLOCFAILED: There is not enough memory to add the annotation.

### Comments

Annotations can be added in any order, but the underlying code is optimized for additions to the end of the list. It takes many hundreds of annotations for this effect to be noticeable. The insertion of icons and bitmaps is only supported on the Windows platforms. Adding annotations to unprintable characters may not always display the annotation.

### Platforms

Windows, X Windows

## 5.1.1 SCCVWHIDEPARABREAK80 Structure

This structure is used by the SCCVW\_ADDANNOTATION message to specify a paragraph break to be deleted.

### Structure

A C data structure defined in sccvw as follows:

```
typedef struct SCCVWHIDEPARABREAK80tag
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    SCCVWPOS   sParaPos;
    VTDWORD    dwData;
} SCCVWHIDEPARABREAK80, * PSCCVWHIDEPARABREAK80;
```

### Parameters

- dwSize: Must be set by the OEM to sizeof(SCCVWHIDEPARABREAK80).
- dwUser: Unique ID that may be used later to remove, jump to or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- sParaPos: Position of first paragraph break to be hidden. Result of SCCVWMAKEPOS(id,offset) macro or result of SCCVW\_MAPPOSITION message. Note: Using the SCCVWMAKEPOS macro is no longer recommended

but supported for backward compatibility. See the Comments section of the SCCVW\_GETRAWTEXT message section.

- `dwData`: Additional data associated with this annotation. It can later be retrieved using `SCCVW_FINDANNOTATION`.

### 5.1.2 SCCVWHIDETEXT80 Structure

This structure is used by the `SCCVW_ADDANNOTATION` message to remove an area of text. Also backward compatible with `SCCVWHIDETEXT40` and `SCCVWHIDETEXT41`.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct SCCVWHIDETEXT80tag
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    SCCVWPOS   sStartPos;
    SCCVWPOS   sEndPos;
    VTDWORD    dwData;
} SCCVWHIDETEXT80, * PSCCVWHIDETEXT80;
```

#### Parameters

- `dwSize`: Must be set by the OEM to `sizeof(SCCVWHIDETEXT80)`.
- `dwUser`: Unique ID that may be used later to remove, jump to or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- `sStartPos`: Position of first character to be hidden. Result of `SCCVW_MAPACCTOPOS` OR result of `SCCVWMAKEPOS(id,offset)`. Note: Using the `SCCVWMAKEPOS` macro is no longer recommended but supported for backward compatibility. See the Comments section of the `SCCVW_GETRAWTEXT` message section.
- `sEndPos`: Position of last character to be hidden. Result of `SCCVW_MAPACCTOPOS` OR result of `SCCVWMAKEPOS(id,offset)`. Note: Using the `SCCVWMAKEPOS` macro is no longer recommended but supported for backward compatibility. See the Comments section of the `SCCVW_GETRAWTEXT` messages.
- `dwData`: Additional data associated with this annotation. It can later be retrieved using `SCCVW_FINDANNOTATION` or `SCCVW_GETANNOTATIONINFO`.

### 5.1.3 SCCVWHILITETEXT41 Structure

This structure is used by the `SCCVW_ADDANNOTATION` message to specify an area of text to color. Also backward compatible with `SCCVWHILITETEXT40`.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct SCCVWHILITETEXT41tag
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
```

```
SCCVWPOS    sStartPos;  
SCCVWPOS    sEndPos;  
VTDWORD     dwInteraction;  
VTDWORD     dwData;  
VTDWORD     dwDummy1;  
VTDWORD     dwDummy2;  
VTDWORD     dwDisplay;  
} SCCVWHILITETEXT41;
```

### Parameters

- **dwSize:** Must be set by the OEM to sizeof(SCCVWHILITETEXT41).
- **dwUser:** Unique ID that may be used later to remove, jump to or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- **sStartPos:** Position of first character to be highlighted. Result of SCCVWMAKEPOS(id,offset) macro or result of SCCVW\_MAPPOSITION message. Note: Using the SCCVWMAKEPOS macro is no longer recommended but supported for backward compatibility. See the Comments section of the SCCVW\_GETRAWTEXT message section.
- **sEndPos:** Position of last character to be highlighted. Result of SCCVWMAKEPOS(id,offset) macro or result of SCCVW\_MAPPOSITION message. Note: Using the SCCVWMAKEPOS macro is no longer recommended but supported for backward compatibility. See the Comments section of the SCCVW\_GETRAWTEXT message section.
- **dwInteraction:** The type of events that the OEM would like to receive for this annotation. Note: Interaction events are only supported in word processor formats. Should be one or more of the following OR-ed together:
  - **SCCVW\_EVENTSINGLECLICK:** If set, parent window will receive a SCCVW\_ANNOTATIONEVENT when the highlighted text is clicked.
  - **SCCVW\_EVENTDOUBLECLICK:** If set, parent window will receive a SCCVW\_ANNOTATIONEVENT when the highlighted text is double-clicked.
  - **SCCVW\_EVENTTRANSITIONINTO:** If set, parent window will receive a SCCVW\_ANNOTATIONEVENT when the cursor transitions into the annotation.
  - **SCCVW\_EVENTTRANSITIONOUTOF:** If set, parent window will receive a SCCVW\_ANNOTATIONEVENT when the cursor transitions out of the annotation.
- **dwData:** Additional data associated with this annotation. It can later be retrieved using SCCVW\_FINDANNOTATION.
- **dwDummy1;** Reserved
- **dwDummy2;** Reserved
- **dwDisplay:** 32 bits packed with information about how the highlight should display. If SCCVW\_USESTYLE is set, then the LOWORD contains the style number to use as defined by the SCCVW\_HILITESTYLE message. If styles are not used, then set using one of the values in the following table:
  - **SCCVW\_BDEFAULT** (Do not change the background color) OR-ed with **SCCVW\_FDEFAULT** (Do not change the foreground color)



- SCCVW\_BBLACK (Black background) OR-ed with SCCVW\_FBLACK (Black foreground)
- SCCVW\_BDARKRED (Dark Red background) OR-ed with SCCVW\_FDARKRED (Dark Red foreground)
- SCCVW\_BDARKGREEN (Dark Green background) OR-ed with SCCVW\_FDARKGREEN (Dark Green foreground)
- SCCVW\_BDARKYELLOW (Dark Yellow background) OR-ed with SCCVW\_FDARKYELLOW (Dark Yellow foreground)
- SCCVW\_BDARKBLUE (Dark Blue background) OR-ed with SCCVW\_FDARKBLUE (Dark Blue foreground)
- SCCVW\_BDARKMAGENTA (Dark Magenta background) OR-ed with SCCVW\_FDARKMAGENTA (Dark Magenta foreground)
- SCCVW\_BDARKCYAN (Dark Cyan background) OR-ed with SCCVW\_FDARKCYAN (Dark Cyan foreground)
- SCCVW\_BLIGHTGRAY (Light Gray background) OR-ed with SCCVW\_FLIGHTGRAY (Light Gray foreground)
- SCCVW\_BGRAY (Gray background) OR-ed with SCCVW\_FGRAY (Gray foreground)
- SCCVW\_BRED (Red background) OR-ed with SCCVW\_FRED (Red foreground)
- SCCVW\_BGREEN (Green background) OR-ed with SCCVW\_FGREEN (Green foreground)
- SCCVW\_BYELLOW (Yellow background) OR-ed with SCCVW\_FYELLOW (Yellow foreground)
- SCCVW\_BBLUE (Blue background) OR-ed with SCCVW\_FBLUE (Blue foreground)
- SCCVW\_BMAGENTA (Magenta background) OR-ed with SCCVW\_FMAGENTA (Magenta foreground)
- SCCVW\_BCYAN (Cyan background) OR-ed with SCCVW\_FCYAN (Cyan foreground)
- SCCVW\_BWHITE (White background) OR-ed with SCCVW\_FWHITE (White foreground)

#### 5.1.4 SCCVWINSERTBITMAP42 Structure (Windows Only)

This structure is used by the SCCVW\_ADDANNOTATION message to insert a bitmap at a specific location in the text.

##### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    VTDWORD    dwData;
    SCCVWPOS   sBitmapPos;
    HICON      hBitmap;
```

```
VTDWORD    dwInteraction;  
} SCCVWINSERTBITMAP42;
```

### Parameters

- **dwSize:** Must be set by the OEM to sizeof(SCCVWINSERTBITMAP42).
- **dwUser:** Unique ID that may be used later to remove, jump to, or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- **dwData:** Additional data associated with this annotation. It can later be retrieved using SCCVW\_FINDANNOTATION or SCCVW\_GETANNOTATIONINFO.
- **sBitmapPos;** Position of the character before which the icon will be appear. Result of SCCVWMAKEPOS(id,offset) macro OR result of SCCVW\_MAPACCTOPOS. Note: Using the SCCVWMAKEPOS macro is no longer recommended but supported for backward compatibility. See the Comments section of the SCCVW\_GETRAWTEXT message section.
- **hBitmap:** Handle to the Windows bitmap to display.
- **dwInteraction:** The type of events that the OEM would like to receive for this annotation. Note: Interaction events are only supported in word processor formats. Should be one or more of the following OR-ed together:
  - **SCCVW\_EVENTSINGLECLICK:** If set, parent window will receive an SCCVW\_ANNOTATIONEVENT when the icon is clicked.
  - **SCCVW\_EVENTDOUBLECLICK:** If set, parent window will receive an SCCVW\_ANNOTATIONEVENT when the icon is double-clicked.
  - **SCCVW\_EVENTTRANSITIONINTO:** If set, parent window will receive an SCCVW\_ANNOTATIONEVENT when the cursor transitions into the icon.
  - **SCCVW\_EVENTTRANSITIONOUTOF:** If set, parent window will receive an SCCVW\_ANNOTATIONEVENT when the cursor transitions out of the icon.

### 5.1.5 SCCVWINSERTICON41 Structure (Windows Only)

This structure is used by the SCCVW\_ADDANNOTATION message insert an icon at a specific location in the text. Also backward compatible with SCCVWINSERTICON40.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct  
{  
    VTDWORD    dwSize;  
    VTDWORD    dwUser;  
    VTDWORD    dwData;  
    SCCVWPOS    sIconPos;  
    HICON       hIcon;  
    VTDWORD    dwInteraction;  
} SCCVWINSERTICON41;
```

#### Parameters

- **dwSize:** Must be set by the OEM to sizeof(SCCVWINSERTICON41).

- **dwUser:** Unique ID that may be used later to remove, jump to, or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- **dwData:** Additional data associated with this annotation. It can later be retrieved using `SCCVW_FINDANNOTATION` or `SCCVW_GETANNOTATIONINFO`.
- **sIconPos:** Position of the character before which the icon will be appear. Result of `SCCVWMAKEPOS(id,offset)` macro OR result of `SCCVW_MAPACCTOPOS`. Note: Using the `SCCVWMAKEPOS` macro is no longer recommended but supported for backward compatibility. See the Comments section of the `SCCVW_GETRAWTEXT` message section.
- **hIcon:** Handle to the icon to display.
- **dwInteraction:** The type of events that the OEM would like to receive for this annotation. Note: Interaction events are only supported in word processor formats. Should be one or more of the following OR-ed together:
  - `SCCVW_EVENTSINGLECLICK`: If set, parent window will receive an `SCCVW_ANNOTATIONEVENT` when the icon is clicked.
  - `SCCVW_EVENTDOUBLECLICK`: If set, parent window will receive an `SCCVW_ANNOTATIONEVENT` when the icon is double-clicked.
  - `SCCVW_EVENTTRANSITIONINTO`: If set, parent window will receive an `SCCVW_ANNOTATIONEVENT` when the cursor transitions into the icon.
  - `SCCVW_EVENTTRANSITIONOUTOF`: If set, parent window will receive an `SCCVW_ANNOTATIONEVENT` when the cursor transitions out of the icon.

### 5.1.6 SCCVWINSETPARABREAK80 Structure

This structure is used by the `SCCVW_ADDANNOTATION` message to insert a paragraph break between two characters.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct SCCVWINSETPARABREAK80tag
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    SCCVWPOS   sParaPos;
    VTDWORD    dwData;
} SCCVWINSETPARABREAK80, * PSCCVWINSETPARABREAK80;
```

#### Parameters

- **dwSize:** Must be set by the OEM to `sizeof(SCCVWINSETPARABREAK80)`.
- **dwUser:** Unique ID that may be used later to remove, jump to or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- **sParaPos:** Position before which the paragraph break will be inserted. Result of `SCCVWMAKEPOS(id,offset)` macro or result of `SCCVW_MAPPOSITION` message. Note: Using the `SCCVWMAKEPOS` macro is no longer recommended

but supported for backward compatibility. See the Comments section of the SCCVW\_GETRAWTEXT message section.

- `dwData`: Additional data associated with this annotation. It can later be retrieved using `SCCVW_FINDANNOTATION`.

### 5.1.7 SCCVWINSERTTEXT80 Structure

This structure is used by the `SCCVW_ADDANNOTATION` message to insert text between two characters.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct SCCVWINSERTTEXT80tag
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    SCCVWPOS   sTextPos;
    VTDWORD    dwData;
    VTLPWORD   pText;
    VTDWORD    dwLength;
} SCCVWINSERTTEXT80, * PSCCVWINSERTTEXT80;
```

#### Parameters

- `dwSize`: Must be set by the OEM to `sizeof(SCCVWINSERTTEXT80)`.
- `dwUser`: Unique ID that may be used later to remove, jump to or otherwise identify this particular annotation or a set of annotations. Always initialize this value to 0 if you are not using this functionality. The use of the high bit is reserved for internal annotation tagging.
- `sTextPos`: Position before which the text will be inserted. Result of `SCCVWMAKEPOS(id,offset)` macro or result of `SCCVW_MAPPOSITION` message. Note: Using the `SCCVWMAKEPOS` macro is no longer recommended but supported for backward compatibility. See the Comments section of the `SCCVW_GETRAWTEXT` message section.
- `dwData`: Additional data associated with this annotation. It can later be retrieved using `SCCVW_FINDANNOTATION`.
- `pText`: The text buffer (Unicode)
- `dwLength`: The number of characters

## 5.2 SCCVW\_ANNOTATIONEVENT

\*\* This message informs the OEM that some user action has been taken on an annotation.

#### Parameters

- `wParam`: The handle of the view window sending this message.
- `lParam`: Pointer to a structure of the type `SCCVWANNOTATIONEVENT41`. Also backward compatible with `SCCVWANNOTATIONEVENT40`.

**Return Value**

If the return value is 0, the Viewer will perform the default behavior for this event on this annotation. If the return value is anything but 0, the Viewer will not perform any action on this annotation.

**Comments**

The transition events may be generated due to mouse or keyboard movement of the cursor. This message is only supported for annotations added to word processor formats. The OEM will always receive a single-click event before a double-click event.

**Platforms**

Windows, X Windows

**5.2.1 SCCVWANNOTATIONEVENT41 Structure**

This structure is used by the SCCVW\_ANNOTATIONEVENT message to inform the OEM what event has occurred. Also backward compatible with SCCVWANNOTATIONEVENT40.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwEvent;
    VTDWORD    dwUser;
    VTDWORD    dwData;
} SCCVWANNOTATIONEVENT41;
```

**Parameters**

- dwSize: Will be set to sizeof(SCCVWANNOTATIONEVENT41).
- dwEvent: One of the following:
  - SCCVW\_EVENTSINGLECLICK: The annotation specified in dwUser has been clicked.
  - SCCVW\_EVENTDOUBLECLICK: The annotation specified in dwUser has been double clicked.
  - SCCVW\_EVENTTRANSITIONINTO: The annotation specified in dwUser has had the cursor transition into it.
  - SCCVW\_EVENTTRANSITIONOUTOF: The annotation specified in dwUser has had the cursor transition out of it.
- dwUser: Identifies the annotation using the dwUser value passed in SCCVW\_ADDANNOTATION. If you want to handle these events correctly, each of your annotations should have a unique dwUser.
- dwData: Returns the value passed when this annotation was created using SCCVW\_ADDANNOTATION.

## 5.3 SCCVW\_BAILOUT

\* \* This message informs the OEM that file viewing has stopped because of an error or some other reason. The developer may decide to handle this message himself, or allow the default action, which will display an appropriate message.

### Parameters

- wParam: Should be 0.
- lParam: The value of lParam describes the reason for the bailout, outlined as follows:
  - SCCVW\_BAILOUT\_BADCREDENTIALS - the password supplied is invalid.
  - SCCVW\_BAILOUT\_BADFILE: The file viewed is not valid for that type.
  - SCCVW\_BAILOUT\_CANCEL - the OEM responded to a callback function requesting that we cancel processing the file.
  - SCCVW\_BAILOUT\_DIVIDEBYZERO: There was a divide by zero operation attempted.
  - SCCVW\_BAILOUT\_DRMFILE - the file is protected by a DRM system
  - SCCVW\_BAILOUT\_EMPTYFILE: The file has no data to be displayed.
  - SCCVW\_BAILOUT\_FILECHANGED: The file has changed and is no longer valid.
  - SCCVW\_BAILOUT\_FILEOPENFAILED: There was a problem with the information in the header.
  - SCCVW\_BAILOUT\_FILTERTIMEOUT: The filter has timed out.
  - SCCVW\_BAILOUT\_GPFAULT: There was a general protection fault.
  - SCCVW\_BAILOUT\_MEMORY: There was a memory allocation failure.
  - SCCVW\_BAILOUT\_MISSINGELEMENT: There were other files needed that are not available.
  - SCCVW\_BAILOUT\_NODATATORENDER: There is no data in this format to render.
  - SCCVW\_BAILOUT\_NOENGINE: The display engine needed for this type is not available.
  - SCCVW\_BAILOUT\_NOFILTER: There is no filter installed for the files type.
  - SCCVW\_BAILOUT\_NOSUPPORTEDFILE: This file type is not supported.
  - SCCVW\_BAILOUT\_OTHEREXCEPTION: There was an unspecified system exception.
  - SCCVW\_BAILOUT\_PROTECTEDFILE: The file viewed is password protected.
  - SCCVW\_BAILOUT\_STREAMBAIL: There was a problem in the filter.
  - SCCVW\_BAILOUT\_SUPFILEOPENFAILS: There was a problem opening extra files.
  - SCCVW\_BAILOUT\_UNKNOWN: General error.
  - SCCVW\_BAILOUT\_UNKNOWNNOTVIEWED: This file type is unknown and the option has been set to not display unknown file types.

- SCCVW\_BAILOUT\_WRITEERROR: There was a write error during viewing.

### Return Value

If the return value is 0, the Viewer will perform the default behavior for this event which is to display an appropriate message. If the return value is anything but 0, the Viewer will only clear the display window.

### Platforms

Windows, X Windows

## 5.4 SCCVW\_CLEARANNOTATIONS

\* This message allows the developer to selectively remove annotations.

### Parameters

- wParam: If set to 0 then all annotations are cleared. Otherwise, set to one of the following:
  - SCCVW\_ABSOLUTE: lParam represents an absolute dwUser value as set by the OEM in a SCCVW\_ADDANNOTATION message.
  - SCCVW\_MASK: lParam represents a mask to be applied to the dwUser values of the annotations (lParam is described in the next table cell).

- lParam: If wParam contains SCCVW\_ABSOLUTE, the set of annotations that are cleared is limited to those annotations where dwUser == lParam.

If wParam contains SCCVW\_MASK, the set of annotations that are cleared is limited to those annotations where dwUser & lParam == lParam.

### Platforms

Windows, X Windows

## 5.5 SCCVW\_CLOSEFILE

\* Causes the viewer to stop viewing the current file and return to its idle state.

### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.

### Return Value

none

### Platforms

Windows, X Windows

## 5.6 SCCVW\_COMPOSITIONS

\* This message allows the parent to compare two SCCVWPOSs. OEMs should only compare SCCVWPOS variables using this message since the structure size of SCCVWPOS is subject to change.

**Parameters**

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWCOMPOSITIONS41.

**Return Value**

One of the following values:

- -1: The position identified by pPosA is less than the position defined by pPosB
- 0: The two positions identified by pPosA and pPosB are equal
- 1: The position identified by pPosA is greater than the position defined by pPosB

**Platforms**

Windows, X Windows

## 5.6.1 SCCVWCOMPOSITIONS41 Structure

This structure is passed by the OEM through the SCCVW\_COMPOSITIONS message.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    PSSCCVWPOS    pPosA;
    PSSCCVWPOS    pPosB;
} SCCVWCOMPOSITIONS41;
```

**Parameters**

- pPosA: Points to an SCCVWPOS structure that identifies the first of two positions being compared.
- pPosB: Points to an SCCVWPOS structure that identifies the second of two positions being compared.

## 5.7 SCCVW\_CONTEXTMENU

\* \* This message is sent to the parent of the view window when a right mouse click occurs inside the view window. The developer may decide to handle that interaction, or allow the Viewer to pop up its context menu.

**Parameters**

- wParam: The handle of the view window that is sending this message
- lParam(Windows): LOWORD(lParam) contains the x coordinate of the cursor. HIWORD(lParam) contains the y coordinate of the cursor.
- lParam(UNIX): Pointer to the triggering XEvent structure.

**Return Value**

If the return value is 0, the Viewer will pop up its own context menu. If the return value is anything but 0, the Viewer does nothing.



**Platforms**

Windows, X Windows

**5.8 SCCVW\_COPY**

\* This message allows the parent to copy the area defined by two positions into memory in a given format.

**Parameters**

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWCOPY41.

**Return Value**

One of the following values:

- SCCVWERR\_OK: The copy was successful.
- SCCVWERR\_BADPARAM: One of the values in the SCCVWCOPY41 structure was invalid.

**Platforms**

Windows, X Windows

**5.8.1 SCCVWCOPY41 Structure**

This structure is passed by the OEM through the SCCVW\_COPY message.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwOptions;
    VTDWORD    dwFormatId;
    SCCVWPOS   sStartPos;
    SCCVWPOS   sEndPos;
    VTDWORD    dwDataHandle;
    VTDWORD    dwDataSize;
    VTDWORD    dwMessageId;
} SCCVWCOPY41;
```

**Parameters**

- dwSize: Must be set by the OEM to sizeof(SCCVWCOPY41).
- dwOptions: None defined, must be set to 0.
- dwFormatId: Indicates the output format. Must be one of the following:
  - SCCVW\_CLIPFORMAT\_TEXT: Text in whatever character set is appropriate for the operating system
  - SCCVW\_CLIPFORMAT\_RTF: Rich Text Format
- sStartPos: Identifies the start position of the area to be copied.
- sEndPos: Identifies the end position of the area to be copied.

- dwDataHandle: Returns an operating system handle to the copied data.
- dwDataSize: The size of the data produced in dwDataHandle.
- dwMessageId: Identifies the copy result. 0 if the copy was successful, otherwise one of the following:
  - SCCID\_VWCLIP\_NOMEMORY: Not enough memory for data.
  - SCCID\_VWCLIP\_NOEMBEDDED: An informational ID indicating the selected area contains an embedding but the embedding is not provided in the data. Note: This will only copy data to the text formats. It is not supported for bitmap, vector or archive formats.

## 5.9 SCCVW\_COPYTOCLIP

\* Causes the viewer to copy the current selection (if any) to the clipboard.

### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.

### Return Value

none

### Platforms

Windows, X Windows

## 5.10 SCCVW\_DEINITDRAWPAGE

\* This message de-initializes the page drawing routines. This message must be called after all calls to SCCVW\_DRAWPAGE.

### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.

### Platforms

Windows, X Windows

## 5.11 SCCVW\_DISPLAYCHANGE

\* \*This message is sent to the developer whenever the display engine changes.

### Parameters

- wParam: The handle of the view window that is sending this message
- lParam: Not used.

### Comments

A reasonable response to this message might be to call SCCVW\_GETDISPLAYINFO, if you need this kind of information.

**Platforms**

Windows, X Windows

**5.12 SCCVW\_DISPLAYPOSITION**

\* This message allows the parent to bring any position into view and provides some control over the placement of the position in the view.

**Parameters**

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWDISPLAYPOSITION41

**Return Value**

One of the following values:

- SCCVWERR\_OK: The mapping was successful.
- SCCVWERR\_BADPARAM: One of the values in the SCCVWDISPLAYPOSITION41 structure was invalid.

**Comments**

This message does not cause the cursor to be located at the defined position. If cursor placement is required then use SCCVW\_SETSELECTION.

**Platforms**

Windows, X Windows

**5.12.1 SCCVWDISPLAYPOSITION41 Structure**

This structure is passed by the OEM through the SCCVW\_DISPLAYPOSITION message.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwDisplayOptions
    SCCVWPOS    sPos;
} SCCVWDISPLAYPOSITION41;
```

**Parameters**

- dwSize: Must be set by the OEM to sizeof (SCCVWDISPLAYPOSITION41).
- dwDisplayOptions: Flags that allow control over the location of the position in the view. If none of the following are set, then the default action is to display the position with as little scrolling of the screen as possible. Otherwise, one of the following:
  - SCCVW\_DISPLAYNEARTOP: The position will be displayed near the top of the view. Formatting considerations will determine exact location.
  - SCCVW\_DISPLAYNEARMIDDLE: The position will be displayed near the middle of the view. Formatting considerations will determine exact location.

- SCCVW\_DISPLAYNEARBOTTOM: The position will be displayed near the bottom of the view. Formatting considerations will determine exact location.
- sPos: Identifies the position to go to.

## 5.13 SCCVW\_DODIALOG

\* This message invokes one of the Viewer's built in dialogs.

### Parameters

- wParam: Should be set to 0.
- lParam: Id of the dialog the developer wishes to invoke. Should be one of the following:
  - SCCID\_DISPLAYOPTIONSIALOG: A dialog that lets the user set a number of aspects of how files are viewed.
  - SCCID\_PRINTOPTIONSIALOG: A dialog that lets the user set a number of aspects of how files are printed.
  - SCCID\_CLIPBOARDOPTIONSIALOG: A dialog that lets the user set a number of aspects of how files are copied to the clipboard.

### Return Value

One of the following values:

- SCCVWERR\_OK: The dialog was successful.
- SCCVWERR\_CANCEL: The user canceled the dialog.
- SCCVWERR\_BADPARAM: The ID in lParam was invalid.

### Platforms

Windows

## 5.14 SCCVW\_DOHELP

\*\* This message is sent to the developer whenever a help button has been pressed in one of the Viewer's dialogs.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: ID of the dialog in which the help button was pressed, it can be one of the following:
  - SCCID\_DISPLAYOPTIONSIALOG
  - SCCID\_DISPLAYMORERIALOG
  - SCCID\_PRINTOPTIONSIALOG
  - SCCID\_PRINTMORERIALOG
  - SCCID\_CLIPBOARDOPTIONSIALOG
  - SCCID\_CLIPBOARDMORERIALOG
  - SCCID\_PRINTIALOG

- SCCID\_PRINTSETUPDIALOG
- SCCID\_SELECTFONTDIALOG

### Platforms

Windows

## 5.15 SCCVW\_DOMENUITEM

\* This message should be called when the developer's application detects user interaction with a menu having an ID greater than the value set by SCCVW\_SETMENU\_MAX or greater than SCCVW\_DEFAULTMENU\_MAX if SCCVW\_SETMENU\_MAX was not called.

### Parameters

- wParam: Menu ID received in WM\_COMMAND.
- lParam: Not used.

### Platforms

Windows

## 5.16 SCCVW\_DRAWPAGE

\* This message draws a page of the currently viewed file to a rectangle and device of the OEM's choice.

### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWDRAWPAGE40 or SCCVWDRAWPAGE41.

### Return Value

One of the following values:

- SCCVWERR\_OK: Draw page was successful.
- SCCVWERR\_LASTPAGE: The page just drawn is the last page in the file.
- SCCVWERR\_NOPAGE: The requested page does not exist or is not yet available.
- SCCVWERR\_NOFILE: No file is being viewed.
- SCCVWERR\_NOINIT: SCCVW\_INITDRAWPAGE has not been called.
- SCCVWERR\_ALLOCFAILED: Allocation failed.
- SCCVWERR\_FEATURENOTAVAIL: Draw page is not supported by this display engine.
- SCCVWERR\_UNKNOWN: Some other error has occurred.

### Platforms

Windows, X Windows

## 5.16.1 SCCVWDRAWPAGE41 Structure

This structure is passed by the developer through the SCCVW\_DRAWPAGE message.

### Structure

A C data structure defined in `sccvw_u.h` (UNIX) and `sccvw_w.h` (Windows), as follows:

#### Windows Structure

```
typedef struct SCCVWDRAWPAGE41tag
{
    VTDWORD    dwSize;
    VTDWORD    dwPageToDraw;
    VTDWORD    dwReserved;
    VTDWORD    dwFlags;
    VTDLONG    lUnitsPerInch;
    VTDLONG    lFormatWidth;
    VTDLONG    lFormatHeight;
    VTDLONG    lTop;
    VTDLONG    lLeft;
    VTDLONG    lBottom;
    VTDLONG    lRight;
    VTDLONG    lResultTop;
    VTDLONG    lResultLeft;
    VTDLONG    lResultBottom;
    VTDLONG    lResultRight;
    HDC        hOutputDC;
    HDC        hFormatDC;
    HPALETTE   hPalette;
} SCCVWDRAWPAGE41, * PSCCVWDRAWPAGE41;
```

#### UNIX Structure

```
typedef struct SCCVWDRAWPAGE41tag
{
    VTDWORD    dwSize;
    VTDWORD    dwPageToDraw;
    VTDWORD    dwReserved;
    VTDWORD    dwFlags;
    VTDLONG    lUnitsPerInch;
    VTDLONG    lFormatWidth;
    VTDLONG    lFormatHeight;
    VTDLONG    lTop;
    VTDLONG    lLeft;
    VTDLONG    lBottom;
    VTDLONG    lRight;
    VTDLONG    lResultTop;
    VTDLONG    lResultLeft;
    VTDLONG    lResultBottom;
    VTDLONG    lResultRight;
    GC         gc;
    Drawable   drawable;
    VTHANDLE   hFormatDC;    /* Must be NULL */
    VTHANDLE   hOutputDC;   /* Must be NULL */
    VTHPALETTE hPalette;
} SCCVWDRAWPAGE41, * PSCCVWDRAWPAGE41;
```

### Parameters

- `dwSize`: Must be set by the developer to `sizeof (SCCVWDRAWPAGE41)`.

- `dwPageToDraw`: The page of the file that should be drawn. Page numbers start at 0. In order to draw a page, all pages before it must have been drawn, but once a page has been drawn it may be drawn again at any time. For example, the following sequence is OK:

```
0 - 1 - 2 - 3 - 4 - 1 - 3 - 2 - 5 - 0 - ...
```

But in this sequence, the request for page 5 will return `SCCVWERR_NOPAGE`:

```
0 - 1 - 2 - 5
```

- `dwReserved`: Reserved for future use, must be set to 0.
- `dwFlags`: Flags indicating the options for draw page. One of the following:
  - `SCCVW_DPFLAG_RETURNPALETTE`: The `hPalette` member will be filled by the view window.
  - `SCCVW_DPFLAG_NOTMETAFILE`: `hOutputDC` will be assumed not to be a metafile DC, even if Windows says it is. Note: This should always be set to 0 on UNIX systems.
  - `SCCVW_DPFLAG_IGNOREBACKGROUND`: Ignore the background when rendering the page.
  - `SCCVW_DPFLAG_DETERMINEOUTPUTTYPE`: Attempt to determine the output device context type at runtime and emulate either a screen or printer. By default, draw page will emulate a printer. This is useful for enabling transparency effects when creating a metafile. Windows only.
- `IUnitsPerInch`: Number of units per inch that `IFormatWidth` and `IFormatHeight` are in. For instance, if `IFormatHeight` and `IFormatWidth` are in twips (as on Windows systems), `IUnitsPerInch` should be 1440. If `IFormatHeight` and `IFormatWidth` are in pixels (as on UNIX systems), `IUnitsPerInch` should be the lesser of `IFormatWidth` divided by the width in inches, or `IFormatHeight` divided by the height in inches.
- `IFormatHeight`: Height of the wrappable part of the page. For instance, if your page is 11 inches tall and you want .5 inch margins, `IFormatHeight` should represent 10 inches. Note: On UNIX systems, this value is in pixels.
- `IFormatWidth`: Width of the wrapable part of the page. For instance, if your page is 8.5 inches wide and you want .5 inch margins, `IFormatWidth` should represent 7.5 inches. Note: On UNIX systems, this value is in pixels.
- `ITop`, `ILeft`, `IBottom`, `IRight`: Rectangle in device units that is equivalent to `IFormatHeight` and `IFormatWidth`. This rectangle must be in device units. On the Windows platform, `SCCVW_DRAWPAGE` uses the Windows mapping modes to draw into this rectangle.
- `IResultTop`, `IResultLeft`, `IResultBottom`, `IResultRight`: Rectangle in device units that was actually filled with output. These elements are filled by the `SCCVW_DRAWPAGE` call, they may be different than the requested rectangle for the following reasons:
  - For Documents: `IResultBottom` may be less than `IBottom` because lines and table rows are never split when printing.
  - For Spreadsheets and Databases: `IResultBottom` and `IResultLeft` may be less because columns and rows are never split when printing.
  - For Bitmaps and Vectors: The result rectangle may be different because the viewer may be maintaining the aspect ratio of the image.

- `gc`: This parameter only applies on UNIX systems. This GC must have been created from the same drawable as that in the `SCCVWDRAWPAGE41` structure.
- `drawable`: This parameter only applies on UNIX systems. This is the window (or pixmap) on which the file will be displayed.
- `hOutputDC`: The device context (Windows, UNIX) or the id pointing to the `NSView` to draw into. Must be set to `NULL` on UNIX systems.
- `hFormatDC`: The device or information context (Windows, UNIX) or information context) or the id pointing to the `NSView` used to wrap text and retrieve other formatting information. Must be set to `NULL` on UNIX systems.

Note: On Windows and UNIX, `hOutputDC` and `hFormatDC` may not be the same DC.

- `hPalette`: Palette that should be used when rendering the page. If the `SCCVW_DPFLAG_RETURNPALETTE` flag is not set, this member will always be `NULL`. If this flag is set, it may be a handle to a palette or it may still be `NULL` if no palette is required. It is the developer's responsibility to `DeleteObject` the palette, if one is returned.

### Comments

How the `SCCVW_DRAWPAGE` message interprets the contents of the `SCCVWDRAWPAGE41` structure on a Windows system depends somewhat on the nature of the `hOutputDC`. If `hOutputDC` is NOT a metafile DC or the `SCCVW_DPFLAG_NOTMETAFILE` flag is set, `draw page` sets the DC to `MM_ANIOTROPIC` mode, sets the window extents/origin and sets the viewport extents/origin so the page will be drawn into the rectangle defined by `lLeft/lTop/lRight/lBottom`. If `hOutputDC` is a metafile DC, `draw page` still sets the mode to `MM_ANISOTROPIC` and sets the window extents/origin, but does not set the viewport. This produces a scalable metafile allowing the developer to later play back the metafile to any rectangle by setting the viewport extents and origin before playing the metafile.

## 5.17 SCCVW\_ENABLEAPP

\* \*This message is sent to the developer whenever the developer application should be disabled/enabled. This message is sent before and after dialogs and printing. It allows the developer to disable any part of the application which could affect the view window.

### Parameters

- `wParam`: The handle of the view window that is sending this message.
- `lParam`: One of the following:
  - `FALSE`: The application should be disabled
  - `TRUE`: The application should be enabled.

### Return Value

Must be `SCCVWERR_MESSAGEHANDLED`, which tells the view window the message has been handled. Any other return value will cause the view window to try the default disabling method for that platform. For example, under Windows if the developer does not process this message and return `SCCVWERR_MESSAGEHANDLED`, the view window will use `EnableWindow` to disable/enable its parent. If this default behavior is acceptable, simply return 0.



**Platforms**

Windows

**5.18 SCCVW\_FILECHANGE**

\* \* This message is sent to the developer whenever the file being viewed is changed, such as on a SCCVW\_VIEWFILE or SCCVW\_CLOSEFILE message. A reasonable response to this message might be to call SCCVW\_GETFILEINFO to get information about the new file to display within your UI.

**Parameters**

- wParam: The handle of the view window that is sending this message
- lParam: Flags indicating the change that is occurring. One or more of the following values OR-ed together:
  - SCCVW\_FC\_CLOSED: File was closed.
  - SCCVW\_FC\_OPENED: File was opened.
  - SCCVW\_FC\_INOPEN: When OR-ed with SCCVW\_FC\_CLOSED, indicates that the close is in response to a SCCVW\_VIEWFILE message and that another SCCVW\_FILECHANGE notification can be expected. This flag should be used to avoid any flashing within your UI.

**Platforms**

Windows, X Windows

**5.19 SCCVW\_FINDANNOTATION**

\* This message allows the parent to find an annotation and retrieve information associated with the annotation. A variety of options are provided for locating an annotation.

**Parameters**

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWFINDANNOTATION41

**Return Value**

One of the following values:

- SCCVWERR\_NONEFOUND: No annotation that meets the mask or absolute criteria was found.
- SCCVWERR\_OK: An annotation that meets the mask or absolute criteria was found and the structure passed through lParam is updated.

**Platforms**

Windows, X Windows

**5.19.1 SCCVWFINDANNOTATION41 Structure**

This structure is passed by the OEM through the SCCVW\_FINDANNOTATION message.

## Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD      dwSize;
    VTDWORD      dwFindOptions;
    VTDWORD      dwUserTest;
    SCCVWPOS     sSearchPos;
    VTDWORD      dwUserResult;
    SCCVWPOS     sStartPos;
    SCCVWPOS     sEndPos;
    VTDWORD      dwData;
} SCCVWFINDANNOTATION41;
```

## Parameters

- **dwSize:** Must be set by the OEM to sizeof (SCCVWFINDANNOTATION41).
- **dwFindOptions:** Flags indicating the starting position and the meaning of the value in dwUserTest. One of the following values:
  - **SCCVW\_FINDFIRST:** Find the first or only annotation in the document that meets the mask or absolute criteria.
  - **SCCVW\_FINDLAST:** Find the last or only annotation in the document that meets the mask or absolute criteria.
  - **SCCVW\_FINDFIRSTFROMPOS:** Find the next annotation in the document that appears after the position identified by the sSearchPos value and that meets the mask or absolute criteria.
  - **SCCVW\_FINDPREV:** Find the first annotation that appears before the position identified by the sSearchPos and meets the mask or absolute criteria.
  - **SCCVW\_FINDNEXT:** Find the first annotation that appears after the position identified by the sSearchPos and meets the mask or absolute criteria.

OR-ed with one of the following values:

- **SCCVW\_MASK:** dwUserTest represents a mask to be applied to the dwUser values of the annotations.
- **SCCVW\_ABSOLUTE:** dwUserTest represents an absolute dwUser value as set by the OEM in a SCCVW\_ADDANNOTATION message.

If dwFindOptions contains SCCVW\_ABSOLUTE, the set of annotations that can be moved to is limited to those annotations where dwUser == dwUserTest. If dwFindOptions contains SCCVW\_MASK, the set of annotations that can be moved to is limited to those annotations where dwUser & dwUserTest == dwUserTest. For example, if five annotations exist with the following dwUser values:

- \* Annotation 1 (dwUser = 0x001)
- \* Annotation 2 (dwUser = 0x0010)
- \* Annotation 3 (dwUser = 0x0011)
- \* Annotation 4 (dwUser = 0x0100)
- \* Annotation 5 (dwUser = 0x1000)

then the following are true:

- \* a dwUserTest of 0x0000 will use all the annotations
- \* a dwUserTest of 0x0001 will use annotations 1 and 3
- \* a dwUserTest of 0x0011 will use annotation 3 only
- \* a dwUserTest of 0x1001 will not use any annotations.

SCCVW\_MASK can be used to move around within a particular set of annotations, where each annotation has a unique dwUser but they all share some bits in common.

- dwUserTest: Used to indicate the class of annotations to be included in the search based on the rules outlined in the preceding list.
- sSearchPos: Indicates the position to begin searching from when SCCVW\_FINDNEXT or SCCVW\_FINDPREV are set in the dwFindOptions.
- dwUserResult: If the annotation is found, returns the value of dwUser as set by the OEM in a SCCVW\_ADDANNOTATION message.
- sStartPos: If the annotation is found:
  - If the annotation type is SCCVW\_INSERTTEXT or SCCVW\_INSERTPARABREAK, sStartPos will indicate the position of the beginning of the inserted text.
  - For all other annotation types, sStartPos will be as set by the OEM in the SCCVW\_ADDANNOTATION message.
- sEndPos: If the annotation is found:
  - If the annotation type is SCCVW\_INSERTTEXT or SCCVW\_INSERTPARABREAK, sEndPos will indicate the position of the insertion point of the inserted text
  - For all other annotation types, sEndPos will be as set by the OEM in the SCCVW\_ADDANNOTATION message
- dwData: If the annotation is found, returns the value of dwData as set by the OEM in a SCCVW\_ADDANNOTATION message.

## 5.20 SCCVW\_FINDPOSITION

\* This message allows the parent to find a position in terms of a SCCVWPOS with numerous options. The position returned can then be used by any message which requires an SCCVWPOS as input. All of the find options are relative to the currently viewed section.

### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVWFINDPOSITION41.

### Return Value

One of the following values:

- SCCVWERR\_NONEFOUND: No position that meets the find criteria was found.
- SCCVWERR\_OK: A position that meets the find criteria was found and the structure passed through lParam is updated.

## Platforms

Windows, X Windows

### 5.20.1 SCCVWFINDPOSITION41 Structure

This structure is passed by the OEM through the SCCVW\_FINDPOSITION message. Many of the find options are only supported for word processing file types.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwFindOptions;
    SCCVWPOS   sSearchPos;
    SCCVWPOS   sResultPos;
} SCCVWFINDPOSITION41;
```

#### Parameters

- dwSize: Must be set by the OEM to sizeof (SCCVWFINDPOSITION41).
- dwFindOptions: Flags indicating the starting position and the meaning of the value in dwUserIn. Refer to the following table. Note: These options support the currently viewed section. Sections are used to delimit multiple-sheet spreadsheets, multi-page presentation files, and multi-page bitmap graphics.
  - SCCVW\_FINDFIRSTPOS: Find the first position in the current section.
  - SCCVW\_FINDLASTPOS: Find the last position in the current section.
  - SCCVW\_FINDPREVPOS: Find the position in the document that appears before the position identified by the sSearchPos.
  - SCCVW\_FINDNEXTPOS: Find the position in the document that appears after the position identified by the sSearchPos.
  - SCCVW\_FINDPREVSECTION: Find the previous section in a document.
  - SCCVW\_FINDNEXTSECTION: Find the next section in a document.
  - SCCVW\_FINDANCHORSELECTPOS: Find the position in the document that identifies the start of selection.
  - SCCVW\_FINDNEXTSELECTPOS: Archive files only, find the position in the document that identifies the next selected node when there are multiple selections.
  - SCCVW\_FINDPREVSELECTPOS: Archive files only, find the position in the document that identifies the previous selected node when there are multiple selections.
  - SCCVW\_FINDENDSELECTPOS: Find the position in the document that identifies the end of selection.
  - SCCVW\_FINDSTARTDISPLAYPOS: Find the position in the document that identifies the top/left most position in the currently displayed area.
  - SCCVW\_FINDENDDISPLAYPOS: Find the position in the document that identifies the bottom/right most position in the currently displayed area.

- SCCVW\_FINDSTARTLINEPOS: Find the position in the document that identifies the start of the line which contains sSearchPos.
  - SCCVW\_FINDENDLINEPOS: Find the position in the document that identifies the end of the line which contains sSearchPos.
  - SCCVW\_FINDPREVLINEPOS: Find the position in the document that identifies the start of the line previous to the line which contains sSearchPos.
  - SCCVW\_FINDNEXTLINEPOS: Find the position in the document that identifies the start of the line following the line which contains sSearchPos.
  - SCCVW\_FINDPREVWORDPOS: Find the position in the document that identifies the start of the word previous to sSearchPos.
  - SCCVW\_FINDNEXTWORDPOS: Find the position in the document that identifies the start of the word which follows sSearchPos.
- sSearchPos: Identifies the position to begin searching for specific dwFindOptions as outlined in the preceding list.
  - sResultPos: Returns the resulting position if it was found.

### Comments

Many of the find options are only supported for word processing file types. These include SCCVW\_STARTDISPLAYPOS, SCCVW\_ENDDISPLAYPOS, SCCVW\_FINDPREVLINEPOS, SCCVW\_NEXTLINEPOS, SCCVW\_PREVWORDPOS, and SCCVW\_NEXTWORDPOS.

## 5.21 SCCVW\_GETANNOTATIONDATA

\* This message is provided to allow the developer to retrieve extended data associated with annotations that are internally created by the Viewer. The technology currently creates annotations to support hyperlinks and bookmarks defined in the original file.

When the technology adds hyperlink annotations, the dwUser member is set to SCCVW\_USERHYPERTAG OR-ed with a zero-based count of the current hyperlink. When the technology adds bookmark annotations, the dwUser member is set to SCCVW\_USERBOOKMARKTAG OR-ed with a zero-based count of the current bookmark. This allows OEMs to use all of the related annotation messages on these internal annotations. Extended data is available for internal annotations and can be retrieved using this message.

### Parameters

- wParam: Should be set to 0.
- lParam: A pointer to a structure of the type SCCVWGETANNOTATIONDATA.

### Return Value

One of the following values:

- SCCVWERR\_OK: The annotation data was retrieved successful.
- SCCVWERR\_BADPARAM: One of the values in the SCCVWGETANNOTATIONDATA structure was invalid.

### Platforms

Windows, X Windows

### 5.21.1 SCCVWGETANNOTATIONDATA Structure

This structure is passed by the OEM through the SCCVW\_GETANNOTATIONDATA message.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwUser;
    VTDWORD    dwData;
    VTDWORD    dwResultDataSize;
    VTVOID     pData;
    VTDWORD    dwDataType;
} SCCVWGETANNOTATIONDATA;
```

#### Parameters

- dwSize: Must be set by the OEM to sizeof (SCCVWGETANNOTATIONDATA).
- dwUser: Indicates the annotation for which extended data is being retrieved. This value should be the absolute value of the dwUser member that was used when initially adding the annotation.
- dwData: Indicates the value of the value of the dwData member that was used when initially adding the annotation.
- dwResultDataSize: On input, indicates the size of the data pointed to by pData. After returning, indicates the size of the extended data associated with this annotation. This element will be updated, even if pData is not of sufficient size to retrieve the data.
- pData: A pointer to data where the extended data should be copied. If the size of the data pointed to by pData is not sufficient to retrieve the extended data then no data will be copied.
- dwDataType: Set by the technology, indicates the format of the data retrieved. One of the following:
  - ADTYPE\_URL: pData points to a NULL-terminated Internet Uniform Resource Locator. This data type can be returned for annotations created from hyperlinks in formats which allow referencing URLs.
  - ADTYPE\_BOOKMARK: pData points to a NULL-terminated string that identifies the bookmark name. This can be returned for annotations created from bookmarks.
  - ADTYPE\_NODATA: This data type can be returned for annotations that do not have any extended data.

## 5.22 SCCVW\_GETCLIPINFO

\* This message returns flags that specify the readiness of the view window to manipulate clipboard information.

#### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.

**Return Value**

Zero or more of the following flags OR-ed together:

- SCCVW\_CANCOPYTOCLIP: Information is selected and can be copied to the clipboard.
- SCCVW\_CANCUTTOCLIP: Information is selected and can be cut to the clipboard.
- SCCVW\_CANPASTEFROMCLIP: Information on the clipboard is available for pasting.

**Platforms**

Windows, X Windows

**5.23 SCCVW\_GETDISPLAYINFO**

\* Returns information about the current display engine, if any.

**Parameters**

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWDISPLAYINFO40 or SCCVWDISPLAYINFO80 structure to be filled.

**Return Value**

One of the following values:

- SCCVWERR\_OK: pFileInfo was filled successful.
- SCCVWERR\_BADPARAM: Structure size was incorrect or lParam was null.

**Platforms**

Windows, X Windows

**5.23.1 SCCVWDISPLAYINFO40 and SCCVWDISPLAYINFO80 Structures**

These structures are passed by the developer to the SCCVW\_GETDISPLAYINFO message handler. Note that while both of these structures can accept Unicode, only the SCCVWDISPLAYINFO80 structure is truly intended to accept Unicode.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTTCHAR    szName[MAX_DISPLAYINFO_SZNAME_SIZE];
    VTDWORD    hMenu;
    VTDWORD    dwFunctions;
    VTDWORD    dwType
} SCCVWDISPLAYINFO40;

typedef struct
{
    VTDWORD    dwSize;
    VTWORD     szName[MAX_DISPLAYINFO_SZNAME_SIZE];
}
```

```
VTDWORD    hMenu;  
VTDWORD    dwFunctions;  
VTDWORD    dwType  
} SCCVWDISPLAYINFO80;
```

### Parameters

- **dwSize:** Must be set by the developer to `sizeof(SCCVWDISPLAYINFO40)` or `sizeof(SCCVWDISPLAYINFO80)`.
- **szName:** String used when a human readable form of the display engine is needed. For example `Bitmap`, `Hex`, `Document`, `Archive`, `Spreadsheet`, etc.
- **hMenu:** Handle to a popup menu specific to the display engine, or `NULL` if the display engine has no popup menu. Under Windows, `hMenu` should be cast into the type `HMENU`. Under X Windows, `hMenu` is the popup menu widget.
- **dwFunctions:** Reserved by Oracle.
- **dwType:** One of the following:
  - `SCCVWTYPE_NONE`: No display engine is loaded
  - `SCCVWTYPE_UNKNOWN`: Unknown display engine
  - `SCCVWTYPE_WP`: Word Processor display engine
  - `SCCVWTYPE_SS`: Spreadsheet display engine
  - `SCCVWTYPE_DB`: Database display engine
  - `SCCVWTYPE_HEX`: Hexadecimal display engine
  - `SCCVWTYPE_IMAGE`: Bitmap graphics display engine
  - `SCCVWTYPE_ARCHIVE`: Archive display engine
  - `SCCVWTYPE_VECTOR`: Vector graphics display engine

### Comments

The popup menus available for each display engine allow the developer to place powerful, file-type-specific options/events in the hand of the user without designing his/her own menus and without dealing with the API for setting options/events. The basic procedure for doing this is as follows.

When you get the `SCCVW_DISPLAYCHANGE` message sent by the view window, call `SCCVW_GETDISPLAYINFO`. If `hMenu` is not 0, remove any previous popup you added and use the `szName` and `hMenu` parameters of the `SCCVWDISPLAYINFO40` or `SCCVWDISPLAYINFO80` structure to add the display engine's popup menu to your menu bar. If `hMenu` is 0, just remove any previous menu.

## 5.24 SCCVW\_GETDRAWPAGEINFO

\* This message will get page information about the requested page. It is to be used within a `SCCVW_INITDRAWPAGE` and a `SCCVW_DEINITDRAWPAGE` before the `SCCVW_DRAWPAGE` to get the best page size information for that page.

### Parameters

- **wParam:** Should be set to 0.
- **lParam:** Pointer to a structure of the type `SCCVWGETDRAWPAGEINFO`.



**Return Value**

One of the following values:

- SCCVWERR\_OK: GETDRAWPAGEINFO was successful.
- SCCVWERR\_NONEFOUND: There is no page information available in this file.
- SCCVWERR\_LASTPAGE: The page just drawn is the last page in the file.
- SCCVWERR\_NOPAGE: The requested page does not exist or is not yet available.
- SCCVWERR\_NOFILE: No file is being viewed.
- SCCVWERR\_NOINIT: SCCVW\_INITDRAWPAGE has not been called
- SCCVW\_ALLOCFAILED: Allocation failed.
- SCCVW\_FEATURENOTAVAIL: Draw page is not supported by this display engine.
- SCCVWERR\_UNKNOWN: Some other error has occurred.

**Platforms**

Windows, X Windows

**5.24.1 SCCVWDRAWPAGEINFO Structure**

This structure is passed by the developer through the SCCVW\_GETDRAWPAGEINFO message.

**Structure**

A C data structure defined in `sccvw_u.h` (UNIX) and `sccvw_w.h` (Windows), as follows:

**Windows Structure**

```
typedef struct SCCVWDRAWPAGEINFOtag
{
    VTDWORD    dwSize;
    VTDWORD    dwPageToDraw;
    VTDWORD    dwReserved;
    VTDWORD    dwFlags;
    VTLONG     lUnitsPerInch;
    VTLONG     lFormatWidth;
    VTLONG     lFormatHeight;
    HDC        hOutputDC;
    HDC        hFormatDC;
} SCCVWDRAWPAGEINFO, * PSCCVWDRAWPAGEINFO;
```

**UNIX Structure**

```
typedef struct SCCVWDRAWPAGEINFOtag
{
    VTDWORD    dwSize;
    VTDWORD    dwPageToDraw;
    VTDWORD    dwReserved;
    VTDWORD    dwFlags;
    VTLONG     lUnitsPerInch;
    VTLONG     lFormatWidth;
    VTLONG     lFormatHeight;
    GC         gc;
    Drawable   drawable;
```

```
HDC          hOutputDC;    /* Must be NULL */
HDC          hFormatDC;    /* Must be NULL */
} SCCVWDRAWPAGEINFO, * PSCCVWDRAWPAGEINFO;
```

### Parameters

- **dwSize**: Must be set by the developer to sizeof (SCCVWDRAWPAGEINFO).
- **dwPageToDraw**: The page of the file about which information is needed. Page numbers start at 0. In order to get this information, all pages before it must have been drawn through SCCVW\_DRAWPAGE. If the previous page was not already drawn, this message will return SCCVWERR\_NOPAGE.
- **dwReserved**: Reserved for future use, must be set to 0.
- **dwFlags**: None currently defined.
- **lUnitsPerInch**: Number of units per inch that lFormatWidth and lFormatHeight are in. For instance, if lFormatHeight and lFormatWidth are in twips (as on Windows systems), lUnitsPerInch should be 1440. If lFormatHeight and lFormatWidth are in pixels (as on UNIX systems), lUnitsPerInch should be the lesser of lFormatWidth divided by the width in inches, or lFormatHeight divided by the height in inches.
- **lFormatHeight**: This will get filled with the page height using the lUnitsPerInch value. If there is no page information in the file, the return code will be SCCVWERR\_NONEFOUND and this value will be unchanged.
- **lFormatWidth**: This will get filled with the page width using the lUnitsPerInch value. If there is no page information in the file, the return code will be SCCVWERR\_NONEFOUND and this value will be unchanged.
- **gc**: This parameter only applies on UNIX systems. This is the window (or pixmap) on which the file will be displayed.
- **drawable**: This parameter only applies on UNIX systems. This GC must have been created from the same drawable as that in the SCCVWDRAWPAGEINFO structure.
- **hOutputDC**: Device context to draw into. Must be set to NULL on UNIX systems.
- **hFormatDC**: Device context (or information context) used to wrap text and retrieve other formatting information. Must be set to NULL on UNIX systems.

Note: hOutputDC and hFormatDC may not be the same DC.

## 5.25 SCCVW\_GETFILEACCESSDATA

\*\* This message is sent from the view window to the developer when the technology encounters a file that requires additional information to access its contents.

### Parameters

- **wParam**: ID of information requested.
- **lParam**: Pointer to a SCCVWFILEACCESSDATA structure.

```
typedef struct {
VTDWORD     dwSize;        /* size of this structure */
VTBOOL      bProcessed;   /* flag if this request was processed */
VTDWORD     dwRequestId;  /* id of information requested */
VTWORD      wFIId;        /* FI id of reference file */
VTDWORD     dwSpecType;   /* file spec type */
```

```

VTVOID    *pSpec;           /* pointer to a file spec */
VTSYSVAL  pReturnData;     /* pointer to structure to place requested */
                          /* information in to return to OIT */
VTDWORD   dwReturnDataSize; /* size of the return data structure */
VTDWORD   dwAttemptNumber; /* The number of times the callback has */
                          /* already been called for the currently */
                          /* requested item of information */
} SCCVWFILEACCESSDATA, * PSCCVWFILEACCESSDATA;

```

- dwRequestID: One of the following values:
  - OIT\_FILEACCESS\_PASSWORD – Requesting the password of the file
  - OIT\_FILEACCESS\_NOTESID – Requesting the notes ID file location
- pReturnData: For OIT\_FILEACCESS\_PASSWORD and OIT\_FILEACCESS\_NOTESID, the buffer is an array of WORD characters.
- dwReturnDataSize: Size of the pReturnData buffer.

### Return Value

- SCCERR\_OK: Tells Outside In that the requested information is provided.
- SCCERR\_CANCEL: Tells Outside In that the requested information is not available.

This message will be repeatedly sent if the information provided is not valid (such as the wrong password). It is the responsibility of the application to provide the correct information or return SCCERR\_CANCEL.

NOTE: Not all formats that use passwords are supported. Only Microsoft Office binary (97-2003), Microsoft Office 2007, Lotus NSF, PDF (with RC4 & AES128 bit encryption), and Zip (with AES 128 & 256 bit, ZipCrypto) are currently supported.

## 5.26 SCCVW\_GETFILEINFO

\* Returns information about the file currently being viewed.

### Parameters

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWFILEINFO40 or SCCVWFILEINFO80 structure to be filled.

### Return Value

One of the following values:

- SCCVWERR\_OK: pFileInfo was filled successfully
- SCCVWERR\_NOFILE: The viewer is not currently viewing a file
- SCCVWERR\_BADPARAM: Structure size was incorrect

### Platforms

Windows, X Windows

## 5.26.1 SCCVWFILEINFO40 and SCCVWFILEINFO80 Structures

These structures can be passed by the developer to the SCCVW\_GETFILEINFO message. Note that while both of these structures can accept Unicode, only the SCCVWFILEINFO80 structure is truly intended to accept Unicode.

### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTTCHAR    szDisplayName[SCCVW_DISPLAYNAMEMAX];
    VTDWORD    dwFileId;
    VTTCHAR    szFileIdName[SCCVW_FILEIDNAMEMAX];
    VTTCHAR    szFileName[SCCVW_FILENAMEEMAX];
} SCCVWFILEINFO40;

typedef struct
{
    VTDWORD    dwSize;
    VTWORD     szDisplayName[SCCVW_DISPLAYNAMEMAX];
    VTDWORD    dwFileId;
    VTWORD     szFileIdName[SCCVW_FILEIDNAMEMAX];
    VTWORD     szFileName[SCCVW_FILENAMEEMAX];
} SCCVWFILEINFO80;
```

### Parameters

- **dwSize:** Must be set by the developer to `sizeof(SCCVWFILEINFO40)` or `sizeof(SCCVWFILEINFO80)`.
- **szDisplayName:** String used when a human readable form of the file name is needed. This string is either set specifically by the developer in the structure or it is generated by the viewer based on the real name of the file.
- **dwFileId:** The ID number associated with this type of file. The numbers are defined in the include file `sccfi`.
- **szFileIdName:** A human readable representation of the FI ID number, for example WordPerfect 5.0.
- **szFileName:** A path to the actual file being viewed.

## 5.27 SCCVW\_GETIDEALWINDOWSIZE

\* This message allows the developer to determine the ideal window size to use for the loaded document. This is especially useful when viewing graphic file formats.

### Parameters

- **wParam:** The handle of the view window sending this message.
- **lParam:** Pointer to a structure of the type `SCCVWIDEALSIZE50`.

### Return Value

One of the following values:

- **SCCVWERR\_OK:** The ideal window size was successfully calculated.

- **SCCVWERR\_BADPARAM:** One of the values in the **SCCVWIDEALSIZE50** structure was invalid.
- **SCCVWERR\_NONEFOUND:** This file does not have an ideal size. In this case the Result values are set to the Maximum values.

### Comments

Since this message cannot determine the ideal window size until the document is already loaded, it is recommended that the initial view window be hidden when created, and shown after resizing using the results of this message. Also, if the OEM is taking over control of the scroll bars, it should be done prior to using this message.

### Platforms

Windows, X Windows

## 5.27.1 SCCVWIDEALSIZE50 Structure

This structure is passed by the OEM through the **SCCVW\_GETIDEALWINDOWSIZE** message.

### Structure

A C data structure defined in **sccvw** as follows:

```
typedef struct SCCVWIDEALSIZE50tag
{
    VTDWORD    dwSize;
    VTDWORD    dwFlags;
    VTDWORD    dwMaxWidth;
    VTDWORD    dwMaxHeight;
    VTDWORD    dwResultWidth;
    VTDWORD    dwResultHeight;
} SCCVWIDEALSIZE50,
* PSCCVWIDEALSIZE50;
```

### Parameters

- **dwSize:** Must be set by the OEM to `sizeof(SCCVWIDEALSIZE50)`.
- **dwFlags:** Set by the OEM to a value of 0. Future support may allow for special flag settings.
- **dwMaxWidth:** Set by the OEM to the maximum value, in screen coordinates, to which the **dwResultWidth** should be set.
- **dwMaxHeight:** Set by the OEM to the maximum value, in screen coordinates, to which the **dwResultHeight** should be set.
- **dwResultWidth:** Returned value which indicates the ideal width, in screen coordinates, to use as the window width of the viewer window. This value is calculated based on the dimensions of the document being viewed and takes the existence of scroll bars into account.
- **dwResultHeight:** Returned value which indicates the ideal height, in screen coordinates, to use as the window height of the viewer window. This value is calculated based on the dimensions of the document being viewed and takes the existence of scroll bars into account.

## 5.28 SCCVW\_GETOPTION

\* This message allows the developer to get the current or default value of an option.

### Parameters

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWOPTIONSPEC40 structure.

### Return Value

One of the following values:

- SCCVWERR\_OK: pData contains the value of the option.
- SCCVWERR\_BADPARAM: Structure size was incorrect or the option ID was bad.

### Platforms

Windows, X Windows

### 5.28.1 SCCVWOPTIONSPEC40 Structure

This structure is passed by the developer through the SCCVW\_GETOPTION or SCCVW\_SETOPTION message.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize
    VTDWORD    dwId;
    VTDWORD    dwFlags;
    VTVOID     pData;
} SCCVWOPTIONSPEC40;
```

#### Parameters

- dwSize: Must be set by the developer to sizeof(SCCVWOPTIONSPEC40).
- dwId: The ID of the option the developer wants to set or get.
- dwFlags: Any of the following OR-ed together:
  - SCCVWOPTION\_CURRENT: Set/Get the current value of the option.
  - SCCVWOPTION\_DEFAULT: Set/Get the default value of the option.

Note: These two flags may only be used together when passing the structure to SCCVW\_SETOPTION. In SCCVW\_GETOPTION they are mutually exclusive.

- pData: A pointer to a data area containing the option's value on a Set or receiving the option's value on a Get. This area must be as large as the data type specified for the option ID the developer is getting or setting.

## 5.29 SCCVW\_GETPROPERTY

This message returns any file property information generated by the input filter.

## Parameters

- wParam: One of the following:
  - SCCVW\_GETPROP\_FIRST: Retrieves the information for the first property generated by the filter.
  - SCCVW\_GETPROP\_NEXT: Retrieves the information for the next property generated by the filter.
  - SCCVW\_GETPROP\_PREV: Retrieves the information for the previous property generated by the filter.
  - SCCVW\_GETPROP\_BYID: Retrieves the information (if any) for a property specified in the structure. Values are specified in `sccca.h`, and range from `SCCCA_DOCCOMMENT` (1) to `SCCCA_APPVERSION` (162). User defined properties can not be specified.
  - SCCVW\_GETPROP\_BYINDEX: Retrieves a property specified by a zero-based index from the property array.
- lParam: Pointer to a structure of the type `SCCVWGETPROP`.

## Return Value

One of the following values:

- `SCCERR_OK`: Property information was successfully retrieved, or data size members were populated (if NULL pointers are passed for data).
- `SCCERR_BADPARAM`: lParam is NULL/0 or an invalid value was passed in wParam, or a buffer size of less than 2 was specified in the `SCCVWGETPROP` structure.
- `SCCERR_ALLOCFAILED`: An internal allocation failed.
- `SCCERR_INDEXOUTOFBOUNDS`: Request property does not exist. This can happen with `SCCVW_GETPROP_NEXT` if the last property was already retrieved, or with `SCCVW_GETPROP_PREV` if the first property was just retrieved, or with `SCCVW_GETPROP_FIRST` if there are no properties available for the file, or with the `SCCVW_GETPROP_BYID` if the specified property ID is not available.
- `SCCERR_INSUFFICIENTBUFFER`: User allocated buffer was not sufficient to hold property information. Data will not be placed in insufficient buffers, and the initial character will be set to NULL. Because there are two buffers, one may be filled even if the other is insufficient. The required buffer size is placed in the `SCCVWGETPROP` structure.

## 5.29.1 SCCVWGETPROP Structure

This structure is passed by the developer through the `SCCVW_GETPROPERTY` message.

### Structure

A C data structure defined in `sccvw.h`, as follows:

```
typedef struct SCCVWGETPROptag
{
    VTDWORD    dwSize;
    VTDWORD    dwPropId;
    VTLPVOID   pName;
    VTDWORD    dwNameSize;
    VTLPVOID   pData;
```

```
VTDWORD   dwDataSize;  
VTDWORD   dwDataType;  
} SCCVWGETRAWTEXT50;
```

### Parameters

- **dwSize:** [IN]: Must be set by the developer to `sizeof(SCCVWGETPROP)`.
- **dwPropId:** [IN or OUT]: ID of property name. Must be set by the developer for `SCCVW_GETPROP_BYID`.
- **pName:** [IN] pointer to a buffer supplied by the developer to receive property name. May be NULL.
- **dwNameSize:** [IN/OUT] IN: Size in bytes of buffer pointed to by `pName`. [OUT]: Bytes copied into `pName`, or size of buffer necessary to receive property name.
- **pData:** [IN] pointer to a buffer supplied by the developer to receive property value. May be NULL.
- **dwDataSize:** [IN/OUT] IN: Size in bytes of buffer pointed to by `pData`. [OUT]: Bytes copied into `pData`, or size of buffer necessary to received property value.
- **dwDataType:** [OUT] Type of data copied into `pData`. For this version, `SCCVW_PROPTYPE_STRING` is the only valid type, indicating Unicode string data.

### Comments

All strings (Property names, as well as property value for this version) are Unicode. If `pName` or `pData` are NULL, the `dwNameSize` and `dwDataSize` members will be filled with required buffer size to hold the indicated property.

## 5.30 SCCVW\_GETRAWTEXT

\* This message allows the parent to get the raw text buffer which contains the character identified by its actual character count (ACC) from the beginning of the document. The buffer of text returned is of variable size.

### Parameters

- **wParam:** Should be set to 0.
- **lParam:** Pointer to a structure of the type `SCCVWGETRAWTEXT50`.

### Return Value

One of the following values:

- **SCCVWERR\_BADPARAM:** There was a problem with the parameters passed into this call.
- **SCCVWERR\_ALLOCFAILED:** A memory allocation has failed. The machine has possibly run out of memory.
- **SCCVWERR\_UNKNOWNFAILURE:** There was a failure opening this document and getting the text.
- **SCCVWERR\_NONEFOUND:** The document does not contain the character (the number of characters in the document is less than the ACC requested).
- **SCCVWERR\_OK:** The text buffer containing the requested character was found and the structure has been updated.



## Comments

To produce offsets used in SCCVW\_ADDANNOTATION, use the SCCVWGETRAWTEXT50 structure as follows:

1. Fill the dwACC member of the structure with a character count which identifies the offset of the character to be annotated.
2. Fill dwSize and dwOptions and call SCCVW\_GETRAWTEXT.
3. Locate the start and end character count offsets of the text to annotate and call SCCVW\_MAPPOSITION to turn each character count into a SCCVWPOS. The end position of an annotation is NOT inclusive, so the value used for an end position should be the offset of the next character after the last character to be modified by the annotation. If an annotation includes the last character of the document, the end position must be set to the offset value of the last character plus 1.
4. Use the resulting SCCVWPOS values as the sStartPos and sEndPos elements when calling SCCVW\_ADDANNOTATION.

NULL characters are included in the text buffer to act as fillers for text which was in the original file but is not part of the document body (revision deletions and document properties).

If Unicode output is required, then use the option SCCID\_SYSTEMFLAGS to enable Unicode raw text output.

It is the OEM's responsibility to free the hText memory blocks. This allows the OEM to perform cross chunk searches.

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**Note:** Developers who need just the text of a file (for indexing, for example) should contact an Oracle Account Representative for information about the Outside In Content Access product. This technology uses the same filters as the Viewer to rapidly read text and other content. Oracle guarantees that the text retrieved from the Content Access product will be identical (character for character) with the text returned by the SCCVW\_GETRAWTEXT. However, Content Access can retrieve more data than is available from the raw text buffer, including non-visible text (such as document properties and hidden text), and text from embedded documents.

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## Platforms

Windows, X Windows

### 5.30.1 SCCVWGETRAWTEXT50 Structure

This structure is passed by the OEM through the SCCVW\_GETRAWTEXT message.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwOptions;
    VTDWORD    dwACC;
    VTHANDLE   hText;
    VTDWORD    dwCharCount;
    VTDWORD    dwCharSet;
```

```
VTDWORD   dwTextBufSize;  
VTDWORD   dwTextOffset;  
} SCCVWGETRAWTEXT50;
```

### Parameters

- **dwSize:** Must be set by the OEM to sizeof(SCCVWGETRAWTEXT50).
- **dwOptions:** Flags indicating options for getting the raw text (none defined, set to 0).
- **dwACC:** Set this to the actual character count, 0 based from the beginning of the document, which defines the raw text buffer being requested.
- **hText:** Returns the handle to an array of BYTEs representing characters. It is the developer's responsibility to free the hText handle when finished accessing the text.
- **dwCharCount:** Returns the number of characters in hText.
- **dwCharSet:** Returns the SO\_\* (see sodefs) character set of the characters in hText. The output character set is either the default native environment character set or Unicode if the SCCID\_SYSTEMFLAGS is set to SCCVW\_SYSTEM\_UNICODE.
- **dwTextBufSize:** Returns the size in bytes in hText. This is not necessary the same as the number of characters for DBCS and Unicode character sets.
- **dwTextOffset:** Returns the number of characters from the beginning of the document to the first character in hText.

## 5.31 SCCVW\_GETTREECOUNT

\* This message allows the parent to get the number of nodes in an archive file. A node is defined as either a folder or a file. Node 0 is the root node for the archive, and contains the other nodes.

### Parameters

- **wParam:** Should be set to 0.
- **LParam:** Pointer to a VTDWORD to be filled in with the number of nodes in the archive.

### Return Value

One of the following values:

- **SCCVWERR\_BADPARAM:** There was a problem with the parameters passed into this call. This can include the file being viewed not being an archive file.
- **SCCVWERR\_OK:** The VTDWORD has been filled in with the number of nodes in the archive.

### Platforms

Windows, X Windows

## 5.32 SCCVW\_GETTREENODE

\* This message allows the parent to get information regarding a node such as the name or size of the node. A node is defined as either a folder or a file. Node 0 is the root node for the archive, and contains the other nodes.

**Parameters**

- wParam: Should be set to 0.
- lParam: Pointer to a SCCDATREENODE structure.

**Return Value**

One of the following values:

- SCCVWERR\_BADPARAM: There was a problem with the parameters passed to this message. This can include the file being viewed not being an archive file.
- SCCVWERR\_OK: The SCCDATREENODE structure has been filled in with information about the node in the archive.

**Platforms**

Windows, X Windows

**Comments**

A node can be either a folder, or an archived file. For archives that store path information, the path is broken down into separate nodes. Node zero is always a folder that contains the contents of the archive file.

**5.32.1 SCCDATREENODE Structure**

This structure is passed by the OEM through the SCCVW\_GETTREENODE message.

**Structure**

A C data structure defined in sccda as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwNode;
    VTTCHAR    szName[1024];
    VTDWORD    dwFileSize;
    VTDWORD    dwTime;
    VTDWORD    dwFlags;
    VTDWORD    dwCharSet;
} SCCDATREENODE, *PSCCDATREENODE;
```

**Parameters**

- dwSize: Must be set by the OEM to sizeof(SCCDATREENODE).
- dwNode: The number of the node to retrieve information about (zero-based).
- szName: A buffer to hold the name of the node.
- dwFileSize: Returns the file size (in bytes) of the requested node. Folder nodes have size 0.
- dwTime: Returns the timestamp of the requested node, in MS-DOS time.
- dwFlags: Returns additional information about the node. It can be a combination of the following:
  - SCCDA\_TREENODEFLAG\_FOLDER: Indicating that the selected node is a folder and not a file.
  - SCCDA\_TREENODEFLAG\_SELECTED: Indicating that the node is selected.

- SCCDA\_TREENODEFLAG\_FOCUS: Indicating that node has focus.
- dwCharSet: Returns the SO\_\* (see sodefs) character set of the characters in szName. The output character set is either the default native environment character set or Unicode if the SCCID\_SYSTEMFLAGS is set to SCCVW\_SYSTEM\_UNICODE.

## 5.33 SCCVW\_GOTOANNOTATION

\* This message allows the parent to move the view/selection from annotation to annotation.

### Parameters

- wParam: Flags indicating the starting position and the meaning of the value in lParam. One of the following:
  - SCCVW\_GOTOFIRST: Go to the first or only annotation in the document that meets the mask or absolute criteria.
  - SCCVW\_GOTOLAST: Go to the last or only annotation in the document that meets the mask or absolute criteria.
  - SCCVW\_GOTOPREV: Go to the first annotation that appears before the current caret/selection in the document and meets the mask or absolute criteria.
  - SCCVW\_GOTONEXT: Go to the first annotation that appears after the current caret/selection in the document and meets the mask or absolute criteria.

OR-ed with one of the following:

- SCCVW\_ABSOLUTE: lParam represents an absolute dwUser value as set by the developer in a SCCVW\_ADDANNOTATION message.
- SCCVW\_MASK: lParam represents a mask to be applied to the dwUser values of the annotations.
- lParam: If wParam contains SCCVW\_ABSOLUTE, the set of annotations that can be moved to is limited to those annotations where dwUser == lParam. If wParam contains SCCVW\_MASK, the set of annotations that can be moved to is limited to those annotations where dwUser & lParam == lParam. For example, if five annotations exist with the following dwUser values:
  - Annotation 1 (dwUser = 0x001)
  - Annotation 2 (dwUser = 0x0010)
  - Annotation 3 (dwUser = 0x0011)
  - Annotation 4 (dwUser = 0x0100)
  - Annotation 5 (dwUser = 0x1000)... then the following are true:
  - an lParam of 0x0000 will use all the annotations
  - an lParam of 0x0001 will use annotations 1 and 3
  - an lParam of 0x0011 will use annotation 3 only
  - an lParam of 0x1001 will not use any annotations

SCCVW\_MASK can be used to move around within a particular class of annotation that each has a unique dwUser but share some bits in common.

### Return Value

One of the following values:

- SCCVWERR\_NONEFOUND: No annotation that meets the mask or absolute criteria was found.
- SCCVWERR\_OK: An annotation that meets the mask or absolute criteria was found and is selected
- SCCVWERR\_BADPARAM: One of the values in wParam or lParam is bad.

### Platforms

Windows, X Windows

## 5.34 SCCVW\_HILITESTYLE

\* This message allows the parent to define a formatting style for highlighted text. The style identifier can be used in conjunction with SCCVW\_ADDANNOTATION.

### Parameters

- wParam: Should be set to 0.
- wCharAttr: Refers to the value set for the wAttr variable used in the SCCVWFONTSPEC structure of the SCCID\_DEFAULTPRINTFONT option to determine font attributes.
- lParam: Pointer to a structure of the type SCCVWHILITESTYLE41.

### Return Value

One of the following values:

- SCCVWERR\_OK: The style definition has been stored.
- SCCVWERR\_BADPARAM: One of the values in the SCCVWCOPY41 structure was invalid.

### Platforms

Windows, X Windows

### 5.34.1 SCCVWHILITESTYLE41 Structure

This structure is passed by the OEM through the SCCVW\_HILITESTYLE message.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD      dwSize;
    VTDWORD      dwStyleId;
    VTDWORD      dwOptions;
    SCCVWCOLORREF sForeground;
    SCCVWCOLORREF sBackground;
    VTWORD       wCharAttr;
```

```
} SCCVWHILITESTYLE41;
```

### Parameters

- `dwSize`: Must be set by the OEM to `sizeof(SCCVWHILITESTYLE41)`.
- `dwStyleId`: A unique ID for this style which can be used when adding highlight annotations with the `SCCVW_ADDANNOTATION` message.
- `dwOptions`: Flags which provide highlight options:
  - `SCCVW_USEFOREGROUND`: Indicates that `sForeground` defines the foreground text color to apply to highlights with this style.
  - `SCCVW_USEBACKGROUND`: Indicates that `sBackground` defines the background color to apply to highlights with this style.
  - `SCCVW_USECHARATTR`: Indicates that `wCharAttr` defines attributes to apply to highlights with this style.
- `sForeground`: Defines the color to be used for the highlight text if `SCCVW_USEFOREGROUND` was set in `dwOptions`. Set this value using the `SCCVWRGB(red,green,blue)` macro. The red, green, and blue are percentages of the color from 0-255 (with 255 being 100%).
- `sBackground`: Defines the color to be used for the background of the highlight if `SCCVW_USEBACKGROUND` was set in `dwOptions`. Set this value using the `SCCVWRGB(red,green,blue)` macro. The red, green, and blue are percentages of the color from 0-255 (with 255 being 100%).
- `wCharAttr`: Defines the font attribute to be used for the highlight text if `SCCVW_USECHARATTR` was set in `dwOptions`.

### 5.34.2 SCCVWHILITESTYLE81 Structure

This structure is passed by the OEM through the `SCCVW_HILITESTYLE` message.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct SCCVWHILITESTYLE81tag
{
    VTDWORD        dwSize;
    VTDWORD        dwStyleId;
    VTDWORD        dwOptions;
    SCCVWCOLORREF  sForeground;
    SCCVWCOLORREF  sBackground;
    VTWORD         wCharAttr;
    VTWORD         wCharAttrMask;
    SCCVWCOLORREF  sUnderline;
} SCCVWHILITESTYLE81, * PSCCVWHILITESTYLE81;
```

The behavior of most of the fields is identical with their behavior in the `SCCVWHILITESTYLE41` data structure. The only differences are as follows:

- The addition of `wCharAttrMask`. This field uses the same flags as the `wCharAttr` field, and is used to indicate which bits of `wCharAttr` should be used in defining this style. If a particular attribute is set in `wCharAttrMask`, then the corresponding value from `wCharAttr` will be used in the style. In this way, the combination of `wCharAttr` and `wCharAttrMask` may be used to turn on or off any of the available

character attributes. Any flag set in `wCharAttr` without the corresponding flag set in `wCharAttrMask` will be ignored.

- The addition of `sUnderline`. This value is a color reference that allows a highlight to be specified in which the text is underlined in a color that is different from the text color. For this value to take effect, the `SCCVW_USEUNDERLINECOLOR` flag must be set in the `dwOptions` field.

### Parameters

- `dwSize`: Must be set by the OEM to `sizeof(SCCVWHILITESTYLE81)`.
- `dwStyleId`: A unique ID for this style which can be used when adding highlight annotations with the `SCCVW_ADDANNOTATION` message.
- `dwOptions`: Flags which provide highlight options:
  - `SCCVW_USEFOREGROUND`: Indicates that `sForeground` defines the foreground text color to apply to highlights with this style.
  - `SCCVW_USEBACKGROUND`: Indicates that `sBackground` defines the background color to apply to highlights with this style.
  - `SCCVW_USECHARATTR`: Indicates that `wCharAttr` defines attributes to apply to highlights with this style.
  - `SCCVW_USETHINUNDERLINE`: If the user specifies this flag in the `dwOptions` field of this data structure, and the style defines an underline character attribute, then the underline will be drawn with a thin line. This overrides the normal case in which the thickness of an underline scales to the size of the font.
  - `SCCVW_USEUNDERLINECOLOR`: If the user specifies this flag in the `dwOptions` field of this data structure, and the style defines an underline character attribute, then the `sUnderline` field will be used to specify the color of underline attributes applied with this style. If this flag is not specified, the `sUnderline` field will be ignored, and the text color will be used for any underline attributes that may be defined.
- `sForeground`: Defines the color to be used for the highlight text if `SCCVW_USEFOREGROUND` was set in `dwOptions`. Set this value using the `SCCVWRGB(red,green,blue)` macro. The red, green, and blue are percentages of the color from 0-255 (with 255 being 100%).
- `sBackground`: Defines the color to be used for the background of the highlight if `SCCVW_USEBACKGROUND` was set in `dwOptions`. Set this value using the `SCCVWRGB(red,green,blue)` macro. The red, green, and blue are percentages of the color from 0-255 (with 255 being 100%).
- `wCharAttr`: Defines the font attribute to be used for the highlight text if `SCCVW_USECHARATTR` was set in `dwOptions`. The following character attribute values are supported:
  - `SCCVW_CHARATTR_UNDERLINE`
  - `SCCVW_CHARATTR_ITALIC`
  - `SCCVW_CHARATTR_BOLD`
  - `SCCVW_CHARATTR_STRIKEOUT`
  - `SCCVW_CHARATTR_CAPS`
  - `SCCVW_CHARATTR_SUBSCRIPT`

- SCCVW\_CHARATTR\_SUPERSCRIPT
- SCCVW\_CHARATTR\_DUNDERLINE
- SCCVW\_CHARATTR\_WORDUNDERLINE
- SCCVW\_CHARATTR\_DASHUNDERLINE
- SCCVW\_CHARATTR\_DOTUNDERLINE

Note that though there are multiple underline attributes defined independently of each other, only one at a time may be applied as an annotation style. If more than one underline style is specified in the character attribute flags, it is not guaranteed which underline style will take effect.

## 5.35 SCCVW\_HSCROLL

\* This message allows the OEM to cause horizontal scrolling behavior.

### Parameters

- wParam: Code describing how to scroll. One of the following values:
  - SCCSB\_LINELEFT: Scroll left one line as if the left arrow on the scroll bar had been pressed.
  - SCCSB\_LINERIGHT: Scroll right one line as if the right arrow on the scroll bar had been pressed.
  - SCCSB\_PAGELEFT: Scroll left one page.
  - SCCSB\_PAGERIGHT: Scroll right one page.
  - SCCSB\_POSITION: Sets the scroll bar to the position given in lParam.
- lParam: Position used if wParam = SCCSB\_POSITION. Its value must be in the range given by the last SCCVW\_SETSCROLLRANGE message sent to the OEM.

### Return Value

One of the following values:

- SCCVWERR\_OK: View window was scrolled.
- SCCVWERR\_BADPARAM: One of the values in wParam or lParam is bad.

### Platforms

Windows, X Windows

## 5.36 SCCVW\_IDLE

\* This message should be sent repeatedly by the developer to the viewer during the viewing process. This message allows the viewer to blink the cursor and read ahead in the file being viewed. Under Windows, this message is only necessary if the developer has set the SCCVW\_SYSTEM\_NOTIMER message in the SCCID\_SYSTEMFLAGS option.

### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.



**Platforms**

Windows, X Windows

## 5.37 SCCVW\_INITDRAWPAGE

\* This message initializes the page drawing routines. This message must be called before any calls to SCCVW\_DRAWPAGE.

**Parameters**

- wParam: Should be set to 0.
- lParam: Should be set to 0.

**Return Value**

One of the following values:

- SCCVWERR\_OK: Ready of SCCVW\_DRAWPAGE messages.
- SCCVWERR\_ALLOCFAILED: Not enough memory to do page drawing.

**Platforms**

Windows, X Windows

## 5.38 SCCVW\_KEYDOWN

\*\* This message is sent to the developer when the view window receives a key press notification from the operating system. This allows the developer to define their own function for any key.

**Parameters**

- wParam: Not used, will be set to 0.
- lParam: Operating system specific key identifier.

For Windows, lParam represents the Windows virtual key code (for example, VK\_DOWN). For X-Windows, lParam represents a pointer to the triggering key event structure.

**Return Value**

One of the following values:

- SCCVW\_DOKEY: If the view window should process the key as usual.
- SCCVW\_IGNOREKEY: If the view window should ignore the key.

**Platforms**

Windows, X Windows

## 5.39 SCCVW\_MAPPOSITION

\* This message allows the parent to map between a position and an actual character count.

**Parameters**

- wParam: Should be set to 0.

- IParam: Pointer to a structure of the type SCCVWMAPPOSITION41.

### Return Value

One of the following values:

- SCCVWERR\_OK: The mapping was successful
- SCCVWERR\_BADPARAM: One of the values in the SCCVWMAPPOSITION41 structure was invalid.
- SCCVWERR\_NONEFOUND

### Platforms

Windows, X Windows

## 5.39.1 SCCVWMAPPOSITION41 Structure

This structure is passed by the OEM through the SCCVW\_MAPPOSITION message.

### Structure

A C data structure defined in sccvw as follows.

```
typedef struct
{
    VTDWORD      dwSize;
    VTDWORD      dwMapOptions;
    SCCVWPOS     sPos;
    VTDWORD      dwACC;
} SCCVWMAPPOSITION41;
```

### Parameters

- dwSize: Must be set by the OEM to sizeof(SCCVWMAPPOSITION41).
- dwMapOptions: Flags indicating mapping options. One of the following:
  - SCCVW\_MAPACCTOPOS: Map the actual character count provided in dwACC into an SCCVWPOS and store the result in sPos. An actual character count is 0 based count of characters from the beginning of the document. See section 6.28.
  - SCCVW\_MAPPOSTOACC: Map the SCCVWPOS identified by sPos into an actual character count and store the result in dwACC.
- sPos: Identifies the position to be mapped or to map into according to the dwMapOptions.
- dwACC: Identifies the actual character count to be mapped or to map into according to the dwMapOptions.

## 5.40 SCCVW\_MAPPROB

\*\* This message informs the OEM that the page of a PDF file being read contains a font or fonts that are more likely to contain unmappable or incorrectly mapped characters.

The following fonts have non-standard encodings and do not have ToUnicode mappings. When used by PDF, they are considered standard:

- STANDARD

- MACROMAN
- MACEXPERT
- WIN\_ANSI
- SYMBOL
- ZAPF\_DINGBATS
- PDFDOC

Fonts with encodings not on this list will trigger this message if they do not have ToUnicode mappings.

This message will be sent once per page. Multiple non-standard fonts in a single page will not trigger repeated messages, but the use of a font across multiple pages will trigger one message for each such page.

#### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: 0

#### Return Value

None

## 5.41 SCCVW\_MAPTREEPOSITION

\* This message allows the parent to map between a position and an archive node numbers. The values can be used with the SCCVW\_GETREENODE, SCCVW\_FINDPOSITION and SCCVW\_SETSELECTION messages.

#### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a structure of the type SCCVW\_MAPTREEPOSITION82.

#### Return Value

One of the following values:

- SCCVWERR\_OK: The mapping was successful
- SCCVWERR\_BADPARAM: One of the values in the SCCVW\_MAPTREEPOSITION82 structure was invalid.
- SCCVWERR\_NONEFOUND: No node was found.

#### Platforms

Windows, X Windows

### 5.41.1 SCCVW\_MAPTREEPOSITION82 Structure

This structure is passed by the OEM through the SCCVW\_MAPTREEPOSITION message.

#### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwMapOptions;
    SCCVWPOS   sPos;
    VTDWORD    dwNode;
    VTDWORD    dwRecordNum;
} SCCVWMAPTREEPOSITION82;
```

### Parameters

- **dwSize:** Must be set by the OEM to sizeof(SCCVWMAPTREEPOSITION82).
- **dwMapOptions:** Flags indicating mapping options. One of the following:
  - **SCCVW\_MAPNODETOPOS:** Map the tree node value provided in dwNode into an SCCVWPOS and store the result in sPos.
  - **SCCVW\_MAPPOSTONODE:** Map the SCCVWPOS identified by sPos into an actual node value and store the result in dwNode.
- **sPos:** Identifies the position to be mapped or to map into according to the dwMapOptions. This value corresponds to the values used in SCCVW\_GETSELCTION and SCCVWSETSELECTION.
- **dwNode:** Identifies the actual node value to be mapped or to map into according to the dwMapOptions. This value corresponds to the values used in SCCVW\_GETTREENODE.
- **dwRecordNum:** Identifies the record number of the node in the archive. This value corresponds to the record number values used in the Content Access technology.

## 5.42 SCCVW\_OPTIONCHANGE

\*\* This message is sent to the developer whenever an option has been changed. It can be used to monitor the current state of options.

### Parameters

- **wParam:** The handle of the view window that is sending this message.
- **lParam:** Id of the option that has changed.

### Platforms

Windows, X Windows

## 5.43 SCCVW\_PRINT

\* Causes the viewer to print the file currently being viewed.

### Parameters

- **wParam:** Should be set to 0.
- **lParam:** Should be set to 0.

### Return Value

One of the following values:

- **SCCVWERR\_OK:** The file was printed.

- SCCVWERR\_CANCEL: The user pressed Cancel in the dialog.

### Comment

This call implements the entire printing process, including setup, option and printer selection dialogs. These dialogs give the user control over the full range of printing functionality available in this technology. If the developer needs more control over the printing process, the SCCVW\_PRINTEX message should be used.

### Platforms

Windows, X Windows

## 5.44 SCCVW\_PRINTEX

\* Causes the viewer to print the file currently being viewed based on information provided by the developer in the SCCVWPRINTEX structure.

### Parameters

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWPRINTEX40 (SCCVWPRINTEX60 on UNIX) structure.

### Return Value

One of the following values:

- SCCVWERR\_OK: The user OK'd the operation.
- SCCVWERR\_CANCEL: The user canceled the operation.

### Platforms

Windows, X Windows

### 5.44.1 SCCVWPRINTEX40 Structure (Windows Version)

This structure is used by the SCCVW\_PRINTEX messages to print a file.

### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwFlags;
    HWND       hParentWnd;
    HDC         hPrinterDC;
    VTTCHAR    szPrinter[128];
    VTTCHAR    szPort[128];
    VTTCHAR    szDriver[128];
    VTBOOL     bPrintSelectionOnly;
    VTBOOL     bDoSetupDialog;
    VTBOOL     bDoAbortDialog;
    VTBOOL     bPrintHeader;
    VTBOOL     bStartDocAlreadyDone;
    VTTCHAR    szJobName[40];
    VTDWORD    dwTopMargin;
    VTDWORD    dwBottomMargin;
```

```
VTDWORD   dwLeftMargin;
VTDWORD   dwRightMargin;
VTTCHAR   szDefaultFont[32];
VTWORD    wDefaultFontSize;
FARPROC   pAbortProc;
VTBOOL    bCollate;
VTDWORD   dwCopies;
VTHANDLE  hDevMode;
} SCCVWPRINTEX40;
```

### Parameters

- **dwSize**: Must be set to `sizeof(SCCVWPRINTEX40)`.
- **dwFlags**: Any of the following OR-ed together:
  - **SCCVW\_USEPRINTERDC**: Use `hPrinterDC` as the output device instead of the default printer.
  - **SCCVW\_USEPRINTERNAME**: If **SCCVW\_USEPRINTERDC** is NOT set, use `szPrinter`, `szPort` and `szDriver` as the output device instead of the default printer. If **SCCVW\_USEPRINTERDC** is set, use `szPrinter`, `szPort` and `szDriver` for display purposes in the Abort dialog.
  - **SCCVW\_USEPRINTSELECTIONONLY**: Use the value of `bPrintSelectionOnly` instead of the value of the **SCCID\_WHATTOPRINT** option.
  - **SCCVW\_USEJOBNAME**: Use the value of `szJobName` instead of the value of the **SCCID\_PRINTJOBNAME** option.
  - **SCCVW\_USEMARGINS**: Use the values of `dwTopMargin` through `dwRightMargin` as the margins instead of the value of the **SCCID\_DEFAULTPRINTMARGINS** option.
  - **SCCVW\_USEPRINTHEADER**: Use the value of `bPrintHeader` instead of the value of the **SCCID\_PRINTHEADER** option.
  - **SCCVW\_USEDEFAULTFONT**: Use the values of `szDefaultFont` and `wDefaultFontSize` instead of the value of the **SCCID\_DEFAULTPRINTFONT** option.
  - **SCCVW\_USEABORTPROC**: Use the values of `pAbortProc` as the Windows printing abort procedure instead of the default abort procedure.
  - **SCCVW\_USECOLLATE**: Use the values of `bCollate` instead of the value of the **SCCID\_PRINTCOLLATE** option.
  - **SCCVW\_USECOPIES**: Use the values of `dwCopies` instead of the value of the **SCCID\_PRINTCOPIES** option.
  - **SCCVW\_SENDPROGRESS**: The view window will send **SCCVW\_PRINTPROGRESS** messages during the print operation. Currently, this flag has not been implemented.
  - **SCCVW\_USEDEVMODE**: Use the value of `hDevMode` instead of the default device setup information for `hPrinterDC`.
- **hParentWnd**: Parent window for the setup and abort printing dialogs.
- **hPrinterDC**: Output DC created by the developer.
- **szPrinter**: String passed to `CreateDC` to create the output DC and/or used in the Abort dialog.

- `szPort`: String passed to `CreateDC` to create the output DC and/or used in the Abort dialog.
- `szDriver`: String passed to `CreateDC` to create the output DC and/or used in the Abort dialog.
- `bPrintSelectionOnly`: If set to `TRUE`, only the currently selected area of the file will be printed.
- `bDoSetupDialog`: If set to `TRUE`, the dialog shown in the `SCCVW_PRINT` message will be displayed before printing.
- `bDoAbortDialog`: If set to `TRUE`, an abort dialog with page count will be displayed as the file is printing.
- `bPrintHeader`: If set to `TRUE`, a header with the display name of the file and the page number will appear on every page.
- `bStartDocAlreadyDone`: This flag need only be set if you are passing in an `hPrinterDC`. If set to `TRUE`, the viewer will assume that a `StartDoc` has already been done on the DC and will not do a `StartDoc` or `EndDoc` itself. This flag can be used to print multiple files in a single print job.
- `szJobName`: The text passed to `StartDoc` as the job name. This text generally appears on banner pages for network printing.
- `dwTopMargin`: Distance in twips from the top edge of the page to the top edge of the area where output should appear.
- `dwBottomMargin`: Distance in twips from the bottom edge of the page to the bottom edge of the area where output should appear.
- `dwLeftMargin`: Distance in twips from the left edge of the page to the left edge of the area where output should appear.
- `dwRightMargin`: Distance in twips from the right edge of the page to the right edge of the area where output should appear.
- `szDefaultFont`: Name of the font to use when no font is specified in the document (such as ASCII documents).
- `wDefaultFontSize`: Height in half points of the font to use when no font is specified in the document.
- `pAbortProc`: A pointer to a valid Windows print abort procedure.
- `bCollate`: If `TRUE` the viewer will collate multiple copies.
- `dwCopies`: The number of copies that should be printed.
- `hDevMode`: Device mode associated with `hPrinterDC`.

#### 5.44.2 SCCVWPRINTEX60 Structure (UNIX Version)

This structure is used by the `SCCVW_PRINTEX` messages to print a file.

##### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct
{
    VTDWORD          dwSize;
    VTDWORD          dwFlags;
    VTBYTE           szPrinter[128];
}
```

```
VTBYTE          szPort[128];
VTBYTE          szDriver[128];
VTBOOL          bPrintSelectionOnly;
VTBOOL          bDoAbortDialog;
VTBOOL          bPrintHeader;
VTDWORD         dwTopMargin;
VTDWORD         dwBottomMargin;
VTDWORD         dwLeftMargin;
VTDWORD         dwRightMargin;
VTBYTE          szDefaultFont[32];
VTWORD          wDefaultFontSize;
SCCVWABORTPROC  pAbortProc;
VTDWORD         dwCopies;
} SCCVWPRINTEX60;
```

### Parameters

- `dwSize`: Must be set to `sizeof(SCCVWPRINTEX60)`.
- `dwFlags`: Any of the following OR-ed together:
  - `SCCVW_USEPRINTERNAME`: If this parameter is set, then the `szPrinter`, `szPort` and `szDriver` parameters must be set in order to avoid undefined behavior.
  - `SCCVW_USEMARGINS`: Use the values of `dwTopMargin` through `dwRightMargin` as the margins instead of the value of the `SCCID_DEFAULTPRINTMARGINS` option.
  - `SCCVW_USEPRINTHEADER`: Use the value of `bPrintHeader` instead of the value of the `SCCID_PRINTHEADER` option.
  - `SCCVW_USEDEFAULTFONT`: Use the values of `szDefaultFont` and `wDefaultFontSize` instead of the value of the `SCCID_DEFAULTPRINTFONT` option.
  - `SCCVW_USEABORTPROC`: Use the values of `pAbortProc` as the UNIX printing abort procedure instead of the default abort procedure.
  - `SCCVW_USECOPIES`: Use the values of `dwCopies` instead of the value of the `SCCID_PRINTCOPIES` option.

- `szPrinter`: The alias for the desired printer in the [devices] section of `xpdefaults` (for example, HP LaserJet IV PostScript Cartridge). If the specified alias does not exist in `xpdefaults`, the Viewer will assume that you wish to output to a file. For example, if the printer alias HP LaserJet IV PostScript Cartridge is specified but does not exist in `xpdefaults`, the Viewer will write the contents of the file to a postscript file named HP LaserJet IV PostScript Cartridge. If this parameter is set to `NULL`, no printing will occur.

If printing to a user-named file is desired, the filename (for example, `/d/user/sample.ps`) should be the value for `szPrinter`, `szPort` should be set to an empty string, and `szDriver` can be set to any one of its three valid values.

- `szPort`: This string must be an existing alias in `xpdefaults` (in the [ports] section of the file) or the keyword `FILE`; which indicates that the printer driver should output the viewed document to a PostScript file. If set to `NULL`, the first port specified for `szPrinter` in `xpdefaults` is used.
- `szDriver`: If printing to a device is desired, this must be set to `""`, in which case the default driver listed in `xpdefaults` is used. If the default driver in `xpdefaults` is one that the target printer isn't capable of reading, printing will fail and there may be



undefined behavior from the Viewer. Make sure that all parameters in `xpdefaults` are correct and that the target printer is properly installed.

When printing to a file is desired, `szDriver` must be set to one of the following:

- PostScript
- PCL
- PCL4
- `bDoAbortDialog`: If set to TRUE, an abort dialog with page count will be displayed as the file is printing.
- `bPrintHeader`: If set to TRUE, a header with the display name of the file and the page number will appear on every page.
- `dwTopMargin`: Distance in twips from the top edge of the page to the top edge of the area where output should appear.
- `dwBottomMargin`: Distance in twips from the bottom edge of the page to the bottom edge of the area where output should appear.
- `dwLeftMargin`: Distance in twips from the left edge of the page to the left edge of the area where output should appear.
- `dwRightMargin`: Distance in twips from the right edge of the page to the right edge of the area where output should appear.
- `szDefaultFont`: Name of the font to use when no font is specified in the document (such as ASCII documents).
- `wDefaultFontSize`: Height in half points of the font to use when no font is specified in the document.
- `pAbortProc`: A pointer to a valid UNIX print abort procedure.
- `dwCopies`: The number of copies that should be printed.

## 5.45 SCCVW\_PRINTSETUP

\* Brings up a platform dependent dialog that allows the user to pick from various platform-printing options.

### Parameters

- `wParam`: Should be set to 0.
- `lParam`: Should be set to 0.

### Return Value

One of the following values:

- `SCCVWERR_OK`: The user OK-ed the operation.
- `SCCVWERR_CANCEL`: The user canceled the operation.

### Comment

The dialog allows the user to pick from the printers on the system. Additionally, Windows users can change their printer's settings.

### Platforms

Windows, X Windows

## 5.46 SCCVW\_RAWTEXTEVENT

\* \* This message is sent repeatedly to the developer during the initial read of a document. Each message identifies the 0-based offset of the next block of raw text available from the technology. The last RawTextEvent contains a text offset of -1 to indicate it is done extracting text from the file. SCCVW\_GETRAWTEXT can be used to retrieve the text buffer.

### Parameters

- wParam: Handle of the view window sending this message.
- lParam: Defines the character offset of the next available raw text buffer.

### Platforms

Windows, X Windows

## 5.47 SCCVW\_READAHEADDONE

\* \* Signals that the chunker is done reading the document. This means that the Outside In Viewer has completely read to the end of the document. This doesn't mean that rendering is done. It may also be necessary for the Outside In Viewer to access the file again while the user scrolls through the document.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: Should be set to 0

### Platforms

Windows, X Windows

## 5.48 SCCVW\_SAVEOPTIONS

\* Causes the view window to save its current options in the default option set. Generally this happens automatically when the window is destroyed, but if the developer disables this default behavior by setting the SCCVW\_SYSTEM\_NOOPTIONSSAVE flag in the SCCID\_SYSTEMFLAGS option, this message may be used to manually save the current options.

### Parameters

- wParam: Should be set to 0.
- lParam: Should be set to 0.

### Platforms

Windows, X Windows

## 5.49 SCCVW\_SAVETREENODE

\* This message instructs the viewer to save a given tree node from an archive file to a new file.

**Parameters**

- wParam: Should be set to 0.
- lParam: Should be a pointer to a SCCVWSAVENODE structure.

**Return Value**

One of the following values:

- SCCVWERR\_BADPARAM: There was a problem with the parameters passed into this call. This can include the file being viewed not being an archive file, or an invalid path being specified.
- SCCVWERR\_OK: The node was saved successfully.

**Platforms**

Windows, X Windows

**Comments**

A node can be either a folder, or a file. If a file is saved, just that file will be saved. If a node is saved, it will save all the contents of that node as well. Saving node zero will save the entire contents of the archive file.

**5.49.1 SCCVWSAVENODE Structure**

This structure is passed by the OEM through the SCCVW\_SAVETREENODE message.

**Structure**

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwNode;
    VTDWORD    dwFlags;
    VTTCHAR    szPath[256];
    VTTCHAR    szName[256];
} SCCVWSAVENODE;
```

**Parameters**

- dwSize: Must be set by the OEM to sizeof(SCCVWSAVENODE).
- dwNode: The number of the node to be saved (zero-based).
- dwFlags: Sets additional information about how to handle the node. Currently the only supported flag is SCCVW\_SAVENODEFLAG\_RESTORE\_PATH indicating that the full path for a selected node is to be expanded. If this is not set, the node will be saved into the path exactly specified by szPath.
- szName: The name to save the node as, if the node is a file. If the node is a folder, this field is ignored. The name specified in the archive file will be used if this is a null string.
- szPath: The path specifying where to save the node. If this is a null string, the path will be obtained from the option SCCID\_ARCOUTPUTPATH. If this path does not exist and cannot be created, the save message will fail.

## 5.50 SCCVW\_SEARCH

\* Causes the view window to scan the document for a text string.

### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a structure of type SCCVWSEARCHINFO40 or SCCVWSEARCHINFO80.

### Return Value

One of the following:

- 0: The search string was found.
- -1: An error occurred in searching.
- 1: The search reached either end of the file before finding the search string.

### Platforms

Windows, X Windows

### 5.50.1 SCCVWSEARCHINFO40 and SCCVWSEARCHINFO80 Structures

These structures are used by the SCCVW\_SEARCH and SCCVW\_SEARCHDIALOG messages to specify what to search for in a file. Note that while both of these structures can accept Unicode, only the SCCVWSEARCHINFO80 structure is truly intended to accept Unicode.

### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTTCHAR    siText[80];
    VTWORD     siTextLen;
    VTWORD     siType;
    VTWORD     siFrom;
    VTWORD     siDirection;
} SCCVWSEARCHINFO40;
```

```
typedef struct
{
    VTDWORD    dwSize;
    VTWORD     siText[80];
    VTWORD     siTextLen;
    VTWORD     siType;
    VTWORD     siFrom;
    VTWORD     siDirection;
} SCCVWSEARCHINFO80;
```

### Parameters

- dwSize: Must be set by the developer to sizeof(SCCVWSEARCHINFO40) or sizeof(SCCVWSEARCHINFO80).
- siText: String to search for.

- siTextLen: Length of siText. This should be in bytes for the SCCVWSEARCHINFO40 structure and words for the SCCVWSEARCHINFO80 structure.
- siType: One of the following:
  - SCCVW\_SEARCHCASE: Case sensitive search.
  - SCCVW\_SEARCHNOCASE: Case insensitive search.
- siFrom: One of the following:
  - SCCVW\_SEARCHTOP: Start the search at the top of the file.
  - SCCVW\_SEARCHBOTTOM: Start the search at the bottom of the file.
  - SCCVW\_SEARCHCURRENT: Start the search at the current caret position.
- siDirection: One of the following:
  - SCCVW\_SEARCHFORWARD: Search towards the bottom of the file.
  - SCCVW\_SEARCHBACK: Search towards the top of the file.

## 5.51 SCCVW\_SEARCHDIALOG

\* Causes the view window to display a search dialog.

### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a structure of type SCCVWSEARCHINFO40 or SCCVWSEARCHINFO80, this value may be NULL if the developer does not want to set or retrieve search information. See the "Comments" for this message for details.

### Return Value

One of the following:

- 0: The search string was found.
- -1: An error occurred in searching.
- 1: The search reached either end of the file before finding the search string.

### Comments

The search dialog is initialized to the values in SCCVWSEARCHINFO40 or SCCVWSEARCHINFO80 passed in lParam. If the user clicks OK, the search is executed and the SCCVWSEARCHINFO40 or SCCVWSEARCHINFO80 passed in lParam is set to the values the user entered.

### Platforms

Windows

## 5.52 SCCVW\_SEARCHNEXT

\* Causes the view window to scan the file for the same text string specified in a previous SCCVW\_SEARCH or SCCVW\_SEARCHDIALOG message.

**Parameters**

- wParam: One of the following:
  - SCCVW\_SEARCHFORWARD: Search towards the bottom of the file.
  - SCCVW\_SEARCHBACK: Search towards the top of the file.
  - SCCVW\_SEARCHSAME: Continue searching in the same direction as the original search.
- lParam: Should be set to 0.

**Return Value**

One of the following:

- 0: The search string was found.
- -1: An error occurred in searching.
- 1: The search reached either end of the file before finding the search string.

**Platforms**

Windows, X Windows

## 5.53 SCCVW\_SELCHANGE

\*\* This message is sent to the parent of the view window when the selection state has changed. The parent may then call SCCVW\_GETCLIPINFO to determine the view window's readiness to copy to the clipboard.

**Parameters**

- wParam: The handle of the view window that is sending this message.
- lParam: Should be set to 0.

**Return Value**

none

**Platforms**

Windows, X Windows

## 5.54 SCCVW\_SELECTALL

\* Causes the viewer window to select all data in the view window.

**Parameters**

- wParam: Should be set to 0.
- lParam: Should be set to 0.

**Return Value**

none

**Platforms**

Windows, X Windows

## 5.55 SCCVW\_SETDISPLAYNAME

\* This call sets the string used when a human readable form of the file name needs to be displayed (like in a dialog). This is useful if the file is a temporary copy of another file (like attachments in mail programs).

### Parameters

- wParam: Should be set to 0.
- lParam: Pointer to a NULL-terminated string with a length less than SCCVW\_DISPLAYNAMEMAX.

### Return Value

One of the following values:

- SCCVWERR\_OK: The display name was set.
- SCCVWERR\_UNKNOWN: There was a problem setting the display name.

### Platforms

Windows

## 5.56 SCCVW\_SETHSCROLLPAGEIZE

\*\* This message is sent from the view window when the page size (thumb size) of the horizontal scroll bar changes. It allows the OEM to establish correct thumb sizes of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: Contains the new page size.

### Platforms

Windows, X Windows

## 5.57 SCCVW\_SETHSCROLLPOSITION

\*\* This message is sent from the view window when the position of the horizontal scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: Contains the new position.

### Platforms

Windows, X Windows

## 5.58 SCCVW\_SETHSCROLLRANGE

\* \* This message is sent from the view window when the range of the horizontal scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: LOWORD(lParam) contains the new minimum position.  
HIWORD(lParam) contains the new maximum position.

### Platforms

Windows, X Windows

## 5.59 SCCVW\_SETHSCROLLSTATE

\* \* This message is sent from the view window when the state of the horizontal scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: One of the following:
  - SCCSB\_ENABLED: Scroll bar should be enabled.
  - SCCSB\_DISABLED: Scroll bar should be disabled.

### Platforms

Windows, X Windows

## 5.60 SCCVW\_SETIDLEBITMAP

\* Sets the bitmap to be centered in the view window when no file is being viewed.

### Parameters

- wParam: An instance handle of the EXE or DLL that contains the bitmap.
- lParam: LOWORD(lParam) should contain the resource ID of the bitmap.  
HIWORD(lParam) Should be set to 0.

### Return Value

None.

### Platforms

Windows

## 5.61 SCCVW\_SETMENUMAX

\* This message informs the view window of the maximum value of the developer's menu IDs. This allows the view window to use IDs above this value when creating



menus or menu items for its menus. The default value if the message is not sent is #defined as SCCVW\_DEFAULTMENUMAX.

### Parameters

- wParam: Highest menu ID used by the caller.
- lParam: Not used.

### Platforms

Windows

## 5.62 SCCVW\_SETOPTION

\* This message allows the developer to set the current or default value of one of the many options available in the Viewer. The term option is a little misleading because some options act much more like properties or events in that they have an immediate impact on the display. In some cases they are very much like events in that they are only triggers for an operation (such as zooming in or out of a bitmap).

### Parameters

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWOPTIONSPEC40 structure.

### Return Value

One of the following values:

- SCCVWERR\_OK: Option has been set.
- SCCVWERR\_BADPARAM: Structure size was incorrect or the option ID was bad.

### Comment

The current option is the value the view is using. The default option is the initial value which a new view will have.

### Platforms

Windows, X Windows

### 5.62.1 SCCVWOPTIONSPEC40 Structure

This structure is passed by the developer through the SCCVW\_GETOPTION or SCCVW\_SETOPTION message.

### Structure

A C data structure defined in sccvw as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTDWORD    dwId;
    VTDWORD    dwFlags;
    VTVOID     pData;
} SCCVWOPTIONSPEC40;
```

**Parameters**

- `dwSize`: Must be set by the developer to `sizeof(SCCVWOPTIONSPEC40)`.
- `dwId`: The ID of the option the developer wants to set or get. These IDs, their data types and their functions are listed in the Options chapter of this book.
- `dwFlags`: Any of the following OR-ed together:
  - `SCCVWOPTION_CURRENT`: Set/Get the current value of the option.
  - `SCCVWOPTION_DEFAULT`: Set/Get the default value of the option.These two flags may only be used together when passing the structure to `SCCVW_SETOPTION`. In `SCCVW_GETOPTION` they are mutually exclusive.
- `pData`: A pointer to a data area containing the option's value on a Set or receiving the option's value on a Get. This area must be as large as the data type specified for the option ID the developer is getting or setting.

## 5.63 SCCVW\_SETSELECTION

\* This message allows the parent to set the anchor and end of selection given two positions. Setting the caret position can be achieved by setting the anchor and end of selection to the same position.

**Parameters**

- `wParam`: Should be set to 0.
- `lParam`: Pointer to a structure of the type `SCCVWSETSELECTION41`.

**Return Value**

One of the following values:

- `SCCVWERR_OK`: The mapping was successful.
- `SCCVWERR_BADPARAM`: One of the values in the `SCCVWSETSELECTION41` structure was invalid.

**Platforms**

Windows, X Windows

### 5.63.1 SCCVWSETSELECTION41 Structure

This structure is passed by the OEM through the `SCCVW_SETSELECTION` message.

**Structure**

A C data structure defined in `sccvw` as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    SCCVWPOS   sAnchorPos;
    SCCVWPOS   sEndPos;
} SCCVWSETSELECTION41;
```

**Parameters**

- `dwSize`: Must be set by the OEM to `sizeof(SCCVWSETSELECTION41)`.
- `sAnchorPos`: Identifies the start selection position.

- sEndPos: Identifies the end selection position.

## 5.64 SCCVW\_SETVSCROLLPAGESIZE

\*\* This message is sent from the view window when the page size (thumb size) of the vertical scroll bar changes. It allows the OEM to establish correct thumb sizes of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: Contains the new page size.

### Platforms

Windows, X Windows

## 5.65 SCCVW\_SETVSCROLLPOSITION

\*\* This message is sent from the view window when the position of the vertical scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: Contains the new position.

### Platforms

Windows, X Windows

## 5.66 SCCVW\_SETVSCROLLRANGE

\*\* This message is sent from the view window when the range of the vertical scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: LOWORD(lParam) contains the new minimum position.  
HIWORD(lParam) contains the new maximum position.

### Platforms

Windows, X Windows

## 5.67 SCCVW\_SETVSCROLLSTATE

\*\* This message is sent from the view window when the state of the vertical scroll bar changes. It allows the OEM to establish correct positioning of scroll bars external to the view window.

**Parameters**

- wParam: The handle of the view window that is sending this message.
- lParam: One of the following:
  - SCCSB\_ENABLED: Scroll bar should be enabled.
  - SCCSB\_DISABLED: Scroll bar should be disabled.

**Platforms**

Windows, X Windows

## 5.68 SCCVW\_VIEWAS

\* This call instructs the viewer to display files identified as unknown in a specific format.

**Parameters**

- wParam: Set to 0 to allow the view window to decide how to view the file.
- lParam: Should be set to 0.

**Platforms**

Windows, X Windows

## 5.69 SCCVW\_VIEWFILE

\* Causes the viewer to open and display the contents of a file. If another file is already open, it will be closed automatically. No intervening SCCVW\_CLOSEFILE is necessary.

**Parameters**

- wParam: Should be set to 0.
- lParam: A pointer to a SCCVWVIEWFILE40 or SCCVWVIEWFILE80 structure.

**Return Value**

One of the following values:

- SCCVWERR\_OK: Open was successful.
- SCCVWERR\_INVALIDID: File ID passed or generated is invalid.
- SCCVWERR\_FILTERLOADFAILED: The filter DLL for this file type could not be loaded.
- SCCVWERR\_FILTERALLOCFAILED: The filter DLL could not allocate enough memory.
- SCCVWERR\_NOFILTER: No filter available for this file type.
- SCCVWERR\_DISPLAYINITFAILED: The display window could not be initialized.
- SCCVWERR\_CHUNKERINITFAILED: The chunker (SCCCH.DLL) could not be initialized.
- SCCVWERR\_FILEOPENFAILED: The file could not be opened.
- SCCVWERR\_UNKNOWNFAILURE: Unknown type of failure.

- SCCVWERR\_BADFILE: The file is corrupt.
- SCCVWERR\_EMPTYFILE: The file is empty.
- SCCVWERR\_PROTECTEDFILE: The file is password protected or encrypted.
- SCCVWERR\_SUPFILEOPENFAILED: The filter could not open additional files needed to view the specified file.
- SCCVWERR\_BADPARAM: One of the parameters was invalid.

### Platforms

Windows, X Windows

## 5.69.1 SCCVWVIEWFILE40 and SCCVWVIEWFILE80 Structures

These structures are used by the SCCVW\_VIEWFILE and SCCVW\_VIEWTHISFILE messages to pass the description of a file to view. Note that while both of these structures can accept Unicode, only the SCCVWVIEWFILE80 structure is truly intended to accept Unicode.

### Structure

C data structures, defined in sccvw as follows:

```
typedef struct
{
    VTDWORD      dwSize;
    VTDWORD      dwSpecType;
    VTVOID       * pSpec;
    VTDWORD      dwViewAs;
    VTBOOL       bUseDisplayName;
    VTTCHAR      szDisplayName[SCCVW_DISPLAYNAMEMAX];
    VTBOOL       bDeleteOnClose;
    VTDWORD      dwFlags;
    VTDWORD      dwReserved1;
    VTDWORD      dwReserved2;
} SCCVWVIEWFILE40, * PSCCVWVIEWFILE40;
```

```
typedef struct
{
    VTDWORD      dwSize;
    VTDWORD      dwSpecType;
    VTVOID       * pSpec;
    VTDWORD      dwViewAs;
    VTBOOL       bUseDisplayName;
    VTWORD       szDisplayName[SCCVW_DISPLAYNAMEMAX];
    VTBOOL       bDeleteOnClose;
    VTDWORD      dwFlags;
    VTDWORD      dwReserved1;
    VTDWORD      dwReserved2;
} SCCVWVIEWFILE80, * PSCCVWVIEWFILE80;
```

### Parameters

- dwSize: Must be set by the developer to sizeof(SCCVWVIEWFILE40) or sizeof(SCCVWVIEWFILE80), depending on which structure is in use.
- dwSpecType: Describes the contents of pSpec, must be one of the following values:

- IOTYPE\_ANSIPATH: Windows only. pSpec points to a NULL-terminated full path name using the ANSI character set and FAT 8.3 (Win16) or NTFS (Win32 and Win64) file name conventions.
  - IOTYPE\_UNICODEPATH: Windows only. pSpec points to a NULL-terminated full path name using the Unicode character set and NTFS (Win32 and Win64) file name conventions.
  - IOTYPE\_UNIXPATH: X Windows on UNIX only. pSpec points to a NULL-terminated full path name using system default character set and UNIX path conventions.
  - IOTYPE\_REDIRECT: Windows and X Windows only. This allows the developer to redirect the IO routines used to read the file.
- pSpec: See the descriptions for individual dwSpecType values in the preceding list.
  - dwViewAs: The HIWORD should be set to 0. The LOWORD should be 0 (to allow the view window to decide how to view the file).
  - bUseDisplayName: If TRUE, szDisplayName is used when a human readable representation of the file needs to be displayed. If FALSE, the viewer will generate a display name from the file name.
  - szDisplayName: A NULL-terminated string used when a human readable form of the file name needs to be displayed (like in a dialog), this is useful if the file is a temporary copy of another file (like attachments in mail programs). The string should be in the viewer's current character set. SCCDISPLAYNAME\_MAX will be long enough to hold the longest file name for a given operating environment and sometimes longer. For instance, under FAT 8.3 (DOS), file names are 12 bytes long, but the Viewer uses 40 bytes so a more readable name can be set by the developer.
  - bDeleteOnClose: If set to TRUE, the view window will delete the file when the view of it is closed by SCCVW\_CLOSEFILE, SCCVW\_VIEWFILE or destroying the view window.
  - dwFlags: The only currently valid value for this parameter is 0.
  - dwReserved1, dwReserved2: Both are currently unused and should be set to 0.

## 5.70 SCCVW\_VIEWTHISFILE

\* \* This message is sent from the view window to the developer when another file should be viewed. Currently, this occurs is when the user double-clicks or hits return on a file entry in an Archive view and on a hyperlink to a referenced document. In the case of the archive formats, the display engine decompresses the file then sends a SCCVW\_VIEWTHISFILE message to the developer. In the case of a hyperlink, if the annotation is not overridden by the developer, this message is generated. The parent can ignore this message or create a new view to view the decompressed file. The parent should use SCCVW\_VIEWFILE to open the decompressed file.

### Parameters

- wParam: The handle of the view window that is sending this message.
- lParam: A pointer to a SCCVWVIEWTHISFILE40 or SCCVWVIEWTHISFILE80 structure which contains a SCCVWVIEWFILE40 or SCCVWVIEWFILE80 structure that can be passed unmodified through a SCCVW\_VIEWFILE message.

## Return Value

Must be `SCCVWERR_MESSAGEHANDLED` if you have viewed the file. Any other return value indicates that you have no interest in the file and the view window should clean up if necessary. Clean up usually entails deleting the file if it is temporary.

---

**Note:** The `SCCVWVIEWFILE40` or `SCCVWVIEWFILE80` structure inside the `SCCVWVIEWTHISFILE40` or `SCCVWVIEWTHISFILE80` structure contains a pointer to data (`pSpec`) that is only valid until you return from this message. The `pSpec` for a `SCCVWVIEWTHISFILE40` or `SCCVWVIEWTHISFILE80` structure copied into a local copy cannot be expected to still be valid at a later time

Do not send the `SCCVW_VIEWFILE` message to the same view window that sent you the `SCCVW_VIEWTHISFILE` message.

---

## Platforms

Windows, X Windows

### 5.70.1 SCCVWVIEWTHISFILE40 and SCCVEVIEWTHISFILE80 Structures

These structures are passed to the developer through the `SCCVW_VIEWTHISFILE` message. Note that while both of these structures can accept Unicode, only the `SCCVWVIEWTHISFILE80` structure is truly intended to accept Unicode.

#### Structure

A C data structure defined in `sccvw` as follows:

```
typedef struct
{
    VTDWORD          dwSize;
    SCCVWVIEWFILE40 sViewFile;
    VTWORD           wFileTime;
    VTWORD           wFileDate;
    VTDWORD          dwFileSize;
} SCCVWVIEWTHISFILE40;
```

```
typedef struct
{
    VTDWORD          dwSize;
    SCCVWVIEWFILE80 sViewFile;
    VTWORD           wFileTime;
    VTWORD           wFileDate;
    VTDWORD          dwFileSize;
} SCCVWVIEWTHISFILE80;
```

#### Parameters

- `dwSize`: Will be set to `sizeof(SCCVWVIEWTHISFILE40)` or `sizeof(SCCVWVIEWTHISFILE80)`.
- `sViewFile`: A `SCCVWVIEWFILE40` or `SCCVWVIEWFILE80` structure that may be a passed unmodified to another view window through the `SCCVW_VIEWFILE` message.
- `wFileTime`, `wFileDate`, `dwFileSize`: Reserved by Oracle.

## 5.71 SCCVW\_VSCROLL

\* This message allows the OEM to cause vertical scrolling behavior.

### Parameters

- wParam: Code describing how to scroll. One of the following values:
  - SCCSB\_TOP: Scroll to top.
  - SCCSB\_BOTTOM: Scroll to bottom.
  - SCCSB\_LINEUP: Scroll up one line as if the up arrow on the scroll bar had been pressed.
  - SCCSB\_LINEDOWN: Scroll down one line as if the down arrow on the scroll bar had been pressed.
  - SCCSB\_PAGEUP: Scroll up one view window page.
  - SCCSB\_PAGEDOWN: Scroll down one view window page.
  - SCCSB\_NEXTDOCPAGE: Scroll to the beginning of the next document page or section.
  - SCCSB\_PREVDOCPAGE: Scroll to the beginning of the previous document page or section.
  - SCCSB\_POSITION: Sets the scroll bar to the position given in lParam.
- lParam: Position used if wParam = SCCSB\_POSITION. Its value must be in the range given by the last SCCVW\_SETSCROLLRANGE message sent to the OEM.

### Return Value

One of the following values:

- SCCVWERR\_OK: View window was scrolled.
- SCCVWERR\_BADPARAM: One of the values in wParam or lParam is bad.

### Platforms

Windows, X Windows



Many developers using the earlier versions of this technology expressed a need to read file data from non-file system based sources. For instance, the developer might want to read the file from a database on a server. Perhaps the developer is downloading the file over a slow link, and wants to see the first screen of a document before the download is completed, or only wants to download enough to view the first screen. To address these requests, developers now have total control over access to a file via Outside In's redirected IO mechanism.

## 6.1 Using Redirected IO

A developer can redirect the IO for an input or output file by providing a data structure that contains pointers to custom IO routines for reading and writing. This data structure is passed in place of a typical file specification. The developer must set the `dwSpecType` parameter of the `SCCVWVIEWFILE40` or `SCCVWVIEWFILE80` structure to `IOTYPE_REDIRECT` when the `SCCVW_VIEWFILE` message is sent.

When `dwSpecType` is set this way, the `pSpec` element must contain a pointer to a developer-defined data structure that begins with a `BASEIO` structure (defined in `baseio.h`). The `BASEIO` structure contains pointers to the basic IO functions for the view window's IO system such as `Read`, `Seek`, `Tell`, etc. The developer must initialize these function pointers to their own functions that perform IO tasks. Beyond the `BASEIO` element, the developer may place any other data. For instance, a developer's structure might look like the following:

```
typedef struct MYFILEtag
{
    BASEIO    sBaseIO;        /* must be the first element */
    VTDWORD   dwMyInfo1;
    VTDWORD   dwMyInfo2;
    .
    .
    .
} MYFILE;
```

Since the `pSpec` passed is essentially the file handle that the view window uses, the developer can redirect the IO on a file-by-file basis while still viewing regular disk-based files.

The `BASEIO` structure is defined as follows:

```
typedef struct BASEIOtag
{
    IOCLOSEPROC pClose;
    IOREADPROC  pRead;
    IOWRITEPROC pWrite;
```

```

IOSEEKPROC pSeek;
IOTELLPROC pTell;
IOGETINFOPROC pGetInfo;
IOOPENPROC pOpen; /* pOpen *MUST* be set to NULL. */
#ifdef NLM
IOSEEK64PROC pSeek64;
IOTELL64PROC pTell64;
#endif
VTVOID *aDummy[3];
} BASEIO, * PBASEIO;

```

The developer must implement the Close, Read, Seek, Tell and GetInfo routines. The Write routine can be a dummy routine and the Open routine must be set to NULL. The first parameter to each of these routines is called hFile and is of the type HIOFILE. HIOFILE is simply the VTLPVOID to your data structure that was passed in the pSpec parameter of the SCCVWVIEWFILE40 or SCCVWVIEWFILE80 structure.

The sample source code for a simple implementation of Redirected IO is in the directory SAMPLES/REDIRect. This sample redirects the technology's IO through the fopen, fgetc, fseek, ftell and fclose run-time library routines.

---

**Note:** Redirected IO does not cache the whole file! Seeks can and will occur throughout the file during the course of viewing. If the developer is implementing redirected IO on a slow or sequential link, it is the developer's responsibility to cache the file locally.

---

## 6.2 IOClose

Closes the file identified by hFile and cleans up all memory associated with the file.

### Prototype

```

IOERR IOClose(
    HIOFILE hFile);

```

#### Parameters

- hFile: Identifies the file to be closed. Should be cast into a pointer to your data structure (MYFILE in the preceding discussion).

### Return Values

- IOERR\_OK: Close was successful.
- IOERR\_UNKNOWN: Some error occurred on close.

## 6.3 IORead

Reads data from the current file position forward and resets the position to the byte after the last byte read.

### Prototype

```

IOERR IORead(
    HIOFILE hFile,
    VTBYTE * pData,
    VTDWORD dwSize,
    VTDWORD * pCount);

```

### Parameters

- `hFile`: Identifies the file to be read. Should be cast into a pointer to your data structure (MYFILE in the preceding discussion).
- `pData`: Points to the buffer into which the bytes should be read. Will be at least `dwSize` bytes big.
- `dwSize`: Number of bytes to read.
- `pCount`: Points to the number of bytes actually read by the function. This value is only valid if the return value is `IOERR_OK`.

### Return Values

- `IOERR_OK`: Read was successful. `pCount` contains the number of bytes read and `pData` contains the bytes themselves.
- `IOERR_EOF`: Read failed because the file pointer was beyond the end of the file at the time of the read.
- `IOERR_UNKNOWN`: Read failed for some other reason.

## 6.4 IOWrite

Writes data from the current file position forward and resets the position to the byte after the last byte written.

---



---

**Note:** This function has been fully documented only for completeness. OEMs who use redirected IO do not need to implement writing and the `IOWrite` function should do nothing but return `IOERR_UNKNOWN`.

---



---

### Prototype

```
IOERR IOWrite(
    HIOFILE      hFile,
    VTBYTE       * pData,
    VTDWORD      dwSize,
    VTDWORD      * pCount);
```

### Parameters

- `hFile`: Identifies the file where the data is to be written. Should be cast into a pointer to your data structure (MYFILE in the preceding discussion).
- `pData`: Points to the buffer from which the bytes should be written. It must be at least `dwSize` bytes big.
- `dwSize`: Number of bytes to write.
- `pCount`: Points to the number of bytes actually written by the function. This value is only valid if the return value is `IOERR_OK`.

### Return Values

- `IOERR_OK`: Write was successful, `pCount` contains the number of bytes written.
- `IOERR_UNKNOWN`: Write failed for some reason.

## 6.5 IOSeek

Moves the current file position.

### Prototype

```
IOERR IOSeek(  
    HIOFILE    hFile,  
    VTWORD     wFrom,  
    VTLONG     lOffset);
```

### Parameters

- **hFile**: Identifies the file to be read. Should be cast into a pointer to your data structure (MYFILE in the preceding discussion).
- **wFrom**: One of the following values:
  - **IOSEEK\_TOP**: Move the file position lOffset bytes from the top (beginning) of the file.
  - **IOSEEK\_BOTTOM**: Move the file position lOffset bytes from the bottom (end) of the file.
  - **IOSEEK\_CURRENT**: Move the file position lOffset bytes from the current file position.
- **lOffset**: Number of bytes to move the file pointer. A positive value moves the file pointer forward in the file and a negative value moves it backward. If a requested seek value would move the file pointer before the beginning of the file, the file pointer should remain unchanged and IOERR\_UNKNOWN should be returned. Seeking past EOF is allowed. In that case IOERR\_OK should be returned. IOTell would return the requested seek position and IORead should return IOERR\_EOF and 0 bytes read.

### Return Values

- **IOERR\_OK**: Seek was successful.
- **IOERR\_UNKNOWN**: Seek failed for some reason.

## 6.6 IOTell

Returns the current file position.

### Prototype

```
IOERR IOTell(  
    HIOFILE    hFile,  
    VTDWORD    * pOffset);
```

### Parameters

- **hFile**: Identifies the file to be read. Should be cast into a pointer to your data structure (MYFILE in the preceding discussion).
- **pOffset**: Points to the current file position returned by the function.

### Return Values

- **IOERR\_OK**: Tell was successful.
- **IOERR\_UNKNOWN**: Tell failed for some reason.

## 6.7 IOGetInfo

Returns information about an open file.

### Prototype

```
IOERR IOGetInfo(
    HIOFILE      hFile,
    VTDWORD      dwInfoId,
    TVVOID       * pInfo);
```

### Parameters

- **hFile**: Identifies the file to be read. Should be cast into a pointer to your data structure (MYFILE in the previous discussion).
- **dwInfoId**: One of the following values:
  - **IOGETINFO\_FILENAME**: pInfo points to a string that should be filled with the base file name (no path) of the open file (for example TEST.DOC). If you do not know the file name, return IOERR\_UNKNOWN. Certain file types (such as DataEase) must know the original file name in order to open secondary files required to correctly view the original file. If you return IOERR\_UNKNOWN, these file types will not convert. See the description of IOGETINFO\_GENSECONDARY below.
  - **IOGETINFO\_PATHNAME**: pInfo points to a string that should be filled with the fully qualified path name (including the file name) of the open file. For example, C:\MYDIR\TEST.DOC. If you do not know the path name, return IOERR\_UNKNOWN.
  - **IOGETINFO\_PATHTYPE**: pInfo points to a DWORD that should be filled with the IOTYPE of the path returned by IOGETINFO\_PATHNAME. For instance, if you return a DOS path name in the Unicode character set, you should return IOTYPE\_UNICODEPATH.
  - **IOGETINFO\_ISOLE2STORAGE**: Must return IOERR\_FALSE. pInfo is not used.
  - **IOGETINFO\_GENSECONDARY**: pInfo points to a structure of type IOGENSECONDARY. Some file types require supporting files to be opened. These supporting files may contain formatting information or extra data. Also, templates may link to other templates, and the paths to those templates must be resolved. Correct handling of IOGETINFO\_GENSECONDARY is critical to the operation of the Outside In technology.

Since the developer is in total control of the IO for the primary file, the technology does not know how to generate a path to these secondary files or even if the secondary files are accessible through the regular file system. The IOGETINFO\_GENSECONDARY call gives the developer a chance to resolve this problem by generating a new IO specification for the secondary file in question. The developer gets just the base file name (often embedded in the original document or generated from the primary file's name) of the secondary file.

The developer may either use one of the standard Outside In IO types or totally redirect the IO for the secondary file, as well.

- **IOGETINFO\_64BITIO**: For redirected I/O that wishes to use 64-bit seek/tell functions, your IOGetInfo function must respond IOERR\_TRUE to this

dwInfoId. In addition, the pSeek64/pTell64 items in the baseio structure must be valid pointers to the proper function types.

Any other value should return IOERR\_BADINFOID.

- pInfo: The size of the pInfo buffer depends on the dwInfoId selected. For IOGETINFO\_FILENAME and IOGETINFO\_PATHNAME, the buffer is of size MAX\_PATH characters (each character is either one byte or two, depending on PATHTYPE). The IOGETINFO\_PATHTYPE buffer is the size of a VTDDWORD.

### Return Values

- IOERR\_OK: GetInfo was successful.
- IOERR\_TRUE: Affirmative response from a true or false GetInfo.
- IOERR\_FALSE: Negative response from a true or false GetInfo.
- IOERR\_BADINFOID: dwInfoId can not be handled by this file type.
- IOERR\_INVALIDSPEC: The file spec is bad for this type.
- IOERR\_UNKNOWN: GetInfo failed for some other reason.

## 6.7.1 IOGENSECONDARY and IOGENSECONDARYW Structures

These structures are passed to the developer through the IOGetInfo function. They allow the developer to tell the technology where a secondary file, needed to view the primary file, is located.

The SpecType of the original file determines which of these two structures is used. If the SpecType is IOTYPE\_UNICODEPATH, IOGENSECONDARYW is used. pFileName will point to a Unicode string terminated with a NULL WORD. For all other SpecTypes, IOGENSECONDARY is used and pFileName will point to a string terminated with a NULL BYTE.

The following is a C data structure defined in SCCIO.H:

```
typedef struct
{
    VTDDWORD    dwSize;
    VTLPBYTE    pFileName;
    VTDDWORD    dwSpecType;
    VTLPVOID    pSpec;
    VTDDWORD    dwOpenFlags
} IOGENSECONDARY, * PIOGENSECONDARY;
```

```
typedef struct
{
    VTDDWORD    dwSize;
    VTLPWORD    pFileName;
    VTDDWORD    dwSpecType;
    VTLPVOID    pSpec;
    VTDDWORD    dwOpenFlags
} IOGENSECONDARYW, * PIOGENSECONDARYW;
```

- dwSize: Will be set to sizeof (IOGENSECONDARY) or sizeof (IOGENSECONDARYW) (both of these values are the same).
- pFileName: A pointer to a string representing the file name of the secondary file that the technology requires. It will generally be a name that is stored in the primary file somewhere (such as MYSTYLE.STY for a Word for DOS file) or a

name generated from the primary file name (the primary file for a DataEase database will always have a .dba extension, the secondary name would be the same file name but with a .dbm extension).

- dwSpecType: The developer must fill this with the IOSPEC for the secondary file.
- pSpec: On entry, this pointer points to an array of 1024 bytes. If the dwSpecType is set a regular IOTYPE such as IOTYPE\_ANSIPATH, the developer may fill this array with the path name or structure required for that IOTYPE. If the developer is redirecting access to the secondary file, then dwSpecType will be IOTYPE\_REDIRECT and the developer should replace pSpec with a pointer to a developer-defined structure that begins with the BASEIO structure.
- Note the file is supposed to be opened by the OEM's redirected IO code by the time they return the BASEIO struct. This is because the pOpen routine in the BASEIO struct is supposed to be NULL.
- dwOpenFlags: Set by the technology. A set of bit flags describing how the secondary file should be opened. Multiple flags may be used by bitwise OR-ing them together. The following flags are currently used:
  - IOOPEN\_READ
  - The secondary file should be opened for read.
  - IOOPEN\_WRITE
  - The secondary file should be opened for write. Please note that if the specified file already exists, it's contents will be erased when this flag is set.
  - IOOPEN\_CREATE
  - The secondary file should be created (if it does not already exist) and opened for write.

## 6.7.2 File Types That Cause IOGETINFO\_GENSECONDARY

This section provides information about applicable file types.

- Microsoft Word for DOS Versions 4, 5 and 6: Used to open and read the style sheet file associated with the document. The filter will successfully degrade if the style sheet is not present.
- Harvard Graphics DOS 3.x: Used to open and read the individual slides within ScreenShow and palette files. Files with the extension .ch3 are individual graphics or slides that can be opened using no secondary files. Files with the extension .sy3 are ScreenShows that reference a list of .ch3 files via the secondary file mechanism. There is also an optional palette file that can be referenced from a .ch3 file, but the filter will successfully degrade if the palette file is not present.
- R:Base: Used to open and read required schema file. The R:Base data files are named ???2.rbf but the data is useless without the schema file named ???1.rbf. There is also a ???3.rbf file associated with each database, but it is not used.
- Paradox 4.0 and Above: Used to open and read memo field data file. Paradox uses a separate file for all memo field data larger than 32 bytes.
- DataEase: Used to open and read the data file. DataEase databases include a .dba file that contains the schema (the file that the technology can identify as DataEase) and a .dbm file that contains the actual data.

## 6.8 IOSEEK64PROC / IOTELL64PROC

These functions are for seek/tell using 64-bit offsets. These functions are not used by default. Rather, they are used if the IOGETINFO\_64BITIO message returns IOERR\_TRUE. This is so redirected I/O using strictly 32-bit I/O is unaffected.

### 6.8.1 IOSeek64

Moves the current file position.

#### Prototype

```
IOERR IOSeek64(  
HIOFILE hFile,  
VTWORD wFrom,  
VTOFF_T offset);
```

#### Parameters

The parameter information is the same as for IOSeek(). However, the size of the VTOFF\_T offset for IOSeek64() is 64-bit unlike the 32-bit offset in IOSeek().

### 6.8.2 IOTell64

Returns the current file position.

#### Prototype

```
IOERR IOTell64(  
HIOFILE hFile,  
VTOFF_T * pOffset);
```

#### Parameters

The parameter information is the same as for IOTell(). The only change is the use of a pointer to a 64-bit parameter for returning the offset.



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## Implementation Issues

This chapter discusses issues when using the Outside In Viewer.

### 7.1 Running in 24x7 Environments

To ensure robust 24x7 performance in server applications embedding the Viewer, it is strongly recommended that the technology be run in a process separate from the server's primary process.

The file filtering technology underlying the software represents almost a quarter of a million lines of code. This code is expected to robustly deal with any stream of bytes, of any length (any file), in all cases. Oracle has dedicated, and continues to dedicate, significant effort into making this technology extremely robust. However, in real world situations, expect that some small number of malformed files may force the filters into unstable states. This generally results in either a memory exception (which can be trapped and recovered from gracefully), infinite loop or a wild pointer that causes the filter to write into memory that is part of the same process but does not belong to the filter. In the latter situation, this wild pointer condition cannot be trapped.

On the desktop this is not a significant problem since the number of files being dealt with is relatively small. In a 24x7 server environment, however, a wild pointer can be extremely disruptive to the server process and produce serious problems. The best solution for dealing with this problem is to run any application that reads complex file formats, including the Viewer, in a separate process. This solution protects the application from the susceptibility of filtering technology to the unknown quality of input files.

It must be stressed that files that lead to wild pointers or infinite loops occur very infrequently, usually as a result of a third-party conversion process or beta versions of applications. Oracle is committed to addressing these issues and to updating and expanding its testing tools and corpus of documents to proactively minimize this garbage in-garbage out problem.



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## Sample Applications

Each of the sample applications included in this SDK is designed to highlight a specific aspect of the technology's functionality. We ship built versions of these sample applications. The compiled executables should be in the root directory where the product is installed.

The following copyright applies to all sample applications shipped with this product:

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**You have a royalty-free right to use, modify, reproduce and distribute the Sample Applications (and/or any modified version) in any way you find useful, provided that you agree that Oracle has no warranty obligations or liability for any Sample Application files.**

### 8.1 Building the Samples on a Windows System

Microsoft Visual Studio project files are provided for building each of the sample applications. For 32-bit versions of Windows, versions of the project files are provided for Visual Studio 6 (.dsp files) and Visual Studio 2005 (.vcproj files).

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**Note:** Because .vcproj files may not pick up the right compiler on their own, you need to make sure that you are building with the Win64 configuration in Visual Studio 2005. For 64-bit versions of Windows, only the Visual Studio 2005 versions are available.

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The project files for the sample applications can be found in the \sdk\samplecode\win subdirectory of the Outside In SDK.

### 8.2 Building the Samples on a UNIX System

See the following sections for specific information about building the sample applications on your flavor of UNIX:

- ["HP-UX Compiling and Linking"](#) on page 3-20
- ["IBM AIX Compiling and Linking"](#) on page 3-20
- ["Linux Compiling and Linking"](#) on page 3-21
- ["Sun Solaris Compiling and Linking"](#) on page 3-25

## 8.3 An Overview of the Sample Applications

This section provides an overview of the sample applications provided with this product. Please note that not all of the sample applications are provided for both the Windows and UNIX platforms. See the heading of each application's subsection for clarification.

### 8.3.1 annoex (Windows Only)

This sample demonstrates the view window's advanced annotation and positioning capabilities. Messages used include:

- SCCVW\_ADDANNOTATION
- SCCVW\_ANNOTATIONEVENT
- SCCVW\_BAILOUT
- SCCVW\_CLEARANNOTATIONS
- SCCVW\_COMPOSITIONS
- SCCVW\_COPYTOCLIP
- SCCVW\_DISPLAYPOSITION
- SCCVW\_FINDANNOTATION
- SCCVW\_FINDPOSITION
- SCCVW\_GETANNOTATIONDATA
- SCCVW\_GETFILEINFO
- SCCVW\_GETRAWTEXT
- SCCVW\_HILITESTYLE
- SCCVW\_MAPPOSITION
- SCCVW\_SETSELECTION

It also demonstrates the following options:

- SCCID\_SYSTEMFLAGS
- SCCID\_FALLBACKFORMAT

### 8.3.2 annotate

This sample is essentially the same as SIMPLE except that it uses the Outside In's Raw Text and Annotation ability to annotate all occurrences of the text the in the document. This sample demonstrates the following messages:

- SCCVW\_ADDANNOTATION
- SCCVW\_ANNOTATIONEVENT
- SCCVW\_GOTOANNOTATION
- SCCVW\_CLOSEFILE
- SCCVW\_COPYTOCLIP
- SCCVW\_FILECHANGE
- SCCVW\_GETFILEINFO
- SCCVW\_PRINT

- SCCVW\_VIEWFILE

It also demonstrates the SCCID\_SYSTEMFLAGS option. Please note that the compiled Linux version of annotate is compiled on Red Hat Linux and as such may not work perfectly on the SuSE Linux platform without including SuSE's LessTif libraries or recompiling.

Messages used include:

- SCCVW\_ADDANNOTATION
- SCCVW\_CLEARANNOTATIONS
- SCCVW\_COMPOSITIONS
- SCCVW\_DISPLAYPOSITION
- SCCVW\_FINDANNOTATION
- SCCVW\_FINDPOSITION
- SCCVW\_GETFILEINFO
- SCCVW\_GETRAWTEXT
- SCCVW\_GOTOANNOTATION
- SCCVW\_MAPPOSITION
- SCCVW\_SETSELECTION
- SCCVW\_VIEWFILE

### 8.3.3 apitest (UNIX Only)

This sample provides a comprehensive test of the API functionality. Messages used include:

- SCCVW\_ADDANNOTATION
- SCCVW\_CLEARANNOTATIONS
- SCCVW\_CLOSEFILE
- SCCVW\_COMPOSITIONS
- SCCVW\_COPYTOCLIP
- SCCVW\_DISPLAYPOSITION
- SCCVW\_FINDANNOTATION
- SCCVW\_FINDPOSITION
- SCCVW\_GETFILEINFO
- SCCVW\_GETOPTION
- SCCVW\_GETRAWTEXT
- SCCVW\_GETTREECOUNT
- SCCVW\_GETTREENODE
- SCCVW\_IDLE
- SCCVW\_MAPPOSITION
- SCCVW\_SAVETREENODE
- SCCVW\_SEARCH

- SCCVW\_SEARCHNEXT
- SCCVW\_SELECTALL
- SCCVW\_SETOPTION
- SCCVW\_SETSELECTION
- SCCVW\_VIEWFILE
- SCCVW\_VIEWTHISFILE

The application also demonstrates the following options:

- SCCID\_ARCOUTPUTPATH
- SCCID\_ARCRENAME
- SCCID\_DAYNAMES
- SCCID\_DIALOGFLAGS
- SCCID\_DISPLAYFONTALIAS
- SCCIDOPT\_FIFLAGS
- SCCID\_FONTSCALINGFACTOR
- SCCID\_INTLFLAGS
- SCCID\_MONTHNAMES
- SCCOPTID\_NUMBERFORMAT
- SCCIDOPT\_PRINTFONTALIAS
- SCCID\_SYSTEMFLAGS
- SCCIDOPT\_TEMPDIR
- SCCIDOPT\_UNMAPPABLECHAR
- SCCID\_VECPRINTBACKGROUND
- SCCID\_VECSHOWBACKGROUND

### 8.3.4 drawpage

This application demonstrates the DrawPage feature that can be used to display thumbnails and write pages to bitmaps. Messages used include:

- SCCVW\_CLOSEFILE
- SCCVW\_COPYTOCLIP
- SCCVW\_DEINITDRAWPAGE
- SCCVW\_DRAWPAGE
- SCCVW\_FILECHANGE
- SCCVW\_GETDISPLAYINFO
- SCCVW\_GETDRAWPAGEINFO
- SCCVW\_GETFILEINFO
- SCCVW\_INITDRAWPAGE
- SCCVW\_OPTIONCHANGE
- SCCVW\_VIEWFILE

It also demonstrates the `SCCID_VECPRINTBACKGROUND` option.

### 8.3.5 `mdiview` (Windows Only)

This application shows how multiple view windows can be supported in an multiple document interface setting. Messages used include:

- `SCCVW_FINDPOSITION`
- `SCCVW_GETIDEALWINDOWSIZE`
- `SCCVW_GETTREENODE`
- `SCCVW_MAPTREEPOSITION`
- `SCCVW_SEARCHDIALOG`
- `SCCVW_SEARCHNEXT`
- `SCCVW_SELCHANGE`
- `SCCVW_SELECTALL`
- `SCCVW_SETOPTION`
- `SCCVW_VIEWAS`
- `SCCVW_VIEWTHISFILE`

This sample also demonstrates the following options:

- `SCCID_ARCSAVEEVENT`
- `SCCID_DIALOGFLAGS`

### 8.3.6 `mfcview` (Windows Only)

This application shows a simple viewer implementation using Microsoft Foundation Class. Messages used include:

- `SCCVW_GETCLIPINFO`

### 8.3.7 `options` (Windows Only)

This sample app demonstrates a broad set of messages, including the following:

- `SCCVW_DODIALOG`
- `SCCVW_DOHELP`
- `SCCVW_GETOPTION`
- `SCCVW_HSCROLL`
- `SCCVW_READAHEADDONE`
- `SCCVW_SETOPTION`
- `SCCVW_VSCROLL`

Additionally, the application demonstrates the following options:

- `SCCID_ARCOUTPUTPATH`
- `SCCIDOPT_DEFAULTPRINTMARGINS`
- `SCCID_DISPLAYFONTALIAS`
- `SCCIDOPT_FIFLAGS`

- SCCIDOPT\_FILTERJPG
- SCCIDOPT\_FILTERLZW
- SCCID\_FONTSCALINGFACTOR
- SCCIDOPT\_PRINTFONTALIAS
- SCCID\_REORDERMETHOD
- SCCID\_RESOURCELIBRARYID
- SCCID\_SCROLLFLAGS
- SCCID\_SYSTEMFLAGS
- SCCIDOPT\_TEMPDIR
- SCCIDOPT\_UNMAPPABLECHAR
- SCCID\_WPDISPLAYMODE

### 8.3.8 print (Windows Only)

This application shows various print options. Messages used include:

- SCCVW\_GETFILEINFO
- SCCVW\_PRINT
- SCCVW\_PRINTEX
- SCCVW\_PRINTSETUP

This application also demonstrates the following options:

- SCCIDOPT\_WHATTOPRINT
- SCCIDOPT\_PRINTSTARTPAGE
- SCCIDOPT\_PRINTENDPAGE
- SCCID\_PRINTCOLLATE
- SCCID\_PRINTCOPIES

### 8.3.9 printd (UNIX Only)

This application code demonstrates how to implement printing in the Outside In Viewer using a dialog. This uses the API messages:

- SCCVW\_GETFILEINFO
- SCCVW\_GETOPTION
- SCCVW\_PRINT
- SCCVW\_PRINTSETUP
- SCCVW\_SETOPTION
- SCCVW\_VIEWFILE

It also demonstrates the following options:

- SCCID\_BMPPRINTBORDER
- SCCID\_BMPPRINTASPECT
- SCCID\_VECPRINTBORDER



- SCCID\_VECPRINTASPECT
- SCCIDOPT\_SSPRINTGRIDLINES
- SCCIDOPT\_SSPRINTHEADINGS
- SCCIDOPT\_SSPRINTFITTOPAGE
- SCCIDOPT\_SSPRINTDIRECTION
- SCCIDOPT\_SSPRINTSCALEPERCENT
- SCCIDOPT\_SSPRINTSCALEXHIGH
- SCCIDOPT\_SSPRINTSCALEXWIDE
- SCCIDOPT\_DBPRINTGRIDLINES
- SCCIDOPT\_DBPRINTHEADINGS
- SCCIDOPT\_DBPRINTFITTOPAGE
- SCCID\_PRINTHEADER
- SCCIDOPT\_USEDOPAGESETTINGS
- SCCIDOPT\_DEFAULTPRINTFONT
- SCCID\_PRINTHEADERFONT
- SCCIDOPT\_DEFAULTPRINTMARGINS

### 8.3.10 prints (UNIX Only)

This application code demonstrates how to implement printing in the Outside In Viewer. This uses the API messages:

- SCCVW\_GETFILEINFO
- SCCVW\_GETOPTION
- SCCVW\_PRINT
- SCCVW\_PRINTSETUP
- SCCVW\_SETOPTION
- SCCVW\_VIEWFILE

It also demonstrates the following options:

- SCCID\_BMPPRINTBORDER
- SCCID\_BMPPRINTASPECT
- SCCID\_VECPRINTBORDER
- SCCID\_VECPRINTASPECT
- SCCIDOPT\_SSPRINTGRIDLINES
- SCCIDOPT\_SSPRINTHEADINGS
- SCCIDOPT\_SSPRINTFITTOPAGE
- SCCIDOPT\_SSPRINTDIRECTION
- SCCIDOPT\_SSPRINTSCALEPERCENT
- SCCIDOPT\_SSPRINTSCALEXHIGH
- SCCIDOPT\_SSPRINTSCALEXWIDE

- SCCIDOPT\_DBPRINTGRIDLINES
- SCCIDOPT\_DBPRINTHEADINGS
- SCCIDOPT\_DBPRINTFITTOPAGE
- SCCID\_PRINTHEADER
- SCCIDOPT\_USEDOPAGESETTINGS
- SCCIDOPT\_DEFAULTPRINTFONT
- SCCID\_PRINTHEADERFONT
- SCCIDOPT\_DEFAULTPRINTMARGINS

### 8.3.11 redirect

This sample is essentially the same as SIMPLE except that it redirects the Outside In input routines (Read, Seek, Tell, ...) through its own routines. This sample uses the API messages SCCVW\_VIEWFILE and SCCVW\_GETFILEINFO.

### 8.3.12 search

This sample is essentially the same as SIMPLE except that it adds the ability to search for strings in the file being viewed. Messages used include:

- SCCVW\_GETFILEINFO
- SCCVW\_SEARCH
- SCCVW\_SEARCHNEXT
- SCCVW\_VIEWFILE

### 8.3.13 simple

This sample demonstrates the simplest implementation of the Viewer. It shows the basics of how to create a view window, view a file, print the viewed file and copy to the clipboard. Messages used include:

- SCCVW\_CLOSEFILE
- SCCVW\_COPYTOCLIP
- SCCVW\_FILECHANGE
- SCCVW\_GETFILEINFO
- SCCVW\_PRINT
- SCCVW\_VIEWFILE

### 8.3.14 welcome (Windows Only)

This application displays the welcome.doc file. Messages used include:

- SCCVW\_GETIDEALWINDOWSIZE
- SCCVW\_VIEWTHISFILE

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This appendix provides a comprehensive overview of all copyright and licensing information for Outside In Viewer.

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## Viewer Options

All SCCID values are VTDWORDS (4 bytes long).

Options are parameters affecting the behavior of the Viewer. These options are available to the developer when using Viewer.

### B.1 Character Mapping

The following character mappings are used.

#### B.1.1 SCCID\_DEFAULTINPUTCHARSET

This option is used in cases where Outside In cannot determine the character set used to encode the text of an input file. When all other means of determining the file's character set are exhausted, Outside In will assume that an input document is encoded in the character set specified by this option. This is most often used when reading plain-text files, but may also be used when reading HTML or PDF files. The possible character sets are listed in charsets.h.

When "extended test for text" is enabled (see "SCCID\_FIFLAGS" on page B-3), this option will still apply to plain-text input files that are not identified as EBCDIC or Unicode.

This option supersedes the SCCOPT\_FALLBACKFORMAT option for selecting the character set assumed for plain-text files. For backwards compatibility, use of deprecated character-set -related values is still currently supported for SCCOPT\_FALLBACKFORMAT, though internally such values will be translated into equivalent values for the SCCOPT\_DEFAULTINPUTCHARSET. As a result, if an application were to set both options, the last such value set for either option will be the value that takes effect.

#### Scope

Global

#### Data Type

VTDWORD

#### Default

- CS\_SYSTEMDEFAULT: Query the operating system.

#### Data

The data types are listed in charsets.h.

## B.1.2 SCCID\_UNMAPPABLECHAR

When the Outside In Viewer Technology is displaying a character and cannot find that character in any font on the system, it will display a replacement character. This value is the Unicode value for this character. The default value for this character is 0x002a "\*" .

### Scope

Local

### Data Type

VTWORD

### Data

The Unicode value for the character to use.

### Default

- 0x002a = "\*"

## B.2 Input Handling

The following sections pertain to input handling.

### B.2.1 SCCID\_FALLBACKFORMAT

This option controls how files are handled when their specific application type cannot be determined. This normally affects all plain-text files, because plain-text files are generally identified by process of elimination, for example, when a file isn't identified as having been created by a known application, it is treated as a plain-text file.

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---

**Note:** A number of values that were formerly allowed for this option have been deprecated. Specifically, the values that selected specific plain-text character sets are no longer to be used. Instead, applications should use the [SCCID\\_DEFAULTINPUTCHARSET](#) option for such functionality.

---

---

### Scope

Global

### Data Type

VTDWORD

### Data

The high VTDWORD of this value is reserved and should be set to 0, and the low VTDWORD must have one of the following values:

- FI\_TEXT: Unidentified file types will be treated as text files.
- FI\_NONE: Outside In will not attempt to process files whose type cannot be identified. This will include text files. When this option is selected, an attempt to process a file of unidentified type will cause Outside In to return an error value of DAERR\_FILTERNOTAVAIL (or SCCERR\_NOFILTER).



**Default**

- FI\_TEXT

**B.2.2 SCCID\_FIFLAGS**

This option affects how an input file's internal format (application type) is identified when the file is first opened by the Outside In technology. When the extended test flag is in effect, and an input file is identified as being either 7-bit ASCII, EBCDIC, or Unicode, the file's contents will be interpreted as such by the viewing process.

The extended test is optional because it requires extra processing and cannot guarantee complete accuracy (which would require the inspection of every single byte in a file to eliminate false positives.)

**Scope**

Global

**Data Type**

VTDWORD

**Data**

One of the following values:

- SCCVW\_FI\_NORMAL: This is the default value. When this is set, standard file identification behavior occurs.
- SCCVW\_FI\_EXTENDEDTEST: If set, the File Identification code will run an extended test on all files that are not identified.

**Default**

- SCCUT\_FI\_NORMAL

**B.2.3 SCCID\_LOTUSNOTESDIRECTORY**

This option allows the developer to specify the location of a Lotus Notes or Domino installation for use by the NSF filter. A valid Lotus installation directory must contain the file nnotes.dll.

---

---

**Note:** The NSF filter is currently only supported on Win32.

---

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**Handle Types**

NULL

**Scope**

Global

**Data Type**

VTLPBYTE

**Data**

A path to the Lotus Notes directory.

**Default**

If this option isn't set, then OIT will first attempt to load the Lotus library according to the operating system's PATH environment variable, and then attempt to find and load the Lotus library as indicated in HKEY\_CLASSES\_ROOT\Notes.Link.

**B.2.4 SCCID\_PARSEXMPMETADATA**

Adobe's Extensible Metadata Platform (XMP) is a labeling technology that allows you to embed data about a file, known as metadata, into the file itself. This option enables parsing of the XMP data into normal OIT document properties. Enabling this option may cause the loss of some regular data in premium graphics filters (such as Postscript), but won't affect most formats (such as PDF).

**Scope**

Local

**Data Type**

VTBOOL

**Data**

- TRUE: This setting enables parsing XMP.
- FALSE: This setting disables parsing XMP.

**Default**

FALSE

**B.2.5 SCCID\_TIMEZONE**

This option allows the user to define an offset to GMT that will be applied during date formatting, allowing date values to be displayed in a selectable time zone. This option affects the formatting of numbers that have been defined as date values (e.g., most dates in spreadsheet cells). This option will not affect dates that are stored as text.

**Scope**

Global

**Data Type**

VTLONG

**Data**

Integer parameter from -96 to 96, representing 15-minute offsets from GMT. To query the operating system for the time zone set on the machine, specify SCC\_TIMEZONE\_USENATIVE.

**Default**

- 0: GMT time

**B.2.6 SCCID\_FORMATFLAGS**

This option allows the developer to set flags that span multiple Outside In products.

**Scope**

Local

**Data Type**

VTDWORD

**Data**

- `SCCOPT_FLAGS_ALLISODATETIMES`: When this flag is set, all Date and Time values are converted to the ISO 8601 standard. This conversion can only be performed using dates that are stored as numeric data within the original file.
- 0: All flags turned off

**Default**

0: All flags turned off

## B.3 Compression

The following information pertains to compression.

### B.3.1 `SCCID_FILTERJPG`

This option can disable access to any files using JPEG compression, such as JPG graphic files or TIFF files using JPEG compression, or files with embedded JPEG graphics. Attempts to read such files when this option is enabled will fail and return the error `SCCERR_UNSUPPORTEDCOMPRESSION` if the entire file is JPEG compressed, and grey boxes for embedded JPEG-compressed graphics. Unlike many other options, this option must be set programmatically, as it is not stored or read on startup.

The following is a list of file types affected when this option is disabled:

- JPG files
- Postscript files containing JPG images
- PDFs containing JPEG images

**Scope**

Local

**Data Type**

VTDWORD

**Data**

- `SCCVW_FILTER_JPG_ENABLED`: Allow access to files that use JPEG compression
- `SCCVW_FILTER_JPG_DISABLED`: Do not allow access to files that use JPEG compression

**Default**`SCCVW_FILTER_JPG_ENABLED`

### B.3.2 SCCID\_FILTERLZW

This option can disable access to any files using Lempel-Ziv-Welch (LZW) compression, such as .GIF files, .ZIP files or self-extracting archive (.EXE) files containing "shrunk" files. Attempts to read such files when this option is enabled will fail and return the error SCCERR\_UNUNSUPPORTEDCOMPRESSION if the entire file is LZW compressed, and grey boxes for embedded LZW-compressed graphics. Unlike many other options, this option must be set programmatically, as it is not stored or read on startup.

The following is a list of file types affected when this option is disabled:

- GIF files
- TIF files using LZW compression
- PDF files that use internal LZW compression
- TAZ and TAR archives containing files that are identified as FI\_UNIXCOMP
- ZIP and self-extracting archive (.EXE) files containing "shrunk" files
- Postscript files using LZW compression

---

---

**Note:** Although this option can disable access to files in ZIP or EXE archives stored using LZW compression, any files in such archives that were stored using any other form of compression will still be accessible.

---

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#### Scope

Local

#### Data Type

VTDWORD

#### Data

- SCCVW\_FILTER\_LZW\_ENABLED: LZW compressed files will be read normally.
- SCCVW\_FILTER\_LZW\_DISABLED: LZW compressed files will not be read.

#### Default

SCCVW\_FILTER\_LZW\_ENABLED

## B.4 Spreadsheet and Database File Rendering

The following information pertains to spreadsheets and database file rendering.

### B.4.1 SCCID\_DBCLIPBOARD

This option controls the format the database data takes when copied to the clipboard.

#### Data Type

VTDWORD

#### Data

One of the following values:

- `SCCVW_CLIPSUBFORMAT_TABLE`: In clipboard formats that support it (RTF and Ami), the database selection will be copied as a table.
- `SCCVW_CLIPSUBFORMAT_TABS`: The database selection will be copied using a tab stop for each field.
- `SCCVW_CLIPSUBFORMAT_OPTIMIZEDTABS`: The database selection will be copied using a tab stop for each field, except when a field is empty.

## B.4.2 `SCCID_DBDRAFTMODE`

If this option is `TRUE`, the display of a database includes a limited set of formatting information. If `FALSE`, the display includes all supported formatting.

### Data Type

VTBOOL

### Default

FALSE

## B.4.3 `SCCID_DBFIELDNAMESTOCLIP`

If this option is `TRUE`, field headings will be copied to the clipboard along with the data.

### Data Type

VTBOOL

### Default

TRUE

## B.4.4 `SCCID_DBPRINTFITTOPAGE`

This option scales a spreadsheet file to a certain percent or to a page width or height. However, in an effort to preserve readability after scaling, the Viewer Technology will not shrink a database document to under approximately one-third of its original size.

It should be noted that when this option is set to `SCCVW_DBPRINTFITMODE_NOMAP`, the pages of the database file are printed down first and then across.

---



---

**Note:** Any margins applied as a result of settings for the `SCCOPT_DEFAULTPRINTMARGINS` option will be included in any scaling that is applied to the viewed image as a result of settings for this option.

---



---

### Data Type

VTDWORD

### Data

One of the following values:

- `SCCVW_DBPRINTFITMODE_NOMAP`: This will not do any scaling of the database image. It will render in its original size onto as many pages as are required to fit the data.

- `SCCVW_DBPRINTFITMODE_FITTOPAGES`: This will fit the database to one page, scaling to the image width or height depending on the page size and database size.
- `SCCVW_DBPRINTFITMODE_FITTOWIDTH`: This will scale the database on the rendered image so it is no larger than one page wide.
- `SCCVW_DBPRINTFITMODE_FITTOHEIGHT`: This will scale the database on the rendered image so it is no larger than one page high.

**Default**

`SCCVW_DBPRINTFITMODE_FITTOPAGES`

#### **B.4.5 SCCID\_DBPRINTGRIDLINES**

If this option is `TRUE`, a dotted grid is printed.

**Data Type**

`VTBOOL`

#### **B.4.6 SCCID\_DBPRINTHEADINGS**

If this option is `TRUE`, field headings will be printed along with the data.

**Data Type**

`VTBOOL`

#### **B.4.7 SCCID\_DBSHOWGRIDLINES**

If this option is `TRUE`, a dotted grid is displayed between fields.

**Data Type**

`VTBOOL`

#### **B.4.8 SCCID\_SSCLIPBOARD**

This option controls the format the spreadsheet data takes when copied to the clipboard.

**Data Type**

`VTDWORD`

**Data**

One of the following values:

- `SCCVW_CLIPSUBFORMAT_TABLE`: In clipboard formats that support it (RTF & Ami), the spreadsheet selection will be copied as a table.
- `SCCVW_CLIPSUBFORMAT_TABS`: The spreadsheet selection will be copied using a tab stop for each cell.
- `SCCVW_CLIPSUBFORMAT_OPTIMIZEDTABS`: The spreadsheet selection will be copied using a tab stop for each cell, except when a cell is empty.

### B.4.9 SCCID\_SSDRAFTMODE

If this option is TRUE, the display of a spreadsheet includes a limited set of formatting information. If FALSE, the display includes all supported formatting.

#### Data Type

VTBOOL

### B.4.10 SCCID\_SSPRINTDIRECTION

This option controls the pattern in which the pages are printed, either across first and then down, or down first and then across.

This option is overridden when the SCCID\_USEDOPAGESETTINGS option is set to TRUE and print direction is specified in the input document.

#### Data Type

VTDWORD

#### Data

One of the following values:

- SCCVW\_SSPRINTDIRECTION\_ACROSS: Will specify that pages are printed across first and then down.
- SCCVW\_SSPRINTDIRECTION\_DOWN: Will specify that pages are printed down first and then across.

#### Default

SCCVW\_SSPRINTDIRECTION\_DOWN

### B.4.11 SCCID\_SSPRINTFITTOPAGE

This option requests that the spreadsheet file be fit to one page.

---

---

**Note:** Any margins applied as a result of settings for the SCCID\_DEFAULTPRINTMARGINS option will be included in any scaling that is applied to the output image as a result of settings for this option.

---

---

This option is overridden when the SCCID\_USEDOPAGESETTINGS option is set to TRUE and fitting the page to the printer's image limits is specified in the input document.

#### Data Type

VTDWORD

#### Data

One of the following values:

- SCCVW\_SSPRINTFITMODE\_NOMAP: No scaling is performed on the spreadsheet image. It will render in its original size onto as many pages as are required to fit the data.

- `SCCVW_SSPRINTFITMODE_FITTOPAGES`: Will scale the spreadsheet in the rendered image to fit to the number of pages specified in the `SCCOPT_SSPRINTSCALEXHIGH` and `SCCOPT_SSPRINTSCALEXWIDE` options. Since aspect ratio is maintained, the lesser of the two dimensions (width or height) will determine the scale factor. Note that if either `SCCOPT_SSPRINTSCALEXHIGH` or `SCCOPT_SSPRINTSCALEXWIDE` is set to 0, the value in the other option will be nullified.
- `SCCVW_SSPRINTFITMODE_FITTOWIDTH`: Will scale the spreadsheet in the rendered image so it is no larger than one page wide.
- `SCCVW_SSPRINTFITMODE_FITTOHEIGHT`: Will scale the spreadsheet in the rendered image so it is no larger than one page high.
- `SCCVW_SSPRINTFITMODE_SCALE`: Will scale the spreadsheet in the rendered image using the scale value stored in the `SCCOPT_SSPRINTSCALEPERCENT` option.

**Default**

- `SCCVW_SSPRINTFITMODE_SCALE`: Scales the rendered image of the spreadsheet using the scale value stored in the `SCCOPT_SSPRINTSCALEPERCENT` option (which is 100 by default).

**B.4.12 SCCID\_SSPRINTGRIDLINES**

If this option is `TRUE`, a dotted grid is printed between cells.

This option is overridden when the `SCCID_USEDOPAGESETTINGS` option is set to `TRUE` and printing grid lines between cells is specified in the input document.

**Data Type**

VTBOOL

**B.4.13 SCCID\_SSPRINTHEADINGS**

If this option is `TRUE`, row and column headings will be printed along with the data.

This option is overridden when the `SCCID_USEDOPAGESETTINGS` option is set to `TRUE` and printing column and row headers is specified in the input document.

**Data Type**

VTBOOL

**B.4.14 SCCID\_SSPRINTSCALEPERCENT**

This option will scale spreadsheet pages by the percentage specified. The option has no effect unless the [SCCID\\_SSPRINTFITTOPAGE](#) option is set to `SCCVW_SSPRINTFITMODE_SCALE`.

This option must take a value between 1 and 100. If any value outside of this range is used, the option will be ignored.

**Data Type**

VTDWORD



### B.4.15 SCCID\_SSPRINTSCALEXHIGH

This option will fit the spreadsheet image to the number of vertical pages specified. The setting for this option will have no effect unless the [SCCID\\_SSPRINTFITTOPAGE](#) option is set to `SCCVW_SSPRINTFITMODE_FITTOPAGES`.

**Data Type**

VTDWORD

### B.4.16 SCCID\_SSPRINTSCALEXWIDE

This option will fit the spreadsheet image to the number of horizontal pages specified. The setting for this option will have no effect unless the [SCCID\\_SSPRINTFITTOPAGE](#) option is set to `SCCVW_SSPRINTFITMODE_FITTOPAGES`.

**Data Type**

VTDWORD

### B.4.17 SCCID\_FILTERNOBLANK

If this option is `TRUE`, blank spreadsheet pages will not be produced when printing a file or rendering it with the `SCCVW_DRAWPAGE` message.

**Data Type**

VTBOOL

### B.4.18 SCCID\_SSSHOWGRIDLINES

If this option is `TRUE`, a dotted grid is displayed between cells.

**Data Type**

VTBOOL

### B.4.19 SCCID\_SSSHOWHIDDENCELLS

This option lets you determine whether or not to show hidden rows or columns when rendering spreadsheets. This is a `BOOLEAN` option that will leave the data hidden when it is `FALSE`, and show all hidden rows and columns when it is `TRUE`, displayed using the default row width or default column height.

**Data Type**

VTBOOL

**Default**

FALSE

## B.5 Graphics File Rendering

The following information pertains to graphics file rendering.

### B.5.1 SCCID\_ANTIALIAS

This option determines the way the viewer stretches bitmaps. Antialiased bitmaps may appear smoother and can be easier to read, but rendering when this option is set will require additional processing time.

**Data Type**

VTDWORD

**Data**

One of the following values:

- SCCVW\_ANTIALIAS\_OFF: Do not antialias bitmaps.
- SCCVW\_ANTIALIAS\_ALL: Antialias all bitmaps.

### B.5.2 SCCID\_BMPDITHER

This option tells the bitmap display engine to use a dithering algorithm on bitmaps with higher color resolution than the screen in order to get better color display. It can have the value SCCVW\_DITHER\_ON or SCCVW\_DITHER\_OFF.

**Data Type**

VTBOOL

### B.5.3 SCCID\_BMPDITHERAVAILABLE

This option is a read only option that indicates the bitmap display engine's ability to dither the current bitmap. For instance dithering is not possible or necessary for a 16-color bitmap on a 256-color display, but it is possible for a 256-color bitmap on a 16-color display.

**Data Type**

VTBOOL

### B.5.4 SCCID\_BMPFITMODE

This option sets the way the bitmap display engine stretches or shrinks a bitmap in relation to the size of the view window.

**Data Type**

VTDWORD

**Data**

One of the following values:

- SCCVW\_FITMODE\_BEST: If the view window is smaller than the original image, this option will fit it to the window. If the view window is larger than the original image, the image will be displayed at its original size.
- SCCVW\_FITMODE\_ORIGINAL: The bitmap is displayed bit for bit on the screen, the size of the window has no effect.
- SCCVW\_FITMODE\_WINDOW: The bitmap will be stretched to fill as much of the window as possible while maintaining its proper aspect ratio.

- **SCCVW\_FITMODE\_WINDOWHEIGHT**: The bitmap will be stretched so its full height fits in the height of the window. Depending on the bitmap, its full width may or may not fit inside the window.
- **SCCVW\_FITMODE\_WINDOWWIDTH**: The bitmap will be stretched so its full width fits in the width of the window. Depending on the bitmap, its full height may or may not fit inside the window.

### B.5.5 SCCID\_BMPPRINTASPECT

This option indicates how the bitmap will be stretched when printed.

#### Data Type

VTDWORD

#### Data

One of the following values:

- **SCCVW\_PRINTASPECT\_ORIGINAL**: The bitmap will be sized up to fill as much of the area inside the print margins as possible while still maintaining the original aspect ratio.
- **SCCVW\_PRINTASPECT\_STRETCH**: The bitmap will be stretched horizontally and vertically to totally fill the area inside the print margins.

### B.5.6 SCCID\_BMPPRINTBORDER

If set to TRUE, a 1-pixel border will be printed around bitmaps.

#### Data Type

VTBOOL

### B.5.7 SCCID\_BMPROTATION

This option indicates how bitmaps should be rotated.

#### Data Type

VTDWORD

#### Data

One of the following values:

- **SCCVW\_ROTATION\_NONE**: Do not rotate the bitmap.
- **SCCVW\_ROTATION\_90**: Rotate the bitmap 90 degrees clockwise.
- **SCCVW\_ROTATION\_180**: Rotate the bitmap 180 degrees clockwise.
- **SCCVW\_ROTATION\_270**: Rotate the bitmap 270 degrees clockwise.

These rotations are absolute from the initial state of the graphic.

### B.5.8 SCCID\_BMPZOOM

This option indicates the X and Y ratios used to stretch/shrink the original image. For instance, setting the X ratio to 1 and the Y ratio to 2 displays the image pixel for pixel

horizontally, but two display pixels for every one-bitmap pixel in the vertical direction.

### Data Type

SCCVWIMAGEZOOM structure

### SCCVWIMAGEZOOM Structure

This structure is used in the SCCID\_BMPZOOM and SCCID\_VECZOOM options.

SCCVWIMAGEZOOM is a C data structure defined in sccvw.h as follows.

```
typedef struct
{
    VTDWORD   dwXNu;
    VTDWORD   dwXDe;
    VTDWORD   dwYNu;
    VTDWORD   dwYDe;
} SCCVWIMAGEZOOM;
```

The image is zoomed in the X (horizontal) direction by a factor of  $dwXNu/dwXDe$ . The image is zoomed in the Y (vertical) direction by a factor of  $dwYNu/dwYDe$ .

## B.5.9 SCCID\_BMPZOOEVENT

This option acts like an event. Normally, its value is SCCVW\_ZOOM\_NOP.

### Data Type

VTDWORD

### Data

One of the following values:

- SCCVW\_ZOOM\_IN: Zooms in (more magnification).
- SCCVW\_ZOOM\_OUT: Zooms out (less magnification).
- SCCVW\_ZOOM\_SELECTION: Zooms to the current selection.
- SCCVW\_ZOOM\_RESET: Restores the display to its original state (based on the value SCCID\_BMPFITMODE).

## B.5.10 SCCID\_VECFITMODE

This option sets the way the vector display engine stretches or shrinks an image in relation to the size of the view window.

### Data Type

VTDWORD

### Data

One of the following values:

- SCCVW\_FITMODE\_BEST: If the view window is smaller than the original image, this option will fit it to the window. If the view window is larger than the original image, the image will be displayed at its original size.
- SCCVW\_FITMODE\_ORIGINAL: The image is displayed one bit on the screen for every unit in the images coordinate system, size of the window has no effect.

- `SCCVW_FITMODE_WINDOW`: The image will be stretched to fill as much of the window as possible while maintaining its proper aspect ratio.
- `SCCVW_FITMODE_WINDOWHEIGHT`: The image will be stretched so its full height fits in the height of the window. Depending on the image, its full width may or may not fit inside the window.
- `SCCVW_FITMODE_WINDOWWIDTH`: The image will be stretched so its full width fits in the width of the window. Depending on the image, its full height may or may not fit inside the window.
- `SCCVW_FITMODE_STRETCHWINDOW`: The image will be stretched to fill the window. The image's aspect ratio is *not* maintained.

### B.5.11 `SCCID_VECPRINTASPECT`

This option indicates how the vector image will be stretched when printed.

#### **Data Type**

VTDWORD

#### **Data**

One of the following values:

- `SCCVW_PRINTASPECT_ORIGINAL`: The bitmap will be sized up to fill as much of the area inside the print margins as possible while still maintaining the original aspect ratio.
- `SCCVW_PRINTASPECT_STRETCH`: The bitmap will be stretched horizontally and vertically to totally fill the area inside the print margins.

### B.5.12 `SCCID_VECPRINTBACKGROUND`

If `TRUE`, the background of a vector image will be printed. If it is `FALSE` the background will not be printed.

#### **Data Type**

VTBOOL

### B.5.13 `SCCID_VECPRINTBORDER`

If `TRUE`, a one-pixel border will be printed around vector images.

#### **Data Type**

VTBOOL

### B.5.14 `SCCID_VECSHOWBACKGROUND`

If `TRUE`, the background of a vector image will be displayed using as defined in the file. If it is `FALSE` the background will not be displayed.

#### **Data Type**

VTBOOL

## B.5.15 SCCID\_VECSHOWFULLSCREEN

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**Note:** This option is only valid on Windows systems.

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This option acts like an event. Normally its value is FALSE, but when set to TRUE the image will be displayed using the entire screen until the user presses ESC.

The default value of this option has no meaning.

### Data Type

VTBOOL

## B.5.16 SCCID\_VECZOOM

This option indicates the X and Y ratios used to stretch/shrink the original image. For instance, setting the X ratio to 1 and the Y ratio to 2 displays the image pixel for pixel horizontally but 2 display pixels for every one-bitmap pixel in the vertical direction.

### Data Type

SCCVWIMAGEZOOM structure

### SCCVWIMAGEZOOM Structure

This structure is used in the SCCID\_BMPZOOM and SCCID\_VECZOOM options.

SCCVWIMAGEZOOM is a C data structure defined in sccvw.h as follows:

```
typedef struct
{
    VTDWORD   dwXNu;
    VTDWORD   dwXDe;
    VTDWORD   dwYNu;
    VTDWORD   dwYDe;
} SCCVWIMAGEZOOM;
```

The image is zoomed in the X (horizontal) direction by a factor of dwXNu/dwXDe.

The image is zoomed in the Y (vertical) direction by a factor of dwYNu/dwYDe.

## B.5.17 SCCID\_VECZOOMEVENT

This option acts like an event. Normally, its value is SCCVW\_ZOOM\_NOP.

### Data Type

VTDWORD

### Data

One of the following values:

- SCCVW\_ZOOM\_IN: Zooms in (more magnification).
- SCCVW\_ZOOM\_OUT: Zooms out (less magnification).
- SCCVW\_ZOOM\_SELECTION: Zooms to the current selection.
- SCCVW\_ZOOM\_RESET: Restores the display to its original state (based on the value SCCID\_VECFITMODE).

## B.6 Page Rendering

The following information pertains to page rendering.

### B.6.1 SCCID\_DEFAULTPRINTMARGINS

This option specifies the top, left, bottom and right margins in twips from the edges of the page. For instance, setting all the values to 1440 creates a 1-inch margin on all sides. Page margins will only be applied when formatting word processing, database and spreadsheet files.

Please note all margins are applied before scaling with the [SCCID\\_SSPRINTFITTOPAGE](#) or [SCCID\\_SSPRINTFITTOPAGE](#) options.

This option is overridden when the [SCCID\\_USEDOPAGESETTINGS](#) option is set to TRUE and print margins are specified in the input document.

This option does not affect the output of bitmap, presentation, vector or archive files.

#### Data Type

The SCCVWPRINTMARGINS structure.

#### SCCVWPRINTMARGINS Structure

This structure is used by the [SCCID\\_DEFAULTPRINTMARGINS](#) option to specify margin settings.

SCCVWPRINTMARGINS is a C data structure defined in `sccvw.h` as follows:

```
typedef struct SCCVWPRINTMARGINStag
{
    VTDWORD  dwTop;
    VTDWORD  dwBottom;
    VTDWORD  dwLeft;
    VTDWORD  dwRight;
} SCCVWPRINTMARGINS, * PSCCVWPRINTMARGINS;
```

#### Parameters

- `dwTop`: Margin from the top edge of the page (in twips). Default is 1 inch.
- `dwBottom`: Margin from the bottom edge of the page (in twips). Default is 1 inch.
- `dwLeft`: Margin from the left edge of the page (in twips). Default is 1 inch.
- `dwRight`: Margin from the right edge of the page (in twips). Default is 1 inch.

### B.6.2 SCCID\_PRINTENDPAGE

This option indicates the page that printing should end on. It is only valid if the option [SCCID\\_WHATTOPRINT](#) has the value [SCCVW\\_PRINT\\_PAGERANGE](#).

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**Note:** Page range settings are one-based and inclusive. Therefore, specifying a range with [SCCID\\_PRINTENDPAGE](#) equal to 5 and [SCCID\\_PRINTSTARTPAGE](#) equal to 3 would print any of the three pages that follow, if they exist: 3, 4 and 5.

---



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#### Data Type

VTDWORD

**Default**

- 0: The last page at the end of the document.

**B.6.3 SCCID\_PRINTSTARTPAGE**

This option indicates the page printing should start on. It is only valid if the option `SCCID_WHATTOPRINT` has the value `SCCVW_PRINT_PAGERANGE`.

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**Note:** Page range settings are one-based and inclusive. Therefore, specifying a range with `SCCID_PRINTENDPAGE` equal to 5 and `SCCID_PRINTSTARTPAGE` equal to 3 would print any of the three pages that follow, if they exist: 3, 4 and 5.

---



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**Data Type**

VTDWORD

**B.6.4 SCCID\_USEDOCPAGESETTINGS**

This option is used to select the document's page layout information when printing.

If `TRUE` the document's native (or author selected) page margins, paper size, page scaling and page orientation are used when available from the filter.

The values of the `SCCID_DEFAULTPRINTMARGINS`, `SCCID_SSPRINTGRIDLINES`, `SCCID_SSPRINTHEADINGS`, `SCCID_SSPRINTDIRECTION`, and `SCCID_SSPRINTFITTOPAGE` options are overridden if this option is set to `TRUE` and the properties associated with those options are specified in the input document. Additionally, print area and page breaks in spreadsheet documents are ignored unless this option is set to `TRUE`.

If `FALSE`, the printer page margins, paper size, orientation and scaling are set to specific values rather than those in the native document. The page size is forced to 8 1/2" x 11" in portrait orientation, but this may be changed by setting the `SCCOPT_GRAPHIC_HEIGHT` and/or `SCCOPT_GRAPHIC_WIDTH` options. The margins are forced 1" all around, but may be changed by setting the `SCCID_DEFAULTPRINTMARGINS` option. The scaling for the document will be set to 100%, although this may be changed by setting any of the various scaling options.

**Data Type**

VTBOOL

**B.6.5 SCCID\_WHATTOPRINT**


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**Note:** This option is only valid on the Windows platforms.

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This option indicates whether the whole file or a selected range of pages should be printed when the `SCCVW_PRINT` message is sent.

**Data Type**

VTDWORD



**Data**

One of the following values:

- SCCVW\_PRINT\_PAGERANGE: The pages in the one-based, inclusive range from SCCOPT\_PRINTSTARTPAGE to SCCOPT\_PRINTENDPAGE will be printed.
- SCCVW\_PRINT\_ALLPAGES: The entire document will be printed.
- SCCVW\_PRINT\_SELECTION: Just the selected area will be printed.

**Default**

SCCVW\_PRINT\_ALLPAGES

## B.7 Word Processor File Rendering

The following information pertains to word processor file rendering.

### B.7.1 SCCID\_WPDISABLEEMAILHEADER

Enables or disables the email view. If disabled, the Normal and Draft viewing modes will not display email headers. If enabled, the email header will be shown for formats identified as email.

**Data Type**

VTBOOL

**Default**

0 (email display feature enabled)

### B.7.2 SCCID\_WPDISPLAYMODE

Indicates how the word processor display engine displays documents.

**Data Type**

VTDWORD

**Data**

One of the following values:

- SCCVW\_WPMODE\_DRAFT: Display using only a single font and size (SCCID\_DEFAULTDISPLAYFONT), do not display embedded graphics, do not display graphic or table borders, wrap the text to the size of the view window.
- SCCVW\_WPMODE\_NORMAL: Display all supported formatting, wrap the text to the size of the view window.
- SCCVW\_WPMODE\_PREVIEW: Display all supported formatting, wrap the text as it will be printed.

### B.7.3 SCCID\_WPFITMODE

Controls the size of word processor pages when using the preview mode.

**Data Type**

VTDWORD

**Data**

One of the following values:

- `SCCVW_FITMODE_ORIGINAL`: Sizes the preview page to the actual size.
- `SCCVW_FITMODE_WINDOWWIDTH`: Sizes the preview page to the width of the window.
- `SCCVW_FITMODE_WINDOW`: Sizes the preview page to the window.

**B.7.4 SCCID\_WPEMAILHEADEROUTPUT**

This option controls rendering of email headers.

**Scope**

Global

**Data Type**

VTDWORD

**Data**

One of these values:

- `SCCUT_WP_EMAILHEADERSTANDARD`: Displays "To," "From," "Subject," "CC," "BCC," "Date Sent," and "Attachments" header fields only.
- `SCCUT_WP_EMAILHEADERALL`: Displays all available email headers.

**Default**

`SCCUT_WP_EMAILHEADERSTANDARD`

**B.7.5 SCCID\_WPWRAPTOWINDOW**

Indicates how the word processing display engine wraps text in the window in Normal and Draft modes. Text always wraps to the page size in preview mode. If the option is `TRUE` (default) the text will wrap to fit in the window. If the option is `FALSE`, text will not wrap and the horizontal scroll bar will be available for scrolling to the unwrapped text.

**Data Type**

VTBOOL

**B.8 Archive Rendering**

The following information pertains to archive rendering.

**B.8.1 SCCID\_ARCOUTPUTPATH**

This option string contains the path to save files in.

**Data Type**

C String

## B.8.2 SCCID\_ARCRENAME

This option allows prompting the user for input when nodes that are being extracted need to be renamed because the node name already exists, the node name contains illegal characters, or both. The default behavior is for neither of the possible values to be set.

### Data Type

VTDWORD

### Data

The option can have the following values, OR-ed together if necessary:

- **SCCVW\_ARCHIVE\_PROMPTONCOLLISION**: If this value is set, a dialog box will appear when two files being extracted have the same name. It will prompt the user to either skip extracting the current file or to overwrite the existing file. If this value is not set, the file will be renamed with a unique number appended to the end.
- **SCCVW\_ARCHIVE\_PROMPTONILLEGALCHAR**: If this value is set, a dialog box will appear when a file being extracted has illegal characters in it. It will prompt the user to rename the file using only legal characters. The list of illegal characters are operating system dependent (Windows: ? [ ] / \ = + < > : ; " Unix: /) , and are all characters that cannot be included in file names or file paths. If this value is not set, all illegal characters will be stripped out of the file name.

## B.8.3 SCCID\_ARCSAVEEVENT

This option acts like an event.

### Data Type

VTDWORD

### Data

Normally, the value for this option is **SCCVW\_ARCHIVE\_SAVENOP**, but it may be set to either of the following values, as well:

- **SCCVW\_ARCHIVE\_SAVESELECTION**: Allows the user to save the selected files to the directory of their choice.
- **SCCVW\_ARCHIVE\_SAVEALL**: Allows the user to save all the files to the directory of their choice.

## B.8.4 SCCID\_ARCSORTORDER

This option sets which attribute to use and the order in which files are displayed in the archive display engine.

### Data Type

VTDWORD

### Data

One of the following values. Any of these values can be OR-ed with **SCCVW\_SORT\_DESCENDING** to force the sorting of the selected attribute to descending order (ascending order is the default when this flag is not set):

- `SCCVW_SORT_NONE`: Display the files in the order they appear in the archive.
- `SCCVW_SORT_NAME`: Display the files sorted by their names.
- `SCCVW_SORT_SIZE`: Display the files sorted by their sizes.
- `SCCVW_SORT_DATE`: Display the files sorted by their dates/times.

## B.9 Data Rendering

The following information pertains to data rendering.

### B.9.1 `SCCID_DAYNAMES`

This option sets the full and abbreviated names used to format the days of the week when formatting dates. The default values are retrieved from the localization resource for each platform.

#### Data Type

`SCCVWDAYNAMES` structure

#### `SCCVWDAYNAMES` Structure

This structure is used by the `SCCID_DAYNAMES` option to specify the format of day names.

`SCCVWDAYNAMES` is a C data structure defined in `sccvw.h` as follows:

```
typedef struct SCCVWDAYNAMEStag
{
    VTTCCHAR  aFullNames[7][16];
    VTTCCHAR  aAbbrevNames[7][16];
} SCCVWDAYNAMES, * PSCCVWDAYNAMES;
```

#### Parameters

- `aFullNames`: An array of character strings which identify the full name for each day of the week, starting with Sunday. This option is used when formatting dates which use the full name of the day of the week.
- `aAbbrevNames`: An array of character strings, which identify the abbreviated name for each day of the week, starting with Sunday. This option is used when formatting dates that use the abbreviated name of the day of the week.

### B.9.2 `SCCID_IGNORE_PASSWORD`

This option can disable the password verification of files where the contents can be processed without validation of the password. If this option is not set, the filter should prompt for a password if it handles password-protected files.

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**Note:** As of release 8.3.5, this feature only applies to Outlook PST files.

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#### Scope

Global

**Data Type**

VTBOOL

**Data**

- TRUE: Ignore validation of the password.
- FALSE: Prompt for the password.

**Default**

FALSE

**B.9.3 SCCID\_INTLFLAGS**

This option is used to set flags related to international support. The default value is retrieved from the operating system for the Windows platform, and defaults to SCCVW\_ENGLISHUNITS OR-ed with SCCVW\_12HOURTIME on all other platforms.

**Data Type**

VTDWORD

**Data**

One of the following values:

- SCCVW\_ENGLISHUNITS: If set, the print margins are displayed to the user in inches. If not set, the print margins are displayed in metric units.
- SCCVW\_12HOURTIME: If set, time variables are formatted for display using a 12 hour clock. If not set, time variables are formatted for display using a 24 hour clock.

**B.9.4 SCCID\_MONTHNAMES**

This option sets the full and abbreviated names used for formatting dates. The default values are retrieved from the localization resource for each platform.

**Data Type**

SCCVWMONTHNAMES structure

**SCCVWMONTHNAMES Structure**

This structure is used to set the SCCID\_MONTHNAMES option.

SCCVWMONTHNAMES is a C data structure defined in sccvw.h as follows:

```
typedef struct
{
    VTTCHAR    aFullNames[13][16];
    VTTCHAR    aAbbrevNames[13][16];
} SCCVWMONTHNAMES;
```

**Parameters**

- aFullNames: An array of character strings which identify the full name for each month of the year starting with January. This option is used when formatting dates which use the full name of the month of the year.

- `aAbbrevNames`: An array of character strings, which identify the abbreviated name for each month of the year, starting with January. This option is used when formatting dates that use the abbreviated name of the month of the year.

## B.9.5 SCCID\_NUMBERFORMAT

This option is used to control the formatting of numbers. It is useful for setting environment dependent variables related to international support. The default values are retrieved from the operating system for the Windows platform, and are set to logical U.S. defaults on all other platforms.

### Data Type

SCCVWNUMBERFORMAT and SCCVWNUMBERFORMAT775 structures

### SCCVWNUMBERFORMAT775 and SCCVWNUMBERFORMAT Structures

These structures are used to set the `SCCID_NUMBERFORMAT` option. The fields of the structures allow the developer to control variables related to international support. Please note that the `SCCVWNUMBERFORMAT775` structure always assumes 2-digit year data, whereas the `SCCVWNUMBERFORMAT` structure allows for both 2- and 4-digital year data.

These are C data structures defined in `sccvw.h` as follows:

```
typedef struct SCCVWNUMBERFORMAT775tag
{
    VTTCHAR    cDecimalSep;
    VTTCHAR    cThousandSep;
    VTTCHAR    cDateSep;
    VTTCHAR    cTimeSep;
    VTTCHAR    szCurrencySymbol[8];
    VTTCHAR    szAM[8];
    VTTCHAR    szPM[8];
    VTDWORD    dwNumBytesAM;
    VTDWORD    dwNumBytesPM;
    VTWORD     wCurrencyPosition;
    VTWORD     wShortDateOrder;
} SCCVWNUMBERFORMAT775, * PSCCVWNUMBERFORMAT775;
```

```
typedef struct SCCVWNUMBERFORMATtag
{
    VTTCHAR    cDecimalSep;
    VTTCHAR    cThousandSep;
    VTTCHAR    cDateSep;
    VTTCHAR    cTimeSep;
    VTTCHAR    szCurrencySymbol[8];
    VTTCHAR    szAM[8];
    VTTCHAR    szPM[8];
    VTDWORD    dwNumBytesAM;
    VTDWORD    dwNumBytesPM;
    VTWORD     wCurrencyPosition;
    VTWORD     wShortDateOrder;
    VTWORD     wShortDateYearDigits;
    VTWORD     wShortDateMonthDigits;
    VTWORD     wShortDateDayDigits;
    VTWORD     wShortDateFlags;
} SCCVWNUMBERFORMAT, * PSCCVWNUMBERFORMAT;
```

## Parameters

- `cDecimalSep`: The character used for the decimal separator when formatting currency.
- `cThousandSep`: The character used for the thousands separator when formatting currency.
- `cDateSep`: The character used to separate years, months, and days when formatting dates. This option only works on variable formats. For example, only one of the several date formats in Microsoft Excel is variable.
- `cTimeSep`: The character used to separate hours, minutes, and seconds when formatting times. This option only works on variable formats. For example, only one of the several time formats in Microsoft Excel is variable.
- `szCurrencySymbol`: The string used for the currency symbol when formatting currency.
- `szAM`: The string used to indicate "AM" when formatting times.
- `szPM`: The string used to indicate "PM" when formatting times.
- `dwNumBytesAM`: Number of bytes of the string stored in `szAM`.
- `dwNumBytesPM`: Number of bytes of the string stored in `szPM`.
- `wCurrencyPosition`: Flags that indicate the positioning of the currency symbol when formatting currency. Only six specific filters are supported: `SOC6`, `WG2`, `WK4`, `WK6`, `WPW`, and `VISO`.
  - `SCCVW_CURRENCY_LEADS`: The currency symbol is placed before the amount.
  - `SCCVW_CURRENCY_TRAILS`: The currency symbol is placed after the amount.
  - `SCCVW_CURRENCY_SPACE`: A space is placed between the currency and the amount.
  - `SCCVW_CURRENCY_NOSPACE`: A space is not placed between the currency and the amount.
- `wShortDateOrder`: Indicates the order used when formatting short dates (numeric dates). This option only works on variable formats. For example, only one of the several date formats in Microsoft Excel is variable. One of the following:
  - `SCCVW_DATEORDER_MDY`: Month, Day, Year
  - `SCCVW_DATEORDER_DMY`: Day, Month, Year
  - `SCCVW_DATEORDER_YMD`: Year, Month, Date
- `wShortDateYearDigits`: This parameter is specific to the `SCCVWNUMBERFORMAT` structure. This is the number of digits in the year as specified by the Windows registry entry `sShortDate`. This option only works on variable formats. For example, only one of the several date formats in Microsoft Excel is variable.
- `wShortDateMonthDigits`: This parameter is specific to the `SCCVWNUMBERFORMAT` structure. This is the number of digits in the month as specified by the Windows registry entry `sShortDate`.
- `wShortDateDayDigits`: This parameter is specific to the `SCCVWNUMBERFORMAT` structure. This is the number of digits in the day as specified by the Windows registry entry `sShortDate`.

- `wShortDateFlags`: This parameter is specific to the `SCCVWNUMBERFORMAT` structure. It is reserved for internal use.

## B.9.6 SCCID\_REORDERMETHOD

This option controls how the viewer reorders bidirectional text.

### Data Type

VTDWORD

### Data

One of the following values:

- `SCCUT_REORDER_UNICODE_OFF`: This disables any processing for unicode characters. This option is the default.
- `SCCUT_REORDER_UNICODE_LTOR`: Characters displayed using the Unicode bidirectional algorithm in left-to-right order
- `SCCUT_REORDER_UNICODE_RTOL`: Characters displayed in right-to-left order

## B.10 View Window

The following information pertains to the View Window.

### B.10.1 SCCID\_DEFAULTCLIPBOARDFONT

This option is the font placed on the clipboard (in clipboard formats that support this functionality) when no font is contained within the file being viewed. It is also the font placed on the clipboard for spreadsheets and databases.

### Data Type

`SCCVWFONTSPEC` structure (see the structure documentation in [SCCID\\_DEFAULTPRINTFONT](#))

### B.10.2 SCCID\_DEFAULTDISPLAYFONT

This option sets the font used when no font is contained within the file being viewed. It is also the font used in draft mode (when viewing documents) and the font used to display spreadsheets and databases.

### Data Type

`SCCVWFONTSPEC` structure (see the structure documentation in [SCCID\\_DEFAULTPRINTFONT](#))

### B.10.3 SCCID\_DIALOGFLAGS

This option controls a number of aspects of the method by which dialogs are displayed and by which dialog choices are added to menus.

### Data Type

VTDWORD



**Data**

One or more of the following values OR-ed together:

- SCCVW\_DIALOG\_NOHELP: The dialogs available in the Viewer Technology should not display "Help" buttons.
- SCCVW\_DIALOG\_NOMORE: The dialogs available in the Viewer Technology should not display "More" buttons. A "More" button allows access to another dialog with more obscure options.
- SCCVW\_DIALOG\_NO3D: Windows only. The dialogs available in the Viewer Technology should not use Microsoft's CTL3DV2.DLL to give its dialogs a 3D effect. If CTL3DV2.DLL is not available, this flag has no effect. CTL3DV2.DLL is loaded dynamically (LoadLibrary) so systems without it will not cause a problem.
- SCCVW\_DIALOG\_NOADDDOCOPYTOMENU: Normally, the menu retrieved from SCCVW\_GETDISPLAYINFO includes an item called Copy, which copies to the clipboard. This flag disables this menu item.
- SCCVW\_DIALOG\_NOADDDOPRINTTOMENU: Normally, the menu retrieved from SCCVW\_GETDISPLAYINFO includes an item called Print..., which prints the file. This flag disables this menu item.
- SCCVW\_DIALOG\_NOADDOPTIONSTOMENU: Normally, the menu retrieved from SCCVW\_GETDISPLAYINFO ends in a popup called Options, which has three items: Display..., Print..., and Clipboard.... These items provide access to the options dialogs available in the Viewer Technology. If this is not appropriate for your application, setting this flag will disable this extra popup.
- SCCVW\_DIALOG\_NOADDDISPLAYTOMENU: Setting this flag removes just the Display... item from the option menu described earlier in this bulleted list.
- SCCVW\_DIALOG\_NOADDPRINTTOMENU: Setting this flag removes just the Print... item from the option menu described earlier in this bulleted list.
- SCCVW\_DIALOG\_NOADDCLIPBOARDTOMENU: Setting this flag removes just the Clipboard... item from the option menu described earlier in this bulleted list.
- SCCVW\_DIALOG\_NOADDFONTZOOMTOMENU: Normally, the menu retrieved from SCCVW\_GETDISPLAYINFO includes a popup menu called Font Size, which allows the user to enlarge, reduce or reset the font size relative to its the original size. This flag disables this popup menu item.
- SCCVW\_DIALOG\_NOADDSHOWFULLSCREEN: The dialog should not display the "Show Full Screen" menu option from the context menu.

**B.10.4 SCCID\_DISPLAYFONTALIAS**

This option sets or gets display font aliases according to the SCCVWFONTALIAS structure.

**Data Type**

SCCVWFONTALIAS structure

**B.10.5 SCCID\_FONTSCALINGFACTOR**

This option scales fonts in the view of a file by a percentage of the original size. The normal size is 100%. The valid range for this factor is from 40 to 300 with 100 as the default.

---

---

**Note:** For word processor documents, this only affects normal and draft modes. It will not affect paragraph, page or table attributes (for example, margins). For spreadsheet and database documents, the font scaling will affect the row height and column widths. This option will not affect metafile or raster graphics views. For all other document types, only the fonts will be affected

---

---

In the context menu, the granularity of an increase/decrease of a font is 20% of the normal size.

### Data Type

VTDWORD

## B.10.6 SCCID\_OLEFLAGS

This option is used to set flags related to OLE features enabled. This flag has meaning only on systems that have OLE 2.0 available. The default value is to have none of the flags set.

### Data Type

VTDWORD

### Data

- **SCCVW\_OLE\_ENABLEDRAGDROP:** If this flag is set, the viewer enables OLE drag-and-drop copying. This allows the user to click on a highlighted selection in a document and drag it to a target application that can accept it.

## B.10.7 SCCID\_RESOURCELIBRARYID

---

---

**Note:** This option is only valid on the Windows platforms.

---

---

Selects the localization string file based on the Resource ID.

### Data Type

SCCVWRESOURCEID structure

### SCCVWRESOURCEID Structure

This structure is used in the SCCID\_RESOURCELIBRARYID option.

SCCVWRESOURCEID is a C data structure defined in sccvw.h as follows:

```
typedef struct
{
    VTDWORD    dwSize;
    VTBYTE     szResourceID [SCCVW_RESOURCEIDMAX];
} SCCVWRESOURCEID;
```

### Parameters

- **dwSize:** Must be set by the developer to sizeof(SCCVWRESOURCEID).

- `szResourceID`: This is a 0-5 character ID defining the new version of the library that has a unique version of the resources.

---

**Note:** `szResourceID` is *not* your OEM ID. This ID will be appended to the platform-specific library name to uniquely identify your resource file. If no ID is defined or it is cleared out (NULL), the default library containing English resources will be used

---

### Example

If you use "GR" for a resource file that is localized with German resources the new library must be named as follows:

- New Name: SCCLOGR.DLL
- Default Name: SCCLO.DLL

## B.10.8 SCCID\_SCROLLFLAGS

This option controls the display of the horizontal and vertical scroll bars. You will need to use both an HSCROLL and a VSCROLL value (from the following list) in the `SCCVW_SETOPTION` call.

### Data Type

VTDWORD

### Data

One of the following values:

- `SCCVW_HSCROLL_NEVER`: No horizontal scroll bar will be visible.
- `SCCVW_HSCROLL_SOMETIMES`: Visibility of the horizontal scroll bar is under the control of the display engines.
- `SCCVW_HSCROLL_ALWAYS`: The horizontal scroll bar is always visible.
- `SCCVW_VSCROLL_NEVER`: No vertical scroll bar will be visible.
- `SCCVW_VSCROLL_SOMETIMES`: Visibility of the vertical scroll bar is under the control of the display engines.
- `SCCVW_VSCROLL_ALWAYS`: The vertical scroll bar is always visible.

---

**Note:** The display engines do not currently show/hide the scroll bars, so `SOMETIMES` and `ALWAYS` are logically equivalent. This may change in the future.

---

## B.10.9 SCCID\_SYSTEMFLAGS

This option controls a number of miscellaneous interactions between the developer and the Viewer Technology.

---

**Note:** Every new window automatically has this option reset to 0. If you wish to use any of these flags they must be explicitly set for each view window after it is created.

---

**Data Type**

VTDWORD

**Data**

One of the following values:

- `SCCVW_SYSTEM_RAWTEXT`: The developer will receive `SCCVW_RAWTEXTEVENT` messages.
- `SCCVW_SYSTEM_NOTIMER`: Windows only. Disables the view window's internal timer that controls background reading, caret blinking and auto scroll. If this flag is set, the developer must send `SCCVW_IDLE` messages to the view window.
- `SCCVW_SYSTEM_NOOPTIONSSAVE`: Normally, when a view window is destroyed, its current options are copied to the default options and saved. If this interaction is not acceptable for the developer's application, this flag may be set to disable it. If this flag is set, the developer may manually cause the current options to be saved into the default set by calling `SCCVW_SAVEOPTIONS`.
- `SCCVW_SYSTEM_NOREADAHEAD`: This flag disables the view window's process that reads through the rest of the file in the background while the first part of the file is being viewed. When this flag is set, the file will be read "on demand" as the user scrolls down through the document. Please note that use of this flag will cause unusual scroll bar behavior as the user scrolls down.
- `SCCVW_SYSTEM_UNICODE`: This flag will enable the following APIs to process Unicode: `SCCVW_GETRAWTEXT`, `SCCVW_SEARCH`, `SCCVW_SEARCHDIALOG` and `SCCVW_GETANNOTATIONDATA`.
- `SCCVW_SYSTEM_TEXTOUTPRINTERDRIVERBUG`, `SCCVW_SYSTEM_TEXTOUTDISPLAYDRIVERBUG`

Windows only. Some device drivers incorrectly implement `ExtTextOutW`. The fault is tied to the character width array. Turning these flags on causes the Outside In Viewer Technology to work around the driver bug. Turning these system flags on when the driver bug does not exist will cause incorrect behavior.

**B.10.10 SCCID\_TOCLIPBOARD**

This option controls the clipboard formats that the viewer attempts to place on the clipboard in response to a `SCCVW_COPYTOCLIP` message.

**Data Type**

VTDWORD

**Data**

One or more of the following OR-ed together:

- `SCCVW_CLIPFORMAT_TEXT`: Text in whatever character set is appropriate for the operating system.
- `SCCVW_CLIPFORMAT_RTF`: Rich Text Format.
- `SCCVW_CLIPFORMAT_UNICODE`: Windows only. Unicode text format.
- `SCCVW_CLIPFORMAT_WINBITMAP`: Windows only. Windows Bitmap.
- `SCCVW_CLIPFORMAT_WINDIB`: Windows only. Windows Device Independent Bitmap.

- SCCVW\_CLIPFORMAT\_WINMETAFILE: Windows only. Windows Metafile.
- SCCVW\_CLIPFORMAT\_WINPALETTE: Windows only. Windows Palette.

## B.11 Printing

The following information pertains to printing.

### B.11.1 SCCID\_DEFAULTPRINTFONT

This option has the same behavior for printing as SCCID\_DEFAULTDISPLAYFONT has for display.

#### SCCVWFONTSPEC Structure

This structure is used by various options to specify a font.

SCCVWFONTSPEC is a C data structure defined in sccvw.h as follows:

```
typedef struct
{
    VTTCHAR  szFace[40];
    VTWORD   wHeight;
    VTWORD   wAttr;
    VTWORD   wType;
} SCCVWFONTSPEC, * LPSCCVWFONTSPEC;
```

#### Parameters

wAttr: The attributes of the font. SCCVW\_CHARATTR\_NORMAL is the default. Any of the following values can be OR-ed together:

- SCCVW\_CHARATTR\_NORMAL
  - SCCVW\_CHARATTR\_UNDERLINE
  - SCCVW\_CHARATTR\_ITALIC
  - SCCVW\_CHARATTR\_BOLD
  - SCCVW\_CHARATTR\_STRIKEOUT
  - SCCVW\_CHARATTR\_SMALLCAPS
  - SCCVW\_CHARATTR\_OUTLINE
  - SCCVW\_CHARATTR\_SHADOW
  - SCCVW\_CHARATTR\_CAPS
  - SCCVW\_CHARATTR\_SUBSCRIPT
  - SCCVW\_CHARATTR\_SUPERSCRIPT
  - SCCVW\_CHARATTR\_DUNDERLINE
  - SCCVW\_CHARATTR\_WORDUNDERLINE
  - SCCVW\_CHARATTR\_DOTUNDERLINE
- wType: Should be set to 0.

### B.11.2 SCCID\_PRINTCOLLATE

If TRUE, multiple copies of a printout will be collated. If FALSE, the copies for each page will be printed together.

**Data Type**

VTBOOL

**B.11.3 SCCID\_PRINTCOPIES**

This option indicates the number of copies of the file, selection or range to print.

**Data Type**

VTDWORD

**B.11.4 SCCID\_PRINTFONTALIAS**

This option sets or gets printer font aliases according to the SCCVWFONTALIAS structure.

**Data Type**

The SCCVWFONTALIAS structure.

**SCCVWFONTALIAS Structure**

This structure is used in the SCCID\_PRINTFONTALIAS option.

SCCVWFONTALIAS is a C data structure defined in sccvw.h as follows:

```
typedef struct SCCVWFONTALIAS
{
    VTDWORD    dwSize;
    VTDWORD    dwAliasID;
    VTDWORD    dwFlags;
    VTWORD     szwOriginal[SCCVW_FONTNAME_MAX];
    VTWORD     szwAlias[SCCVW_FONTNAME_MAX];
} SCCVWFONTALIAS;
```

**Parameters**

- dwSize: Must be set by the developer to sizeof(SCCVWFONTALIAS).
- dwAliasID: ID of the aliasing in the current list of aliases.
- dwFlags: The usage of these flags depends on whether this structure is being used with the SCCVW\_SETOPTION or SCCVW\_GETOPTION message. It should be set to one of the following:
  - SCCVW\_FONTALIAS\_COUNT (SCCVW\_GETOPTION): dwAliasID will be filled with the count of current font aliases for that device.
  - SCCVW\_FONTALIAS\_ALIASNAME (SCCVW\_SETOPTION): The alias of szwAlias for szwOriginal will be used when szwOriginal is not available on the device. When a font alias is added to the list, this can affect the alias count. If an alias already exists for szwOriginal, the new szwAlias will replace it.
  - SCCVW\_FONTALIAS\_ALIASNAME (SCCVW\_GETOPTION): szwAlias will be filled if there is an alias in the alias list for the font in szwOriginal on that device.
  - SCCVW\_FONTALIAS\_GETALIASBYID (SCCVW\_GETOPTION): szwAlias and szwOriginal will be filled by the technology for the alias in the numbered slot identified by the ID.

- SCCVW\_FONTALIAS\_GETALIASID (SCCVW\_GETOPTION): dwAliasID will be set for the font in szwOriginal. If none exists, the dwAliasID will be 0xFFFFFFFF.
  - SCCVW\_FONTALIAS\_REMOVEALIASBYID (SCCVW\_SETOPTION): The alias in that slot will be removed if one exists. When a font alias is removed from the list, this can affect the other alias IDs.
  - SCCVW\_FONTALIAS\_REMOVEALIASBYNAME (SCCVW\_SETOPTION): The alias for the font szwOriginal will be removed from the alias list if one exists. When a font alias is removed from the list, this can affect the other alias IDs.
  - SCCVW\_FONTALIAS\_REMOVEALL (SCCVW\_SETOPTION): The alias list will be cleared out and the count will be zero.
  - SCCVW\_FONTALIAS\_USEDEFAULTS (SCCVW\_SETOPTION): This clears the existing alias list and sets it to a list of default aliases that is variable by platform.
- szwOriginal: This represents the original name of a font that will be mapped when this font is not available. This name should be a Unicode string.
  - szwAlias: This represents the new name of a font that will be used as a replacement for the unmapped font named in szwOriginal. This name should be a Unicode string.

### Data

The technology assumes the following default mappings. The first value is the szwOriginal Value, the second is the szwAlias Value.

- Chicago = Arial
- Geneva = Arial
- New York = Times New Roman
- Helvetica = Arial
- Helv = Arial
- times = Times New Roman
- Times = Times New Roman
- Tms Roman = Times New Roman
- Symbol = Symbol
- itc zapf dingbats = Zapf dingbats
- itc zapf dingbats = Zapf dingbats

### B.11.5 SCCID\_PRINTHEADER

If the value is TRUE, a header containing the page number and the text specified by the SCCID\_PRINTJOBNAME option will be printed at the top of each page.

---



---

**Note:** If necessary, the top margin (SCCID\_DEFAULTPRINTMARGINS) will be moved down to accommodate the header.

---



---

**Data Type**

VTBOOL

**B.11.6 SCCID\_PRINTHEADERFONT**

This option is the font used when printing the header if SCCID\_PRINTHEADER is TRUE.

**Data Type**

SCCVWFFONTSPEC structure

**B.11.7 SCCID\_PRINTJOBNAME**

This option sets the text printed in the header on each page and the job name passed to the OS (if applicable). The characters "%F" appearing in the string will be replaced by the display name of the file being viewed. For instance "My document is [%F]" might result in "My document is [TEST.DOC]."

**Data Type**

C string of 128 characters (data size is 128 characters, including the terminating zero)

**B.12 File System**

The following information pertains to file systems.

**B.12.1 SCCID\_IO\_BUFFERSIZE**

This provides three options that allow the user to adjust buffer sizes to take advantage of faster computers/more memory. This is an advanced option that casual users may ignore. This option allows users to tune memory usage to a particular target machine. The number specified is in kilobytes.

**Scope**

Global

**Data Type**

SCCBUFFEROPTIONS Structure

**Data**

A buffer options structure

**SCCBUFFEROPTIONS Structure**

```
typedef struct SCCBUFFEROPTIONStag
{
    VTDWORD dwReadBufferSize;    /* size of the I/O Read buffer
                                in KB */
    VTDWORD dwMMapBufferSize;    /* maximum size for the I/O
                                Memory Map buffer in KB */
    VTDWORD dwTempBufferSize;    /* maximum size for the memory-
                                mapped temp files in KB */
    VTDWORD dwFlags;            /* use flags */
} SCCBUFFEROPTIONS, *PSCCBUFFEROPTIONS;
```



## Parameters

- `dwReadBufferSize`: Used to define the number of bytes that will read from disk into memory at any given time. Once the buffer has data, further file reads will proceed within the buffer until the end of the buffer is reached, at which point the buffer will again be filled from the disk. This can lead to performance improvements in many file formats, regardless of the size of the document.
- `dwMMapBufferSize`: Used to define a maximum size that a document can be and use a memory-mapped I/O model. In this situation, the entire file is read from disk into memory and all further I/O is performed on the data in memory. This can lead to significantly improved performance, but note that either the entire file can be read into memory, or it cannot. If both of these buffers are set, then if the file is smaller than the `dwMMapBufferSize`, the entire file will be read into memory; if not, it will be read in blocks defined by the `dwReadBufferSize`.
- `dwTempBufferSize`: The maximum size that a temporary file can occupy in memory before being written to disk as a physical file. Storing temporary files in memory can boost performance on archives, files that have embedded objects or attachments. If set to 0, all temporary files will be written to disk.
- `dwFlags`
  - `SCCBUFOPT_SET_READBUFSIZE` 1
  - `SCCBUFOPT_SET_MMAPBUFSIZE` 2
  - `SCCBUFOPT_SET_TEMPBUFSIZE` 4

To set any of the three buffer sizes, set the corresponding flag while calling `dwSetOption`.

## Default

The default settings for these options are:

- `#define SCCBUFOPT_DEFAULT_READBUFSIZE` 2: A 2KB read buffer.
- `#define SCCBUFOPT_DEFAULT_MMAPBUFSIZE` 8192: An 8MB memory-map size.
- `#define SCCBUFOPT_DEFAULT_TEMPBUFSIZE` 2048: A 2MB temp-file limit.

Minimum and maximum sizes for each are:

- `SCCBUFOPT_MIN_READBUFSIZE` 1: Read one Kbyte at a time.
- `SCCBUFOPT_MIN_MMAPBUFSIZE` 0: Don't use memory-mapped input.
- `SCCBUFOPT_MIN_TEMPBUFSIZE` 0: Don't use memory temp files
- `SCCBUFOPT_MAX_READBUFSIZE` 0x003fffff, `SCCBUFOPT_MAX_MMAPBUFSIZE` 0x003fffff, `SCCBUFOPT_MAX_TEMPBUFSIZE` 0x003fffff: These maximums correspond to the largest file size possible under the 4GB `DWORD` limit.

## B.12.2 SCCID\_TEMPDIR

From time to time, the technology needs to create one or more temporary files. This option sets the directory to be used for those files.

It is recommended that this option be set as part of a system to clean up temporary files left behind in the event of abnormal program termination. By using this option with code to delete files older than a predefined time limit, the OEM can help to ensure that the number of temporary files does not grow without limit.

---

---

**Note:** This option will be ignored if `SCCOPT_REDIRECTTEMPFILE` is set.

---

---

### Scope

Global

### Data Type

SCCUTTEMPDIRSPEC structure

### SCCUTTEMPDIRSPEC Structure

This structure is used in the `SCCID_TEMPDIR` option.

SCCUTTEMPDIRSPEC is a C data structure defined in `sccvw.h` as follows:

```
typedef struct SCCUTTEMPDIRSPEC
{
    VTDWORD    dwSize;
    VTDWORD    dwSpecType;
    VTBYTE     szTempDirName[SCCUT_FILENEMEMAX];
} SCCUTTEMPDIRSPEC, * LPSCCUTTEMPDIRSPEC;
```

There is a limitation in the current release. `dwSpecType` describes the contents of `szTempDirName`. Together, `dwSpecType` and `szTempDirName` describe the location of the source file. The only `dwSpecType` values supported at this time are:

- `IOTYPE_ANSIPATH`: Windows only. `szTempDirName` points to a NULL-terminated full path name using the ANSI character set and FAT 8.3 (Win16) or NTFS (Win32 and Win64) file name conventions.
- `IOTYPE_UNIXPATH`: X Windows on UNIX platforms only. `szTempDirName` points to a NULL-terminated full path name using the system default character set and UNIX path conventions.

Specifically not supported at this time are `IOTYPE_UNICODEPATH` and `IOTYPE_REDIRECT`.

### Parameters

- `dwSize`: Set to `sizeof(SCCUTTEMPDIRSPEC)`.
- `dwSpecType`: `IOTYPE_ANSIPATH`, `IOTYPE_UNICODE` or `IOTYPE_UNIXPATH`
- `szTempDirName`: The path to the directory to use for the temporary files. Note that if all `SCCUT_FILENEMEMAX` bytes in the buffer are filled, there will not be space left for file names.

## B.12.3 SCCOPT\_DOCUMENTMEMORYMODE

This option determines the maximum amount of memory that the chunker may use to store the document's data, from 4 MB to 1 GB. The more memory the chunker has available to it, the less often it needs to re-read data from the document.

### Scope

Global

**Data Type**

VTDWORD

**Parameters**

- SCCDOCUMENTMEMORYMODE\_SMALLEST 1 - 4MB
- SCCDOCUMENTMEMORYMODE\_SMALL 2 - 16MB
- SCCDOCUMENTMEMORYMODE\_MEDIUM 3 - 64MB
- SCCDOCUMENTMEMORYMODE\_LARGE 4 - 256MB
- SCCDOCUMENTMEMORYMODE\_LARGEST 5 - 1 GB

**Default**

SCCDOCUMENTMEMORYMODE\_SMALL 2 - 16MB

**B.12.4 SCCOPT\_REDIRECTTEMPFILE**

This option is set when the developer wants to use redirected IO to completely take over responsibility for the low level IO calls of the temp file.

**Scope**

Global (not persistent)

**Data Type**

VTLPVOID: pCallbackFunc

Function pointer of the redirect IO callback.

Redirect call back function:

```
typedef
{
    VTDWORD (* REDIRECTTEMPFILECALLBACKPROC)
    (HIOFILE *phFile,
    VTVOID *pSpec,
    VTDWORD dwFileFlags);
```

There is another option to handle the temp directory, `SCCOPT_TEMPDIR`. Only one of these two can be set by the developer. The `SCCOPT_TEMPDIR` option will be ignored if `SCCOPT_REDIRECTTEMPFILE` is set. These files may be safely deleted when the Close function is called.



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