



# Display PostScript System

---

*Adobe Systems Incorporated*

## **Introduction: Perspective for Software Developers**

15 April 1993

Adobe Systems Incorporated

Adobe Developer Technologies  
345 Park Avenue  
San Jose, CA 95110  
<http://partners.adobe.com/>

Copyright ©, 1988-1993 by Adobe Systems Incorporated. All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written consent of the publisher. Any software referred to herein is furnished under license and may only be used or copied in accordance with the terms of such license.

PostScript, the PostScript logo, Display PostScript, and the Adobe logo are trademarks of Adobe Systems Incorporated which may be registered in certain jurisdictions. X Window System is a trademark of the Massachusetts Institute of Technology. Other brand or product names are the trademarks or registered trademarks of their respective holders.

*This publication and the information herein is furnished AS IS, is subject to change without notice, and should not be construed as a commitment by Adobe Systems Incorporated. Adobe Systems Incorporated assumes no responsibility or liability for any errors or inaccuracies, makes no warranty of any kind (express, implied or statutory) with respect to this publication, and expressly disclaims any and all warranties of merchantability, fitness for particular purposes and noninfringement of third party rights.*



# Contents

---

- 1 About This Document INTRO-1
  - 2 About the Display PostScript System INTRO-1
  - 3 Application Building Blocks INTRO-2
  - 4 Using pswrap INTRO-2
  - 5 Required Reading INTRO-3
  - 6 Related Documentation INTRO-4
  - 7 System-Specific Documentation INTRO-5
  - 8 Developer Resources INTRO-5
- Index  
*See Global Index to the Display PostScript Reference Manuals*





# List of Figures

---

Figure 1	Display PostScript as an extension to X	INTRO-2
Figure 2	Creating a Display PostScript application	INTRO-3



# Introduction: Perspective for Software Developers

## 1 About This Document

This document is your introduction to application development using the text and graphics imaging resources of the Display PostScript® system in the X Window System™ environment.

This overview for the application programmer describes:

- The Display PostScript system environment you'll be interacting with.
- The Client Library interface you'll be programming for.
- The use of the *pswrap* translator to prepare C-callable procedures containing PostScript® language programs.
- The manuals you'll need.

## 2 About the Display PostScript System

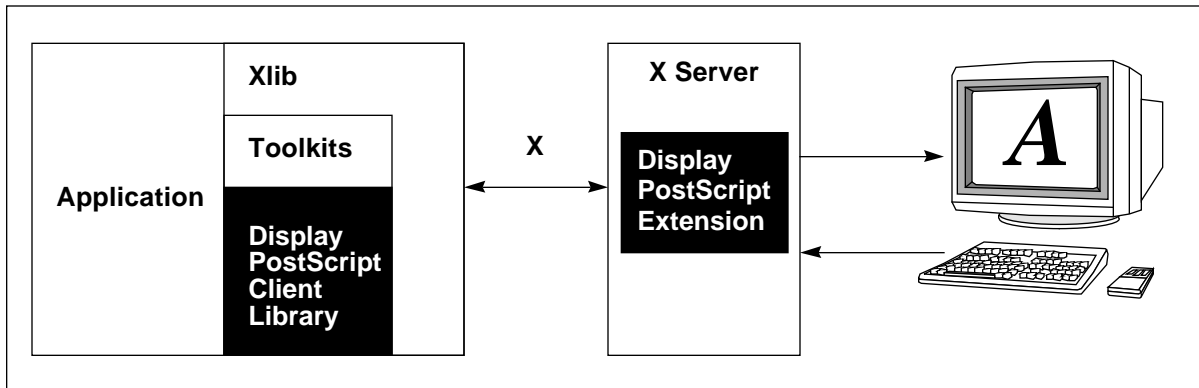
The text and graphics imaging resources of the Display PostScript System provide the same imaging model for both printers and active computer displays. As a result, developers can more easily write programs that provide true WYSIWYG (what-you-see-is-what-you-get) imaging.

The Display PostScript system provides a device-independent imaging model for displaying information on a screen. This imaging model is fully compatible with the imaging model used in PostScript printers. By allowing you to use the PostScript language to display text, graphics, and sampled images, it frees you from display-specific details such as screen resolution and number of available colors.

In the X Window System, the PostScript interpreter is implemented as an extension to X. Figure 1 illustrates information flow between the application, the X server, and the Display PostScript extension. The X server and its associated window manager handle window operations such as displaying and positioning

windows, while the Display PostScript extension handles imaging within the window. The application communicates with the server by means of X requests, replies, and events.

**Figure 1** *Display PostScript as an extension to X*



### 3 Application Building Blocks

Most of your application will be written in C or another high-level language. You'll call Client Library procedures to start a PostScript execution context, send programs and data to the PostScript interpreter, and get results from the interpreter. The Client Library is the application's primary interface to the Display PostScript system.

In addition, you'll call *wraps*—PostScript language procedures developed specifically for your application. Wraps, short for *wrapped procedures*, are created by the *pswrap* translator from PostScript language programs written to meet application needs.

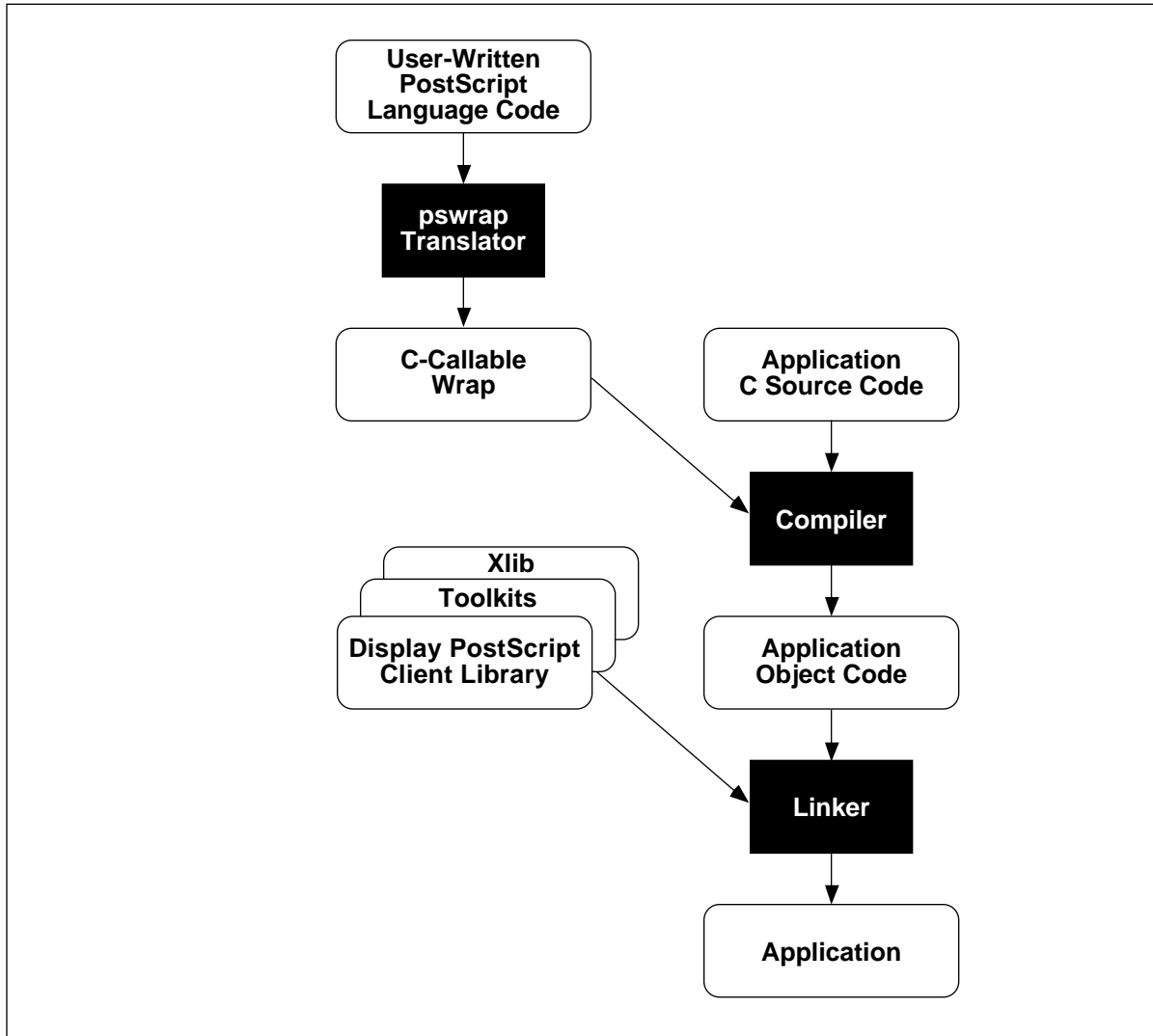
### 4 Using pswrap

Your application will perform calculations, communicate with the window system, read and write files, and do other application processing in C or another high-level language. It will perform imaging tasks by calling wrapped procedures to send PostScript language programs to the interpreter. The *pswrap* translator creates these wraps from PostScript language input.

Figure 2 shows how you bring together wraps, libraries, toolkits, and application code to make an executable program. You compile your application source code, together with any wraps you have prepared, to produce application object code. Then you link in the Client Library, Xlib, and any toolkits you are using.



**Figure 2** *Creating a Display PostScript application*



## 5 Required Reading

The following four documents are required reading for developers who want to write Display PostScript programs in the X Window System environment. They can be obtained from the Adobe file server, as described on page INTRO-6.

*Client Library Reference Manual* describes the application program interface to the Display PostScript system, including how to send programs and data to a PostScript execution context, how to handle context output, and how to create and terminate a context. It contains procedure definitions, programming tips, and a sample application program. It is the definitive reference for the Client Library.

*Client Library Supplement for X* contains information about the Client Library interface to the Display PostScript system implemented as an extension to the X Window System. It is the definitive reference for X-specific features of the Client Library.

*pswrap Reference Manual* describes ways to define C language-callable procedures that contain PostScript language programs. It details methods for declaring input arguments and output to be received from the interpreter. It documents the *pswrap* command line options and is the definitive reference for *pswrap*.

*Display PostScript Toolkit for X* is a collection of utilities for programmers who use the Display PostScript extension to the X Window System. The toolkit can be used for context management, user object management, user path handling, and file previewing. It also lets users preview and choose from currently available fonts by using the font selection panel and the font sampler. It is the definitive reference for the Display PostScript Toolkit for X.

## 6 Related Documentation

The following additional manuals are useful to developers who are programming with the PostScript language or are developing in a Display PostScript environment.

*Programming the Display PostScript System with X* is written for the X Window System programming environment. However, much of information it contains applies to all Display PostScript developers. Through discussion, pictures, diagrams, and sample code, the book provides specific tips and techniques for writing graphically sophisticated applications. The book includes the four reference manuals listed in section 5, “Required Reading.”

*PostScript Language Tutorial and Cookbook* is an introduction to the PostScript language. It contains a collection of example programs that illustrate the PostScript language and imaging model. This book emphasizes examples rather than efficient programming strategies, to illustrate clearly many of the capabilities of the PostScript language.

*PostScript Language Reference Manual, Second Edition*, is the official reference for the PostScript language. It describes the imaging model, the interpreter, and the operators in detail. It is the definitive resource for all PostScript language programmers.

*PostScript Language Program Design* is a guide for advanced developers to use in designing and debugging PostScript language programs. Although its content focuses on printers, much of it is relevant to the Display PostScript system.

*Adobe Type 1 Font Format* describes the format and methods of construction for Adobe Type 1 font programs. Type 1 fonts give font developers the ability to create a single font program that can be rendered on a wide variety of devices and resolutions. They are useful for small graphical objects such as control points as well as text characters.

## 7 System-Specific Documentation

The term *system specific* refers to implementations of the Display PostScript system that are customized to fit a specific machine and operating system environment. *Client Library Reference Manual* and *pswrap Reference Manual* apply to all Display PostScript implementations. *Client Library Supplement for X*, and *Display PostScript Toolkit for X* apply to all Display PostScript implementations under the X Window System.

For more information about system-specific aspects of your Display PostScript implementation, see the documentation provided by your Display PostScript system vendor.

## 8 Developer Resources

The following is a list of resources maintained by Adobe for developers:

**Technical Publications.** The manuals described in section 6, “Related Documentation,” can be obtained from Addison-Wesley Publishing Company, from a technical bookstore, or from the Adobe Developers Association.

**Adobe Developers Association.** Adobe provides a membership program for active developers. The literature and services provided by the association are designed to support developers and keep them up to date as they work with Adobe technology. For information about membership, publications, and services call the Adobe Developer Support Line.

**Adobe Developer Support Line.** You can call 1-415-961-4111 for the following kinds of support:

- To order Software Development Kits (SDKs).
- To order the code samples from *Programming the Display PostScript System with X* in machine-readable form.
- To receive information on training classes.
- To receive a free Technical Literature Catalog.
- To order technical literature.
- To receive a membership application for the Adobe Developers Association.

- To request technical assistance (for members of the Adobe Developers Association only).

**Adobe File Server.** Users who have access to Internet or UUCP electronic mail can use Adobe's public access file server to obtain the following information:

- Programs.
- AFM (Adobe font metric) files.
- Documentation.
- PPD (PostScript printer description) files.
- Press releases.

The public access file server is a mail-response program. You send it a request by electronic mail and it mails back a response. (The "Subject:" line is treated as part of the message by the file server.)

To send mail to the file server, use one of the following addresses:

Internet: `ps-file-server@adobe.com`  
UUCP: `...!decwrl!adobe!ps-file-server`

To receive detailed information on how to use the file server, send the following message:

```
send Documents long.help
```

To receive a listing of available documents, send the following message:

```
index Documents
```

To receive a listing of available example programs, send this message:

```
index Programs
```

To receive a listing of available press releases, send this message:

```
index Updates
```

The file server may take a few hours to respond, so consider sending all of the above messages at the same time. You will receive the fastest response if you mail each message separately.

The file server maintains several documents that describe the contents of Adobe Software Development Kits. These kits provide a set of documentation and tools that give application developers a head start with their PostScript and Display PostScript projects.

**PostScript Language Software Development Kit.** This comprehensive set of tools and reference materials helps application software developers take advantage of PostScript language technology. The PostScript SDK includes technical papers, manuals, sample code, fonts, and utilities.

**Display PostScript Software Development Kit for X.** This SDK includes current documentation on Display PostScript, PostScript, and Type 1 font design as well as software tools, libraries, code examples, and fonts.

