# Installation Guide

**Zinc® Application Framework™
Version 5**

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# Introduction

Thank you for selecting Zinc Application Framework Version 5!

ZAF is the most advanced C++ class library ever developed for the creation of portable and international user interfaces. In addition to the class library, ZAF 5 includes Zinc Designer (a visual design tool), utility programs, examples, tutorials, and extensive electronic documentation.

Installing ZAF 5 is more than just copying files or running a simple installation program. The ZAF 5 installation process is designed to provide an important introduction to the Zinc development environment—including building class libraries and example programs from supplied source code. Although the installation process may seem detailed, developers will find the information gained during installation to be invaluable when using ZAF 5 for application development.

This installation guide provides step-by-step instructions for

- downloading ZAF 5, if not obtained on CD-ROM
- reviewing ZAF license agreements
- installing ZAF on your system
- configuring your development environment
- building ZAF libraries of your choosing
- building ZAF example programs
- obtaining technical support, if necessary

Some chapters in this "Installation Guide" are divided into sections corresponding to platforms currently supported by ZAF 5. Follow *only* those instructions that pertain to the platform(s) for which you are installing.

Free installation technical support is available to all users of ZAF 5. Please contact Zinc immediately if you have questions during this process. Complete technical support information can be found in the "Obtaining Technical Support" section of this guide.

Enjoy Zinc Application Framework Version 5!

# Downloading ZAF 5

Zinc Application Framework is available on CD-ROM, or it may be downloaded from many electronic forums including

- Zinc's Web site
- Zinc's FTP server
- many of Zinc's authorized resellers and partners
- other public forums

Before downloading any files, consult the "Required Files" section of this chapter.  Instructions for downloading from Zinc's sites follow.

**CD-ROM**     Developers with CD-ROM distributions may skip this chapter.

The "Personal (Free) Version" of ZAF 5 is currently unavailable on CD-ROM. All "Professional Version" customers automatically receive CD-ROM media which includes all platform modules.  Members of Zinc's Customer Assurance Plan (CAP) receive regular upgrades on CD-ROM which also include all platform modules.  HOWEVER, YOU MAY ONLY INSTALL AND USE THE PLATFORM MODULE(S) DESIGNATED ON THE LICENSE CERTIFICATE PROVIDED WITH THE SOFTWARE.  For more information about different ZAF versions and software licensing, please refer to the "Installing ZAF" section of this manual, and the license agreements found at the end of this manual.

To purchase ZAF on CD-ROM, contact Zinc Software.  Contact information can be found in the "Contacting Zinc" section of this manual.

**Web**     Zinc's home page on the world wide web may be reached via:

`http://www.zinc.com`

To download the Personal (Free) Version, select "Download Free Version" and follow the instructions.  Additional software is available for downloading by those who "Register" their Personal Version (available online) and by those who purchase a "Professional Version" license (including those members of Zinc's "Customer Assurance Plan (CAP))" by selecting the download areas for these customers. Passwords are required for these areas of the web.

NOTE: The most current download instructions will *always* be found on the web itself.

**FTP**

The Zinc FTP server may be reached at:

```
ftp.zinc.com
```

Anonymous logins are accepted using any ftp client including WINFTP, FTP, or a web browser such as Netscape Navigator or Microsoft Internet Explorer.

If requested, enter "anonymous" as your login name, and use your complete email address when prompted for a password. Once authenticated, move into the ZAF 5 distribution directory "/zaf." Command-line users will enter

```
cd /zaf
```

Before downloading files, be sure to set "binary transfer" mode. Command-line users will enter

```
bin
```

Finally, download the necessary files. Command-line users will enter

```
get <filename>
```

(or for multiple files)

```
mget <filespec>
```

FTP servers may be accessed using most web browsers as well. Simply enter:

```
ftp://ftp.zinc.com
```

for the URL and navigate the directory display presented. Double click files to download.

**Required Files**

Zinc Application Framework 5 is a large, complex product. As a portable development tool, much of its source code is shared between the various platforms supported by ZAF. This source code is referred to as "Shared Code." Additional, non-portable code is also required to implement the portable functionality on each platform. This source code is referred to as "Platform Specific" code.

When downloading ZAF 5 (or an update), you must obtain both Shared Code and Platform-Specific Code. In addition, documentation and example programs are extremely helpful when using ZAF and are the most frequently updated portions of the product.

The following sections list the various archive file formats provided by Zinc Software. Multiple formats are provided to make file access as easy as possible for programmers on all platforms. Each file is provided in the format most likely to appeal to programmers using that format. For example, the "ZIP" format is the format most often used by developers on Windows, therefore Zinc supplies code for Windows platforms in this format.

Each table lists all files available in a given format.  Files required for proper use of Zinc Application Framework are indicated by the word "***required***." Other "*optional*" files may be downloaded as well.

If downloading ZAF for multiple platforms, you only need to download "Shared" files once.  These may be used, without change, on all ZAF supported platforms.

To simplify downloads, we have included all required files into a few archives. The shared files are found in shared.zip and shared.tar.Z, and platform-specific files are found in windows.zip and motif.<os>.tar.Z.  For example, to download required files for ZAF on Microsoft Windows, you need only download shared.zip and windows.zip.  These files' contents are explained below.

ZIP Archive Format (PC Platforms)

Zinc's PKZIP archives contain Shared code (portable to all platforms) and platform-specific code for Microsoft Windows as well as examples and tutorials, electronic documentation, etc.

| File | Contents |
| --- | --- |
| zafinc.zip | Shared (portable) header files. ***Required***. |
| zafsrc.zip | Shared (portable) library source code files. ***Required***. |
| zafuni.zip | Shared (portable) Unicode files (non-personal versions). ***Required for Unicode***. |
| zafreg.zip | Notebook class source code files (non-personal versions). ***Required for ZafNotebook***. |
| zafpro.zip | Table class source code files (professional version). ***Required for ZafTable***. |
| zafdoc.zip | Online documentation (professional version). ***Required for professional version***. |
| zafdocn.zip | Online documentation (non-printable, non-indexed). ***Required for non-professional versions***. |
| zafread.zip | Readme text files. ***Required***. |
| | |
| wininst.zip | Installation files for Microsoft Windows. ***Required for Windows***. |
| winsrc.zip | Windows library source files. ***Required for Windows***. |
| winbin.zip | Windows binary files: Zinc Designer, utilities, data, etc. ***Required for Windows***. |
| acrobt??.exe | Adobe Acrobat reader with search capability for Windows. ***Required to view electronic documentation***.  May be obtained from other sources including Adobe at http://www.adobe.com |

| File | Contents |
|------|----------|
| pkunzip.exe | Uncompresses files with zip extension. ***Required to uncompress files***.  May be obtained from other sources. |
| zafexm.zip | Example programs and tutorials. *Strongly recommended.* |
| zafconv.zip | ZAF 4 to ZAF 5 data file conversion utilities, source code, and example conversions. *Optional.* |
| zafattr.zip | Library test suite source code (attribute tests). *Optional.* |
| cf_zaf.zip | Third-party ChartFolio charting library source files. *Optional, but required for use of the ZafChart object.* |
| shared.zip | cf_zaf.zip, zafexm.zip, zafinc.zip, zafread.zip, zafsrc.zip |
| windows.zip | winbin.zip, wininst.zip, winsrc.zip |

tar.Z Archive Format
(Unix Platforms)

Zinc's tar archives contain Shared code (portable to all platforms) and platform-specific code for X/Motif as well as examples and tutorials, electronic documentation, etc.

| File | Description |
|------|-------------|
| zafinc.tar.Z | Shared (portable) header files. ***Required***. |
| zafsrc.tar.Z | Shared (portable) library source code files. ***Required***. |
| zafuni.tar.Z | Shared (portable) Unicode files (non-personal versions). ***Required for Unicode***. |
| zafreg.tar.Z | Notebook class source code files (non-personal versions). ***Required for ZafNotebook***. |
| zafpro.tar.Z | Table class source code files (professional version). ***Required for ZafTable***. |
| zafdoc.tar.Z | Online documentation (professional version). ***Required for professional version***. |
| zafdocn.tar.Z | Online documentation (non-printable, non-indexed). ***Required for non-professional versions***. |
| zafread.tar.Z | Readme text files. ***Required***. |
| mtfinst.<os>.tar.Z | Installation files for Motif.  Replace "<os>" with an appropriate operating system identifier. ***Required for Motif***. |
| mtfsrc.tar.Z | Motif library source files. ***Required for Motif***. |
| mtfbin.tar.Z | Motif binary data files. ***Required for Motif***. |

| File | Description |
|---|---|
| `mtfbin.<os>.tar.Z` | Motif Zinc Designer exectutable. Replace "<os>" with an appropriate operating system identifier. ***Required for Motif***. |
| `[acrobat reader]` | Adobe Acrobat reader with search capability for your platform. ***Required to view electronic documentation***. May be obtained from other sources including Adobe at http://www.adobe.com |
| `zafexm.tar.Z` | Example programs and tutorials. *Strongly recommended.* |
| `zafconv.tar.Z` | ZAF 4 to ZAF 5 data file conversion utilities, source code, and example conversions. *Optional.* |
| `zafattr.tar.Z` | Library test suite source code (attribute tests). *Optional.* |
| `cf_zaf.tar.Z` | Third-party ChartFolio charting library source files. *Optional, but required for use of the ZafChart object.* |
| `xpm.tar.Z` | Third-party XPM library source files for Motif. *Optional, but required for use of the ZafImage object.* |
| `shared.tar` | cf_zaf.tar.Z, zafexm.tar.Z, zafinc.tar.Z, zafread.tar.Z, zafsrc.tar.Z |
| `motif.<os>.tar` | mtfbin.tar.Z, mtfbin.<os>.tar.Z, mtfinst.<os>.tar.Z, mtfsrc.tar.Z, xpm.tar.Z |

# Licensing ZAF 5

Zinc Application Framework Version 5 is available in two versions—"Personal" (Free) and "Professional"—each subject to the terms and conditions of a separate license agreement.  Before actually installing ZAF 5, an understanding of basic licensing terms is necessary.  *During the upcoming installation process you will be asked if you have read and accepted the terms and conditions of the appropriate license agreement.*

**Notice**        THIS SECTION OF THE "INSTALLATION GUIDE" IS INTENDED TO PROVIDE A PLAIN ENGLISH DESCRIPTION OF MAJOR LICENSE AGREEMENT PROVISIONS.  IT IS NOT COMPLETE AND NEITHER SUBSTITUTES FOR, NOR SUPERCEDES THE LICENSE AGREEMENTS THEMSELVES.  YOU ARE REQUIRED TO READ THE APPROPRIATE LICENSE AGREEMENT AND CONSENT TO ITS TERMS AND CONDITIONS DURING THE INSTALLATION OF ZAF 5.  COMPLETE LICENSE AGREEMENTS MAY BE FOUND AT THE END OF THIS MANUAL.

**Basic Terms**    Both ZAF license agreements include many of the same terms and conditions, most of which are typical to development tools in general.  A few worth mentioning include

- Per seat, per platform licensing

  ZAF 5 is licensed on a per-developer, per-platform basis (i.e., a license to the Shared Code is required for each individual developer as well as a license to the Platform Module for each platform used by that developer).  Multiple developers require multiple Shared Code licenses, each with the appropriate Platform Module license(s) corresponding to the platform(s) used by that developer.

- Zinc copyright notice requirement

  All applications developed using Zinc Application Framework must display a valid Zinc copyright notice.  Typically, this notice is contained in a "help, about" window.

- Non-compete requirement

  ZAF 5 may not be used to develop an application that is competitive with, or may be used in lieu of ZAF 5.

**Personal
(Free) Version**

The "Personal Version License Agreement" allows individuals to

- use the ZAF Personal Version software to develop non-commercial, non-distributable, personal-use-only applications (i.e., the only end-user of the application you build with the Personal Version software is you);
- distribute complete and unmodified copies of the ZAF Personal Version software (i.e., only those Personal Version software files listed as "distributable" on Zinc's web server (http://www.zinc.com/);
- distribute source code to applications developed using the Personal Version. Executables may not be distributed.

ANY OTHER USE NOT LISTED ABOVE  REQUIRES THE PURCHASE OF A PROFESSIONAL VERSION LICENSE.

**Professional
Version**

In addition to Personal Version benefits, the "Professional Version License Agreement" allows individuals and entities to use the Zinc Application Framework Professional Version software designated in the License Certificate to

- develop applications which can be freely distributed in executable or source code form without additional run-time fees;
- distribute some ZAF binary files with a ZAF-based application (e.g., a ZAF DLL or shared library);
- print reference documentation for personal use;
- gain access to Zinc professional technical support and the Customer Assurance Plan.

EACH PROFESSIONAL VERSION DEVELOPER MUST BE PROPERLY LICENSED FOR ALL PLATFORM(S) USED BY THAT DEVELOPER.

**Registered
Software**

As a benefit of registering their software, "Personal Version" developers gain access to additional ZAF objects and functionality.  Likewise, "Professional Version" developers have access to still more objects and functionality.

Restricted-access software components may not be re-distributed.  All other ZAF software (i.e. software obtained without passwords or other restrictions) may be freely re-distributed *in its original form* (i.e., the original archive file(s)).

# Installing ZAF 5

Zinc Application Framework is available on CD-ROM or via electronic download. Installation methods differ. Please choose the one appropriate for you.

**NOTE: Several files necessary for using the ZAF libraries are encrypted. You must run the installation files described below to be able to use the ZAF libraries.**

**CD-ROM**

CD-ROM installation instructions are included with the ZAF 5 CD-ROM.

**ZIP files**

1. Uncompress all files.

    After downloading the files from any of our electronic sites, place them together in a directory chosen to be the root ZAF directory. A common choice would be C:\ZAF. After placing the files in this directory and making this directory the current directory, unzip each file with the -d option using the pkunzip utility. This will create the entire ZAF tree and place the uncompressed files in their proper locations. If you have downloaded the registered or professional version, be sure to uncompress zafreg.zip and/or zafpro.zip last, since they replace existing files in the tree to add functionality to ZAF.

    ```
    pkunzip -d *.zip
    ```

2. Read and agree to the license agreement.

    Read and accept the appropriate license agreement found in this manual (and found in the license.txt file in the README directory). The license.txt file may be opened and viewed with any text editor.

3. Run the winstall batch file.

    When run, winstall prompts you to confirm that you have read and accepted the license agreement. To agree, choose "y"; otherwise choose "n" to terminate the installation. Upon acceptance, winstall decrypts certain files necessary to use ZAF.

    *NOTE: If you don't specify "y" in the winstall batch file at this time, the ZAF libraries will be unusable.*

**tar.Z files**

1. Uncompress all files.

    After downloading the files from any of our electronic sites, they should be placed in a directory chosen to be the root ZAF directory. A common choice would be /user/myUserAccount/ZAF. Uncompress the .Z files by using the Unix uncompress utility for each file. For example:

```
uncompress zafsrc.tar.Z
```

After the files have been uncompressed, tar each of them with the -xvf
options to create the ZAF tree.  If you have downloaded the registered or
professional version, be sure to tar zafreg.tar and/or zafpro.tar last, since
they replace existing files in the tree to add functionality to ZAF.

```
tar -xvf zafsrc.tar
```

The complete directory tree will be created and the ZAF files will be placed
in the appropriate locations.

2.  Read and agree to the license agreement.

    Read and accept the appropriate license agreement found in this manual
    (and in the license.txt file in the readme directory).  The license.txt file may
    be opened and viewed with vi or any other text editor.

3. Run the minstall script (or sinstall for SCO).

    - When run, the minstall script prompts you to confirm that you have read and
      accepted the appropriate license agreement.  To agree, choose "y"; otherwise
      choose "n" to terminate the installation.

    - You are next prompted to select the system to install for.  A numbered list of
      systems is presented.  Type the number according to the system you are install-
      ing for.  For example, IBM AIX is "3."

    - Next, you are prompted for the compiler for which the make files will be config-
      ured.  A numbered list of compilers is presented.  For most systems, this will be
      either the native compiler, or the GNU compiler.  Type the number according to
      the compiler you will be using.  For example, the IBM AIX native compiler is
      "1."

    - If the system and compiler support shared libraries, you will next be prompted to
      choose between archived and shared libraries; otherwise make files will be con-
      figured to build and use archived libraries.

    - After making the previous selections, the current default values for the chosen
      system and compiler are displayed.  These values will be typical for the selec-
      tions that were made.  Before modifying them, consult with the system adminis-
      trator to be sure of the appropriate values.  The installation script next modifies
      the source file extensions, examples, and make files to reflect the choices previ-
      ously selected.  Finally, minstall decrypts certain files necessary to use ZAF.

SCO: The sinstall script is non-interactive for use on SCO systems, and per-
forms the same functions as the minstall script.

*NOTE: If you don't specify "y" in the minstall script at this time, the ZAF
libraries will be unusable.*

**File Locations**     You may want to familiarize yourself with the installed directory structure before continuing.  The ZAF tree should look like this:

**zaf** (root of ZAF tree)
  **attrtest** (ZAF attribute test programs source)
  **bin** (PC designers and data files)
    **mtfbin.aix4** (AIX 4 designers and data files)
    **mtfbin.hpux9** (HP-UX 9 designers and data files)
    **mtfbin.irix5** (Irix 5 designers and data files)
    **mtfbin.linux2** (Linux 2 designers and data files)
    **mtfbin.osf1** (OSF/1 designers and data files)
    **mtfbin.sco** (SCO designers and data files)
    **mtfbin.sun4** (SunOS 4 designers and data files)
    **mtfbin.sun5** (Solaris 2 designers and data files)
  **cf_zaf** (ChartFolio library source)
  **convert** (ZAF 4 to 5 conversion utilities and examples)
  **doc** (ZAF electronic documentation)
  **example** (ZAF example programs)
  **include** (ZAF library headers)
  **readme** (ZAF informational text files)
  **source** (ZAF library source)
    **intl** (international data file source and library source)
    **unicode** (Unicode support source and i18n.znc data file)
  **xpm** (Motif only - 3rd party XPM library source)

# Configuring your Development Environment

Before building ZAF libraries or applications the development environment must be configured. Configuration consists of setting environment variables with information about your compiler.

**PC Compilers**

Zinc provides a custom make utility called ZMake (found in the BIN directory). Like most compiler-supplied make utilities, ZMake relies on environment variables to find other necessary components such as compilers and linkers. Your will normally want to set these environment variables in startup files so they will always be available. **These environment variables must all be set before building any ZAF libraries or applications.**

Typically, ZAF is installed to a directory of its own. This directory then contains an organized set of subdirectories containing the ZAF 5 files. By default, this "ZAF root" directory is called "ZAF". In the example code that follows, "ZAF" is assumed to be the root ZAF directory. Replace this name if you installed to a different directory.

PATH

The "PATH" environment variable lists the directories where the operating system looks for external programs requested from the command line. PATH must be modified to include the "BIN" directory where Zinc Designer, ZMake, and other ZAF utilities are stored. For example:

```
set PATH=%path%;C:\ZAF\BIN
```

ZINC_COMPILER

The "ZINC_COMPILER" environment variables tells ZMake which vendor's compiler, linker, and librarian to use. Valid choices include BORLAND, MICROSOFT, or WATCOM. For example:

```
set ZINC_COMPILER=BORLAND
```

ZAF_PATH

"ZAF_PATH" defines where ZAF's BIN directory is located. This is needed by Zinc Designer to find data files it depends on.

```
set ZAF_PATH=C:\ZAF\BIN
```

ZAF_ROOT

"ZAF_ROOT" specifies the location of ZAF's root directory. This variable is used by the ZMake to find header and source files when building a ZAF library or application.

```
set ZAF_ROOT=C:\ZAF
```

INCLUDE

"INCLUDE" is an environment variable commonly used by compilers other than Borland. It is used to locate header files. Be sure to include the compiler's include directories as well. Although Borland does not use environment variables, the ZMake utility uses them, so INCLUDE should be set for all compilers including Borland.

```
set INCLUDE=C:\BC5\INCLUDE;C:\ZAF\INCLUDE
```

If you will be using the optional, supplied ChartFolio libraries (required to use the ZafChart object) you should also add

```
;C:\ZAF\CF_ZAF\INCLUDE
```

LIB

The "LIB" variable is also common for compilers other than Borland. It is used to locate library files. Be sure to include the compiler's library directories as well. Although Borland does not use environment variables, ZMake uses them, so LIB should be set for all compilers including Borland.

```
set LIB=C:\BC5\LIB;C:\ZAF\LIB\BORLAND
```

**Unix Compilers**

Manually setting environment variables is not generally necessary on Unix, but you may wish to set ZAF_PATH as described below.

ZAF_PATH

"ZAF_PATH" should be defined to allow Zinc Designer to be run from locations other than "zaf/bin". Its definition is the same on both PC and Unix platforms.

# Building Libraries

Zinc Application Framework Version 5 supports many different operating systems, compilers, library types, etc. In fact, the number of combinations is so large that Zinc cannot realistically build all possibile combinations and ship them in a single release.

For example, on Microsoft Windows alone Zinc supports three versions of the operating system (Windows NT, 95, and 3.x), three build options (16 bit static libraries, 32 bit static libraries, 32 bit DLLs), three compilers (Microsoft, Borland, and Watcom) , three character sets (local code page, ISO-8859-1, and Unicode), and various other build options including debug or non-debug libraries. Clearly, any attempt to build a full set of libraries would rapidly exceed reasonable time and storage resources.

For this reason, and to ensure that users are comfortable building ZAF libraries, Zinc requires developers to build their own development libraries. The following instructions outline this process. Note: Building ZAF 5 libraries may requires anywhere from 10 minutes to over one hour depending on the hardware and compiler used.

**PC Compilers**     After environment variables have been set (see the previous section, "Configuring your Development Environment"), ZAF 5 libraries may be built. 16-bit Microsoft Windows libraries may be compiled with Borland or Watcom compilers, and 32-bit Microsoft Windows libraries may be compiled with Borland, Watcom, and Microsoft compilers. Other compilers such as IBM may work as well but have not been sufficiently tested to be certified by Zinc.

At the command line from the ZAF\SOURCE directory enter one of the following:

```
zmake win16 (builds 16-bit Windows static libraries)
zmake win32 (builds 32-bit Windows static libraries)
zmake win32dll (builds 32-bit Windows DLL libraries)
```

These commands compile and build the libraries and place them in the appropriate location for the compiler specified by the environment variable ZINC_COMPILER. For example, if using Borland tools, the completed libraries will be placed in \ZAF\LIB\BORLAND. After compilation the following libraries will be created, depending on which of the commands was used:

```
zafw16.lib (16-bit Windows)
zafw16p.lib (16-bit persistence library for Windows)

zafw32.lib (32-bit Windows)
zafw32p.lib (32-bit persistence library for Windows)
```

```
zafw32.dll (32-bit Windows DLL, used by "win32dll" executables)
zafw32i.lib (32-bit import library for Windows DLL)
zafw32d.lib (32-bit library which contains WinMain())
```

Be sure to test your library by running the test application program (.EXE file named according to the build option used) built along with the libraries. This program is found in the current (SOURCE) directory.

In addition to the ZAF 5 library code, Zinc supplies source code to a portable third-party charting library. This library must be built if your application will make use of the ZafChart class. See Third-Party Libraries for more information.

**Unix Compilers**

After configuring your environment (see the previous section, "Configuring your Development Environment") you may build ZAF 5 libraries. From the Zinc root directory (usually "ZAF"), simply type "make" at the command line. The XPM library (required for support of the ZafImage object on Motif) will be created first, followed by the Zinc libraries. See Third-Party Libraries for more information on XPM.

After compilation the following libraries will be created and placed in the zaf/lib directory:

```
libXpm.a (XPM library)
libZafMtf.a (Archive library for Motif)
libZafMtfP.a (Persistence archive library for Motif)
```

Be sure to test your library by running the "mtest" program built along with the libraries. This program is found in the current (SOURCE) directory.

In addition to the ZAF 5 library code, Zinc supplies source code to a portable third-party charting library. This library must be built if your application will make use of the ZafChart class. See Third-Party Libraries for more information.

**Third-Party Libraries**

ZAF provides some third-party libraries that may be compiled and used to provide additional functionality. Other third-party libraries are available that do not ship with ZAF. Contact Zinc for more information if you are interested in using or providing a third-party library for ZAF.

**DPC ChartFolio**

DPC Technology provides a library that can be used for creating simple charts. This library is not compiled as part of the ZAF libraries and must be compiled separately. This library is required to support the ZafChart object.

ChartFolio for PC

To compile the ChartFolio library for PC platforms, invoke ZMake from the ZAF\CF_ZAF\SRC directory.  Build options are identical to those used for the ZAF 5 libraries: win16, win32, and win32dll.

Following the build process, one of the following libraries (depending on the build option used) will be placed in the same directory as your ZAF 5 libraries.

```
cfzw16.lib (16-bit Windows)
cfzw32.lib (32-bit Windows)
cfzw32.dll and cfzw32i.lib (32-bit DLL Windows)
```

ChartFolio for Unix

To compile the ChartFolio library for Unix platforms, invoke "make" from the zaf/cf_zaf/src directory.

Following the build process, libCfChart.a will be placed in the same directory as your ZAF 5 libraries.

**XPM Library
(Motif only)**

The source for this library is third-party freeware that Zinc utilizes to provide rich support for the ZafImage class.  It is not bundled into the ZAF files, but is shipped as a separate tar file.  This tar file, xpm.tar.Z, must be downloaded with the rest of the Motif source files.  No explicit build instructions are required since the XPM library is built by the same make file as the ZAF libraries (when invoked from the zaf root directory).

The XPM library is provided on an as-is basis, and its components should not be modified.  The "posix.mak" file included to build the XPM library is used by the installation script to create "Makefile," but the build options are not modified.

# Building Example Programs

After successfully building the ZAF 5 libraries, it is recommended that you build the ZAF example programs prior to moving on to the "Getting Started" manual where you will actually learn to program using Zinc Application Framework.

Supplied make files allow individual example programs to be built, or related sets of examples (one directory), or all examples at once.  Select the build option that is most suitable for you, depending on your strategy for learning ZAF.

To build all examples at once for the PC, use the zmakeall batch file with the appropriate platform option.  At the command line from the ZAF\EXAMPLE directory enter one of the following:

```
zmakeall win16 (builds 16-bit Windows examples)
zmakeall win32 (builds 32-bit Windows examples)
zmakeall win32dll (builds 32-bit Windows examples using the DLL)
```

To build all examples at once for Unix, type "make" in the zaf/example directory.

To build a related set of example programs (one directory), go to the desired example subdirectory and invoke ZMake (for the PC) or make (for Unix) as you built the libraries.  For example, to build the Hello World examples for 32-bit Microsoft Windows, go to the zaf/example/hello directory and type:

```
zmake win32
```

To build a single example program, go to the directory that contains its source code and invoke ZMake (for the PC) or make (for Unix) and include the program name on the command line.  For example, to build the Hello World 1 example for Motif, go to the zaf/example/hello directory and type:

```
make mhello1
```

*Note: To build individual example programs you may need to examine the contents of the make file in each directory for a list of valid program names (targets.)*

# Learning Zinc Application Framework

Congratulations! You've installed Zinc Application Framework Version 5—and along the way you've learned more than you might think. You're now ready to begin studying ZAF application development techniques and working on your own applications.

Zinc provides many tools to help you learn. The most important are excellent documentation and example programs. Both of these ZAF components are being continually expanded to make ZAF as easy to learn and use as possible.

If you have never used electronic documentation, or if you have had a negative experience in the past, you'll be pleasantly surprised by the ZAF versions. Zinc has taken electronic docs to a whole new level. They're easy to use and soon become an invaluable resource. Spend a few minutes familiarizing yourself with the documentation set, and especially the contents of the "Programmer's Reference" manual.

To quickly become productive using Zinc Application Framework we recommend that you step through the following procedure:

- Read the "Getting Started" manual and follow all examples and tutorials. This manual is written for developers at all levels. It begins very slowly by stepping you through sample applications. Than, as the manual progresses it moves more quickly to allow you to think and learn.
- Compile and study the sample programs supplied with ZAF 5. Located in the "zaf/example" directory, these programs demonstrate many of the most fundamental ZAF programming techniques. Building them and understanding their concepts and programming techniques will prepare you to quickly handle common tasks.
- Read a few important sections of the "Programmer's Reference" manual: the "ZafWindowObject" chapter, and the "Event Definitions" and "Property Matrices" appendices.
- Print the "Installation Guide" and "Getting Started" manuals for easier reading, or purchase a set of hard copy documentation from Zinc. Electronic documents are excellent for reference but are more difficult to use while learning.

Enjoy Zinc Application Framework Version 5! We look forward to hearing from you as you join the growing crowd of educated developers who rely on ZAF.

# Obtaining Technical Support

Free technical support is provided for the installation of Zinc Application Framework. Additional, ongoing technical support is provided to those customers who have purchased Zinc's Customer Assurance Plan (CAP), or on a per-call fee basis.

The following support contact information lists public support access points. CAP members receive separate, private contacts for priority access.

- Public, user community self-support is available via an automated mailing list "zaf5-list@zinc.com". For instructions on subscribing to this and other Zinc lists, send email to "majordomo@zinc.com" and include "help" in the body of the mail, or visit the support section of our web site.

- Direct email support is available via "support@zinc.com". This address is monitored by worldwide support personnel, but is handled only on an as-available resource basis. CAP members receive priority support through another email address.

- CompuServe users may access Zinc's forum using "GO ZINC." This forum is occasionally monitored by Zinc but is intended for user community self-support.

- Telephone and fax technical support are available world wide from one of Zinc's offices or from a Zinc Partner reseller. Zinc's offices are listed below. Visit the Zinc web site at www.zinc.com for a current list of Zinc Partners.


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