New Features

This rewrite of the *Compiler Information File (CIF) Reference Manual* supports the 2.1 release of the compiler information library routines located in the /usr/lib/libcif.a file. This product is released with CrayTools 1.3.

Two new library routines have been added:

- Cif_Cifconv(3), to reformat a CIF to binary format and then open it
- Cif_Filename(3), to obtain the actual file name of an opened CIF

The following records have been changed:

- **CIF_CIFHDR**
  - Added: bintype field
  - Changed: machname field
- **CIF_EDOPTS**
  - Added: CIF_EDF_OPTt symbolic constant
  - Added: CIF_EDF_OPTx symbolic constant
  - Changed: CIF_EDF_OPTd symbolic constant
  - Changed: CIF_EDF_OPTz symbolic constant
- **CIF_C_ENTRY**
  - Added: link field
- **CIF_C_OBJECT**
  - Added: link field
  - Changed: tagid field
- **CIF_F90_BEGIN_SCOPE**
  - Changed: symid field
  - Deleted: CIF_SCP_MOD_SPEC symbolic constant
- **CIF_F90_CALLSITE**
  - Added: scopeid field
  - Changed: entryid field
- **CIF_F90_COMBLK**
  - Added: moduleid field
  - Changed: dist field
- **CIF_F90_CONST**
  - Added: scopeid field
  - Changed: fid field
  - Changed: strline field
  - Changed:strpos field
  - Changed: endline field
  - Changed: endpos field
- **CIF_F90_ENTRY**
  - Added: moduleid field
  - Added: useassoc field
- **CIF_F90_INT_BLOCK**
  - Changed: intid field
- **CIF_F90_OBJECT**
  - Changed: offset field
- **CIF_F90_MISC_OPTS**
  - Added: nPdirs field, Pdirs field
  - Changed: npdirs field, pdirs field, calname field, objname field, inname field

- **CIF_F90_NAMELIST**
  - Added: moduleid field

- **CIF_F90_OBJECT**
  - Added: localname field
  - Changed:
    - CIF_DN_UNKNOWN symbolic constant
    - CIF_DN_UNKNOWN_SHARED symbolic constant

- **CIF_F90_OPT_OPTS**
  - Added: CIF_OOF_AGRESS symbolic constant
  - Changed:
    - CIF_OOF_OVERINDEX symbolic constant
    - CIF_OOF_PATTERN symbolic constant
    - CIF_OOF_GENERAL symbolic constant

- **CIF_F90_RENAME**
  - Added: orignlen field, origmodid field, nlen field, scopeid field, nlocalids field, localid field, name field, origname field
  - Changed: localid field

- **CIF_F90_USE_MODULE**
  - Added: direct field
  - Deleted: fid field, cpos field, line field

- **CIF_LOOP**
  - Added: CID_LP_DO_INFINITE symbolic constant

- **CIF_MACH_CHAR**
  - Added: CIF_MC_XEA symbolic constant
  - Changed: cpuname field

- **CIF_MESSAGE**
  - Added: CIF_F_MS_SCALAR symbolic constant

- **CIF_OBJECT**
  - Changed: class field name to symclass

- **CIF_STMT_TYPE**
  - Added to the C statement symbolic constants table:
    - CIF_CTP_DO_WHILE_END
    - CIF_CTP_EXPR_END
    - CIF_CTP_RETURN_WITH_EXPR

- **CIF_USAGE**
  - Added: CIF_F90_OB_IND_MOD symbolic constant
The illustration on the following pages highlights the major body of documentation available for Cray Research (CRI) customers. The illustration is organized into categories by audience designation:

<table>
<thead>
<tr>
<th>Audience</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>End users</td>
<td>Those who use the UNICOS operating system, products, applications, or networking software</td>
</tr>
<tr>
<td>Application and system programmers</td>
<td>Those who write or modify system or application code on a CRI system for the purpose of solving computer system, scientific, or engineering problems</td>
</tr>
<tr>
<td>System administrators</td>
<td>Those who perform system administration tasks, such as installation, configuration, and basic troubleshooting</td>
</tr>
<tr>
<td>System analysts</td>
<td>Those who perform advanced troubleshooting, tuning, and customization</td>
</tr>
<tr>
<td>Operators</td>
<td>Those who perform operational functions, such as performing system dumps, and those who administer an operator workstation</td>
</tr>
</tbody>
</table>

To use the map, find the audience designation closest to your specific needs or role as a CRI system user. Note that manuals under other audiences may also be of interest to you; manuals are listed only once, underneath the audience to which they most directly apply. Some manual titles are abbreviated. The date in the map’s footer tells you when the information was last revised.

**For more information**

In addition to the illustration, you can use the following publications to find documentation specific to your needs:

- *Software Documentation Ready Reference*, publication SQ–2122, serves as a general index to the CRI documentation set. The booklet lists documents and man pages according to topic.

- *Software Overview for Users*, publication SG–2052, introduces the UNICOS operating system, its features, and its related products. It directs you to documentation containing user-level information.

- *User Publications Catalog*, publication CP–0099, briefly describes all CRI manuals available to you, including some not shown on the map, such as training workbooks and other supplementary documentation.

**Ordering**

To obtain CRI publications, order them by publication number from the Distribution Center:

Cray Research, Inc.  
Distribution Center  
2360 Pilot Knob Road  
Mendota Heights, MN 55120  
USA

<table>
<thead>
<tr>
<th></th>
<th>Order desk</th>
<th>Fax number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(612) 683-5907</td>
<td>(612) 452-0141</td>
</tr>
</tbody>
</table>
**Available online with CrayDoc**

★ **Available online with Docview**

▲ **Man pages available with the `man` command**
# Application and System Programmers

## Ada
- Cray Ada Reference (SR–3014)
- Cray Ada Programming Guide (SR–3082)

## C
- Cray Standard C Reference (SR–2074)
- Cray Standard C Ready Reference (SQ–2076)
- Cray Standard C for MPP (SR–2506)

## CAL for CRAY Y-MP
- CAL for CRAY Y-MP and CRAY Y-MP C90 Reference (SR–3108)
- Symbolic Machine Instructions (SR–3109)
- Ready Reference (SQ–3110)
- UNICOS Macros and Opdefs (SR–2403)
- Cray Assembler for MPP CAM Reference (SR–2510)

## FORTRAN 77
- CF77 Ready Reference (SQ–3770)
- CF77 Commands and Directives (SG–3771)
- CF77 Fortran Reference (SR–3772)
- CF77 Optimization Guide (SG–3773)
- CF77 Message Manual (SR–3774)
- Cray MPP Fortran Reference (SR–2504)

## FORTRAN 90
- CF90 Commands and Directives (SR–3901)
- CF90 Fortran Language Reference (SR–3902)
- CF90 Ready Reference (SQ–3900)
- Introducing CF90 SPARC Prog. Env. (IN–2155)
- Introducing DPE (IN–2163)

## Libraries
- System Libraries (SR–2080)
- System Libraries Ready Ref. (SQ–2147)
- Scientific Libraries (SR–2081)
- Math Library (SR–2138)
- Application Programmer’s I/O Guide (SG–2168)
- Application Programmer Library Ref. Manual (SG–2169)
- Introducing CrayLibs (IN–2167)
- PVM and HeNCE Ref. (SR–2501)
- PVM Reference Card (SQ–2512)
- Loaders
  - Loader Reference (SR–0066)
  - SEGLDR Ready Reference (SQ–0303)
- Loader for MPP
  - Cray MPP Loader Guide (SG–2514)
- Networking
  - RPC Reference (SR–2089)
  - Kerberos User’s Guide (SG–2409)
- Simulators
  - Cray MPP Simulator Guide (SG–2503)
- Source Control
  - USM User’s Guide (SG–2097)
- System Calls
  - System Calls (SR–2012)
- X Window System
  - Tuning Guide to Parallel Vector Applications (SG–2182)

## Programming Tools
- Compiler Information File (CIF) Reference (SR–2401)
- CDBX Debugger Reference (SR–2091)
- CDBX Debugger User’s Guide (SG–2094)
- CDBX Reference Card (SQ–2110)
- Tuning Guide to Parallel Vector Applications (SG–2182)

## MPP Apprentice Tool
- Introducing Cray TotalView Debugger (IN–2502)

## Operators

## OWS-E/IOS-E
- OWS-E/IOS-E Reference (SR–3077)
- OWS-E/IOS-E Ready Reference (SQ–3080)
- OWS-E/IOS-E Administrator’s Guide (SG–3079)

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● Available online with CrayDoc
★ Available online with Docview
▲ Man pages available with the `man` command
- Available online with CrayDoc
- Available online with Docview
- Man pages available with the man command

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# Record of Revision

The date of printing or software version number is indicated in the footer. Changes in rewrites are noted by revision bars along the margin of the page.

<table>
<thead>
<tr>
<th>Version</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>April 1992. Original printing.</td>
</tr>
<tr>
<td>2.0</td>
<td>May 1993. This rewrite supports libcif.a 2.0. Major changes include four new routines to process binary files, three new records to process CDIR$, one new record type to support massively parallel processing (MPP), six new C record types, the addition of new record types to support CF90, and minor changes to several other record types.</td>
</tr>
<tr>
<td>2.1</td>
<td>November 1993. Updated online to support libcif.a 2.1, a product released with CrayTools release 1.1.</td>
</tr>
<tr>
<td>2.1.1</td>
<td>October 1994. This printing of the manual reflects the changes of the 2.1 version and other miscellaneous technical changes. In addition, some sections have undergone a reorganization for improved readability. This printing supports the CrayTools release 1.3.</td>
</tr>
</tbody>
</table>