FreeHEP sections

The software packages within FreeHEP are divided into sections, with an editor (or editors) for each section. Choose one of the following sections to see a list of all the packages in that section. Note that some packages may appear in more than one section.

- Analysis and Data Reduction
- Artificial Intelligence
- CAD/CAE Systems
- Computer Hardware
- C++ (See also FreeHEP C++ reviews or C++ Virtual Library.)
- Data Acquisition
- Data bases and file systems
- Data Modeling and I/O
- Detector Simulation
- Event Generators
- General Libraries
- Graphics, visualization, GUIs
- HEP Theory
- Languages
- Lattice field theory (See also Lattice High Energy Physics overview.)
- Mathematics
- Networking/Electronic mail/News
- Operating Systems
- Parallelism and Distributed Computing
- Particle Properties
- Software Engineering

It is also possible to select packages from an alphabetical list of all packages, or to perform a database search to track down the package you are interested in.

FreeHEP Home Page
Submitting new software to FreeHEP

We are always looking for new software packages to add to the FreeHEP database. The only requirement for new items is that they be generally useful to the High Energy Physics community. If you have, or know of, any software that you think meets this criterium please let us know. In the first instance you should contact the editor for the subject area in which you think the package belongs. If you are unsure what area is appropriate feel free to contact the managing editor for guidance.

All software packages in FreeHEP are described by a .dbase file which resides on the FreeHEP anonymous FTP machine. A good way to submit new software is to create a .dbase file for the package and send it to the relevant editor. Once a new .dbase file is installed on the FreeHEP machine the spires and WWW databases will be automatically updated (after about a day).

If you would like to place source code or documentation on the FreeHEP machine to make it available by anonymous FTP to others then you should contact the FreeHEP managing editor directly.
Further Information about FreeHEP

The idea of setting up a library of useful and easily accessible HEP software was first proposed at the HEPLIB meeting at the SSC Lab in September 1991 and again at La Londe in January 1992. At that meeting it was generally recognized that this was a worthwhile idea that should be actively pursued.

Benefits

There are many potential benefits of FreeHEP both to the HEP user community and to software writers. Users benefit by gaining knowledge of existing software, by gaining easy access to the software they want, by gaining from the experience of other users and by having easy access to authors so that bugs and other problems can be fixed quickly. Authors benefit by gaining a mechanism for distributing their software, by avoiding duplication of efforts, by getting bug reports and suggestions from users and by making contacts with potential collaborators. Since FreeHEP is meant to be an inclusive service to authors as well as to the HEP user community, there is no requirement on the form of software distribution and we leave it up to the authors to distribute their packages in whatever form is most convenient.

Organization

FreeHEP currently consists of a database of useful software, accessible using WWW, Spires, or directly from the FreeHEP anonymous FTP site. The anonymous FTP site also contains areas for reviews of software packages, and in some cases the actual software itself. Software packages are organized into subject areas, with one or more editors for each section, as well as a managing editor.

We also plan to set up News Groups for different subject areas and to publish some form of (electronic?) newsletter listing new packages and other topical information.

We encourage anyone who has, or knows of, software that they believe should be included in the FreeHEP database to let us know.
HEPLIB

The first HEPLIB user's meeting was held at the SSC Laboratory, Dallas, Texas, September 19-20, 1991. Fifty-four scientists from thirty-one High Energy Physics research institutes and universities met for two full days to discuss the support and environments of High Energy Physics computing and to form and define the scope of a HEPLIB Users Group.

Initial Objectives

There was a general consensus for the following objectives:

- HEPLIB should be world users group for enhancements, communications, and distribution of software in the HEP computing environments.
- HEPLIB will collect, maintain, document, and distribute shareable application software for HEP computing as well as non-HEP applications, including code management systems in heterogeneous environments, data base systems, and automatic installation and test procedures. (See FreeHEP).
- HEPLIB should promote and recommend industry, as well as HEP computing standards as appropriate, including operating systems, distributed computing environments, quality assurance, version control, and information exchange.

A steering committee was formed to plan subgroups, initiate exchange and communication, plan logistics, arrange for meetings, begin planning for a HEPLIB Newsletter, and look into questions of manpower and funding for the HEPLIB Users Group.

Progress

The current status of HEPLIB is summarized in three working documents:

- Note 92-02  Summary - The HEPLIB'92/KEK International Users Meeting
- Note 92-03  H E P L I B - Consensus and Objectives
- Note 92-04  Standards for Certified Software in HEPLIB

Contacts

Initially, the following addresses may be used to contact the HEPLIB User Group:

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CERN  2550 Beckleyemeade Avenue  
CH-1211 Geneve 23  Dallas, Texas 75237  
Switzerland  U.S.A.  
Tel (022) 767-4912  Tel (214) 708-6000  
Fax (022) 767-7155  Tel (214) 708-0006  
Marquina@CERNVM  Johnstad@SSCVX1.SSC.GOV

http://www.slac.stanford.edu/FIND/HLMAIN.HTML  
8/30/01
Using Spires to Search FreeHEP

Enter SPIRES Search Command:

You can use Spires to search for specific packages in FreeHEP. You can issue search commands by typing commands of the following form as "keywords":

- AUTHOR Youssef, Saul
- AUTHOR Rene Brun
- AUTHOR T. Burnett
- SECTION Analysis
- DATE 1992
- DATE March 1992
- TITLE motif
- ABSTRACT radiative

Note that when searching for titles or abstracts any package that contains the specified word in the title or abstract will match. You can also form compound searches using the word "AND", for example:

- AUTHOR Youssef, Saul AND DATE 1992
- AUTHOR Johnson AND TITLE Motif

Commands are not case sensitive. You can also get a complete list of spires keywords(AUTHOR, SECTION, DATE etc.) available for use with FreeHEP, browse an alphabetical list of all packages or search for packages by subject area.

FreeHEP Home Page

http://www.slac.stanford.edu/FIND/FHSPIRES.HTML
Further Information about FreeHEP

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Benefits

There are many potential benefits of FreeHEP both to the HEP user community and to software writers. Users benefit by gaining knowledge of existing software, by gaining easy access to the software they want, by gaining from the experience of other users and by having easy access to authors so that bugs and other problems can be fixed quickly. Authors benefit by gaining a mechanism for distributing their software, by avoiding duplication of efforts, by getting bug reports and suggestions from users and by making contacts with potential collaborators. Since FreeHEP is meant to be an inclusive service to authors as well as to the HEP user community, there is no requirement on the form of software distribution and we leave it up to the authors to distribute their packages in whatever form is most convenient.

Organization

FreeHEP currently consists of a database of useful software, accessible using WWW, Spires, or directly from the FreeHEP anonymous FTP site. The anonymous FTP site also contains areas for reviews of software packages, and in some cases the actual software itself. Software packages are organized into subject areas, with one or more editors for each section, as well as a managing editor.

We also plan to set up News Groups for different subject areas and to publish some form of (electronic?) newsletter listing new packages and other topical information.

We encourage anyone who has, or knows of, software that they believe should be included in the FreeHEP database to let us know.

Example FreeHEP .dbase file

The following is an example of a FreeHEP .dbase file. These simple text files are kept on the FreeHEP anonymous FTP machine and provide information on each of the packages in FreeHEP. These files are also imported into the Spires and WWW databases daily.

Name: HippoPlotamus
Version: 1.10
Date: May, 1992
Title: A package for 'tuple viewing and manipulation
Authors(s): Mike Gravina(SLAC,mfg@ebnextk.slac.stanford.edu)
            Paul Kunz(SLAC,pfkeb@kaon.slac.stanford.edu)
            Paul Rensing(SLAC,rensing@unixhub.slac.stanford.edu)
Contact: pfkeb@kaon.slac.stanford.edu
Subject Area(s): graphics_vis_gui, analysis
News Group or Email: hippo_comment@ebnextk.slac.stanford.edu (e-mail)
Bug reports to: hippo_bug@ebnextk.slac.stanford.edu (e-mail)
Software Needed: XDR ANSI-C
Hardware Needed: A computer running VM, VMS or UNIX
Access: anonymous ftp from hepelib.slac.stanford.edu
User Base:
Documentation: Included in TAR file
Published References: Proceedings of L'Agelonde workshop
See Also: HippoDraw
Abstract: HippoPlotamus is a n-tuple management and display package written in ANSI C with an object orientation. The management part is designed to be user friendly and also has a FORTRAN binding. Binary files use the XDR format so binary ftp can be done between machines of different architectures. Files can also be converted from or to a plain text format and from HBOOK format with supplied utilities.

The display package can produce histograms, scatter plots, grey or color density plots, and x-y plots. It is designed to be friendly to one who implements an interactive application for visualizing the n-tuple data. Drivers for Display Postscript, X11, InterViews, UNIXPlot, line printer and PostScript printer are supplied.

HippoPlotamus has been tested on NeXT, SUN, RS/6000, Ultrix, SGI, VAX/VMS, and VM/CMS.
Example FreeHEP .dBASE file

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Name: HippoPlotamus
Version: 1.10
Date: May, 1992
Title: A package for 'tuple viewing and manipulation
Authors(s): Mike Gravina(SLAC,mfg@fnl.ethz.ch)
            Paul Kunz(SLAC,pkeb@kaon.slac.stanford.edu)
            Paul Rensing(SLAC,rensing@unixhub.slac.stanford.edu)
Contact: pfkeb@kaon.slac.stanford.edu
Subject Area(s): graphics_vis_gui, analysis
News Group or Email: hippo_comment@fnl.ethz.ch (e-mail)
Bug reports to: hippo_bug@fnl.ethz.ch (e-mail)
Software Needed: XDR ANSI-C
Hardware Needed: A computer running VM, VMS or UNIX
Access: anonymous ftp from heplib.slac.stanford.edu
User Base:
Documentation: Included in TAR file
Published References: Proceedings of L’Aiglonde workshop
See Also: HippoDraw
Abstract: HippoPlotamus is a n-tuple management and display package written in ANSI C with an object orientation. The management part is designed to be user friendly and also has a FORTRAN binding. Binary files use the XDR format so binary ftp can be done between machines of different architectures. Files can also be converted from or to a plain text format and from HBOOK4 format with supplied utilities.

The display package can produce histograms, scatter plots, grey or color density plots, and x-y plots. It is designed to be friendly to one who implements an interactive application for visualizing the n-tuple data. Drivers for Display Postscript, X11, InterViews, UNIXPlot, line printer and PostScript printer are supplied.

HippoPlotamus has been tested on NeXT, SUN, RS/6000, Ultrix, SGI, VAX/VMS, and VM/CMS.
FreeHEP editors

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Tony Gabriel, ORNL
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Important Note

The programs and information provided by FreeHEP are offered in the hope that they will be of benefit to the HEP community. However neither the editors, nor any one else associated with the project can guarantee the accuracy of any information provided.

THE PROGRAMS AND DOCUMENTS IN FREEHEP ARE OFFERED WITH NO WARRANTY OF ANY KIND.
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  Detector Simulation (th@utkhep.phys.utk.edu)
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  Event Generators and Software Engineering (sscvx1:johnstad)
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  General Libraries (csa:koellner)
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Youhei Morita, KEK
  Parallelism and Distributed Computing (kekvax:morita)
Miguel Marquina, CERN
  Software Engineering (marquina@cernvm.cern.ch)
Andrea Palounek, LANL
  Compilation (vaxInf:pace)
Jamie Shiers, CERN
  Data bases and file systems (jamie@cernvm.cern.ch)
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Saul Youssef, SCRI
  (managing editor) (youssef@scri.fsu.edu)

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THE PROGRAMS AND DOCUMENTS IN FREEHEP ARE OFFERED WITH NO WARRANTY OF ANY KIND.
How To use Anonymous FTP

If you are new to unix, you may not be familiar with ftp or copying files. On most machines, once you reach freehep via ftp you will see a prompt like this:

```
ftp>
```

From here, you can navigate the directory structure with `% ls` and `% cd`. To copy an ascii file to your home machine, do

```
ftp> get filename (case sensitive)
```

You may also see files with extensions ".tar", ".Z", or typically, both. The ".Z" indicates a compressed binary file which can be fetched like so:

```
ftp> binary
ftp> get xxxx.Z
```

On your home unix machine, you can uncompress it with the command

```
% uncompress xxxx.Z
```

which produces the file "xxxx".

Files with the extension ".tar" are also binary files containing a packed collection of files possibly including subdirectories. To unpack such a file, do

```
% tar xvf xxxx.tar
```

or see the tar command on your home unix machine.

You may also see files with a ".pac.Z" extension. These files can be unpacked with `tar xvf` and with the "% dupackag" command assuming that the "TYPES" package is installed.
How To use Anonymous FTP

If you are new to unix, you may not be familiar with ftp or copying files. On most machines, once you reach freehep via ftp you will see a prompt like this:

ftp>

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ftp> get filename    (case sensitive)

You may also see files with extensions ".tar", ".Z", or typically, both. The ".Z" indicates a compressed binary file which can be fetched like so:

ftp> binary
ftp> get xxxx.Z

On your home unix machine, you can uncompress it with the command

% uncompress xxxx.Z

which produces the file "xxxx".

Files with the extension ".tar" are also binary files containing a packed collection of files possibly including subdirectories. To unpack such a file, do

% tar xvf xxxx.tar

or see the tar command on your home unix machine.

You may also see files with a ".pac.Z" extension. These files can be unpacked with tar xvf and with the "% dupackag" command assuming that the "TYPES" package is installed.
Parse upper arg ip_adr file '()' options

Say time() 'FHGET received:' ip_adr file '()' options

Parse Var file subfile'/rest
p = LastPos('/',rest)
mode = Substr(rest,p+1)
if p>0 Then criteria = Substr(rest,1,p-1)
    else criteria = ''
temp = criteria
n=0
Do While temp=''
    n = n+1
    Parse Var temp Index.n'/Value.n'/temp
    If Value.n='*' Then Value.n='a'
End

NCriteria = n
SpiresTerm = Index.1 Decode(Value.1)
Do i=2 to NCriteria
    SpiresTerm = SpiresTerm 'AND' Index.i Decode(Value.i)
End

Restart:

If mode='SHOWIND' Then Do

'EXEC QSPIRES SHOW IND ( STACK NOSTAR IN' subfile
j=0;
Do Queued()
    Parse Pull . 'Index:' term '({'quals'}').
    If term=' ' Then Iterate
    j = j+1
    Term.j = Strip(term)
End

Queue '<TITLE>Index keywords available for FreeHEP</TITLE>'
Queue '<H2>Index keywords available for FreeHEP</H2>'

Queue 'Note: Commas separate synonyms.'
Queue '<UL>'
    We do not include indexes with no synonyms (for FreeHEP)
*/
Do i=1 to j
    p = LastPos(',',Term.i)
    if p=0 Then Iterate
    term = Strip(SubStr(Term.i,p+1))
    Queue '<LI>'
    Queue '<A HREF=/'subfile'/'term'/BROWSE>'
    Queue Term.i'</A>'
End
Queue '</UL>'
End

Else If mode='BROWSE' Then Do

n = nCriteria
'EXEC QSPIRES BROWSE' Index.n Value.n 'STACK NOSTAR IN' subfile
j = Queued()
Do i=1 to j
   Parse Pull Term.i
   Term.i = Strip(Term.i)
End

'EXEC QSPIRES SHOW ELEM DESC' Index.n 'STACK NOSTAR IN' subfile
Pull .
Pull .
jj = Queued()
Do i=1 to jj
   Parse Pull Desc.i
   Desc.i = Strip(Desc.i)
End

Queue '</TITLE>Browse' Index.n Decode(Value.n) 'for FreeHEP+'</TITLE>'
Queue '</H2>Browse' Index.n Decode(Value.n) 'for FreeHEP+'</H2>'
Queue '</INDEX>'
Queue '</H3>Description'</H3>'
Do i=1 to jj
   Queue Desc.i
End
Queue '</H3>Typical values'</H3>'
Queue '</UL>'
Do i=1 to j
   Queue '</LI>'
   Queue '<A HREF=/FIND/subfile/''Index.n''/Encode(Term.i)''/RESULT>'
   Queue Term.i'</A>'
End
Queue '</UL>'
Queue 'Choose one of the above or type a new value.'
End

Else If mode='INDEX' Then Do

'EXEC QSPIRES FIND' SpirestTerm 'STACK NOSTAR IN' subfile 'BRIEF'
i = 0;
Do Queued()
   Parse Pull Line
   if Substr(Line,1,10)='No records' Then Do
      Do Queued()
         Pull .
      End
      Mode = 'RESULT'
      Signal Restart
   End
   Parse Var Line Title":" Name
   Title = Strip(Title)
   Name = Strip(Name)
   If Title = 'Freehep Name' Then Do
      i=i+1
Name.i = Name
Title.i = ""
End
Else If Title = 'Title' Then Title.i = Name
Else If Title.i = '' Then Name.i = Name.i Strip(Line)
           Else Title.i = Title.i Strip(Line)
End

Queue '<DL>
Do j=1 to i
  Queue '<DT><A HREF=./FIND/FREEHEP/NAME/'Encode(Name.j)' /FULL>'
  Queue Name.j'</A>'
  If Title.J /= '' Then Queue '<DD>'Title.j
End
Queue '</DL>'
End

Else If mode='RESULT' | mode='NARROW' Then Do

'EXEC QSPIRES FIND' SpiresTerm '( STACK NOSTAR RESULT IN' subfile
Parse Pull Line
If Line = 'Invalid index term' Then Do
  If NCriteria=1 Then Do
    Queue 'Your index keyword ('Index.1') is invalid.'
  End
  Else Do
    Queue 'One of your index keywords ('Index.1
    Do i=2 to NCriteria-1
      Queue ',', Index.i
    End
    Queue 'or' Index.NCriteria') is invalid.'
  End
Queue 'You can obtain a list of'
Queue '<A HREF=./FIND/FREEHEP/SHOWIND>valid keywords</A> or'
Queue '<A HREF=./FIND/FHSPIRES.HTML>start a new search</A>.'
End
Else Do
Parse Var Line 'Result' N.

if NCriteria=1 Then latin = "criterium"
   Else latin = "criteria"

if NCriteria=1 Then are = "is"
   Else are = "are"

Queue '<P>'
Queue 'Your current search' latin are':'
Queue '<UL>'
Do i=1 to NCriteria
  Queue '<LI>' Index.i Decode(Value.i)
End
Queue '</UL>'
Queue '<P>'

If n='' Then Queue 'No packages matched your search' latin'.'
Else If n=1 Then Queue '1 package matched your search' latin'.'
   Else Queue N 'packages matched your search' latin'.'

If Mode='RESULT' Then Do
Queue '<P>You may now'
if n=1 Then Do
    Queue '<A HREF=/FIND/FREEHEP/'criteria'/FULL>'
    Queue 'examine the entry that matched your' latin'</A>,'
    End
Else if n>1 Then Do
    Queue '<A HREF=/FIND/FREEHEP/'criteria'/INDEX>'
    Queue 'examine a list of items that matched your' latin'</A>,'
    Queue 'continue to narrow down your search by specifying'
    Queue '<A HREF=/FIND/FREEHEP/'criteria'/NARROW>'
    Queue 'further criteria'</A>,'
    End
Else Do
    Queue '<A HREF=/FIND/FREEHEP/'criteria'/BROWSE>'
    Queue 'browse a list of values'</A> that almost matched your'
    Queue 'last criterium,'
    End
    Queue 'or <A HREF=/FIND/FHSPIRES.HTML>start a new search'</A>.'<
    End
Else Do /* NARROW */
    Queue '<P>'
    'EXECIO * DISKR FHNARROW HTML ( FINI'
    End
End

EXEC QSPIRES FIND SpiresTerm '{ STACK NOSTAR IN' subfile .

Ref = '
Title = ''
i=0
Do Queued()
    Parse Pull Line
    if Substr(Line,1,10)='No records' Then Do
        Do Queued()
            Pull.
            End
        Mode = 'RESULT'
        Signal Restart
        End
    Parse Var Line . 'Freehep Name:' Name
    if Name /= '' Then Title = Strip(Name)
    Parse Var Line . 'See Also:' Refs
    if Refs = '' Then Do
        i = i+1
        Line.i = Line
        End
    Else Ref = Refs
    End
If Title='' Then Do
    Queue '<TITLE>'Title'</TITLE>'
    Queue '<H1>'Title'</H1>'
    End
Queue '<XMP>'
Do j=1 to i
Queue Line.j
End
Queue '

' if Ref=" Then Queue 'See also' Do While Ref=" Parse Var Ref R,'Ref R = Strip(R) if Ref=" Then Punc='.' Else Punc='', Queue "R"Punc End End Return Queued() /* Spires search term values may have spaces in them, but WWW filespecs cannot, so here we encode names. */ Encode: Procedure Parse Arg String Bad = "% ()/" Good = "%BOCQS' Out = " Do I=1 to Length(String) c = Substr(String,i,1) if Index (bad,c)/=0 Then Out = Out||"%"Translate(c,good,bad) Else Out = Out||c End Return Out Decode:
Procedure Parse Arg String Bad = "% ()/" Good = "%BOCQS' Out = " Esc = 0 Do I=1 to Length(String) c = Substr(String,i,1) if Esc Then Do Out = Out||"Translate(c,bad,good) Esc = 0 End Else if c = "%' Then Esc = 1 Else Out = Out||c End Return Out
Parse upper arg ip_adr file '()' options

Say time() 'FHGET received:' ip_adr file '()' options

Parse Var file subfile'/rest
p = LastPos('/', rest)
mode = Substr(rest, p+1)
if p>0 Then criteria = Substr(rest, 1, p-1)
    else criteria = ''
temp = criteria
n=0
Do While temp=''
    n = n+1
    Parse Var temp Index.n'/Value.n'/temp
    If Value.n='*' Then Value.n=>a'
End

NCriteria = n
SpireSTerm = Index.1 Decode(Value.1)
Do i=2 to NCriteria
    SpireSTerm = SpireSTerm 'AND' Index.i Decode(Value.i)
End

Restart:

If mode='SHOWIND' Then Do

'EXEC QSPIRES SHOW IND { STACK NOSTAR IN' subfile
j=0;
Do Queued()
    Parse Pull. 'Index:' term '('.quals')'.
    If term='' Then Iterate
    j = j+1
    Term.j = Strip(term)
End

Queue '<TITLE>Index keywords available for FreeHEP</TITLE>'
Queue '<H2>Index keywords available for FreeHEP</H2>'

Queue 'Note: Commas separate synonyms.'
/
We do not include indexes with no synonyms (for FreeHEP)
*/
Do i=1 to j
    p = LastPos(',', Term.i)
    If p=0 Then Iterate
    term = Strip(SubStr(Term.i, p+1))
    If i=1 Then Prefix = '<UL>'
        Else Prefix = '<LI>'
    Queue Prefix '<A HREF=./IND//subfile//'term'//BROWSE>'
    Queue Term.i'</A>'
End
Else If mode='BROWSE' Then Do

n = nCriteria
'EXEC QSPIRES BROWSE' Index.n Value.n '( STACK NOSTAR IN' subfile
j = Queued()
Do i=1 to j
  Parse Pull Term.i
  Term.i = Strip(Term.i)
End

'EXEC QSPIRES SHOW ELEM DESC' Index.n '(STACK NOSTAR IN' subfile
Pull .
Pull .
jj = Queued()
Do i=1 to jj
  Parse Pull Desc.i
  Desc.i = Strip(Desc.i)
End

Queue '<TITLE>Browse' Index.n Decode(Value.n) 'for FreeHep</TITLE>'
Queue '<H2>Browse' Index.n Decode(Value.n) 'for FreeHep</H2>'
Queue '<I>Index</I>'
Queue '<H3>Description</H3>'
Do i=1 to jj
  Queue Desc.i
End
Queue '<H3>Typical values</H3>'
Do i=1 to j
  If i=1 Then Prefix = '<UL>'
  Else Prefix = '<LI>'
  Queue Prefix '<A HREF="/FIND/'Index.n'/"Encode(Term.i)'/RESULT">'
  Queue Term.i '</A>'
  End
Queue '</UL>'
Queue 'Choose one of the above or type a new value.'
End

Else If mode='INDEX' Then Do

'EXEC QSPIRES FIND' Spiresterm '( STACK NOSTAR IN' subfile 'BRIEF'

i = 0;
Do Queued()
  Parse Pull Line
  if Substr(Line,1,10)='No records' Then Do
    Do Queued()
      Pull .
      End
    Mode = 'RESULT'
    Signal Restart
  End
  Parse Var Line Title":" Name
  Title = Strip(Title)
  Name = Strip(Name)
  If Title = 'Freehep Name' Then Do
    i=i+1
  End
Name.i = Name
Title.i = ""
End
Else If Title = 'Title' Then Title.i = Name
Else If Title.i = '"' Then Name.i = Name.i Strip(Line)
    Else Title.i = Title.i Strip(Line)
End

Queue '"<TITLE>List of FreeHEP packages</TITLE>''
Queue '"<H1>List of FreeHEP packages</H1>''
Queue '"<DL>''
Do j=1 to i
    Queue '"<DT><A HREF=/FIND/FREEHEP/NAME/'Encode(Name.j)' /FULL>''
    Queue Name.j"</A>''
    If Title.j = "" Then Queue '"<DD>Title.j''
End
Queue '"</DL>''
End

Else If mode='RESULT' | mode='NARROW' Then Do

'EXEC QSPIRES FIND' SpiresTerm ' ( STACK NOSTAR RESULT IN' subfile
Parse Full Line
If Line = 'Invalid index term' Then Do
    If NCriteria=1 Then Do
        Queue 'Your index keyword ('Index.1') is invalid.'
    End
    Else Do
        Queue 'One of your index keywords ('Index.1
        Do i=2 to NCriteria-1
            Queue ', ' Index.i
        End
        Queue 'or' Index.NCriteria') is invalid.'
    End
    Queue 'You can obtain a list of'
    Queue '"<A HREF=/FIND/FREEHEP/SHOWINDEX>valid keywords</A> or'
    Queue '"<A HREF=/FIND/FHSPIRES.HTML>start a new search</A>.'
End
Else Do
    Parse Var Line 'Result' N .

    if NCriteria=1 Then latin = "criterium"
        Else latin = "criteria"

    if NCriteria=1 Then are = "is"
        Else are = "are"

    Queue '"<P>''
    Queue 'Your current search' latin are:'
    Do i=1 to NCriteria
        If i=1 Then Prefix = '"<UL>''
            Else Prefix = '"<LI>''
        Queue Prefix Index.i Decode(Value.i)
    End
    Queue '"</UL>''

    If n='"' Then Queue 'No packages matched your search' latin'.'
    Else If n=1 Then Queue '1 package matched your search' latin'.'
        Else Queue N 'packages matched your search' latin'.'

If Mode='RESULT' Then Do
  Queue '<p>You may now'
  if n=1 Then Do
    Queue '"A HREF=/FIND/FreeHep/"criteria"/FULL>''
    Queue 'examine the entry that matched your latin"</A>,''
  End
  Else if n>1 Then Do
    Queue '"A HREF=/FIND/FreeHep/"criteria"/INDEX>''
    Queue 'examine a list of items that matched your latin"</A>,''
    Queue 'continue to narrow down your search by specifying'
    Queue '"A HREF=/FIND/FreeHep/"criteria"/NARROW>''
    Queue 'further criteria</A>,''
  End
  Else Do
    Queue '"A HREF=/FIND/FreeHep/"criteria"/BROWSE>''
    Queue 'browse a list of values</A> that almost matched your'
    Queue 'last criterium,'
  End
  Queue 'or <A HREF=/FIND/FHSPires.HTML>start a new search</A>.'
End
Else Do /* NARROW */
  Queue '<p>'
    'EXECIO * DISKR FHNARROW HTML ( FINI'
  End
End
End
Else Do
  'EXEC QSPires FIND' SpiresTerm '{ STACK NOSTAR IN' subfile

Ref = ''
Title = ''
i=0
Do Queued()
  Parse Pull Line
  if Substr(Line,1,10)='No records' Then Do
    Do Queued()
      Pull.
    End
    Mode = 'RESULT'
    Signal Restart
  End
  Parse Var Line .'Freehep Name:' Name
  if Name /= '' Then Title = Strip(Name)

  Parse Var Line .'See Also:' Refs
  if Refs = '' Then Do
    i = i+1
    Line.i = Line
  End
  Else Ref = Refs
End

If Title/='' Then Do
  Queue '"TITLE>''Title'"</TITLE>''
  Queue '"H1>''Title'"</H1>''
End
Queue '<XMP>''
Do j=1 to i
  Queue Line.j
End
Queue ''

' if Ref='"' Then Queue 'See also' Do While Ref='"' Parse Var Ref R,'Ref R = Strip(R) if Ref='"' Then Punct='.' Else Punct=';' Queue ''R''Punct End End Return Queueed() /* Spires search term values may have spaces in them, but WWW file specs cannot, so here we encode names. */ Encode: Procedure Parse Arg String Bad = '%$\)/<>' Good = '%$BOCQSGL' Out = '' Do I=1 to Length(String) c = Substr(String,i,1) if Index(bad,c)=0 Then Out = Out||%Translate(c,good,bad) Else Out = Out||c End Return Out Decode: Procedure Parse Arg String Bad = '%$\)/<>' Good = '%$BOCQSGL' Out = '' Esc = 0 Do I=1 to Length(String) c = Substr(String,i,1) if Esc Then Do Out = Out||Translate(c,bad,good) Esc = 0 End Else if c = '%$' Then Esc = 1 Else Out = Out||c End Return Out
Implementation of the FreeHEP Spires/WWW interface

The interface between FreeHEP/HEPLIB and Spires/WWW was implemented by Tony Johnson (Boston University), with considerable help from Louise Addis, George Crane and the other SLAC WWWizards.

Please report any inaccuracies or problems you encounter when using this system to TonyJ@SlacVX.Slac.Stanford.EDU.

The information in the FreeHEP database was initially compiled by Saul Youssef(Scri), Andrea Palounek(LANL) and Tony Johnson, based on an earlier compilation by Saul and Andrea.
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FreeHEP - Library of High Energy Physics Software

In spite of the large number of talented people writing and using software in High Energy Physics, much of this work is hampered simply by lack of information or by lack of easy access to software packages. This feeling was confirmed by our experience in compiling a simple list of existing packages in use in the field. Only a fraction of this software is generally known about. Clearly we need a better mechanism than word of mouth to find out about useful software. The same problem exists with respect to commercial software where there is a need to find out what exists and to share experiences. To help solve this problem, we have set up an organization which will perform the following services for the HEP community:

- A global software compilation -- an extension of our original compilation.
- ftp access to software packages, documentation, instructions for getting software from other locations, reviews and benchmarks.
- A news groups for subject areas and software packages.

FreeHEP is based on the principle that ALL software which might be useful to the HEP community should be included. This includes software from other fields and commercial software packages. Commercial software will appear in the form of instructions for getting software from a company and a news group to share experiences.

Using WWW you can find out more about FreeHEP or access information about freehep software in a variety of ways. If you know the name of the package you are interested in then type the name of the package as a keyword now. Otherwise you can search by subject area, by browsing an alphabetical list of all packages or by using the full power of the Spires database system to access the information that you are interested in.

The WWW interface to FreeHEP is in an initial testing period at the current time. Please report any problems or inaccuracies that you encounter when using WWW to access FreeHEP.
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The WWW interface to FreeHEP is in an initial testing period at the current time. Please report any problems or inaccuracies that you encounter when using WWW to access FreeHEP.
This URL has changed!

The application or page you are calling has moved to a new location.

Go to the main SPIRES page
http://www.slac.stanford.edu/spires/
or:

Please ask the owner of the referring page to change. In general, the filenames have stayed the same, but the machine name has changed from:

```
slacvm.slac.stanford.edu
to
www.slac.stanford.edu
```

and, in the case of SPIRES, the search syntax may have changed.

If you were doing a search in the SLAC SPIRES-HEP database, please see:

http://www.slac.stanford.edu/spires/hep/

If you were searching a SPIRES database other than HEP, see:

http://www.slac.stanford.edu/spires

If you have a hard-coded search string, you may need to change the syntax of your search slightly, as shown in the following examples:

Old style (no longer works):

```
http://www.slac.stanford.edu/find/hep?find+a+beacom.j.f.%2C+%28using+wwwcite
```

New style:

```
http://www.slac.stanford.edu/spires/find/hep/wwwcite?a=beacom,j.f..
```

If you are uncertain about how to modify your particular search syntax, try the search from the appropriate search page and copy the url which is formed from it.

Send comments or questions to: library@slac.stanford.edu

HOC
27 Jun 2001

Addis
2 Jul 1998

http://www.slac.stanford.edu/FIND/FREEHEP/NAME/*/INDEX

8/30/01
You can use Spires to continue to narrow down your search by adding extra search criteria of the following form:

<UL>
<LI>AUTHOR Youssef, Saul
<LI>AUTHOR Rene Brun
<LI>AUTHOR T. Burnett
<LI>SECTION Analysis
<LI>DATE 1992
<LI>DATE March 1992
<LI>TITLE motif
<LI>ABSTRACT radiative
</UL>

Note that when searching for titles or abstracts any package that contains the specified word in the title or abstract will match. You can also form compound searches using the word "AND", for example:

<UL>
<LI>AUTHOR Youssef, Saul AND DATE 1992
<LI>AUTHOR Johnson AND TITLE Motif
</UL>

Commands are not case sensitive. You can also get a complete list of spires keywords</A>(AUTHOR, SECTION, DATE etc.) available for use with FreeHEP.
You can search this index. Type the keyword(s) you want to search for:

You can use Spires to continue to narrow down your search by adding extra search criteria of the following form:

- AUTHOR Youssef, Saul
- AUTHOR Rene Brun
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Original compilation of HEP software

A. Palounek and S. Youssef, "Monte Carlo Programs and other Utilities for High Energy Physics," LBL-29115 (1990). This paper is available via DECNET in postscript format as: SSCVX1::USER1:[APTP]DOCREF.PS
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FreeHEP anonymous FTP machine

The FreeHEP anonymous ftp machine is called "FreeHEP.Scri.Fsu.Edu". Feel free to FTP to this machine and look at what is there. (You can sign in as user "anonymous", just give your userid on your home machine when you are prompted for a password).

The directories on this machine are organized by subject area. These areas contain data base records (.dbase files) and may also contain source code in some cases. There is a /reviews area for each subject area which is meant for general reviews, benchmarks etc. The file INDEX contains a daily updated index of entries in the data base. The file FILES contains a daily updated complete directory tree. The /tutorials section contains instructions for various common tasks.

Many of the directories on the FreeHEP machine contain software and documentation that you can access using anonymous FTP.

The information in the .dbase files on the FreeHEP machine can also be accessed using WWW.
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Many of the directories on the FreeHEP machine contain software and documentation that you can access using anonymous FTP.

The information in the .dbase files on the FreeHEP machine can also be accessed using WWW.
Trace Off
Arg Node Comm '{' options
Say time() Node Comm '{' Options
parse var options File'.'Type

if File = 'FMAIN' Then Do
    'EXEC FHGET' Node 'FREEHEP/NAME/'Encode(Strip(comm))'/LONG'
End
Else If File = 'FHSPIRES' Then Do
    File = 'FREEHEP'
    Do While Comm=''
        Parse Var Comm Index Value 'AND' Comm
        Value = Encode(Strip(Value))
        File = file'/''Index'/''Value
    End
    File = File'/RESULT'
    'EXEC FHGET' Node File
End
Else Do
    p = LastPos( '/',options)
    mode = Substr(options, p+1)
    rest = Substr(options, 1, p-1)

    if mode='BROWSE' Then Do
        q = LastPos( 'http://www.slac.stanford.edu/archive/1992/S'LACVM/www/192/rl1384/fhsearch @exec',options, p+1)
        File = Substr(rest, 1, q) || Encode(Strip(Comm)) || '/RESULT'
        'EXEC FHGET' Node File
    End

    Else If mode='NARROW' Then Do
        File = rest
        Do While Comm=''
            Parse Var Comm Index Value 'AND' Comm
            Value = Encode(Strip(Value))
            File = file'/''Index'/''Value
        End
        File = File'/RESULT'
        'EXEC FHGET' Node File
    End

    Else Do
        Queue '<PLAINTEXT>'
        Queue 'huh?'
    End
End
Exit Queued()}
Encode: Procedure
Parse Arg String

Bad = '% ()?/
Good = '%BOCQS'

Out = ''
Do I=1 to Length(String)
   c = Substr(String, I, 1)
   if Index(bad, c) /= 0 Then Out = Out || '%Translate(c, good, bad)
   Else Out = Out || c
   End

Return Out
Trace Off
Arg Node Comm '('* options
Say time() Node Comm '('* Options
parse var options File'.'Type

if File = 'FHMAIN' Then Do
  'EXEC FHGET' Node 'FREEHEP/NAME/'Encode(Strip(comm))/LONG'
  End
Else If File = 'FHSPIRES' Then Do
  File = 'FREEHEP'
  Do While Comm=''
    Parse Var Comm Index Value 'AND' Comm
    Value = Encode(Strip(Value))
    File = file'/Index'/Value
  End
  File = File'/RESULT'
  'EXEC FHGET' Node File
  End
Else Do
  p = LastPos('/',options)
  mode = Substr(options,p+1)
  rest = Substr(options,1,p-1)

  if mode='BROWSE' Then Do
    q = LastPos('/',rest)
    File = Substr(rest,1,q)||Encode(Strip(Comm))||'/RESULT'
    'EXEC FHGET' Node File
    End

  Else If mode='NARROW' Then Do
    File = rest
    Do While Comm=''
      Parse Var Comm Index Value 'AND' Comm
      Value = Encode(Strip(Value))
      File = file'/Index'/Value
    End
    File = File'/RESULT'
    'EXEC FHGET' Node File
    End

  Else Do
    Queue '<PLAINTEXT>'
    Queue 'huh?'
    End
  End
End

Exit Queued()
Encode: Procedure
Parse Arg String

Bad = '()%?<>'
Good = '%BOCQSGL'

Out = ''
Do I=1 to Length(String)
   c = Substr(String,i,1)
   if Index(bad,c)/=0 Then Out = Out||'\ Translate(c,good,bad)
      Else Out = Out||c
   End

Return Out
Using Spires to Search FreeHEP

You can search this index. Type the keyword(s) you want to search for:

You can use Spires to search for specific packages in FreeHEP. You can issue search commands by typing commands of the following form as "keywords":

- AUTHOR Youssef, Saul
- AUTHOR Rene Brun
- AUTHOR T. Burnett
- SECTION Analysis
- DATE 1992
- DATE March 1992
- TITLE motif
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FreeHEP sections

The software packages within FreeHEP are divided into sections, with an editor (or editors) for each section. Choose one of the following sections to see a list of all the packages in that section. Note that some packages may appear in more than one section.

- Graphics, visualization, GUIs
- Detector Simulation
- Data Acquisition
- Analysis and Data Reduction & compilation
- Event Generators
- Software Engineering
- General Libraries
- Parallelism and Distributed Computing
- Data bases and file systems
- CAD/CAE Systems
- Artificial Intelligence
- Computer Hardware
- Languages
- Mathematics
- Particle Properties
- Networking/Electronic mail/News
- Cad/Cae Systems

It is also possible to select packages from an alphabetical list of all packages, or to use the full power of Spires to track down the package you are interested.
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- CAD/CAE Systems
- Artificial Intelligence
- Computer Hardware
- Languages
- Mathematics
- Particle Properties
- Networking/Electronic mail/News
- Cad/Cae Systems

It is also possible to select packages from an alphabetical list of all packages, or to use the full power of Spires to track down the package you are interested.
Trace Off
Arg comm '()' options
parse var options subfile.
upper subfile
Queue '<PLAINTEXT>'
Parse var comm . token1 rest
if Abbrev('FIND',token1,3) = 0 Then temp = 'FIND 'token1 rest
else temp = token1 rest
parse var temp token1 token2 rest
upper token2
Say temp '('options
if subfile = 'SPIRES' Then subfile = 'HEP'
Select
When token2 = 'REACCESS' Then Do
  Address CMS 'Access 192 B'
  Queue 'Disk re-accessed RC='rc
End
When Abbrev('SHOW',token2,3) > 0 Then Do
  'EXEC QSPIRES SHOW 'rest 'STACK NOSTAR IN 'subfile
End
When Find('EXPLAIN WHOIS WHATIS WHEREIS QUERY',token2) > 0 Then Do
  'EXEC QSPIRES 'token2 rest 'STACK NOSTAR'
End
When Abbrev('BROWSE',token2,3) > 0 Then Do
  'EXEC QSPIRES BROWSE 'rest 'STACK NOSTAR IN 'subfile
If queued() = 2 Then Do
  parse pull header
  parse pull string
  parse var string first second
  Queue header
  Queue string
  If first = 'Invalid' Then Do
    Queue '.
    Queue 'Try: SHOW INDEX for a list of valid terms'
    Queue 'Then: BROWSE term value'
    Queue 'i.e.: BROWSE AUTHOR DRELL'
  End
End
End
When subfile = 'STORES' Then Do
  Parse var temp . temp
  'EXEC STORES' temp 'FIFO NOSTAR'
End
Otherwise Do
  'EXEC QSPIRES' temp,
'STACK NOSTAR OUTPUT TYPE BRIEF IN 'subfile
If queued() = 2 Then Do
  parse pull header
  parse pull string
parse var string first second
Queue header
Queue string
If first = 'Invalid' Then Do
  Queue ' '
  Queue 'Try: SHOW INDEX for a list of valid terms'
  Queue 'Then: FIND term value'
  Queue 'i.e.: FIND AUTHOR DRELL'
End
End
End
Exit Queued()
/* */ Trace Off Arg comm '(' options parse var options subfile , upper subfile Queue '

Parse var comm , token1 rest
if Abbrev('FIND',token1,3) = 0 Then temp = 'FIND 'token1 rest
else temp = token1 rest
parse var temp token1 token2 rest
upper token2
Say temp '('options
if subfile = 'SPIRES' Then subfile = 'HEP'
Select
  When token2 = 'REACCESS' Then Do
    Address CMS 'Access 192 B'
    Queue 'Disk re-accessed RC=rc
  End
When Abbrev('SHOW',token2,3) > 0 Then Do
  'EXEC QSPIRES SHOW 'rest '('STACK NOSTAR IN 'subfile
End
When Find('EXPLAIN WHOIS WHATIS WHEREIS QUERY',token2) > 0 Then Do
  'EXEC QSPIRES 'token2 rest '('STACK NOSTAR
End
When Abbrev('BROWSE',token2,3) > 0 Then Do
  'EXEC QSPIRES BROWSE 'rest '('STACK NOSTAR IN 'subfile
If queued() = 2 Then Do
  parse pull header
  parse pull string
  parse var string first second
  Queue header
  Queue string
  If first = 'Invalid' Then Do
    Queue '
    Queue 'Try: SHOW INDEX for a list of valid terms'
    Queue 'Then: BROWSE term value'
    Queue 'i.e.: BROWSE AUTHOR DRELL'
  End
End
End
When subfile = 'STORES' Then Do
  Parse var temp , temp
  'EXEC STORES' temp '{ FIFO NOSTAR
End
Otherwise Do
  'EXEC QSPIRES' temp,
  '('STACK NOSTAR OUTPUT TYPE BRIEF IN 'subfile
If queued() = 2 Then Do
  parse pull header
  parse pull string
  parse var string first second
  Queue header
  Queue string
  If first = 'Invalid' Then Do
    Queue '
    Queue 'Try: SHOW INDEX for a list of valid terms'
    Queue 'Then: FIND term value'
    Queue 'i.e.: FIND AUTHOR DRELL'
  End
End
End
End
Exit Queued()
Trace Off
Arg comm '(' options
parse var options subfile .
upper subfile
Queue '<PLAINTEXT>'
Parse var comm . token1 rest
if Abbrev('FIND',token1,3) = 0 Then temp = 'FIND 'token1 rest
else temp = token1 rest
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Select
When token2 = 'REACCESS' Then Do
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End
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End
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  If queued() = 2 Then Do
    parse pull header
    Queue header
    Queue string
    If first = 'Invalid' Then Do
      Queue ','
      Queue 'Try: SHOW INDEX for a list of valid terms'
      Queue 'Then: BROWSE term value'
      Queue 'i.e.: BROWSE AUTHOR DRELL'
    End
  End
End
When subfile = 'STORES' Then Do
  Parse var temp . temp
  'EXEC STORES' temp '{ FIFO NOSTAR'
End
Otherwise Do
  'EXEC QSPIRES' temp,
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    parse pull string
    parse var string first second
    Queue header
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    Queue ' '
    Queue 'Try: SHOW INDEX for a list of valid terms'
    Queue 'Then: FIND term value'
    Queue 'i.e.: FIND AUTHOR Drell'
End
End
End
Exit Queued()
Traces Off
Arg comm '{' options
parse var options subfile .

If SubStr(subfile,1,2)='FH' | SubStr(subfile,1,7)='FREEHEP' Then Do
  'EXEC FHSEARCH' comm '{' options
  Exit Rc
End
upper subfile
Queue '<PLAINTEXT>'
Parse var comm . token1 rest
if Abbrev('FIND',token1,3) = 0 Then temp = 'FIND 'token1 rest
else temp = token1 rest
parse var temp token1 token2 rest
upper token2
Say temp '{'options
if subfile = 'SPIRES' Then subfile = 'HEP'
Select
  When token2 = 'REACCESS' Then Do
    Address CMS 'Access 192 B'
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  End
  When Abbrev('SHOW',token2,3) > 0 Then Do
    'EXEC QSPIRES SHOW 'rest '(STACK NOSTAR IN 'subfile
  End
  When Find('EXPLAIN WHOIS WHATIS WHEREIS QUERY',token2) > 0 Then Do
    'EXEC QSPIRES 'token2 rest '(STACK NOSTAR
  End
  When Abbrev('BROWSE',token2,3) > 0 Then Do
    'EXEC QSPIRES BROWSE 'rest '(STACK NOSTAR IN 'subfile
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      parse pull header
      parse pull string
      parse var string first second
      Queue header
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      If first = 'Invalid' Then Do
        Queue ''
        Queue 'Try: SHOW INDEX for a list of valid terms'
        Queue 'Then: BROWSE term value'
        Queue 'i.e.: BROWSE AUTHOR DRELL'
      End
    End
  End
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  If first = 'Invalid' Then Do
    Queue ' '
    Queue 'Try: SHOW INDEX for a list of valid terms'
    Queue 'Then: FIND term value'
    Queue 'i.e.: FIND AUTHOR DRELL'
  End
End
End
End
Exit Queued()