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Documentation for the Cray Performance Toolset

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Topics

- Software versions
- Online help
- Examples

Accessing Software Versions

- Software package information
  - Use avail, list or help parameters to module command
  - With 5.0 release and later, 'module help xt-craypat' shows release notes
- craypat version (same for pat_build, pat_report, pat_help)

```
% pat_build –V
 CrayPat/X:  Version 5.0 Revision 2786  08/31/09 12:18:23
```

- Cray Apprentice^2 version
  - Displayed in top menu bar when running GUI

Online information

- User guide
  - http://docs.cray.com
  - Click on “Latest Docs” and choose “Performance Tools 5.0”
- Man pages
- To see list of reports that can be generated

```
% pat_report -O -h
```

- Notes sections in text performance reports provide information and suggest further options

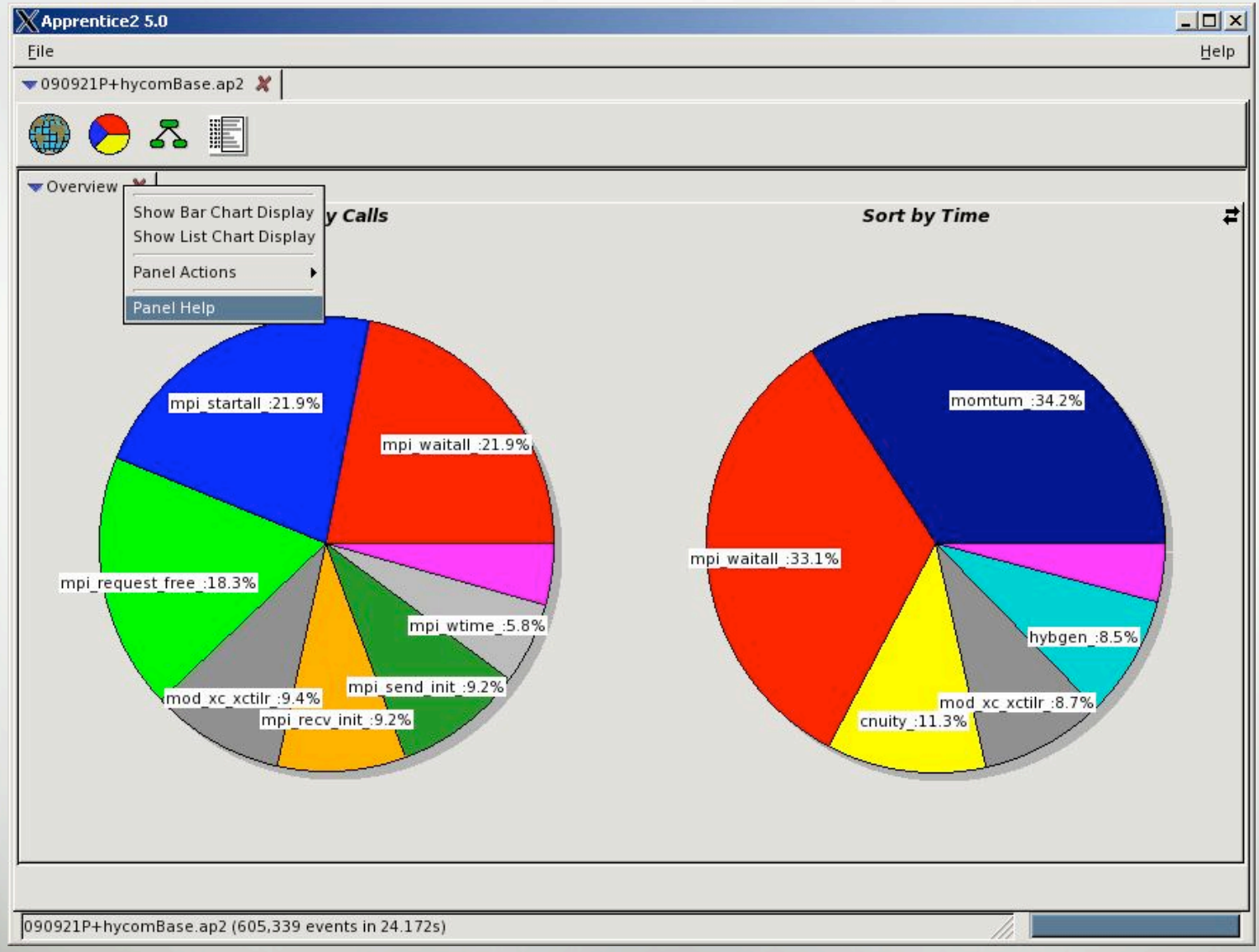
Online Information (2)

- Cray Apprentice2 panel help
- pat_help – interactive help on the Cray Performance toolset
- FAQ available through pat_help

Man pages

- **intro_craypat**(1)
  - Introduces the craypat performance tool
- **pat_build**
  - Instrument a program for performance analysis
- **pat_help**
  - Interactive online help utility
- **pat_report**
  - Generate performance report in both text and for use with GUI
- **hwpc**(3)
  - describes predefined hardware performance counter groups
- **papi_counters**(5)
  - Lists PAPI event counters
  - Use papi_avail or papi_native_avail utilities to get list of events when running on a specific architecture

Cray Apprentic^2 Panel Help



Top of default report from APA sampling

```
CrayPat/X:  Version 5.0 Revision 2631 (xf 2571)  05/29/09 14:54:00

Number of PEs (MPI ranks):      48
Number of Threads per PE:       1
Number of Cores per Processor:  4

Execution start time:   Fri May 29 15:31:49 2009
System type and speed:   x86_64  2200 MHz
Current path to data file:
  /lus/nid00008/homer/sweep3d/sweep3d.mpi+samp.rts.ap2  (RTS)

Notes:
    Sampling interval was 10000 microseconds (100.0/sec)
    BSD timer type was ITIMER_PROF

  Trace option suggestions have been generated into a separate file
  from the data in the next table.  You can examine the file, edit
  it if desired, and use it to reinstrument the program like this:

            pat_build -O sweep3d.mpi+samp.rts.apa
```

pat_report -O -h

```
pat_report: Help for -O option:

Available option values are in left column, a prefix can be specified:

  ct                -O calltree
  defaults          Tables that would appear by default.
  heap              -O heap_program,heap_hiwater,heap_leaks
  io                -O read_stats,write_stats
  lb                -O load_balance
  load_balance      -O lb_program,lb_group,lb_function
  mpi               -O mpi_callers
  ---
  callers           Profile by Function and Callers
  callers+hwpc      Profile by Function and Callers
  callers+src       Profile by Function and Callers, with Line Numbers
  callers+src+hwpc  Profile by Function and Callers, with Line Numbers
  calltree          Function Calltree View
  calltree+hwpc     Function Calltree View
  calltree+src      Calltree View with Callsite Line Numbers
  calltree+src+hwpc Calltree View with Callsite Line Numbers
  ...
```

pat_help

- Interactive by default, or use trailing '.' to just print a topic:
- New FAQ craypat 5.0.0.
- Has counter and counter group information

```
% pat_help counters amd_fam10h groups .
```

pat_help Example

```
 The top level CrayPat/X help topics are listed below.
A good place to start is:

    overview

If a topic has subtopics, they are displayed under the heading
"Additional topics", as below.  To view a subtopic, you need
only enter as many initial letters as required to distinguish
it from other items in the list.  To see a table of contents
including subtopics of those subtopics, etc., enter:

    toc

To produce the full text corresponding to the table of contents,
specify "all", but preferably in a non-interactive invocation:

    pat_help all . > all_pat_help
    pat_help report all . > all_report_help

  Additional topics:

    API                         execute
    balance                     experiment
    build                       first_example
    counters                    overview
    demos                       report
    environment                 run

pat_help (.=quit ,=back ^=up /=top ~=search)
=>
```

FAQ

```
% pat_help (.=quit ,=back ^=up /=top ~=search)
=> FAQ

Additional topics that may follow "FAQ":

 Application Runtime
 Miscellaneous
 Availability and Module Environment
 Processing Data with pat_report
 Building Applications
 Visualizing Data with Apprentice2
 Instrumenting with pat_build
```

FAQ Example

```
% => 11. inclusive time of region recorded by
  CrayPat API

% (.=quit ,=back ^=up /=top ~=search) => 11

I cant find a way to make CrayPat report the
  inclusive time of a region recorded by the
  API. What can I do?

pat_help FAQ "Processing Data with pat_report"
  (.=quit ,=back ^=up /=top ~=search) =>
%
```

Short Quiz

Using pat_help, find the definition for computational intensity.

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Questions / Comments

Thank You!