Psy-Q development tools

(The current state of…)

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Psy-Q Past, Present and Future

- ❖ Recent updates to SCE approved tools
- ❖ Work in progress & What's to come
- ❖ Questions (and maybe some answers :-)

Recent Updates to Approved Tools

- ❖ Gnu-C compiler
- ❖ ASPSX assembler
- ❖ Linker and Librarian
- ❖ DOS hosted debugger
- ❖ Other utilities (SYMMUNGE & RUN)

The Gnu C compiler

- ❖ Current version is 2.7.2
- ❖ DOS extended and 32-Bit NT executable versions available

  32-Bit versions compile code significantly faster under Windows NT

ASPSX assembler

- ❖ -0 switch suppresses division by zero test code (2.33)

  e.g. ccpsx -Wa,0 ...

ASPSX assembler

❖ When specifying a section name prefix
  with -s you can suppress group creation
  by prefixing the name with '-' (2.26)

  e.g. ccpsx -Wa,s-level1 ….

  will create sections level1.text,
  level1.data, etc. but no group level1

PSYLINK linker

❖ Automatic overlay support with /v switch.

No need to make any modifications to your source code. (2.30)

e.g.   psylink /v ….

PSYLINK linker

❖ Library search path can be specified on linker command line and in PSYQ.INI

  e.g. psylink /l c:\psx\lib …..

  or add the following to PSYQ.INI

  [psylink]
   library_path = c:\psx\lib

PSYLINK linker

- Switch /wl warns of multiple definitions of a symbol in library files.
- Switch /wm warns of multiple declarations of C variables.

PSYLIB librarian

❖ New library format about to be released that reduce link time.

(Linker supports old and new formats).

DBUGPSX debugger

- ❖ Source file searchpath on Alt-P (4.69)
- ❖ Auto Overlay Support (4.70)
- ❖ C callstack crawler (4.75)
- ❖ long long & floating point (4.78)
- ❖ typecasting (4.82)
- ❖ fixed keyboard mix-ups, ENUM display, source/dis toggle on space bar

Other Utilities

- ❖ SYMMUNGE
  Compresses debugging data to reduce size of .SYM files and speed debugger loading.

  Usage: symmunge <infile> <outfile>

- ❖ Spots non-matching structure declarations

Other Utilities

❖ RUN (version 2.32)

– now handles multiple raw binary and CPE files

– /e switch allows you to specify an overriding execution address:-

e.g. RUN file1.tmd,80020000 prog.bin,80010000 /e80010000

Libraries and Target Code

- ❖ SNMAIN startup module in LIBSN
  - – setting your stack-size
  - – building for 2MB or 8MB target
  - – making your own start-up module
- ❖ SNPATCH, SNPATCHJ, SNPATCHW
- ❖ Target downloader version 4.04
  - – pollhost in callback no longer breaks Fileserver
  - – PSYQpause()

Tools awaiting approval

- <u>Low cost</u> plug-in dev kit for production console
- CD-R burning direct from emulator image
- PsyWin debugger for Win95 (and NT soon)
- Other 32 bit tools for Win95 and WinNT
- SGI hosted Psy-Q development tools
- Playstation target box for SGI or PC

Low-Cost console-based dev kit

- ❖ Compact plug-in cartridge for a real production Playstation console
- ❖ PIO interrupt facility - no pollhost()
- ❖ Boots in 2 seconds - no patches required
- ❖ Uses all the standard Psy-Q tools
- ❖ What's the catch?
  - – Only 2 MB memory
  - – No CD emulation

CD-R cutter software

- ❖ Reads CD data direct from emulator image

- ❖ Drives Sony CDW900 at double speed

- ❖ Simple command line program so there's nothing for you to get wrong.

- ❖ Other CD-R cutters supported

PsyWin debugger for Windows95

- ❖ Available now (email: support@snsys.com)
- ❖ Has almost all the major features of the DOS debugger
- ❖ (And many more including extensive project support)
- ❖ Supported by mailing list for automatic update info.
- ❖ Soon for Windows NT and Psy-Q PSX target box

Also available for Win95 & WinNT

❖ Native 32 bit builds of
  – GNU C and C++ compilers
  – ASPSX assembler
  – PSYLINK linker
  – PSYLIB librarian

Psy-Q for Silicon Graphics Host

- Developed with help of Silicon Studios for Silicon Graphics Workstations
- Port currently includes
  - Compilers/Assemblers
  - Linker/Librarian
  - X-Windows hosted debugger
- Uses same file formats as PC system
- Just copy files to target-box for CD emulation

Psy-Q PSX target box

- ❖ For use with Silicon Graphics or PC host
- ❖ Includes:-
  - – 486DX-2/80 Target box & Hard Drive
  - – On-the-fly CD image creation
  - – SCSI-2 communication software and hardware
- ❖ Accepts existing DTL-H2000 cards and CD emulator
- ❖ Development host PC can be any motherboard

Coming Sooner (or Later)

- ❖ Windows NT support
- ❖ Compilation server
- ❖ New Linker
- ❖ PowerMac Host Support
- ❖ Integrated development environment
- ❖ Windows hosted CD emulation tools
- ❖ Developer API for Windows'95

Any Questions?

- email:

Support@SNSys.com

Before things go wrong

- ❖ Get to know compiler output
- ❖ Look at C header files
- ❖ Look at what's in the libraries you use
- ❖ Generate a MAP file of your program and get to know the layout of your code.
- ❖ Knowing how it all works is the best way to cope with those really weird code problems
  - – "new PSYLINK makes my code 100 times slower"