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Conference

FireWire Overview

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Technology Manager

What Is FireWire

- A digital serial bus
- Fast: 50 MB/s (400 mbps)
- Scalable: 100 MB/s in 2000
- Easy, consumer-friendly
- IEEE 1394

FireWire Is Better

- Hot plug
- Isochronous
- Cable power
- No terminators or DIP switches
- Forward and backward compatible

FireWire Products

- Power Macintosh G3
- Over 4,000,000 DV camcorders
- Disk drives: VST, Yano, MacTell, La Cie
- Printers: Epson, Fuji Xerox, JVC
- Still cameras: Kodak, Phase One

More Products Soon

- Newer FireWire 2 Go PC Card
- mLAN: Yamaha, Roland, Kawai
- CD-RW, MO, DVD, Tape
- Scanners
- (Your Product Here)

Huge Adoption in CE

- PlayStation 2
- Replay TV
- DVD
- Set Top Boxes
- Digital TVs

FireWire Technology

Eric Anderson

FireWire Software Manager and Technical Lead

FireWire in Mac OS

- Apple hardware and software
- Software architecture summary
- Software features and roadmap
- Hardware roadmap

Demo

FireWire Hard Disk Drive

Power Macintosh G3

- Two FireWire ports in every box
- Supports up to 62 more devices
- 400 mbps (50 MB/s)
- Also 200 and 100 mbps
- Power: 15W total (18-24V)

Mac OS 8.6/QT 4.0

- FireWire 2.0
- Standard DV camera support
  - Final Cut Pro
  - Any QuickTime application
- Includes SBP-2 support
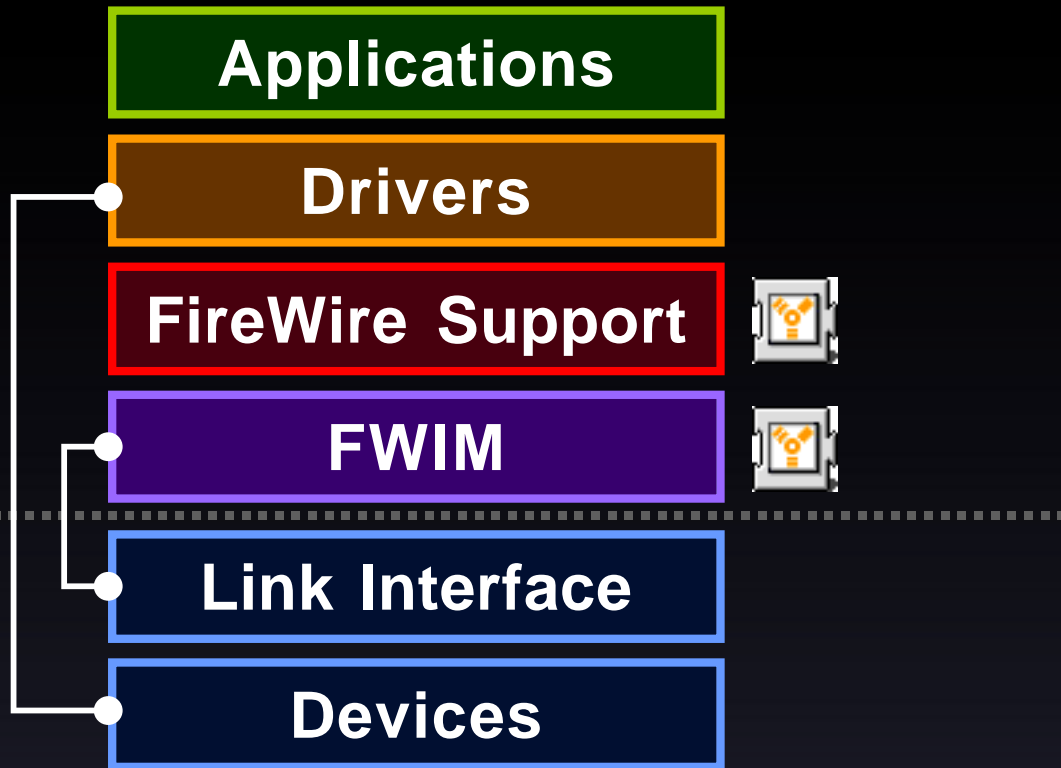 - SBP-2 drivers come with devices

Demo

DV camcorder

Software Architecture

FireWire 2.0 and 2.1

- FireWire 1.0 was mostly DV

- FireWire 2.0 adds SBP-2
    - Services for disk, printer, etc.
    - Not full device support

- FireWire 2.1 adds CardBus
    - And faster SBP-2 (up to 4x)

FireWire 3.0

- Later this year
- Boot from FireWire
- AV/C Expert Loader
- Advanced Power Management
- (Your feature here)

Mac OS X/Carbon

- FireWire is below Carbon
  - Applications don't call FireWire directly

- I/O Kit will support FireWire
  - Drivers will need modification
  - Sample code to be provided

Hardware Roadmap

- Soon: 1394 Open HCI
  - Higher performance
  - Many isochronous channels

- Cable power (except PowerBooks)
- 6-pin connectors only
- 800 mbps and beyond

FireWire Do's

- Write FireWire-savvy applications
- Use 400 mbps parts
- Use cable power (8-33V)
- Stick with the API and 1394 standards
- Use unique serial numbers ("GUID")
- Attend 1394 Developers Conference
  - June 2–4, San Jose

FireWire Don'ts

- Don't bypass Apple's API
- Don't replace Apple's FWIM
- Don't use the 4-pin connector
- Don't wait for USB 2.0

Sample Code

- SBP-2 disk driver
- YUV camera VDIG
- File transfer application
- SBP-2 skeleton app, library, and driver
- Being adapted for CodeWarrior

Resources

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FireWire SDK

- Sample code, API documentation
- Advance SDK will be on secure ftp site
  - Contact firewire@apple.com

- Public SDK for most recent release
  - 2.1 Coming soon

- New PowerMac G3 or older G3 with FireWire PCI card is the development platform

Developer Kitchens

- Typically Cupertino and Tokyo
- New service presentations
- Hands on code and debug

Mailing List

- Open to the public
- firewire@isg.apple.com
  - requests@isg.apple.com

  subject: subscribe firewire

- Private: firewire@apple.com

Design Guidelines

- Use two or more 6 pin connectors
- Take advantage of bus power
- Provide optional power for portables
- Make use of the multiple host topology
- Remember that people will do a hot plug/unplug
- HI guidelines for mass storage will go in the SDK

Opportunities

- FireWire to SCSI
- FireWire RAID
- Disk Sharing
- File Sharing
- IP over FireWire
- HAVi
- mLAN

Use Appropriate Logos

- Use the Mac logo

- Use the FireWire logo

Related Sessions

206: FireWire In-depth	Hall A2	
Developing FireWire hardware and software	**Wed., 1:00pm**	
119: I/O Kit Drivers in Mac OS X	Hall A1	
FireWire in Mac OS X	**Thur., 1:00pm**	
916: FireWire Feedback Forum	Hall J2	
Tell us what you think	**Thur., 2:30pm**	
203, 204: USB Intro / USB In-depth	Hall A2	
Two back-to-back sessions	**Wed., 2:30pm** **Wed., 4:00pm**	

FireWire Q&A

- Feedback Forum: Thur., 2:30 pm (J2)
- www.apple.com/firewire
- www.1394ta.org
- firewire@isg.apple.com

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