



1990 Worldwide Developers Conference



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A/UX Engineering
Project Leaders



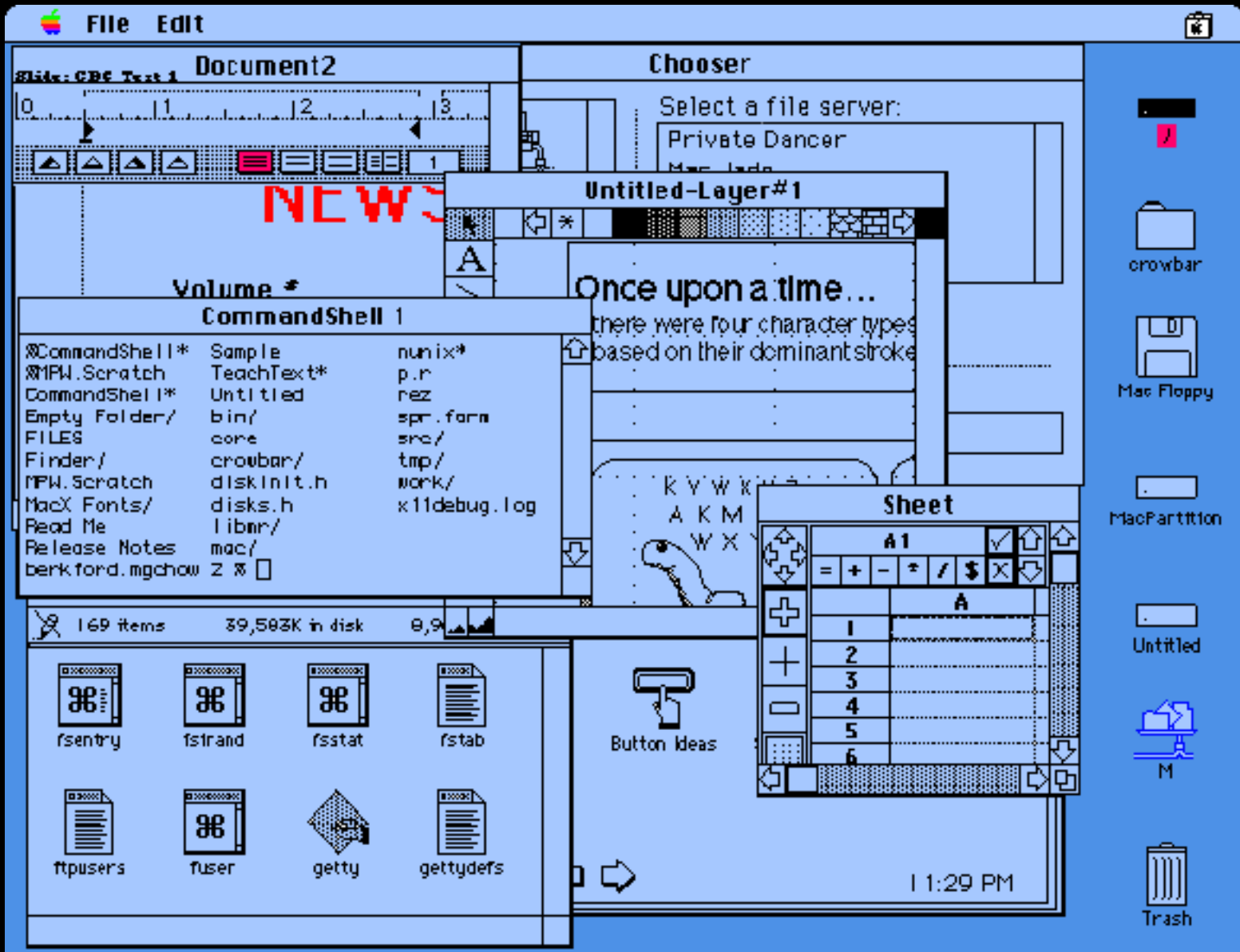
A/UX Technical Insights

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- A/UX Overview and MultiFinder
 - Mike Chow
- X Window System and Communications
 - Steve Peters
- A/UX File Manager and Compatibility
 - Winston Hendrickson

A/UX Overview

- Logging into A/UX
 - 24/32 Bit Finder, X, or Console
- Environment is Finder/MultiFinder
- Mix and Match of Applications
 - Mac, X, UNIX, on the same desktop
- 32-Bit Application Environment



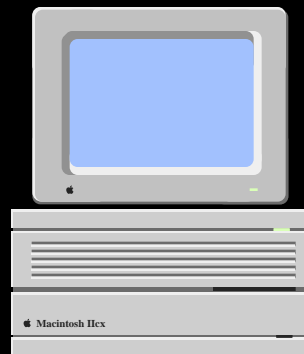
A/UX Overview

- Macintosh System Software
 - 6.0.5 Derived
 - Several 7.0 Features
 - 32-Bit QuickDraw
 - Sound, Serial Managers
 - INITs, CDEVs, RDEVs
- Personal or Global System Folders

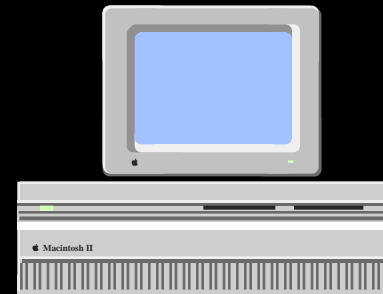
CPU's Supported by A/UX



SE/30



IIcx, IIci



II, IIx, IIfx

A/UX MultiFinder

- Newer than 6.0.X
- Single address space for applications
 - Uses UNIX Virtual Memory
- Cooperative Multitasking
 - Use WaitNextEvent()
- Extended for UNIX
 - Runs as a single UNIX process
 - UNIX scheduler is biased

Hybrid Applications

- UNIX programs with Mac User interface
- Attached to MultiFinder shared area
- Cooperative Multitasking
 - Be careful not to block
 - Support for using `select()`
- Enables launching from CommandShell

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MacX™—An X Server for Macintosh

- Fully conforming X implementation:
 - Supports all required X11 server standards
 - ICCCM compliant window management
- Integrated with the Macintosh desktop:
 - X clients comprise a MultiFinder layer
 - Clients get Macintosh window frames and controls (titlebar, grow and close boxes)
- A/UX compatible!

MacX in the A/UX Environment

- Interoperate with UNIX and Macintosh productivity applications
 - Supports text cut and paste to clipboard
- X clients can run on remote hosts connecting through TCP/IP *or*
- X clients can run on local CPU as separate A/UX processes
 - Double-click to launch local X clients

A/UX Technical Insights

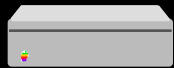
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The File Manager

- File Manager overview
- UNIX volume differences

File Manager Overview

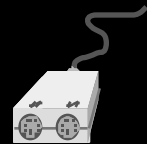
- A/UX 2.0 provides access to:



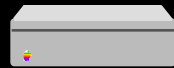
UNIX volumes



HFS volumes

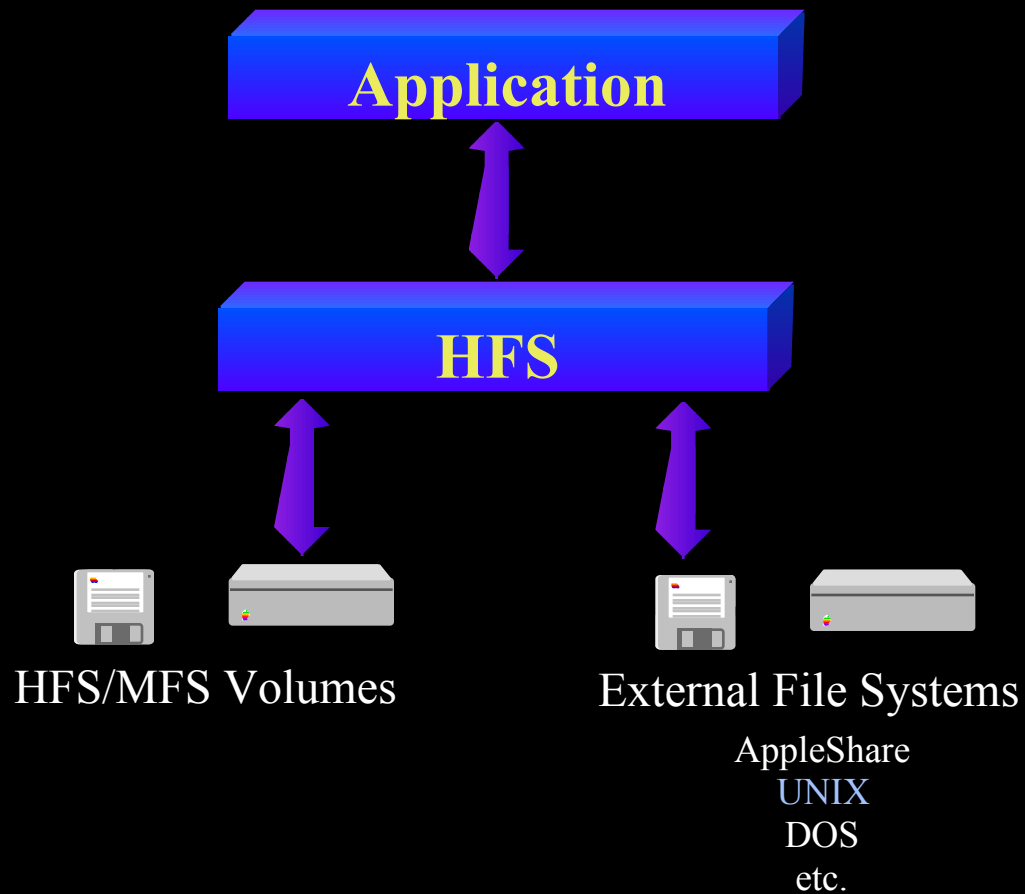


AppleShare volumes



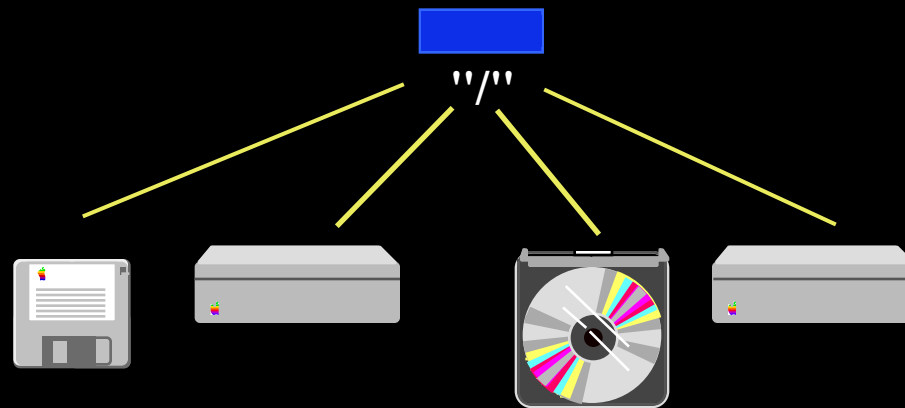
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File Manager Overview



UNIX Volume Differences

- All mounts joined into a single volume “/”
 - PBCatMove will fail across mounts
 - Produces a very deep hierarchy



UNIX Volume Differences

- UNIX file systems are *case sensitive*
 - JamesTKirk jamestkirk
- Not all file systems allow 31 character names
- ‘/’ is used as a pathname separator
 - “Font/DA Mover” = “Font:DA Mover”
 - ‘/’s translated to ‘_’s in some cases

UNIX Volume Differences

- “Pure” UNIX files lack HFS-specific info
 - Dir IDs
 - Finder Info (e.g. Type and Creator)
- Associated through an external database
 - File types synthesized from file contents
 - Dir IDs can change if mounts move

UNIX Volume Differences

- UNIX associates permissions with all files
 - Dir permissions mapped to AFP values
 - GetDirAccess supported
 - Type and Creator reflect unreadable files
- UNIX and Macintosh use different eol chars
 - Use PBSetCatInfo right after PBCreate

UNIX Volume Differences

- Do not directly access VCBs or FCBs
 - Use File Manager calls instead
- PBAllocate and PBAllocContig do nothing
 - Use PBSetEOF instead
- Volume mod time changes regularly
 - Some apps key off this to update displays
 - UNIX activity may modify file system

UNIX Volume Differences

- Desktop items are handled specially
 - Item is never really moved into the root
 - Must set fOnDesk before PBCatMove

Compatibility Issues

- Do not access hardware directly
 - The kernel arbitrates all access to hardware
 - Use the Managers instead
 - Many existing Mac OS drivers won't work
- Some Managers are not supported
 - ADB Manager
 - SCSI Manager

Compatibility Issues

- Don't depend on *how* things work
 - Event Manager
 - Memory Manager (roving allocation)

Compatibility Issues (*cont.*)

- Some system files are *A/UX specific*
 - System
 - Finder
 - Patches
 - MacTCP
 - AppleShare



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