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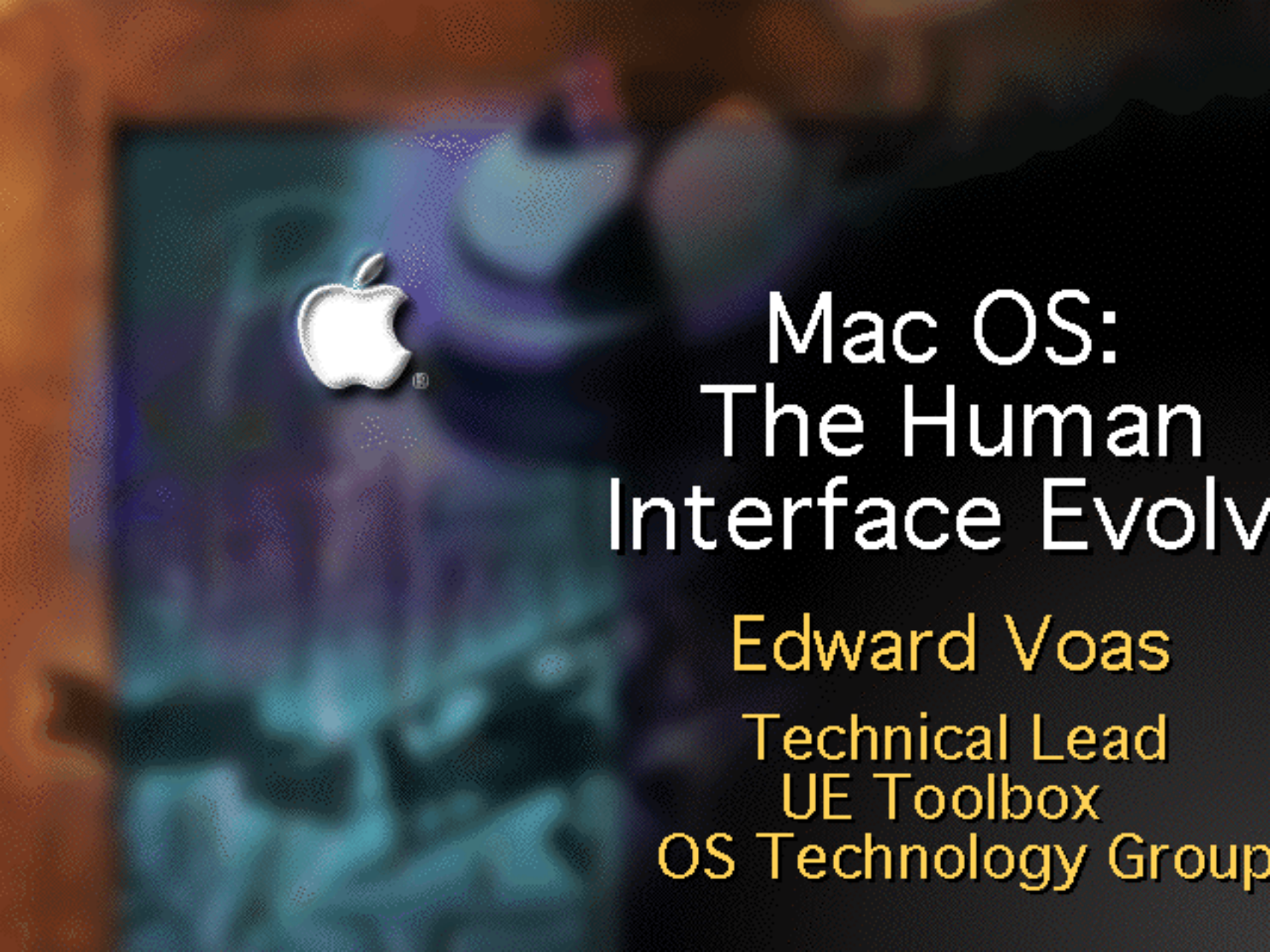
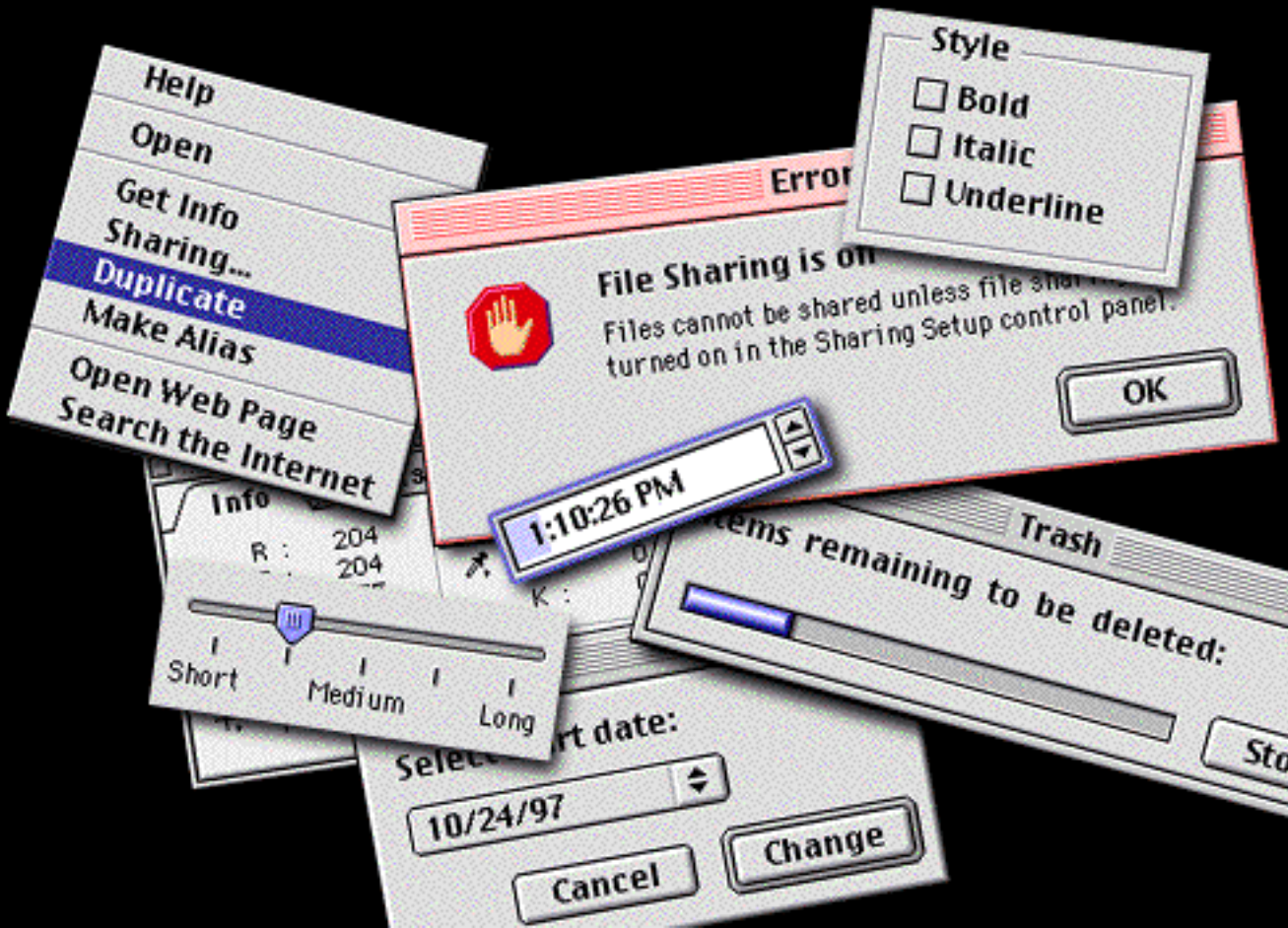
Mac OS
User Experienc
Enhancements


Mac OS:
The Human
Interface Evolv
Edward Voas
Technical Lead
UE Toolbox
OS Technology Group

Mac OS 8 User Experience



What's New and Different

Appearance Manager	Patterns and colors
Control Manager	New controls, embedding
Dialog Manager	Improved dialog/alert ha
Window Manager	Collapsing, new zoom va
Menu Manager	Contextual menus, modifi

Features and Benefits

- Features
  - New look, many new controls
  - More powerful Window, Control, Dialo and Menu Managers
- Benefits
  - Enables faster application developme (you write less code)
  - Improves consistency of interface
  - Makes your application theme-switch

The Pieces

- Appearance extension
  - Contains new controls
  - Implements new APIs
- Appearance control panel
  - Allows user to customize font, accent color
  - Window collapsing options
  - System-wide appearance

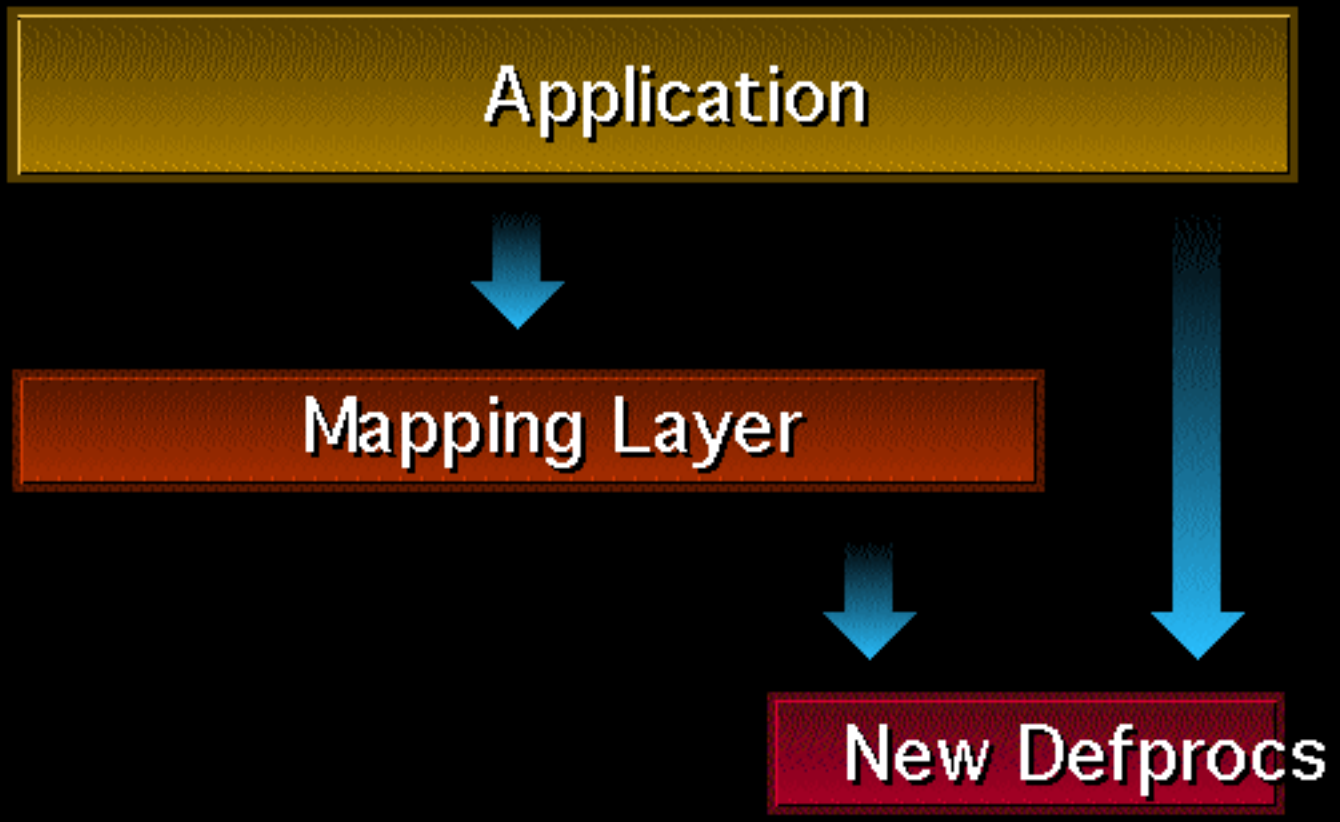
Appearance Manager

- Register/UnregisterAppearanceClien
- Colors and patterns
  - You can get the right colors and pat match the current theme
- Primitives
  - Placard, Window Header, Separators
- Future versions will have more
  - Button and menu backgrounds, etc.

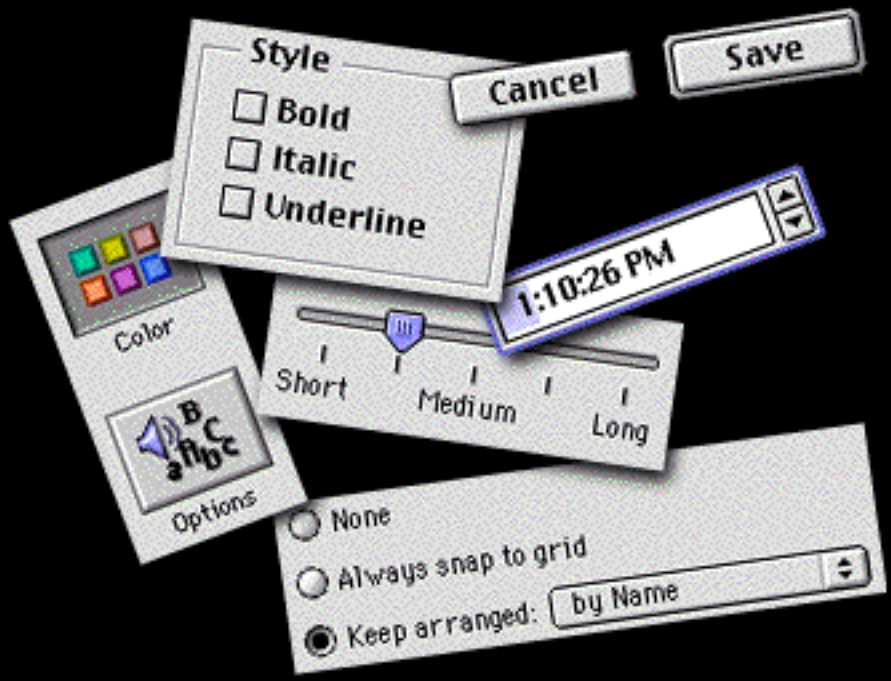
Registering for Success

- RegisterAppearanceClient tells Appearance to map any calls to cla defprocs to the new defprocs
- Allows for quick migration
- Adopting new defprocs directly is b the long run
  - Allows access to new features
  - Classic defprocs are deprecated

DefProc Mapping



Mac OS 8 Control Manager



Mac OS 8 Control Manager

- New CDEF messages
- Control embedding
- Keyboard focus
- Abstract mechanism to get/set cor
- Enhanced font handling
- Richer API set

New CDEF Messages

- Getting features
- Idle
- Focus/keyboard events
- Self-tracking
- Backgrounds
- Data access
- Getting optimal size
- Activation

Control Embedding

- Controls can be placed inside of one another
  - Enforces draw order, hit testing
- Allows you to act on controls as a g
- Root control contains all controls for a window
- Embedding only exists when reques
  - CreateRootControl
- Can do smart, automatic embeddin

Keyboard Focus

- Focus can be advanced, reversed, s gotten, or cleared
- Works only with controls
- Only available when using embeddin
  - Doing it manually isn't very fun—tak high road
- Future systems will allow 'generic f
  - Plan ahead by ordering your controls correctly

Getting/Setting Control Dat

- Exposing implementation is undesirable
- Now there's a generic way to get d
  - GetControlData/SetControlData
  - Implemented via new control messag
  - Control advertises support of data access
  - Control defines 'tags' for its data

Better Font Control

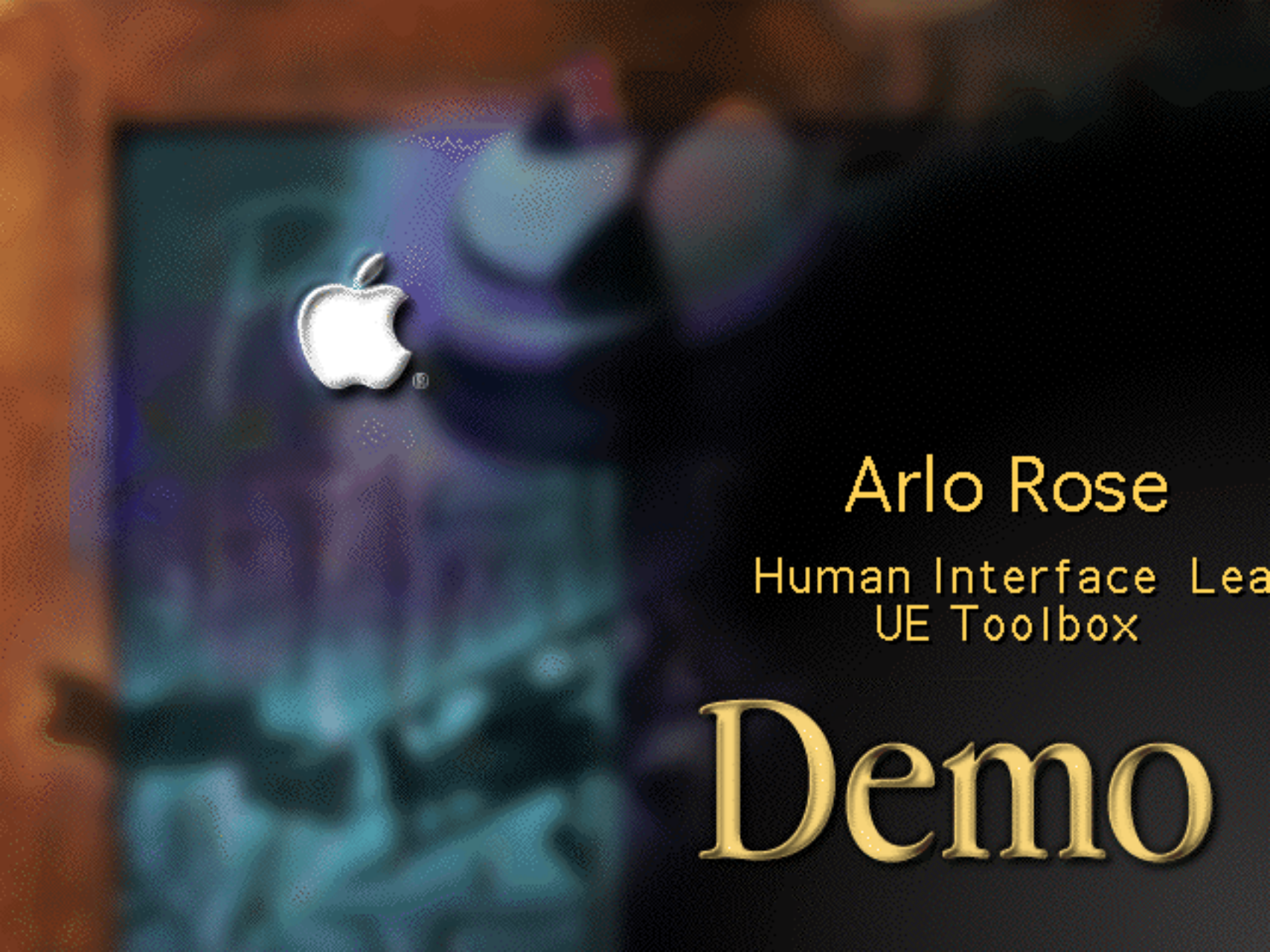
- Fonts unchained: any font for any control!
- Two ways to set fonts
  - SetControlFontStyle
  - New ‘dftb’ resource for dialogs
- New ‘meta-font’ numbers

Richer Control Manager API

- Activate/DeactivateControl
- SetControlVisibility
- DrawControlInCurrentPort
- Live feedback

New Controls

- Bevel Buttons
- Chasing Arrows
- Clock
- Disclosure Triangles
- Edit Text
- Group Box
- Icon control
- Image Well
- List Box
- Little Arrows
- Little Arrows
- Picture control
- Placard, Jean-Luc
- Pop-up Arrow
- Progress Indicator
- Slider
- Static Text
- Tabs
- User Pane
- Window Header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Mac OS 8 Dialog Manager

Mac OS 8 Dialog Manager

- New functionality
  - Theme backgrounds, auto-embeddin
    movable modal handling
- You enable things via a new bitfield
  - NewFeaturesDialog
  - New ‘dlgx’/‘alrx’ resources
  - Good combination of features is ther
    backgrounds, theme controls,
    and embedding
  - Movable alerts: use filter proc plus th
    kAlertFlagsAlertIsMovable flag

Mac OS 8 Dialog Manager

- Weirdess, weirdness go away!
- No more 3 pixel thick border when adopting directly

Mac OS 8 Dialog Manager

- New APIs
  - StandardAlert
  - AutoSizeDialog
  - Move/SizeDialogItem
  - GetDialogItemAsControl

Dialogs and Embedding

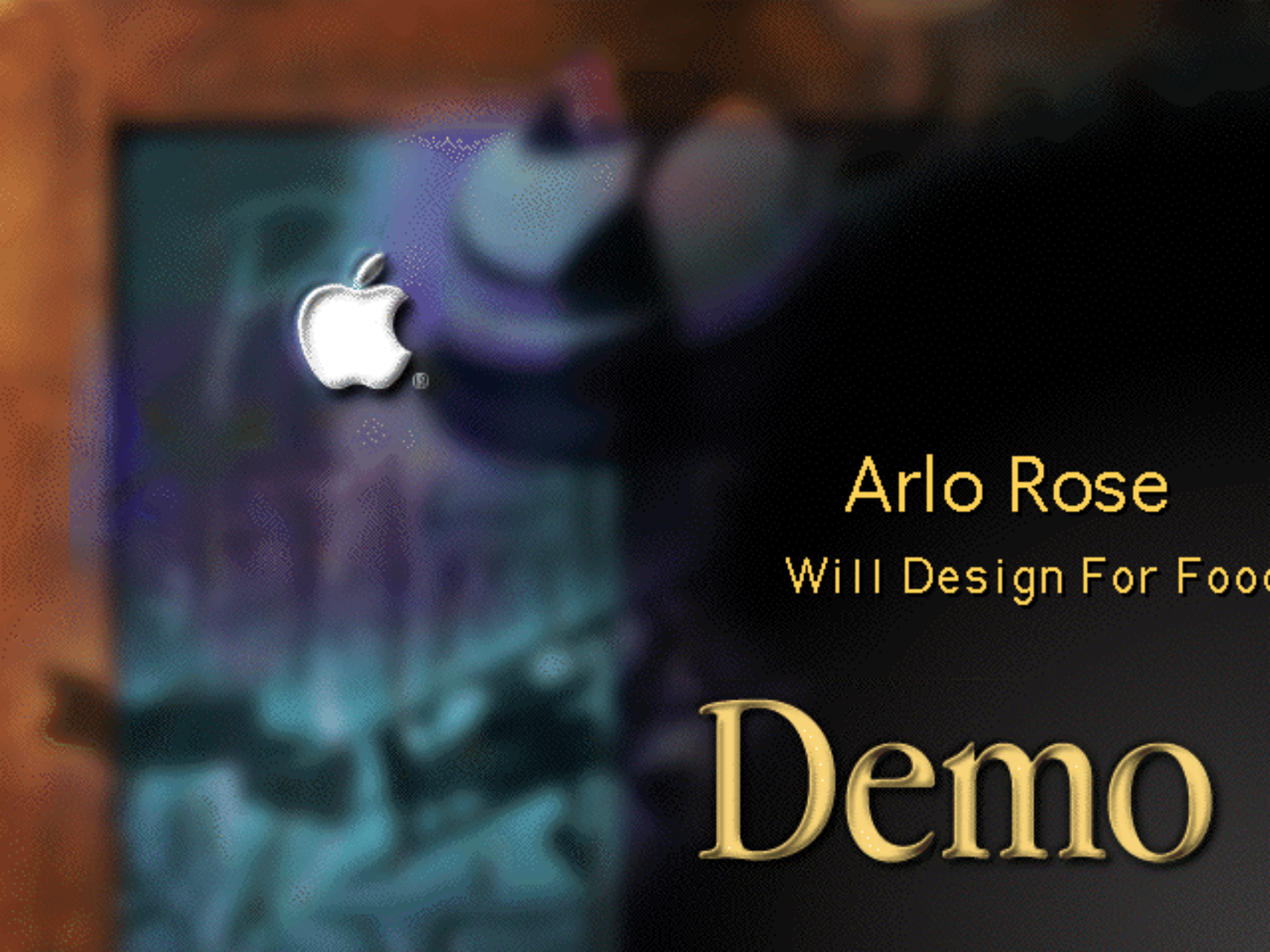
- When enabled, all items become co
- Use GetDialogItemAsControl
  - GetDialogItem is not affected
- SetDialogItem has restrictions
  - You cannot change the type or hand item (except user items)
- SetDialogItemText won't update sc
  - You'll need to call DrawOneControl

Mac OS 8 Window Manager

- Defproc Mitosis
  - One for document windows, one for dialogs
  - Utility window also split between top side title bar looks
- Window Collapsing
  - Collapsing API is public!
- GetWindowRegion
- GetWindowFeatures

Mac OS 8 Window Manager

- Variant codes are now different
  - Old variants work through mapping la
  - For new windows, use GetWindowFea
- More zoom variants: horizontal and vertical
  - Available only through direct adoptio
- Sizes boxes are part of the structur
- Utility windows have smaller size bo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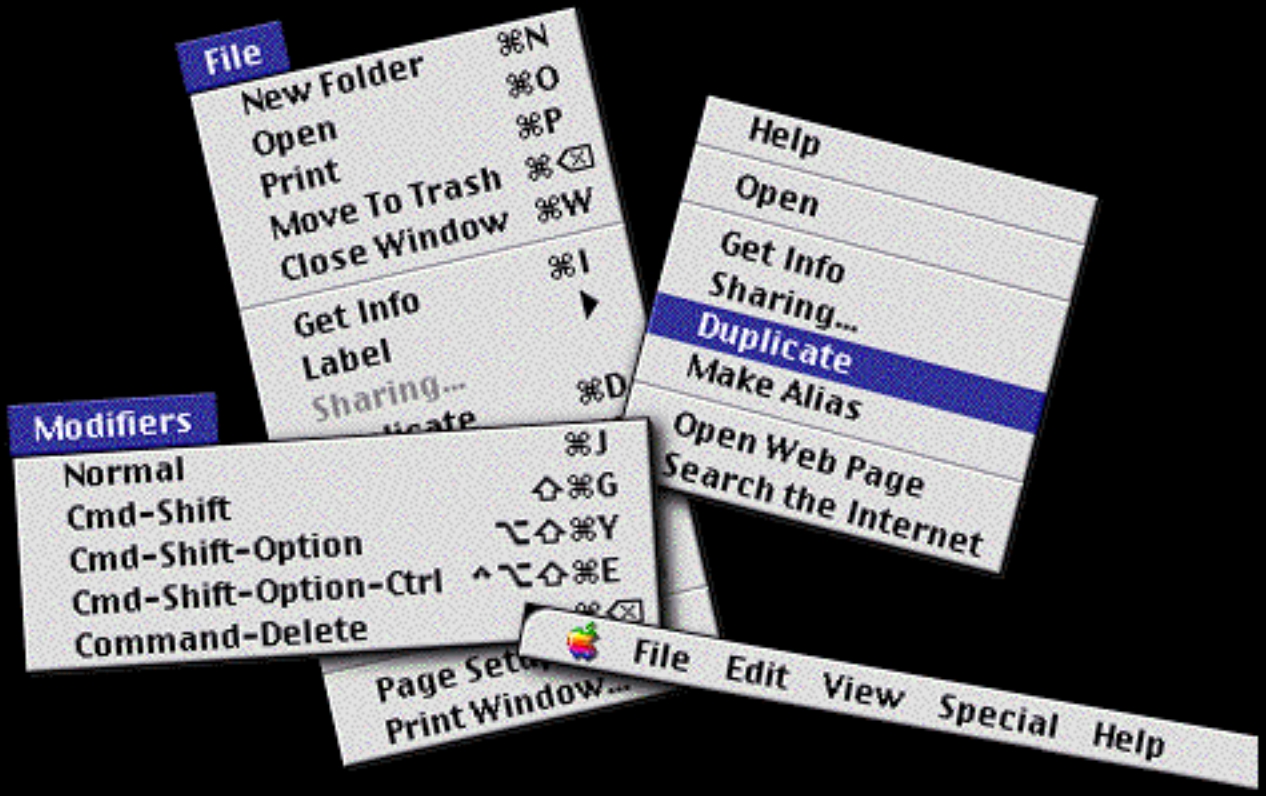
Mac OS 8 Menu Manager



Mac OS 8 Menu Manager

- New getters/setters
  - Extended modifiers, command IDs, e
- New ‘xmnu’ resource
- MenuEvent API
  - Use in place of MenuKey to determin menu item was selected
  - Don’t look for the command key
- Sticky Menus

Mac OS 8 Menu Manager

- Programmatic creation is a little tric
  - Need to stuff the menuProc field wit right MDEF

Contextual Menu Manager

- Allows quick access to frequently used commands
- Plug-ins can enhance your applicati Contextual Menu content
- Help and Plug-in items added for yo

Contextual Menu Manager

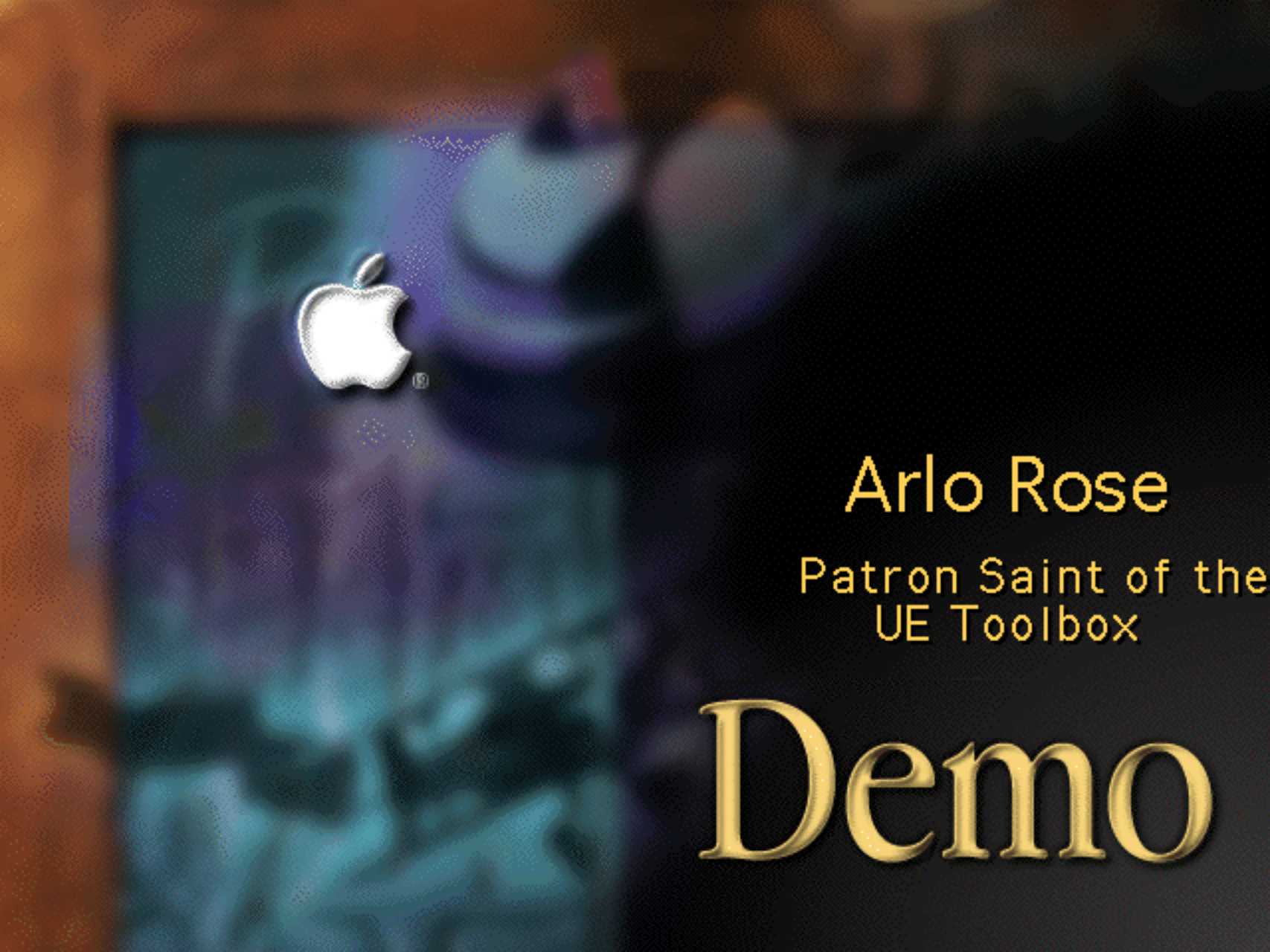
Source Code changes

- Toolbox initialization:
  - InitContextualMenus();
- Event loop:
  - IsShowContextualMenuClick(&myEve
  - Provide visual feedback
  - ContextualMenuSelect(…);
  - Handle the choice

Contextual Menu Manager

Support Plug-ins

- Describe the click location with an AEDesc:
  - Raw ‘TEXT’, ‘PICT’, etc.
  - Object Specifier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Adoption Checklist

- Call RegisterAppearanceClient
- Use new defproc numbers
- Use the new ‘dlgx’ and ‘alrx’ resour
  make dialogs savvy
- Replace user items with new contro
  when appropriate
- Enable embedding in dialogs
- Make your alerts movable
- Support Contextual Menus

Some Helpful Metric Rules

- Default rings can be outset a maxir
  4 pixels
- Focus rings can be outset a maxim
  pixels
- Editable text, group box, and list b
  frames are a maximum of 2 pixels t
- Progress indicator borders can be c
  maximum of 2 pixels

Metric Rules (cont.)

- Control metrics are the same acros
  themes (with the exception of bor
- Window structure metrics CAN cha
- Use GetMBarHeight: with themes, t
  menu bar height can vary, but will
  be more than 24 pixels

Make It So

- Read the article in MacTech
- Go to the Compatibility Lab!
- Check out Session 103 to learn abo
  CMM Plug-ins

Q&A

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