To Advance through Presentation
Use Page Up and Page Down Keys

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Conference

HLTB: Carbon Changes and Additions

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Recovering Demo Boy

Basic Changes

- Opacity
- Low Memory Globals are gone
- No DefProcs in Resources
- API Cleanup/Tweaks
- New Functionality

Opacity

- Structures aren't exported

- Use Accessor APIs

- Don't dereference them!
    - They are NOT Handles or Ptrs

Properties

- "RefCons on steroids"—N. Ganatra

- Associate arbitrary data with Windows, Controls, and Menus

- Supported back to 8.1

International

- CFString-based APIs
- Multi-Lingual Text Edit support
- Huttese and Wookie fully supported in the 16-bit Unicode space

Demo

Ed Voas

Window Manager

- Buffering on Mac OS X
- Don't touch the visRgn
- Window Layering is always on
- Changeable Window Attributes
- Document Window Model on Mac OS X

Menu Manager

- Automatic Apple Menu support
- Low Memory Hooks are gone
- GetMenu() always gives a fresh MenuRef
- Use DisposeMenu() instead of ReleaseResource()
- MBDFs not supported

Control Embedding

- Always on for Mac OS X

- Not automatically turned on under CarbonLib for 8.x

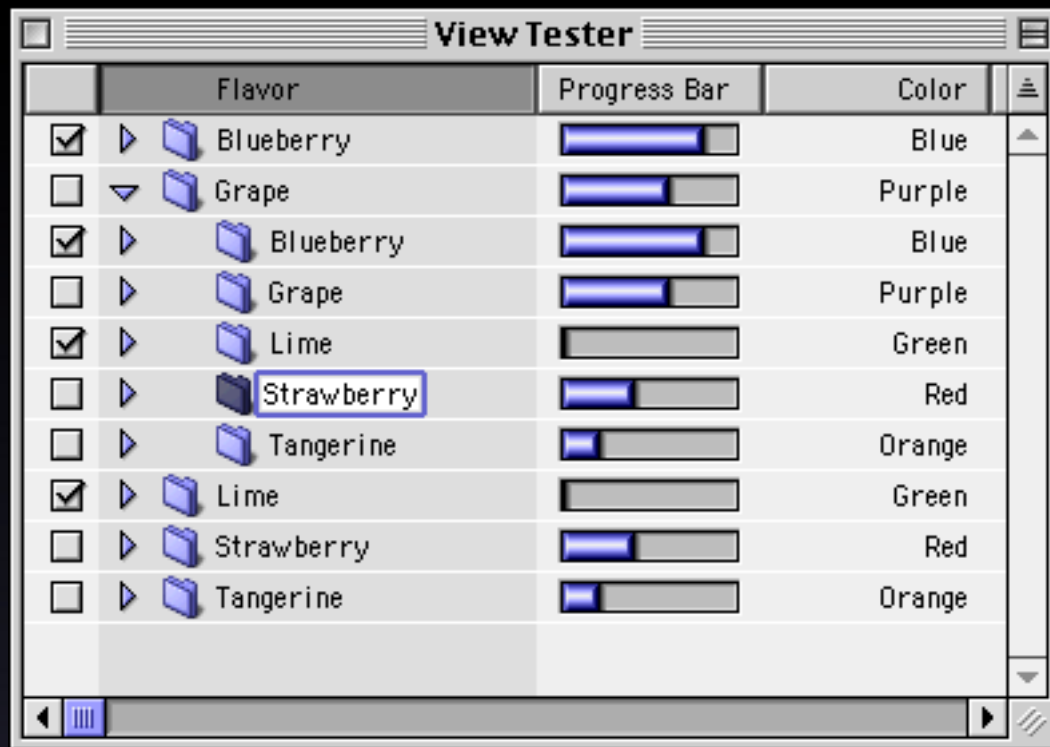- Turn it on manually on 8.x for your Windows

Control Manager

- Specific creation APIs for system controls
- Control IDs
- Drag & Drop Support
- Cursor Setting
- Persistence

Data Browser Control

Data Browser Features

- Header Buttons
- Multiple Columns
- Hierarchical/Outline Support
- Variable Row Heights
- Text, Icons, Checkboxes, Progress Bars
- Customizable Content

Demo

Jim Rodden

Custom DefProcs

- Replaces 'CDEF', 'WDEF', 'MDEF', and 'LDEF' code resources

- ProcPtr based

- Code lives in your application or shared library

How This Affects You

- DefProc code stays the same (mostly)
- Move it into your application
- Call a new creation API…

CreateCustomControl()

```
OSStatus CreateCustomControl(
        WindowRef              owningWindow,
        const Rect *           controlBounds,
        const ControlDefSpec   defSpec,
        Collection             initData,
        ControlRef *           outControl );
```

ControlDefSpec

```
enum
{
    kControlDefProcPtr    =    0
};
typedef UInt32 ControlDefType;

struct ControlDefSpec
{
    ControlDefType        defType;
    union
    {
        ControlDefUPP    defProc;
    } u;
};
```

Example

```
SInt32 MyControlDef( … )
{
    SInt32   result = 0;

    switch ( message )
    {
        … // do real work here
    }

    return result;
}
```

Example

```
defSpec.defType = kControlDefProcPtr;
defSpec.u.defProc = NewControlDefUPP( MyControlDef
    );

error = CreateCustomControl(myWindow,
                            &myBounds,
                            &defSpec,
                            myInitData,
                            &myControlRef );
```

Register Your DefProc

- Associate a proc ID with a DefSpec
- Leverage existing 'CNTL', 'WIND', and 'MENU' resources
- Allows old creation APIs to keep working:
  - NewControl()
  - NewCWindow()
  - LNew()

Window DefProcs

- Variant codes are meaningless
- kWindowMsgGetRegion message replaces wCalcRgns

Menu DefProcs

- Respond to kMenuThemeSavvyMsg
- Find and Hilite messages replace mChooseMsg
- Init and Dispose messages
- MenuTrackingData structure replaces Low Mems

Control DefProcs

- initCntl differences:
    - Must return OSStatus
    - Receives a Collection containing initialization data
- Variant codes are meaningless

Sending the Collection

- Build one and pass it to CreateCustomControl()

- Register a Conversion Routine:
  - Translates proc ID, value, min, max, etc. into Collection data
  - Allows NewControl() to call your DefProc

User Pane Control

- Still supported
- Will not take advantage of new Control Manager features
- Use Custom Control DefProcs instead

DITL Manipulation

- No direct access to the DITL Handle

- New APIs for addition/removal of individual dialog items:

  - RemoveDialogItem()

  - InsertDialogItem()

Scrap Manager

- New APIs

- Promised Flavors ala Drag Manager

- We're pedaling as fast as we can:
    - Streaming
    - Multiple Scraps

Help Manager

- New Help Implementation
- Object Oriented
- Compatibility APIs for your Balloon resources

Event Manager

- Update Events are only sent once
- WaitNextEvent() always sleeps
- OSEventAvail() and jGNE Filters gone
- New Event Model

Meat and Cheese

- Opacity and Accessors
- Control Embedding
- Window Layering/Floating Windows
- New Scrap APIs
- New Help APIs
- DefProc changes

Things You Can Do

- Start using Accessors + PreCarbon.o

- Turn on Control Embedding and Window Layering

- Give us lots of feedback!
  - toolbox@apple.com
  - Feedback session later today

Roadmap

HLTB: **The Carbon Event** **Model**	Hall 2 **Fri., 1:00pm**
High Level Toolbox **Feedback Forum**	Hall A2 **Fri., 4:00pm**

Q&A

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