

The background features a dark, textured surface with a glowing blue and purple sphere in the center. A white Apple logo is positioned at the top of the sphere. The text "Worldwide Developers Conference" is overlaid on the image. "Worldwide" and "Conference" are in a gold, serif font, while "Developers" is in a white, serif font enclosed in a white rectangular box. The overall aesthetic is futuristic and tech-oriented.

Worldwide

Developers

Conference



MacApp

The Mother of All Frameworks

Michael D. Rossetti

Partisan

Session Description

What we will cover in this session:

- **What you probably want to hear about:**
 - MacApp in the Rhapsody world
 - MacApp in the Windows world
- **We're going to keep you in suspense**
- **First, what's been going on**
- **And a brief introduction to MacApp**



Our Guiding Light

Mission Statement

- To promote the development of compelling Macintosh software which takes advantage of all of the great Macintosh OS and Toolbox technologies



Goals

Provide an application framework which:

- **Lowers your learning curve**
- **Improves your time-to-market**
- **Prediscovers any “difficulties,”**
- **Increases your market potential**



Objectives

Brief Summary of Objectives

- Support all important Macintosh OS and Toolbox technologies
- Incorporate modern C++ language features and object design techniques
- Support industry standard technologies
- Provide migration while retaining the benefits of “Macintosh *first*”
- Support a wide variety of development environments



MacApp: A Brief Introduction

Software You Don't Have to Write

- Object-oriented application framework
- We write the common core code
- You just write the value-add stuff



MacApp: A Brief Introduction

Mature

- Introduced in 1985
- Nurtured by
 - Skilled Apple engineers
 - Dedicated development community
- Pioneered many *patterns*
- Grew through Object Pascal to C++
- Maturing along with modern C++



MacApp: A Brief Introduction

Comprised of many useful components

- **User interface**
 - Windows
 - Menu
 - Controls, &c.
- **Underlying event handling**
 - Mouse & key events
 - Documents
 - Commands, &c.



MacApp: A Brief Introduction

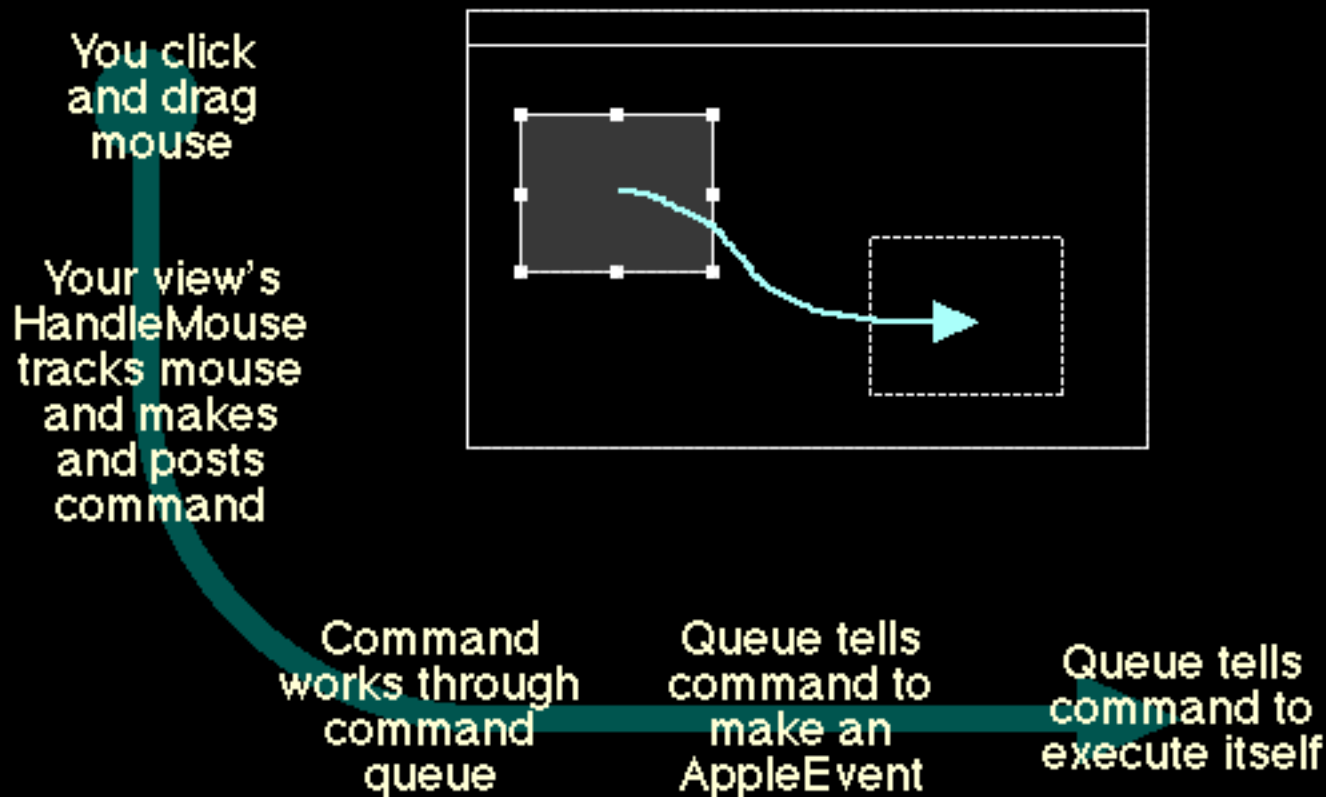
Stratification of responsibility

- **Model/View/Controller**
- **Commands**
 - Scriptability/Recordability/Attachability
 - Command deferral
 - Undoability



MacApp: A Brief Introduction

Typical command dispatch



This Year's Work

Accomplished since WWDC 1996

- **MacApp 3.3.3**
- **MacApp Release 12**
- **MacApp Release 13 & Apple Class Suites (ACS)**
- **New staff**



Report Card

Features Promised at 1996 WWDC

- + OS, Memory Management
- Copland Compatibility
- + Modularization, C++ Mixin and M. I.
- + OpenDoc/ALOE Support
- + Performance, Iterator Cleanup
- + Printing, GX Basic
- + Tool, MakeNewProjectFromTemplate
- + Tool, Library Build Tool
- + View, Grid Views, > 32K, Phase 1
- + View, Grid Views, > 32K, Phase 2



Report Card

Features Promised at 1996 WWDC (cont.)

- + View, QuickTime
- + View, QuickDraw 3D
- + Multiple Undo & Redo
- New Logo and Icon
- + Modularization, Removal of TObject, Phases 1
- + Modularization, Removal of TObject, Phases 2
- + Modularization, View Breakdown, Phases 1
- + Modularization, View Breakdown, Phases 2
- + Tool, View Editor, Improved
- Toolbox, AppleGuide Support



Report Card

Features Promised at 1996 WWDC (cont.)

- Toolbox, Drag & Drop, Transparent Dragging
- + Toolbox, Text to Speech
- + View, More/Better Standard
- + View, Sizing Behaviors



Report Card

Future features wanted but not planned

- + C++: Native Exception Handling
- + C++: Better Encapsulation
- Copland, Essential Feature Usage
- Copland, Full Feature Usage
- Modularization, Use of ODF Libraries
- + Networking & Internet Classes
- + OS, Threading
- Toolbox, Inter-application Communication Support
- View, QuickTime VR
- Text Edit, New Text Engine



Report Card

So How'd We Do?

- + 20 out of 24 promised
- + 4 out of 10 optionals
- + Plus we did a lot of things not even thought about at the time



MacApp Release 13

What we've been up to with MacApp

- Features
- Tools
- Supported development environments
- Windows -> Rhapsody



Current Work

Let's review new developments

- **Modularization of MacApp**
 - Resulting in ACS and a new, svelte MacApp
- **Support for appearance manager**
 - Licensed Gray Council
 - Transitioned to platinum appearance
- **Tools**
 - Apple now owns Ad Lib
 - And we're doing things with it



Modularization

Apple Class Suites

- ALOE
- Appearance
- containers
- core
- files
- imaging
- Network
- Patterns
- Streams
- text
- TextEditor
- Threads
- TidyHeap
- toolbox



ACS — Apple Class Suites

Quite a bit has moved into ACS

- You pick and choose
- Can even use without MacApp
- Can even use with PowerPlant
- Eases multi-platform work
 - Encourages abstractions
 - High-level nature doesn't hurt either



Still a Lot of Work to Do

Multi-platform

- **International**
- **ACS Extensions**
- **High-level Networking Protocols**
- **Multimedia Improvements**
- **Text Engine Refit**
- **More Tools**
- **More Views**



ACS Highlights

Here's some detail

- **Networking**
- **Threading**
- **Appearance Manager**





Networking Suite

Mike Fullerton

ACS's Networking Suite

Impress your co-workers with little effort

- **Designed for networking newbies**
- **Designed for networking gurus**
- **Abstracted API**
- **Flexible object-oriented subsystem**



ACS's Networking Suite

For simple tasks



- Simple API inspired by Java
- Example: `CTCPSocket_AC`
- Blocking, synchronous calls
- Thread savvy



ACS's Networking Suite

For complex tasks



- Asynchronous API
- Polymorphic network abstractions
- Manage multiple connections or sessions simultaneously
- Helper classes for managing single or multiple connections or sessions
- Queueable net transactions



ACS's Networking Suite

Today: Internet aware

- Internet DNR services
- TCP connections
- OpenTransport/MacTCP





Webinator
Demo

ACS's TidyHeap

Diagnostic tool

- Suite of C++ classes and operators
- Tracks and verifies memory blocks
- Reports undeleted allocations
- Flexible and extensible





MacApp's Threading and Appearance Manager Support

Brian Arnold

Appearance Manager

Platinum Appearance

- ACS appearance classes
- New MacApp views
- Ad Lib templates





Appearance
Demo

ACS's Threading Suite

Overview

- **Multitasking within an application**
- **Improved responsiveness**
- **Synchronization of shared resources**



ACS's Threading Suite

Quick and easy threaded applications

- **Simplified CommonPoint threads**
- **CThread base class**
- **Convenience classes**
 - CThreadRunner
 - CWhileSynchronized and CMonitorLock
- **Platform agnostic**
- **Flexible object-oriented subsystem**
- **Thread Manager, MP, Win32 support**





FracApp
Demo

ACS's Threading Suite

Threads, MacApp and the Future

- **Use threads with any framework**
 - On any platform
- **Threaded idle and reactor patterns**
- **Threaded MacApp event handling**
- **Rhapsody thread support**



Multi-Platform MacApp

What you've been waiting for

- **Windows then Rhapsody**
 - “Leg up” with Windows
 - Leveraging a compatibility layer
- **Built ACS DLL and MacApp DLL**
- **Minimal changes to developer code**
 - Changes being made in MacApp instead
- **Rhapsody when environment available**



Keep In Touch

Best lines of support

- **Support and sympathy:**
 - `comp.sys.mac.oop.macapp3`
- **Bugs and enhancement requests:**
 - `mabugs@devtools.apple.com`
- **Latest MacApp and tools:**
 - `http://devtools.apple.com/macapp`
- **Developer database registration:**
 - `mafriend@devtools.apple.com`





Brian Arnold
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Steven Friedrich
Mike Fullerton
Gary Little
Shaowei Mao
Mike Rossetti

Q&A

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