Welcome

To Advance through Presentation
Use Page Up and Page Down Keys

606 Directory Svcs/NetInfo

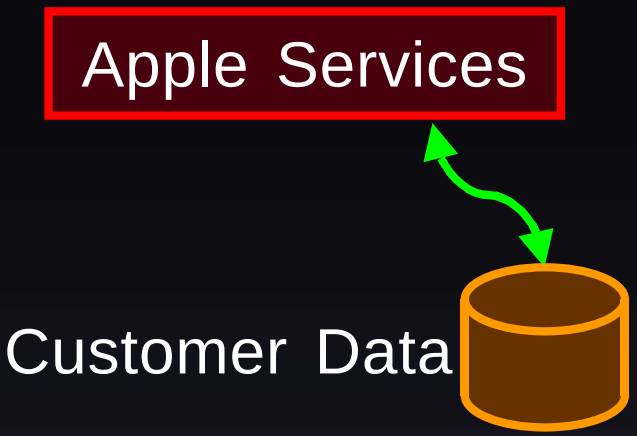
David M. O'Rourke
Apple Server Software

Today's Agenda

- Directory Service API Origins and Future
- List Apple Software that Will Use the Directory Access APIs
- What Directory Access Plug-ins Will Apple Provide?
- Discuss the Details and Model of the Directory Access API
- Q&A

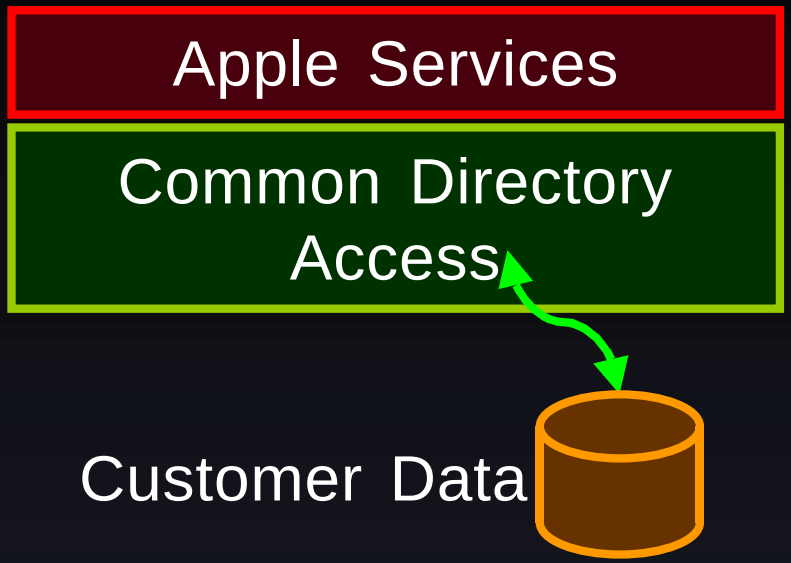
The Concept

- Apple customers should be able to configure Apple software to use the customer's directory service of choice

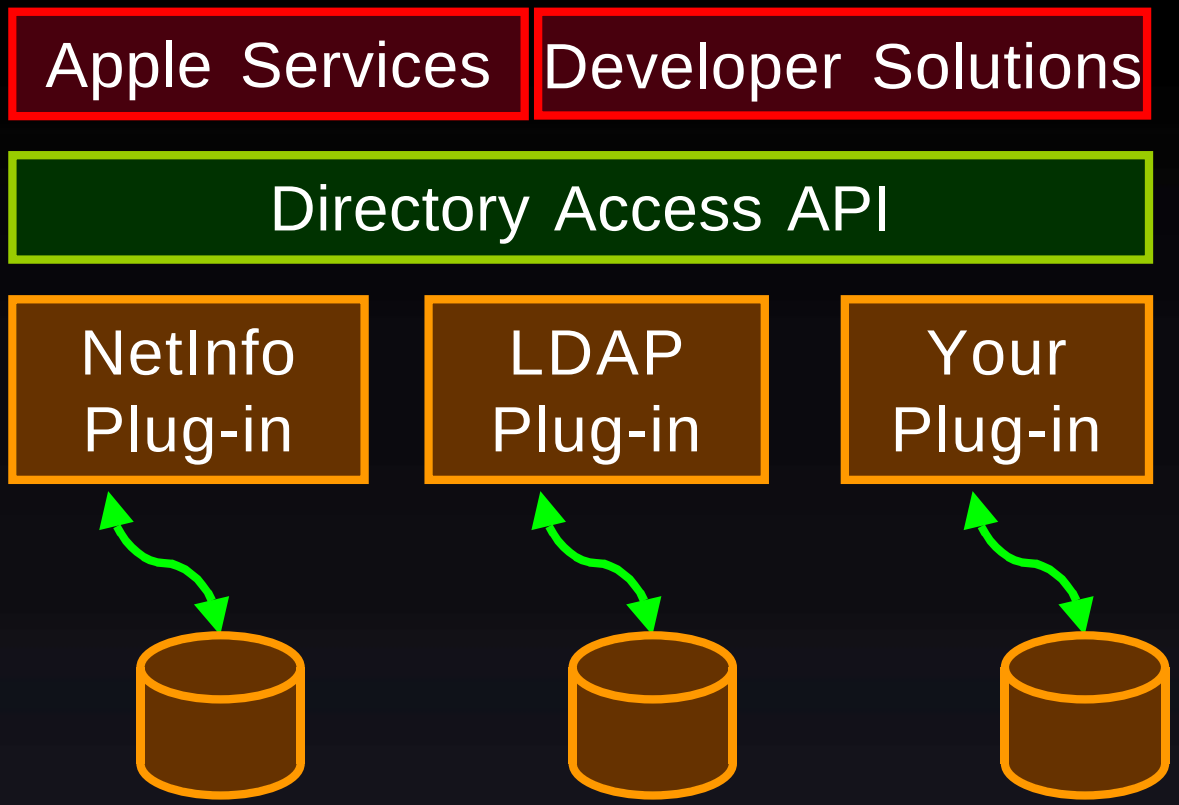


The Idea

- Apple's future Mac OS and Mac OS X software products will be based on a common Directory Access architecture



The Architecture



The Plumbing

Your Plug-in

Directory Access

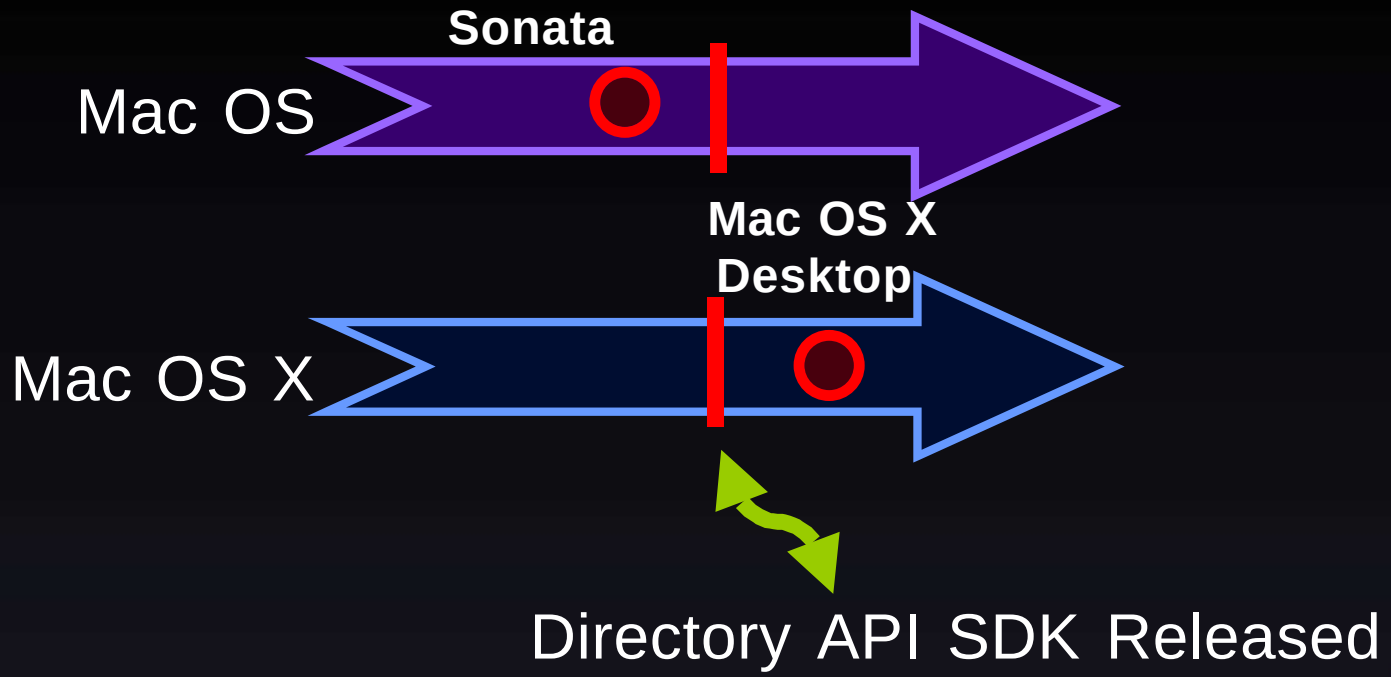
Data Mapping to Documented Standards

Authentication Support

The Plan

- Directory Access API will be a part of all future Apple software platforms
- Apple will initially deliver SDKs for 2 APIs
    - Directory Access Client API
    - Directory Access Plug-in API
- SDKs will eventually become part of the standard System install

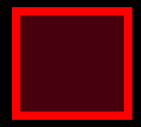
The Roadmap


Sonata
Mac OS
Mac OS X
Desktop
Mac OS X
Directory API SDK Released

API Summary

- Full support for Read/Write/Discovery operations
- API offers access to custom authentication methods
- API allows capabilities discovery so that clients can adapt to dissimilar systems
- Directory Client API access via Carbon for Mac OS and Mac OS X

Opportunities . . . $$$

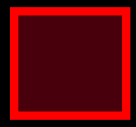


- Directory Enabled Client Software
  - Directory Enable your product to co-exist and leverage other Directory Enabled software
  - Provide alternatives or enhancements to Apple provided software
  - Add value by leveraging the standard Directory data

Opportunities . . . $$$

- Directory plug-ins that provide access to specific Directory Systems:
  - X.500, NDS, Windows NT . . .
  - Provide the enabling technology for Directory Enabled clients to use an existing customer directory system

Apple Adoption



- Apple's own Server and Desktop software (AFP, HTTP, DNS, Boot-p, DHCP, QTSS, SMTP, POP, IMAP…)
  - Administration for these products will be using this API to configure services
- 3rd party enhancements or replacements of services can leverage Apple's directory use via these APIs

Apple Plug-ins

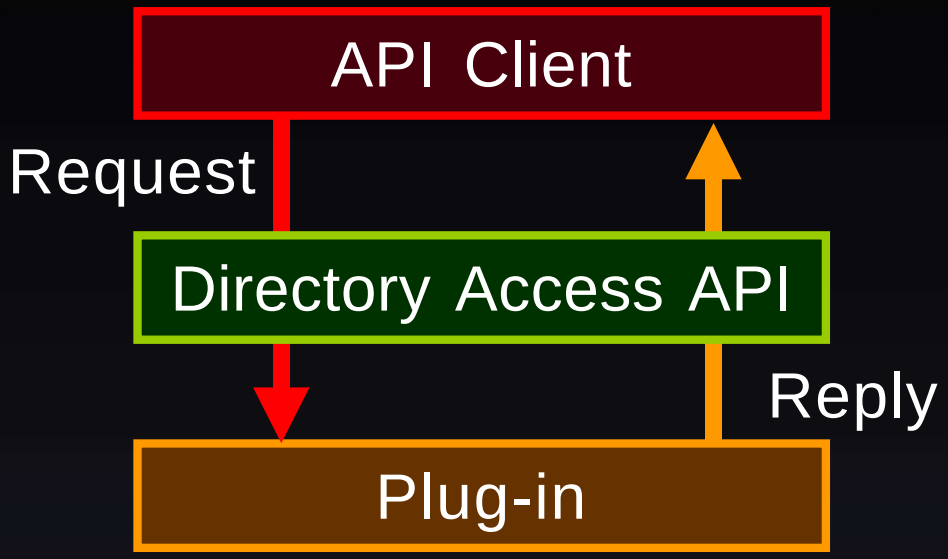
- Apple is planning to deliver three basic access plug-ins:
  - NetInfo—Apple's own Directory Service
  - LDAPv2—Internet compatibility
  - Local data store—stand alone
- Apple software products will be tested with these three basic plug-ins

API Model—Nodes

- Directory API provides access to a collection of Directory Nodes
  - Each Directory Node is published by a Directory plug-in
  - All API calls for a given Directory Node are handled by one and only one directory plug-in

API Model—API Call

- Typical API Call



API Model—Records

- Each Directory Node contains a collection of Records
  - Records have at least one unique name-key
  - Records are of a single type (user, group, printer, machine)
  - Records contain Attributes (Data)

API Model—Attributes

- Each Directory Record contains a collection of Record Attributes
  - Attributes represent a “type” of data contained in a record
  - Attributes contain at least one value, representing an instance of data
  - Example attribute types: “UniqueID”, “Phone Number”, or “Group Membership”

API Model—Attributes

- Apple documentation will cover “required” vs. “optional” attributes for a Directory plug-in to support
- Individual Apple product may have their own record attribute requirements

API Model—Usage

- Apple software products will be configurable as to what directory nodes are used
  - Well Known Record Types and their required and optional attributes will be documented
  - This will enable any directory system that supports Apple Records and Attributes to be used by customers

API Model—Plug-ins

- Plug-ins provide the following functions:
  - Access to a foreign directory service
  - Data mapping from the foreign systems structure to documented Types and Attributes
  - Publish and facilitate authentication services supported by the directory system

Related Technologies

- Network Service Location (NSL)
  - NSL will have a Directory Service plug-in
- The Directory Service APIs complements NSL by providing a system level directory service that NSL can browse
  - Long term goal is to provide complete set of Directory Service plug-ins

Resources

Apple Developer Connection:
www.apple.com/developer/

WWDR Contacts:
Directory Services API
Attn: Tom Weyer

Directory Service API Documentation:
Draft documentation available
at the Apple Developer web site

Key Messages

- Directory Service API brings Directory Access to all of Apple's Software platforms
- Apple, developers, and customers can leverage this API to offer maximum configuration choice
- Opportunities exist for Directory based services and Directory Access plug-ins

Double the Opportunity. . . $$$

Your Product Here!

Apple's Directory Access API

Your Directory Plug-in Here!

Q&A

Think different.™

Welcome

To Advance through Presentation
Use Page Up and Page Down Keys