# DLF Forum

## Repository Stuff

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# *Agenda*

- **Today's Agenda: *Repositories***
  - **MoA II Background**
  - **The MoA II Digital Library Service Model**
  - **Berkeley's Current Thinking on Repositories**
  - **MoA II Architecture: Theory and Model Stuff**

- **Tomorrow's Agenda: *Page Turning***
  - **Encoding Digital Objects**
  - **Client/Repository Interactions**
  - **Page Turning with Standard Objects and Methods Calls within the MoA II Architecture**

# The Making of America II Project

## *MoA II's Goal is to Create Community Standards for Digital Library Objects*

- **MoA II Partners**
  - **Participants: UC Berkeley, Cornell, NYPL, Penn State and Stanford**
  - **Funding: DLF and NEH**
- **Digital Library Objects Encapsulate**
  - **Content (e.g., digitized page, text transcription)**
  - **Metadata: Descriptive, Structural, Administrative & Technical**
  - **Methods (e.g. Repository access, Page turning)**

# *The Making of America II Project*

- **Standardized Objects Need a Standard Encoding Scheme**
  - **The MoA II XML DTD**
- **Why Do We Need DL Object Standards?**
  - **Interoperability**
  - **Scalability**
  - **Digital Preservation**
- **The MoA II Testbed**

# *The MoA II Service Model*

***The goal of the MoA II Model*** **is to develop suites of tools for specific audiences that integrate the discovery, display, navigation and manipulation of standardized objects across distributed repositories.**

# *Service Model: Assumptions*

1) A National DL will be made up of **many different classes** of objects
   - library, archival, museum, GIS, numeric datasets

2) These objects will populate **distributed repositories**

3) Scholars and students will require **coherent and integrated access** to these objects (i.e., distributed repositories are transparent)

# Assumptions (Cont.)

**4) Therefore, we will need to develop *tools* that can transparently discover, display, navigate and manipulate DL objects across distributed repositories**

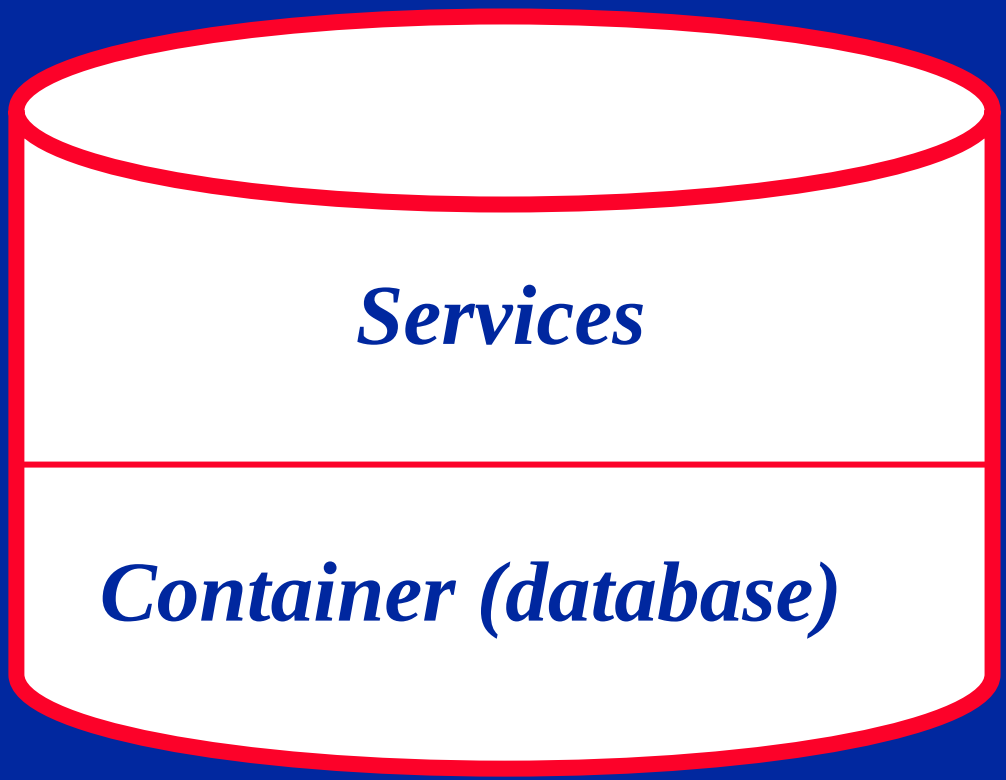
***5) These tools will require objects be standardized***

***Note: Our interest in repositories is focused on Client/Repository & Repository/Repository Interactions***

# Repository - Defined

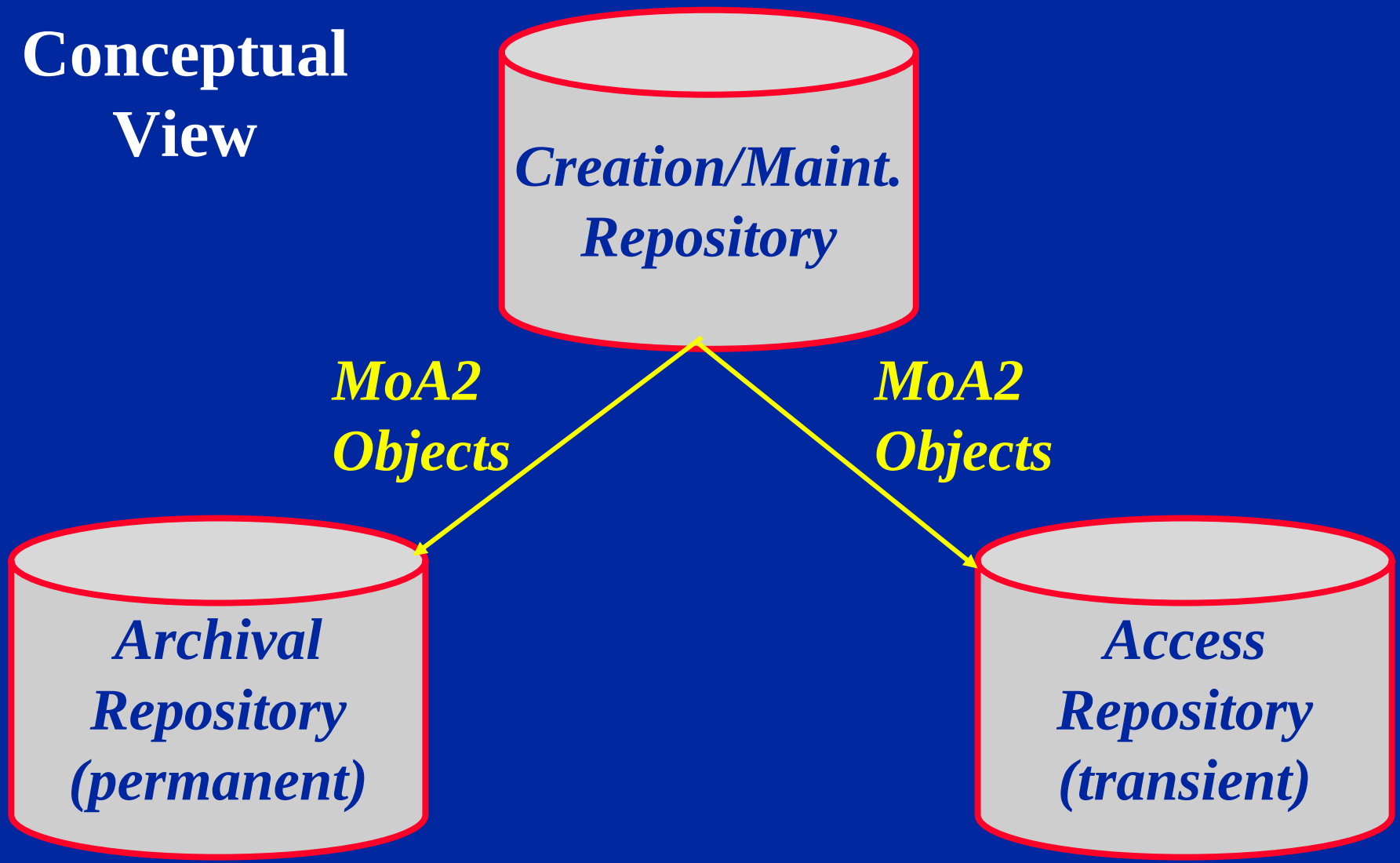
- **Definitely Not the Penultimate Definition**

  **(just want to avoid confusion)**

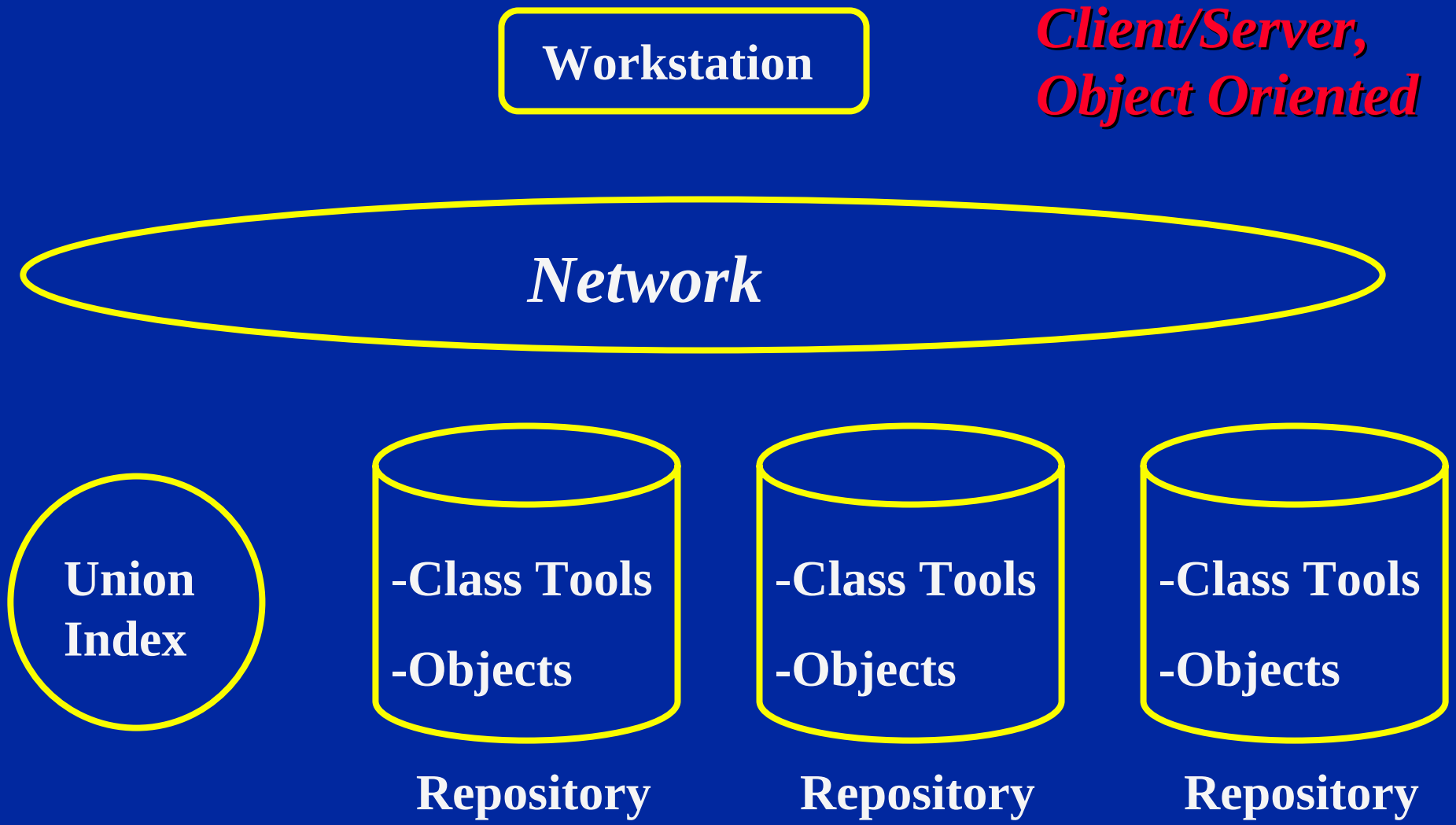


# Current Thinking on Repository Services

**Conceptual View**



# MoA II Access Repository Architecture



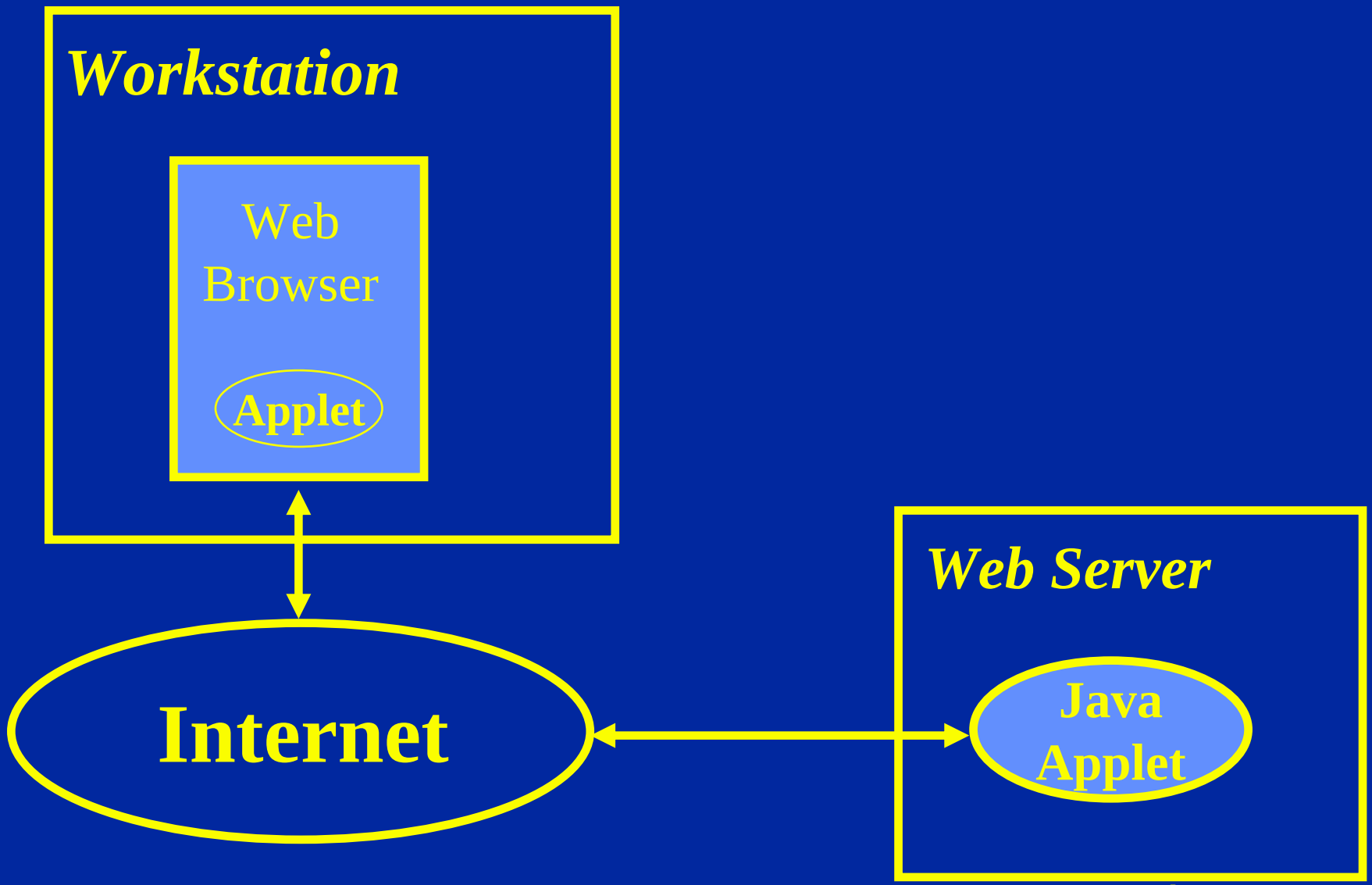
# *Implementation Technologies*

- **Minimize the use of HTML/CGI scripting**
- **Investigate**
  - ***Object Oriented Design***
  - ***The Java Enterprise Model***
  - ***Distributed Object Architectures***
    - ***RMI, CORBA, DCOM***
  - ***The Object Web***

# Object Oriented Design

- **Definition of a Digital Object**
  - **Digital objects have content**
  - **Digital Objects have metadata**
  - **Digital objects have behaviors (methods)**
  - **Encapsulate content, metadata and methods together in a digital object**

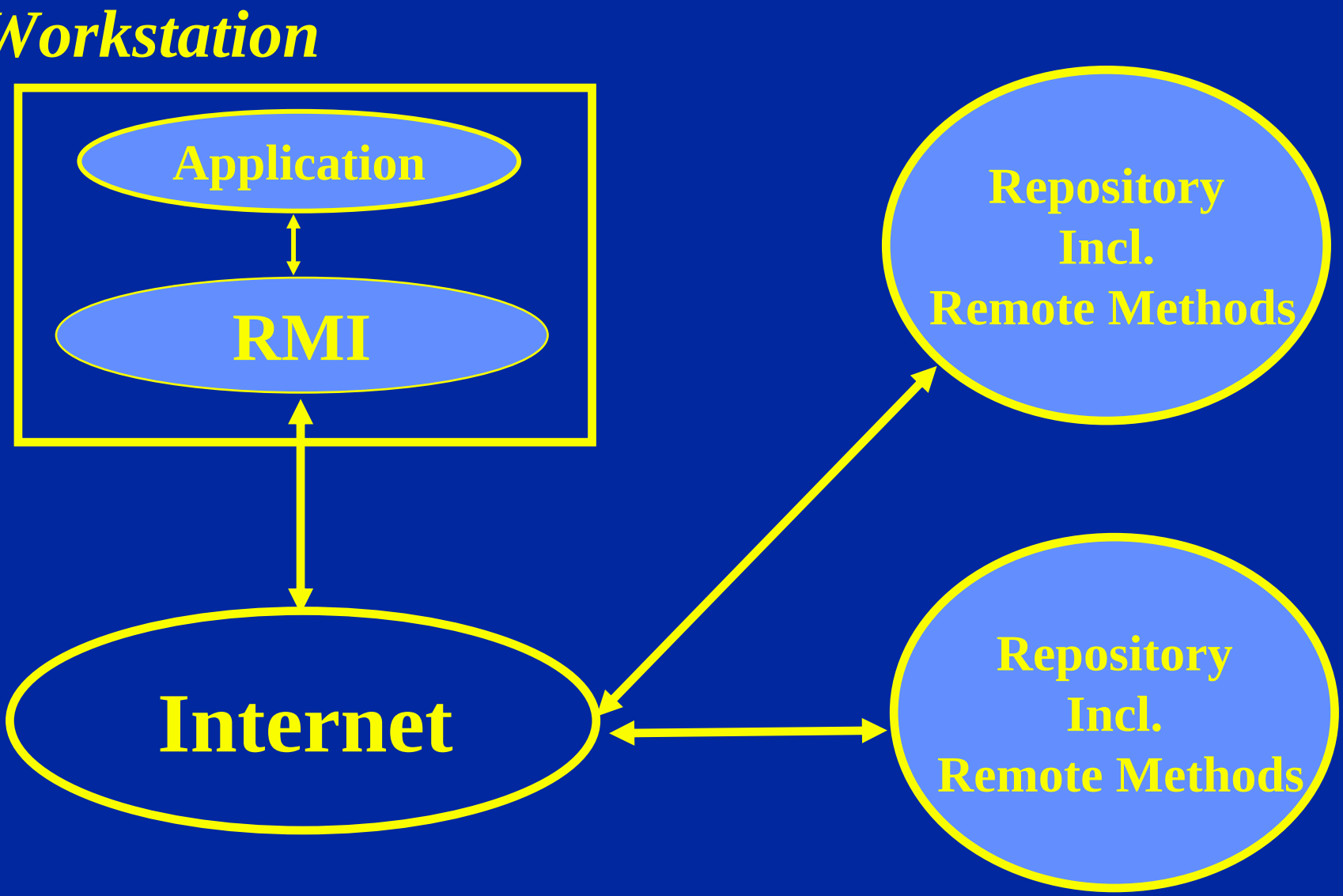
# The Java Enterprise Model

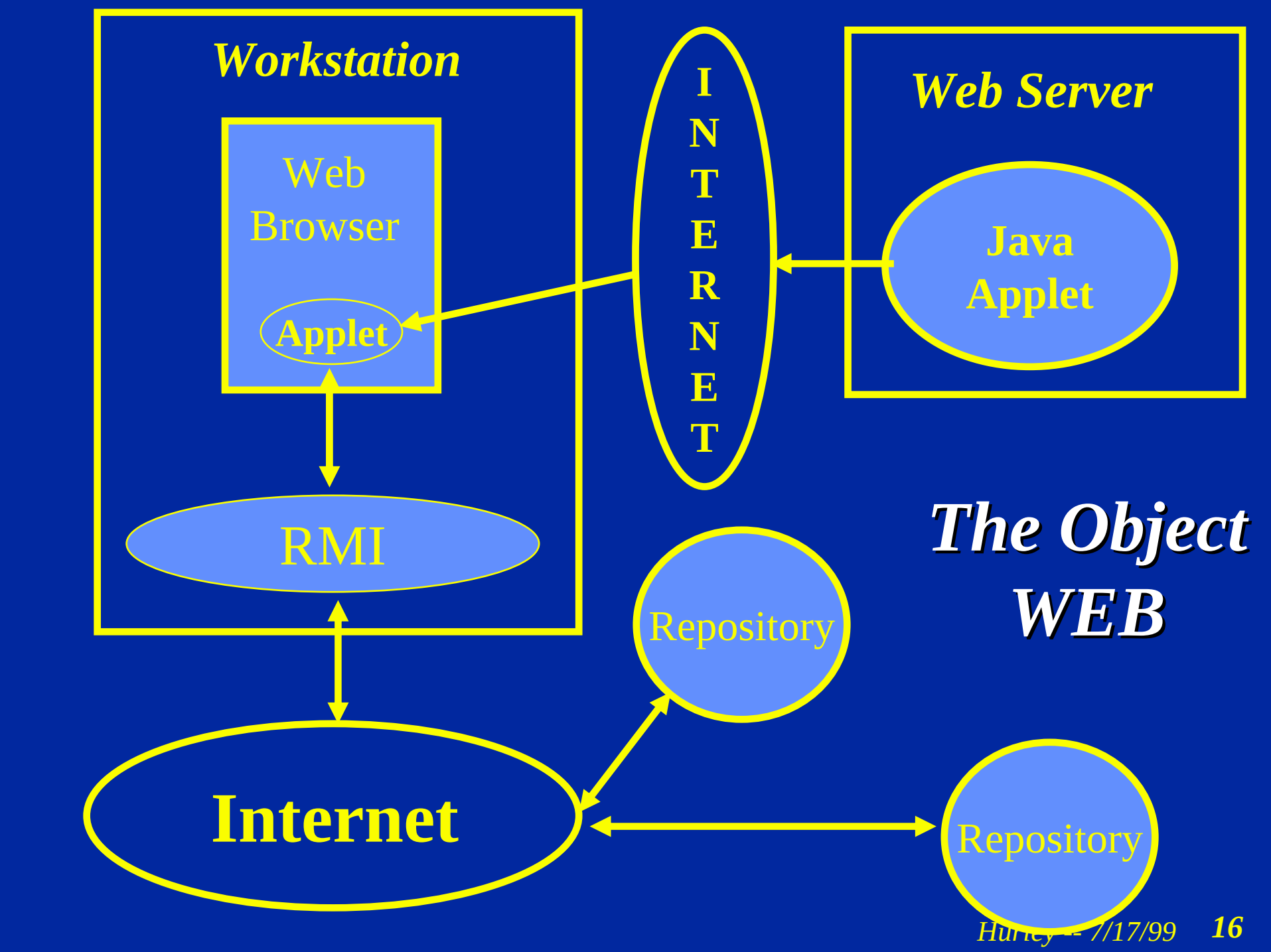


# Distributed Object Architecture (RMI)

- **Remote Method Invocation**
  - **Enables communications between the client and the repository by allowing methods called in the client to execute remotely on the server**
- **RMI Registry (basic naming service)**
  - **Client and Repository communications are bootstrapped using the RMI Registry**
    - **MoA2 RMI compliant repositories register with the RMI Registry when they become active**
    - **Clients can lookup active repositories in the registry and are returned a RMI reference to the repository**
    - **With the reference, the client can calls defined by the MOA2Repository Interface**

# Distributed Object Architecture

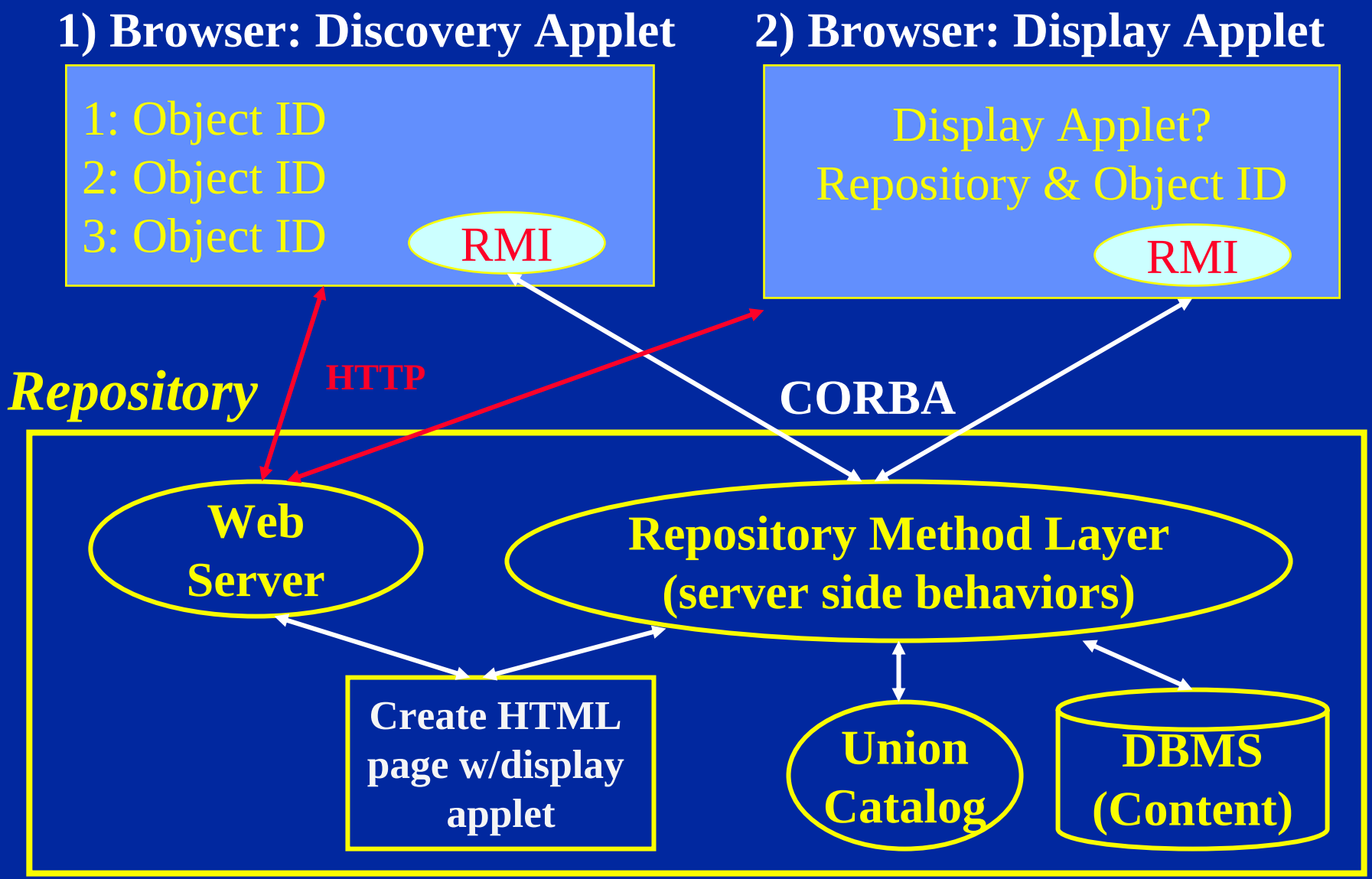



Workstation
Web Browser
Applet
RMI
INTERNET
Web Server
Java Applet
Repository
Internet
Repository
The Object WEB

# Benefits of the Object Web

- Load Applets on Demand (version control)
- Distributed Object Middleware...
  - Designed to support distributed repositories
  - Determine where behaviors execute - client or server side
- Doesn't Require an Extremely Powerful Client
- Scales

# Full Object Web Implementation



# Z39.50/CGI/Object Web Implementation