Dynamic Server as Next Generation Web Technology: A Direction based on Multithreaded Object-Oriented Lisp-based Architecture: An Introduction of four Government funded projects

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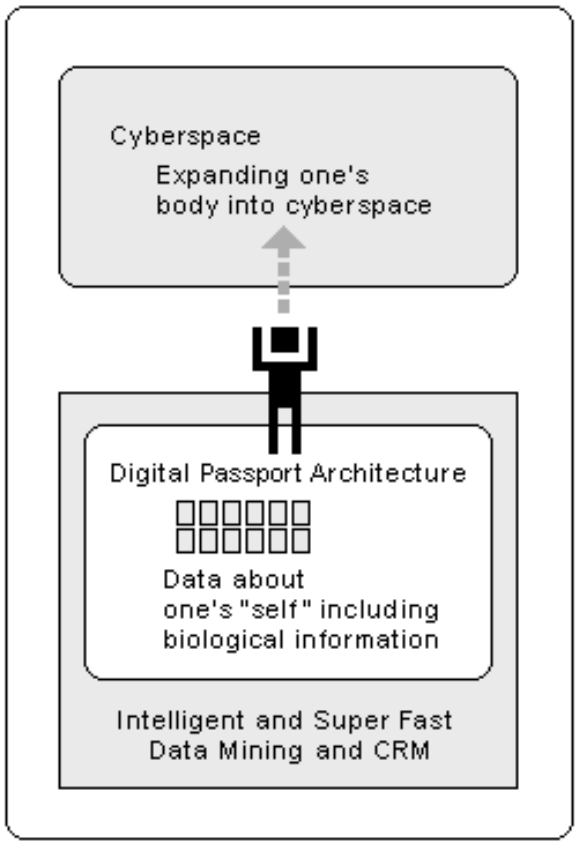
Hyperself Architecture & CRM Project

An Image of Hyperself Architecture



Lispache Project

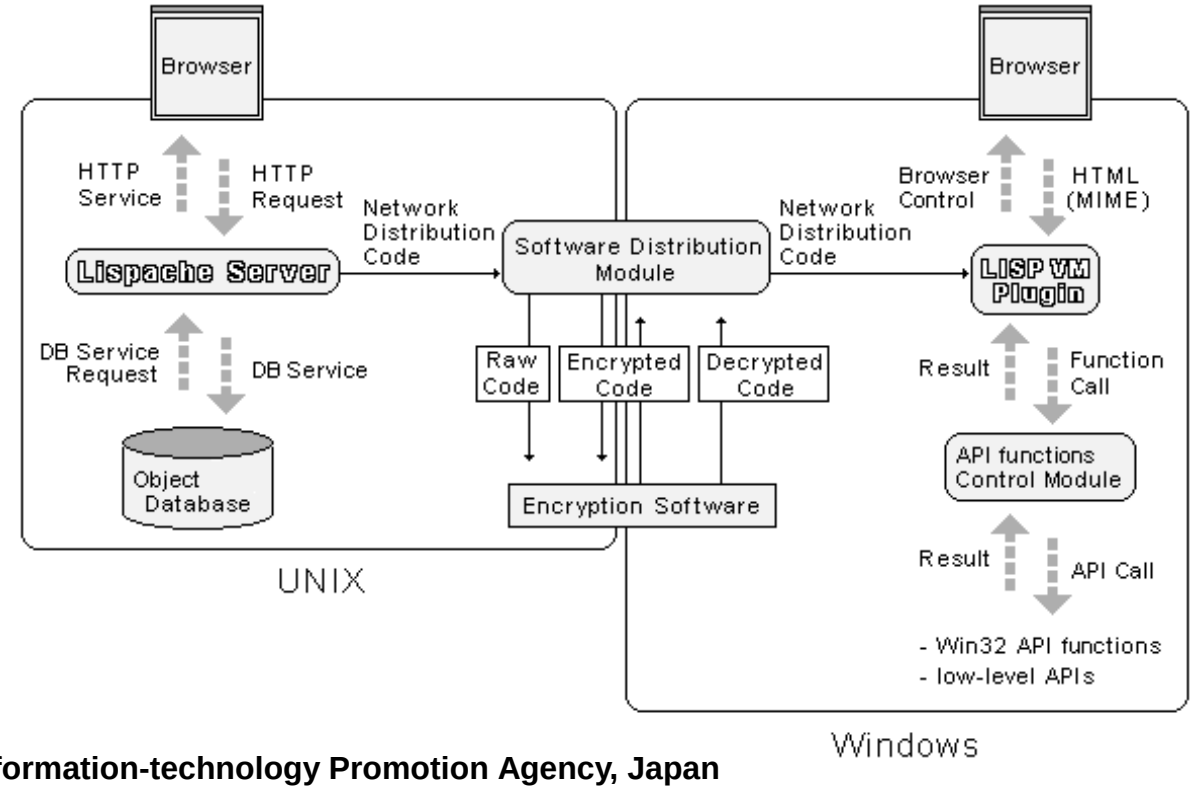
(funded by IPA*, a MITI arm)

[Lispache] --- Dynamic Object Oriented Web Server

- HTTP server written in ANSI Common Lisp
- Solution to CGI overheads
- Multithreaded Server Sessions
- CLOS wrapped HTML tags

ANSI Common Lisp Browser Runtime Plugin

- LISP VM Plugin for Netscape Communicator
- Common Lisp functions to control APIs (Java & Win32 API)
- Use of CLOS object via network environment

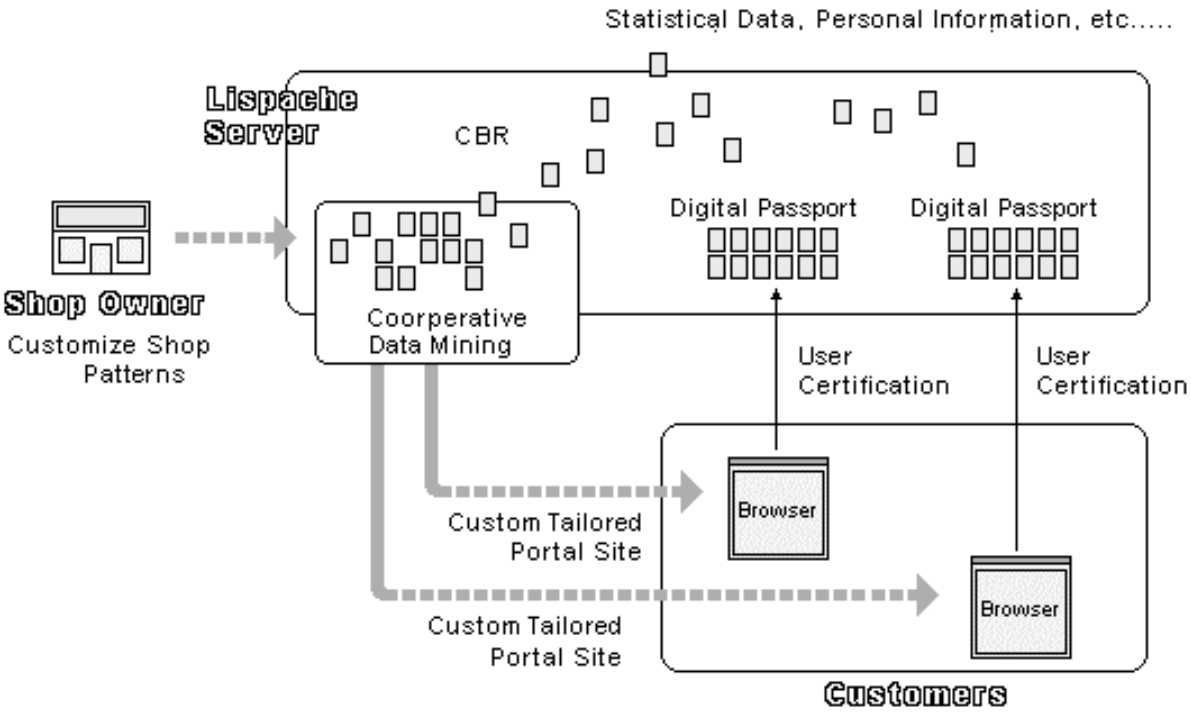


*** IPA: Information-technology Promotion Agency, Japan**

JIPDEC* Project

JIPDEC Shopping Mall Architecture

- Statistical data & personal information stored in Digital Passport
- Monotonic Data Structure
- CCBR (Cooperative Case-Based Reasoning)
- Customization on shop patterns for dynamic HTML generation
- User defined Privacy Level per shop
- Administrative pages to dynamically generate SQL queries on backend RDB

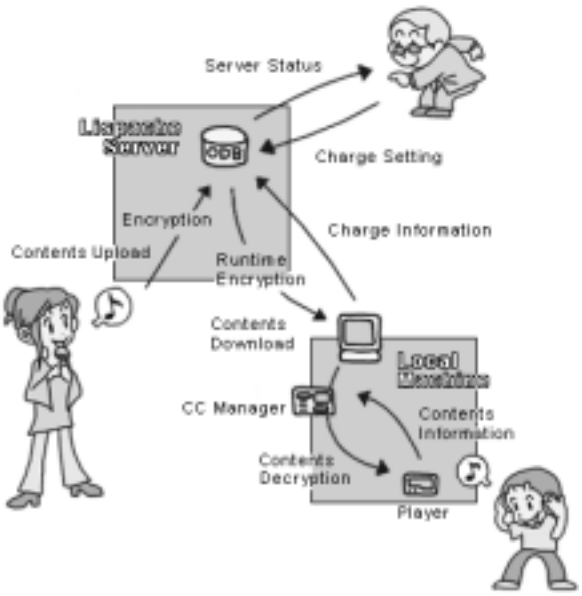


*** JIPDEC: Japan Information Processing Development Center**

MMCA* Project

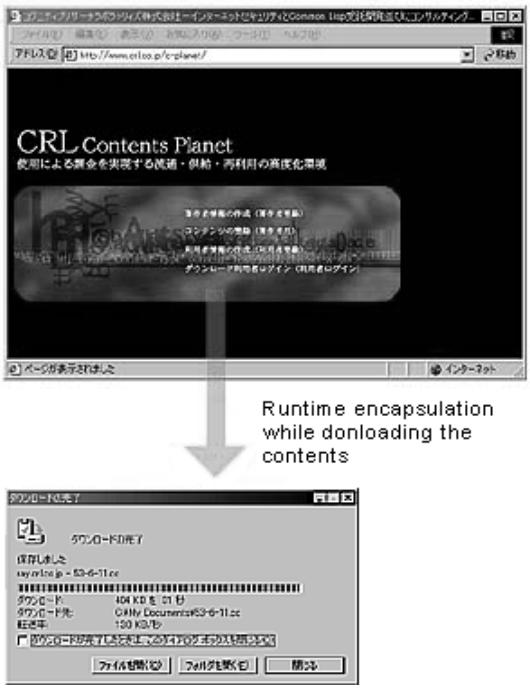
MMCA Contents Distribution and Control Service

- Contents Capsules (CC)
- Monotonic Data Structure
- Runtime encryptions unique to every user
- User & author information stored in ODB
- Charges per use, not per content

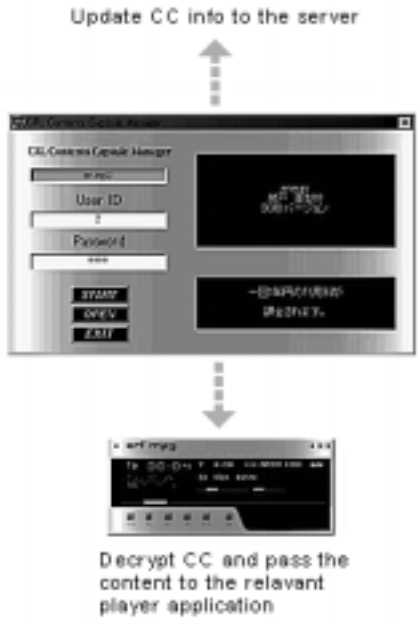


1) User, Author, and Contents Registration
   - Author can define charge setting on multimedia contents
   - Encrypt the contents with author's key

2) Content Download
   - Requires user ID and password for server login (no key exchange)
   - Dynamically generates content capsules at runtime when downloaded



3) Content Use
   - Requires user ID and password for runtime use
   - Decrypt contents capsules on client's machine
   - Auto-play the contents with relevant player applications
   - Update and inform the charges to the server



4) Administrator Web Page
   - Dynamically generate SQL queries on ODB
   - Author/administrator can view and modify related settings

*** MMCA: Multimedia Content Association of Japan**

Dynamic Home Server Project

Dynamic Home Server Architecture

- DDSVM (Dynamic Distributed & Shared Virtual Machine)
- Secured control over the Home Appliances (encapsulated digital data)
- Monotonic Data Structure
- CCBR (Cooperative Case-Based Reasoning)