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The Internet Server

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The Internet Server

Hong Q. Bui
Chris Zuleeg

Introduction

Why Jeeves Makes Sense

by Hong Bui

Internet Server Manager

Overview, Jeeves . . .

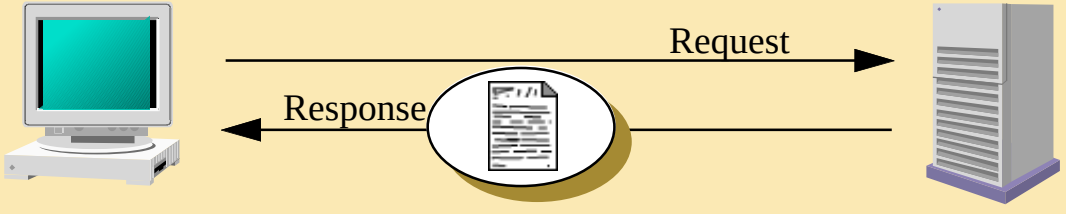
- Enables collaborative and interactive computing on the Net.
- Provides access to the whole Internet server market.
- Maximizes your flexibility.

Jeeves . . .

- Provides a set of foundation classes for building Internet-ready server services.
- Has an extensible framework for a server environment via servlets. Servlets are uploadable byte code that run safely on any servers that support the Jeeves framework.
- Can be implemented as a web server.

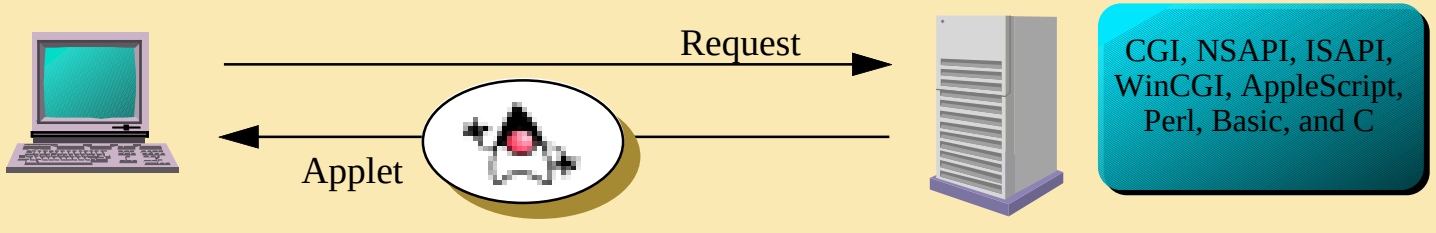
First phase of Internet computing

- Basic client/server environment.
- Basic interaction between the client and the server. At the client's request, the server sends static text or data to the client.



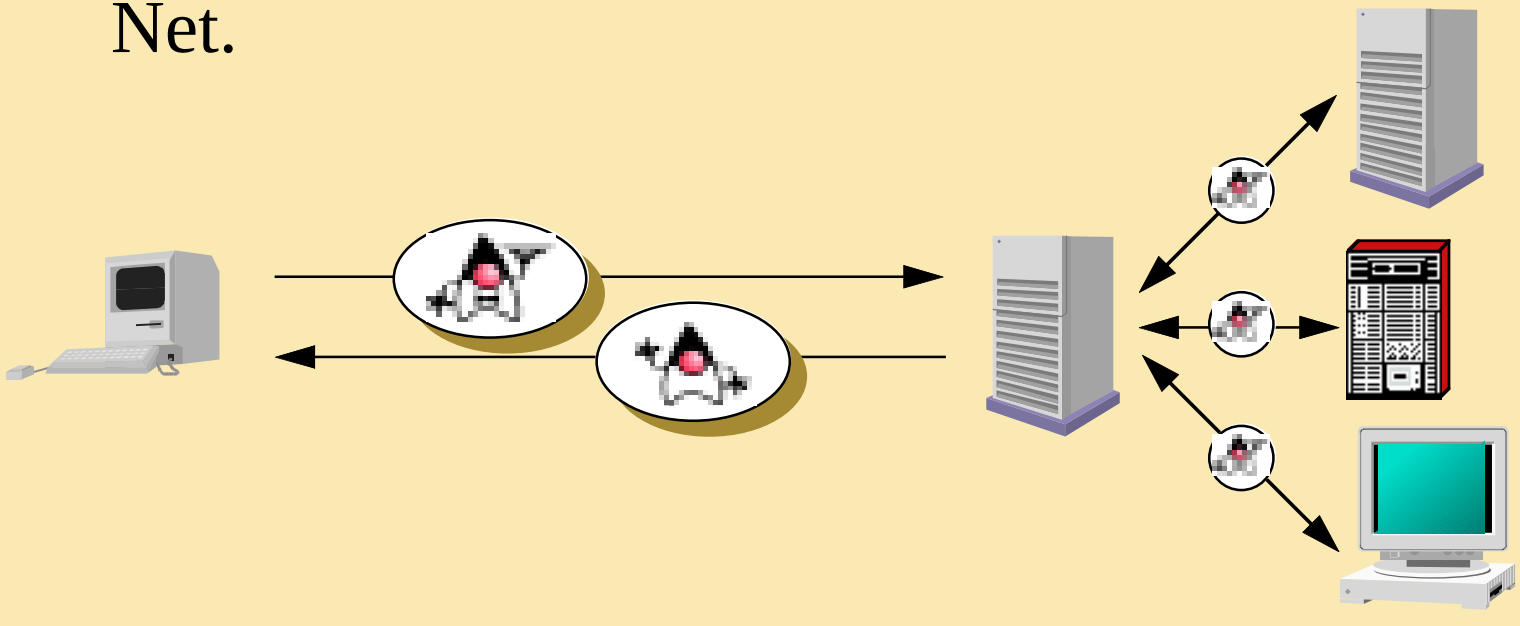
Second phase of Internet computing

- In addition to text, the server can send applets to the client at the client's request.
- More interactive, but most interaction occurs on the client side.
- Web server technology is still behind.



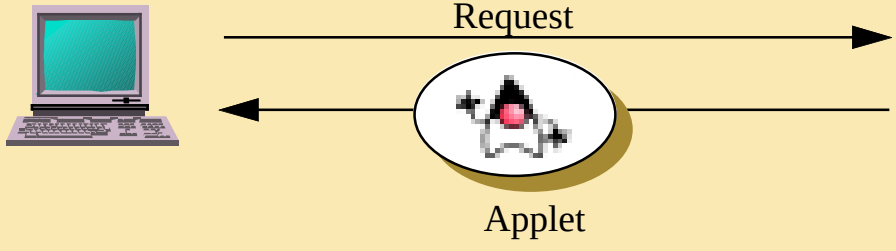
Third phase of Internet computing

- Applets and servlets can be safely sent back and forth as needed between the clients and the servers.
- Ultimate interactivity and collaboration on the Net.



Today's server solutions . . .

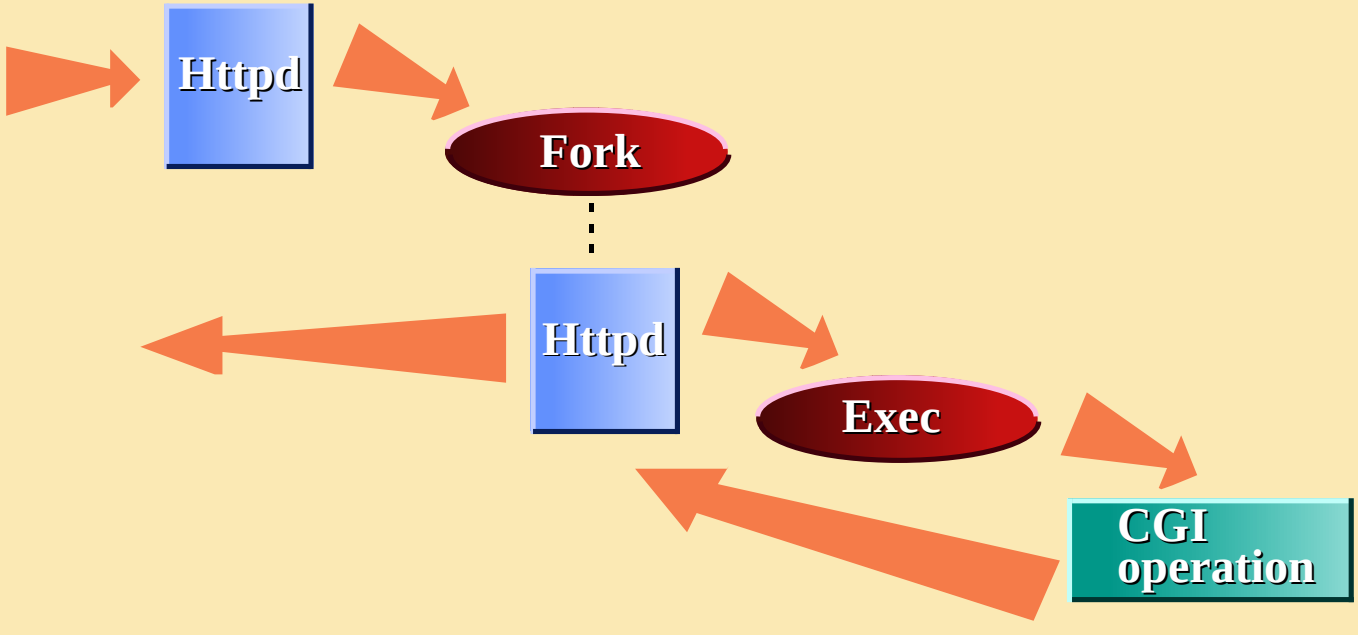
- Are inefficient.
- Have limited capabilities.
- Are not portable. That is, server solutions lock-in a specific operating system (OS) and hardware (HW) platform.



CGI,
NSAPI,
ISAPI,
WinCGI,
AppleScript,
Perl, Basic,
and C

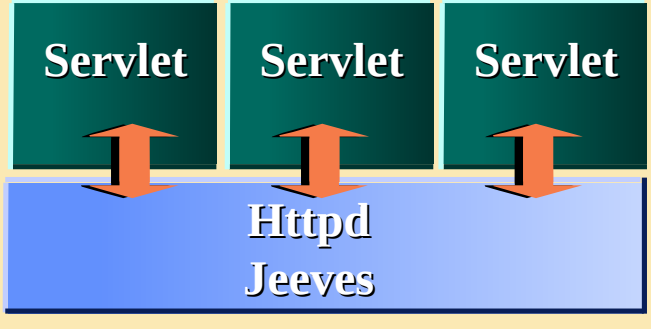
Scripts such as CGI . . .

- Provide inefficient performance
- Have limited capability
- Require multiple IPCs, which are costly



Servlets are simple yet powerful. Servlets . . .

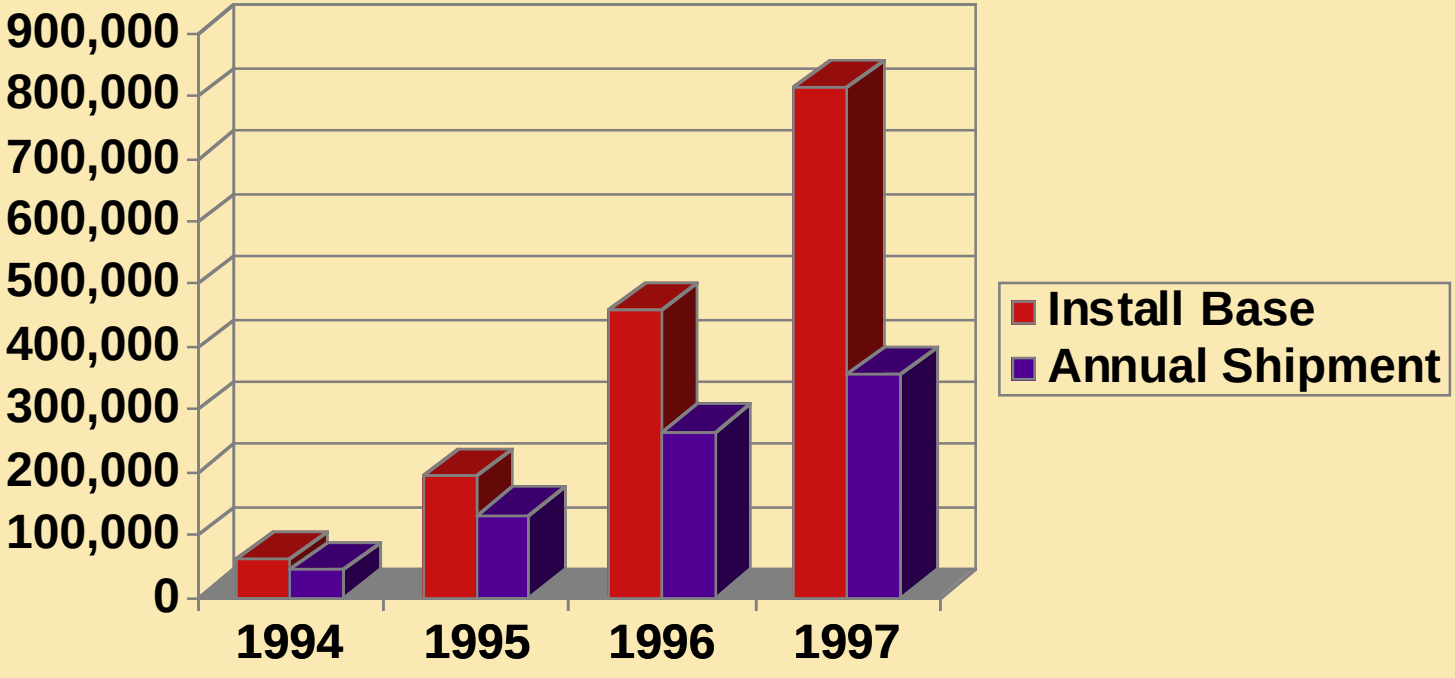
- Provide higher performance than script-based solutions.
- Offer portability and can be uploaded safely from the Net.
- Are tightly integrated in Jeeves.
- The CGI servlet offers backward compatibility with the CGI script.



Why Jeeves is needed

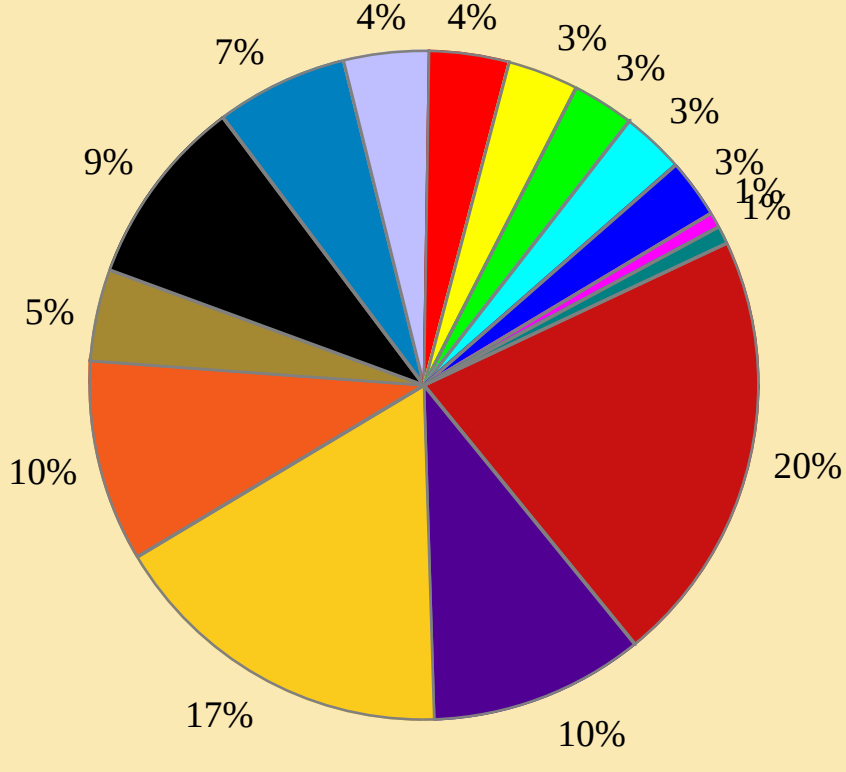
- Jeeves provides a common framework to distribute servlets on various servers.
- With Jeeves, a complete Java Internet computing framework is created.
- Jeeves drives the Java platform (JIT, GC, security, and networking).

The growth of the Internet server market is certain



Source IDC, 1995

Market share of the Internet server

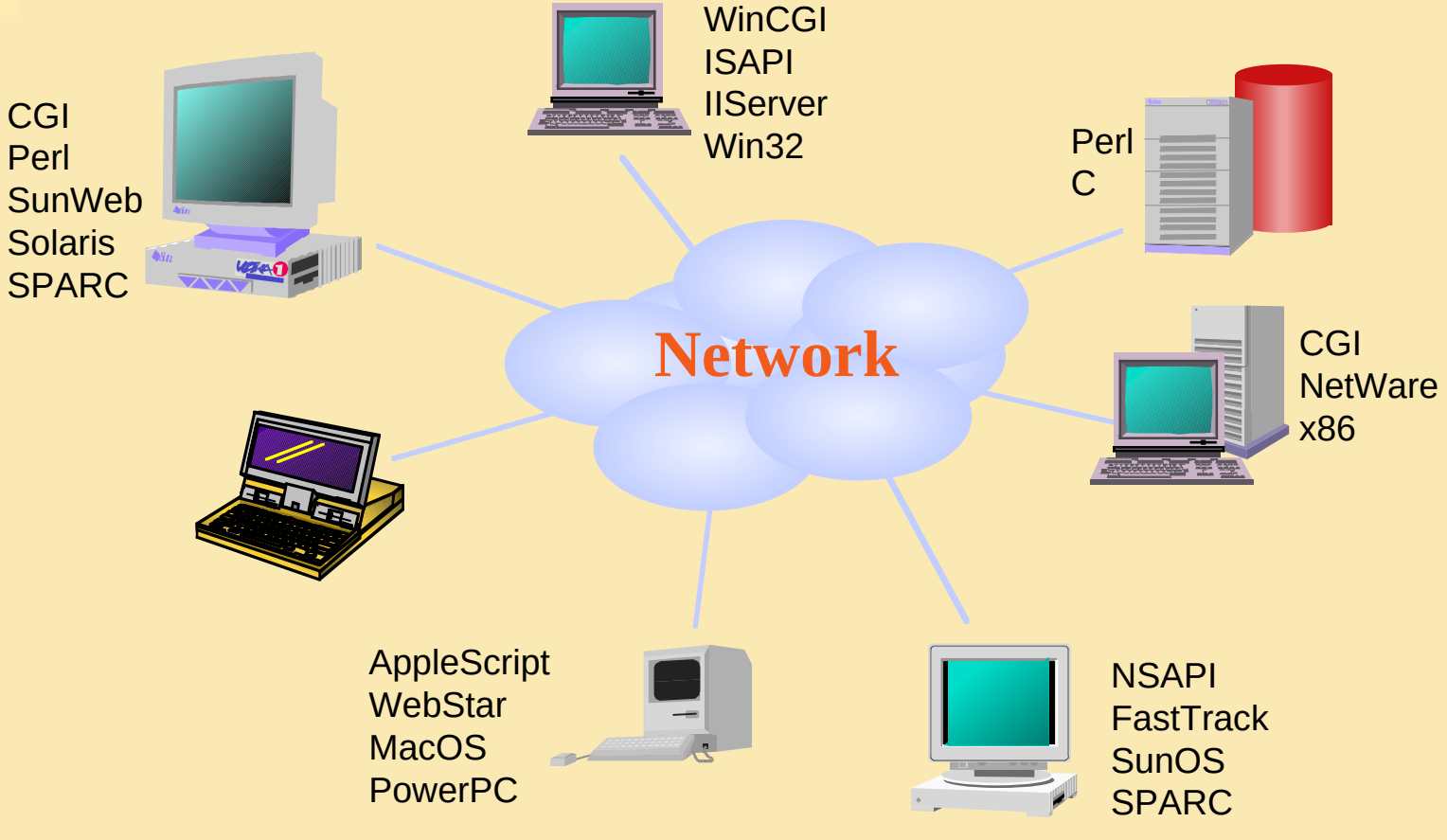


Source: Internet.WWW.Survey

Web server, OS, and HW lock-ins

Today, server solutions are tied to the operating system, which in turn is tied to the computer's processor.

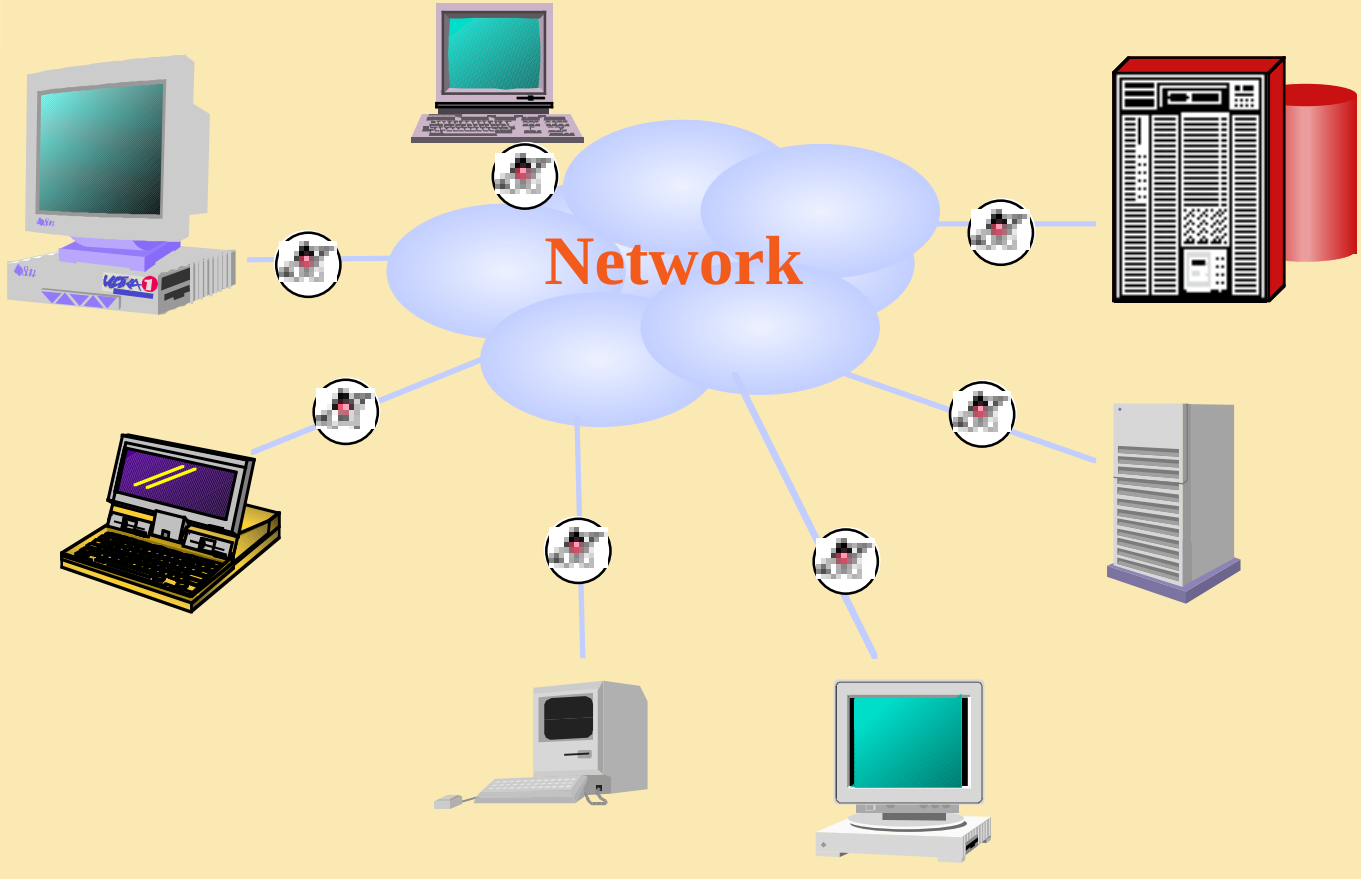
Lock-ins are difficult to support



Customers want a web solution that . . .

- Can run on all platforms.
- Allows them to preserve their investment in the OS and HW platforms.
- Allows them to keep up with the rapid, changing pace of the Net.
- Based on the Forrester report, 69% of customers will select a server with an OS and HW platform with which they are already familiar.

Java and Jeeves are simple

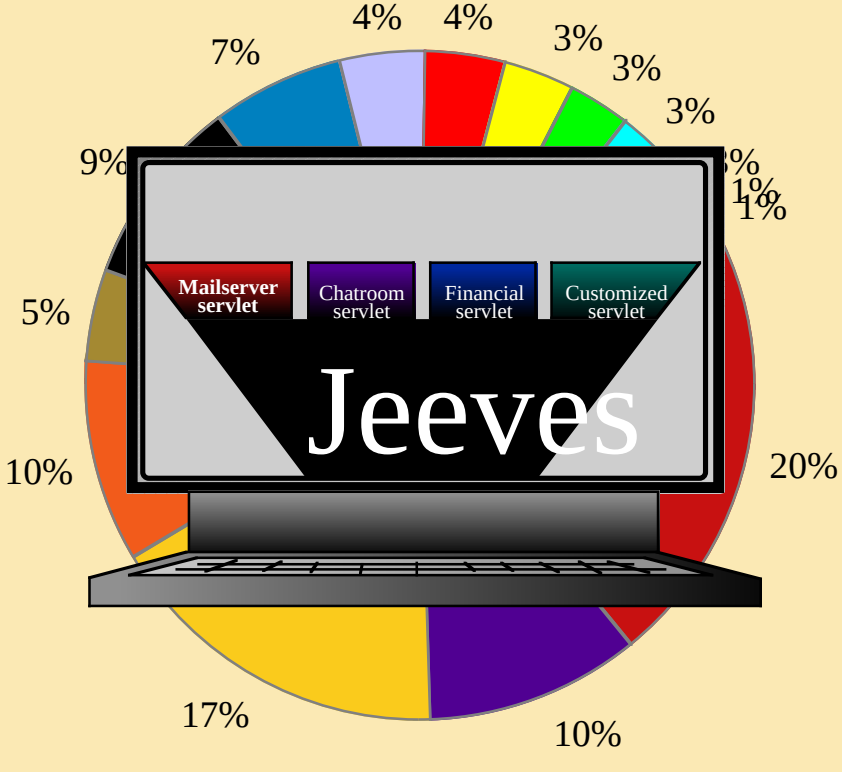


Write once, run everywhere!

Vendors and systems that will include Java

- Apple MacOS™
- IBM AIX™, MVS™, OS/2™, and Windows™3.1
- Microsoft Windows™ 95 and Windows NT™
- Novell Netware™ 4.x
- SCO UnixWare™
- SGI IRIX™
- SunSoft Solaris™
- Tandem Non-stop Kernel™

Market accessibility for developers

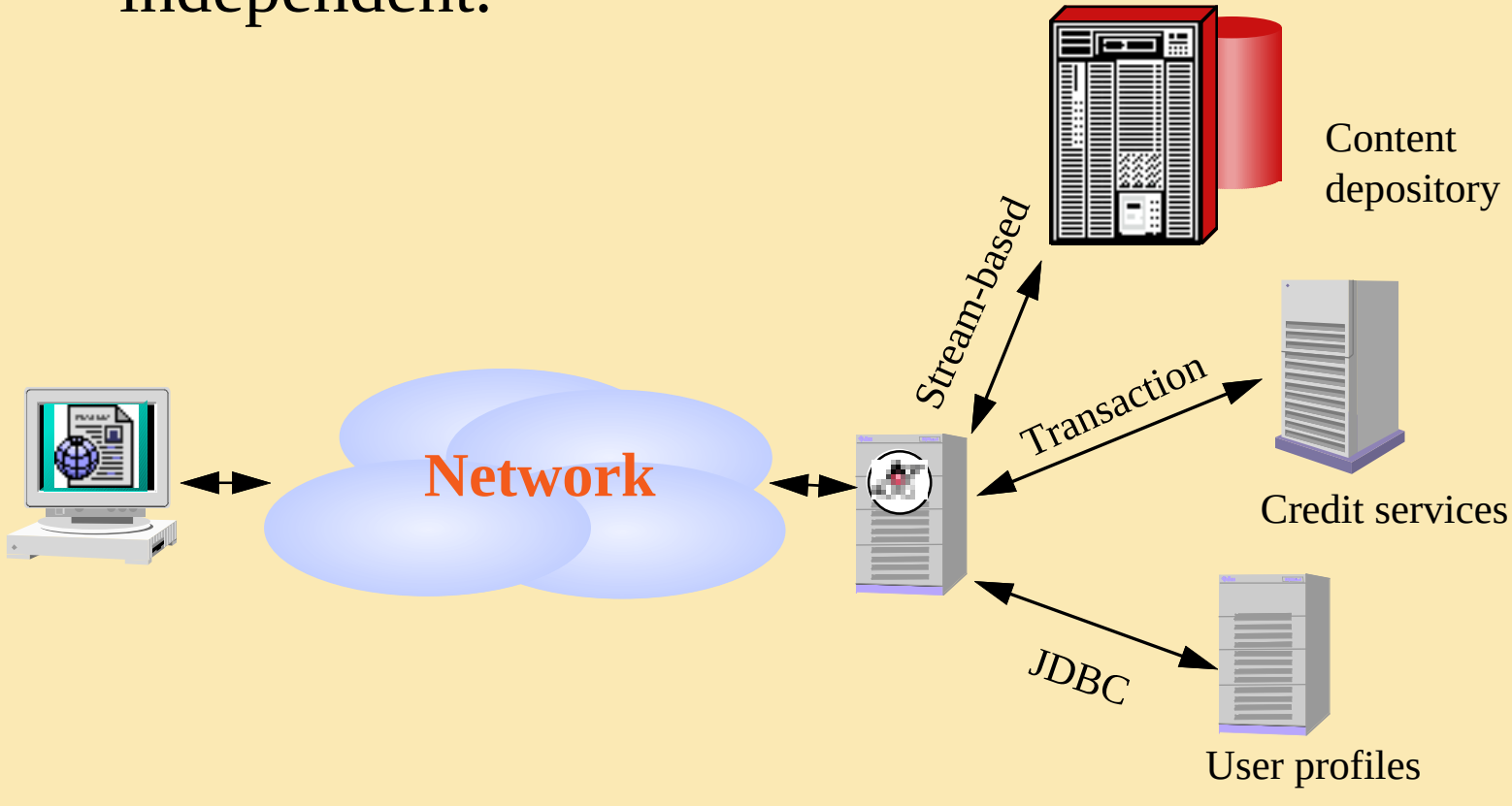


Jeeves . . .

- Makes sense technically.
- Makes sense because of its market accessibility.
- Makes sense because of its portability and migratability.
- What’s more . . .

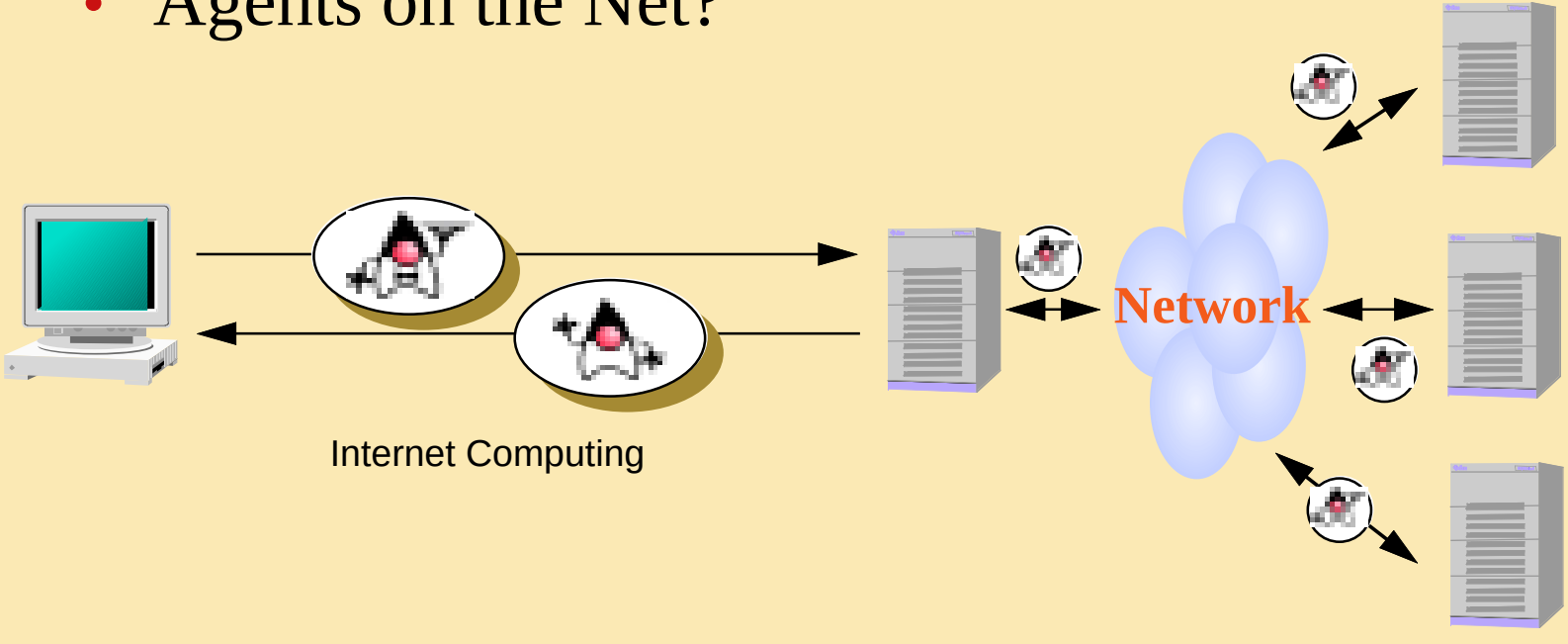
Making no assumptions for tomorrow

- Jeeves is flexible, secure and protocol independent.



Unleashing servlets on the Internet

- As Java security becomes even more robust, applets and servlets can be safely distributed and can collaborate on the Net as needed.
- Agents on the Net?



Internet Computing

Jeeves . . .

- Enables collaborative and interactive computing on the Net.
- Enables quick time to market.
- Provides access to the whole Internet server market.
- Maximizes your flexibility.
- Prepares you for tomorrow.

Demo

- Jeeves demo

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Business Opportunities for the Java™-Powered Internet Server

Chris Zuleeg

What is Jeeves All About?

- Jeeves is JavaSoft's Java™-Powered Internet Server

What is Jeeves?

- Jeeves is a Multi-Platform Internet Server And a Framework for Creating Server Extensions
- Jeeves Provides a Uniform and Consistent Model for Server Installation and Administration

Jeeves' Advantage Areas

- Solves Webmasters' Dilemmas
- Simplifies Developers' Job
- Provides Flexibility for OEMs
- Performance
- Technical Agility
- Customer Satisfaction

Webmasters' Advantages

- Solves Webmaster's Dilemmas
  - Platform Choice
  - Technical Complexity
  - Installation and Administration Nightmare

Webmaster's Platform Dilemma Today

Not all services run on all platforms!

Not all platforms run all desired services!

Platform	HTTP	Innovative Service #1	Innovative Service #2	Innovative Service #3
Macintosh	✓	✓		
Windows	✓		✓	
UNIX	✓			✓

Jeeves is Portable

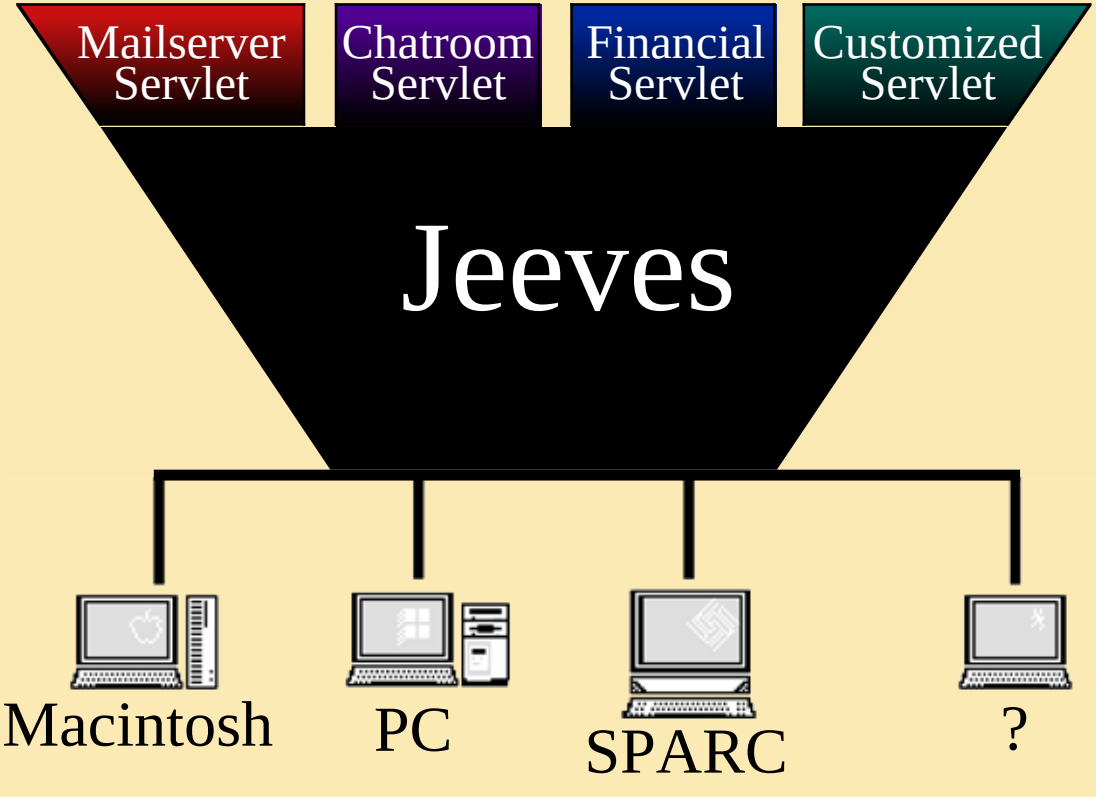
With Java and Jeeves, all services run on any platform!

	HTTP	Innovative Service #1	Innovative Service #2	Innovative Service #3
JEEVES	✓	✓	✓	✓

Jeeves Migrates

Multi Platform Interoperability

Protects Your Server Software Investments



Webmasters' Technical Complexity Dilemma Today

HTTP
+ HTML
+ cgi-bin
+ NSAPI
+ ISAPI
+ AppleScript
+ Frontier

MANY TECHNOLOGIES

Jeeves Is Simple

HTTP
HTML
Java
\+ Jeeves

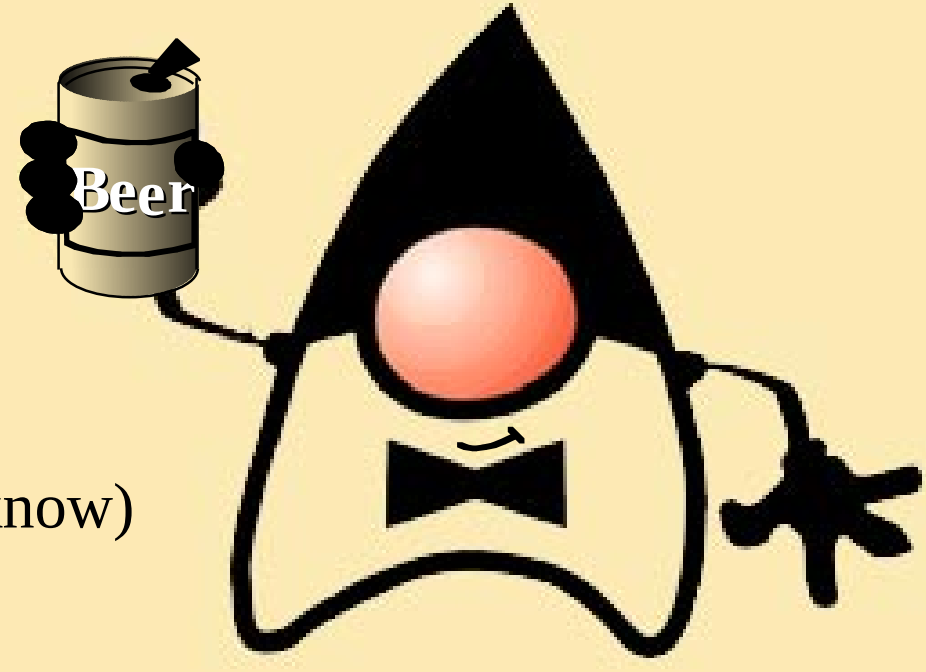
FEW TECHNOLOGIES

Jeeves Amortizes Your Java Investment

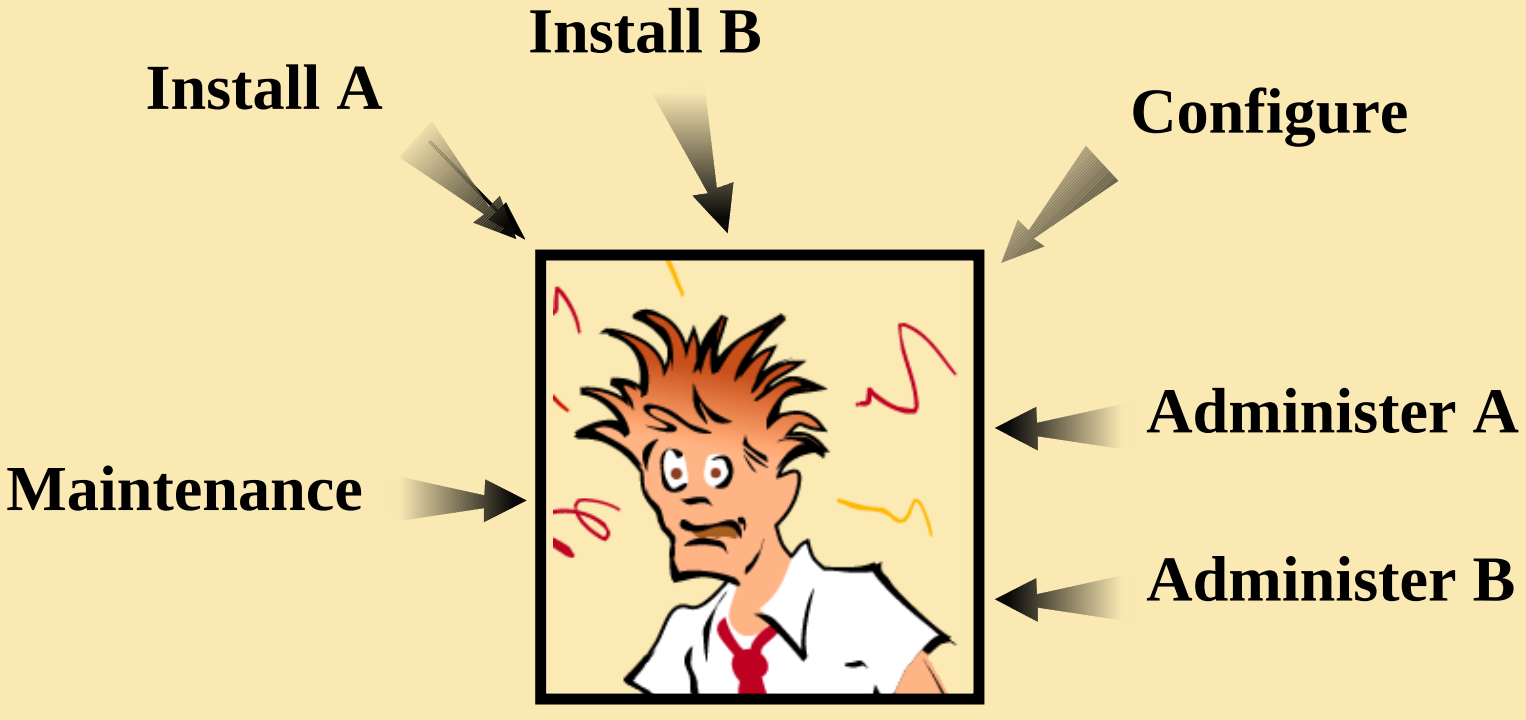
HTTP
HTML
Java
\+ Jeeves

FEW TECHNOLOGIES
\- Java (that you already know)

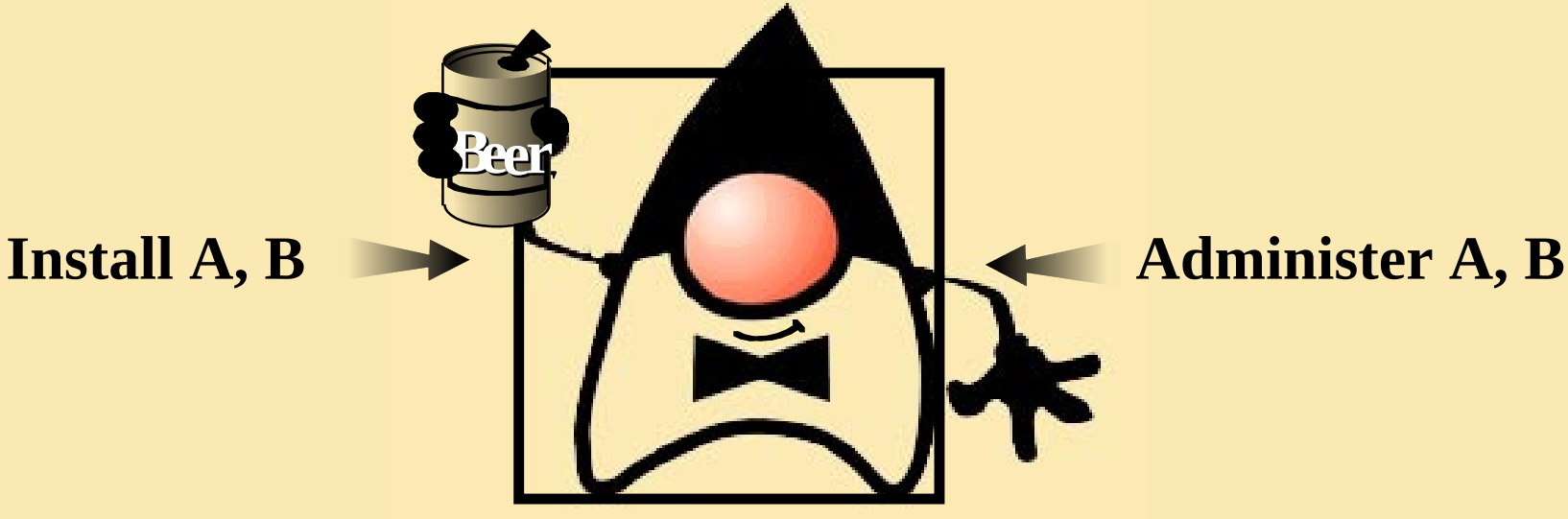
NEGLIGIBLE
INCREMENTAL
TECHNOLOGY!!!



Webmasters' Installation and Administration Nightmare



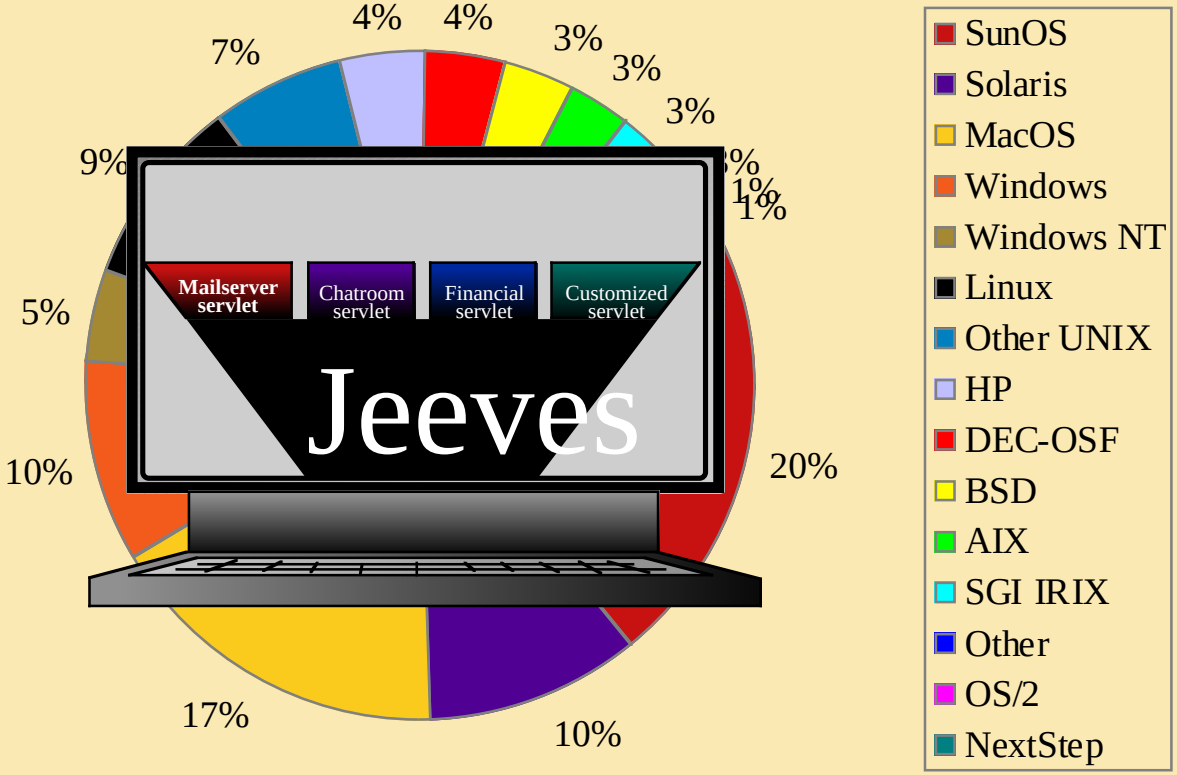
Jeeves' Suite Dreams



Developers' Advantages

- Why not just build your own?
- Early adopters enthusiastically embrace ours
- Lets you Focus on Your Value-Add
- Improves Time-To-Market
- Write Once, Sell Everywhere!

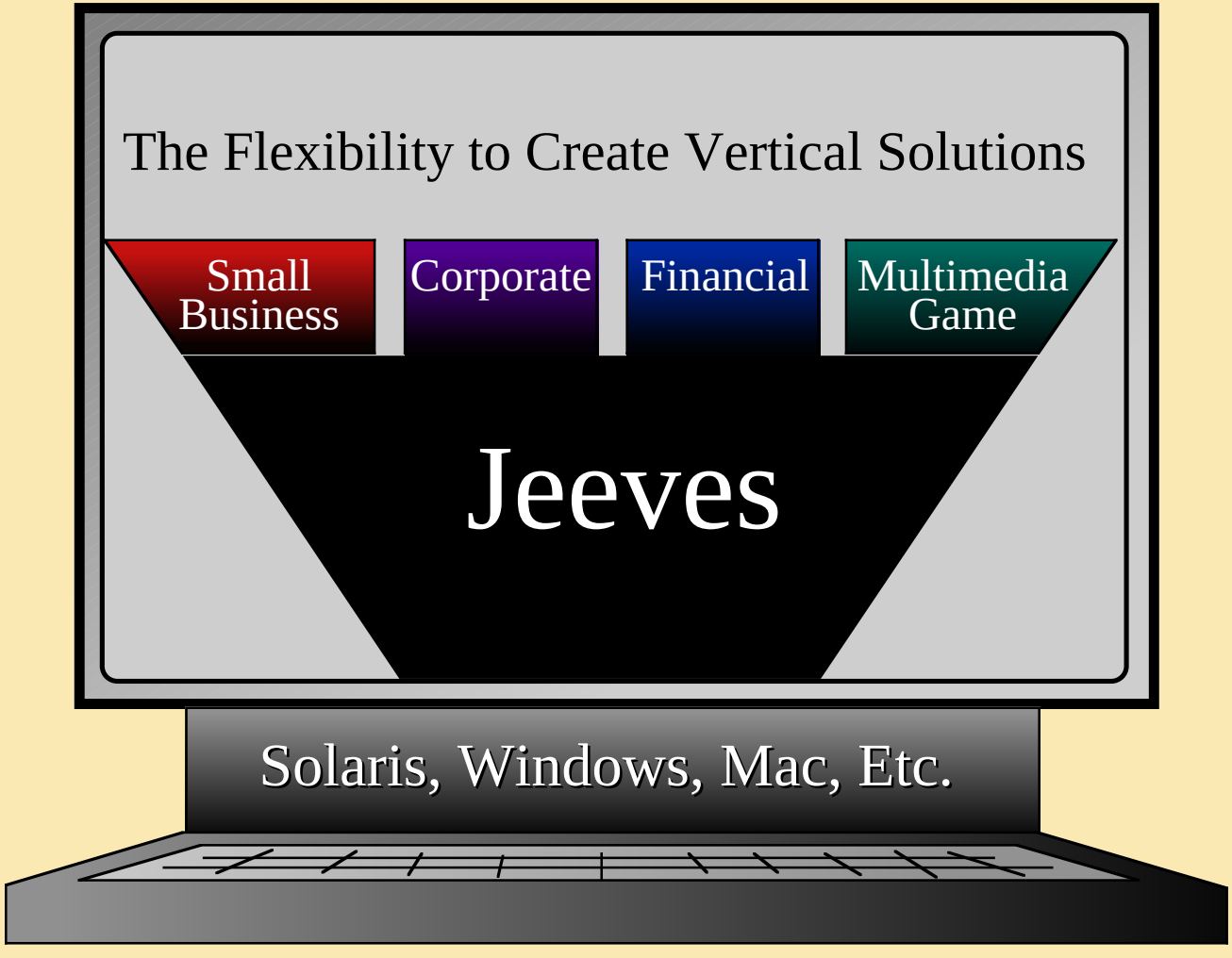
Developers' Value Proposition



OEMs' Advantages

- Provides Flexibility
- Vertical Solutions
- Targeted Markets
  - Small Business Internet Server
  - Corporate Intranet Server
  - Commerce or Banking Server
  - Multimedia Game Server

OEMs' Value Proposition



Productivity and Differentiation

- Mythical Man-Month
- Wonderful Web-Week
- cgi-bin Scripts are Inelegant, a Passing Fad
- Java Provides True Interactivity
- Jeeves Provides Technical Agility
- Jeeves Differentiates Your Web Site

Performance Metrics

- Http Ops/Sec Used Today
- New Data Types require New Metrics
- No Service, No Performance
- Fastest Way to Deliver New Technology
- Greatest Customer Satisfaction

Performance Numbers

- Marketing dance around abysmal performance?
- Emphasizing our strengths, another way of looking at performance
- Within 25% of “C” implementations
- 100+ HttpOps/sec
- Anticipate further improvements with more tuning and better JIT compilers

How Jeeves Delivers

- Not just another internet server
- A family of extensible services
- A framework for developing innovative new services easily and quickly

How Jeeves Delivers

- Java is secure and multi-platform
- Jeeves defines
  - Policies and methods
  - Consistent and uniform access
  - Fundamental server and administrative resources
- Jeeves does on the server side what HotJava does on the client side

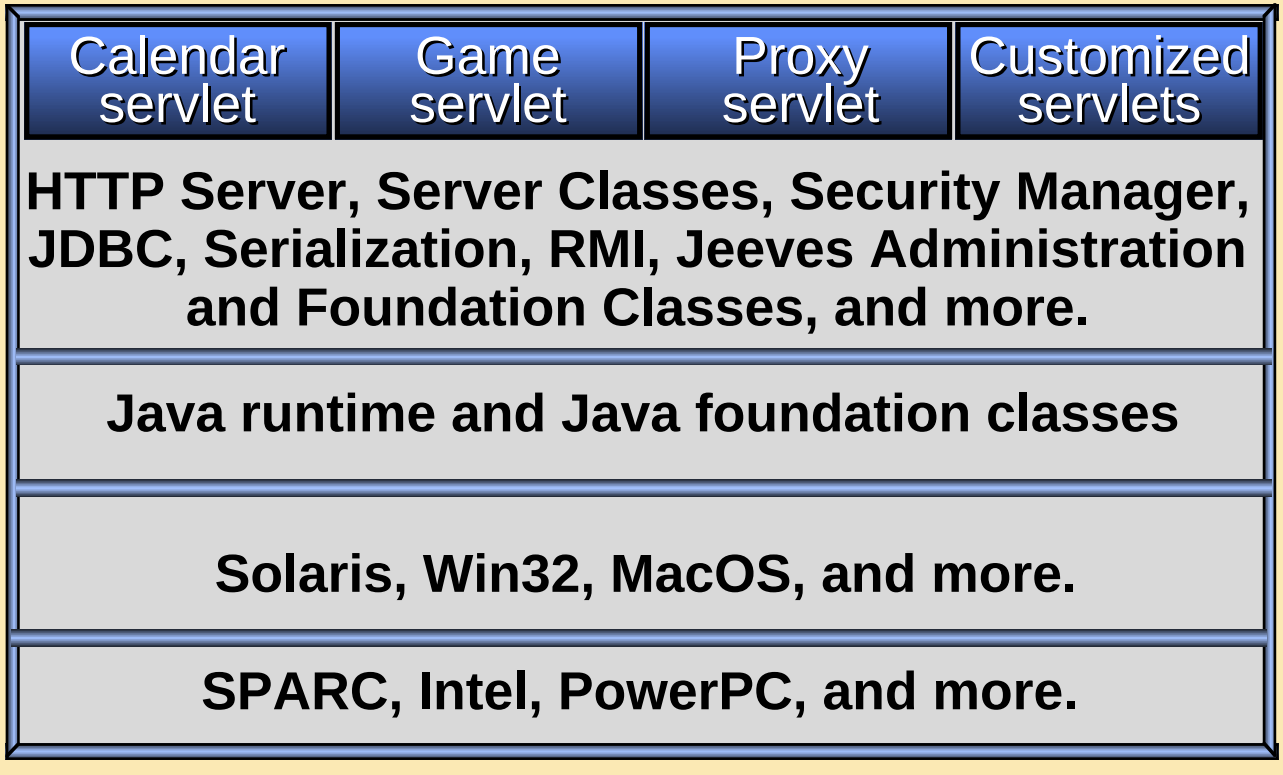
How Jeeves Delivers

- Creating Definition
- Insuring Widespread Adoption
- Value to Developers
- Pass Value on to End-Users
- Greatest Overall Java Value

What Is Jeeves?

- HTTP server
- Server Libraries
- Security Manager
- Administration Manager
- JDBC, RMI, Serialization Integration
- Documentation
- Example Servlets

Jeeves Block Diagram



Servlets

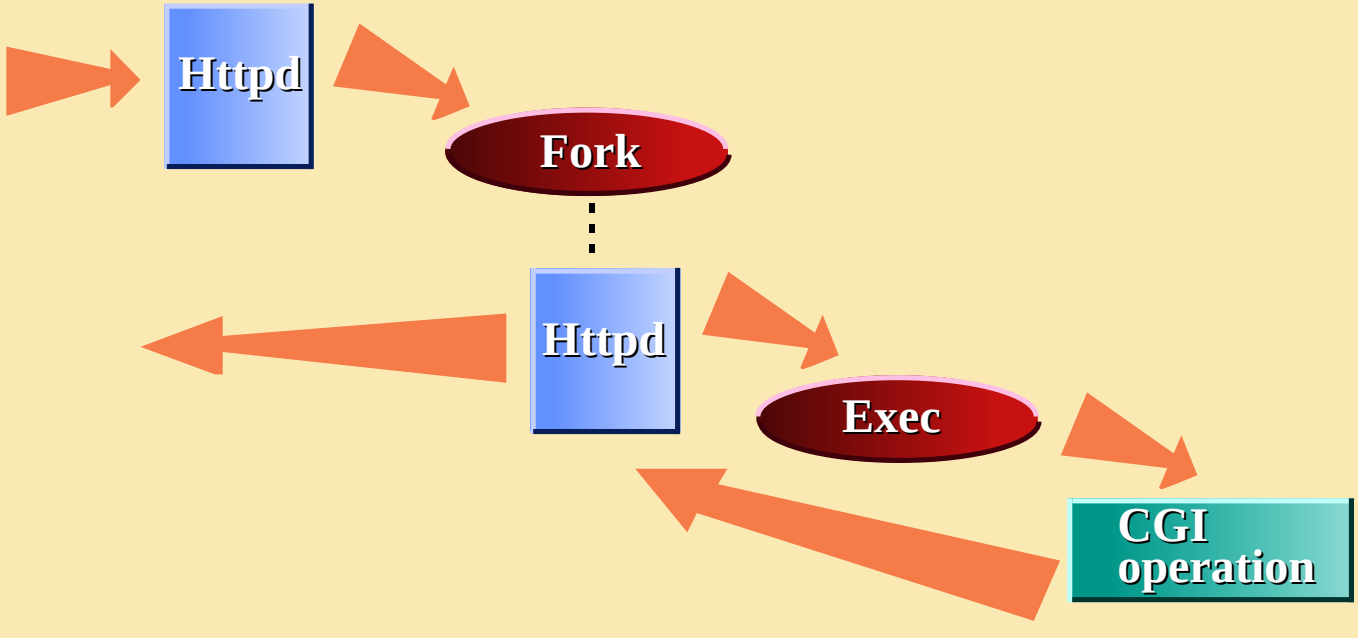
- Server-side Applets
- Extend Server Functionality
- Dynamically Loadable
- Instantiated At Startup or on Demand
- Local or Remote
- Provide Persistence and State

Servlet Advantages

- Higher Performance than cgi-bin
- More Extensible than C Plug-ins
- Provide Greater Security

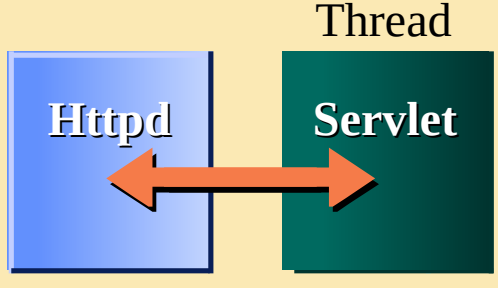
cgi-bin Scripts

- Lower Performance
- Expensive Fork and Exec
- Multiple IPC



Servlets are Simple

- Higher Performance
- Based on Java™ Threads
- Tight Integration
- Backwards Compatibility



Servlets vs. C Plug-ins

- Extensible
- Customizable
- Portable
- Plug-ins are Clunky!

Security

- Core Servlets
- Local Servlets
- Signed Servlets
- Unsigned Servlets
- Enables Agents over time

Services Well Suited For Jeeves

- Any Network Service that Requires Interaction or State!
- Particular Network Services Including
  - Personalized Newspaper
  - IS Applications
  - Games
  - Calendars

Current Developers

- Weblogic
- DimensionX
- NEC
- Sybase

Business Model

- Free for Personal, Non-Commercial, or Educational Use
- Available for Licensing Fee for Commercial Use
- Modeled after Java Licensing Program

Summary

- Solves Webmasters' Dilemmas
- Minimizes Developers' Time-to-Market
- Maximizes Developers' Value Add
- Maximizes OEMs' Flexibility
- Provides Greatest End-User Satisfaction

Demo

- Freeman Murray demonstrates Jeeves

Road Map

- Information on our Web Site
- Availability in July, 1996
- Notification

Q & A

- Jeeves…
  Coming to
  Serve You!
- Questionnaire
- Tech Pavilion #1
- jeeves@goa.eng.sun.com
- http://java.sun.com/products/jeeves

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