

# Siena Web Services

A Solution To Personal Computing  
With Established Desktop Programs  
Exploiting Web Technologies





**Siena Web Services**

# Siena Web Services: **Overview**

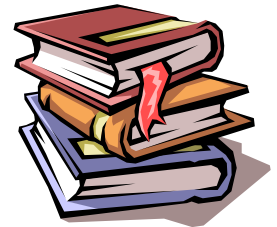
- Reference
- Potential for YOU ?
- Requirements
- Solution
- Siena Architecture
- Siena Product Offerings
- Service Offerings





Reference:  
**Utilizing Web Services**

- Project in London
  - Fortune 500 company
  - Pharmaceutical and chemical industry
- Problem
  - too many client applications
  - client applications write directly into databases
  - low programming skills
- Requirements
  - centralized managed database access
  - easy service implementation
- Solution
  - use Siena Architecture as open Web Services architecture middle tier





## Siena Web Services

### Use Cases:

### Potential for YOU ?

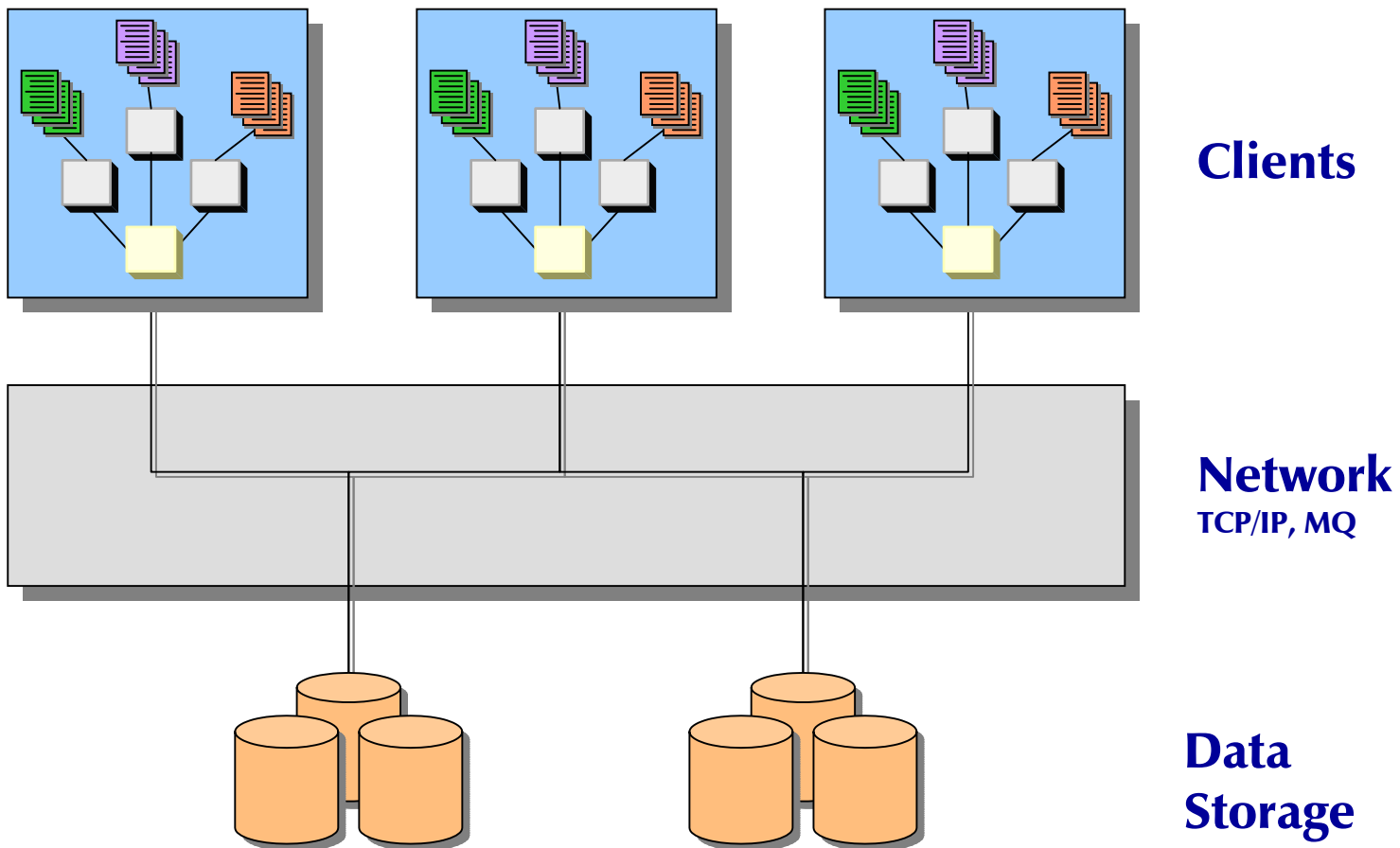
- How many business professionals would like to access data to be converted into information using normal desktop applications/tools (e.g. **Excel, PowerPoint, Word, Lotus 123, etc.**) ?
- Are you looking for a **scalable** and **available platform** for your personal computing environment ?
- Are you looking for standardized ways to access many different **data sources** ?





## Siena Web Services

# Personal Computing Today: Direct Access to Core-Data only ?!

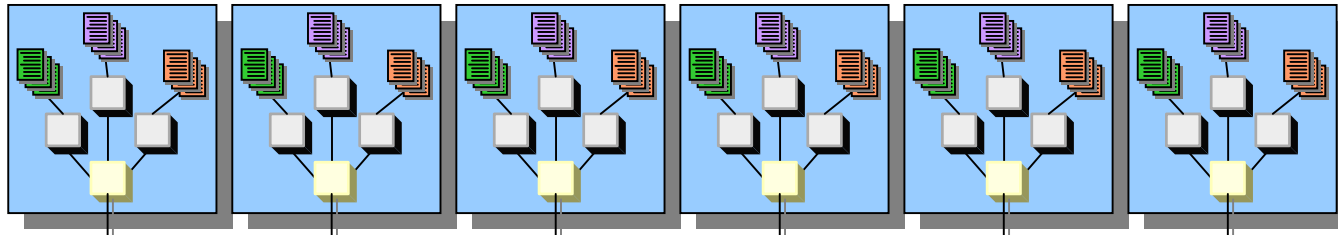




## Siena Web Services

Problem:

# What about special Data Storages ?



**Clients**

**Network**  
TCP/IP, MQ



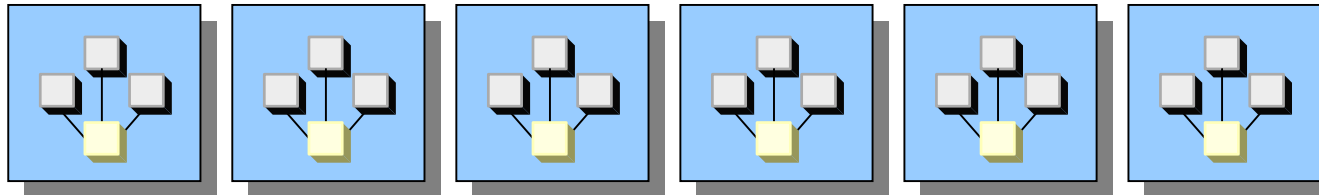
**Data Storage**



## Siena Web Services

Problem:

# Uncentralized IT Management



**Clients**

**Network**  
TCP/IP, MQ



**Data  
Storage**



## Siena Web Services Requirements: Vendor Independence

- Built on open standards
  - W3C Standards: XML, SOAP, WSDL, etc.
  - OASIS Standards: ebXML, UDDI, etc.
- Must be extendable
  - Integration of new data types should be possible
  - Addition of new standards and components must be possible
- Platform independent
  - Client interfaces must be available for  
all major platforms and for  
all major programming languages



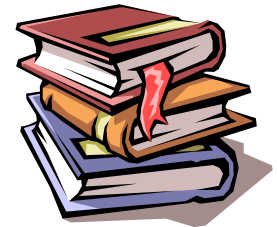


## Siena Web Services

### Problem:

### Few finalized standards

- Standards (selection)
  - Web Services
    - XML 1.0 – **W3C recommendation**: <http://www.w3.org/TR/REC-xml>
    - SOAP 1.1 – submitted to W3C: <http://www.w3.org/TR/SOAP/>
    - WSDL 1.1 – submitted to W3C: <http://www.w3.org/TR/wsdl/>
    - UDDI v2/v3 – intended for submission as OASIS specification: <http://www.oasis-open.org/>
  - APIs
    - J2EE 1.4 – JAX-RPC: planned for mid-2003
    - MS .NET 1.0 – framework is still evolving
- Problem: **Everything is still in flux**
- Answer: Use the open **Siena Web Services Architecture** to solve real problems **now**





## Siena Web Services

### Solution:

# Siena Web Services Architecture



## Clients

Web Service Interface

## Network

TCP/IP, Message Queues  
(IBM MQ Series)

## Service Engine

Web Services

## Data Storage



## Siena Application Spaces: Overview

- IT Management
  - Serve more business professionals with individual data requirements
- Enterprise Information Management
  - Manage data access security at application level
- Enterprise Application Integration (EAI)
  - Integrate arbitrary applications for improved efficiency
- Business to Business Integration (B2B)
  - Integrate business processes between business partners





## Siena Application Spaces: Centralize IT Management

- IT Knowledge
  - Database schemas
  - Server locations
  - Knowledge about access mechanisms (e.g. Kerberos, Liberty)
  - Configuration data
- IT Processes
  - Insertion of product records into a database
  - Transformation of retrieved data (e.g. convert to XML)
  - Report generation using multiple databases, files, directories
  - Single sign-on procedure
- IT Infrastructure
  - Client-side fail-over



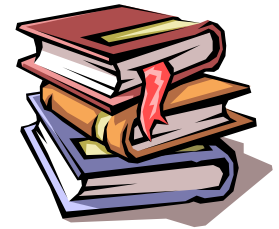


- Security
  - Prevent direct database access
  - Manage access permissions
- Abstraction
  - Separate data storage from data access
  - Unify data formats without modifying the data storage
- Logging
  - Log database/file access
  - Detect IT intrusion





- Cookbook Approach to EAI
  - use XML as data transport encoding
  - use XSLT to transform between different XML data languages
  - use Web Services for interaction
  - use reliable messaging (e.g. MQ Series) for transactions
  
- Business to Business (B2B)
  - Evolving standard: ebXML
  - Extends the above EAI approach
  - Problem: not complete yet





## Siena Web Services

### Use Case:

# Controlled End User Integration

- Situation:
  - IT is willing to provide to their end users
    - services (e.g. calculations) and
    - data (to be converted into information)
  - Many business professionals (end users) have
    - Desktop applications based on Word, Excel, Access or PowerPoint \*) and
    - wish to integrate the services and data into spreadsheets, text documents or presentations

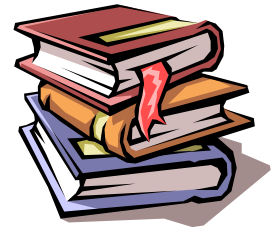
\*) or some other Windows COM compatible application
- Solution:
  - The IT dept. installs the **Siena Enterprise Server** to **enable controlled and secure access** to special company data
  - The end users install the **Siena Client** which **enables Word, Excel, etc.** to receive company data via the Siena Enterprise Server





## Advantages of Siena: Interoperability

- Consistent IT interfaces between company divisions (EAI)
  - Adding data to databases
  - Retrieving data from multiple data sources
- Expose IT interfaces to partners and customers (B2B)
  - Querying data
  - Integration of third-party IT-technology
  - Enhanced work-flow
- Interoperability with other Web Services tools
  - Integration with J2EE / Java tools
  - Integration with .NET / Sun ONE





- COM-Client for Windows Platforms
  - Integration with **Word, Excel, Access, etc.** via Visual Basic for Applications (VBA)
  - Integration with **Lotus, Visual Basic, etc.** via their COM interfaces
- Java-Client for all other platforms
  - **Platform-independent**
  - Full support of the Siena Servers
  - Easy to use API





## Siena Architecture: Advantages over Competitors

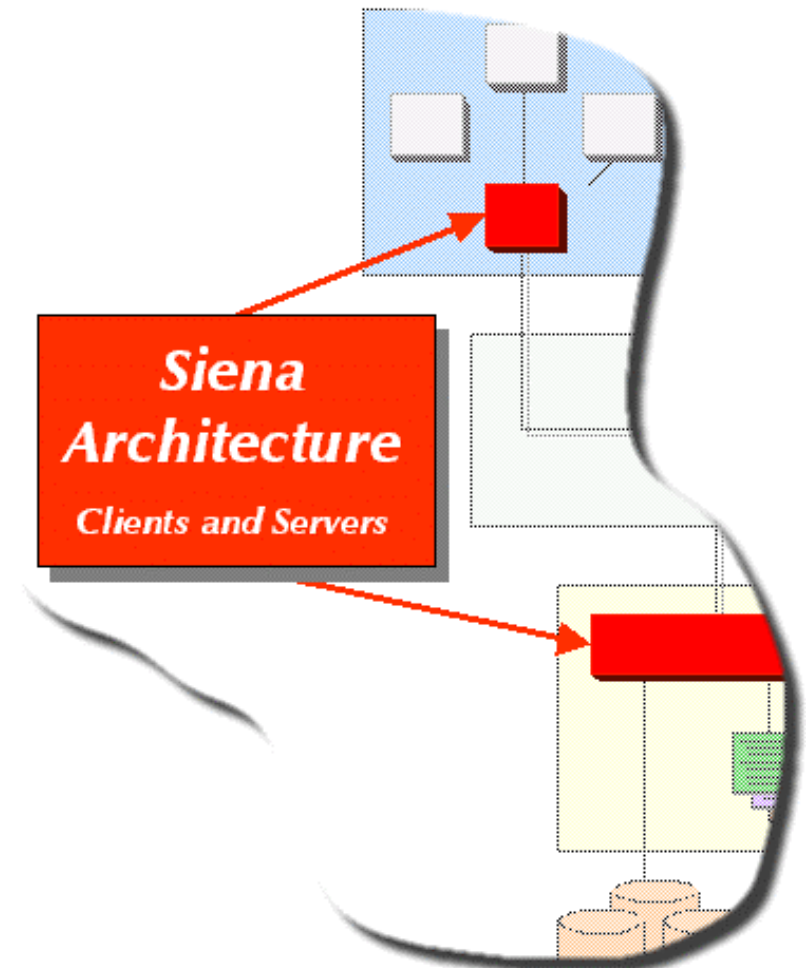
- Less training overhead
  - 3-6 months for Java / J2EE to use with a J2EE Server
  - 1 week for the Siena Web Services Language
- Faster development
  - 1-2 weeks for J2EE setups
  - 1-2 days for Siena
- Better usage of computing power
  - No client side architecture in J2EE or .NET
  - Reduced bandwidth, better scalability with Siena



## Siena Web Services

# Siena Architecture: Technology Overview

- Client – Server Solution
  - Client and server-side interfaces to all major programming languages and environments:
    - COM, VB, Word/Excel, Java, Python and others
  - Unix-based server side:
    - scalable high availability platform built on the Open Source SAP DB
    - clustering, failover and transaction management
    - high performance database connectivity
- XML-based communication
  - Interoperability, standards-compliant
  - Extendable and future-proof

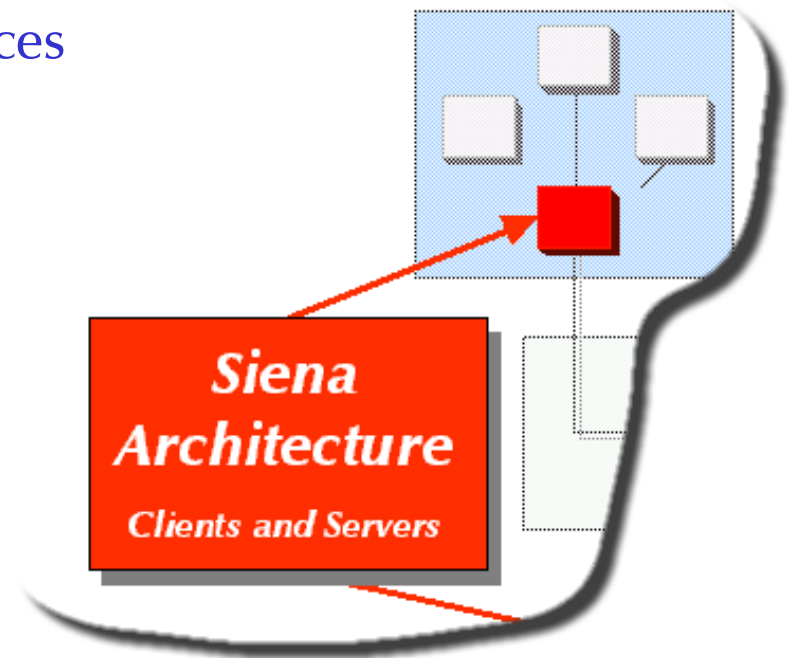




## Siena Web Services

# Siena Architecture: Siena Client Interfaces

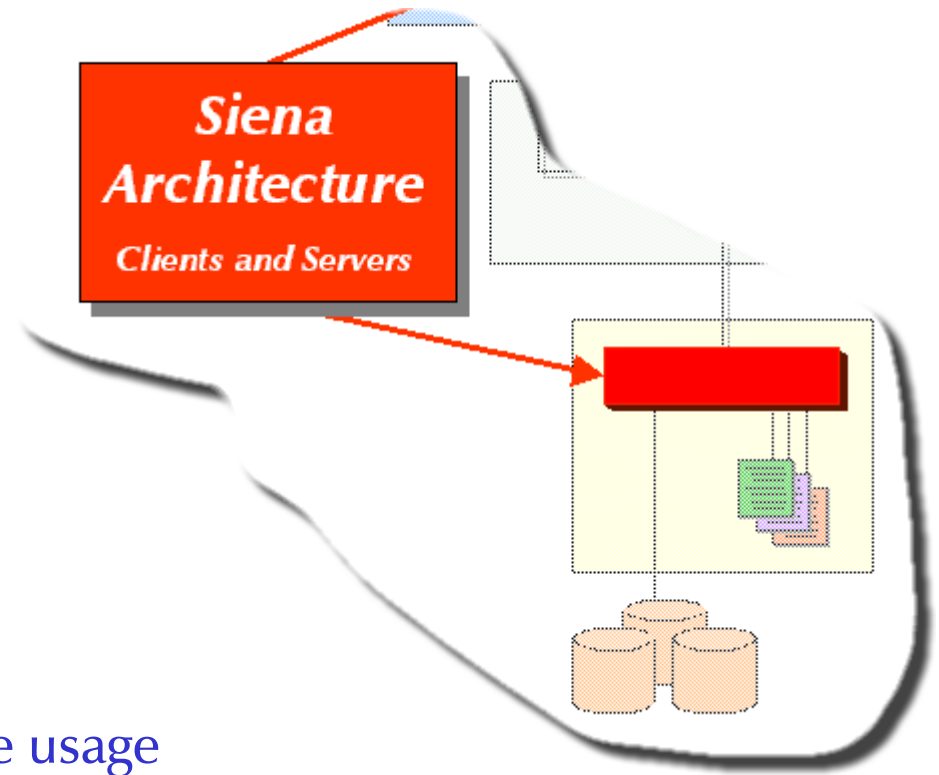
- Features:
  - Transparent interfacing to Web Services on the server
  - Supports session-based Web Services
  - Seamless failover
  - Auto-Configuration
  - Integrated client-side Web Service Engine
- Platforms:
  - Windows: COM-Server
  - Java: Native Client API
  - Unix: XML-RPC Server



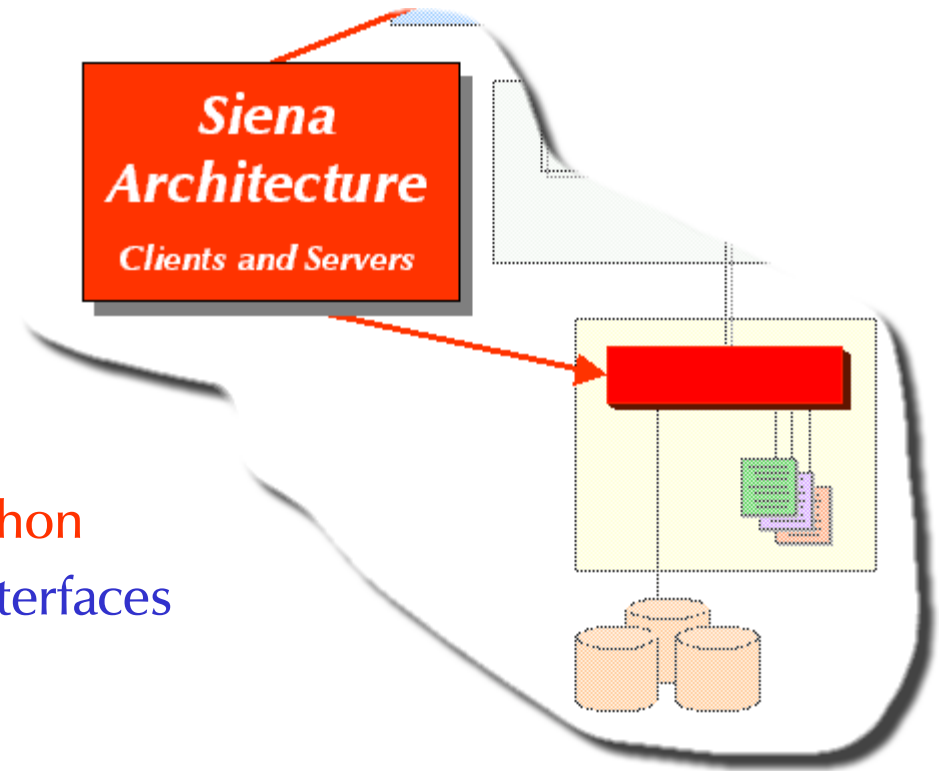


# Siena Architecture: Siena Server Offerings

- Enterprise Server
  - High performance, Scalable, Clustering Support
- Team Server
  - Mid-range multi-user server, easy to manage, install and maintain
- Personal Server
  - Single-user server, good for stand-alone or offline usage



- Web Services Engine
  - Supports session-based Web Services (enterprise edition only)
  - Can be integrated with the server's transaction management (enterprise edition only)
  - Services can be written in Python
  - XML-RPC, HTTP and SOAP interfaces
  - WSDL support
  - Auto-Configuration

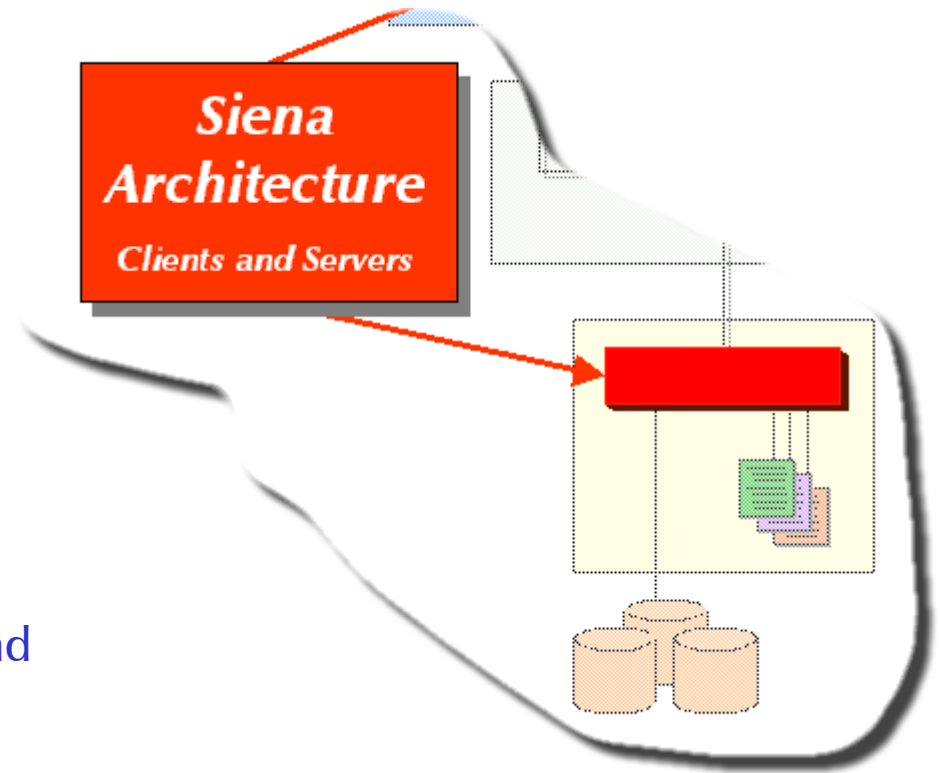




## Siena Web Services

# Siena Architecture: Siena Enterprise Server

- Features:
  - Scalable, high availability platform
  - High performance database connectivity
  - Zero Maintenance
  - Clustering and failover support
  - Transaction Management
  - Siena Web Service Engine with Session-based Web Services
  - SAP DB System Database Backend
- Platforms:
  - Linux, Solaris, AIX

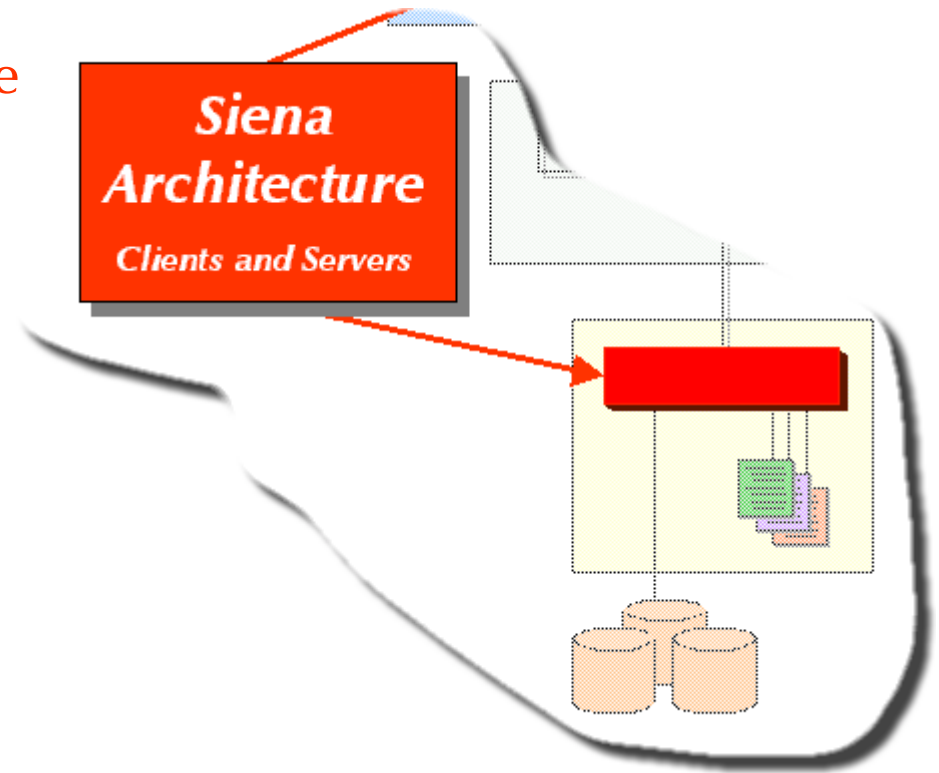




## Siena Web Services

### Siena Architecture: Siena Team Server

- Features:
  - Portable medium performance solution
  - Integrated ODBC database connectivity
  - Connection Pooling
  - Zero Maintenance
  - Siena Web Service Engine
- Platforms:
  - Windows, Linux, Solaris, AIX

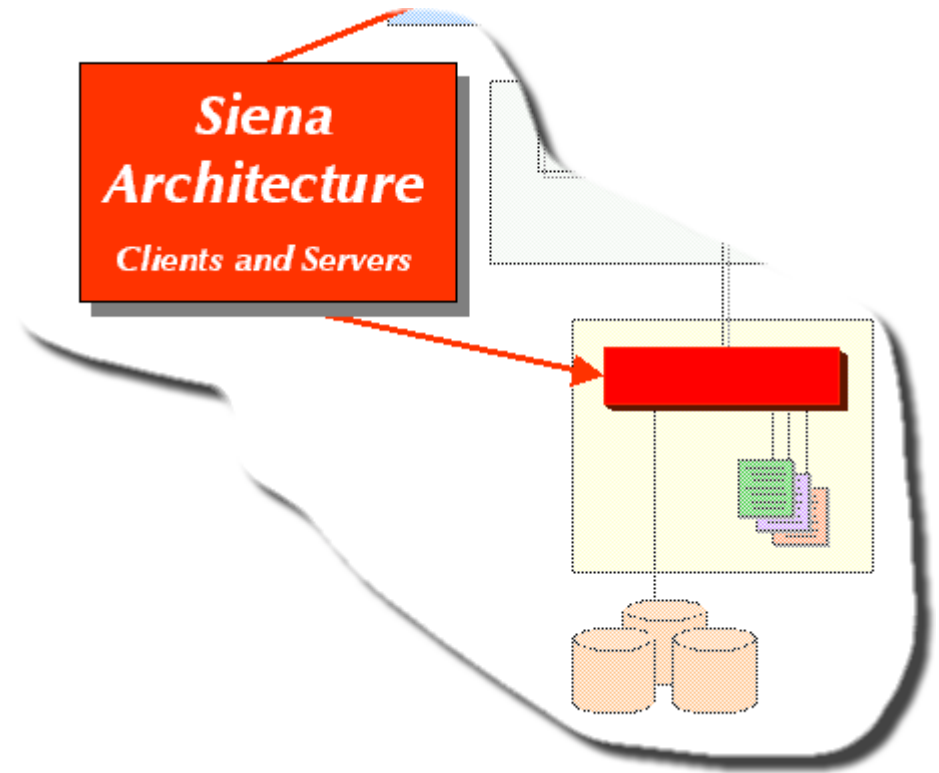




## Siena Web Services

### Siena Architecture: Siena Personal Server

- Features:
  - Ideal development and offline solution
  - ODBC database connectivity
  - Zero Maintenance
  - Siena Web Service Engine
- Platforms:
  - Windows





## Siena Web Services Contact

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