

# **Enterprise Database Systems on Mac OS X**

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# Why Bring This Up?

- **Apple is making great inroads into the Enterprise market with Xserve, Xserve RAID, Mac OS X Server and Xsan**
- **Great potential market for Mac-savvy consultants who can do more than set up servers and workgroups**
- **New skills and software need to be learned or Apple could just as easily lose a significant part of this market again...**



# Setting the Stage

# The Enterprise Market

- Large companies with many facilities and lots of data to manage
- Divisions often treated as small companies, but not data-independent
- Many are also international and must support multi-lingual applications
- Consider government and big education to be in this same general category



# Data in the Enterprise

- Many types of data need to be viewable by many different internal clients with various levels of access/security
- IT departments tend to want to manage the actual databases, but often are too busy to spend time building applications
- Departments/divisions must often contract with outside sources to have easy-to-use applications built – and otherwise have their needs met

# IT Departments

- **Responsible for equipment, networks, databases and backup for the enterprise**
- **Often maintain large “server farms” with hundreds or even thousands of servers and storage devices**
- **May not be client-oriented because of these huge responsibilities and need outside assistance to fulfill their larger mission of serving clients**



# SQL Database Servers

- **Client/Server engines that can handle massive numbers of tables, records, simultaneous users and transactions**
- **Generally managed by trained personnel in the IT department rather than by the staff of individual departments**
- **Many not available for Mac OS X (yet...), but are coming to the table...**

# Database Applications

- Interactive windows on the database
- May vary from one workgroup to the next, but may access common sets of enterprise data
- Need to interact with the SQL database in its native tongue and be scalable
- ODBC by itself is usually frowned upon
- Web applications need to be threaded



# Custom Application vs Off-the-Shelf

- Custom application always serves the client's needs better, but costs more
- Client's business is different from that of the company for which the off-the-shelf application was originally built
- Cost-cutting is relative. A well-fit custom app can save millions over a poorly-fit off-the-shelf app while only costing tens of thousands more

# Challenges and Opportunities



# Management Turnover

- Often means change of data platform, especially if it means switching to Xserves and Mac OS X Server
- This leads to translation of current data and applications to fit the new system
- Can lead to significant work, but the right tools can make this easier
- A little knowledge in this area can make a consultant into a hero with IT

# Moving to Xserve

- **Similar challenges and opportunities to management turnover**
- **Unless Oracle, FrontBase or OpenBase (or other SQL engine available on Mac) were in use on old servers, this means significant work to translate data and applications for new platform**



# Cross-Platform Environments

- **May have Macs on desktop, but databases on Windows or Linux servers**
- **May have Mac servers, but maintain legacy Windows workstations**
- **May have mix of technologies on both client and server ends**
- **In-house “standards” are rarely pure and are frequently only guidelines for new acquisitions**

# The Workgroup Application Fallacy

- Workgroups are rarely independent from a database point of view
- Access to enterprise resources is usually required by the workgroup
- Access to workgroup data is often required elsewhere in the enterprise, so solutions must be scalable – yielding consistency of information throughout the enterprise



# IT Rules

- **Eventually nearly all databases must come under IT control and protection**
- **This may mean moving from a more proprietary local database to the company's choice of SQL standard**
- **This can be both a short-term and a long-term opportunity if done right**

# Embrace the Change

- Even “independent” databases that have existed for years at the department level will eventually need to become more broadly available for efficiency’s sake
- The “small business” tools originally used may not be up to the task, so data must be moved to the SQL database and new applications must be built to use it
- This doesn’t have to be difficult – and it may lead to other business within the greater client company if done well



# Outsourcing to “India”

- Companies are learning that this is **NOT** cost effective – and that they lose control of projects as well
- Database expertise is no better outside the country than inside
- Effective on-site assistance is worth more than ineffective remote assistance
- We must offer better, more appropriate results to bring that business back

**Where We Fit In**



# The Role of the Consultant

- Sometimes advocate for the client with the IT department
- More often mediator between the two
- Client authorizes payments, but IT determines the longevity and viability of the project, so both must be happy
- Often programming becomes secondary to politics – and is assumed to be flawless after the initial sales presentation

# Role with Client

- Determine client's needs and build suitable application
- Train client personnel in its use
- Deal with data transfer, networking and security issues
- Explain client's importance to IT



# Role with IT

- **Sometimes educator, since IT personnel will rarely understand tools used to build client applications**
- **Troubleshooting partner – solving problems, not pointing fingers**
- **Explain IT's importance to client**

# Tools of the Trade



# SQL Database

- **SQL knowledge is essential, as is a deep understanding of the specific database in use at client's company**
- **On the Mac OS X platform there are limited choices (so far...), but good ones**
- **It is not necessary to be a certified DBA to be of value in a database transition**
- **In fact, knowledge of good application software and interface design are often outside the knowledge base of a DBA**

# Mac OS X Choices

- Oracle
- FrontBase
- OpenBase
- MySQL
- PostgreSQL
- Others...



# Application-Building Tools

**C variants**

**FileMaker**

**Java, PHP**

**4D**

**Web Objects**

**Omnis Studio**

**Basic variants**

**Others...**

# Demonstrations



Q & A