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PEO

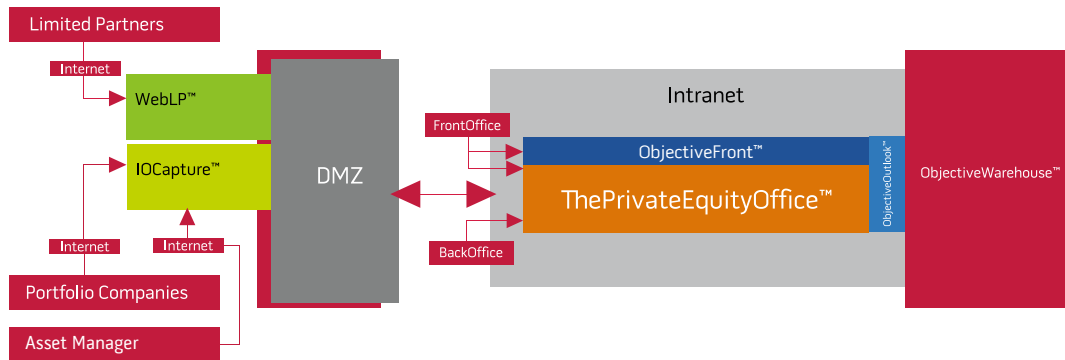
PrivateEquityOffice™

TECHNOLOGY
TOPOLOGY
FRAMEWORK

The Private Equity Office Technology Topology and Framework

Operational Architecture & Three Tier Mode

The Private Equity Office (PEO) is deployed with smart client technology using the industry standard 3-tier model. The result is that the PEO enables organizations to rollout the application to end-users across multiple locations with considerable ease. Unlike many .net applications in the industry domain today, The PEO operational architecture is a pure 3-tier model with the following important details:



Integrated Front And Back Office

Tier I

This client layer is an XML only transport layer between client and server with limited data bursts for optimal performance. This layer is the graphical user interface that the user sees.

Tier II

This is the Business Object Layer as web services written in C# with a pure object oriented implementation. All BOL calculations are web services, typically residing on a central server (though they can be deployed anywhere). Essentially this means that in a distributed situation with a Server in San Francisco and a user in Hong Kong accessing the PEO over a firm VPN, the same calculation performance is achieved as users residing on the local area network in San Francisco. The BOL web services are divided into the following categories:

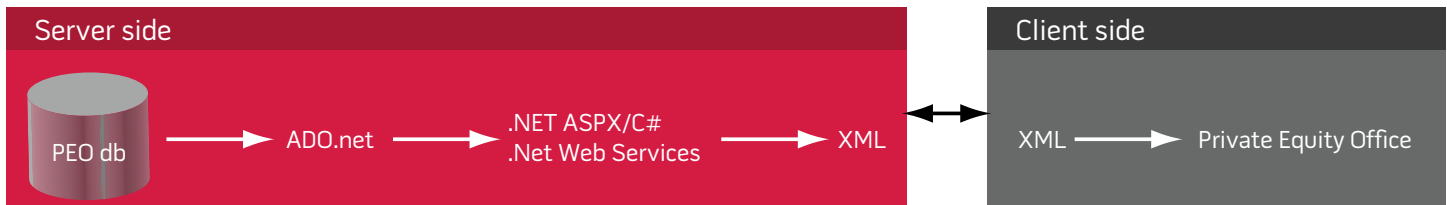
- (1) Data interchange between the client and IIS server featuring dished up XML as the transport content
- (2) Calculations web services including asset transactions, fund transactions, analytics, and debt amortization
- (3) Tickler web service that checks the status of alert criteria every ten seconds and sends alerts to users

Tier III

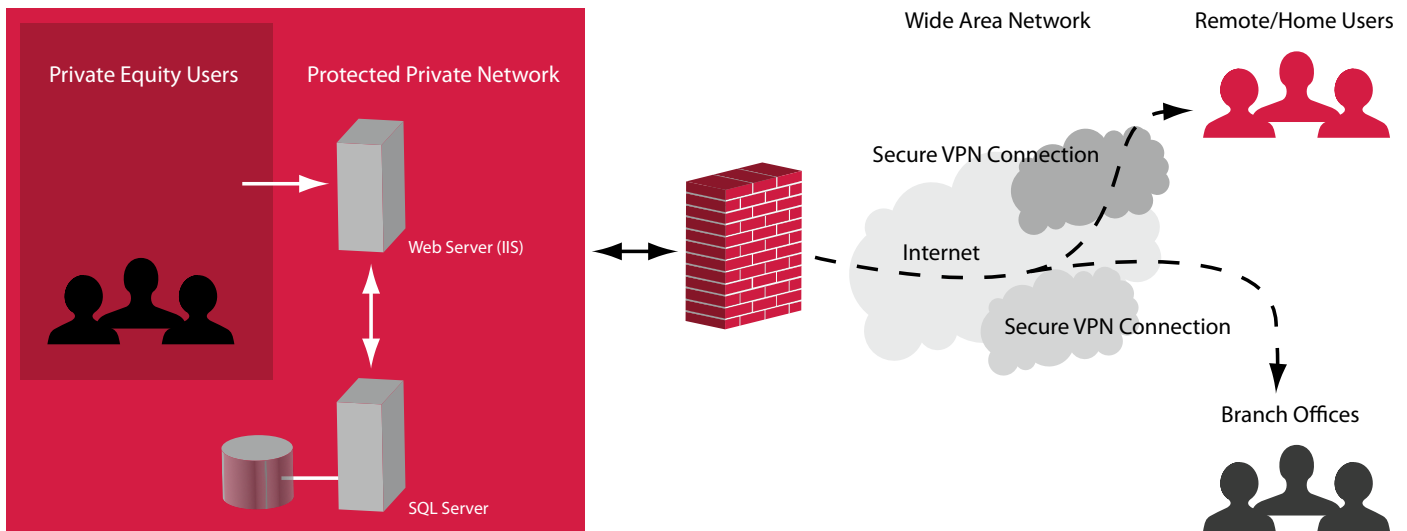
This is a Database layer residing on a central server as the central data repository. There are three databases in use by the PEO:

- (1) The Main Database repository featuring fully normalized (4th normal form) data structures with uncompromising referential integrity featuring identifying relationships as well as primary and foreign keys with cascade restrict or cascade delete referential integrity.
- (2) The Data Warehouse (DW) repository featuring snowflake-schema structures enabling drag and drop dimensional reporting from the DW as well as surfing of OLAP cubes using Microsoft analysis services.
- (3) The Document Database featuring BLOBS - stored as a separate DB to maximize transaction performance.

Physical Architecture



Microsoft SQL Server 2005 is employed as the database management system for PEO. Using ADO, ASPX and C# Microsoft IIS Web Services provide XML to be utilized by a C# thin client. The products architecture removes a number of the System Administrator's considerations including application deployment and maintenance, non-standard clients and distribution to branch offices and remote users formerly requiring additional Application Server software e.g. Terminal Services or Citrix.



Application Topology Program Design

The PEO is programmed using pure object oriented (OO) principles using C#. Further, these OO paradigms apply to both the database and the programming layers. Specifically, inheritance, encapsulation and polymorphism are extensively applied. For instance, the deal dashboard, fund raising opportunity and investor fund raising opportunity are all derived from a base project class. All transactions late bind in polymorphic fashion and calculation objects instantiate when called. Also, objects are in charge of their own functions - with central code instructing the objects what to do - but not how to do it - thus enforcing encapsulation.

Why is this important?

Because maintenance is a nightmare with the hard coded transactions offered by many vendors. The behavior will be different for different instances of alternative assets. The PEO scales to meet these requirements through object oriented components and program design.

Recommended Server Configuration

1 Server Installation

SERVER SIDE - HARDWARE

Minimum

Memory (RAM) **4 GB**

Disk Space **20 GB**

Processor Speed **1.8 GHz**

Recommended

Memory (RAM) **8 GB**

Disk Space **80 GB**

Processor Speed **2.4 GHz**

SERVER SIDE - SOFTWARE

Minimum

Operating System **Microsoft Windows 2003 Server**

Database **Microsoft SQL 2005 Server SP3**

Web server **Internet Information Service 6.0, ASP.Net, .Net Framework 3.5**

Recommended

Operating System **Microsoft Windows 2008 Server**

Database **Microsoft SQL 2008 SP1**

Web server **Internet Information Service 7.0, ASP.Net, .Net Framework 3.5**

2 Server Installation

SERVER SIDE - HARDWARE

Minimum

Disk Space **20 GB**

Processor Speed **1.8 GHz**

Recommended

Disk Space **80 GB**

Processor Speed **2.4 GHz**

SERVER SIDE 1 - SOFTWARE

Minimum

Memory (RAM) **4 GB**

Operating System **Microsoft Windows 2003 Server, ASP.Net, .Net Framework 3.5**

Database **Microsoft SQL 2005 Server SP3**

Recommended

Memory (RAM) **6 GB**

Operating System **Microsoft Windows 2008 Server, ASP.Net, .Net Framework 3.5**

Database **Microsoft SQL 2008 SP1**

SERVER SIDE 2 - SOFTWARE

Minimum

Memory (RAM) **2 GB**

Operating System **Microsoft Windows 2003 Server, ASP.Net, .Net Framework 3.5**

Web server **Internet Information Service 6.0**

Recommended

Memory (RAM) **4 GB**

Operating System **Microsoft Windows 2008 Server, ASP.Net, .Net Framework 3.5**

Web server **Internet Information Service 7.0**

Client Requirements

CLIENT SIDE - HARDWARE

Minimum

Memory (RAM) **512 MB**
Disk Space **100 MB**
Processor Speed **1.8 GHz**
Video Card **1024x768**

Recommended

Memory (RAM) **1 GB**
Disk Space **1 GB**
Processor Speed **2.4 GHz**
Video Card **1024x768**

CLIENT SIDE - SOFTWARE

Minimum

Operating System **Microsoft Windows XP Pro**
Additional Software **.Net Framework 3.5, Microsoft Outlook 2007 SP2**

Recommended

Operating System **Microsoft Windows XP Pro, Windows Vista, or Windows 7**
Additional Software **.Net Framework 3.5, Microsoft Outlook 2007 SP2**

Additional Requirements

Server Hardware: Dual Processors, Fast I/O, RAID Server Software: Microsoft SQL Server 2005 Standard and Enterprise Editions are supported. Express and Workgroup editions (included with Small Business Server) are not supported. Additional Software: ASP.NET and .Net Framework 3.5 is required.

PEO

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