

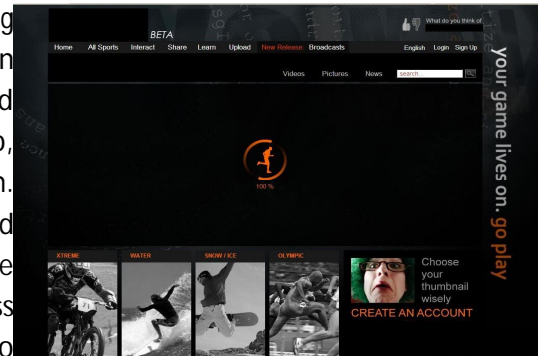


Social Networking

A video sharing community website.

Executive Summary

The client firm had a couple of social networking – video sharing community websites that were hosted using a freely available open source codebase that the client had acquired on the web and wanted to enhance. Contracting work to another firm and that too, another country was a double-challenge for the client firm. Mindfire's immense experience in video streaming and community/social application development, helped establish the initial trust. This was well supported by the different business engagement models Mindfire proposed to the client firm. Two dedicated resources were assigned for the first two months and this later became a long and healthy relationship resulting in a full scale virtual team setup on the video sharing community application development which was crucial to the success of the client firm. Mindfire delivered a full scale, extensible team setup, with experienced resources involved in multiple technologies for both client and server side application design and development.



About our Client

Client Software Development Company | **Location** Utah, USA | **Industry** Internet, Software & Services

Business Situation

The client firm was facing security issues with the open source code base that they had used on their websites and had never tried outsourced/contracted development. Mindfire offered its services and gained the clients confidence by showing expertise in the related domain and technical areas. Initial discussions were held on establishing point of contact, communication and collaboration methods. Further, Mindfire's prior experience and success commitments/guarantee with integrated change management for risk aversion helped the client arrive at a phase wise development plan. A plan was made to:

- Interview and assess the proposed resources, project manager, lead software engineers and others.
- Assign a technical point of contact on the client's end for project related queries and requirements.
- Establish an engineer as a primary point of contact for the client firm.
- Assign preliminary work to the engineer allowing him time to understand the system and
- Assess progress and appropriately time the extension of the team from 2 to 8 resources, also extending the responsibility of the lead software engineer to a project manager for the client firm on Mindfire's end. This would mean extending project management responsibilities allowing for greater authority on decision making required for the project(s) development at Mindfire.



Solution Details

The Mindfire Solution

The team of resources continues to work on different modules of the website, which is a video sharing community web site essentially, designed for sports enthusiasts. The web application includes features that include video upload, encoding/streaming, picture cropping/annotation, media content sharing, many to many Video/Audio/Text chat, Live Video Broadcasting and other social networking modules.

An administration module is provided to establish labels, users, permissions, configuration, monitor media content and user preferences.

Achievements

We designed and developed the site based on Agile Development Methods with Web 2.0 techniques in mind to make the site fast and usable for all users with any type of Internet connection. We used CSS sprites to design the site layouts which help speed up site load time.

Using Ajax, we could get the work flow screens to demonstrate desktop application type response times.

We also created a desktop widget for this website which is a platform independent application using Rich Internet Application (RIA) technologies from Adobe Air. The widget is totally in sync with the web site which allows access to all features to the users such as Media search and messaging including, Video/Audio/Text chat and live broadcasting.

Technologies

- Presentation Tier:

- Web page designs done using the Smarty template system with the help of XML, HTML, CSS Sprites.
- Ajax, Javascript, Prototype, jQuery, Scriptaculous used for desktop application like experience
- Rich Internet Application (RIA) using Flash, Flex.

- Business Tier:

- Business objects implementation using Object Oriented PHP– state machines, permissions/privilege matrices, validations, data lookups, transactions processing etc.

- Data Tier:

- ADOdb database class was used in the data-tier and data layer abstraction, which seamlessly allows use of any database server, given the generic interfaces.

A multi-tier architecture was created, separating the presentation, business/application logic and the data management into different layers. Technology decisions were made keeping in mind that the deployment and total costs to the client firm and its users.



Presentation layer is essentially an HTML web interface. Business logic layer is the core application processing engine, supplemented by generic database-interface layer. The data layers consist of the database server where all data and information is stored.

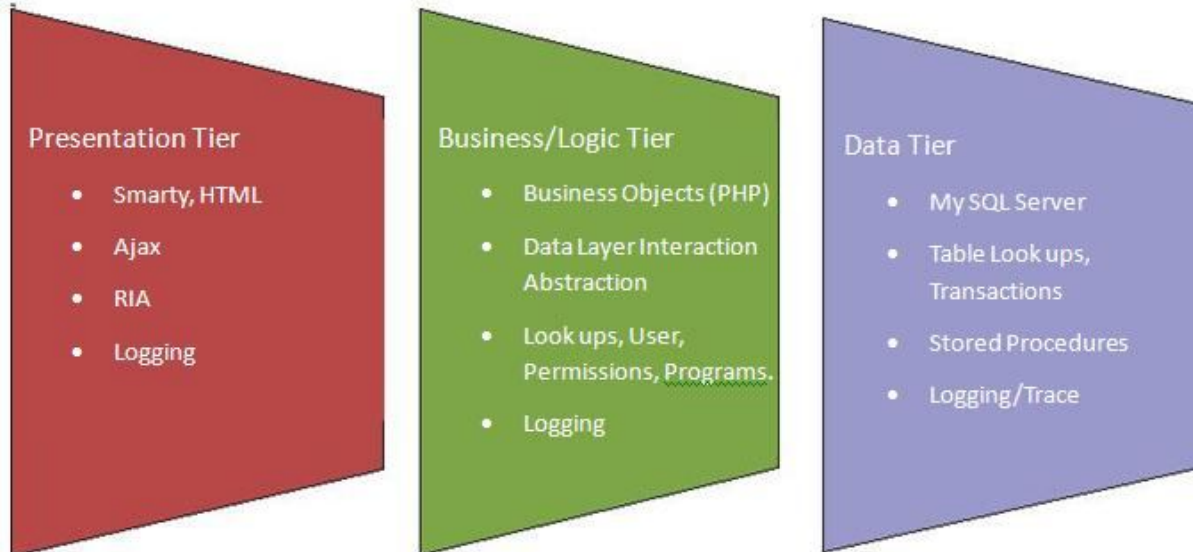


Figure 1 – Multi-Tier Architecture

All layers have a generic, loosely coupled interface, to allow for improvements in scalability, performance, easier change control and better control on functionality.

- Server Technologies Used:

- Lighttpd, Apache, Nginx, Flash Media Server(FMS), Video Streaming (RTMP), Pseudo Streaming (HTTP)
- Memcached, APC cache for caching content
- Video encoding using ffmpeg, mencoder, flvtool2.
- Load Balancer with Replicated Web and My SQL database servers

- Supported Client Browsers/Technologies:

- IE 7+ browser support on any Windows machine. Safari, Firefox 3+ on both Mac and Windows platforms.

Final Results **Software System**

A key aspect is the development of a web application with common features available on several larger community websites, which allows the users to share and network with other people with similar interests. The unique features available to users are Live Broadcasting to the world, Video/Text/Audio live chat, Blogs, Groups (Leagues and Teams), Discussions, E-commerce Shopping cart. The site promotes Data portability and implements an API that allows other applications to PULL and PUSH data to the website.



- Figure-2 shows the basic deployment diagram of the load balancer server configuration

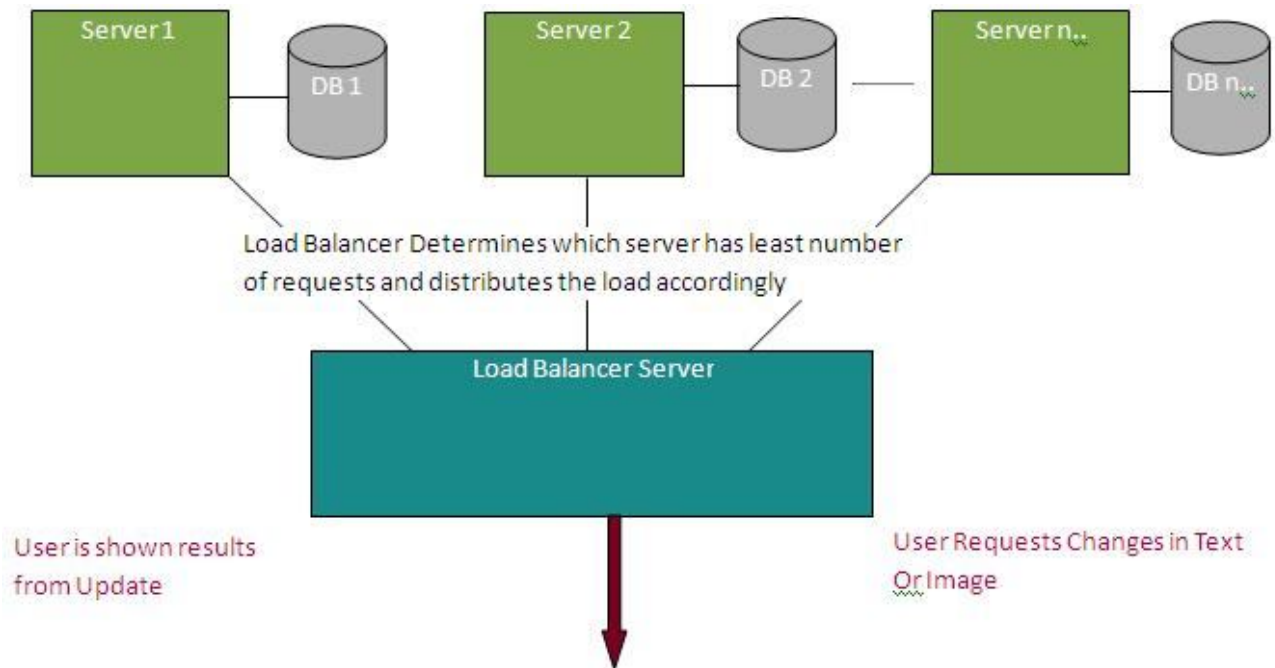


Figure 2 – Deployment (and basic story board)

- Figure-3 shows the basic deployment diagram of each individual server

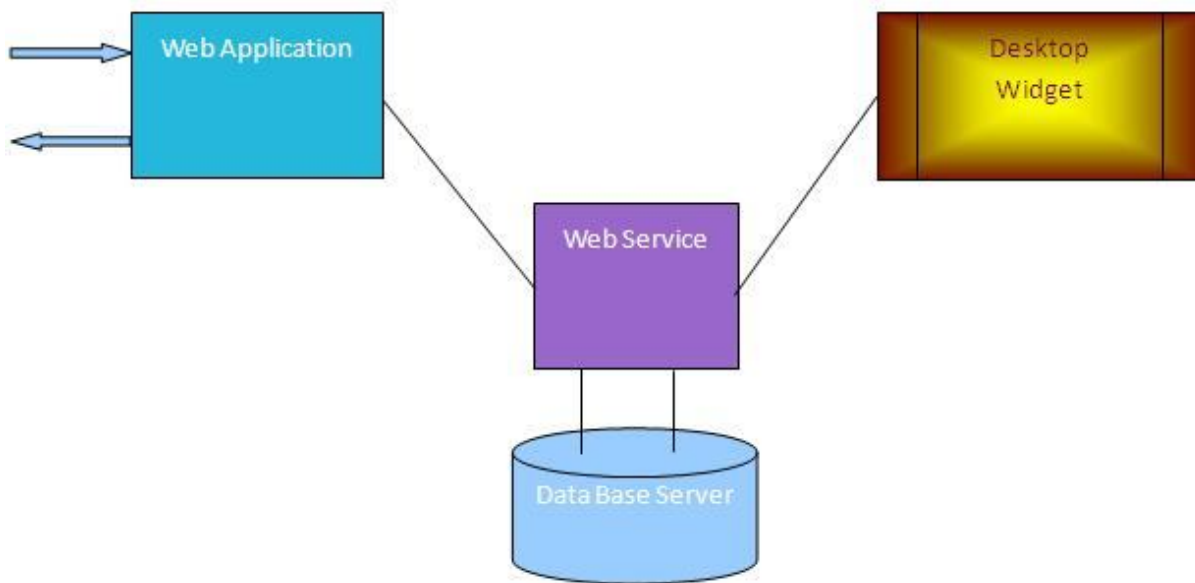


Figure 3 – Deployment of each individual server



Customer Benefits

The specifications were more on the conceptual side. Mindfire provided product design support where basic requirements were understood and analyzed, workflow and features were brainstormed to come to the best possible design & implementation after elaborate discussion with client. Communication and co-ordination with the client was the key to the decision-making on feature details.

Mindfire has an excellent understanding of the business, architectural, operational, customer base specific considerations and requirements for various steps/versions of the complete product/system road map. Clear vision of the scope and future requirements is a big plus to reducing the number of iterations, redundancy and associated costs.

Working with Mindfire, the client continues to benefit on overall costs for the website development, Mindfire's skills, experience, and aggressive pricing has greatly reduced the total costs.

Future relationship

Mindfire continues to be an active software service provider/vendor for the client firm, handling product and project development from its broad product portfolio, involving various different technologies and trends. The client firm has just released the Beta version of the website and plans to continue adding features and has started 2 more projects along the same lines.

