



## **SFA Portal**

### ***Application Architecture and Detailed Design***

Version 1.1

9 February 2001

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## 1.0 Overview

This document, *Application Architecture and Detailed Design*, is part of the overall analysis of technical requirements for the SFA Portal Version 1.0. There are three other sets of documents that make up the technical analysis of requirements:

- Business, Functional, and Technical Requirements (Attachments A and B)
- Interface Design (Attachments C and D)
- Test Plan (Attachment E)

Collectively, these documents comprise the development team's deliverable to SFA as outlined in the Task Order governing development of the SFA Portal V1.0

The analysis of technical requirements is a living document (or set of documents) that will continue to evolve and be refined through the course of building the SFA Portal V1.0. The requirements document (Attachment A) has served as a vehicle for refining existing requirements and identifying new requirements to more accurately reflect customer needs, launching the user interface and storyboard design work, and defining the test plan. User design sessions will generate further refinement of existing requirements and identification of new requirements, some of which it may be feasible to implement in V1.0. Similarly, the user interface design and storyboard are living documents and will continue to evolve right up through both the NASFAA conference and the final few weeks before production system deployment.

The *Application Architecture and Detailed Design* also is a living document. It serves several core purposes in the development of the portal:

- Identify how the component technologies will work together to deliver the functionality specified in the requirements
- Serve as a roadmap to guide development so that the Portal code is architecturally sound and robust, and can be developed with maximum efficiency and speed
- Provide the framework for detailed documentation so that the Portal application can be easily maintained, enhanced, built upon, and integrated with other applications

As delivered today, the *Application Architecture and Detailed Design* document takes the currently available knowledge about required functionality and component technologies as far as it can go to define the architecture and detailed design of the SFA Portal application. It will continue to evolve with further refinements of business, functional and technical requirements and user interface design. It will also continue to change as we learn more about the capabilities of the underlying COTS applications and their ability to work together; both through provision of vendor technical support, training, and documentation and through the development process itself.

## 2.0 Architecture

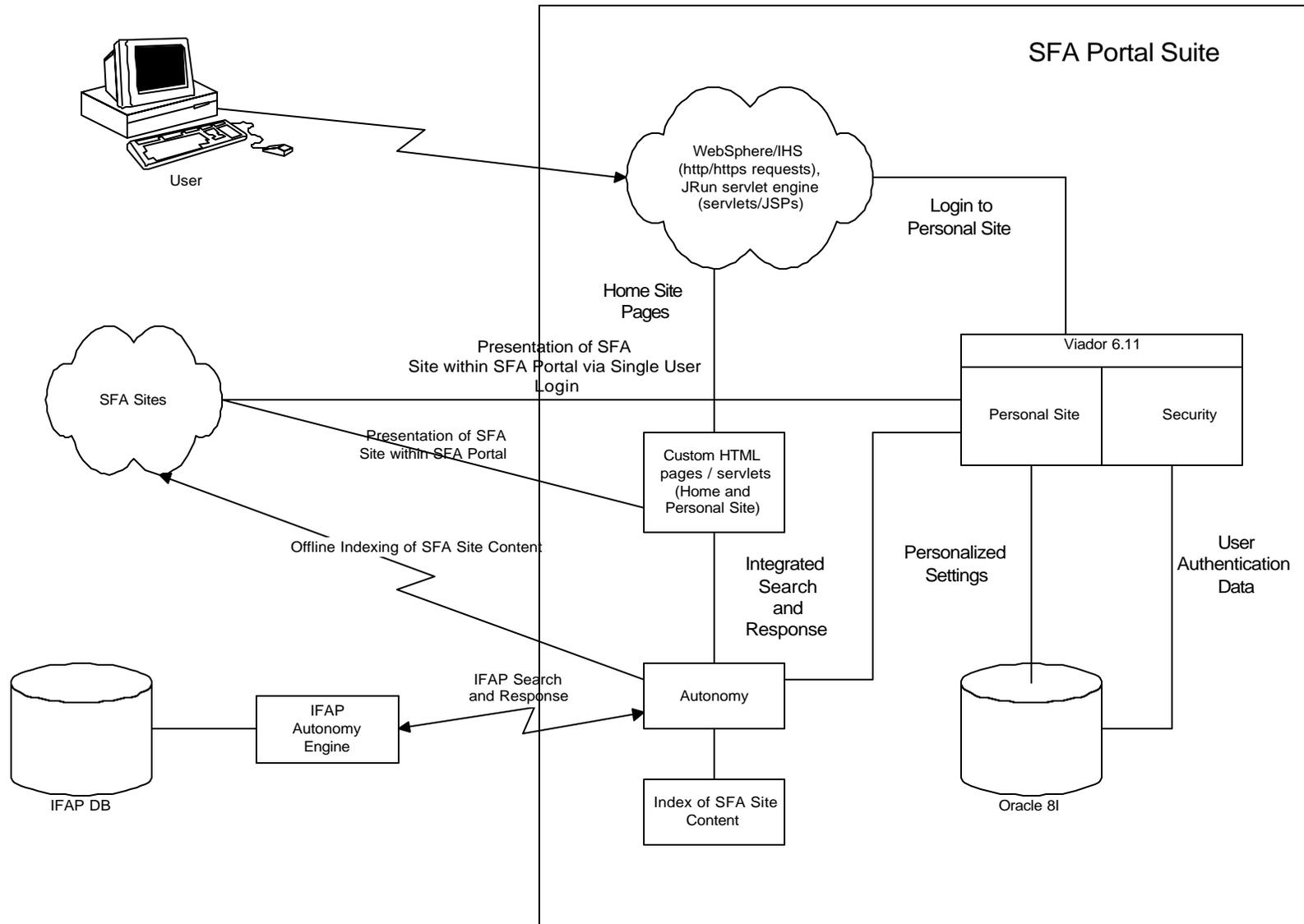
The SFA Portal system is composed a series of COTS products integrated by custom-developed code to form a complete system that meets the functional requirements as specified in the *SFA Portal Requirement Document* (attachment A). The major components of the SFA Portal are:

<b>Product</b>	<b>Function</b>
<b>WebSphere</b>	Web Server for client HTTP requests. Also provides a Servlet engine for server-side processing
<b>Autonomy</b>	Search engine providing integrated search and spidering for the Portal
<b>Oracle 8</b>	Relational database used to provide persistent data storage for user preferences and dynamic Portal contents
<b>Viador</b>	Commercial Portal interface used to provide security and authentication of users

The basic architecture of the SFA Portal system is shown in **Figure 1**.

- All client interactions are processed through **WebSphere**. This includes ‘click-through’ and ‘link-and-launch’ functions in support of SFA sites, as well as external sites accessible via bookmarks in the Personal Site area.
- **WebSphere** retrieves Portal content as requested by the user. **WebSphere** is also responsible for delivering the login interface from **Viador** to the client.
- **Viador** stores client authentication information for login and client preferences for the Personal Site in **Oracle 8**.
- The Home Site and Personal Site pages access **Autonomy** to provide integrated search functionality.
- **Autonomy** spiders the SFA site content and stores it in its own internal database. **Autonomy** also accesses the external Autonomy engine provided by IFAP.
- **Viador** will provide access and presentation, through **WebSphere**, of external content such as news feeds and stock quotes, as these features are defined.
- **Interwoven**, part of the IFAP application, is used to manage content provided to the Portal. Interwoven is not part of the application architecture for the SFA Portal.

Figure 1: SFA Portal Architecture



## 3.0 High Level Design

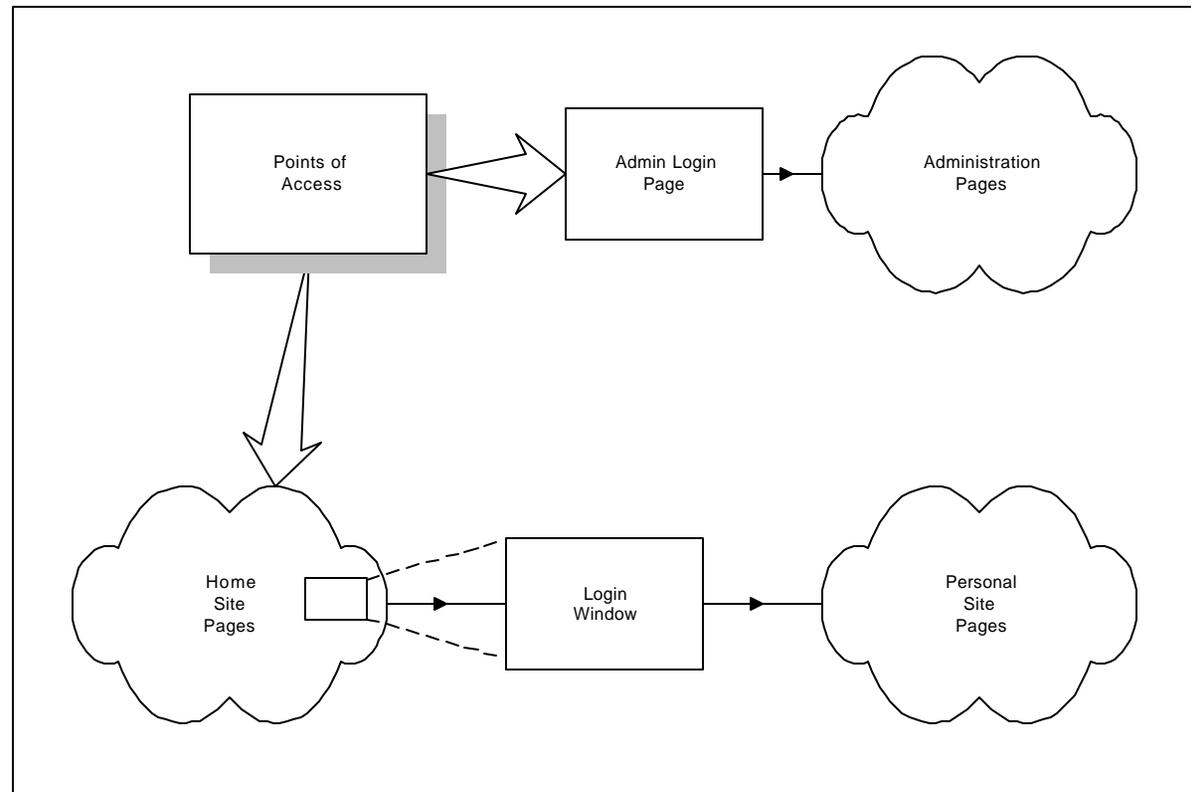
### 3.1 High Level Site Map

The SFA Portal consists of three groups of web pages:

- The Home Site, containing open access content with no customization;
- The Personal Site, providing customized content on a per-user basis;
- The Administration Site, allowing site administrators to create and maintain calendar and headline content

The high level layout of the SFA Portal pages is shown below in **Figure 2**. Clients can freely access the Home Site pages, but cannot access the Personal Site pages without going through the Login Window within the Home Site. This provides the necessary level of authentication required to do personalization, and provides the security framework allowing the future implementation of single user login. Likewise, administrators cannot access the Administration pages without authenticating through the Admin Login page.

**Figure 2: High Level Site Map**

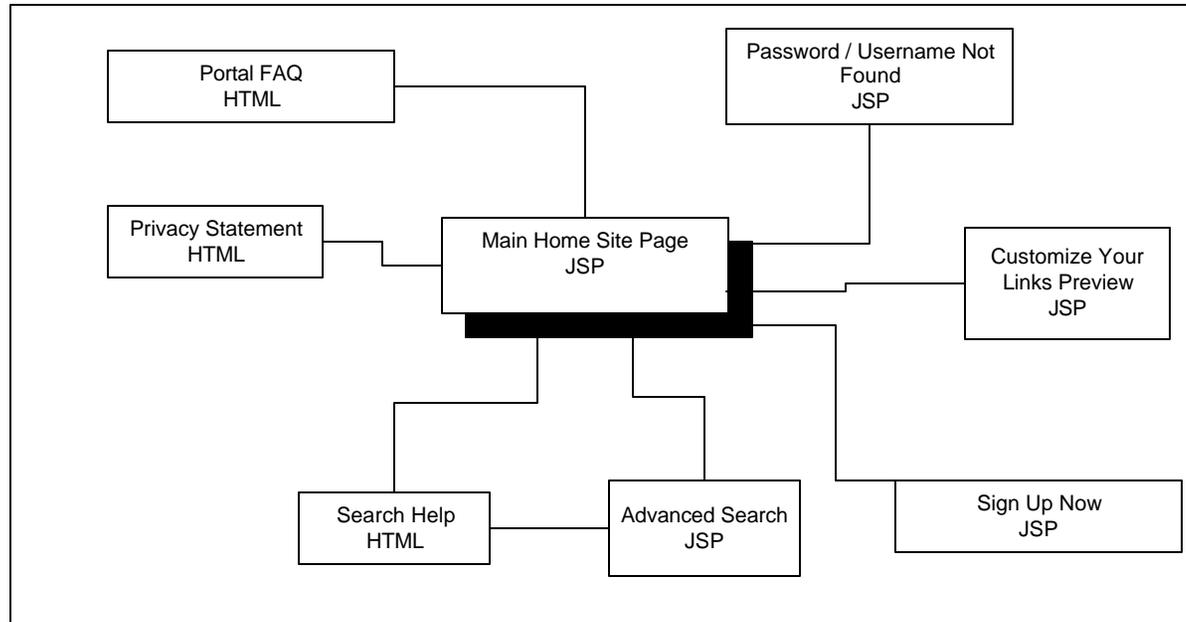


Pages within the Home Site and Personal Site areas will be displayed in the current browser window, while sites outside of the SFA Portal accessed through links in the Portal will be floated in a new window.

### 3.2 Home Site Pages Map

The Home Site pages are the set of open access pages available to all clients without the need for authentication. No customization of content based on the client identification is available on the Home Site. The Home Site pages are connected as shown in **Figure 3**.

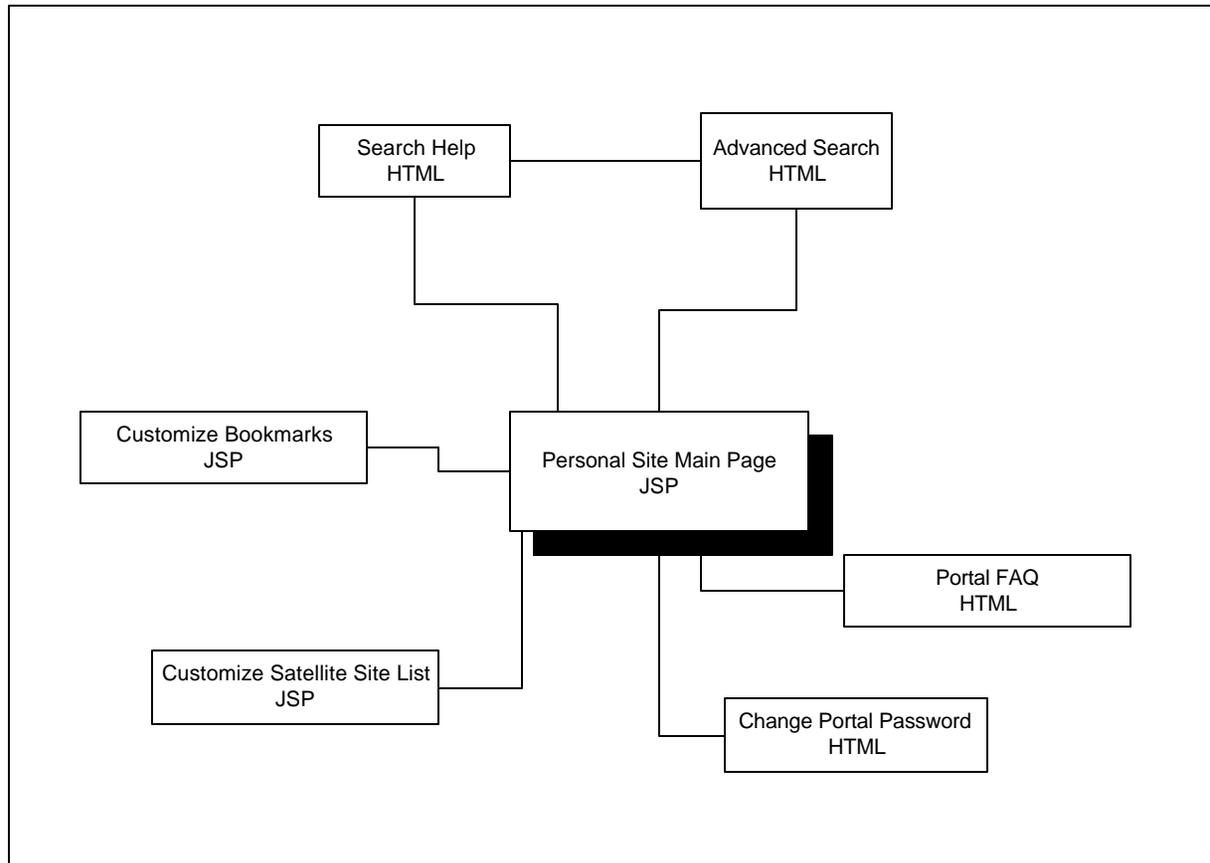
**Figure 3: Home Site Map**



### 3.3 Personal Site Pages Map

The Personal Site pages are the set of pages that are only accessible after the client has been authenticated. The Personal Site provides custom content based on preferences that the client can configure through the Portal. The Personal Site pages are connected as shown in **Figure 4**.

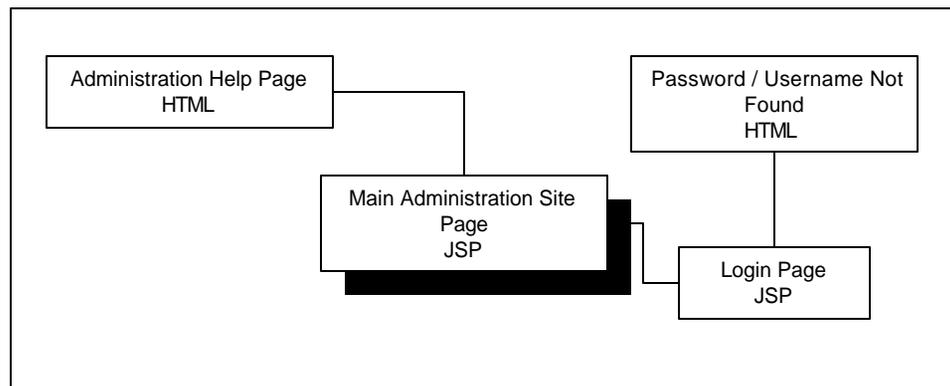
**Figure 4: Personal Site Map**



### 3.4 Administration Site Pages Map

The Administration Site pages provide a web-based interface to perform any administrative functions that must be performed internally. Currently, the only functions defined are for content management (add/mod/delete) of Headlines and the Calendar. Should Single-Logon be implemented, administration of user passwords and ids would likely take place through the Administration Site pages. The URL to access these pages will not be publicly available and the pages will require authentication before an administrator can make any changes to the content of the Headlines or Calendar data.

**Figure 5: Administration Site Map**



## 4.0 Detailed Design

The detailed design is divided into three sections corresponding to the three sections specified in the high level design.

### 4.1 Home Site Detailed Design

The Home Site consists of six major functional areas:

- Static HTML pages
- SFA Links Window
- Calendar of Events Window
- Headlines Window
- Search Functions Window
- Personal Site Account Creation
- Login Window

#### 4.1.1 Static Pages

Static pages are those web pages which contain no dynamic content and which maintain no server side connection. All static HTML pages are delivered to the client via standard HTTP (Hypertext Transfer Protocol) techniques utilizing WebSphere as the delivery mechanism. The static pages contained under the Home Site are as follows:

- Portal FAQ/Help page
- Privacy Statement page
- Search Help page
- Login Failed page

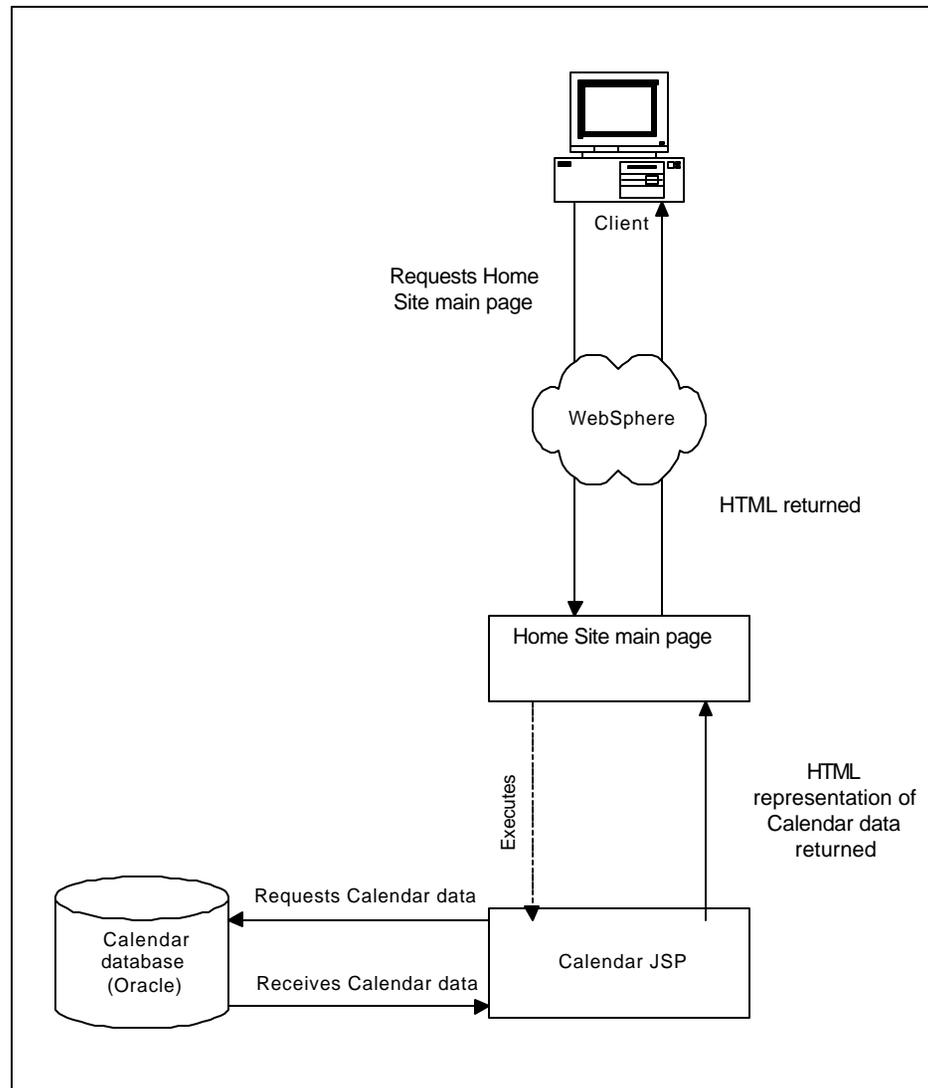
#### 4.1.2 SFA Links

The links to the SFA Link Sites will be static HTML links within the Home Site JSP. Clicking on a SFA Link will float the target site in a new window.

#### 4.1.3 Calendar of Events Window

The content provided by the Calendar of Events will be generated by the Calendar JSP (Java Server Page) and incorporated into a window within the Home Site main page. The generation of this content is done as shown in **Figure 6**.

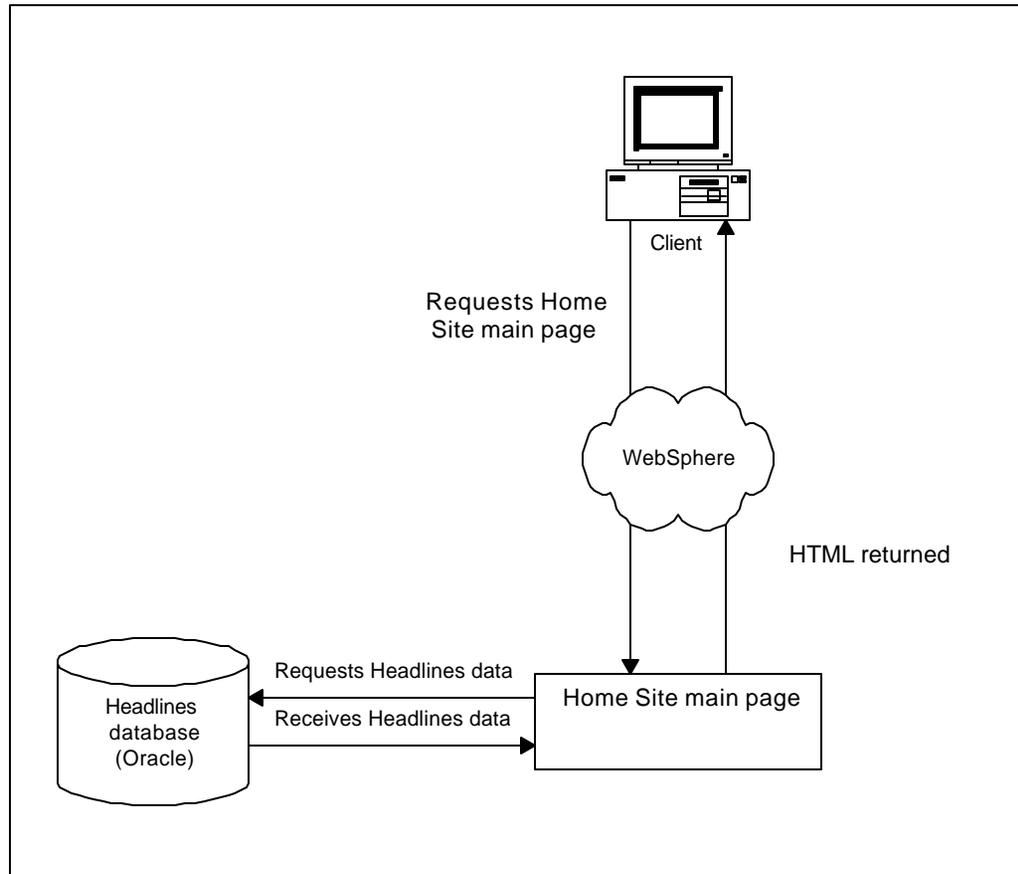
Figure 6: Calendar Retrieval Data Flow



#### 4.1.4 Headlines Window

The Headlines content will be generated directly by the Home Site main page JSP (Java Server Page) and incorporated into a window within the Home Site main page. The generation of this content is done as shown in **Figure 7**.

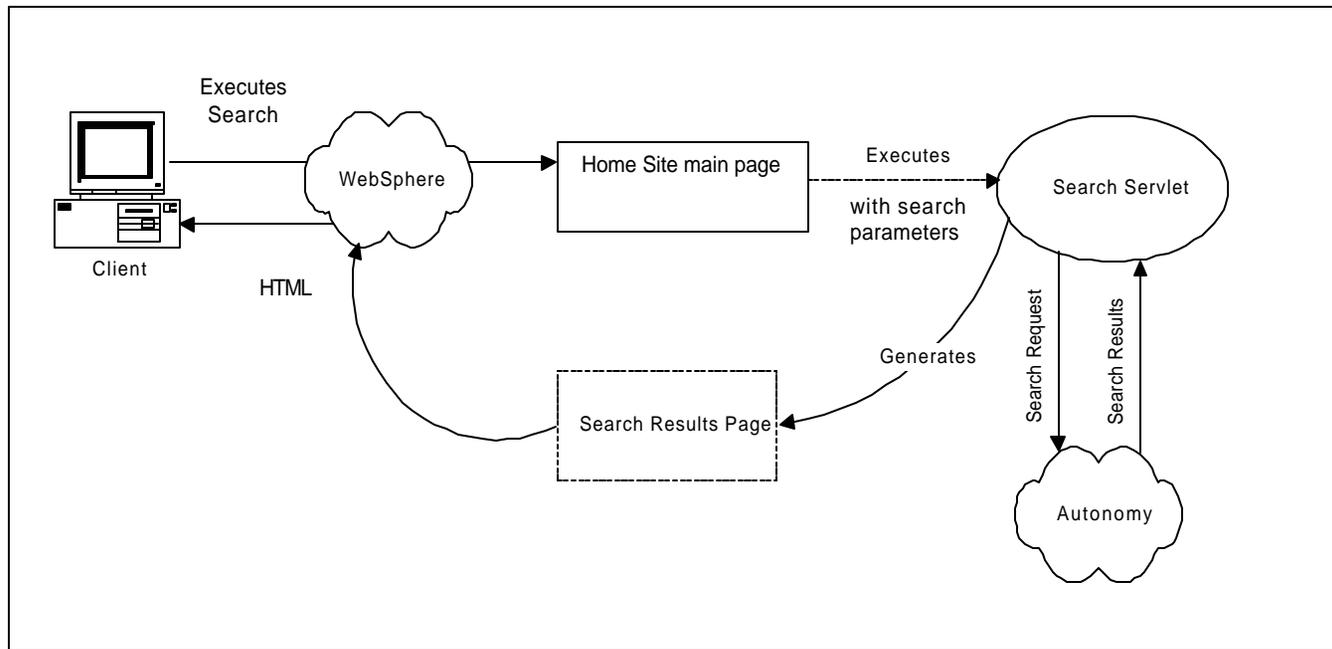
**Figure 7: Headline Retrieval Data Flow**



#### 4.1.5 Basic Search

A basic search occurs when a user executes a search directly from the Home Site main page. The search results are generated by the Autonomy search engine and then displayed to the user in a new window. The details of the transaction are present in **Figure 8**.

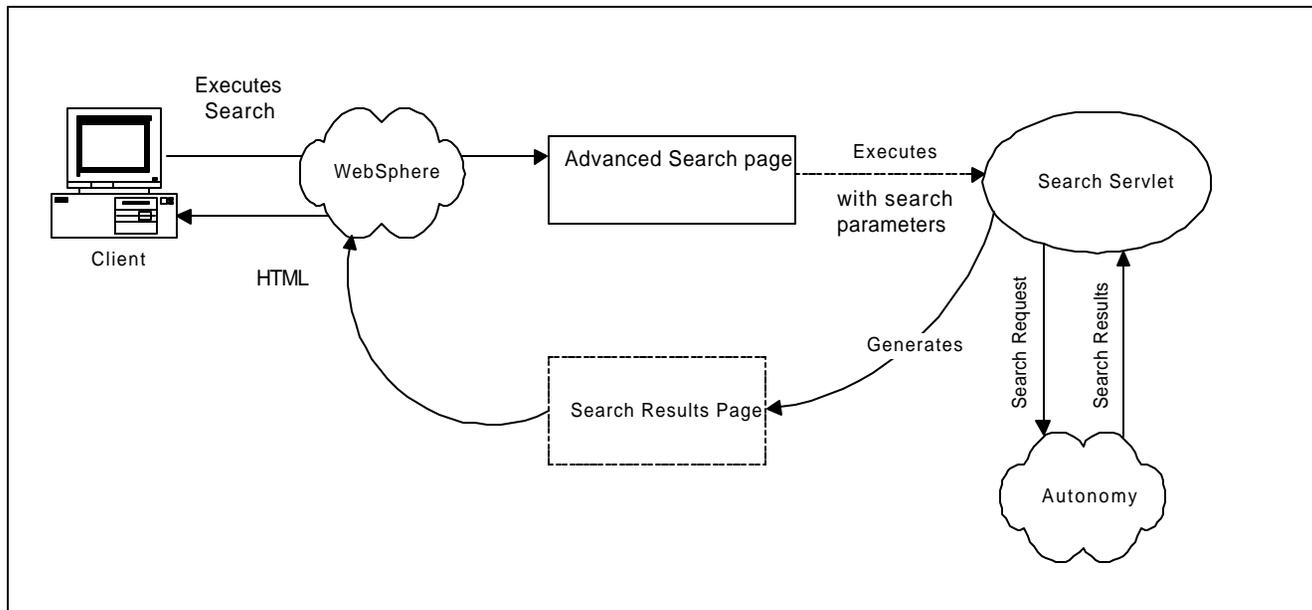
Figure 8: Basic Search Data Flow



#### 4.1.6 Advanced Search

An advanced search can be initiated by the user from the Advanced Search page. This page presents the user with additional search options beyond the ones available from the basic search found on the Home Site main page. These options include limiting the search to a specified set of SFA sites, as well as breaking the query down into groupings such as ‘must include’ or ‘must not include’ See **Figure 9** for details.

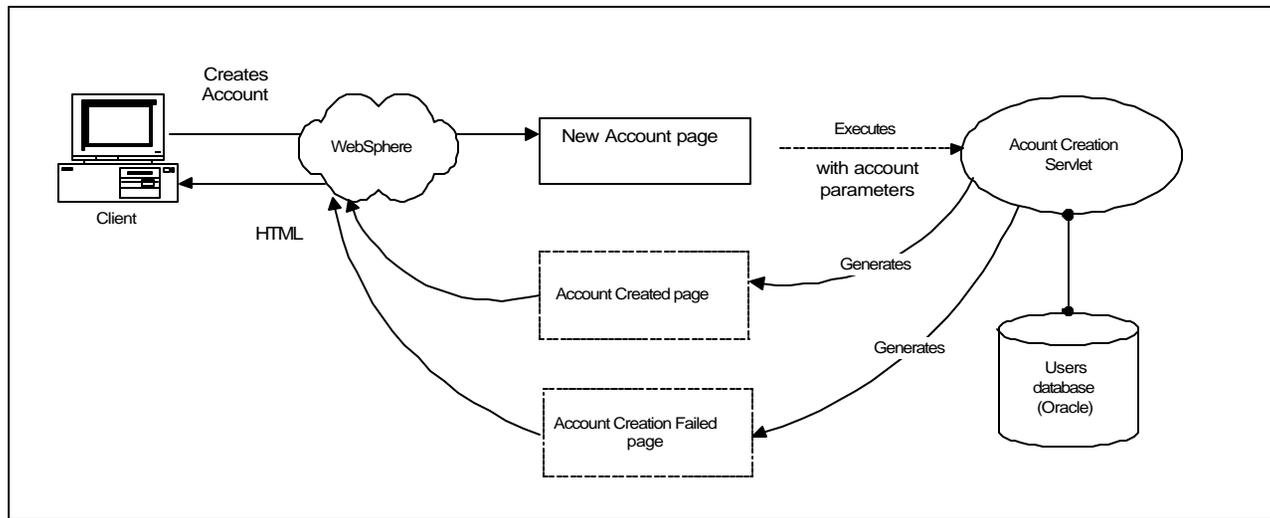
**Figure 9: Advanced Search Data Flow**



### 4.1.7 New Account Creation

This details the process by which a user creates a new account for the SFA Portal. The account creation page will prompt them for some user information and a password. At this point, the user will press the submit button and the SFA Portal will attempt to create the account. The flow of data through the system is as follows:

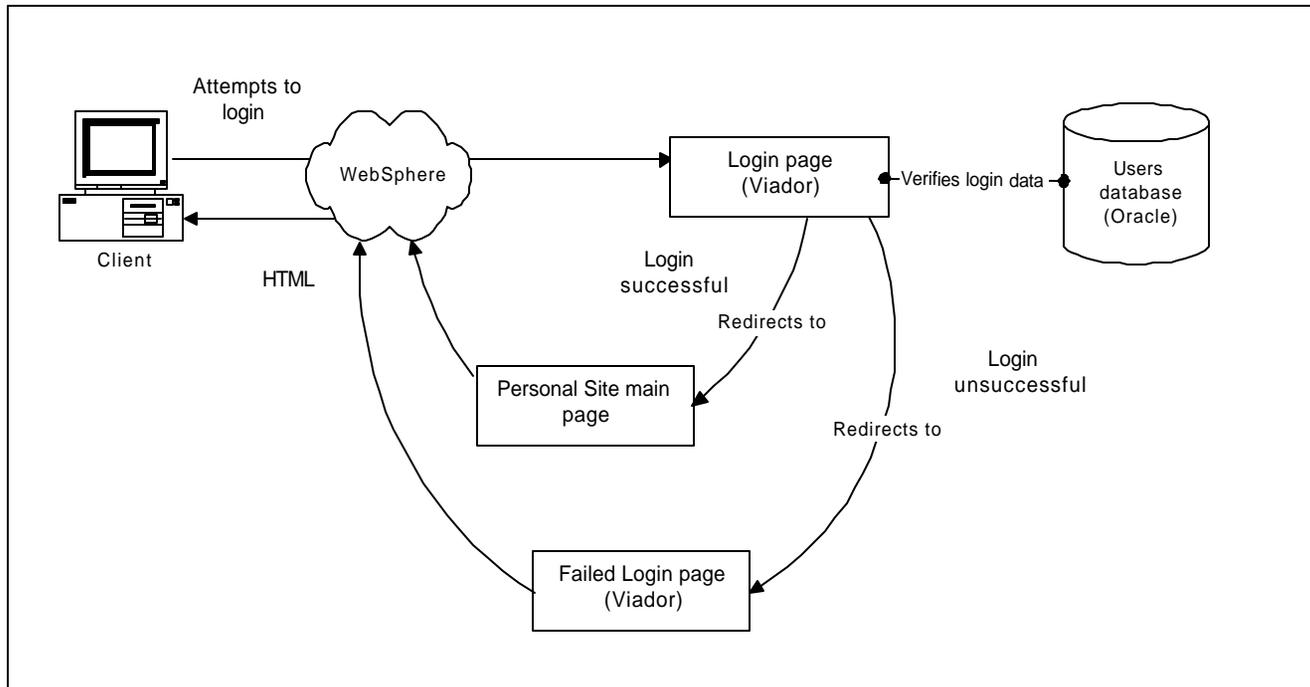
Figure 10: New Account Creation Data Flow



#### 4.1.8 Login Window

The login window on the Home Site is provided as a means of identifying users for the purpose of providing customized content and as a way of providing secure access to unified login functions. The login page can be accessed from the Home Site main page. The login process occurs in the following manner:

Figure 11: Login to Personal Site



## 4.2 Personal Site Detailed Design

For purposes of security and authentication, the Personal site pages can only be reached by filling out a login name and password on the Home Site. The Personal Site consists of the following functional areas:

- Static HTML pages
- Calendar of Events
- Headlines
- Calendar of Events Customization Page
- Headlines Customization Page
- SFA Links
- SFA Links Customization Page
- Personal Bookmarks
- Personal Bookmarks Customization Page

## SFA Portal Application Architecture and Detailed Design

- Search Functions
- Modify User Profile

### **4.2.1 Static HTML Pages**

The static HTML pages found under the personal site are handled in the same manner as those found under the Home Site pages. The static HTML pages contained under the Personal Site are as follows:

- Portal FAQ/Help page
- Privacy Statement page
- Advanced Search page
- Search Help page

### **4.2.2 Calendar of Events Window**

The Calendar of Events that is displayed on the Personal Page functions in the same manner as the Calendar of Events found on the Home Site.

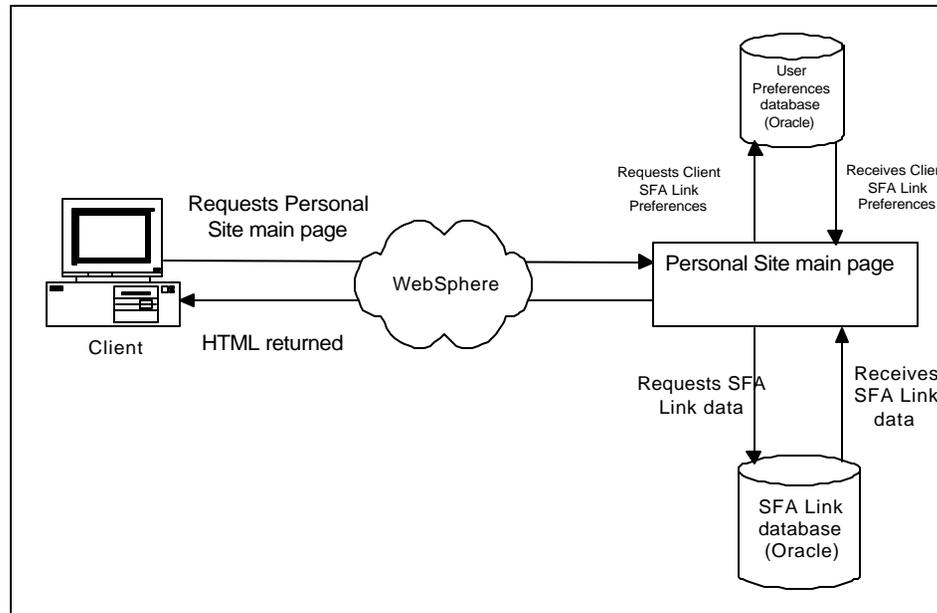
### **4.2.3 Headlines**

The Headlines that are displayed on the Personal Page functions in the same manner as the Headlines found on the Home Site.

### **4.2.4 SFA Links**

The SFA Links that are displayed on the Personal Page functions in the nearly the same manner as the Headlines found on the Home Site, except that the user has the ability to filter out links they do not wish to see.

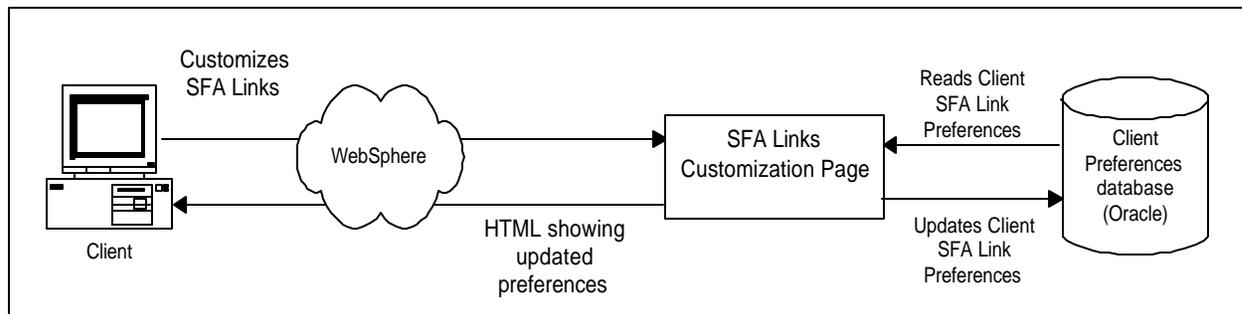
**Figure 12: SFA Link Display Data Flow**



**4.2.5 SFA Links Customization Page**

The Personal Site provides users with the ability to choose which SFA Links they wish to see. This is done through the SFA Links Customization Page, which allows users to selectively turn on and off each SFA Link. The information is stored in the database as shown in the following figure:

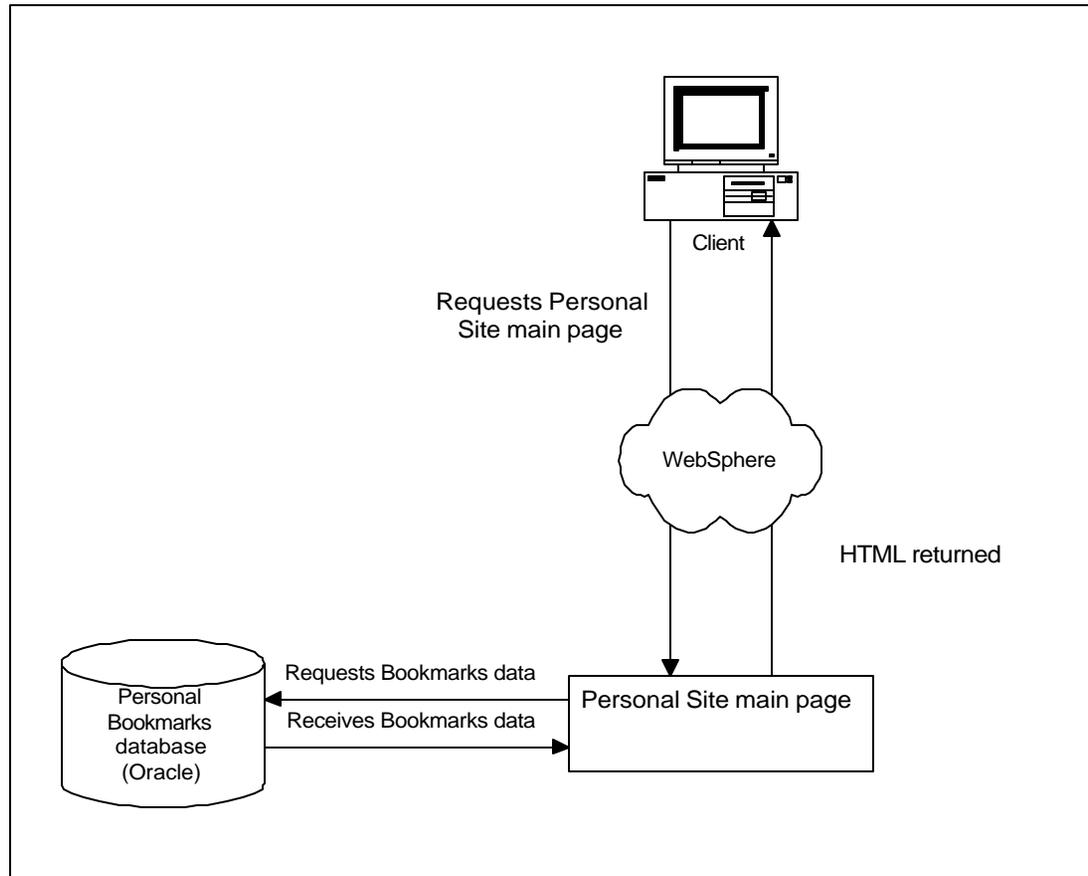
**Figure 13: SFA Links Customization**



### 4.2.6 Personal Bookmarks

The Personal Site main page displays a list of Personal Bookmarks that have been defined by the client. The mechanism by which these bookmarks are displayed is detailed in the following figure.

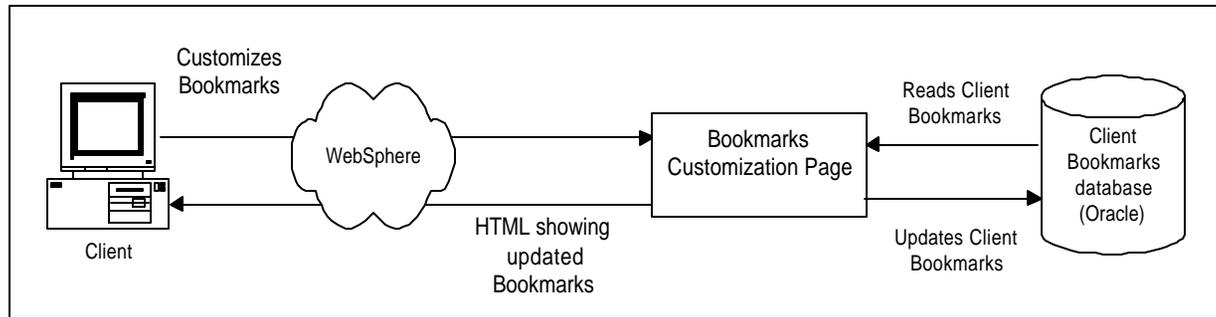
**Figure 14: Personal Bookmarks Data Flow**



### 4.2.7 Personal Bookmarks Customization Page

This page allows users to add and remove personal Bookmarks as well as define the subset of Personal Bookmarks that are to be displayed on their Personal Site main page.

**Figure 15: Personal Bookmarks Customization**



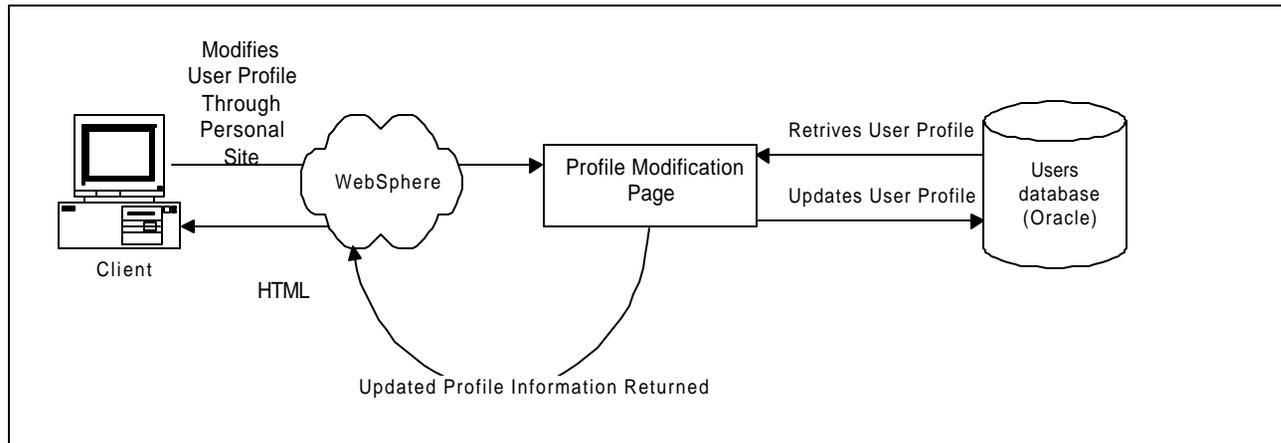
#### 4.2.8 Search Functions

The search functions available from the Personal Site are identical in design and function to those available from the Home Site.

#### 4.2.9 Modify User Profile

The Personal Site provides a page allowing the user to change their SFA Portal password and other profile information. The flow of the Modify Profile functionality is show below:

**Figure 16: Modify User Profile**



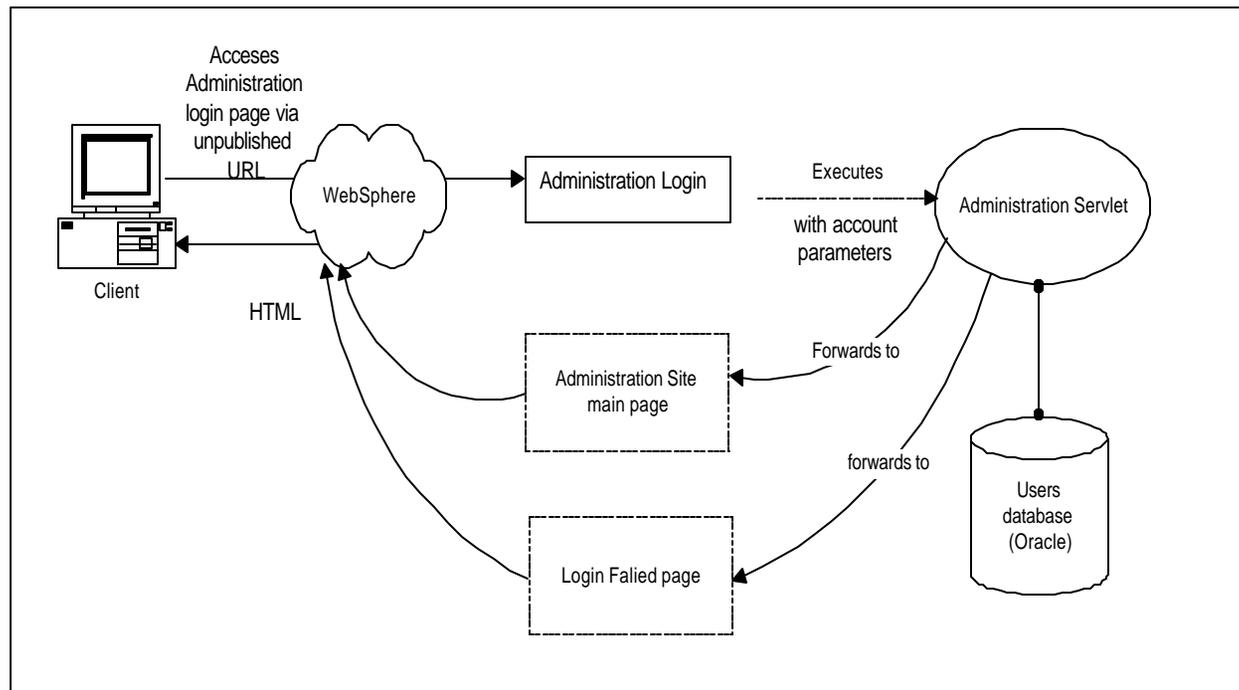
### 4.3 Administration Site

The pages in the Administration Site are provided as a means for authorized personnel to modify and add Calendar of Events and Headlines information to the SFA Portal. The Administration Site pages will not be accessible by any links on any of the SFA Portal pages. The URL for accessing the Administration Site will be given to authorized users only, thereby allowing them direct access to the page while discouraging unauthorized users from attempting to gain access.

#### 4.3.1 Administration Login

This diagram shows the process used by administrators to log into the system.

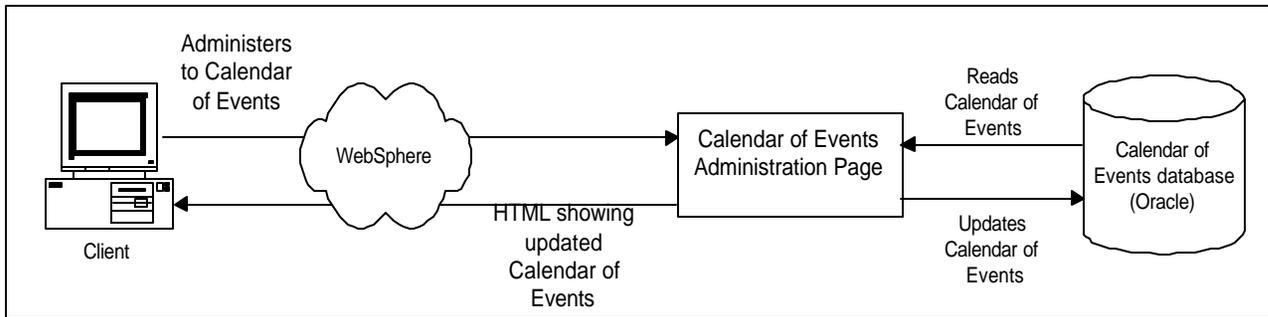
**Figure 17: Administration Site Login**



#### 4.3.2 Calendar Administration

The Calendar Administration page of the Administration Site provides users with the ability to add, delete, or modify Calendar of Events information. The Calendar Administration database will be available for external access by authorized users.

**Figure 18: Calendar of Events Administration**



### 4.3.3 Headlines Administration

The Headlines Administration page of the Administration Site provides users with the ability to add, delete, or modify Headlines information. The Headlines Administration database will be available for external access by authorized users.

**Figure 19: Headlines Administration**

