Data Sheet: AJAX

INTRODUCTION

AJAX is a web programming technique, which yields a desktop "application-like" feel to a browser based program like Aperio. This provides companies the ability to disseminate Aperio company wide, only requiring users to have a web browser. Aperio's powerful ability to manage and control large amounts of test data is enhanced by the use of AJAX's ability to make the user interface familiar and efficient. With AJAX, data is handled separately from style and format elements, thereby reducing the bandwidth required to update pages. Data can be incrementally re-loaded on an as needed basis via the server, while HTML is produced locally from the browser.

KEY FEATURES

JavaScript
Uses the XMLHttpRequest object.

Enhanced User Interface
Uninterrupted views of multiple web controls.
Automatic refresh, or refresh on demand.
Loading indicators

OVERVIEW OF KEY FEATURES

JavaScript

AJAX is a web programming technique that employs JavaScript to manipulate and use the XMLHttpRequest object. This object allows requests from a web page to be sent directly to the back end for retrieving data, processing information, or a variety of other tasks. Due to the objects ability to handle these requests, a webpage that a user is accessing does not need to be fully reloaded as new data is retrieved.

Enhanced User Interface

The use of AJAX can greatly enhance the user's experience of Aperio's browser based program. The following are some examples:

- Users could be on a page that presents several different web controls. By interacting with one control they are presented with new information from that control, while maintaining an uninterrupted view of other controls on the web page.
- A control that contains frequently changing information can be set to automatically refresh to keep users up-to-date, or can refresh on user demand.
- Loading indicators can be used to enable users to see that their requests are being processed in near real-time.

OTHER CONSIDERATIONS

Security

Currently, not all security aspects of AJAX have been fully investigated. Most of the security issues involve those traditionally faced by web applications and sites. Since Aperio is installed on a company's local intranet, the security impact of using AJAX is limited by the integrity of the companies own security.

Recommendations

In addition to login information, **all data** should be encrypted to ensure secure transmissions. All AJAX programmatic requests to the server should be via SSL.

Number of Concurrent Users/History Retrieval

Overuse or inappropriate use of AJAX can have a negative impact on the web server running a browser based application like Aperio. For example, if automatic refreshing of information occurs too frequently, this can cause many unnecessary requests to be made to the server, resulting in reduced performance if many users are running the application at the same time. Also, because pages are dynamically updated, the retrieval of histories through features such as the back button and book marking can yield confusing results.

Recommendations

Aperio uses AJAX judiciously. AJAX is best suited to show the dynamic status of data, and to allow web pages to load in a more multithreaded way. A distributed architecture then lends itself to the viewing of static data.

REFERENCES

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