New Features and Changes in WebDB2*decade*

NOTE:
Please see the last page for features added to WebDB2*decade* since it's release in 2010

Overview

WebDB2 was first implemented during the period from 1998 through 2000. Popular browsers at the time included Internet Explorer version 4.0 and Netscape Navigator version 3.0. Over the years, the original frame-based interface was enhanced to provide compatibility with more modern browsers and some of the benefits that standards like Cascading Style Sheets and Javascript brought to the web. In all that time, and through all those revisions, the framed environment that allowed WebDB (and it's successor WebDB2) to remain a useful data collection, query and update tool remained the same.

Welcome to 2010. The Internet is a very different place than it was in 1998. Over the past couple of years, the old web pages have begun to give way to newer and more efficient web applications that run inside the browser. And now that "application" look and feel has come to the latest version of WebDB2 in WebDB2*decade*.

While making the decision to re-write the interface for WebDB2*decade*, many options were explored using the following design goals:

- Overhauling the interface needed to bring real benefits to the user in terms of functionality, productivity and speed.
- The installation and implementation of the new WebDB2*decade* programs needed to update the currently installed systems with minimal changes and full backwards compatibility.
- Client investments in Custom Reports and Jump pages had to be preserved.
- The tools used to create the new interface needed to possess a wide range of browser support and be backed by a large community of developers.

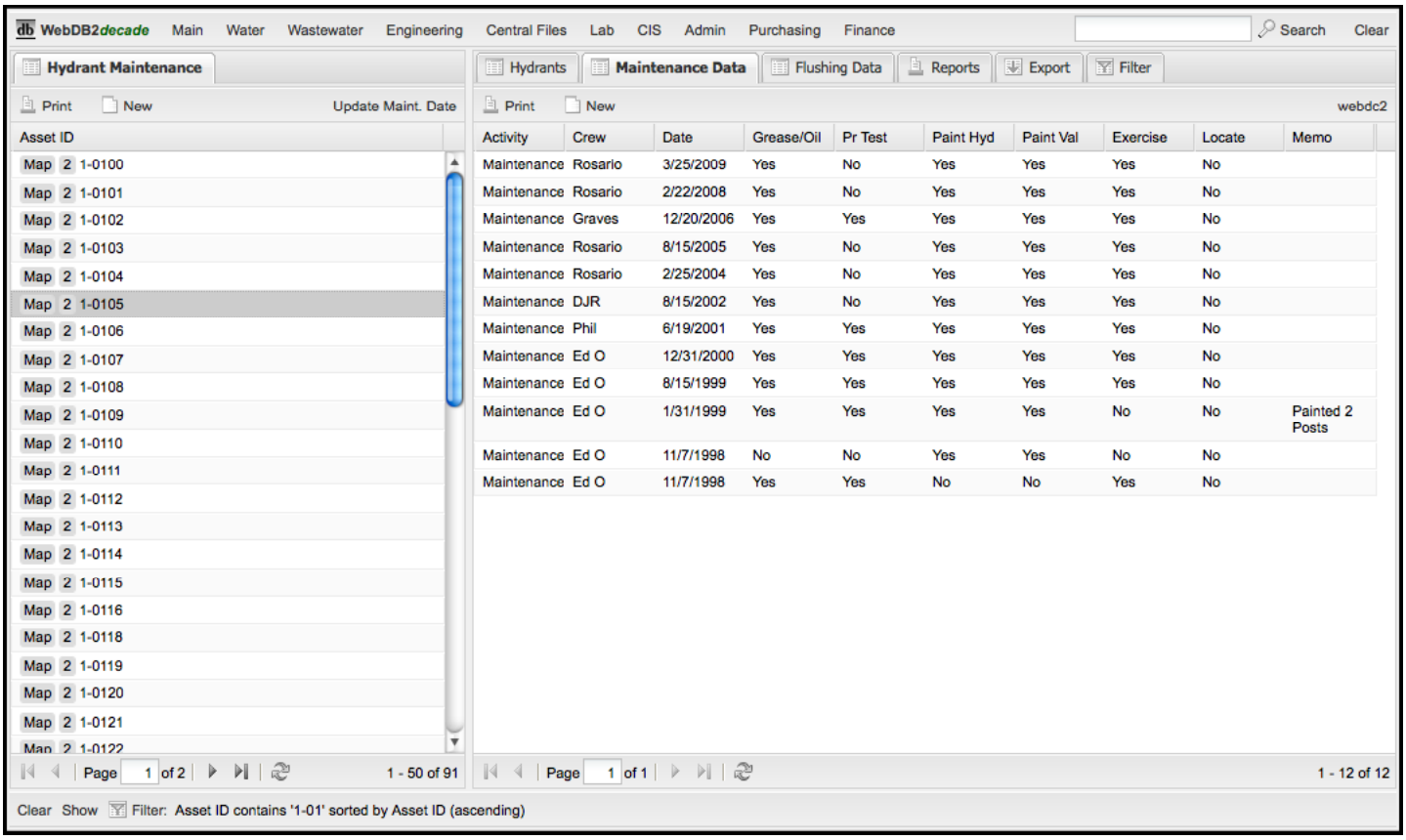
Andelain Softworks believes that all of these design goals have been met.

Speed Improvements

In WebDB2*decade*, two basic approaches have been exploited to increase the responsiveness of the system. The first involves reducing the amount of data being transferred between the browser and the server, while the second involves reducing the amount of scrolling needed to view or edit the data, especially in complex database Modules.

Admittedly, the initial load time for the WedDB2*decade* application has lengthened somewhat, but brings later benefits during the user's session. First off, when the administrator switches the user to the *decade* interface, they can set the user's default Module. In that way, the user is at their primary Module as quickly as possible after login. Of course, WebDB2*decade* supports 2.eight.c's "auto login" feature if the system is so configured, and that speeds up the process even more.

In the screen shot below, WebDB2*decade* is looking at the Hydrants Module in Seacoast's Asset Management implementation of WebDB2*decade*. The application is running in Firefox on a Macintosh; the Windows version is virtually identical. This helps illustrate some of the other speed improvements from the user's perspective.



Across the top of the window, the application displays the Menu bar/Search bar. The Menu bar, showing items like "Main", "Water", "Wastewater", etc., allows for fast user switching through drop down menus to any Module in the system for which they are authorized. (Note that Seacoast currently has nearly 50 different Modules in the 10 menu categories shown, so for them, quick "always there" access to these Modules is very important.) The Search field responds to the <Return> key for quick entry of search text, or the user can enter the text and click on the Search button. Clicking on the right side of the Search button gives the user access to Search Options (which tables to search) without going to a preferences screen.

Across the bottom of the display, the current Filter (if any) is always displayed, with quick buttons to Clear the Filter, Show a long Filter in a popup window, or jump directly to the Filter tab. These top and bottom Menu/Search/Filter toolbars are always visible, and never scroll out of view.

The center area of the browser's window is split into a Parent table pane and Child/Utility pane. The width of the left-hand Parent pane is set by the administrator, but can be adjusted by dragging the separator bar between the two panes. As you would expect, the left pane always displays the Parent table, whether the Module is a conventional or Flex database. Buttons in the toolbar across the top of the Parent tab allow for quick printing the table, creating a new record, and any Jump actions that have been configured for this table. Across the bottom of the pane are controls for moving through "pages" of data and information as to the number of records found.

In the right-hand pane, WebDB2*decade* has a tabbed interface into a form view of the currently selected Parent record (optional and configured by the administrator), a tab for each Child table in the Module (if any), and the tabs for Reports, Export and the Filter. In a large database with many Child tables, the tab bar can scroll for access to all the tables. The Child tabs are all laid out like the Parent tab with regards to the top and bottom toolbars.

While browsing the database, single clicking on any Parent record synchronizes the display of any data in the selected (active) Child tab. And once a Parent record has been selected in this manner, the cursor keys can be used to navigate though the Parent records, and it's fast because only the active Child tab is refreshed. Switch Child tabs, and the new active tab synchronizes. No more scrolling through long database pages to see a particular Child table. It's always right there. That saves time and frustration. That equals speed.

The Reports and Export tabs have all the same features of the 2.eight version, with speed enhancements of their own. When selecting or arranging fields in the Advanced mode, the user can drag and drop single or multiple fields to make or change their selections. And multiple table databases hide and show the appropriate table information with a click. Both Report and Export configurations can be saved and recalled, and are completely compatible with configurations created in 2.eight. There's even a streamlined interface for working with saved configurations that allows for recall with a double click. Again, it's fast.

Re-imagining the Filter tab was a prime motivator in the development of the *decade* interface. When the Filter tab is selected (either by clicking on the tab or by clicking on the Filter button in the bottom toolbar) the Filter tab is shown. On first use in a module, the sections for each table are collapsed into a compact view. Clicking on a Table's reveal button shown the filter form for that table, where the filter criteria can be entered. Once the criteria has been entered, clicking on the Select button in the top toolbar saves and applies the filter, and the Parent tab is refreshed with the results of the Filter. Don't like the results? Go ahead and adjust the criteria. It's still right there in front of you, and it will be until you select another tab in the right-hand pane. That's convenient. That's fast. And by the way, Filters created in 2.eight are directly compatible. And the Filter tab shares the same improved interface for working with saved filters that Reports and Exports use. Learn one; know them all.

Editing also boasts some speed improvements. Like a drop down calendar that appears with all date fields that can be navigated from the keyboard, new streamlined Lookups, and much more. And by the way, all of this (except for the actual reports you view or print) happens in the same, always present browser window.

As for server speed, the *decade* interface asks for less information during the course of a session. Network traffic is down after the initial startup, improving responsiveness for everyone.

Performing the Upgrade "Switch"

Like many other software upgrades, when WebDB2*decade* is installed and accessed by the first user, and series of changes is made to the system configuration tables to accommodate the new features of the software. Unlike many other software upgrades, however, the WebDB2*decade* upgrade is 100% backwards compatible. In fact, once the upgrade is installed, the only difference users will see is a change in the WebDB2 logo. That's it. Period.

The reason for this is that the *decade* interface is optional for each individual user. The administrator can switch themselves to the *decade* interface and begin testing the upgrade and configuring the new options without impacting other users on the system. Then, as time or policy permits, each user can be switched over to the *decade* interface as desired.

Besides allowing for compatibility testing, this gives the administrator the ability to test the new feature settings on themselves, rather than impacting personnel.

In the System-Wide Modules Table, the administrator can set (per Module):

- The left pane width (in pixels only, not a percentage). The default is 350; the range is 350-1200. The *decade* interface has two main panes in its window. The left is used for the Parent or only table in the Module, while the right pane contains a tabbed array of Child tables plus the Reports, Export and Search tabs. This setting is the default starting width for all users. The split between the panes is adjustable by the user after the Module loads.
- Show or Not Show the parent form view in the first right-hand tab. It defaults to Show. Some Parent tables hold a great deal of information, while others hold just one or two “identifier” fields. Using this setting, the administrator can turn off the parent form tab in the latter case since displaying the information would be redundant and unnecessary.
- Set the default Search option (parent, all or found). It defaults to searching the parent only. In the past, this was a user selected preference, and something that caused confusion. Now the administrator can set the most logical default for the contents of the Module.
- Set the depth to which Flex DBs will automatically expand. The default is 2. 1 through 4 are the valid values. The tree views for Flex DBs have undergone significant enhancement in the *decade* interface. Expanding and collapsing tree nodes no longer requires a round trip to the server. It all takes place in the browser. This setting allows the administrator to tailor the number of pre-expanded nodes to the structure of the individual Module.
- New in 10.0.1 – Change the way in which the left pane displays data. By default, *decade* will display data in a multi-column grid when the Module is a flat, parent-only database, and in a single-column grid when the Module is relational. This behavior can be overridden with the following four options. Note that Flex databases always display the tree view in the left pane.
    - Use fields from the Narrow List in a single column
    - Use fields from the Narrow List in a multi-column grid
    - Use fields from the Wide List in a single column
    - Use fields from the Wide List in a multi-column grid

In the Tables Table in each Module, the administrator can set (per Table):

- The list maximum length for list views. The default is 50; the range is 25-250. This setting controls the number of records fetched from the server for each “page” of the list view. It can have a noticeable effect on the perceived speed of the system by the user. Tables showing many fields in the list view will load faster if the list length is restricted. By allowing the administrator access to setting this value, the performance can be tuned to the individual Table.

Compatibility with Custom Jump Pages and Reports

In a word, guaranteed. WebdDB2 has been engineered to work seamlessly with all custom add-ons to version 2.eight. Jump pages have traditionally opened in separate windows, and continue to do so. Some will require minor adaptation, and will be so modified during the installation and upgrade process. Custom reports are also guaranteed to work as expected, and even appear on the built-in Reports tab as an optional report. There's little risk here.

Development Tools and Browser Compatibility

The development tools used in the creation of the new *decade* interface were each selected after many months of considering a very long list of options. The development environment consisted of a Macintosh computer running Bare Bones Software's BBEdit program editor. Why that software on a Mac? Because most of the *decade* interface is written in Javascript, and Microsoft's tools for web development do a very poor job with Javascript. BBEdit on the other hand, has probably the best feature set for program editing of any editor I could find, and it only runs on a Mac. Occasionally I switch back to Visual Interdev running on the backend Windows server for some editing of the ASP files that power the database queries. The combination gave me the best tools for each task, and allowed for some of the most bug free programming I've ever experienced.

As for browser compatibility, the old problems of slow Javascript performance and quirky programming tricks could only be solved by standardizing on a commercial library for the interface of WebDB2*decade*. Ext JS was chosen from all the candidates. The feature set is complete, the reliability robust, and it is seeing active development and improvement. You can find out more about Ext JS at www.extjs.com. If you've used the web, chances are very high you've already run some Ext code at sites like Adobe, Amazon, Best Buy, Symantec, and Verizon. The user list is available at their site.

The Ext JS Library supports numerous browser and their various versions. Andelain, however, will only support a subset of those browsers. (After all I am a small company.)

Supported browsers:

- Firefox version 3.6 and later
- Internet Explorer versions 7 and 8
- NO support for Internet Explorer 6
- Safari version 4.0.5 and later

Firefox is clearly the preferred choice. Beside the fact that it's Javascript performance is light-years ahead of Internet Explorer, the development work was done using Firefox with the Firebug add-on for debugging purposes. That means it's the most thoroughly tested browser. Isn't that the one you want to trust your data to?

Miscellaneous Changes

A new Application setting to control session time-outs now makes it easier to prevent the server from logging out the user if that's what you want.

The WebDB2.eight Admin Module has been retained and updated for the new configuration options. It runs in a separate window (or tab).

WebDB2ModuleBuilderForDecade has been updated to support the new Module and Table configuration items.

2013 - Changes and Additions since the Initial *Decade* Release

New databases can be configured to store data in tables in Microsoft SQL Server. Existing databases can be migrated manually to use SQL Server. This provides the power and security of SQL Server and allows for enhancements using Triggers and Stored Procedures. Storing the data in SQL Server is transparent to the user. Note that as with Access-based databases, file attachments are still stored in a directory structure and not in database BLOBs.

A new interface called TabletDC has been added. It has been specifically crafted to allow iOS devices such as iPads and iPhones to collect data in the field. Text input and photo attachments are provided in an environment that is designed for touch on the supported devices. The basic software is included, and allows for the creation and/or editing of Child data records when a parent record has been selected based on a key field. Customization hooks are provided that have been used at Seacoast to tie into their Customer Services and Maintenance systems.

When Searching only parent records, the speed of the searches has been increased by a very significant amount, whether the database resides in SQL Server or Access.

The Admin module has had changes made that improve the user experience when configuring Modules, Tables, and especially Fields.

ImageGlue 7 is now supported for improved Preview and Thumbnail generation, and EXIF data is extracted from images when present.

Jump buttons can now be configured to open an additional instance of Decade that has the desired Module selected and searched for accessing related data in other Modules.

As with all software, many "bugs" and "undocumented features" have been corrected in the three years that the software has been in active use.