

Paper 162-27

Keeping Form Data from Falling into the Bit Bucket with WebAF™

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ABSTRACT

All companies have forms that are used every day, whether they are used to make requests such as creation of user ids, restoration of archived data, loading of tapes, or scheduling of production jobs, or to report issues or submit questions. Often these are paper or email forms, which require a large amount of human intervention and may lead to human errors. Face it, we are all human and we all make mistakes. Paper forms get lost, email forms get inadvertently deleted, and progress updates are not properly communicated to the requester.

What is the solution? Web based forms on the company intranet.

INTRODUCTION

This paper demonstrates a web based forms application that was developed using AppDev Studio™ software. It will present what the application looks like, demonstrate how simple it is to use, and show the benefits of using a web based application. It will also expose what is happening behind the scenes when a form is submitted.

With web based forms, all requests are maintained using SAS® data sets, thus greatly eliminating the possibility of a request being lost by human intervention. Emails are sent automatically, providing the requester with a receipt of the request or of progress updates. The progress of the form is then tracked using the data stored within the SAS data sets and can be reported on using SAS.

This application uses the Windows NT Server platform to house both the web server and the applications server. Because webAF is thin-client, it is not necessary for you to have SAS on your desktop in order to submit forms. As long as you have a browser you can use the application. When you log into the forms application, a SAS session is invoked on the application server. This session is used for all SAS data set updates and queries.

All list boxes in the application are dynamically populated using the SAS SQL procedure to read data from the SAS data sets stored on the server. All information you input is written to and saved in the SAS data sets using a PROC SQL update or insert statement.

SIGNING IN AND MAIN MENU

When you first access the application you are required to sign in (**Figure 1**) using a user id and password, which are maintained in a SAS data set on the server. The information you entered is verified against this data set using SAS. This sign in process also includes verifying your access permissions, which define the links that will be accessible to you on the Main Menu (**Figure 2**)

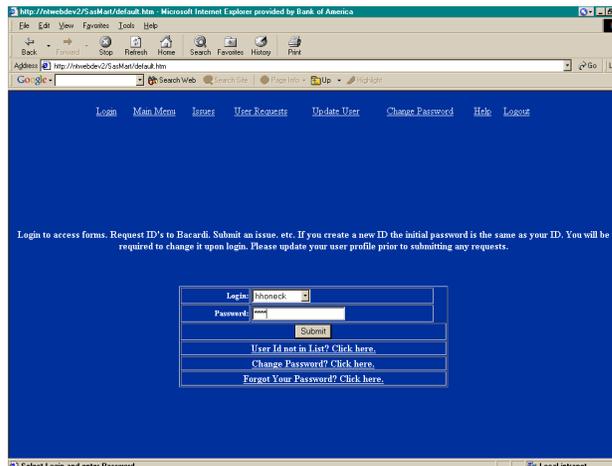


Figure 1 Signon

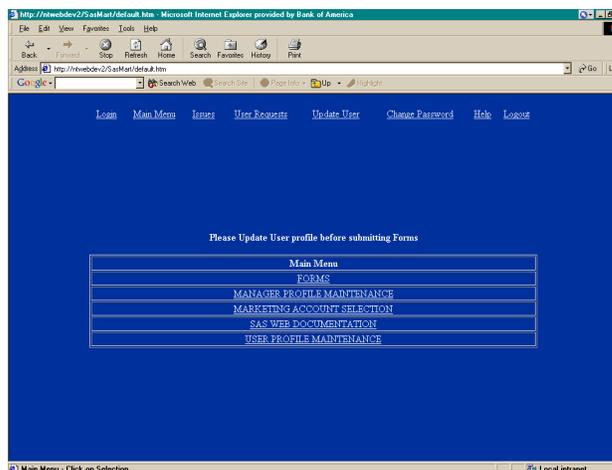


Figure 2 Main Menu

USER PROFILE MAINTENANCE

You are responsible for maintaining your own profile using the User Profile Maintenance page (**Figure 3**). This page contains personal information such as name, phone number, email address, and manager information, all of which is maintained in a SAS data set on the server and referenced using SAS when forms are submitted.

When you access this page, all fields are populated with your information from the SAS data set. If you make a change to any of these fields and submit the form, the altered fields will be updated in the data set using PROC SQL. If you are a new user, all the fields will be blank for you to input your information, and you will be required to select your manager from the list box. Once you have selected your manager, his or her information, such as email and phone number, will be filled in dynamically. After entering all your information and submitting the form, a record will be added to the data set.

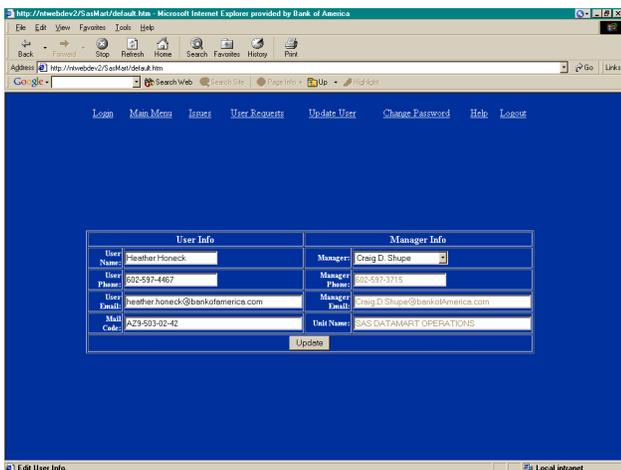


Figure 3 User Profile Maintenance

Once you have verified your personal information, you are ready to submit a form. By selecting the FORMS link on the Main Menu you are directed to the Forms Menu (Figure 4). This paper will demonstrate four forms, ranging from simple to complex.

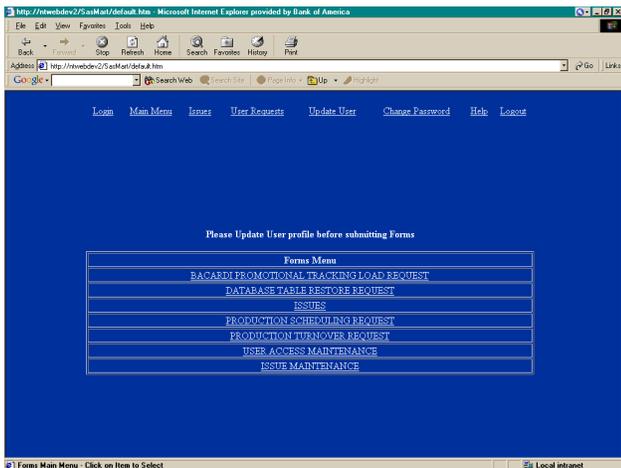


Figure 4 Forms Menu

USER ACCESS MAINTENANCE

The User Access Maintenance form (Figure 5) is used to create, delete, enable, or disable a UNIX id or to reset a UNIX password.

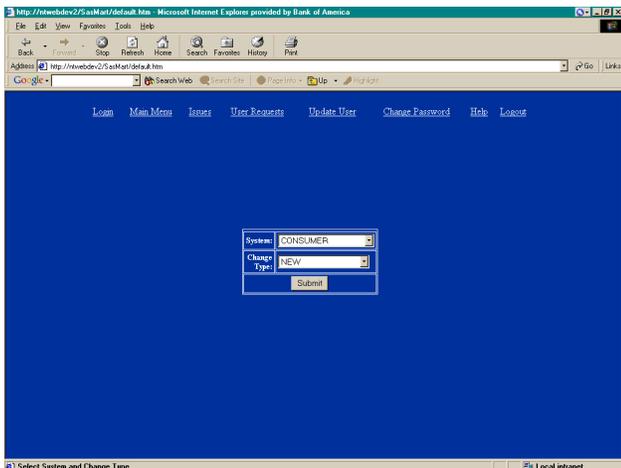


Figure 5 User Access Maintenance

The User Access Maintenance form is a basic form with just two list boxes that are populated with data from a SAS data set. This allows you to select the information pertinent to your request.

Once this form is submitted, an email receipt is automatically sent via SAS to you, as the requester, notifying you that the request is underway. A copy of the email is also sent to the group responsible for maintaining user ids, notifying them of the new request. Finally, a record is added to the User Access SAS data set, which includes all relevant information regarding this request. Once your request has been processed, it will be marked as closed using the Issue Maintenance page (Figure 7), which will be described later. At that time, another automatic email will be sent to you, notifying you of the completion of your request.

ISSUE SUBMISSION

When you need to report an issue or would like to ask a question regarding production data or system problems, you would use the Issues form (Figure 6).

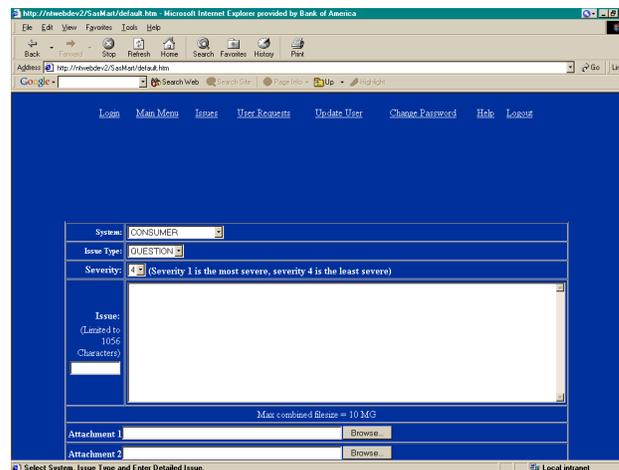


Figure 6 Issues

On this form, you first select the type of issue you are reporting, i.e. SAS, UDB, or question. Then you input details corresponding to the issue, and attach any supporting documentation, such as an Excel spreadsheet, SAS data set, etc., that may be helpful in researching and resolving the issue.

When submitted, all relevant data is inserted into the Issue data set using a PROC SQL update or insert statement. A request number is automatically assigned to the issue and the appropriate emails, with any attachments, are sent out to the requester and the person responsible for that particular issue type, notifying them of the submission.

ISSUE MAINTENANCE

The Issue Maintenance page (Figure 7) is used to maintain the status and progress of an issue.

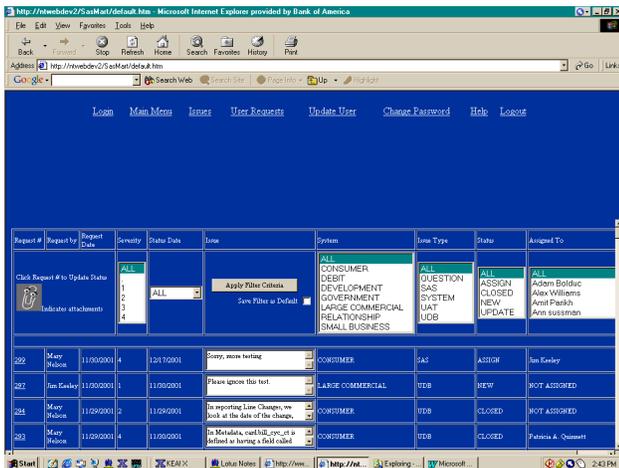


Figure 7 Issue Maintenance

Each time this page is viewed, an SQL query is used to obtain all issues stored in the Issue data set on the server. These issues are then displayed, along with the request number, requester, request date, system affected, issue type, status, and the person the issue is assigned to. This list can be filtered on any combination of the following: system, issue type, status, and/or assigned to. Filtering is accomplished using a PROC SQL select statement, with the corresponding where clause, to pull off the issues that meet the filter criteria.

Clicking on the request number will bring up that specific issue (Figure 8) and allow for updates and viewing of any attachments. This, too, is done using a PROC SQL select statement with the proper where clause.

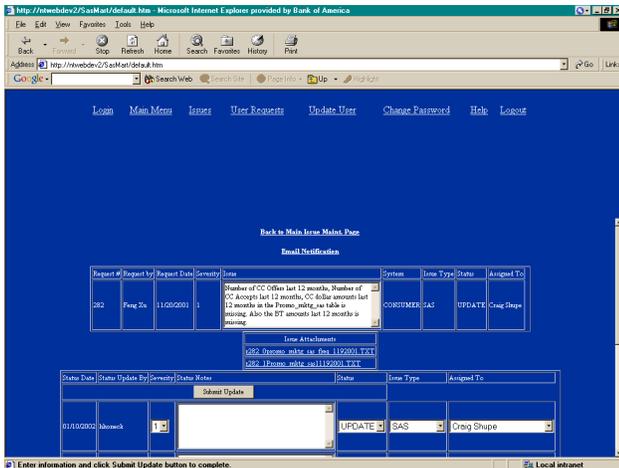


Figure 8 Issue Maintenance, issue selected

When a particular issue is selected, the history of updates will be shown. There are three possible updates that can be made: assign, update, or close. Each time an update is made, a new record is added to the data set. An automatic email is then sent to the requester and the person the issue has been assigned to, notifying them of the change in status.

PRODUCTION SCHEDULING REQUEST

The last and most complex form that will be discussed is the Production Scheduling Request form (Figures 9 and 10). This form is used to request jobs to be added to the production schedule.

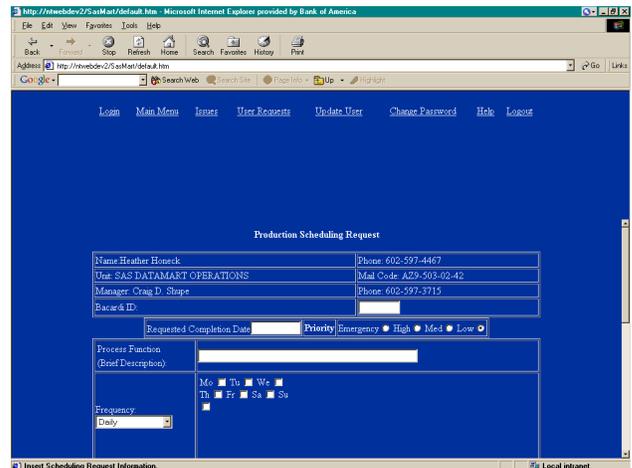


Figure 9 Production Scheduling, pg. 1

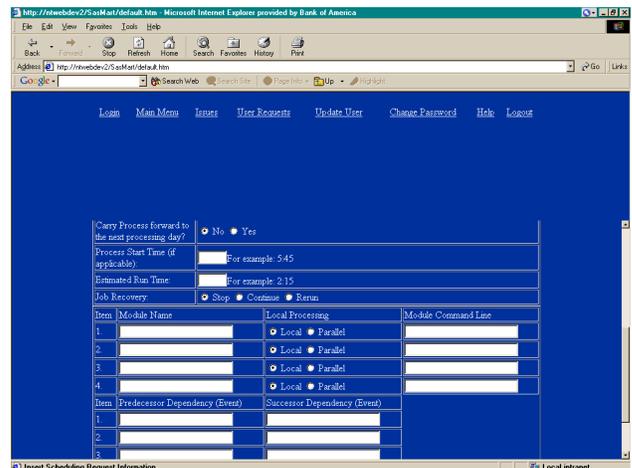


Figure 10 Production Scheduling, pg. 2

Your personal information is retrieved from the User SAS data set on the server and displayed at the top of the form. Following this is a series of radio buttons, allowing you to indicate the priority of the request.

You may then select how often, and when, the job(s) needs to be run. On the left of this section is a list box, allowing you to select whether the job should be run daily, weekly, monthly by week, monthly by date, or on request. The choices on the right of this section change based on the selection you make in that list box. For example, if you select "Daily", the days of the week will be displayed on the right, allowing you to check which day(s) the jobs need to run. If you select "Monthly by Week", a list box will appear on the right, allowing you to select which week(s) (week1, week2, etc) the jobs need to run, and so on. (Figure 9)

Next you fill out information such as the time the job will run, estimated run time, and what to do if the job fails. Finally, you indicate the names of the jobs that need to be scheduled, the command used to run them, and any predecessor or successor dependencies.

Once again, all the pertinent information is written to a SAS data set and the appropriate emails are sent automatically, notifying all parties involved that a scheduling request has been submitted.

DATA VALIDATIONS

All of the above forms have some sort of data validations. These are checks that are done when a form is submitted to verify that information is filled out correctly. For example, if a required field

is left blank, an error message will pop up telling you that the field must be completed before the form can be submitted. Or, if a field requires numeric characters and you enter alpha characters, a message will pop up informing you that the field must contain a numeric value. These validations are done using JavaScript and are processed on the client rather than on the server, making them more efficient.

CONCLUSION

SAS AppDev Studio 2.0 is an excellent application to use for creating a forms application such as this. HTML and JSP can be used to create a user interface that is familiar to those who are accustomed to using the Internet, making it easy for them to use. Because SAS is not needed on the users' desktops, the application can be deployed to many users, including those with no knowledge of SAS. Using SAS data sets to store and track all issues and requests limits the possibility of human error. Building data validations into the application allows users to be more confident that all the required information has been included. Finally, because emails are automatically sent using SAS, users will no longer be left in the dark, wondering if their issue or request has fallen into a black hole.

CONTACT INFORMATION

Your questions and comments are greatly encouraged. Contact the author at:

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