

Using SAS/Access to Save Time and Automate Non SAS Processing Steps

Timothy J. Stires, Alliance Data Systems, Columbus, OH

ABSTRACT

This paper will discuss benefits for using SAS Access to streamline processes and procedures for marketing rental list selection.

Rental lists are selected from customer marketing databases managed on behalf of retailers, who realize the value of their marketing databases as a revenue source. Using SAS Access, marketers can provide list rental as a service while maintaining compliance with opt-out requests and local and regional privacy legislation.

Our list rental process was typically composed of five discrete steps, four of which occur outside of SAS. Using SAS/Access, we can automate and manage those steps from within SAS and save time primarily spent in having a programmer perform these steps manually.

INTRODUCTION

Some programmers/coders will ask, "What is the advantage of using SAS/Access?" There are several, but the two major benefits are the streamlining and automation of processes, and the ability to control programs outside of the SAS environment.

One of the challenges all of us face is the "step-by-step" process we have to take to achieve an end result. Wouldn't it be nice if we could cut the step-by-step process down from five to two, or even one? By using SAS/Access we can help streamline our process, even if the steps involved are outside of SAS.

The example of rental list selection involves five steps:

- 1) Extraction of raw data based on date parameters
- 2) Transfer of the raw data
- 3) Application of suppression rules and suppression of named opt-out customers
- 4) Formatting of data based on user-requested file layouts
- 5) Output of files to requested format for delivery

CHALLENGE

The steps listed above are performed in several different programs, including SQL, WS_FTP Pro, SAS and the destination program for finished files (Excel, Microsoft Access, Flat files, etc.). The challenges addressed by using SAS/Access involves managing these steps by eliminating delays for human intervention and also the potential related errors involved in manual processing.

Specific Steps in list selection

- SQL/CRT
 - The first step of data extraction involves pulling raw data from a database or data warehouse. This raw data can be selected from multiple sources. This process is not only modified but also monitored by an analyst. Once the raw pull is successful the file will be later transferred and manipulated.
- FTP
 - Once the SQL/CRT process is complete a manual transfer of the raw files from multiple source locations occurs via WS_FTP PRO. During this process, programmers initiate the kick off of each file and wait for the file transfer to complete before performing the next file relocation.
- Suppress
 - Once the files are successfully transferred from one of the database sources, they are read into SAS where several suppression steps occur, including application of privacy rules and flagging of records ineligible for usage based on collection of specific opt-out requests.
- Format
 - At this point the files are formatted directly in SAS based on client requested data layouts.
- Output
 - The final step is the output of the final result file. Utilizing SAS we can QC the final files by running various Freq/ Output reports. Once the file has been approved, we use SAS to write out a final file to the client specified file or program type.

SOLUTION

The opportunity using SAS/Access involves managing these steps, thereby eliminating delays for human intervention and the potential related human errors involved in manual processing.

- SQL/CRT

- Utilizing SAS/Access the raw data is still extracted from the database or warehouse, but the programmer eliminates the use of SQL/CRT. SAS/Access also creates a LOG report that is easy to read and understand. This integrated documentation is beneficial since another programmer/analyst can step in and take over for a project, with little to no SQL/CRT capabilities.

```
%let project=Supress;          * ENTER PROJECT NUMBER OR NAME;
%let start_date='20030801';    * SCORING START DATE;
%let end_date='20030831';      * SCORING END DATE;

proc sql;
connect to odbc as R02 (user=***** pw=***** datasrc=RMDS02);

execute(SELECT
  consumer_id
FROM
  extracts@smds02_tcp:suptbl_suppress
  where opt_out_type > 0
GROUP
  by consumer_id
HAVING
  min(last_update_date) between &start_date. and &end_date.
INTO TEMP T1)by r02;
create table readin as
SELECT *
  FROM connection to R02
(select {+ full(a) full(b)}
  a.consumer_id,
  title,
  first_name,
  middle_init,
  last_name,
  name_suffix,
  address_line_1,
  address_line_2,
  city, state,
  zip_cd, zip_4,
  dpbc, cart,
  country_cd
FROM
  T1 a,
  addrss_address b
WHERE
  a.consumer_id = b.consumer_id);
quit;
```

- FTP

- Utilizing SAS/Access the transfer of raw files from multiple sources is automated. This step is very beneficial since it eliminates the delays in single-threaded transfers and the associated wait time for the transfer of the raw data to be complete. SAS/Access is programmed to automatically transfer (ftp) the files as soon as the raw data pull is complete.

```
data _null_;
set readin;
file "S:\List Fulfillment\Licensee files\August_Data\&project..txt";
put
  @1      consumer_id      9.
  @27     title            $8.
  @39     first_name       $16.
  @55     middle_init      $1.
  @56     last_name        $20.
  @76     name_suffix      $4.
  @80     address_line_1   $30.
  @110    address_line_2   $30.
```

```

@140  city          $20.
@160  state         $2.
@162  zip_cd        $5.
@168  zip_4         $4.
@173  dpbc          $2.
@175  cart          $4.
@180  country_cd    $2. ;

```

- **Suppress, Format, Output**
 - Once the transfer of the raw files is complete base SAS is used to format and reformat the files into specific layouts. SAS is also used to write out permanent final files.

```

data net_hotline;
merge hotline_source(in=a) suppress(in=b);
by consumer_id;
if a=1 and b=0;
run;

proc sort data=net_hotline nodupkey noequal;
by consumer_id;
run;

*** Hotline Audit File;
data audit_hotline;
set net_hotline;
file 'S:\List Fulfillment\Licensee files\August_Data\Hotline\Final_File.txt';
put
@1 consumer_id    $9.
;
run;

```

BENEFITS

Some of the benefits, or avoid problems since they are automated

- **Less hand holding**
 - Using SAS/Access allowed us initially develop and document the “one step” SAS code and then focus efforts from production on this project to development on other pending projects.
- **Minimize chance of error**
 - SAS/Access also helps minimize the chance of error. Error by analyst, or error by system malfunction. Whenever an analyst is modifying multiple codes and transferring multiple files, there is always a chance for error. Some of the errors that can occur are as simple as inputting the wrong date or transferring the wrong file. Using SAS/Access can minimize, if not eliminate some of these errors. Instead of having to modify several pieces of code, the analyst may enter parameters and initiate the transfer in an automated system. By condensing the human steps involved, a project that required several touchpoints is minimized and the resulting chance for error is minimized.
- **One step process, faster completion time**
 - Using SAS/Access will assist in fast completion time for one primary reason. Before using SAS/Access, analysts would first kick off the SQL/CRT code manually. This could take anywhere from three to five hours, which means this would normally be run in the evenings. Once this step was completed the next step (FTP) would have to wait until the next day to be initiated. Once the FTP was kicked off by the analyst, the process could take anywhere from one to two hours. Finally, after the FTP transfer was complete the analyst would have to modify the SAS code for the final steps. By using SAS/Access we can eliminate at least fifteen hours of overnight down time per request, plus additional multi threaded processing time saved via FTP processes occurring simultaneously.
- **Easier to understand universal code**
 - Within the world of marketing or business in general, businesses experience turnover, either through attrition or promotion. Unfortunately, clients still require accurate delivery of their finished products on time. Using one universal (SAS/Access) code allows the organization to document and streamline processes, maintaining corporate memory of the process and allowing easy cross training on production functions.

CONCLUSION

It is proven that SAS/Access is a useful tool and can be very beneficial when attempting to take several steps and encompassing them into an “all inclusive” code. Although SAS/Access is only a tool and there is always the possibility for human error, by encompassing the various steps into a one-step process the chance of error is greatly reduced. In conclusion, using SAS/Access in this instance it not only simplifies the steps needed to achieve the end result but SAS/Access can sufficiently cut down the lapsed “wait to run” time.

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AUTHOR CONTACT INFORMATION

Timothy J. Stires
Alliance Data Systems
800 Techcenter Drive
Gahanna, Ohio 43230
Work: (614) 729-4653
Email: tstires@alldata.net

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