

Utilizing DTCC's Mutual Fund Profile Service in an Automated Environment

Burton Keller
Senior Vice President



Contents

TABLE OF CONTENTS	2
SECTION 1: FACTORS TO CONSIDER WHEN BUILDING THE MAINFRAME INTEGRATION	3
SECTION 2: FUNDVIEWS INTEGRATION FUNCTIONALITY	7

▲ Section 1

Factors to Consider When Building the Mainframe Integration

Profile Data Structure

How Profile Data is Delivered

Change File Issue

Future Change Records

Post-Dated Changes

Filtering Out Funds not on Your Platform

Selecting the Applicable Data Points

Summary

▲ Section 2

FUNDViews Integration Functionality

Identifying Changes in Data Points

Identifying Securities to Integrate

Setting Up and Scheduling the Various Integration Files

Summary



Section 1

Factors to Consider When Building the Mainframe Integration

At long last, the DTCC's Mutual Fund Profile Service (Profile) is now at the point of being able to deliver on the promise of providing accurate and timely fund data to firms at a very reasonable price point. Now that the coverage and reliability of this vital information is where it should be, it is time to look at how the data gets integrated into brokerage, trust and other source recordkeeping systems.

The data output from Profile consist of multiple file types utilizing multiple record types consisting of hundreds of data points. Building an automated integration of this data with mainframe brokerage and trust systems involves several factors that need to be thoroughly understood in order to capture all the benefits Profile has to offer. This paper will discuss those factors and other important considerations based on the structure and dissemination of Profile data to firms.

▲ Profile Data Structure

The data points in Profile are categorized into nine different record types:

- 020 – General Profile – Identification and other Key Data
- 021 – Blue Sky States
- 022 – CDSC Information
- 023 – Breakpoint Information
- 024 – 12b-1 Information
- 025 – Social Codes
- 026 – Short Term Redemption Fee Information
- 029 – Linking Rules
- 031 – Fees and Expenses

Note: the 027 record type included in the file is a Fund/SERV record and not a Profile record.

A complete set of data points for an individual security issue (CUSIP) would always consist of an 020 General Profile record and then several supporting detail records which are written to the additional record types. For instance, the General Profile record contains indicators that let the receiving system know that STR Rates exist and CDSC Rules apply. Moreover, the additional record types depend on the aforementioned factors and if Short Term Redemption Fees apply in the General Profile then short term redemption details (026 record) will be sent. Additionally, if CDSC rules apply then CDSC details (022 record) will be sent out as well. So, there is a strong correlation in the General Profile (020) record type and supporting detail records.

The maximum number of records any individual security would have is nine. The data can be received in either fixed length or variable length records, based on the format you indicate when requesting the data. Most of the record types contain multiple records if the preferred format is fixed length. For example the 022 CDSC record type can contain up to 18 subsequent records, depending on the amount and type of data. However, the variable format contains only one record per record type. Header records indicate information such as submission date. The header also contains the existing unique information about the file. Finally, the trailer contains similar record set counts as well.

▲ How Profile Data is Delivered

The data is delivered in two different ways, either as a full dump file or as a change file.

The full dump file consists of all the data on file for a specific security. For both variable and fixed length, this could mean receiving nine different records (020 through 032) for a single security if it contains data points covering all nine record types. This data can be requested for a single security, a single fund family or for all the funds in Profile.

The other way to receive data from Profile is through the change files. The change file utilizes the same nine record types as the full dump. The difference is that change files are only created when data in one or more of the nine record types changes for a specific security. Change files are created nightly. The Profile service is a single cycle process, so files are created and delivered only once a day and are usually available between 9:00 to 10:00 PM ET.

In every record, there is a field called Action Type. Valid values are A=Add, C=Change and D=Delete. All records in the dump file will contain an A=Add. Most records in the Change file will contain a C=Change unless a new CUSIP or

new record type is being added in which case it will have an A=Add. You can also get a D=Delete in the Change file if a CUSIP or a specific record is being removed from Profile.

▲ Change File Issue

When a fund makes a change to a data point, the receiving system receives the record that contains the data point that was changed. The problem is that you receive all the data points for that record type, not just the one that changed. An O20 General Profile record contains approximately 90 data points. So if you receive a changed O20 record for a security, the only way to tell what actually changed is to compare all 90 data points in the O20 record with what the data was in the last O20 record you received for this security. Due to this complexity, some firms receive a full dump file nightly instead of the change files. Then they just refresh all the applicable data points each day. This process creates issues around tracking historical changes of individual data points. In order to track and record an audit trail of changes, the full refresh method would still need to look for changes at the individual data point level and only update those data points that actually did have a change.

▲ Future Change Records

Profile allows funds to enter future effective date changes. These future dated changes are sent out the day the change is entered by a fund into Profile but they have a future effective date which is determined if the effective date is greater than the submission date. Then on the night before the effective date of the change, the Profile system creates "R" reminder records that are included with all the other change records for the day. The only difference is that the future dated changes go out the night **before** the actual change and normal changes go out the night **of** the actual change. If you are receiving the full dump file, the file includes all future dated changes for all securities in the file. If you are receiving the change file, the file only contains the future dated records that were entered by the fund that day, in advance of the actual change. In order to utilize the future dated records, your data integration process will need to pull out the future dated changes, since they won't go into effect until some future date. Those future changes can be inserted into a separate table and used for reporting purposes to help plan for upcoming changes.

▲ Post-Dated Changes

Funds also have the ability to enter post-dated changes in Profile, for up to 365 days in the past. Most post-dated changes are usually a result of a fund

cleaning up data that was either missing or was entered incorrectly in the past. It is important to monitor post-dated changes and keep a record of them so in case issues arise, you have proof that you were notified after the true effective date of the change.

▲ **Filtering Out Funds not on Your Platform**

There are three options when requesting data from the Profile service, data for a single security, a single fund family or all the fund families on Profile. Most firms will need to select all fund families and then segregate out the funds that may not be supported on its platform.

▲ **Selecting the Applicable Data Points**

Not all security master tables, regardless of the brokerage, trust or recordkeeping system being integrated, will contain all the data points contained in Profile. You will need to perform a mapping exercise to match up all applicable data points in your security master table with the appropriate record type and specific location within the record. The Profile data dictionary is a helpful tool in understanding each of the data points in Profile and also the format of the data, such as field lengths, data type, etc. The Profile data dictionary is available from the DTCC.

▲ **Summary**

All these issues considered, it is a fair assertion that integration of Profile data with your application software is no small task. Being cognizant of these issues will help ensure an integration effort that correctly updates required data needs with the proper information. Missing a change on an important data point for a security could have serious ramifications when that security is traded.

In order to help facilitate the process and reduce the risk in building an automated integration of Profile data, Delta Data has created a Profile integration tool as part of its FUNDViews service.



Section 2

FUNDViews Integration Functionality

Delta Data has been working with the Profile data since 2007 when the re-designed Profile was first released by the DTCC. It was then that we released the first version of our FUNDViews product, a Software as a Service (SaaS) application for sourcing, manipulation, analysis and extraction of Profile data. Subsequently, we partnered with the DTCC to provide a private-labeled, limited version of FUNDViews to all fund groups subscribing to Profile, which is used to validate the integrity of their data. More recently, Delta Data partnered with the DTCC to re-engineer the Profile application with a primary focus on improving the fund's data entry function.

Our extensive knowledge of the Profile database has enabled us to develop a comprehensive data integration function into our FUNDViews application. This integration function performs most of the work that is required to integrate Profile data for application in source systems.

Delta Data receives the full dump and change files daily directly from the Profile service. Firms that subscribe to Profile can request the full dump and change files, but if subscribing to the FUNDViews service, this is not a requirement, as we have access directly to these files. All file handling, monitoring and processing of files is done by Delta Data.

▲ Identifying Changes in Data Points

The FUNDViews database contains all the securities and all the data points in Profile. It takes in the nightly change file and then compares every data point in every record in the change file with the existing data in Profile. When it finds a difference between the change file data and the existing data, it writes out the old data point to a history file and then updates the database with the current change record. When the update to the database is made, both the date the change was made as well as the effective date of the change is recorded. This process allows us to isolate the specific data points that have changed each day in Profile.

Future dated changes received in the change file do not update the active data point table in the FUNDViews database. They are pulled out of the change file and saved in a separate table. This future changes table can be accessed separately via both a report and the charting function in FUNDViews. The night prior to the effective date of any future dated changes, the Profile system

creates a change file for those data points and at that point they update the active data point table in FUNDViews.

Post-dated changes to Profile data points are logged in the database with the date they changed as well as the effective date of the change. FUNDViews has a CUSIP inquiry function that highlights any data point that has been changed and provides a drill down view of all changes with the date changed and effective date for each change.

▲ Identifying Securities to Integrate

The Profile database contains data points on nearly 20,000 individual securities. Most firms will not have selling agreements with all the funds and thus do not need data for all the funds in Profile. Utilizing the “Portfolio” functionality in FUNDViews, a firm can identify and track only those securities for which it has selling agreements. When the integration change file is created out of FUNDViews, it can be restricted to only get changes for securities in a specific portfolio.

Since we bring in all the securities in Profile into the FUNDViews database, we update all securities that have changes, whether you use them or not. That way when you get ready to add a new fund family to your platform, it is always available and you have a complete history of all prior data point changes.

▲ Setting Up and Scheduling the Various Integration Files

The FUNDViews integration function allows for setting up and scheduling three different file types – a change file, a full refresh file and a file for new CUSIPs. The integration setup is done through the FUNDViews GUI and consists of four simple steps.

Step 1 – Select the Portfolio of securities you wish to apply the data point selection. A firm may create an unlimited number of Portfolios.

Step 2 – Select the file type you need to have created for integration with the brokerage, trust or recordkeeping system. In most cases Delta Data will create a custom format based on a firm’s specific requirements. If a custom format is not used, the default output file is an XML file.

Step 3 – Select the data points you wish to pull from the Profile data from the pick list and arrange them in the order you wish them to appear in the output file.

Step 4 – Schedule the frequency of the file creation. This can be nightly, weekly, monthly, quarterly, semi-annually or annually.

Each of the three file types – change, full refresh or new CUSIPs – is set up separately, so each type can have its own data point selection, schedule frequency, etc. You can also have the system send out an email after each of the files is created. The files can either be placed on Delta Data’s FTP site or they can be placed out on a firm’s FTP site.

In the reports section of FUNDDViews, a “Change Export Report” is created for each change file created. The last ten reports are kept in the reports section. The report gives all the details in the change file: Fund family, CUSIP number, ticker symbol, share class, field name, old value, new value and effective date of change.

▲ Summary

Integrating Profile data into your application using the various output files from Profile can be a significant project. A thorough knowledge of the various files types and how the data is delivered is critical in developing a fully automated integration. Utilizing the functionality available in FUNDDViews can dramatically reduce the time, effort and risk involved in building an automated Profile to mainframe integration.