



# **Managed Account Rebalancing System**

FAQ

## ***Rebalancing and Portfolio Management***

*Describe the rebalancing process as a result of new accounts (cash or combination of cash and securities), deposits (cash or combination of cash and securities), and withdrawals.*

In the context of using the Windows-based MARS application, if a user wants to rebalance or ‘manufacture’ new accounts relative to a given strategy or model, they could initially create a batch of new accounts (based on a desired filter criteria), set optimization parameters (if not already defined) and then optimize the batch of accounts. Once completed, they could view the optimal portfolios at either the aggregate or individual account level.

If one wants to rebalance account(s) that have had deposits and/or requested withdrawals, they could use the rebalancing templates within the application to constrain the ‘manufacturing’ process such that a given amount of cash (and/or securities) maybe invested (or raised) during the rebalancing process.

*Can a rebalance be done on various levels within a strategy? For example, choose to rebalance for a specific component only, or rebalance across the entire account, or rebalance for a specific sector.*

Yes, one may constrain the rebalancing process in a variety of ways; either across a single account or multiple accounts – at the security, industry, sector or user defined levels.

*What are the alert functions and procedures to notify portfolio managers and traders that certain accounts need to be rebalanced due to unacceptable drifts, or other functions that are based on set regularity (e.g., monthly withdrawal/deposits)?*

Within our MARS Enterprise offering, the process of either performing risk analytics or full rebalancing on client accounts maybe automated in nightly batches to the point where the results (in a variety of reports) maybe pushed to various mediums (emails, file systems, intranet, printer, etc.); thereby notifying the appropriate individuals of the actions to be taken.

## ***Tax Management***

*How are taxes taken into consideration when managing clients’ portfolios (inherited securities, withdrawals, on-going changes in security positions for portfolio management)?*

Softpak’s offering incorporates the tax aware component of the Northfield optimizer such that taxes are a negative component of the utility function. Client specific tax information (if known) maybe utilized during the rebalancing process; including short/long term tax rates, YTD realized G/L information and maximum limits on capital gains.

The tax methodology that Northfield utilizes in their open optimizer has been well established and widely used in the marketplace.

*Can accounts be aggregated according to relationships for transactions and tax considerations?*

Yes, again accounts can be batched together based upon any client defined account characteristic.

*Are there ways to show a client's performance after tax relative to a "tax oblivious" or unconstrained portfolio.*

While after-tax performance reports are not part of the 'pre-canned' reports that we offer clients, we tell all clients that we will deliver any report based on client defined specifications and the availability of data. Our reporting tool is built around the flexibility of Crystal Reports.

*Is there available information on realized and un-realized gains (short and long-term) and losses on an on-going basis?*

Yes, if this information is captured from the accounting system and pulled into the MARS Schema. In fact, such information maybe vital in the tax management of a client's account and/or the handling of a client mandate (such as harvesting gains/losses).

### **Compliance**

*How does the system handle restrictions on the accounts?*

Account specific restrictions can be pulled into the MARS Schema (from the accounting system or another enterprise system) and then applied as hard constraints during the rebalancing process. Restrictions may also be applied to accounts by utilizing a separate "Set Restriction" utility (with a variety of ways to apply constraints) before accounts are rebalanced.

*Please list all restriction types currently supported by the system. Outside of traditional restrictions types (security, category, etc.) can custom restrictions be set-up?*

Don't buy, don't sell, don't trade, sell to x%, buy to x%, set to x%, +/- x% relative to benchmark, and many more. Yes, custom restrictions maybe setup

*How are restrictions coded onto relevant accounts? (e.g., input into the system, data feed, etc.)*

Restrictions are tied to Account IDs and as noted, maybe pulled from the accounting system (data feed) or applied using the application (input into the system). In each case, restrictions maybe tagged with a data source identifier in order to streamline the process of maintaining the restrictions in the MARS Schema on an ongoing basis.

*Explain the monitoring procedures to identify accounts with restrictions and the on-going accounts compliance to their respective restrictions.*

Clients may always view what restrictions exist for a given account via reports and/or the data maintenance utility (this application allows users to make changes to the data once loaded into the MARS Schema. It is particularly useful in a multi-user environment, where different users wish to maintain their own sets of data; like Buy Lists or Alpha Lists.

## ***Risk Management***

*Does your system allow interfacing with a proprietary risk management system? If not, what kind of customization is necessary to allow for interface and display of relevant risk data for portfolio management purpose?*

Yes. Due to the open nature of Northfield's optimizer and Softpak's offering, any structured risk model maybe used with our offering, including proprietary risk management systems.

*If your system includes risk tools that we want to replace/over-ride with our proprietary risk system, how will that affect pricing and the implementation.*

The only additional costs that would be associated with using a proprietary risk management system (risk models) would be the time/resources needed to convert the proprietary system into a readable format.

*Does the system allow for sensitivity analysis prior to sending trades to a trade order management system?*

Once the optimal portfolios are created, users may cancel trades at the account, blocked trade, share and share lot level before submitting trades to a TOM. In canceling any trades, users have the option to perform sensitivity analysis from a risk perspective (changes to tracking error, etc.) before the submission of trades.

## ***Model Set-up and Maintenance***

*How are models maintained? Are there any system's limitations for the number of models maintained?*

Within the context of our offering, we provide the ability for users to load and maintain their own models with no limit on the number of models that maybe stored in the MARS Schema. While the processing (loading) of model information maybe automated, we work with each client to ensure that the desired functionality is delivered and available to the user group.

*Are there any limits to the number of names in models? How many buckets for "cash"?*

There are no limits on the number of names in a given model. It is worth noting that once Softpak configures and installs the MARS Schema (database infrastructure) in a client's environment; clients have complete access to all tables within the schema.

While clients may define multiple 'buckets for cash', they must make certain that the cash identifiers are recognized by the risk model being used.

*Can models be set to be either "dynamic" or "static"? Positions reflective of underlying price movement on an intra-day basis?*

The frequency with which clients update the model information in the MARS Schema is client dependent – so models can be either static or dynamic

*Describe the architecture of models. For example, if a model is a component, at different percentage weights, in different strategies, how will a change in a given model be translated to all the strategies that contain that model?*

During the setup and configuration of the application, Softpak will provide connectivity to all the desired systems, including detailed model related data. Such information is typically refreshed on a daily basis. Any co-dependencies of models across strategies maybe maintained within the MARS Schema and applied to the appropriate accounts.

*How are models linked to underlying client accounts, corporate actions feeds, pricing feeds etc.?*

Models maybe associated with underlying client accounts as an account characteristic in the MARS\_IN\_ACCOUNTS table. This characteristic will allow users to batch (group) together accounts with similar properties (such as same model or strategy).

Users may also link client accounts with different models on the fly – depending upon the objectives of the user.

Models maybe linked to other tables in the MARS Schema via stored procedures – again depending upon what the client wants to achieve with such linking.

### ***Interfaces/Data Feeds***

*What are the data feeds needed to support your product. (e.g., account data, prices, security master, tax lots etc.)*

While there are a number of optional inputs to the portfolio manufacturing process (depending upon the strategy and level of detail being employed), the inputs include the following:

- 1) Portfolio - Tax lot level information with Account ID, Security IDs (ticker or cusip), shares, and purchase date
- 2) Benchmark (models) - Security IDs and percent weights (must add to 100%) – or shares
- 3) Buy Lists - Security IDs only (this is typically just the model/benchmark securities)
- 4) Alpha - Security IDs and alpha value (Optional)
- 5) Portfolio Restrictions (min/max holdings) - (Optional)
- 6) Industry/Sector classifications - defaults provided by Northfield
- 7) Transaction costs to buy/sell (security level) - (Optional)
- 8) Min Trade Size (security level) - (Optional)
- 9) Roundbase (security level) - (Optional)
- 10) Prices - Security ID and price (Optional)
- 11) Penalties - (Optional)
- 12) Composite Assets - (Optional)
- 13) Industry Mapping – (Optional)

We can provide connectivity to almost any enterprise system (data source) in order to seamlessly connect and move data through the portfolio manufacturing process.

*What interfaces for Trade Order Management exist?*

MARS works with the industry's leading trade order management systems. Users have the capability to generate trade files in a variety of output formats, upload trades directly to any trade order management system or FTP the trade file to a remote server. Sample formats include:

Checkfree APL – Advent - Charles Schwab – Fidelity - TD Waterhouse - Centerpiece - Charles River – MacGregor - Client Defined

*Is it possible to create other interfaces?*

Yes. If there is a specific trade format that a client would like to incorporate as part of the portfolio manufacturing process, then Softpak will work with the client to define and deliver the format as part of the initial setup and configuration of the application (such that total setup time does not exceed 100 man hours). Should additional time be needed to develop and deliver a given interface, then Softpak will deliver in writing a fixed cost for such implementation before an engagement begins.

### ***Reporting***

*Please list the standard reports available in the system.*

Within the available 'standard' reports, there are both initial (pre-rebalancing) and optimal reports.

The initial reports include Account Risk Profile, Account Summary, Share Summary, Share Lot Summary, Tax Liability and Who Owns.

The optimal reports include Account Risk Analytics, Blocked Trade, Conflict Summary, Gain Loss Harvesting, Optimization Summary, Return Decomposition, Risk Decomposition, Share Summary, Share Lot Summary, Buy/Sell, Account Detail, Largest Holdings (>3%), Sector Chart, Sector Bets, Exception by Account, Exception by Security, Account Holdings, SEC Trade Ticket.

*What is the process for creating custom reports?*

Softpak will deliver any custom reports for clients during the setup and configuration of the application – such that total setup time does not exceed 100 man hours. Should additional time be needed to develop and deliver custom reports (or should additional reports be needed post implementation), then Softpak will deliver in writing a fixed cost for such implementation before an engagement begins.

Clients will also have the option to build their own reports as our reporting application is built around Crystal Reports technology

*Would our internal developers have access to all data stored in the applications database to write our own reports?*

Yes. Once the MARS Schema and application is setup, clients have access to all relevant tables/data within the schema and as noted, may create their own reports.

*Is a report-writing tool available? If so please describe.*

Yes. As described above, we provide clients with a separate reporting tool that is built around Crystal Report technology.

*Does the application provide on-screen query functions?*

Yes, depending upon the type of query.

### ***Training***

*How much training is recommended for new users of the system?*

It depends upon the knowledge and roles of the user base. While we recommend that all clients have internal resources that can support a risk based portfolio manufacturing process, we certainly do not require users to have an in-depth knowledge of quantitative finance. In fact, through the use of the rebalancing templates in the MARS and MARS Web, users may only focus on rebalancing portfolios based on a trade off of turnover, taxes and tracking error.

On the training side, we allocate up to 100 man hours during the setup/installation that can be used, in part, for user training and we continue to work with the user base to build proficiencies with the application.

*Are there any costs associated with training or is it included with the project implementation?*

No – see previous answer.

*Is any on-going training/consultancy included in the annual maintenance charge?*

Yes.

### ***Technology Platform***

*Please describe the technical architecture of your product.*

SoftPak's Managed Account Rebalancing Systems (MARS) is a Windows-based two-tier client/server application. MARS Web is an n-tier application

- SoftPak will install the MARS schema in the client's corporate database of choice. MARS supports any relational technology; including Oracle, Sybase and SQL Server. The MARS schema holds the snapshot of all the data used by the application and its supporting utilities
- While the MARS server database could be on any software or hardware platform, we recommend that client's allocate 5GB of free disk space for every 1000 accounts processed.
- The MARS client is a Windows based application, developed in Visual C++ and Borland C+. It will run on any PC that supports Windows 2000 or Windows XP operating systems. SoftPak recommends a PC with a minimum of 256 MB memory, P4 processor and 5GB of free disk space for every 1000 accounts processed.

- The MARS client uses the native libraries provided by the database vendors to communicate with the server; as such the database client software is required on the clients. The MARS client uses the server only as a data repository; to retrieve and load data. All processing is done locally on the client and the results are loaded back to the database server.
- All MARS clients must use a *MARS\_DB\_Settings.cfg* file created by a connection template utility (part of the MARS Admin applications) in order to communicate with the MARS server. The database username and password that is part of this configuration file is typically the same for all MARS clients. This username is required to have db\_datareader, db\_datawriter and execute (for stored procedures) privileges within the database. The password is 128-bit encrypted in the configuration file.
- All users must be assigned a valid username and password in the MARS Schema via the Security Management application (part of the MARS Admin applications).
- SoftPak imposes no restriction on the number of concurrent users on MARS server database, but the database vendor may have licensing restrictions. All communications between the MARS client and server database is done via TCP/IP or HTTP protocols.

*Please provide a list of the databases with the versions supported that your product currently runs on.*

We provide connectivity to most relational technologies, including Oracle (8i – 10g), SQL Server (2000), Sybase (11.2 to 12.5).

*What database administrative issues should clients be aware of?*

During the implementation phase, the database tables, default data and stored procedures are setup using scripts. Once the schema is in place and the MARS clients are communicating with the database, the maintenance of the schema will be client dependent. While the input tables (MARS\_IN) are typically refreshed with each data load, the output tables (MARS\_OUT) store data based on User ID and Batch ID. For example, if the same user creates a 100 different batches over a one month period, all information related to the 100 batches will remain in the output tables (MARS\_OUT) until the information is cleared by a database administrator.

Given that clients may wish to archive certain data; clients can apply their own policies in truncating the output tables (MARS\_OUT).

**Note:** Depending upon the disk space that is allocated to the database server, as the output tables grow in size, MARS client performance maybe impacted.

*Does the system have a standard web browser interface? Please state which versions of Netscape and Internet Explorer are supported.*

Yes, for MARS Web. Latest versions are supported.

*Does the system rely on any 3<sup>rd</sup> party products (e.g., Barra, Northfield, Crystal Reports)?*

Yes. As noted, the application was built in partnership with Northfield due to the open nature of their technology. We have also incorporated the industry standard of reporting, Crystal Reports, within our offering.

*Is there a limit to the number of users on the system?*

No.

*Is there a limit to the number of simultaneous users on the system?*

No.

### ***Implementation***

*Please provide a detailed overview of the recommended implementation process for the system.*

While the complete implementation may vary depending upon what version of the application is being installed (MARS, MARS Enterprise, MARS Web), the process would include the following:

Before beginning the implementation, we work with the client to identify all data sources that would be used to populate the MARS Schema. Once identified, Softpak would layout the procedures that would move data between the various systems and the MARS Schema.

The MARS Schema is then installed in a client's enterprise database server of choice. Once installed, the 'hooks' into all of the desired data sources are put in place and the connectivity testing commences.

Once the connectivity testing is complete, we will install the application in the client's environment and begin user testing/training.

While the implementation time may vary depending upon a client's environment and needs, Softpak allocates up to 100 man hours for the setup, configuration and implementation of a typically client installation.

*What documentation is provided with the system?*

Both user and technical documentation is provided to each client.

*What resources are expected from the client for the implementation?*

We ask each client to provide both technical and business resources during the setup and implementation phase. The technical resources help identify data sources and address database related questions. The business resources help identify data to be used in the portfolio manufacturing process; i.e. use cases and expected business processes.

*Do you provide on-site support during the installation of the system?*

Absolutely, we work very close with each new client.

*Can an implementation be done on an ASP basis? How does an ASP implementation affect the costs of the application?*

We currently do not offer an ASP based solution.

## *Support / Maintenance*

*Please provide a sample SLA with response times.*

SoftPak agrees to supply Client with technical support and product maintenance for the Product (including providing Updates) without charge during the period that this Agreement is in effect. Technical support and product maintenance includes the following: (i) unlimited telephone support, including consultation on the operation, installation and utilization of the Product, through a Client Support number to be supplied by Softpak, on Business Days (any day that the New York Stock Exchange and/or The Federal Reserve Bank is/are open to conduct business in New York and shall be from the hours of 8:00 a.m. to 6:00 p.m. E.S.T.) and (ii) error-correction services, which shall require Softpak to design, code and implement programming changes to the Product to correct errors, defects or malfunctions therein so that the Product is brought into substantial conformance with the warranties set forth herein.

The technical support and error-correction services will be subject to the following “Error/Response Time Criteria”:

“ERROR”: shall mean any error, problem, or defect resulting from (1) an incorrect functioning of code, or (2) an incorrect or incomplete statement or diagram in documentation, if such error, problem or defect renders the code inoperable, causes the code to fail to meet the specifications thereof, causes the documentation to be inaccurate or incomplete in any material respect, causes incorrect results, or causes incorrect functions to occur. This definition of “ERROR” does not include any error or problem due to invalid user defined parameters and/or missing or incorrect data. The determination (classification) of the severity level for an Error will be made jointly by SoftPak and Client, each acting reasonably and in good faith, and will be based on an objective assessment of the applicable business situation.

“SEVERITY I ERROR”: shall mean an emergency condition which causes critical impact which delays the work of Client or Client’s customers, causes the loss of data, or makes the performance or continued performance of any one or more functions impossible. SoftPak will respond during Business Days and begin Error correction as quickly as possible and continue Error correction activity on a continuous basis during SoftPak’s normal maintenance and support hours until a workaround correction is provided. Thereafter, SoftPak will continue to actively pursue a permanent correction.

“SEVERITY II ERROR”: shall mean a condition which significantly affects the work of Client or of Client’s customers or makes the performance or continued performance of any one or more functions difficult and which cannot be circumvented or avoided on a temporary basis by the intended user. SoftPak will respond during Business Days and begin Error correction within four (4) hours and will continue Error correction activity until a workaround correction is made. Thereafter, SoftPak will continue to actively pursue a permanent correction.

“SEVERITY III ERROR”: shall mean a documentation Error or a limited problem condition which is not critical in that no loss of data occurs and which may be circumvented or avoided on a temporary basis by the intended user. SoftPak will provide Error correction within a mutually agreed upon time frame, but in no event later than the next release.

“SEVERITY IV ERROR”: shall mean a minor problem condition that can be easily avoided or circumvented by the intended user. SoftPak will provide Error correction in the next release.

If SoftPak determines that a permanent Error correction cannot be provided within twenty-four (24) hours for Severity I and II Errors, SoftPak shall immediately initiate an escalation procedure as follows: (i) assign additional sufficient skilled personnel to correct the Error; (ii) notify SoftPak management personnel that such Error has not been corrected and that the escalation procedure has been activated; and

(iii) provide verbal status reports at intervals of not less than two (2) times per day to Client or as otherwise agreed. The foregoing escalation procedure shall continue until a permanent Error correction is provided.

*Please describe the help desk structure and support hours.*

While Softpak has a staff of professionals dedicated to client support, each client is assigned a relationship manager that is ultimately responsible for resolving all client issues and proper client communication. Each client is provided with a number to reach their relationship manager during Business Days; as defined above.

*What standard warranties and/or guarantees apply to the products being supplied?*

SoftPak represents and warrants the following:

- a) SoftPak has ownership and marketing rights to the Product.
- b) The Product is in conformity with the specifications represented in the Product Documentation.
- c) All maintenance, support and training shall be conducted by qualified SoftPak personnel.
- d) The Documentation provided by SoftPak will fully and accurately reflect the functionality of the applicable Product.
- e) Prior to delivering the Product, SoftPak will test the Product and the media on which it is to be delivered with a reasonably current version of a leading anti-virus application in efforts to detect, and if so detected, to eliminate, any computer code (sometimes referred to as “viruses” or “worms”) designed to damage, disrupt, disable, harm, or otherwise impede in any manner, the orderly operation of the Product or any other software, data files, firmware, hardware, computer system or network. SoftPak further represents and warrants that the Product (and all other software delivered or installed by SoftPak for use in conjunction with the Product) shall not contain any computer code (sometimes referred to as “viruses” or “worms”) or any other procedures, routines or mechanisms designed by SoftPak (or its personnel or licensors) to: (i) disrupt, disable, harm or impair in any way the Product’s (or any other software’s) orderly operation based on the elapsing of a period of time, advancement to a particular date or other numeral (sometimes referred to as “time bombs”, “time locks”, or “drop dead” devices); (ii) cause the Product to damage or corrupt any of Client’s or its Affiliates’ data, storage media, programs, equipment or communications, or otherwise interfere with Client’s or its Affiliates’ operations, or (iii) permit SoftPak, its personnel, its licensors or any other third party, to access the Product (or any other software of Client’s or its Affiliates’ computer systems) to cause such disruption, disablement, harm, impairment, damage or corruption (sometimes referred to as “traps”, “access codes” or “trap door” devices). SoftPak will not unilaterally (*i.e.*, without appropriate judicial order) remove, deinstall, repossess, modify, delete, damage, deactivate, disable, or interfere with the Product because of any dispute relating to this Agreement. SoftPak further represents and warrants that the Product will function according to the information provided in the Documentation.
- f) The Product which is licensed to Client hereunder and used by Client prior to, during or after the calendar year 2000, includes or shall include, at no added cost to Client, design and performance so the Client shall not experience Product abnormally ending and / or invalid and/ or incorrect result from the Product in the operation of the business of the Client. The Product design to ensure year 2000 compatibility shall include, but not be limited to, date data century recognition, calculations and accommodate same century and multi-century formulas and date values, and date data interface values, and date data interface values that reflect the century.

## *Talking Points*

*What are the strengths and key differentiators of the product within the context of model maintenance and “Portfolio Manufacturing”*

1) Technology: Without applying the right technology, the manufacturing of heterogeneous portfolios is a labor intensive process.

- Scalability – Apply the manufacturing process to one or one hundred thousand portfolios
- Connectivity – Seamlessly connect and move data through the manufacturing process; across all enterprise systems
- Automation – Provide for an unattended manufacturing and quality control process
- Portability – Allow for the manufacturing process to be initiated regardless of the location
- Security – Provide for proper access and security controls
- Ease of Use – Provide for an intuitive user interface that allows one to focus on the results and not the manufacturing process

2) Use of Risk-based portfolio manufacturing methodology:

- Regardless of the investment style, every asset manager needs to understand the risks one takes to generate returns and one must be able to communicate that understanding to others.
- Once manufactured, portfolios evolve through day to day changes in asset values and client directed mandates...leading to unintended bets that may impact performance.
- Risk analysis or ‘decomposition’ exposes these bets which, in turn, transform implicit assumptions into explicit decisions.
- Risk-based portfolio manufacturing has a straightforward return profile – what you put into it is what you get out of it.

3) Overlay Management - the ability to not only combine separate models to form a given strategy, but the ability to combine multiple accounts (taxable and tax-exempt) from the same family and optimize it against a benchmark/model/strategy – while keeping track of all trades and making certain that the market values of each sleeve remains constant.

*Comment on the system’s capability to download and upload data with other systems and software (e.g., Microsoft Office products).*

Connectivity is a key issue as noted above. We have integrated this application with every major relational technology; as well as a variety of different platforms/software.

*Can the system provide different access rights to its users? (Read, write, trade etc.)*

Yes, clients have the option to utilize a comprehensive security management system that is built around our offering; ultimately allowing access privileges to named users. Note: included as part of the security management system, a comprehensive logging system is available which details all user activity within the application.