AXIOMA
Analytics by Qontigo

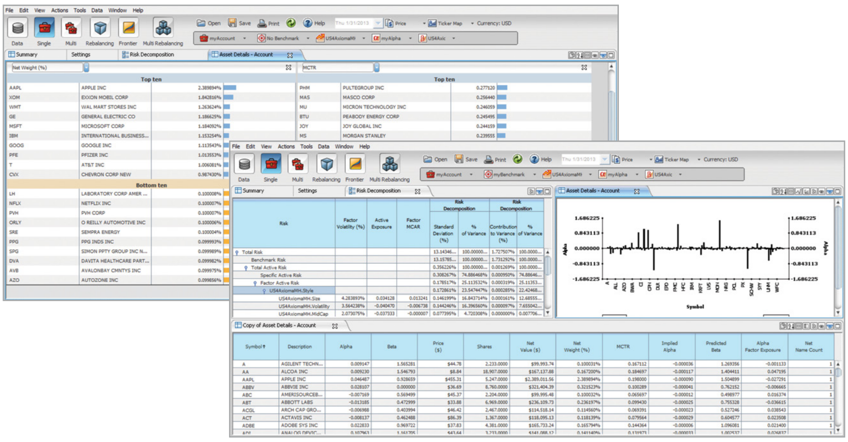
**QONTIGO'S SUITE OF PORTFOLIO CONSTRUCTION TOOLS:**

- ✓ **Axioma Portfolio Optimizer™**
- ✓ Axioma Portfolio Analytics™
- ✓ Axioma Risk Models™
- ✓ Axioma Risk Model Machine™

# Axioma Portfolio Optimizer™

## Advanced portfolio construction tool delivers maximum flexibility for all types of investment strategies

**AXIOMA PORTFOLIO OPTIMIZER** supports a wide range of investment management approaches, from quantitative to fundamental. With virtually limitless objectives and an equally unlimited range of constraints, Axioma Portfolio Optimizer delivers maximum flexibility to model even the most complex strategies.



## Leverage our marketleading optimization capabilities

**SUPERIOR RISK CONTROL**

- Use multiple risk models to incorporate several perspectives of risk.
- Place hard limits on total risk or tracking error.
- Prevent risk underestimation and model misalignment using the alpha alignment factor.
- Better manage tracking error and avoid unintended surprises using custom risk models from Axioma Risk Model Machine™.

**AN OPEN DATA PLATFORM**

- Integrate Axioma Factor Risk Models, third-party models or your own proprietary models.
- Incorporate ETFs, futures and other composite instruments using content from Qontigo or the vendor of your choice.
- Deploy proprietary factors or leverage factors from Axioma factor libraries.

**UNIQUE INSIGHTS**

- Quantify the impact of individual constraints on the objective function with constraint attribution.
- Understand and resolve conflicts between constraints using the constraint hierarchy.

**SPEED AND SCALE**

- Benefit from Second Order Cone Programming (SOCP), a state-of -the-art approach capable of solving complex problems quickly and efficiently.
- Automate your portfolio construction process by scheduling large batches of portfolio rebalancings.

## Suited for your specific needs

### 1 Actively managed portfolios

- Control portfolio exposures to key factors to deliver results aligned with your strategy objectives.
- Construct more efficient portfolios by allocating risk to factors you believe will outperform.
- Explicitly incorporate uncertainty into your alpha estimates.

### 2 Global portfolios

- Efficiently optimize global portfolios over large asset universes with many exposures to manage.
- Incorporate risk from the currency perspective of your choice.
- Accurately capture risk for portfolios holding multiple share classes and depository receipts from the same issuer.
- Track a benchmark holding foreign ordinaries using depository receipts.
- Control exposure to individual issuers.

### 3 Long/short portfolios

- Manage a long/short portfolio, create a factor hedging basket or implement pair trading.
- Control the long, short and net exposure to any factor, including user-defined factors.
- Specify the portfolio leverage or let the optimizer select the best leverage.
- Capture asset-specific short selling costs including short rebates.
- Prevent positions in “hard-to-borrow” assets.

### 4 Index-tracking portfolios, account replication and tax-efficient strategies

- Incorporate all transaction-related costs that impact performance including market impact costs, commissions, and brokerage fees.
- Limit trading to a fraction of average daily trading volume.
- Construct smart beta strategies that closely follow the benchmark.
- Limit taxable gains or harvest losses while respecting a risk budget.

## Advanced features for superior performance

### ✓ Explore strategy trade-offs with the frontier

- Explore the impact of varying either a constraint limit or an objective term weight with the frontier.
- Measure the impact of relaxing constraints in the strategy by using constraint frontiers.
- Create a classical mean variance frontier or explore other trade-offs using objective frontiers.

### ✓ Seamlessly evaluate manual changes with the data editor

- Evaluate the impact of changes to the portfolio holdings, optimized trade list and portfolio data using the data editor to make adjustments to your strategies with a click of a button.

### ✓ Backtest with the utmost flexibility

- Leverage all the model-building flexibility of the Axioma Portfolio Optimizer in your time series simulations using the backtester.
- Like the optimizer, the backtester is an open platform facilitating use of content from any source.
- The backtester provides comprehensive risk and performance analytics with in-depth analysis of strategy performance including constraint attribution.
- Advanced customization and automation of backtests can be accomplished using one of the Axioma Portfolio API interfaces.
- APIs are available in in C++, Java, Python, MATLAB, and R as well as a RESTful Web Service.

**Minimum System Requirements**

Axioma Portfolio Optimizer runs on Windows 8x/10. For best performance, an Intel i3 and 4GB or more of RAM is recommended.

To learn more about Qontigo, please contact us, or visit **qontigo.com**

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