YU INVESTUDY / OFFICIAL DOCUMENTATION

# Assetalyze
# Portfolio Optimizer

## Detailed User Manual

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# Assetalyze — Portfolio Optimizer User Manual

Detailed operating manual and specification reference — Microsoft Store version 1.0.55.0 x64
English edition: October 27, 2026
Product specification baseline: accepted Source commit
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This manual describes features accessible through the normal interface of version 1.0.55.0. Bold interface labels follow the app's English resources and the code that applies them. Explanations are written in English; they are not alternative names for the controls. Available controls and their enabled state depend on the selected data, conditions, and window size.

Some related screens use different English names. The main navigation item is Results. Its chart tab is Asset path. The separate Graph details window uses Asset growth as a display mode. Custom allocation has its own numbered tab, 3 Growth. These differences reflect the product interface.

This is an operating manual, not investment, tax, or legal advice. It does not guarantee profits, preservation of principal, or calculation outcomes. Read the documents available under Legal information as well.

Where to start: Read Chapters 1–8 for setup, Chapters 10–14 for input data and analysis conditions, and Chapters 16–22 for results. Read Chapters 21, 24, and 29 before deleting results, backing up data, or uninstalling. Source references, English-label verification, and unresolved external matters are recorded in the accompanying Source_Research_and_Verification_1.0.55.0_EN.md.

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# 1. Introduction

## 1.1 What Assetalyze does

Assetalyze compares portfolios using historical asset prices and assumptions about contributions, allocation, rebalancing, trading costs, and taxes.

- Automatic optimization: Evaluates allocation candidates for 1–10 selected assets. At each specified volatility limit, it selects a candidate that maximizes mean or median final value.
- Custom allocation: Saves allocations you specify and compares several sets using shared evaluation years.
- Results: Displays final value, XIRR, volatility, maximum drawdown, asset paths, and allocations.
- Exports: Provides table CSVs, asset-path CSVs, HTML overview reports, and PNG images from graph-detail windows.

Assetalyze does not place orders in a brokerage account. “Optimal” means best under the selected inputs, candidate set, objective, and constraints. It does not mean best for future investment decisions.

## 1.2 Three important distinctions

Distinction: Demo versus real data
Meaning: The built-in demo uses fictional data. It is separate from downloaded market data and your CSVs.

Distinction: Current settings versus saved results
Meaning: Changing an input does not recalculate a previously saved result.

Distinction: Registered assets versus selected assets
Meaning: The asset library can contain more than 10 assets. Standard optimization uses the 1–10 assets checked in Basic settings. Custom allocation uses the weights in each set independently.

# 2. System requirements

## 2.1 Supported package environment

The 1.0.55.0 package targets x64 Windows Desktop. Its declared Windows minimum version is 10.0.26200.0. This manual does not claim support for earlier builds. Check the Windows version on your PC and the installation eligibility displayed by Microsoft Store.

CPU computation is available. A compatible NVIDIA GPU can accelerate candidate search when the required driver and runtime are available. Use Compute environment to check the actual machine. The presence of an NVIDIA GPU alone does not establish runtime readiness.

The Store package includes its product runtime. Normal use does not require creating a development Python environment or changing packages with pip.

## 2.2 Workload, memory, and disk space

Time, memory, and disk requirements depend on asset count, history length, allocation step, rolling periods, and output settings. Finer allocation steps can increase the search dramatically: 10 assets with a 5% step produce 10,015,005 candidate allocations.

No fixed minimum RAM amount, universal GPU model list, or guaranteed completion time is specified here. Consult the app’s diagnostics and recommendations for the current PC.

The interface supports resizing and maximizing. At Windows scaling of 100%, 125%, and 150%, use available scrolling and table-column paging when the screen is small.

# 3. Installation

## 3.1 Installing from Microsoft Store

1. Open Assetalyze — Portfolio Optimizer in Microsoft Store. The product ID is 9NDJXCCWG6D2.
2. Review the price, availability, and terms displayed by Store, then install the app.
3. Launch Assetalyze from the Windows Start menu.
4. Complete the language/currency and legal-document steps described in Chapter 6.

Purchases and payments take place through Microsoft Store. This manual does not establish a price, refund policy, or regional availability.

## 3.2 Identifying the version

This manual applies to Store package version 1.0.55.0. An internal release label such as RC1.275 is a separate identifier.

For technical identification, the Package Identity Name is YuInvestudy.AssetalyzePortfolioOptimizer. The Package Family Name (PFN) is YuInvestudy.AssetalyzePortfolioOptimizer_v52yw7agrk5ve. Users do not need to edit these values.

## 3.3 Updating versus reinstalling

A normal update within the same package family is different from uninstalling and reinstalling. Back up settings and registration information as well as results if they must be retained. Do not start troubleshooting by uninstalling or clearing all data; see Chapters 24 and 29 first.

# 4. Trial and Purchased access

## 4.1 Available operations

Operation: Analyze the genuine built-in fictional demo
Unlimited Trial/free access: Available
Valid Purchased access: Available

Operation: View, export, and resume genuine demo results
Unlimited Trial/free access: Available
Valid Purchased access: Available

Operation: Inspect a personal CSV for compatibility
Unlimited Trial/free access: Inspection only
Valid Purchased access: Available

Operation: Register a personal CSV in the asset library
Unlimited Trial/free access: Purchase required
Valid Purchased access: Available

Operation: Analyze or recalculate real data
Unlimited Trial/free access: Purchase required
Valid Purchased access: Available

Operation: Use saved real-data results, resume them, or use their calculation cache
Unlimited Trial/free access: Purchase required
Valid Purchased access: Available

Operation: Download public market data
Unlimited Trial/free access: Purchase required
Valid Purchased access: Available

Only data the product recognizes as its genuine demo qualifies as demo data. Renaming a personal CSV or changing its settings to say “demo” does not make real-data analysis part of the free demo.

## 4.2 Starting from Home

- Try the built-in demo starts the fictional-data workflow.
- Free CSV compatibility check inspects readability, columns, dates, and numeric values. A successful check does not register an asset.
- Buy in Store opens the Microsoft Store purchase workflow.

The Assetalyze — Unlimited Trial heading describes the trial offer. Read the separate License: Purchased, Trial (no time limit), or other license-state display to determine the current entitlement.

## 4.3 Limits of the free CSV check

Readable means the selected CSV passed the relevant readability checks. It does not guarantee sufficient history, overlapping dates with other assets, complete FX data, or success with every analysis condition. The inspection-only operation does not change or upload the original CSV, register an asset, optimize real data, or calculate its investment performance.

Other compatibility outcomes include Review required and Cannot read. Follow the preview and format guidance in Chapter 12.

# 5. Screens and navigation

## 5.1 Main screens

English interface label: Home
Purpose: Workflow, demo, CSV compatibility check, and license status.

English interface label: Compute environment
Purpose: CPU/GPU readiness, performance settings, and diagnostics.

English interface label: Basic settings
Purpose: Assets, input data, cash flows, optimization, constraints, and costs.

English interface label: Advanced
Purpose: Output, language/currency, appearance, and maintenance.

English interface label: Run
Purpose: Start, stop, resume, and monitor an analysis.

English interface label: Results
Purpose: Select completed results and inspect charts, metrics, and tables.

English interface label: Custom allocation
Purpose: Evaluate and compare saved fixed-allocation sets.

English interface label: Legal information
Purpose: Disclaimer, privacy, license documents, third-party notices, and consent.

English interface label: Run log
Purpose: Processing messages and error details.

The How to use / Guide actions open bundled help documents. A ? control opens help for the associated feature. For wide tables, use scrolling, column paging, or the full-row detail view.

## 5.2 Tabs and nested views

Screen: Basic settings
Tabs or view choices: Assets & Data; Simulation 1 — Investment & optimization; Simulation 2 — Constraints & costs

Screen: Advanced
Tabs or view choices: Output; Language & currency; Maintenance

Screen: Results
Tabs or view choices: Dashboard; Asset path; Detailed data

Screen: Results → Detailed data
Tabs or view choices: Details by Vol; Statistics by period; Allocation comparison, selected through Display item

Screen: Custom allocation
Tabs or view choices: 1 Allocation; 2 Run; 3 Growth; 4 Details

Allocation comparison is a view within Detailed data, not a separate fourth Results tab. The custom-allocation 4 Details tab is separate from the normal Results Detailed data tab.

# 6. First setup

## 6.1 Initial sequence

1. In Assetalyze — First setup, choose Display language and Valuation currency.
2. Select Start with these settings.
3. In Review legal documents, read the EULA, Privacy, Disclaimer, and Third-party notices. Select Agree and continue if you agree. Exit without agreeing ends the process without acceptance.
4. Open Compute environment if the environment has not been confirmed.
5. Use Set up and verify automatically.
6. Select Continue to Basic settings →, then prepare assets and conditions.
7. Review Advanced → Output, then proceed to Run.

Language and currency can be changed later under Advanced → Language & currency. The normal startup flow does not require the retired guided-setup wizard retained in older source definitions.

## 6.2 Trying fictional data first

Use Try the built-in demo on Home or Apply demo settings in Basic settings. Check the fictional/demo-data indication before interpreting results.

Return to real data uses the supported path for returning from demo settings. After returning, verify the selected assets, amounts, valuation currency, and periods before running a real-data analysis. Do not assume the demo inputs describe your actual portfolio.

# 7. Compute environment

## 7.1 Automatic setup

Open: Main navigation → Compute environment.

1. Under Compute method, select Automatic (recommended).
2. Click Set up and verify automatically.
3. Review the CPU, RAM, GPU, runtime, and recommended-method information.
4. Once confirmed, click Continue to Basic settings →.

If GPU operation is unavailable, CPU computation remains an available path. If GPU was selected explicitly and verification fails, follow the displayed diagnostic result and review the selected compute method. A material hardware/runtime change can require confirmation again.

## 7.2 Compute methods

Choice: Automatic (recommended)
Meaning: Chooses an available method using the environment diagnosis.

Choice: GPU
Meaning: Uses a supported NVIDIA GPU for candidate search. Winning candidates are rechecked through CPU exact evaluation.

Choice: CPU
Meaning: Computes on the CPU without requiring the GPU execution environment.

GPU search is an acceleration path, not a setting that omits final numerical verification. Custom allocation evaluates fixed portfolios using CPU exact and does not perform the standard GPU candidate search.

## 7.3 Performance controls

The Mode choices are Power saving, Standard (recommended), High performance, Maximum performance, and Manual. They adjust processing batches, working memory, parallelism, and checkpoint frequency. They do not change the optimization objective or remove final CPU exact checks.

Control: CPU batch / GPU batch
Meaning and caution: Number of candidates processed together. Larger batches can require more working memory.

Control: CPU workers
Meaning and caution: Limit on CPU-side parallel workers.

Control: CPU working memory / GPU working memory
Meaning and caution: Working-memory limits, particularly relevant to median calculations. These are not the PC’s total RAM/VRAM. Values are in MiB.

Control: checkpoint
Meaning and caution: Candidate-count interval for saving resumable progress.

Control: GPU device ID
Meaning and caution: Identifies the GPU to use. Match it to the environment diagnosis.

Control: Measure performance
Meaning and caution: Measures the current PC to obtain recommended settings; it uses CPU/GPU resources while running.

Control: Copy standard recommended values
Meaning and caution: Applies the displayed standard recommendations to performance inputs. Despite “Copy,” this is not a text-copy-to-clipboard operation.

Use automatic setup and a preset mode first if you are unsure about manual values.

## 7.4 Individual diagnostics

Expand Details / troubleshooting when needed.

Action: Run diagnostics only
Purpose: Checks current runtime readiness separately from performance measurement.

Action: Recheck MSIX runtime
Purpose: Checks the runtime included with the Store package. It does not replace it with a development Python installation.

Action: Recheck GPU runtime
Purpose: Checks GPU/runtime readiness and reports the detected state.

Diagnostics and measurements can save associated information. Opening a screen and actively running a diagnostic are different operations.

# 8. Basic settings

## 8.1 Assets & Data

Open: Basic settings → Assets & Data.

Check the assets to include in standard optimization. The limit is 1–10 checked assets, independently of the number registered in the library.

Action: Select all / Clear all
Purpose: Changes the analysis checkboxes together. The 10-asset run limit still applies.

Action: Auto-download market data
Purpose: Opens supported public-data acquisition and registration.

Action: Add cash asset
Purpose: Adds cash in another supported currency.

Action: Add CSV asset
Purpose: Reviews and registers a price CSV.

Action: Create leveraged asset
Purpose: Generates a synthetic leveraged series from daily input data.

Action: Edit selected asset
Purpose: Reviews or changes editable asset metadata and data status.

Action: Delete selected asset
Purpose: Removes an asset registration; this is separate from deleting an analysis result.

Action: Configure dividends/distributions
Purpose: Defines price interpretation and dividend inputs.

Action: Manage reference data
Purpose: Manages FX and interest-rate data.

Action: Export selected asset CSV
Purpose: Exports input asset data rather than analysis statistics.

Review each asset’s period, dividend interpretation, and source. Combining assets with different histories can shorten the usable overlapping period.

## 8.2 Data modes

Choice: Hybrid (recommended)
Behavior: Uses registered local data and the corresponding supported official source when data is missing.

Choice: Local only
Behavior: Does not fetch calculation data over the network. Required prices, FX, and rates must already be available.

Choice: Auto-download only
Behavior: Uses supported downloadable data. It is not an arbitrary ticker-download service.

Choice: Demo
Behavior: Uses a separate fictional-data mode.

Local only does not disable Microsoft Store license communication. Calculation-data access and entitlement checks are separate.

### 8.3 Moving to conditions

Use Simulation 1 — Investment & optimization for amounts, periods, and search settings. Use Simulation 2 — Constraints & costs for volatility limits, costs, taxes, rebalancing, and dates. Valid input changes are normally saved automatically. An invalid value or save-error message means you must resolve the issue rather than assume the change was saved.

## 9. Advanced settings

### 9.1 Output

Open: Advanced → Output.

Output level: Standard (recommended)
Effect: Keeps normal result viewing/basic outputs and limits additional per-window output.

Output level: Detailed
Effect: Adds per-period summary CSV output.

Output level: All
Effect: Enables per-period summaries, asset-path CSVs, charts, and 100% asset comparisons.

Output level: Custom
Effect: Lets you choose output types and the range of windows to export.

Output level: Do not output
Effect: Suppresses automatic user-facing CSV/HTML/PNG output. Internal files needed for result viewing and replay still exist.

For custom output, Per-period choices include Do not output, Best / median / worst, Best 5 / worst 5, and All periods. Output types include Period summary CSV, Asset path CSV, Per-period charts, and 100% asset comparison. The last compares portfolios with 100% invested in a single asset.

All periods can produce thousands of files. Output settings change saved artifacts, not the candidate-search objective or winning allocation.

### 9.2 Language & currency

This tab controls display language, valuation currency, theme, and highlight color. Chapter 23 explains the consequences of currency changes. Appearance settings do not change calculations.

### 9.3 Maintenance

Action: Open user data
Scope and caution: Opens the actual input/results storage location. Use it to locate data before backup.

Action: Reset app state
Scope and caution: Resets settings, diagnostics, performance measurements, and caches. It preserves input files and results in the user-data area, but registration/settings information still needs backup.

Action: Permanently delete all data
Scope and caution: Deletes current application state and application-managed user data after two confirmation stages. This is not the single-result Recycle Bin operation.

Do not use reset or permanent deletion as the first response to an ordinary error. Permanent deletion has no in-app undo and may leave a partially deleted state if an error occurs. Original CSVs, older storage locations, and backups outside the current managed roots are not all deleted by this action.

# 10. Asset data

## 10.1 Prices and currencies

Price CSVs provide dates and prices. Normal analysis uses monthly series; daily-data input paths use the last observed value within each month. Confirm whether the input contains ordinary closing prices or adjusted/total-return prices.

Specify the currency explicitly. Display language, file names, and currency symbols are not substitutes for selecting the correct currency. Assets in another currency need suitable historical FX data.

## 10.2 Cash assets

Cash for the valuation currency is shown in the asset list. Use Add cash asset for other supported currencies.

A cash series represents one unit of its own currency with a nominal 0% return in that currency. Foreign cash is converted using the required FX series. It is not a simulation of the interest, fees, or terms of a particular bank deposit.

## 10.3 Editing and removing assets

1. Select an asset row and click Edit selected asset.
2. Review its source, period, currency, analysis inclusion, and managed-CSV status.
3. Change editable fields and click Save.

CSV asset names are fixed to preserve their relationship with settings and results. Downloaded/generated assets can also have fixed source or currency fields because these belong to their generation conditions.

If a managed CSV changes after registration, analysis may stop for safety. Use Approve CSV change only after reviewing the actual change. Removing an asset registration is different from unchecking it for the next run. Keep the original input CSV separately from the managed copy.

## 10.4 Dividends and distributions

Open: Basic settings → Assets & Data, select an asset, then Configure dividends/distributions.

Choice: Price / Close (dividends entered separately)
Meaning: Treats prices as excluding separately supplied dividends.

Choice: Adjusted / Total Return (dividends included)
Meaning: Treats the price series as including dividends. Avoid adding them again.

Choice: No dividends
Meaning: Adds no separate dividend input.

Choice: Separate CSV (date + dividend)
Meaning: Uses a reviewed CSV of dividend dates and amounts.

Choice: Annual dividend yield
Meaning: Uses an annual-yield assumption rather than an actual payment history.

Choice: Dividend column in price CSV (legacy)
Meaning: Uses a specified dividend column in the price file.

Check currency, per-share/per-unit amounts, units, ex-dividend dates, and split adjustments. Dividend tax and payment handling are separate settings in Simulation 2. Holding dividends as cash requires unadjusted prices.

### 10.5 Synthetic leveraged assets

Open: Basic settings → Assets & Data → Create leveraged asset.

1. Select the underlying daily price CSV and verify dates, prices, and currency.
2. Choose a preset and a name for the generated asset.
3. Review the model, leverage, expenses, and funding assumptions.
4. Click Create and check the registered series.

Presets include custom and generic 2x/3x models, TQQQ dedicated (calibrated model), and QLD dedicated (calibrated model).

Input: Leverage multiple
Interpretation: Multiplier applied to daily underlying changes, not simply to the total-period return.

Input: Expense ratio (% p.a.) and other drag
Interpretation: Annualized expense assumptions used by the daily model.

Input: Funding
Interpretation: Fixed-rate funding or funding based on DFF.

Input: Fixed funding rate (% p.a.) and funding spread
Interpretation: Assumptions about financing costs.

Input: Underlying dividend yield
Interpretation: Assumed dividend return for the underlying series.

Input: Calibrated funding multiplier, Calibrated net carry (% p.a.), Calibration reference expense (% p.a.)
Interpretation: Model-specific calibration inputs. Some calibrated-preset values are fixed.

The result is a daily-reset synthetic series, not actual ETF NAV or market-price history. The dedicated presets do not turn arbitrary inputs into a reconstruction of TQQQ or QLD. Their expected underlying USD daily data and funding inputs matter.

## 11. Downloading public market data

### 11.1 Supported catalog

Open: Basic settings → Assets & Data → Auto-download market data.

The catalog includes World Bank Gold, Silver, Brent, WTI, Copper, Natural Gas (US), Aluminum, and Platinum. It also includes a US 10-year Treasury series derived from Federal Reserve DGS10. Review the source, currency, usage information, and registration status for each row.

The Treasury series is an approximate total-return index derived from yields, not the actual price history of a particular ETF or bond holding. This catalog is not a general search for S&P 500,

NASDAQ-100, individual stocks, or arbitrary ETFs.

## 11.2 Adding and refreshing data

1. Confirm that the license display is Purchased.
2. Select a catalog item and review its source, currency, and terms.
3. Click Add selected.
4. After acquisition finishes, check the asset’s name, period, and source in Basic settings.
5. Check it in the asset list if it should participate in standard analysis.

Downloaded data is stored in local caches and managed copies. Use Refresh selected for a registered catalog item or Refresh market data in the asset editor to update it. These are data-writing operations; back up an input version first if you need to reproduce an earlier run exactly.

Downloads can fail because of connectivity, provider changes, or insufficient history. Supported acquisition does not guarantee uninterrupted external service. Resolve a license error before diagnosing the market-data provider.

## 11.3 FX and interest-rate reference data

Use Manage reference data for FX pairs and interest rates. Federal Reserve H.10 supplies the supported standard-currency FX data. DFF provides an interest-rate reference.

Action: Add FX data
Use: Specifies BASE and QUOTE currencies and registers a CSV.

Action: Register / replace CSV
Use: Creates or updates the managed data for a series.

Action: Export CSV
Use: Saves the selected data to an external file.

Action: Remove registration
Use: Removes the reference-data registration.

Action: Return to automatic download
Use: Returns a supported series to automatic acquisition.

Action: Refresh
Use: Reloads the displayed state.

An FX value is QUOTE units per 1 BASE unit. For example, USD/JPY = 150 means 1 USD = 150 JPY. Check the direction during registration. Conversion can resolve inverse or multi-pair routes, but this does not correct wrongly interpreted CSV values.

Depending on the series, use automatic acquisition, CSV-only handling, or hybrid handling with CSV preference and automatic completion. For an annual percentage rate, 5 means 5% per year; 0.05 is not automatically interpreted as 5%. DGS10 and DFF are different rate series.

# 12. Registering CSV assets

## 12.1 Preparing the file

Provide a date column and a price column. A clear interchange format uses ISO dates (YYYY-MM-DD), a decimal point, and no thousands separators. If conversion is necessary, prepare a separate copy and preserve the original.

```
Date,Price
2024-01-31,100.00
2024-02-29,101.25
2024-03-31,99.80
```

This short example illustrates format only; it does not provide enough history for a multi-year analysis. Choose the currency in the registration dialog.

Supported read paths also include CSV.GZ/GZ and a safely structured ZIP containing exactly one CSV/TXT member. This is not an Excel-workbook importer.

## 12.2 Registration steps

1. Select Basic settings → Assets & Data → Add CSV asset.
2. Choose the original CSV.
3. In Review CSV import, check Asset name, Currency, Date column, and Price column.
4. Click Load and preview.
5. Compare the preview with the original. Check dates, prices, period, row count, invalid rows, and duplicates.
6. Complete the confirmations for dates/period and prices/decimal format/currency/price units/notices.
7. Click Register reviewed data.
8. Check the asset in the library and configure dividends if necessary.

The file and review conditions are checked again before registration. Changing an import choice after preview requires another preview and confirmation.

## 12.3 Import controls

Control: Asset name
Meaning: Library identifier. Avoid conflicts with existing assets.

Control: Currency
Meaning: JPY, USD, EUR, GBP, AUD, CAD, SGD, or CNY. It is not inferred automatically.

Control: Date column / Price column
Meaning: Two distinct columns providing dates and prices.

Control: Encoding
Meaning: Automatic detection or supported encodings such as UTF-8, UTF-16 with BOM, CP932, Windows-1252/1250, GB18030, Big5, and CP949.

Control: Delimiter
Meaning: Automatic detection, comma, semicolon, or tab.

Control: Records to skip at start / Records to skip at end
Meaning: Excludes introductory records or trailing notes.

Control: Date order
Meaning: Review automatic detection or the appropriate year/month/day, day/month/year, month/day/year, or supported ROC-year format.

Control: Decimal separator
Meaning: Automatic detection, point, or comma. Do not confuse decimals with digit-grouping separators.

Control: Security
Meaning: Selects one security from a supported multi-security CSV.

Open Advanced in the import dialog for the less frequently used controls. Empty/duplicate column names, mixed formats, unequal row lengths, or ambiguous dates/numbers require review. Do not put currency symbols or a percent sign that does not represent a price into the price column.

### 12.4 Managed copies and change detection

Registration uses a reviewed managed copy and metadata, rather than continuously treating the original CSV as an editable live input. The current review workflow creates a normalized CSV and a review record. Registration information is kept in custom_assets.json; managed files are stored under locations such as input\custom_assets.

Keep the original CSV. Editing the managed CSV externally can cause a hash mismatch. Use the supported review, replacement, or approval workflow for an intended change. A .review.json record documents import choices and user confirmation; it does not certify the economic correctness of the data.

## 13. Analysis conditions

### 13.1 Cash flows and evaluation periods

Open: Basic settings → Simulation 1 — Investment & optimization.

Input: Initial investment
Meaning and validation: Amount invested once in the first observed month of each evaluation window. Must be zero or greater. The label shows the valuation-currency unit.

Input: Monthly contribution
Meaning and validation: Amount invested every month, including the first observed month. Must be zero or greater.

Input: Rolling periods (up to 3)
Meaning and validation: Up to three different periods of 1–100 years. Data must cover the selected periods.

Initial investment and monthly contribution cannot both be zero. Zero initial investment means contribution-only investing; zero monthly contribution means a lump sum without later regular contributions. Amounts use the selected valuation currency.

A 10-year rolling period evaluates many 10-year windows with different start months. It does not refer to just one selected decade.

### 13.2 Constraints and costs

Open: Basic settings → Simulation 2 — Constraints & costs.

Input or option: Vol limit start (%), Vol limit end (%), Vol step (%)
Meaning and caution: Range of risk constraints to evaluate. Start and step must be positive; end must not be below start.

Input or option: Trading cost (% / one way)
Meaning and caution: One-way transaction-cost assumption used by the simulation.

Input or option: Capital-gains tax rate (%)
Meaning and caution: Model tax on realized gains; not a substitute for actual tax accounting.

Input or option: Dividend/distribution tax rate (%)
Meaning and caution: Tax assumption for dividend/distribution receipts.

Input or option: Dividend payment handling
Meaning and caution: Reinvest after receipt, Hold as cash (do not reallocate), or Hold as cash; allocate at scheduled rebalance.

Input or option: Rebalance
Meaning and caution: Compare (none / periodic), No rebalancing, or Periodic rebalancing.

Input or option: Rebalancing interval (months)
Meaning and caution: Number of months between scheduled rebalances; at least 1.

Input or option: Start date (YYYY-MM-DD / blank) / End date (YYYY-MM-DD / blank)
Meaning and caution: Restricts historical input dates. Blank means no additional restriction from that field.

Input or option: Rolling start-step (months)
Meaning and caution: Months by which the next evaluation window’s start advances.

Input or option: Offset realized gains and realized losses within the same rebalance
Meaning and caution: Offsets modeled realized gains/losses within one rebalance. It does not reproduce every tax rule for a real account.

Vol is a measure of return variability. A Vol limit constrains the optimization; it is not a guarantee of the maximum future loss. See Chapter 30 for definitions.

### 13.3 How fees and taxes affect metrics

Final value and XIRR include deductions for rebalancing transaction costs and realized-gains tax. TWR, Vol, and maximum DD use monthly returns measured before the current contribution and rebalancing. They therefore exclude the direct deduction of that month’s rebalancing costs and tax.

Earlier costs and taxes can still affect subsequent balances. Do not interpret Vol or maximum DD alone as a complete measure of after-tax, after-cost profit. Read them together with final value and XIRR.

## 14. Optimization conditions

### 14.1 Allocation step

In Simulation 1 — Investment & optimization, choose an Allocation step of 5%, 10%, 20%, 25%, or 50%. Candidate weights total 100%.

A finer grid means more candidates and often substantially more work. It does not guarantee better future performance.

### 14.2 Optimization metric

Choice: Maximize mean final value
Candidate selected: Maximizes the arithmetic mean of final values across rolling windows. Extreme windows can influence the mean.

Choice: Maximize median final value
Candidate selected: Maximizes the median final value across rolling windows. With an even number of windows, the median is the average of the two middle values.

Both operate under the Vol constraint. Neither is a direct “maximize XIRR” objective. Median search can require more working memory and time than mean search.

### 14.3 Standalone and robust optimization

- Optimize each period separately selects an allocation for each chosen period independently.
- Robust multi-period optimization combines periods using scores normalized against each period’s best value. The primary ranking uses mean score; the secondary ranking uses the minimum period score.

Both can be enabled. A standalone 10-year allocation and a robust allocation combining 10, 20, and 30 years answer different questions. Their allocations can differ at the same Vol limit. Robust scores are relative scores, not returns or probabilities.

### 14.4 Testing a fixed allocation

Use Custom allocation when you want to test specific weights. See Chapter 22. The hidden fixed-allocation controls retained in older normal-settings code are not an additional user workflow in this manual.

## 15. Running an analysis

### 15.1 Starting a new run

1. Confirm the Compute environment.
2. In Basic settings, review assets, input data, currency, contributions, periods, and optimization conditions.
3. Review Advanced → Output.
4. Open Run and click Start simulation.
5. Enter a run name when prompted, or leave it blank. The name is appended to the result-folder name.
6. Monitor processing stages, progress, elapsed time, and estimated remaining time.
7. When complete, open Results, or use Go to Results → where shown.

A new run creates a new result folder. It does not overwrite a selected previous result merely because the conditions are similar. Remaining-time estimates are progress indicators, not guaranteed completion times.

### 15.2 Stopping and resuming

Action: Stop
Behavior: Requests a stop. The engine saves resumable state when it can do so.

Action: Resume
Behavior: Continues paused data when the current settings match the saved stop-point settings.

Action: Restore stopped-run settings
Behavior: Restores the stopped run’s settings into the current inputs; this changes the inputs you are editing.

Action: Clear paused data
Behavior: Removes resume data. It is not the Recycle Bin operation for one completed result.

After requesting a stop, wait for the save/stop status instead of immediately terminating the process. Resume may recompute some work; it is not a guarantee of continuation from the very next instruction after the saved point.

If settings differ, read the reason resume is unavailable. The supported workflow warns about editing settings while paused data exists. Recovery guidance may also appear after an abnormal interruption. Check the selected record and location; do not edit internal state JSON to force it to become resumable.

### 15.3 Run log and normal exit

Read Run log and the displayed message when an operation fails. Logs can contain asset names and local paths; inspect them before sharing.

Close the app using the normal window-close operation. If a task is running, follow the prompt about stopping and exiting. Avoid forced termination while files are being saved.

## 16. Results

### 16.1 Selecting a completed result

Open: Main navigation → Results.

1. Select a completed run in the Result dropdown.
2. Check the result ID, run name, and conditions.
3. Switch among Dashboard, Asset path, and Detailed data.

Refresh reloads the result list. It does not run a new analysis or refresh market prices. After choosing another result, also review period, rebalancing, and Vol selections.

### 16.2 Result toolbar

Action: Refresh
Effect: Reloads available results.

Action: Delete selected result
Effect: Moves the selected completed result folder to Windows Recycle Bin. See Chapter 21.

Action: Overview report
Effect: Opens the selected result’s existing HTML analysis overview.

Action: Result folder
Effect: Opens that result’s folder.

Action: Save CSV
Effect: Exports the table selected in Detailed data. Asset-path CSV has a separate button inside Asset path.

## 16.3 Dashboard metrics

Choose Displayed Vol, Period, and Rebalance to compare a consistent set of conditions.

Display: Selected volatility limit
Meaning: Constraint used when selecting the allocation, distinct from realized Vol.

Display: Mean final value
Meaning: Mean ending value across the applicable rolling windows.

Display: Mean XIRR (annualized)
Meaning: Aggregation of annualized returns that account for cash-flow timing.

Display: Mean realized volatility
Meaning: Mean historical variability measured for the evaluation windows.

Display: Mean max DD
Meaning: Mean of the individual windows’ maximum drawdowns.

Display: Worst max DD
Meaning: Most severe maximum drawdown among the applicable windows.

Display: BEST / MEDIAN / WORST
Meaning: Representative windows selected by final value, not forecasts of future best/typical/worst outcomes.

Click a point on the risk/return chart to change the displayed Vol limit. The allocation display and metric cards should be read with their selected conditions. An all-conditions view can include more points than an individual-condition view.

## 16.4 Scatter-plot Graph details

Click Graph details on Dashboard to open the XIRR versus mean-Vol scatter plot in its own window. Hover near a point to inspect the associated Vol limit, Realized Vol, and XIRR. Resize or maximize the window and use Save PNG if needed.

This opens a Scatter plot. It is not the three-mode asset-growth/drawdown viewer described in Chapter 17.

## 16.5 No results

No completed runs, including after deletion of the last result, is a supported No results state. Results tabs do not retain an old result ID, KPI, graph, or detailed row as if it were current. Actions requiring a result are disabled or provide a safe no-result message.

After a new analysis completes, its result appears in the list and the views become available. Do not invent a folder reference in latest.json to fill an empty state.

# 17. Asset path

## 17.1 Choosing conditions and dates

Open: Results → Asset path.

1. Select the completed Result to inspect.
2. Review Rebalance, Vol limit, Allocation to use, and Years.
3. Choose Latest, BEST, MEDIAN, WORST, or Custom for the period.
4. For Custom, select Start and End, then click Display.
5. Inspect the asset value, cumulative principal, drawdown, and metric cards.

Period choice: Latest
Interpretation: An evaluation period at the latest end of the available history.

Period choice: BEST
Interpretation: A representative period with the best final value for the selected allocation/evaluation conditions.

Period choice: MEDIAN
Interpretation: A representative period near the median final value.

Period choice: WORST
Interpretation: A representative period with the worst final value.

Period choice: Custom
Interpretation: The start/end year-month range you specify.

This is an ex-post simulation applying an already selected fixed allocation to the chosen period. It does not imply that the allocation could have been known at that period’s start. Changing this display is different from running optimization again.

## 17.2 Reading the chart

- Portfolio value is the evaluated asset value at that time.
- Cumulative principal is the initial investment plus contributions made so far.
- Gain / loss is the difference between value and contributed principal.
- Drawdown expresses a fall from a preceding peak.
- XIRR, realized Vol, and maximum DD should be read with the cost/tax distinctions in Chapter 13.

Hover over a graph to inspect dates and values. Amounts use the saved result’s valuation currency. Changing the current settings currency does not recalculate the old result in another currency.

## 17.3 The independent Graph details window

1. Click Graph details.
2. In Display, choose Asset growth, Drawdown, or Stacked.
3. In Stacked, drag the divider to change the relative heights. The initial target is approximately 75% asset growth and 25% drawdown, subject to minimum panel heights.
4. Resize, maximize, or restore the window for a suitable viewing area.
5. Use the vertical guide and hover values to inspect Portfolio value, Cumulative principal, and drawdown.

6. Click Save PNG and choose a destination to export the image.

The graph redraws for its display size. If the same detail window is already open, opening it again reuses it, updates it with the evaluated data available at that moment, and brings it forward. Switching modes, resizing, or saving a PNG does not rerun optimization.

PNG output matches the chosen mode. Stacked output reflects the current divider ratio. Export CSV when you need reusable numerical values.

# 18. Detailed data

## 18.1 Choosing a table

Open: Results → Detailed data.

Select Period and Rebalance, then choose Display item.

Choice: Details by Vol
Purpose: Selected candidates and performance for each Vol limit.

Choice: Statistics by period
Purpose: Statistics for the allocation at each rolling horizon. Robust results can show CPU exact statistics by year count for the same fixed allocation.

Choice: Allocation comparison
Purpose: Asset weights across Vol limits under the same period and rebalancing conditions.

## 18.2 Columns, full-row details, and copying

Use horizontal scrolling or Previous columns / Next columns when the table is wider than the window. A column outside the current page still exists.

Use All fields of selected row to inspect a complete row. Supported tables also open the detail dialog by double-clicking a row or pressing Enter. The full-row dialog includes fields outside the current column page and allows row navigation. Copy all fields copies the full detail representation. Cells can also be selected and copied with Ctrl+C.

The Results toolbar’s Save CSV exports the selected table. It is different from the CSV of dated asset values produced inside Asset path.

## 18.3 Understanding aggregates

Means, medians, and worst values summarize data differently. Mean max DD averages the maximum drawdown calculated separately for each window. It is not the maximum drawdown of one long concatenated history. A robust score is a relative selection score, not a return or probability of profit.

# 19. Allocation comparison

Open: Results → Detailed data → Display item → Allocation comparison.

1. Select a completed result.
2. Match the period and rebalancing method you want to inspect.
3. Choose Allocation comparison.
4. Compare each asset’s weight across the Vol-limit columns.
5. Use column paging/scrolling for wide data, or Save CSV to export it.

This table compares allocations selected at different Vol limits within the same run. It does not make results from unrelated conditions directly comparable or provide a future investment recommendation.

For comparison of several allocations you design yourself, use Custom allocation.

# 20. Saving results and reports

## 20.1 Automatically saved results

Normal analysis saves run state, settings, and display/replay data in a result folder for each run. Depending on output settings, it also saves CSV, HTML, and image outputs. Use Result folder to locate the selected run.

Do not output suppresses automatic user-facing exports; it does not remove every internal file needed to view results.

## 20.2 Export controls

Location: Results toolbar → Save CSV
Exported content: The Details by Vol, Statistics by period, or Allocation comparison table currently selected in Detailed data.

Location: Results → Asset path → Save CSV
Exported content: The displayed period/allocation's dated values, principal, drawdown, and asset-level values.

Location: Custom allocation → 3 Growth → Save CSV
Exported content: Evaluated paths for comparison sets, including the amounts actually used.

Location: Custom allocation → 4 Details → Save CSV
Exported content: The selected Metric comparison or Rolling statistics table.

Location: Graph details → Save PNG
Exported content: Image for the current display mode, including the current divider ratio for Stacked.

Location: Basic settings → Export selected asset CSV
Exported content: Input asset data rather than result statistics.

Check the file name and destination in the normal save dialog. Confirm before replacing an existing export. Result-table CSV export is not limited to whichever columns happen to fit on the current screen page.

## 20.3 Overview report

Overview report opens the selected run's existing 分析概要レポート.html. The on-disk filename remains this literal name; the English button is Overview report.

The HTML summarizes calculated statistics. It does not perform a new optimization or forecast. If the chosen output settings did not create the HTML, the app displays guidance instead.

A highlighted condition such as the highest mean XIRR is a comparison within that run's results, not a trading recommendation. The report is structured without external scripts, CDNs, web fonts, or analytics tags.

### 20.4 Sharing exports

Run names, asset names, CSVs, and logs can contain personal information. Review them before sharing. The data provider’s attribution/usage terms and your rights to imported CSVs still apply.

## 21. Deleting results

### 21.1 What is moved

Open: Results toolbar → Delete selected result.

The operation moves the entire selected individual completed-result folder to Windows Recycle Bin. It includes that run’s CSV, JSON, HTML, graphs, and replay data.

It does not delete the whole results root, the shared results\system area, other result folders, original input CSVs, managed asset CSVs, market data, settings, or custom-allocation sets.

### 21.2 Procedure

1. Select the target in the Result dropdown.
2. Check the result ID, run name, and whether needed exports have been saved elsewhere.
3. Click Delete selected result.
4. In Delete analysis result, review the target ID, folder, and scope.
5. Choose Move to Recycle Bin only if the target is correct. Choose Cancel to leave it unchanged.
6. Review the refreshed list and the result now displayed.

Deletion is unavailable during relevant processing, when no valid target is selected, or when folder safety cannot be established. It is separate from stopping/resuming an incomplete run.

### 21.3 Recycle Bin and safety

This uses the standard Windows Recycle Bin. If recycling fails, the app does not fall back to permanent deletion. Read the failure message and check the target/storage state.

Unsafe targets are rejected, including a parent root, the shared system area, paths outside the result root, traversal attempts, and paths with unsafe reparse points such as links/junctions. Do not edit folders or internal JSON to bypass these checks.

Windows may allow restoration while the item remains in Recycle Bin. Assetalyze has no dedicated undo-result-deletion button. Restoration depends on Windows retaining the item. After restoring through Windows, use Refresh and select the result explicitly. The previous latest selection is not guaranteed to be restored automatically.

### 21.4 Latest selection and the last result

If the removed result was referenced by latest management information, the app selects another remaining completed result. After the last result is removed, it does not leave a latest/backup reference to the deleted folder.

The resulting no-result state supports Dashboard, Asset path, Detailed data, and Allocation comparison navigation, normal exit, and restart. Related actions are disabled or provide safe no-result guidance. Old KPIs, graphs, details, and result IDs are cleared.

# 22. Custom allocation

## 22.1 Purpose

Open: Main navigation → Custom allocation.

This evaluates saved fixed allocations with CPU exact calculations. It does not search for optimal weights. It uses the current asset library independently of the standard-analysis checkboxes. A set can contain at most 10 assets with weights greater than 0%.

## 22.2 Creating and editing sets in 1 Allocation

1. In Create allocation (assets added in Basic settings), enter the weights for assets you want to use.
2. Leave unused assets at 0% and make the total exactly 100%.
3. Enter Initial investment and Monthly contribution. Each set can have different amounts, but both cannot be zero.
4. Set rebalancing and its month interval.
5. Specify a set name and click Add for comparison.
6. In Comparison allocation sets, check Compare for the sets to evaluate.
7. Click Next: Run.

Action: Load optimal allocation
Effect: Loads the currently selected winning allocation from Results into the editor. Requires a suitable result.

Action: Clear
Effect: Clears the allocation inputs, not the entire saved-set list.

Action: Allocation details
Effect: Opens the selected set’s asset names and weights.

Action: Edit
Effect: Loads the selected set’s weights, amounts, rebalancing, interval, and name into the editor.

Action: Save changes
Effect: Updates that same set.

Action: Cancel
Effect: Discards the edit and returns to new-set entry.

Action: Duplicate
Effect: Creates a separate set from the selected one.

Action: ↑ Up / ↓ Down
Effect: Changes set order.

Action: Delete
Effect: Removes the selected allocation set; it does not recycle a normal analysis-result folder.

Selecting a row alone does not overwrite the editor; use Edit. Set changes are saved persistently. Saving identical content avoids unnecessary writes and backup rotation. Merely starting an evaluation does not rotate the saved-set backup.

## 22.3 Evaluating in 2 Run

1. Check that the intended comparison sets are listed as evaluation targets.
2. Choose the shared Years.
3. Enable Calculate rolling stats if needed.
4. Select Latest, BEST, MEDIAN, WORST, or Custom for the display period.
5. For Custom only, specify start/end year-month values.
6. Click Run evaluation. Completion opens 3 Growth automatically.

The shared years apply to all comparison sets, paths, rolling statistics, and representative periods. They are independent of the rolling-period selection in Basic settings. If available data causes an adjustment, check the years actually used in the results.

Prices, valuation currency, trading costs, capital-gains tax, and loss-offset conditions use the relevant current shared settings. Distinguish these from each set’s own amounts, weights, and rebalancing settings.

Changing a period or input does not overwrite an existing evaluation. Read the changed-condition guidance and click Run evaluation to apply the new conditions. There is no separate apply-display-period button in this workflow.

## 22.4 3 Growth

The tab displays each evaluated set’s asset path and drawdown, with the upper growth chart given more space. Hover to inspect set names, dates, and values.

Save CSV exports the evaluated series and each set’s actual initial investment/monthly contribution. Graph details provides Asset growth, Drawdown, and Stacked modes, divider adjustment, resizing, and PNG export.

## 22.5 4 Details

Use Result to display to choose a table.

Choice: Metric comparison
Content: Actual amounts, evaluation period, rebalancing, final value, gain/loss, XIRR, maximum DD, realized Vol, trading costs, taxes, and related fields by set.

Choice: Rolling statistics
Content: Window counts, mean/median final values, best/worst periods, mean XIRR/Vol/maximum DD, and related rolling aggregates.

Save CSV follows the selected table. If rolling statistics were not calculated, the app explains that you must enable them in 2 Run and evaluate again; rolling CSV export is disabled.

Double-click a row or press Enter to see all its fields, including columns outside the current page. This custom-allocation view does not have the same persistent All fields of selected row button used by normal Results.

## 22.6 Saved sets versus evaluated snapshots

Sets persist in free_allocation_sets.json and reload after restart. The current format is schema 5, with a read/migration path for missing fields in older formats. An explicitly saved zero amount is distinct from an absent field. Do not edit the schema number manually.

The evaluated Custom allocation result itself cannot be reopened unchanged after exiting the app. Save needed tables as CSV and graphs as PNG. Saving a set is not the same as persistently saving its evaluation screen.

After an evaluation, tables, exports, and graph details use the conditions actually evaluated. Editing inputs does not retroactively change that snapshot. Evaluate again to compare new conditions.

# 23. Language, currency, and appearance

## 23.1 Display language

Open: Advanced → Language & currency.

Language choice: 日本
Code: ja-JP

Language choice: English
Code: en-US

Language choice: Deutsch
Code: de-DE

Language choice: Français
Code: fr-FR

Language choice: Español
Code: es-ES

Language choice: Italiano
Code: it-IT

Language choice: 简体中文
Code: zh-CN

Language choice: 繁　中文
Code: zh-TW

Changing the display language updates interface headings, choices, and messages. It does not translate user-defined asset/run names or the contents and column names of external CSVs.

## 23.2 Valuation currency

Supported choices are JPY, USD, EUR, GBP, AUD, CAD, SGD, and CNY. Language and valuation currency are separate choices.

Entered amounts are not automatically converted when you change currency. For example, leaving 100,000 in a field while changing JPY to USD changes its unit to USD. Review the intended amounts again.

Cross-currency assets use available FX conversion routes. Saved results retain their original valuation currency; they are not automatically recalculated using the current setting.

## 23.3 Appearance

Under Appearance, Theme offers Use Windows setting, Basic (light), and Dark. Highlight color can be chosen from presets or More colors...; the Base color (HEX) field and Apply provide the supported custom-color path.

Appearance changes are saved. Colors may be adjusted for readability; they do not change calculation conditions or the meaning of warnings/errors. Windows High Contrast takes priority when enabled and can temporarily disable color selection.

# 24. Data storage and backup

## 24.1 Two storage areas

Area: User-data area
Normal location: PortfolioOptimizer under the Windows Documents folder
Contents: Managed inputs/reference data under input; analysis runs under results.

Area: Package private state
Normal location: %LOCALAPPDATA%\Packages\YuInvestudy.AssetalyzePortfolioOptimizer_v52yw7agrk5ve\LocalCache\Local\PortfolioOptimizer\v1_0
Contents: Settings, asset registrations, custom-allocation sets, consent, diagnostics, and caches.

If Documents is redirected/synchronized, or the usual location cannot be used safely, the actual location can differ. A supported fallback is %USERPROFILE%\PortfolioOptimizer. Use Advanced → Maintenance → Open user data to inspect the actual user-data root. The internal folder name remains PortfolioOptimizer even though the product is named Assetalyze.

## 24.2 Important files

File or folder: Private state: settings\user_settings.json / .bak
Role: Screen, analysis, language, currency, and related settings.

File or folder: Private state: settings\custom_assets.json
Role: Asset registrations, currencies, managed-copy references, and provenance.

File or folder: Private state: settings\free_allocation_sets.json / .bak
Role: Saved custom-allocation sets.

File or folder: Other reference/dividend/consent information under settings
Role: Input interpretation, reference series, and document acceptance.

File or folder: User data: input\custom_assets
Role: Managed registered/generated CSVs and review records.

File or folder: User data: input\reference_data
Role: Managed FX and interest-rate inputs.

File or folder: User data: results\<individual result folder>
Role: Run-specific CSV/JSON/HTML/images/replay data.

File or folder: results\<individual result folder>\system
Role: State, settings, and internal result information belonging to that run.

File or folder: results\system\latest.json / .bak
Role: Shared management information pointing to the latest completed result.

File or folder: Private state: data\cache, data\metadata, and related locations
Role: Download/calculation caches and input/diagnostic metadata.

File or folder: Private state: t
Role: Session-owned temporary working data.

Compatibility paths read older result/latest layouts. Do not manually combine old and current structures. Backup-file behavior varies by file; .bak is not a complete version-history system.

### 24.3 What latest means

latest.json points to a completed result; it is not the result itself. Backing up that file alone does not preserve charts, tables, or replay prices.

Completing a run or deleting the latest result can update these references. After deleting the last result, there should be no dangling reference to its folder. An empty result list is valid and does not require manual repair by creating a dummy folder.

### 24.4 Automatic settings saves

Valid changes are saved automatically. Read any save-error notice. Environment diagnostics and performance recommendations can also save related information.

Current editing conditions, a saved run's execution conditions, and a custom-allocation set serve different purposes. To analyze changed conditions, run a new analysis rather than editing an old result's internal files.

### 24.5 Backup procedure

1. Wait for current work to finish and exit the app normally.
2. Copy the entire actual user-data root to a new backup location, including each result's system subfolder.
3. If settings and registrations are needed, back up the current package-family private state separately.
4. Include original CSVs stored outside the managed locations.
5. Compare file counts, sizes, and important SHA-256 hashes. Preserve results and latest references from the same point in time.
6. Record the app version, backup date, source locations, and valuation currency.

Copying private state to another PC/user does not guarantee restoration of every state or consent condition. Store entitlement is managed separately by Microsoft. Before restoration, preserve the current data too; stop the app and check target paths and compatibility. Do not blindly overwrite current files with an old backup.

### 24.6 Caches

Caches avoid repeated downloads/computation. Downloaded data can be refreshed according to cache expiry. A cache does not guarantee permanent offline operation or permanent provider availability.

Managed CSVs, completed results, and registration metadata are not all disposable cache. GPU JIT cache and temporary files are managed within the ownership boundaries the app can establish.

## 25. Microsoft Store licensing

### 25.1 Display states

English state: Purchased
Meaning: The Store API confirmed a valid non-trial entitlement.

English state: Trial (no time limit)
Meaning: The trial entitlement and feature scope described in Chapter 4.

English state: Invalid license
Meaning: Returned validity/expiry information does not establish an active entitlement.

English state: License could not be verified
Meaning: The request is incomplete, failed, or needs updating. This is not a definitive statement that no purchase exists.

The product uses Windows Store APIs for the current package. There is no user-entered product-license-key mechanism.

### 25.2 Purchase and refresh

1. Read the license state on Home.
2. Use Buy in Store if you want to purchase.
3. After purchase, wait for the product to confirm Purchased access.
4. If needed, use Refresh license in the license dialog.

Canceling the Store flow does not complete a purchase. A failed request is not guessed to mean Purchased; saved data remains intact while guidance is shown. The genuine demo and CSV compatibility check provide supported inspection paths when purchase verification is unavailable.

### 25.3 Network and cached state

Windows manages Store’s durable/offline entitlement cache. The app’s own verification snapshot is short-lived process state. A temporary unverified display immediately after startup should be distinguished from the subsequent completed request.

Permanent offline operation after purchase is not guaranteed for every Windows/Store state. Do not modify settings to fabricate Purchased, change authentication code, or copy license state from another environment.

## 26. Privacy

### 26.1 Information processed locally

The product processes selected CSVs, assets, analysis conditions, results, logs, settings, consent records, and environment information on the PC. Diagnostics can record CPU, RAM, NVIDIA GPU/VRAM, and driver information so that recommendations can be reused on that PC.

The implementation does not provide an app-specific account-registration service, advertising identifiers, usage analytics, or automatic crash-report uploading. User-defined names, filenames, and logs may still contain personal information.

### 26.2 External communication

- Public-data acquisition contacts supported official World Bank/Federal Reserve hosts.
- Entitlement queries and purchases use Microsoft Store mechanisms.
- Local only concerns calculation-data acquisition, not Store licensing communication.
- The market-data acquisition paths do not upload your analysis CSV contents, investment settings, or calculation results to data providers.

Providers receive normal connection information such as IP addresses and HTTP request information. Microsoft and provider handling is governed by their respective terms. Documents synchronization through OneDrive or another service also depends on OS/service settings.

### 26.3 Protecting and sharing files

The app does not encrypt every CSV or result. Protect the Windows account, storage, and backups appropriately. Review local paths, names, and file contents before sending logs or evidence to support.

Read Legal information → Privacy for the bundled privacy document. This manual does not add a new privacy contract or guarantee another service’s behavior.

## 27. Cautions and disclaimer

### 27.1 Analytical limits

- A historically optimal allocation may not remain effective in the future.
- Rolling analysis and grid searches can overfit past data.
- Taxes, costs, dividends, and leverage are modeled assumptions, not a complete reproduction of account rules, execution, or legislation.
- Indices, approximate Treasury series, and synthetic leveraged histories need not represent tradable instruments.
- Demo data is fictional, not actual performance or a forecast.
- “Optimal,” BEST, and robust scores are conditional on the chosen inputs and selection rules.

Assetalyze does not recommend acquiring, holding, or selling financial instruments and does not provide investment, tax, or legal advice. It does not guarantee future profit, principal, safety, or complete/accurate results. Verify the input data and its permitted use. Consult an appropriately qualified professional when needed.

### 27.2 Legal information screen

Action: Disclaimer
Content: Product disclaimer.

Action: Privacy
Content: Data-handling document.

Action: License agreement / EULA
Content: Bundled software license agreement.

Action: Third-party licenses
Content: Notices for third-party components.

Action: View accepted terms
Content: Recorded document acceptance details.

Action: Withdraw consent
Content: Withdraws consent and exits; normal use requires agreement again.

Withdrawal alone does not delete inputs, results, settings, or caches. Do not remove third-party notices when redistributing materials. This manual does not replace the bundled documents or

establish new sales/refund terms.

# 28. Troubleshooting

## 28.1 Record the context first

Record the package version, screen, preceding action, exact message, selected result ID, currency, and period. Read Run log if needed. Locate and back up data before destructive troubleshooting.

Symptom: Purchased app does not allow real-data operations
Checks and safe response: Check the displayed License state, purchase account, and connectivity. Use Refresh license. Do not delete settings or bypass licensing.

Symptom: fetch:real_or_unverified_data
Checks and safe response: Indicates a license gate for real/unverified data acquisition. Confirm entitlement before assuming a provider outage.

Symptom: analyze:real_or_unverified_data or similar
Checks and safe response: Real-data permission has not been established. Distinguish genuine demo data from personal inputs and check the license.

Symptom: Cannot detect the CSV price column
Checks and safe response: Specify Date column and Price column after reviewing the source. Choose ordinary or adjusted close according to its meaning.

Symptom: Ambiguous date order or decimals
Checks and safe response: Review Advanced import controls. If needed, prepare a separate ISO-date/decimal-point copy without digit grouping.

Symptom: Multiple securities in a CSV
Checks and safe response: Select the intended Security and preview again.

Symptom: CSV is readable but analysis fails
Checks and safe response: Check shared history, requested years, FX/rates, asset count, and entitlement.

Symptom: Managed CSV changed after registration
Checks and safe response: Review the change and use the supported approval/replacement path. Do not edit the recorded hash manually.

Symptom: Missing FX/conversion route
Checks and safe response: Check asset and valuation currencies, required pairs, quote direction, and dates in reference data.

Symptom: Public-data download fails
Checks and safe response: Check connectivity, data mode, supported catalog, and provider guidance. Supply CSV data for unsupported instruments.

Symptom: GPU unavailable
Checks and safe response: Recheck Compute environment and diagnostics. Explicitly review the compute method if using CPU instead.

Symptom: Slow run or insufficient memory
Checks and safe response: Review asset count, allocation step, periods, median objective, and output volume. Use diagnostic recommendations; changed analytical conditions define a different analysis.

Symptom: Resume unavailable
Checks and safe response: Check the stop-state record and exact settings compatibility. Restore stopped-run settings changes current inputs.

Symptom: Empty result list
Checks and safe response: Check the actual storage location and Refresh. No results after deleting the last run is normal.

Symptom: Overview report unavailable
Checks and safe response: Check whether that run contains the HTML. Do not output does not create the automatic HTML overview.

Symptom: Asset-path CSV cannot be saved
Checks and safe response: Display a valid path first. Check destination permissions, free space, and file use by another program.

Symptom: Rolling statistics empty
Checks and safe response: Enable Calculate rolling stats in Custom allocation → 2 Run, then Run evaluation.

Symptom: Graph unchanged after editing inputs
Checks and safe response: It may show the evaluated snapshot. Re-evaluate Custom allocation, or distinguish a new normal analysis from changing a saved result’s display period.

Symptom: Recycle Bin operation fails
Checks and safe response: Read the folder-use/storage/safety message. Do not substitute permanent deletion.

Symptom: Table/graph is cramped
Checks and safe response: Maximize, scroll, page columns, open row details, or use Graph details.

Symptom: Startup document-validation/initialization error
Checks and safe response: Preserve the exact message and current data. Check the official distribution/support information before resetting anything.

### 28.2 Empty results versus an exception

With no results, the absence of graphs and KPIs is normal. An unhandled exception, Assetalyze startup error, or PowerShell launcher failed is not a normal empty-state indication. Record it and preserve the data for investigation.

### 28.3 Do not rush to forced termination or reset

If calculation is running, request Stop and wait for saved-stop feedback first. Do not manually remove result/settings files to hide an error. Reset app state and Permanently delete all data are destructive maintenance actions, not routine screen-navigation fixes.

## 29. Uninstalling

### 29.1 Back up first

1. Locate needed result CSV/HTML/PNG exports.
2. Exit the app normally.
3. Back up user data, required private state, and original CSVs as described in Chapter 24.

4. Uninstall Assetalyze through Windows’ installed-app management.

### 29.2 What remains and what is removed

Location: Installed product and bundled runtime
Normal MSIX uninstall behavior: Removed.

Location: Current package-family private state
Normal MSIX uninstall behavior: Normally removed, including settings, registrations, and caches.

Location: Inputs/results in Documents or the fallback user-data root
Normal MSIX uninstall behavior: Outside package private state; not deleted by ordinary app uninstall.

Location: Original CSVs, exports, or backups placed elsewhere by the user
Normal MSIX uninstall behavior: Not collectively removed by the app uninstall.

Managed CSVs remaining in Documents do not by themselves restore the asset library. The registrations connecting them to the app may have been in private state. Preserve settings/registration information as well as input files.

Store entitlement is separate from local data. Restoring a backup does not create a purchase license.

### 29.3 Intentionally deleting managed data

Advanced → Maintenance → Permanently delete all data is the explicit operation for deleting currently managed data. Review its scope before uninstalling. Unlike deleting a single result, it does not use the reversible single-result Recycle Bin workflow and has no in-app undo. Original CSVs, old alternate locations, and backups outside its targets must be reviewed separately.

## 30. Glossary

Term: Allocation / portfolio
Explanation: The combination of assets and the percentage assigned to each.

Term: Optimization
Explanation: Selecting the best-scoring candidate under defined inputs, objectives, and constraints; not a guarantee of future superiority.

Term: Allocation grid
Explanation: The set of candidate weights formed with a fixed step, such as 5%.

Term: Risk / return
Explanation: The relationship between variability or decline and performance. Here it refers to historical/model statistics.

Term: Volatility / Vol
Explanation: Variability of returns. A larger value means greater variation, not a direct loss amount.

Term: Vol limit
Explanation: An optimization constraint, distinct from the measured realized Vol.

Term: Realized Vol
Explanation: Variability measured over the evaluated history/windows, not a future forecast.

Term: Drawdown / DD
Explanation: A percentage decline from a preceding peak.

Term: Maximum drawdown / max DD / MDD
Explanation: The largest drawdown within an evaluation period. It is not a cap on future losses.

Term: XIRR
Explanation: An annualized internal rate of return that accounts for cash-flow dates and amounts. It is useful with contributions at different times and is not simply total profit divided by years.

Term: TWR
Explanation: Time-weighted return: links period returns while separating the influence of external cash flows. Its purpose differs from XIRR.

Term: Cumulative principal
Explanation: Initial investment plus all contributions made up to that time.

Term: Final value
Explanation: Portfolio value at the end of the evaluated period, not profit alone.

Term: Gain / loss
Explanation: Difference between portfolio value and contributed principal.

Term: Mean
Explanation: Sum of values divided by their count; sensitive to extreme values.

Term: Median
Explanation: Middle value after sorting; the mean of the two middle values for an even count.

Term: Rolling window
Explanation: A fixed-length evaluation interval whose start moves through history.

Term: Windows
Explanation: Number of usable rolling evaluation intervals.

Term: BEST / MEDIAN / WORST
Explanation: Representative periods selected by final value, not probabilities of future scenarios.

Term: Rebalancing
Explanation: Trading to bring portfolio weights toward target weights. Costs and tax assumptions affect its result.

Term: Total return
Explanation: Return incorporating price changes and dividends/distributions. Verify what the input already includes.

Term: CPU exact
Explanation: The product’s CPU float64 evaluation/verification path. “Exact” does not mean a perfect reproduction of reality.

Term: GPU search
Explanation: GPU-accelerated candidate evaluation/selection followed by the relevant CPU verification.

Term: Batch
Explanation: A group of candidates processed together.

Term: Snapshot
Explanation: Data preserving settings or evaluation values at a particular time, separate from subsequent edits.

Term: Cache
Explanation: Saved acquisition/computation data for reuse; not a synonym for all results and registrations.

Term: Checkpoint
Explanation: A saved calculation-progress point for resume, in this user workflow.

Term: Latest
Explanation: Management information pointing to a completed result, not the result itself.

Term: Result ID
Explanation: Identifier used to distinguish runs, including before deletion or in support requests.

Term: Schema
Explanation: Version of a stored data structure. Normally managed by the app.

Term: SHA-256
Explanation: A content hash used for copy identity or change detection. It does not prove data is economically correct.

Term: MSIX / PFN
Explanation: Windows package format / package-family identifier, relevant to updates and private storage.

Term: Purchased / Trial / Unknown / Invalid
Explanation: Store entitlement states; see Chapter 25.

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Scope: This English edition describes the accepted 1.0.55.0 Source and its reachable normal interface. It does not present the retired wizard, hidden validation pages, developer commands, or test controls as user features. It does not guarantee future external-service availability, performance on every PC, or features in another version. The source/label audit accompanying this manual distinguishes verified product behavior from matters the Source alone cannot establish.