Contest Log Analyzer - User Guide

Version: 0.88.4-Beta Date: 2025-09-21

--- Revision History ---

[0.88.4-Beta] - 2025-09-21

Fixed

- Synchronized the "Available Reports" list with the current project

baseline to add one missing report and correct one report ID.

[0.86.8-Beta] - 2025-09-15

Changed

- Synchronized the "Available Reports" list to include the new WAE reports.

[0.85.13-Beta] - 2025-09-13

Changed

- Added WAE CW and WAE SSB to the list of supported contests.

[0.62.0-Beta] - 2025-09-08

Changed

- Updated documentation to reflect the new two-directory and two-environment-variable

system (CONTEST_INPUT_DIR and CONTEST_REPORTS_DIR).

[0.56.31-Beta] - 2025-09-03

Changed

- Corrected the report ID for the QSO Breakdown Chart to align with the

source code.

[0.56.30-Beta] - 2025-09-01

Fixed

- Added the missing `iaru_officials.dat` file to the list of

required data files.

1. Introduction: What is the Contest Log Analyzer?

[cite_start]The Contest Log Analyzer is a powerful command-line tool designed for amateur radio contesters who want to perform deep, data-driven analysis of their operating performance. [cite: 1501] [cite_start]It goes beyond the simple score summary provided by most logging software, allowing you to: [cite: 1501]

- [cite_start]Process raw Cabrillo log files into a clean, standardized format. [cite: 1502]
- [cite_start]Automatically classify every QSO as "Run," "Search & Pounce," or "Unknown" to analyze your operating strategy. [cite: 1503]
- [cite_start]Generate detailed reports and charts that compare your log against one or more others. [cite: 1504]
- [cite_start]Analyze performance on a band-by-band basis to identify strengths and weaknesses. [cite: 1505]
- [cite_start]Calculate contest-specific QSO points for supported contests. [cite: 1505] [cite_start]The ultimate goal of this program is to help you understand your contest operation in minute detail, identify missed opportunities, and improve your strategy for the next event. [cite: 1506]

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2. What You Need to Get Started

[cite_start]Before running the analyzer, you will need a few files and some configuration: [cite: 1507]

- [cite_start]**Your Cabrillo Log File(s)**: These are the standard log files generated by your contest logging software (e.g., `kd4d.log`, `n0ni.log`). [cite: 1507] [cite_start]You can analyze a single log or compare multiple logs at once. [cite: 1508]
- [cite_start]**Data Files**: The program requires specific data files to be placed in a central `data/` directory. [cite: 1509]
  - [cite_start]`cty.dat`: Required for all contests. [cite: 1510]
  - [cite_start]`arrl_10_mults.dat`: Required for the ARRL 10 Meter contest. [cite: 1510]
  - [cite_start]`ARRLDXmults.dat`: Required for the ARRL DX contest. [cite: 1511]
  - [cite_start]`NAQPmults.dat`: Required for NAQP and CQ 160-Meter contests. [cite: 1511]
  - [cite_start]`SweepstakesSections.dat`: Required for ARRL Sweepstakes and ARRL Field Day. [cite: 1512]
  - [cite_start]`band_allocations.dat`: Required for all contests to perform frequency validation. [cite: 1512]
  - [cite_start]`iaru_officials.dat`: Required for the IARU HF World Championship contest. [cite: 1513]
- [cite_start]**Environment Variables**: You must tell the program where to find your input files and where to save your output reports by setting

two environment variables: [cite: 1514]

- [cite_start]`CONTEST_INPUT_DIR`: This variable must point to the root directory that contains your `Logs` and `data` subdirectories. [cite: 1514] [cite_start]This can be inside a cloud-synced folder like OneDrive. [cite: 1515]
- [cite_start]`CONTEST_REPORTS_DIR`: This variable must point to the directory where the analyzer will create its `reports` output folder. [cite: 1515] [cite_start]**This must be a local, non-synced path** (e.g., `C:\Users\YourUser\HamRadio\CLA`) to avoid file-locking errors. [cite: 1516]

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3. How to Run the Analyzer

[cite_start]The program is run from your command prompt or terminal using `main_cli.py`. [cite: 1517]

Basic Syntax

[cite_start]python main_cli.py --report <ReportID|all|chart|text|plot|animation|html> <LogFi

Command-Line Options

- [cite_start]`--report <ReportID|all|chart|text|plot|animation|html>`: (Required) Specifies which report to generate. [cite: 1518] [cite_start]Use a specific `ReportID` (e.g., `score_report`), `all` to generate every available report, or a category keyword like `chart` to run all chart reports. [cite: 1519]
- [cite_start]`<LogFile1> ...`: (Required) One or more paths to the Cabrillo log files you want to analyze. [cite: 1520] [cite_start]The path should be relative to the `Logs` subdirectory in your `CONTEST_INPUT_DIR`. [cite: 1521]
- [cite_start]`--verbose`: (Optional) Enables detailed `INFO`-level status messages for debugging. [cite: 1522]
- [cite_start]`--include-dupes`: (Optional) By default, duplicate QSOs are ignored. [cite: 1522] [cite_start]Use this flag to include them in all calculations. [cite: 1523]
- [cite_start]`--mult-name <name>`: (Optional) For reports that analyze multipliers (like `missed_multipliers`), this specifies which multiplier to use (e.g., 'Countries', 'Zones'). [cite: 1523]
- [cite_start]`--metric <qsos|points>`: (Optional) For the `cumulative_difference_plots` report, this specifies whether to compare QSO counts or Point totals. [cite: 1524] [cite_start]Defaults to 'qsos'. [cite: 1525]
- [cite_start]`--debug-data`: (Optional) When used with a visual report (chart, plot, animation), this saves the report's source data to a `.txt` file in a `Debug/` subdirectory. [cite: 1525]

- [cite_start]`--debug-mults`: (Optional) Save intermediate multiplier lists from text reports for debugging. [cite: 1526]

Examples

- **Generate all available reports for two logs: CODE_BLOCK** python main_cli.py --report all 2025/cq-160-cw/kd4d.log 2025/cq-160-cw/n0ni.log **CODE_BLOCK**

- **Generate only the text reports for two logs: CODE_BLOCK** python main_cli.py --report text 2025/cq-160-cw/kd4d.log 2025/cq-160-cw/n0ni.log **CODE_BLOCK**

- **Generate a specific report (Score Summary) for a single log: CODE_BLOCK** python main_cli.py --report score_report 2025/cq-160-cw/kd4d.log **CODE_BLOCK**

- **Generate a Missed Multipliers report for CQ WW Zones: CODE_BLOCK** python main_cli.py --report missed_multipliers --mult-name Zones 2024/cq-ww-cw/k3lr.log 2024/cq-ww-cw/kc1xx.log **CODE_BLOCK**

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4. Supported Contests

[cite_start]The analyzer uses the `CONTEST:` field in your Cabrillo file header to automatically apply the correct rules. [cite: 1527] [cite_start]The following contests are currently supported: [cite: 1528]

- ARRL 10 Meter
- ARRL DX (CW & SSB)
- ARRL Field Day
- ARRL Sweepstakes (CW & SSB)
- CQ 160-Meter (CW & SSB)
- CQ WPX (CW & SSB)
- CQ World Wide DX (CW & SSB)
- IARU HF World Championship
- North American QSO Party (NAQP) (CW & SSB)
- WAE CW
- WAE SSB

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5. Available Reports

[cite_start]Use the `Report ID` with the `--report` command-line option. [cite: 1529]

Animation Reports (`animations/`)

- [cite_start]`hourly_animation`: Hourly Rate Animation [cite: 1529]

HTML Reports (`html/`)

- [cite_start]`html_qso_comparison`: HTML QSO Comparison Report [cite: 1529]

Chart Reports (`charts/`)

- [cite_start]`chart_point_contribution`: Point Contribution Breakdown (Comparative) [cite: 1529]
- [cite_start]`chart_point_contribution_single`: Point Contribution Breakdown (Single Log) [cite: 1529]
- `qso_breakdown_chart`: QSO Breakdown by Run/S&P

Plot Reports (`plots/`)

- [cite_start]`band_activity_heatmap`: Band Activity Heatmap [cite: 1529]
- `comparative_band_activity`: Comparative Band Activity
- [cite_start]`comparative_band_activity_heatmap`: Comparative Band Activity Heatmap [cite: 1529]
- [cite_start]`comparative_run_sp_timeline`: Comparative Activity Timeline (Run/S&P) [cite: 1529]
- [cite_start]`cumulative_difference_plots`: Cumulative Difference Plot [cite: 1529]
- [cite_start]`point_rate_plots`: Cumulative Point Rate Plot [cite: 1529]
- [cite_start]`qso_rate_plots`: Cumulative QSO Rate Plot [cite: 1529]

Text Reports (`text/`)

- [cite_start]`comparative_continent_summary`: Comparative Continent Summary [cite: 1529]
- [cite_start]`comparative_score_report`: Comparative Score Report [cite: 1529]
- [cite_start]`continent_breakdown`: Continent Breakdown by Run/S&P [cite: 1529]
- [cite_start]`continent_summary`: Continent Summary [cite: 1529]
- [cite_start]`missed_multipliers`: Missed Multipliers [cite: 1529]
- [cite_start]`multiplier_summary`: Multiplier Summary [cite: 1529]
- [cite_start]`multipliers_by_hour`: Multipliers by Hour [cite: 1529]
- [cite_start]`qso_comparison`: QSO Comparison Summary [cite: 1530]
- [cite_start]`rate_sheet`: Rate Sheet (per hour) [cite: 1530]
- [cite_start]`rate_sheet_comparison`: Rate Sheet Comparison [cite: 1530]
- [cite_start]`score_report`: Score Report [cite: 1530]
- [cite_start]`summary`: QSO Summary by Run/S&P [cite: 1530]

- [cite_start]**text_wae_comparative_score_report**: WAE Comparative Score Report [cite: 1530]
- [cite_start]**text_wae_score_report**: WAE Score Summary [cite: 1530]