Contest Log Analyzer - User Guide

Version: 0.30.30-Beta Date: 2025-08-05

--- Revision History ---

[0.30.30-Beta] - 2025-08-05

- Updated environment variable and --report argument documentation.

[0.30.0-Beta] - 2025-08-05

- Initial release of Version 0.30.0-Beta.

- Standardized all project files to a common baseline version.

---

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: 2253] [cite_start]It goes beyond the simple score summary provided by most logging software, allowing you to: [cite: 2254]

- [cite_start]Process raw Cabrillo log files into a clean, standardized format. [cite: 2254]
- [cite_start]Automatically classify every QSO as "Run," "Search & Pounce," or "Unknown" to analyze your operating strategy. [cite: 2255]
- [cite_start]Generate detailed reports and charts that compare your log against one or more others. [cite: 2256]
- [cite_start]Analyze performance on a band-by-band basis to identify strengths and weaknesses. [cite: 2257]
- [cite_start]Calculate contest-specific QSO points for supported contests. [cite: 2257]

[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: 2258]

2. What You Need to Get Started

Before running the analyzer, you will need a few files:

- [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: 2259] [cite_start]You can analyze a single log or compare multiple logs at once. [cite: 2260]
- [cite_start]**Data Files**: The program requires specific data files to be placed in a central `data/` directory. [cite: 2261]
    - [cite_start]`cty.dat`: Required for all contests. [cite: 2262]
    - [cite_start]`ARRLDXmults.dat`: Required for the ARRL DX contest. [cite: 2262]
    - [cite_start]`SweepstakesSections.dat`: Required for ARRL Sweepstakes. [cite: 2262]
- [cite_start]**An Environment Variable**: You must tell the program where to find your data files by setting an environment variable named `CONTEST_LOGS_REPORTS`. [cite: 2263] [cite_start]This variable should point to the root directory that contains your `Logs`, `data`, and `reports` subdirectories. [cite: 2264]

---

3. How to Run the Analyzer

[cite_start]The program is run from your command prompt or terminal using `main_cli.py`. [cite: 2265]

Basic Syntax

```
python main_cli.py --report <ReportID|all|chart|text|plot> <LogFile1> [<LogFile2>...] [option
```

Command-Line Options

- [cite_start]`--report <ReportID|all|chart|text|plot>`: (Required) Specifies which report to generate. [cite: 2266] [cite_start]Use a specific `ReportID` (e.g., `score_report`), `all` to generate every available report, or a category like `chart` to run all chart reports. [cite: 2267]
- [cite_start]`<LogFile1> ...`: (Required) One or more paths to the Cabrillo log files you want to analyze. [cite: 2268]
- `--include-dupes`: (Optional) By default, duplicate QSOs are ignored. [cite_start]Use this flag to include them in all calculations. [cite: 2269]
- [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: 2270]
- [cite_start]`--metric <qsos|points>`: (Optional) For the `cumulative_difference_plots` report, this specifies whether to compare QSO counts or Point totals. [cite: 2271] [cite_start]Defaults to 'qsos'. [cite: 2272]

Examples

-
    Generate all available reports for two logs:

    ```
    python main_cli.py --report all 2025/cq-160-cw/kd4d.log 2025/cq-160-cw/n0ni.log
    ```

-
    Generate only the text reports for two logs:

    ```
    python main_cli.py --report text 2025/cq-160-cw/kd4d.log 2025/cq-160-cw/n0ni.log
    ```

-

Generate a specific report (Score Summary) for a single log:

```
python main_cli.py --report score_report 2025/cq-160-cw/kd4d.log
```

Generate a Missed Multipliers report for CQ WW Zones:

```
python main_cli.py --report missed_multipliers --mult-name Zones Logs/2024/cq-ww-cw/k
```

---

4. Supported Contests

[cite_start]The analyzer uses the `CONTEST:` field in your Cabrillo file header to automatically apply the correct rules. [cite: 2272] [cite_start]The following contests are currently supported: [cite: 2273]

- ARRL DX (CW & SSB)
- ARRL Sweepstakes (CW & SSB)
- CQ 160-Meter (CW & SSB)
- CQ WPX (CW & SSB)
- CQ World Wide DX (CW & SSB)
- North American QSO Party (NAQP) (CW & SSB)

---

5. Available Reports

[cite_start]Use the `Report ID` with the `--report` command-line option. [cite: 2273]

Chart Reports (`charts/`)

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

Plot Reports (`plots/`)

- `cumulative_difference_plots`: Cumulative Difference Plot
- `point_rate_plots`: Cumulative Point Rate Plot
- `qso_rate_plots`: Cumulative QSO Rate Plot

Text Reports (`text/`)

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

rate_sheet_comparison: Rate Sheet Comparison
- score_report: Score Report
- summary: QSO Summary by Run/S&P