

# Contest Log Analyzer - User Guide

Version: 0.35.25-Beta Date: 2025-08-15

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## --- Revision History ---

**[0.35.25-Beta] - 2025-08-15**

Changed

- Updated the "Available Reports" list and the `--report` argument

description to be consistent with the current codebase.

**[0.30.31-Beta] - 2025-08-11**

Changed

- Updated the "Available Reports" section to be complete and accurate

based on the current project state.

**[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.

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## 1. Introduction: What is the Contest Log Analyzer?

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. It goes beyond the simple score summary provided by most logging software, allowing you to:

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

**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.**

## 2. What You Need to Get Started

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

- **Your Cabrillo Log File(s):** These are the standard log files generated by your contest logging software (e.g., `kd4d.log`, `n0ni.log`). You can analyze a single log or compare multiple logs at once.
- **Data Files:** The program requires specific data files to be placed in a central `data/` directory.
  - `cty.dat`: Required for all contests.
  - `ARRLDXmults.dat`: Required for the ARRL DX contest.
  - `SweepstakesSections.dat`: Required for ARRL Sweepstakes.
- **An Environment Variable:** You must tell the program where to find your data files by setting an environment variable named `CONTEST_LOGS_REPORTS`. This variable should point to the root directory that contains your `logs`, `data`, and `reports` subdirectories.

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## 3. How to Run the Analyzer

The program is run from your command prompt or terminal using `main_cli.py`.

### Basic Syntax

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

### Command-Line Options

- `--report <ReportID|all|chart|text|plot|animation>`: (Required) Specifies which report to generate. 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.
- `<LogFile1> ...`: (Required) One or more paths to the Cabrillo log files you want to analyze.
- `--include-dupes`: (Optional) By default, duplicate QSOs are ignored. Use this flag to include them in all calculations.
- `--mult-name <name>`: (Optional) For reports that analyze multipliers (like `missed_multipliers`), this specifies which multiplier to use (e.g., 'Countries', 'Zones').
- `--metric <qsos|points>`: (Optional) For the `cumulative_difference_plots` report, this specifies whether to compare QSO counts or Point totals. Defaults to 'qsos'.

## 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/k3lr.log :
```

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## 4. Supported Contests

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

- 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)

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## 5. Available Reports

Use the `Report ID` with the `--report` command-line option.

### Animation Reports (`animations/`)

- `hourly_animation`: Hourly Rate Animation

## **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