

Contest Log Analyzer

Version: 0.36.6-Beta Date: 2025-08-15

--- Revision History ---

[0.36.6-Beta] - 2025-08-15

Changed

- Updated the --report argument syntax in the "Usage" section to include the 'animation' category keyword.

[0.35.21-Beta] - 2025-08-15

Changed

- Updated "Key Features" and "Available Reports" to include the new hourly animation report.

[0.31.0-Beta] - 2025-08-11

Added

- Initial release of the README.md file.
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[cite_start]A Python-based tool for in-depth analysis and comparison of amateur radio contest logs. [cite: 4] [cite_start]This application processes standard Cabrillo files to generate detailed reports, charts, and visualizations, providing deep insights into operator strategy and

performance. [cite: 5]

Key Features

- [cite_start]**Data-Driven Architecture:** Uses simple JSON files to define the rules, scoring, and exchange formats for each contest, making the tool highly extensible. [cite: 6]
 - [cite_start]**Run/S&P Heuristics:** A sophisticated, multi-pass heuristic analyzes QSO timing and frequency to classify each contact as "Run," "Search & Pounce," or "Unknown," providing a clear picture of operating strategy. [cite: 7]
 - [cite_start]**Unique vs. Common QSO Analysis:** The analyzer precisely identifies "unique" QSOs (worked by only one of two logs) and "common" QSOs (worked by both), breaking them down by Run/S&P status to reveal strategic advantages. [cite: 8]
 - [cite_start]**Cumulative Difference Plots:** Goes beyond traditional rate graphs by presenting QSO and Point rate data in "Cumulative Difference Plots," which visualize performance trends and momentum shifts much more clearly. [cite: 9]
 - [cite_start]**Animated Hourly Replay:** Generates an MP4 video that visualizes the entire contest on an hour-by-hour basis, showing cumulative scores, QSO rates, and band-by-band totals for up to three logs. [cite: 10]
 - [cite_start]**Annotated CSV Output:** Generates detailed, "annotated" CSV files from the processed logs, perfect for loading into Excel or other tools for custom analysis and prototyping. [cite: 11]
 - [cite_start]**Contest-Specific Scoring:** A modular system calculates QSO points based on the official rules for supported contests (ARRL-DX, ARRL-SS, CQ-WPX, CQ-WW). [cite: 12]
 - [cite_start]**Dynamic Reporting Engine:** A flexible, "plug-and-play" system for generating a wide variety of text, plot, and chart-based reports. [cite: 13]
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Usage

[cite_start]The analyzer is run from the command line using `main_cli.py`. [cite: 14]

Basic Syntax

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

Examples

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Generate all available reports for two logs:

```
python main_cli.py --report all Logs/2024/cq-ww-cw/k3lr.log Logs/2024/cq-ww-cw/kc1xx.
```

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

```
python main_cli.py --report score_report Logs/2024/cq-ww-cw/k3lr.log
```

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Generate a Missed Multipliers report for CQ WW Zones:

```
python main_cli.py --report missed_multipliers --mult-name Zones Logs/2024/cq-ww-cw/1
```

Available Reports

[cite_start]All generated files are saved to a structured directory under `reports/YYYY/CONTEST_NAME/`. [cite: 16]

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

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