An Introduction to the Heatmap / Histogram Plugin

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Histogram Panel

- Originally created by @woodsaj

- Calculate histogram from row time series data

- Could work with any datasource plugins

- Mostly compatible with Graph panel

- Options

  - Bucket size
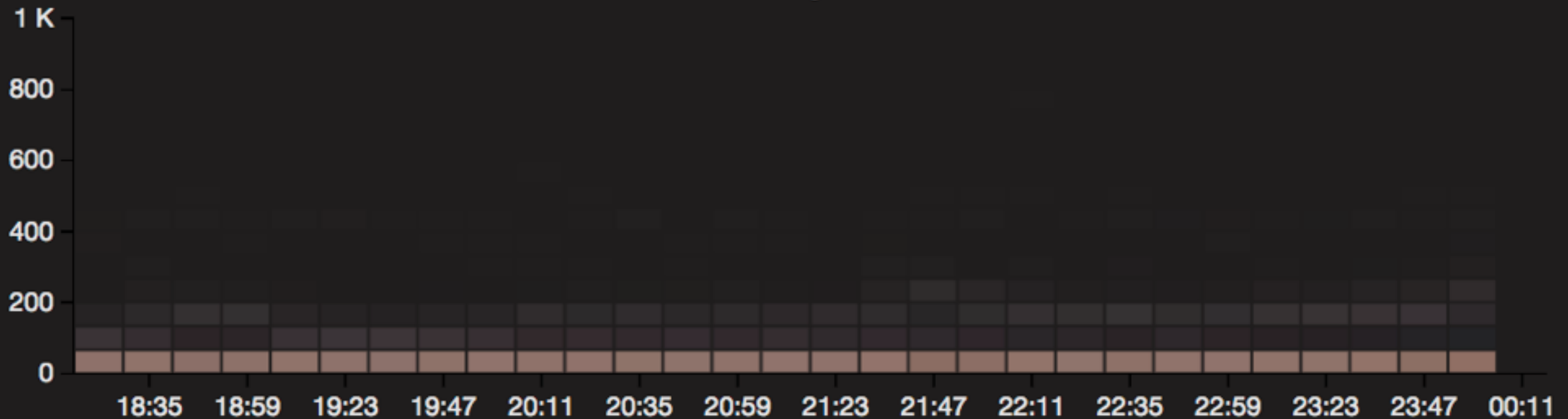
  - Data range

  - Normalize

Histogram

Heatmap Panel

- Generate Heatmap from row time series data

- Could work with any datasource plugins

- Use Fastly Epoch visualization library

- Option

  - Bucket size

  - Window size

  - Data range

Heatmap?

- Heat maps are a three dimensional visualization, using x and y coordinates for two dimensions, and color intensity for the third. They can reveal detail that summary statistics, such as line charts of averages, can miss.
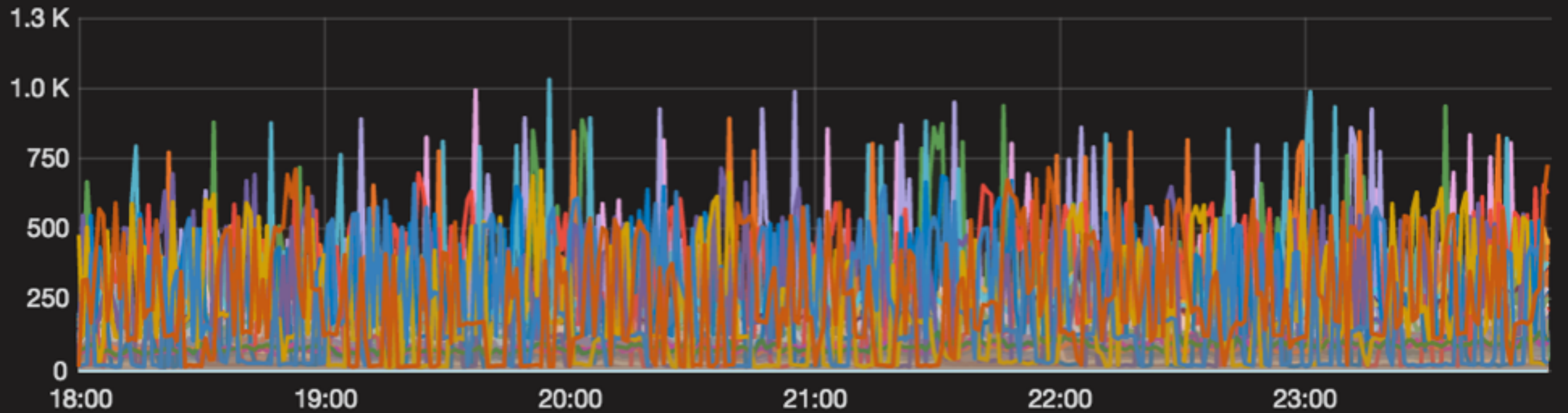
- http://www.brendangregg.com/heatmaps.html

Heatmap

— i-ed0f1272	— i-69736bf6	— i-8182631f	— i-f3372c6c	— i-c7968d58	— i-44ea0eda	— i-5f8760c1	— i-6d8661f3
— i-5f2acec1	— i-572bcfc9	— i-45170eda	— i-cf08ed51	— i-e9fd1977	— i-74c423ea	— i-afb2a930	— i-d10f144e
— i-a7a34739	— i-42df31cc	— i-43df31cd	— i-40df31ce	— i-7be209f5	— i-c51bed4b	— i-c203e94c	— i-0b1be285
— i-8311e80d	— i-c103e94f	— i-c003e94e	— i-c303e94d	— i-df749e51	— i-de749e50	— i-ef749e61	— i-54769cda
— i-bb779d35	— i-1114e09f	— i-f102e87f	— i-278374a9	— i-208374ae	— i-97827519	— i-9082751e	— i-2402e8aa
— i-436591cd	— i-446591ca	— i-1f936791	— i-cb679345	— i-cc679342	— i-379367b9	— i-be997230	— i-5b967dd5
— i-788c78f6	— i-d98d7957	— i-6711f9e9	— i-6611f9e8	— i-6011f9ee	— i-f01ef67e	— i-9409fd1a	— i-e7df2869

When to use Heatmap

- Visualize Latency of response time, I/O

- Visualize Utilization of many servers in one panel

- Don't miss details by using average

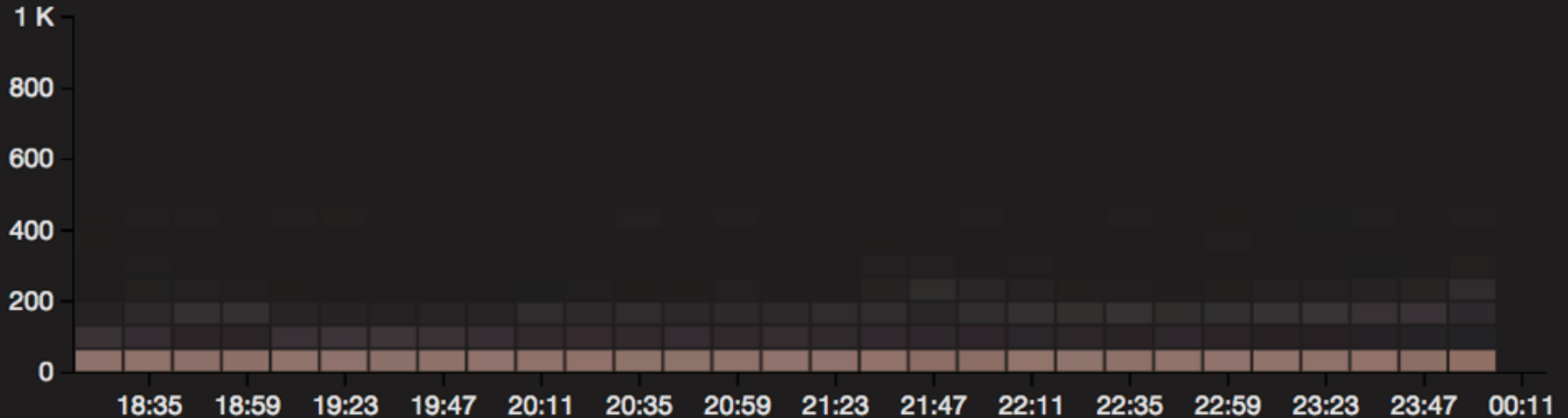- Can get to know the trend of time series data

Line chart

Legend:
- i-ed0f1272
- i-69736bf6
- i-8182631f
- i-f3372c6c
- i-c7968d58
- i-44ea0eda
- i-5f8760c1
- i-6d8661f3
- i-5f2acec1
- i-572bcfc9
- i-45170eda
- i-cf08ed51
- i-e9fd1977
- i-74c423ea
- i-afb2a930
- i-d10f144e
- i-a7a34739
- i-42df31cc
- i-43df31cd
- i-40df31ce
- i-7be209f5
- i-c51bed4b
- i-c203e94c
- i-0b1be285
- i-8311e80d
- i-c103e94f
- i-c003e94e
- i-c303e94d
- i-df749e51
- i-de749e50
- i-ef749e61
- i-54769cda
- i-bb779d35
- i-1114e09f
- i-f102e87f
- i-278374a9
- i-208374ae
- i-97827519
- i-9082751e
- i-2402e8aa
- i-436591cd
- i-446591ca
- i-1f936791
- i-cb679345
- i-cc679342
- i-379367b9
- i-be997230
- i-5b967dd5
- i-788c78f6
- i-d98d7957
- i-6711f9e9
- i-6611f9e8
- i-6011f9ee
- i-f01ef67e
- i-9409fd1a
- i-e7df2869
- i-e6df2868
- i-d547ad5b
- i-d247ad5c
- i-436d87cd
- i-0f32d881
- i-0c32d882
- i-4e23c9c0
- i-0d32d883
- i-8ede2a00
- i-e1c5316f
- i-e3c5316d
- i-e2c5316c

Line chart (average)

— avg

Heatmap

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- i-c7968d58
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- i-5f8760c1
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- i-d10f144e
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- i-42df31cc
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- i-c203e94c
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- i-8311e80d
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- i-df749e51
- i-de749e50
- i-ef749e61
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- i-f01ef67e
- i-9409fd1a
- i-e7df2869

Why use Epoch

- Flot plugin doesn't support Heatmap

- Epoch support Heatmap itself

- Realtime graph (this is a really good feature)

Future plan

- Support pre-calculated histogram/heatmap data

  - Elasticsearch, Prometheus, InfluxDB, …

- Integrate with Grafana Live, realtime monitoring

- Annotation support

- Improve compatibility with Graph panel

  - Tooltip, time range selection, …