...Lag

...Lag

What's wrong with my slave?

Act I

How do I know?

Monitoring 101
Cacti, Nagios, Zabbix + pagerduty

```
select * from
pg_stat_replication;
```

What is Normal?

```
Create Table rep_ts (
        ts timestamp not null default NOW()
);
```

Time V Bytes

Time Measurement

```
SELECT CASE
WHEN pg_last_xlog_receive_location() =
          pg_last_xlog_replay_location()
THEN 0
ELSE EXTRACT (EPOCH FROM now() -
        pg_last_xact_replay_timestamp())::int
END
AS log_delay
```

Normal - 7 Days

Date ->

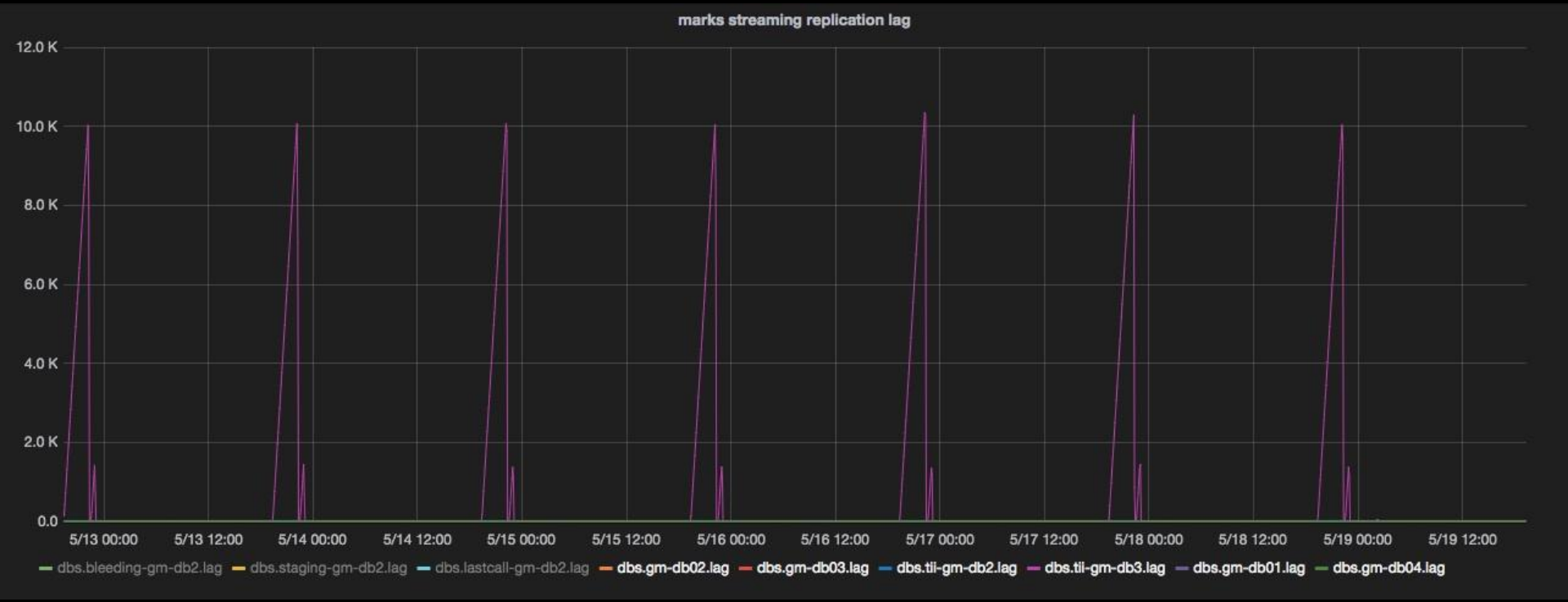
Max < 3.5 Sec, 10 spikes

Also Normal

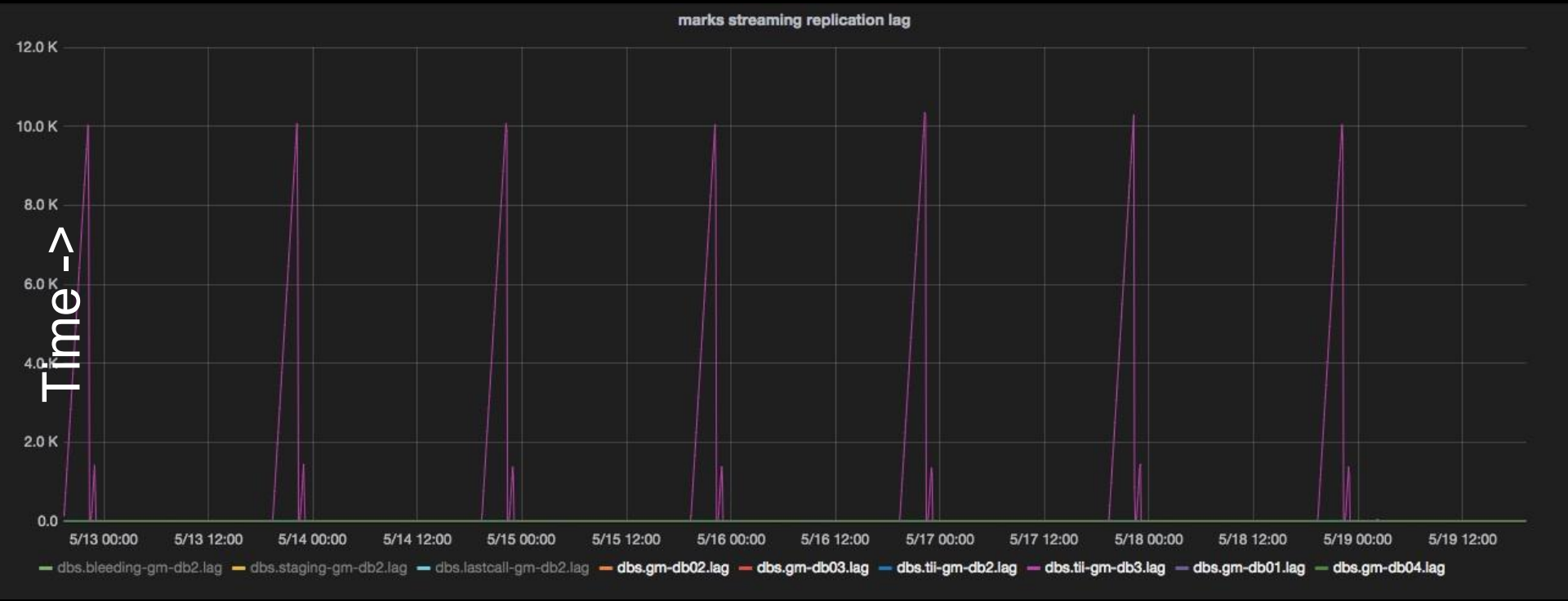
Date ->

Max < 20k Sec, 7 spikes

7 Days, 2 regular spikes



Still Normal



Date ->

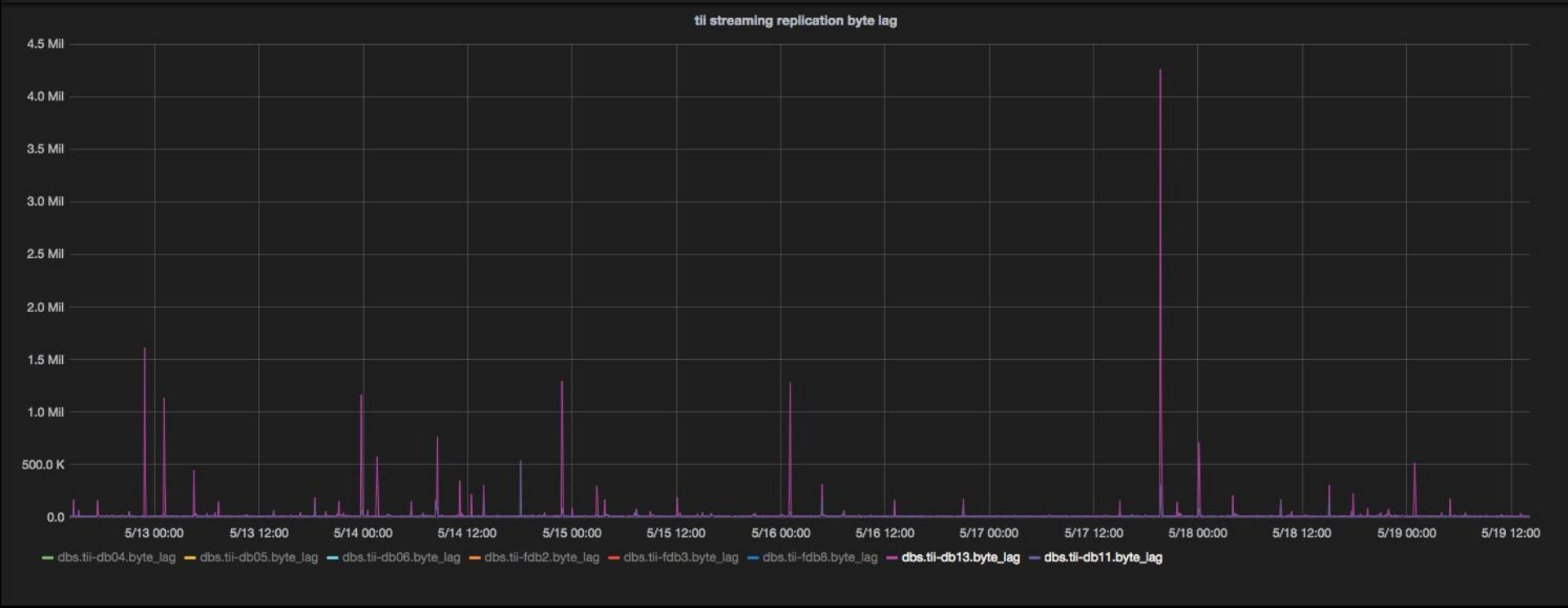
Max < 10k Sec, 14 spikes

is replication paused?

Byte Measurement

```
SELECT client_hostname, pg_xlog_location_diff
(pg_stat_replication.sent_location, pg_stat_replication.
replay_location),
EXTRACT(EPOCH FROM now())
FROM pg_stat_replication;
```

Normal - 7 Days



Act II

What's Going Wrong?

Most issues are in the initial setup phase.

1. Configuration

1. Configuration
2. Hardware

1. Configuration
2. Hardware
3. Human Error

Async or Sync?

Traffic Isolation: separate host with alternate configuration

Act III

Configuration

max_standby_archive_delay
&
max_standby_streaming_delay

max_standby_archive_delay

Applies as WAL data is read

max_standby_streaming_delay

Applies when WAL data is received

replication_timeout
&
wal_receiver_status_interval

hot_standby_feedback

hot_standby_feedback

+

max_standby_streaming_delay

=

LAG

Act IV

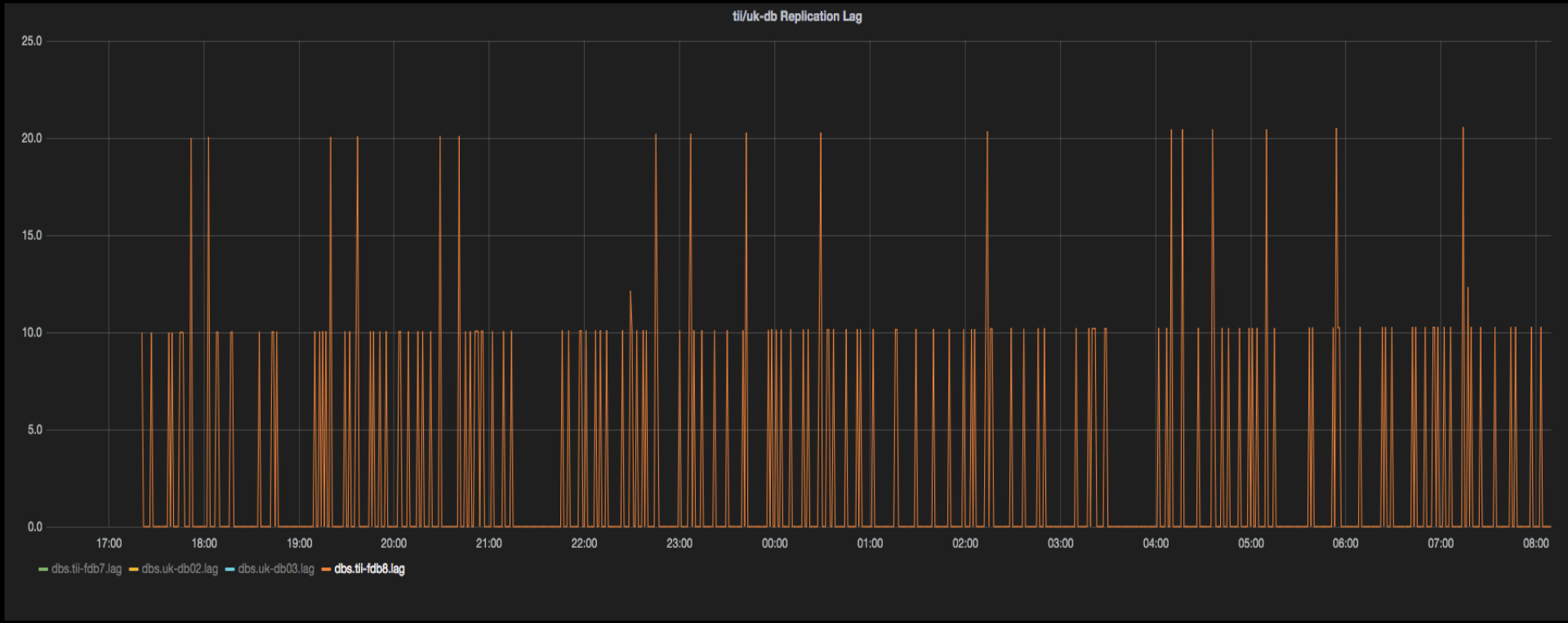
Hardware

5 Hours, Irregular Spikes

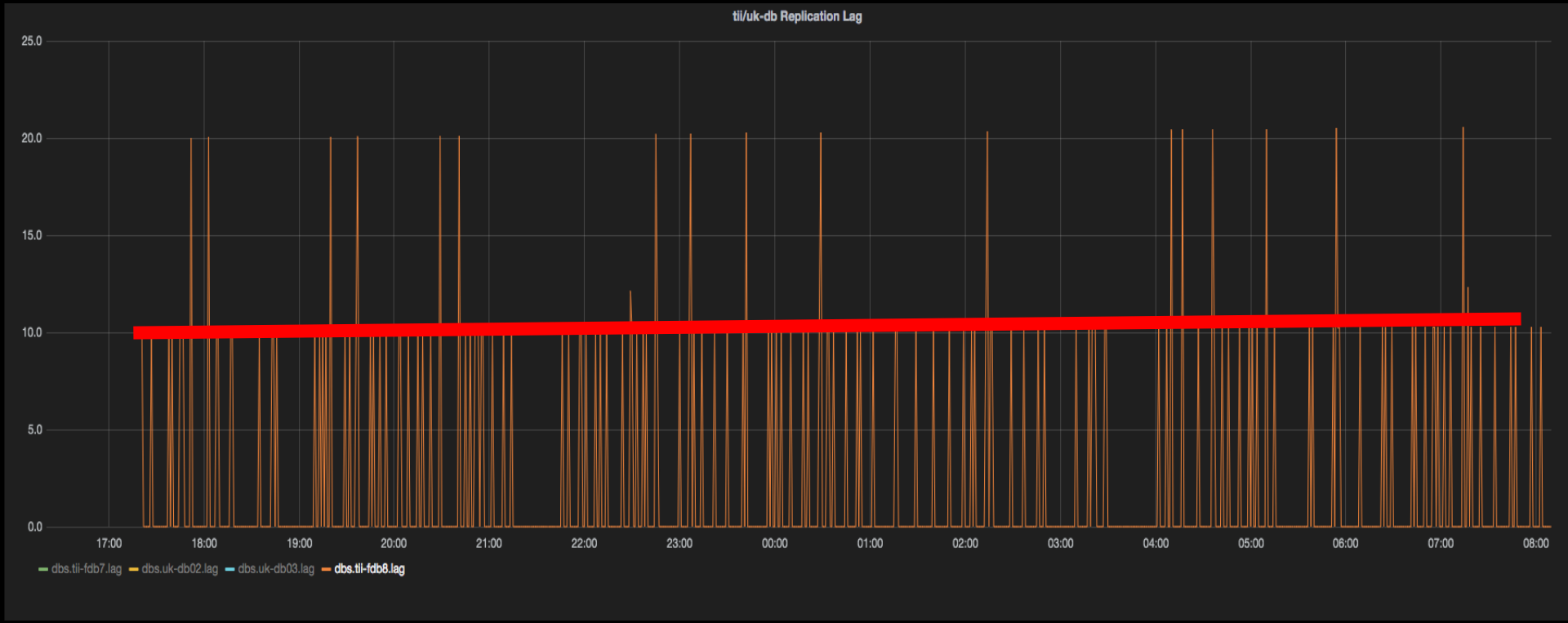
25 - 30 Seconds

Spindle disk, Non-Partitioned xlogs

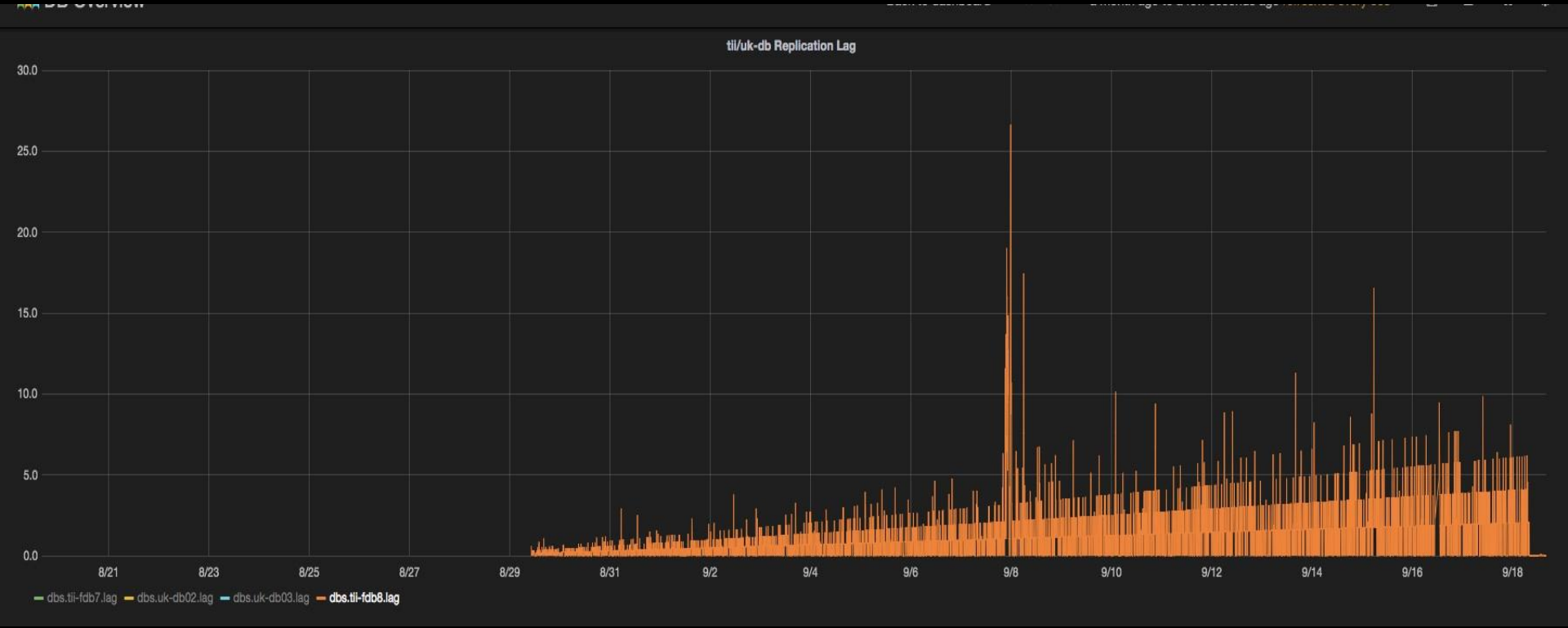
15 Hours, Mostly Regular Spikes



VERY Slight Increase

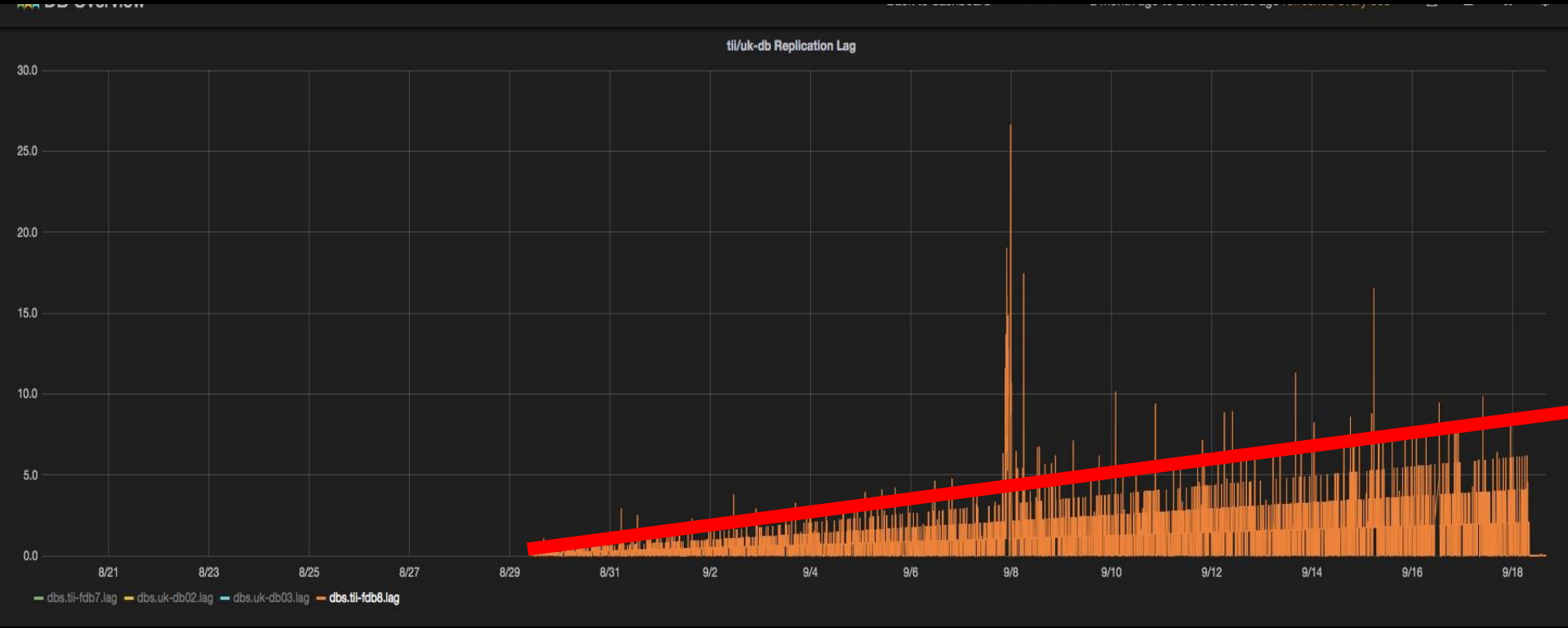


Zoomed Out, 3 Weeks



Clear Pattern from 0 to ~5 s

Zoomed Out, 3 Weeks



Clear Pattern from 0 to ~5 s

NTP

What’s that 500 second Abnormal Spike?

Not Worth It

What have you experienced?

The
End