Running PostgreSQL in enterprise level telco systems

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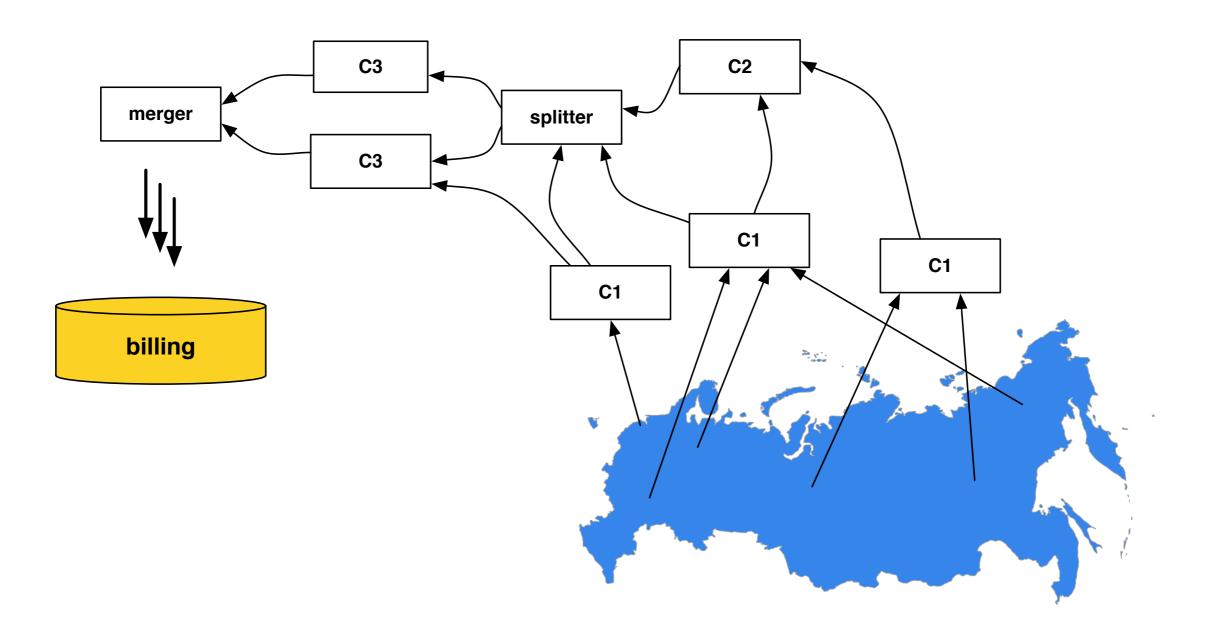
intelotec
G R O U P

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What is mediation

- Collecting CDRs from network

- Processing CDRs (logic is complicated)

- Transportation to billing system

What is mediation

Needs and expectations for mediation monitoring

- Reports from each stage/chain

  - CDR amount

  - Processing speed

  - Chain integrity

  - Alerts

- Reports to GUI

- Early warning

OpenNMS

- Ready to go

- Highly customizable via extensions

- PostgreSQL-based ;-)

- for LAN, not for cellular

InMetrix

- Plugin set for OpenNMS

- plpgsql application for data processing

Why PostgreSQL?

- Failsafe & consistency = database needed

- Open Source

- Simple

- Oracle-fashion procedures

So lets persuade operations department's DBAs
that we are right

GSM-provider's DBAs

- Know how to cook Oracle Database

- Like Oracle

- Count money

- Ask awkward questions

Awkward questions

- Is there smth like RMAN in Postgres?

- How to tune without wait events?

- What about table partitioning?

- What about data compression?

- Smth like ASM?

- ...

Don't argue about obvious things

- There is no RMAN, OWI, ASM

- Hardly any partitioning

- Compression: external only, if any

Don't argue about obvious things

- There is no RMAN, OWI, ASM

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- Come to discuss when recession strikes;-)

Necessary and sufficient

- Hot-standby

- Emulated table partitioning by date

- Compression - struggling with zfs?

Nice features

- hstore

- CTE - recursive queries

hstore

- for various non relational data

- hstore → json → java → GUI

hstore

```
CREATE FUNCTION public.hs_2json(hs hstore) RETURNS text
    AS $$
declare
        rv text;
        r record;
        count integer;
begin
         count:=0;
         rv:='';
         for r in (select key, val from each(hs) as h(key, val)) loop
                if rv<>'' then
                        rv:=rv||',';
                end if;
                rv:=rv || '"'  || r.key || '":';
                rv:=rv || '"' || regexp_replace(regexp_replace(r.val,$$\\$$,$$\\\\$$,'g'),'"', $$\"$$,'g') || '"';
                count:=count+1;
         end loop;
         return '{'||rv||'}';
end;
$$;
LANGUAGE plpgsql IMMUTABLE;
```

hstore

- for various non relational data

- hstore → json → java → GUI

- Sometimes a bit LISPy, but not a problem ;-)

```
((h_param[((akeys(kpi_attr_name::hstore))::int[1])[1]])::hstore ->
                avals(kpi_attr_name::hstore))[1]))
```

Really needed

- PRAGMA AUTONOMOUS_TRANSACTION

- Skip locked

thanks!

- Anton Barkov

- Alexey Bekasov

- Alexander Kulikov

- Denis Nikonov

- Ivan Podgorny

- Ivan Frolkov - for json ideas