

The Register

Open source PostgreSQL named DBMS of the year by DB-Engines

Already more than 37 years old, the relational system continues to gain popularity

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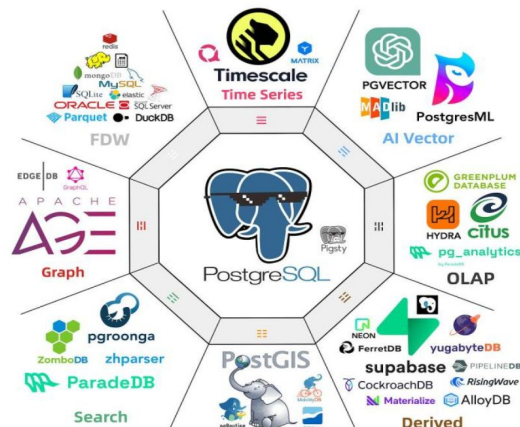
survey.stackoverflow.co/2024/technology#1-databases



Peter Zaitsev • 1st

Entrepreneur | Driving Success with MySQL, MariaDB, MongoDB & Postgr...

"Postgres is eating the database world" - Do you agree?
[#postgres](https://lnkd.in/ecUyySRj)



Postgres, postgres, postgres

It's already awesome!



But wait... what if one could make it even better? Like 5x better - in about 3 minutes?

Talking about \$\$\$ here :)

The Elephant in the room - managed database costs...

Spot instances!

Amazon EC2 Spot Instances

Run fault-tolerant workloads for up to 90% off

Get started with Amazon EC2 Spot Instances

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Save up-to 90% on On-Demand prices.

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ChatGPT ▾



What is the estimate percentage of really business critical databases?



The percentage of **business-critical databases** can vary significantly depending on the size, industry, and operational needs of a company. However, based on industry surveys and studies, it is estimated that **15% to 25%** of an organization's databases are considered **business-critical**.

A selection of non-critical workloads

- Dev / staging environments
- Feature testing “forks”
- Backup / DR restore testing
- Production snapshots for ad-hoc reporting and exploration with mutations
- Testing effects / feasibility of HW upgrades
- Testing critical maintenance operations like VACUUM FULL-s
- ...

Spot is actually not that scary

If to use the Spot Instance advisor [tool](#) by AWS

The average frequency of interruption across all Regions and instance types is <5%.

Region

US West (N. California)

OS

Linux

vCPU (min)

4

Memory GiB (min)

0

Instance types supported by EMR

Q i4

X

9 matches

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1

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Instance Type ▲	vCPU ▼	Memory GiB ▼	Savings over On-Demand ▼	Frequency of interruption ▼
i4i.12xlarge	48	384	82%	<div>5-10%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.16xlarge	64	512	82%	<div>10-15%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.24xlarge	96	768	84%	<div>10-15%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.2xlarge	8	64	78%	<div><5%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.32xlarge	128	1024	85%	<div>10-15%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.4xlarge	16	128	73%	<div>5-10%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.8xlarge	32	256	86%	<div><5%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.metal	128	1024	88%	<div>10-15%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>
i4i.xlarge	4	32	68%	<div>5-10%</div> <div> <div></div> <div></div> <div></div> <div></div> </div>

Meaning - **on average, one can expect to run a few months uninterrupted!**

Stateful databases + stateless Spot ?

Gets messy of course...those pesky DBs namely have “state”...

Wouldn't it be nice if someone else deals with the annoying details ?

What about something like:

PG Spot Operator

```
psql "$(pg_spot_operator --region=eu-north-1 --ram-min=64 --storage-min=500 \  
--storage-type=local --tuning-profile=analytics --instance-name=mypg1 \  
--admin-user=pgspotops --admin-user-password=topsecret123 \  
--connstr-output-only )"
```

...

```
psql (16.4 (Ubuntu 16.4-1.pgdg24.04+2))
```

```
SSL connection (protocol: TLSv1.3, cipher: TLS_AES_256_GCM_SHA384, compression: off)
```

```
Type "help" for help.
```

```
pgspotops@postgres=>
```

* Assumes local AWS CLI setup

“UI” - CLI / Docker params or a “manifest”

```
pg_spot_operator \  
  --instance-name pg1 \  
  --region eu-north-1 \  
  --cpu-min 2 \  
  --storage-min 100 \  
  --storage-type network
```

```
docker run -e PGSO_REGION=eu-west-1 \  
  -e PGSO_RAM_MIN=128 \  
  -e PGSO_STORAGE_TYPE=local \  
  -e PGSO_CHECK_PRICE=y \  
  -v ~/.aws:/root/.aws:ro  
pgspotops/pg-spot-operator:latest
```

```
api_version: v1  
kind: pg_spot_operator_instance  
cloud: aws  
region: eu-south-2  
instance_name: hello-aws  
expiration_date: "2024-12-22 00:00+03"  
vm:  
  cpu_min: 4  
  ram_min: 16  
  storage_min: 500  
  volume_iops: 10000  
os:  
  extra_packages: [ pgbadger, postgresql-16-cron ]  
  ssh_pub_key_paths: [ ~/.ssh/my_key.pub ]  
user_tags:  
  app: backend  
postgresql:  
  admin_is_superuser: false  
  app_db_name: app  
  admin_user: admin  
  tuning_profile: oltp # none | default | oltp | analytics | web  
  admin_user_password: !vault |  
    $ANSIBLE_VAULT;1.1;AES256  
    306433643563343037396265346239376137333865353466613631663231386
```

Sustainable Open Source

- We believe a great addition to the Postgres ecosystem
 - Making Postgres even more accessible and fun to play with
- Looking for a pre-seed round to bring out an Enterprise Edition
 - HA, Azure + Google cloud, etc
 - Hybrid provisioning - Spot only if DT budget allows
 - Extra developer hands needed to hack away the nitty-gritty

github.com/pg-spot-ops/pg-spot-operator

Licence: Functional Source License, Version 1.1, Apache 2.0 Future License

(Meaning: use however you want for any non-compete purpose, totally free after 2 years)

info@pgspotops.com