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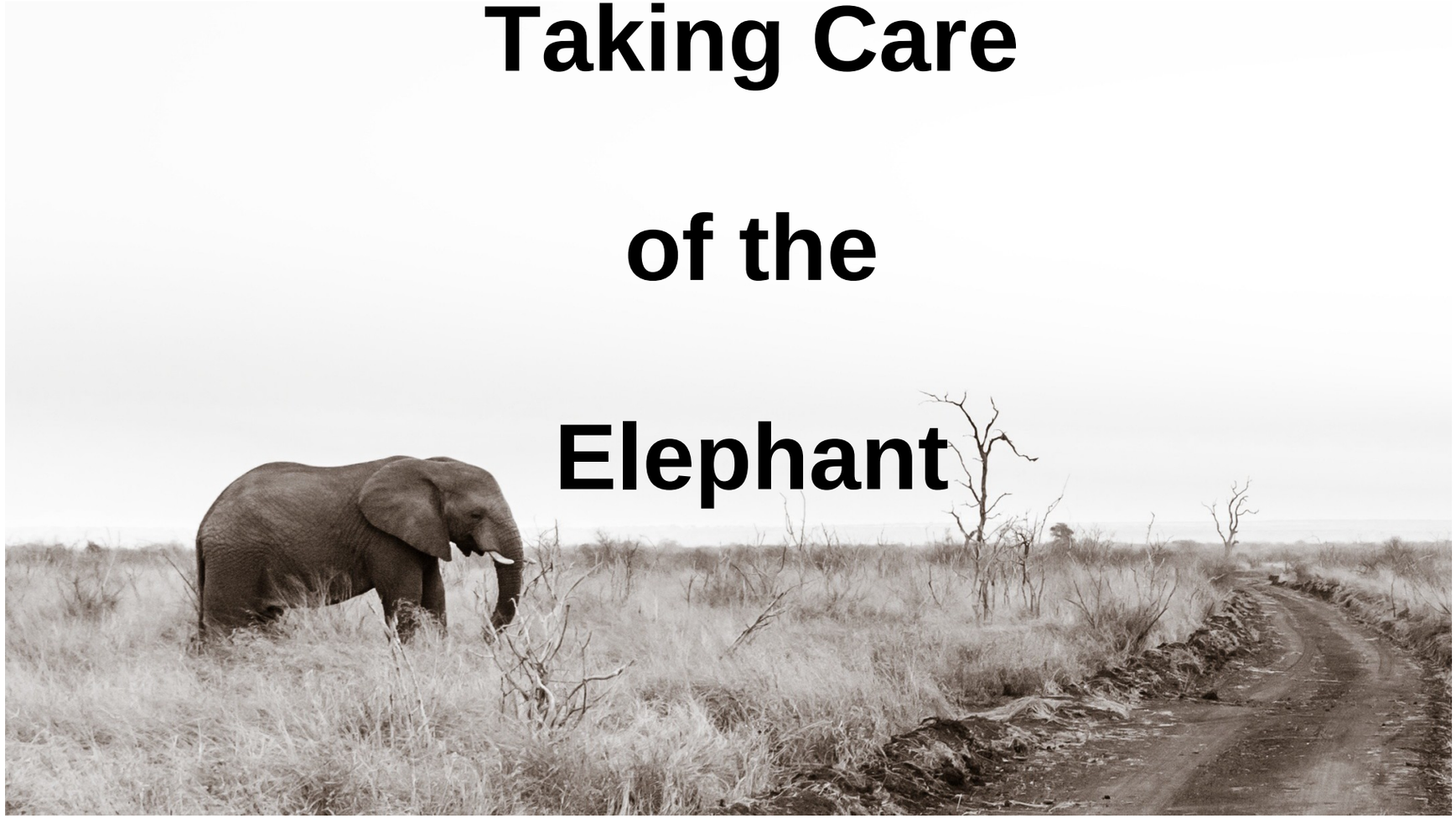
Open Source Support Center

Michael Meskes

Taking Care of the Elephant



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Open Source Support Center

Actively

Working

On

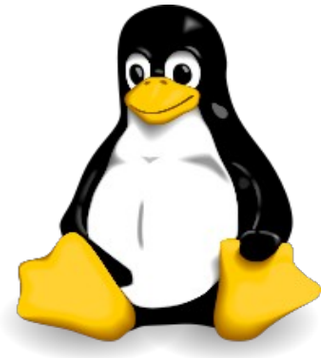
Open Source

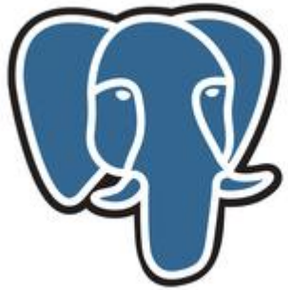
· Free Software since 1993

· Linux since 1994

· Debian GNU/Linux since

· PostgreSQL since 1998





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Actively

Working

On

Open Source

- 1992 – 1996 Ph.D.
- 1996 – 1998 Project Manager
- 1998 – 2000 Branch Manager
- Since 2000 President/CEO

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24/7/365

Phone

Email

Remote

On-site

US/EU/India

Open Source Support Center

- Consulting
- Installation
- Administration
- Operations
- Training
- Support

Open Source Support Center

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Current State Of The Community

-

Forks

Plenty

Of

Differences

Incompatible differences in

- Statements
- Datatypes
- Storage
- Features

(c) Alexander Madyankin, Roman Shamin

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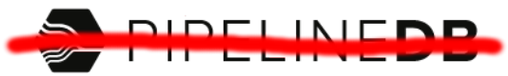
Current State Of The Community

-

Forks



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Business

Models

vs.

Community

Create IP	**Different Solutions**
Resources	**Diverging Code**

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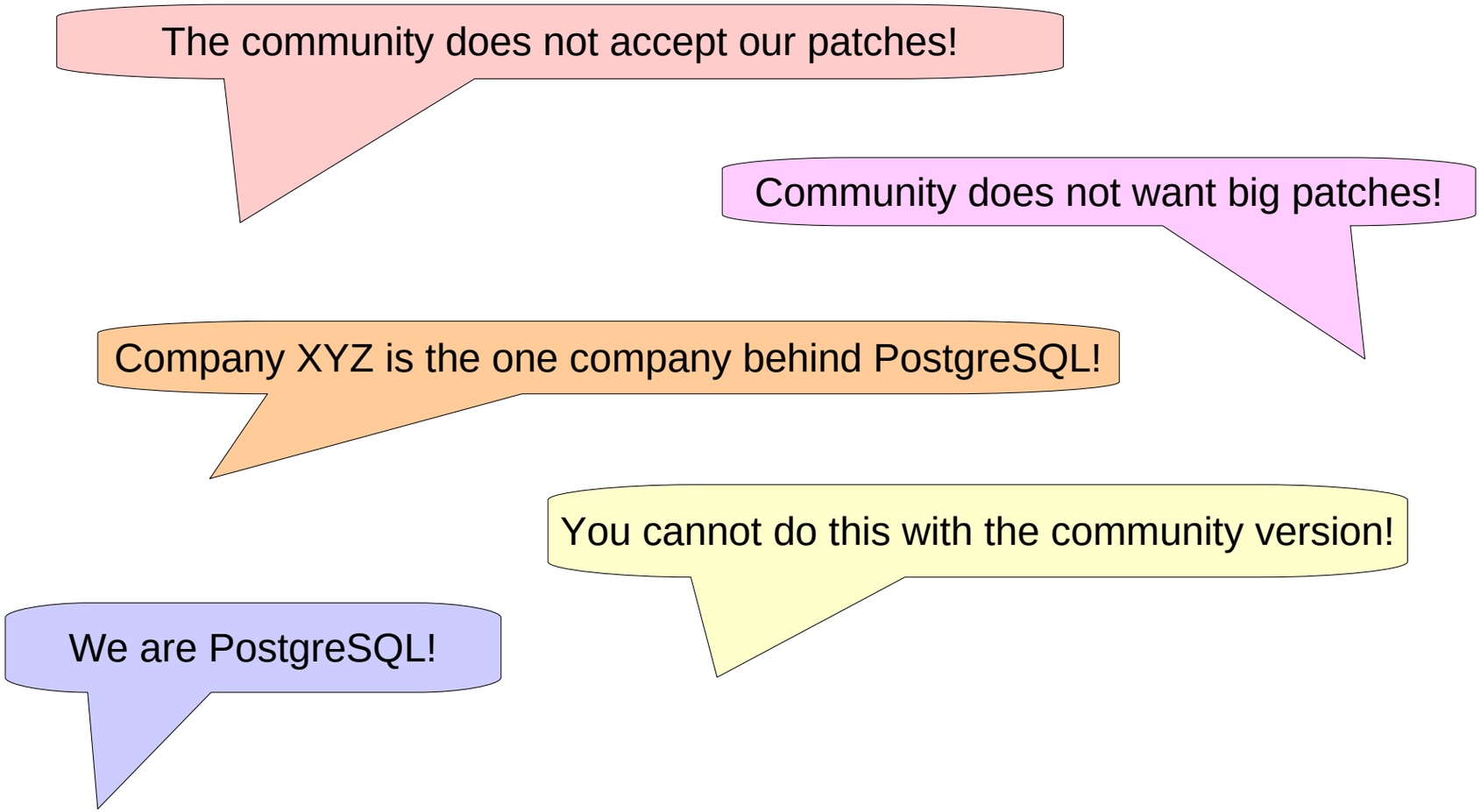
Sales

vs.

Community



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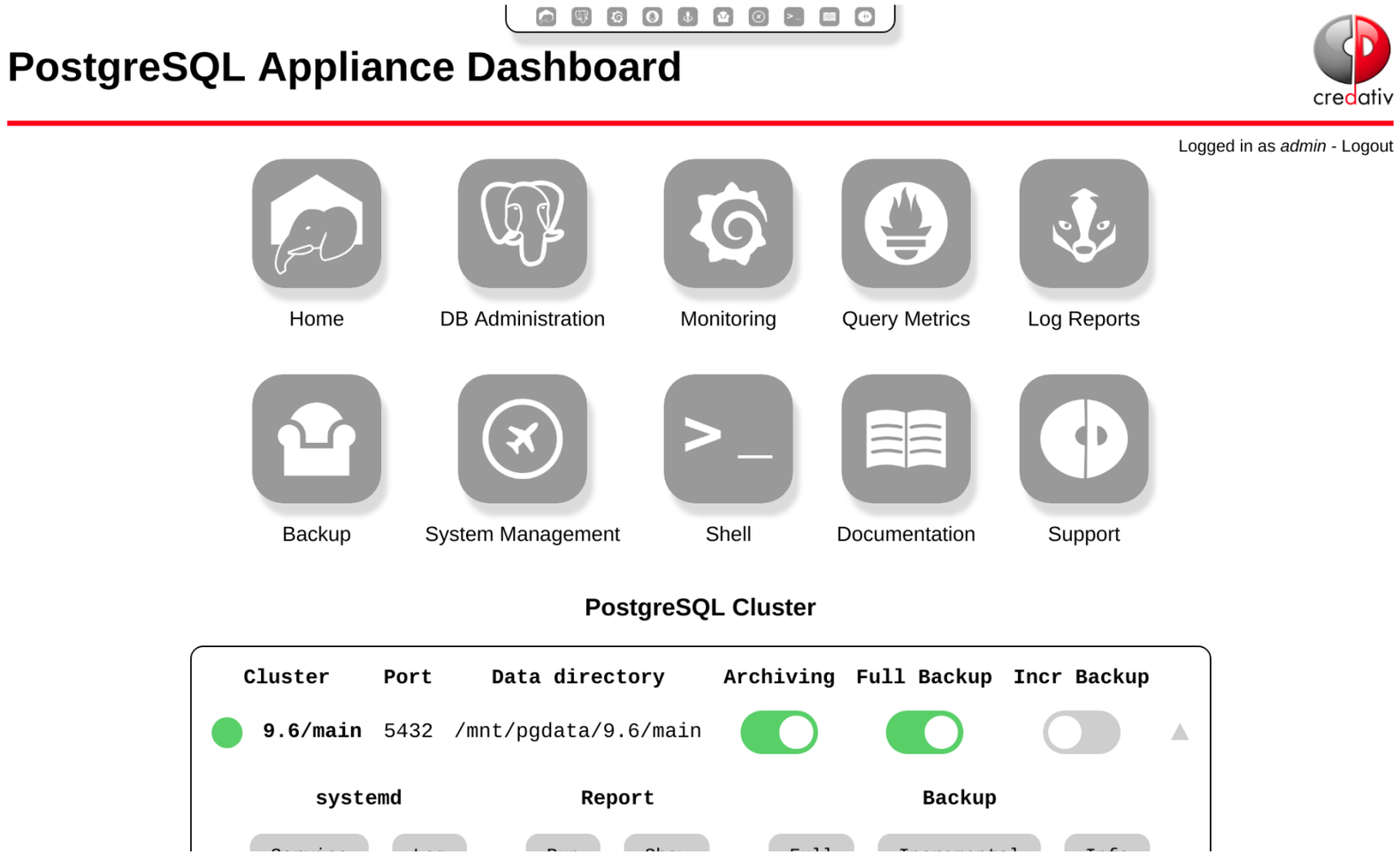
Open

Source

Has

Everything



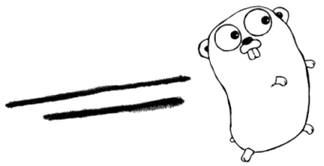
Software

Development

-

Vendoring

Vendoring is the act of making your own copy of the 3rd party packages your project is using. Those copies are traditionally placed inside each project and then saved in the project repository.



Vendoring is the conceptual opposite of using a dependency manager

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Modern

Deployment

Methods

- Flatpak
- Snap
- AppImage
- Docker
- Appliances
- Cloud

© Tomomarusan

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Current State Of The Community

-

Cloud

Database

Administrator

Responsibilities

- Configure database servers
- Monitor and maintain system health and security
- Design backup processes for server and associated data
- Establish a disaster recovery protocols
- Schedule and perform regular server maintenance

Elephant Shed - Design Goals

- Complete solution
- No external dependencies
- Modular
- Covers most use case
- Easily adjustable and extendable
- Ease of use

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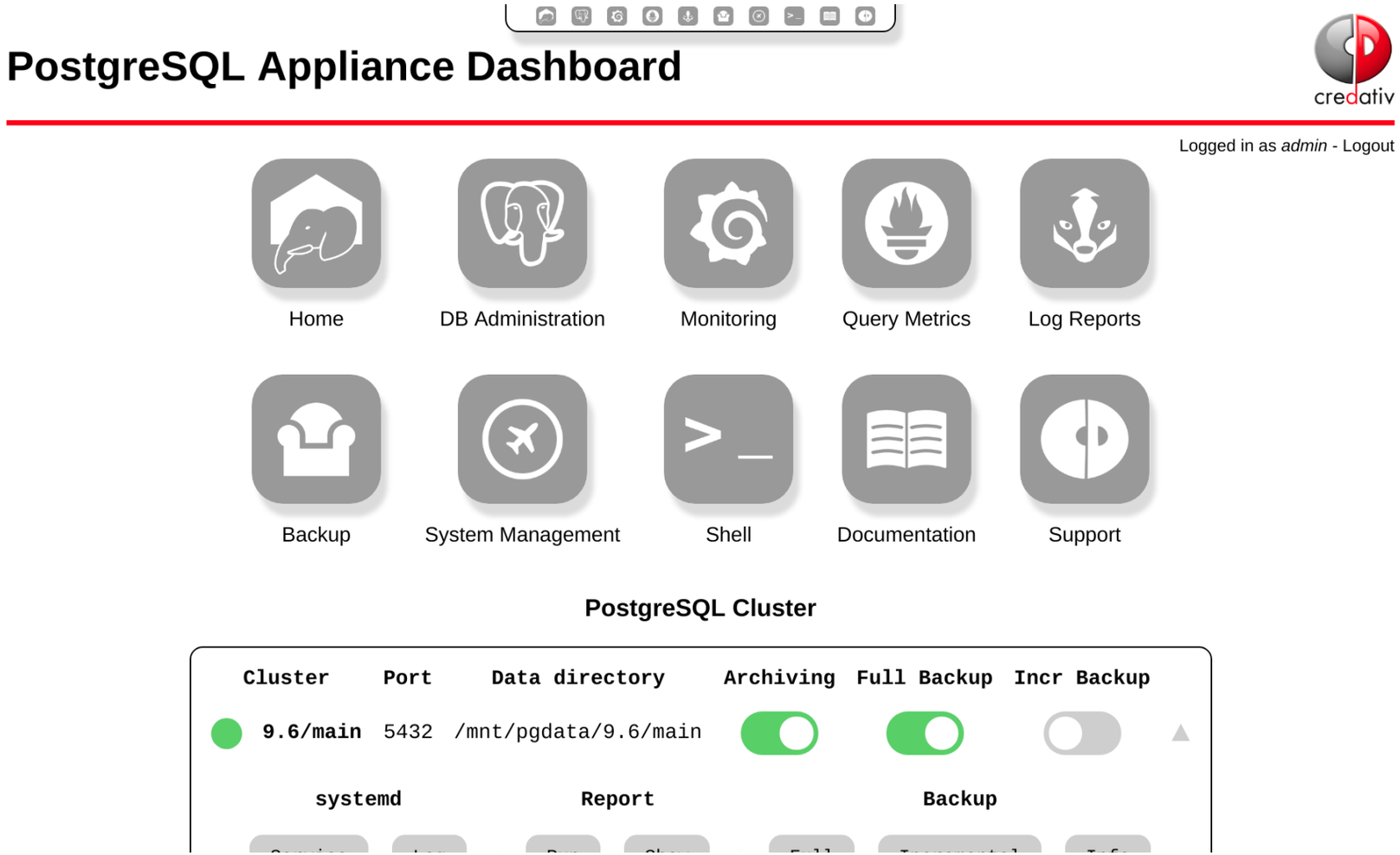
Portal

-

Point

Of

Entry



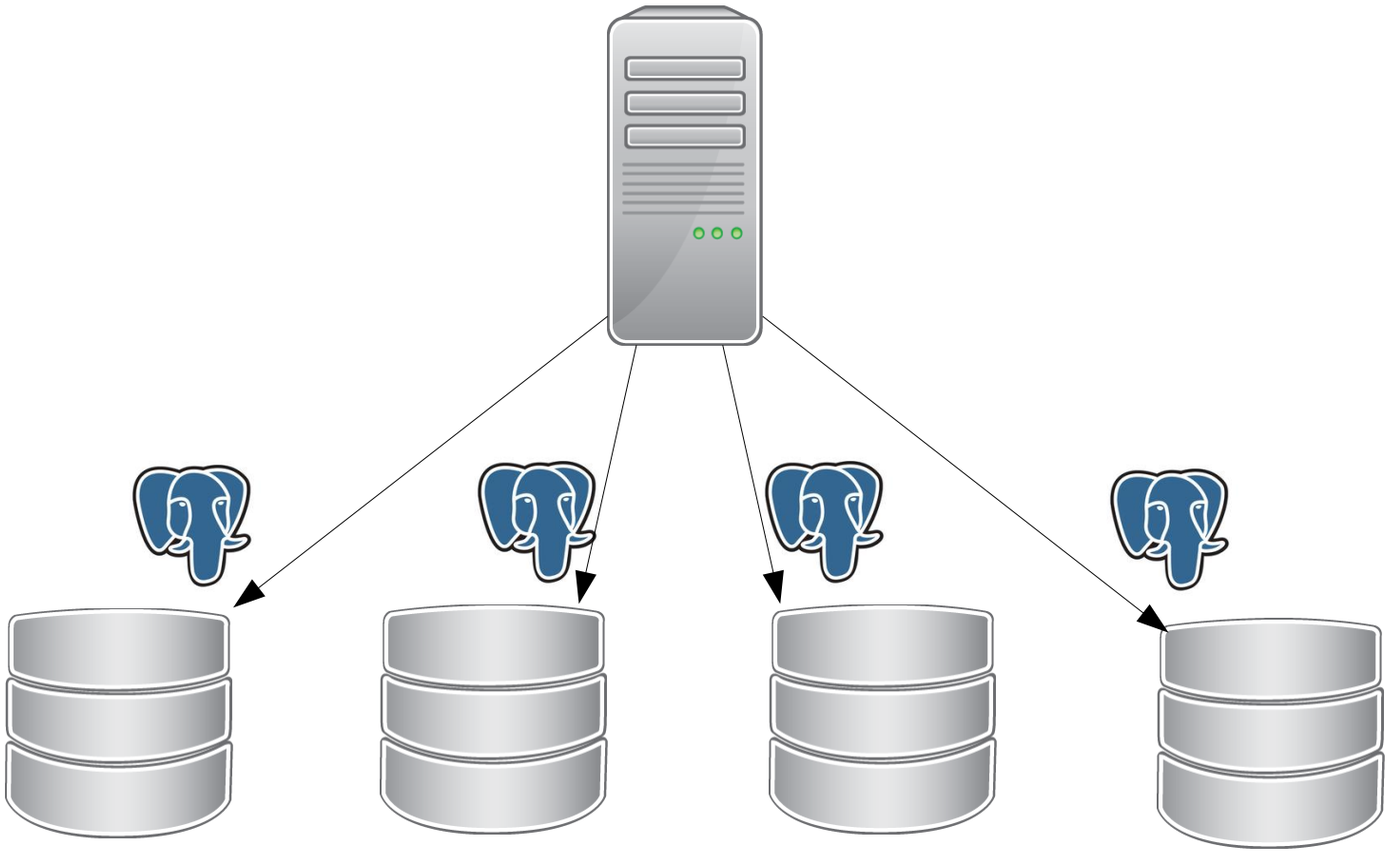
Multi

Version

-

Multi

Cluster



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Apt . Postgresql . Org

all active PostgreSQL versions for all active distribution versions

- 3-4 Debian Releases + 3-4 Ubuntu Releases
- 6 PostgreSQL Releases
- Server, Extensions, Modules
- 3 Architectures

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➲ 200 different source packages

➲ 25,473 binary packages

Quality Asssurance

Tests are done automatically

Continuous Integration Server

Jenkins

- Source - build source packages
- Binary – build binary packages
- Test

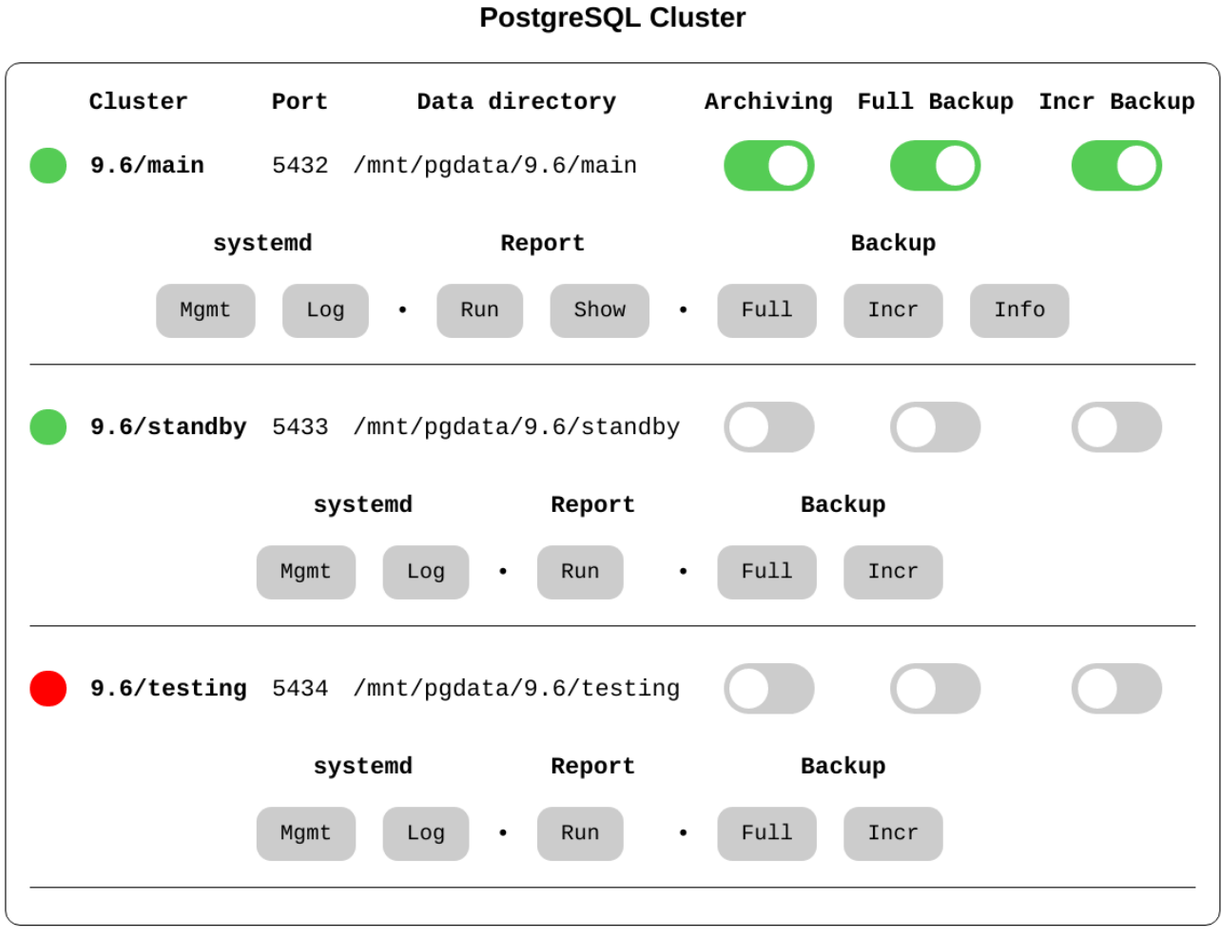
```
====== Running all tests with tight umask 077
=======
=== Running test 001_packages.t ... ===
1..19
# PostgreSQL versions installed: 9.4
ok 1 - postgresql-9.4 installed
ok 2 - postgresql-plpython-9.4 installed
ok 3 - postgresql-plpython3-9.4 installed
ok 4 - postgresql-plperl-9.4 installed
ok 5 - postgresql-pltcl-9.4 installed
ok 6 - postgresql-server-dev-9.4 installed
ok 7 - postgresql-contrib-9.4 installed
ok 8 - libecpg-dev installed
...
```

Portal

-

PostgreSQL

Clusters



systemd

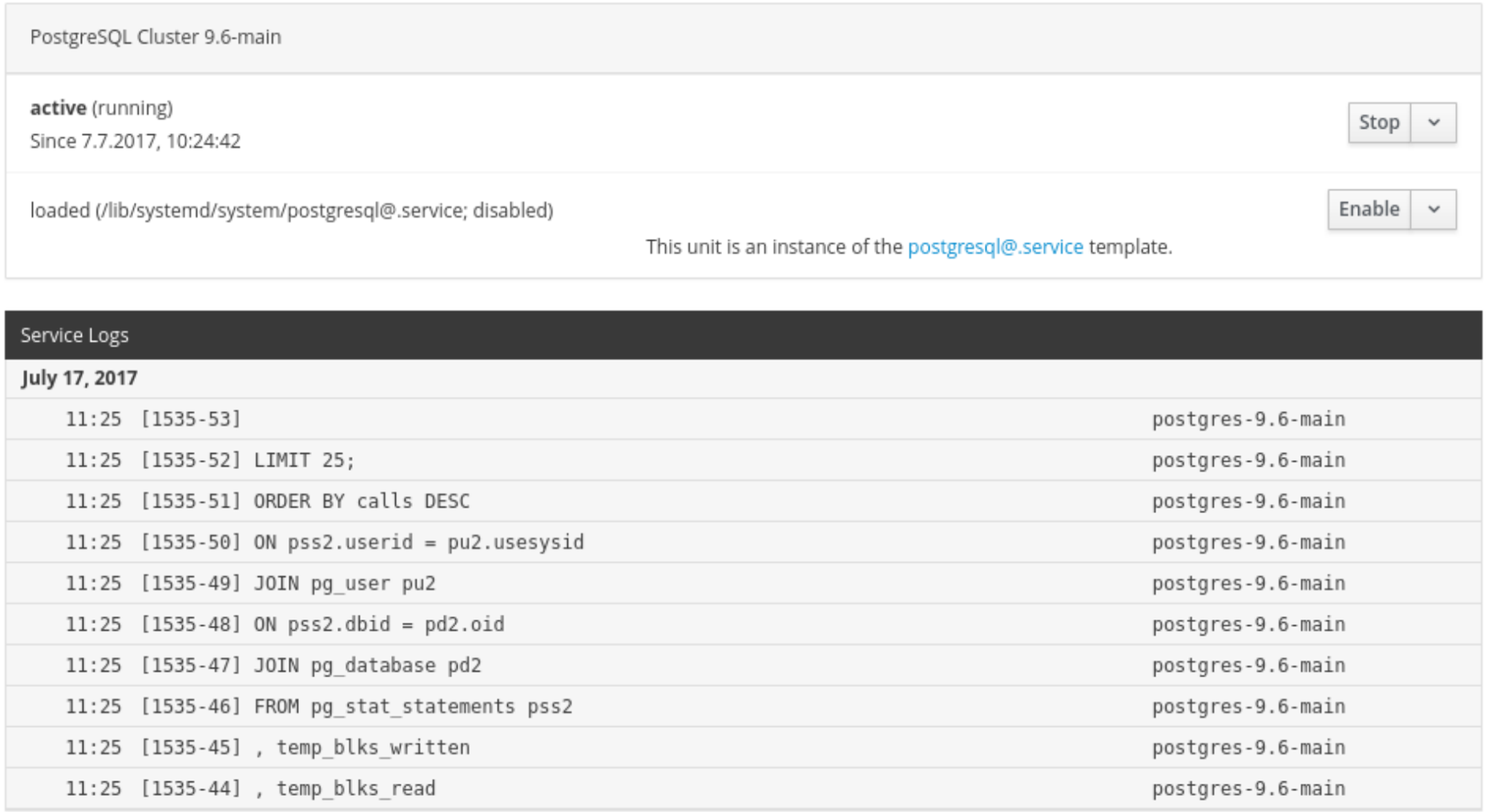
-

System

&

Service

Manager

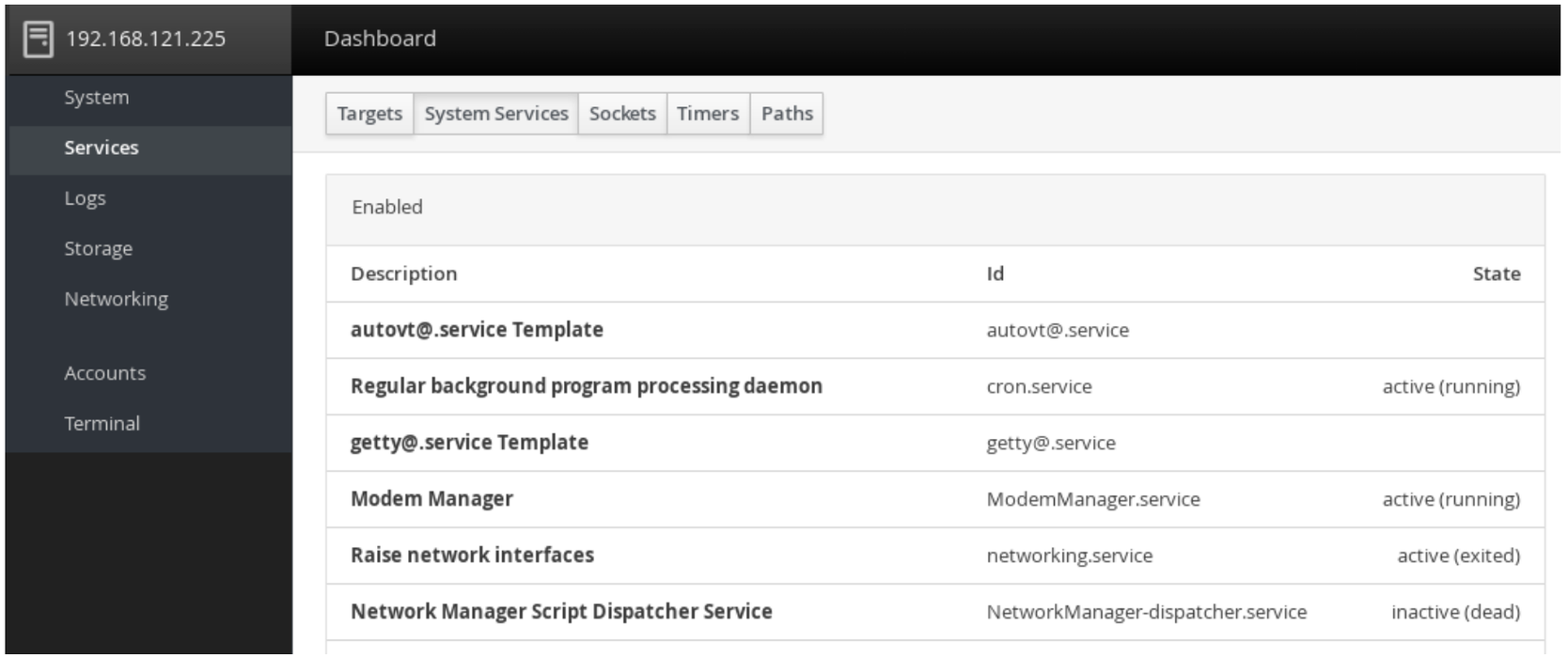


Cockpit

-

System

Management

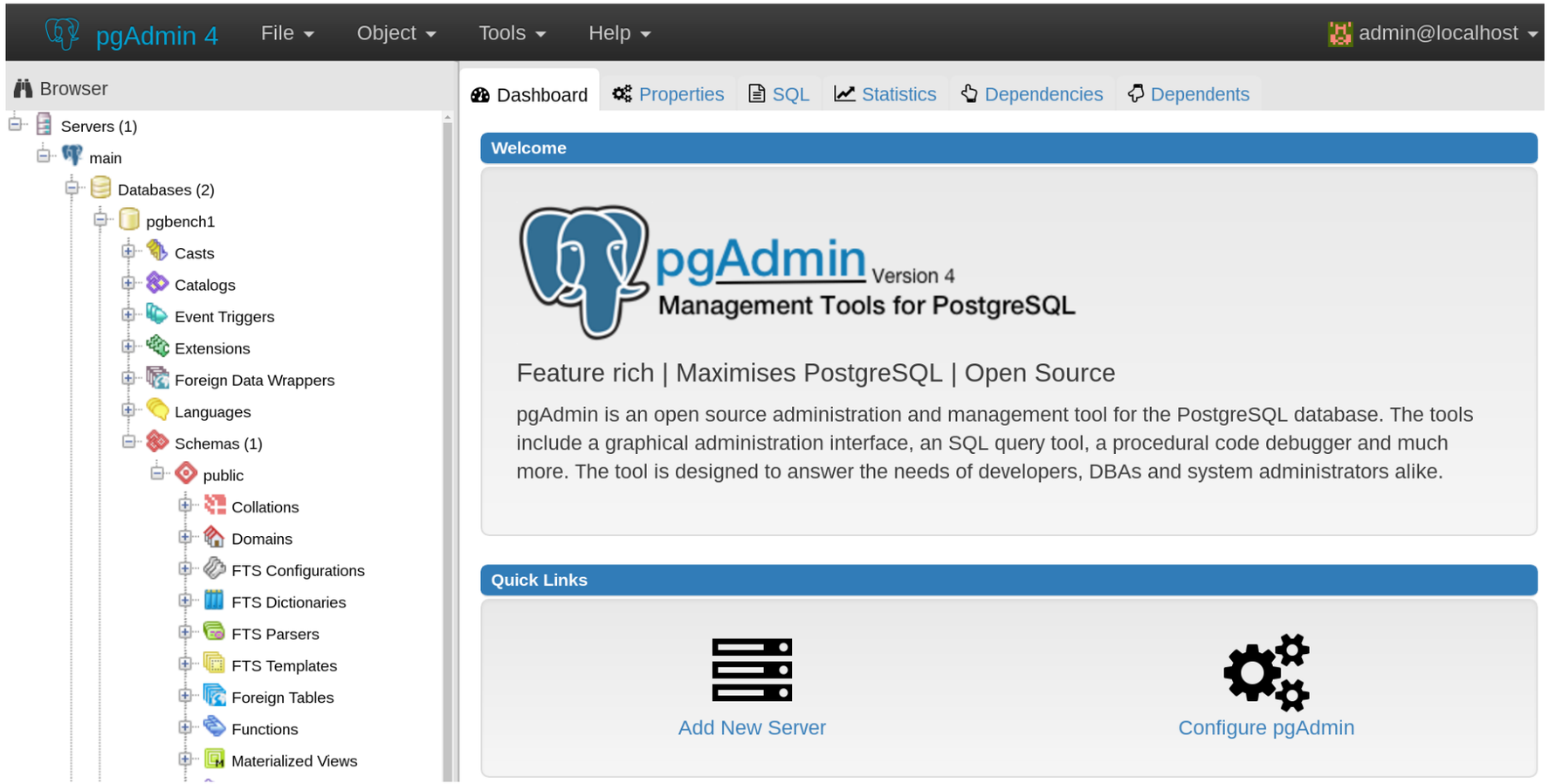


pgAdmin4

-

Manage

PostgreSQL



Grafana

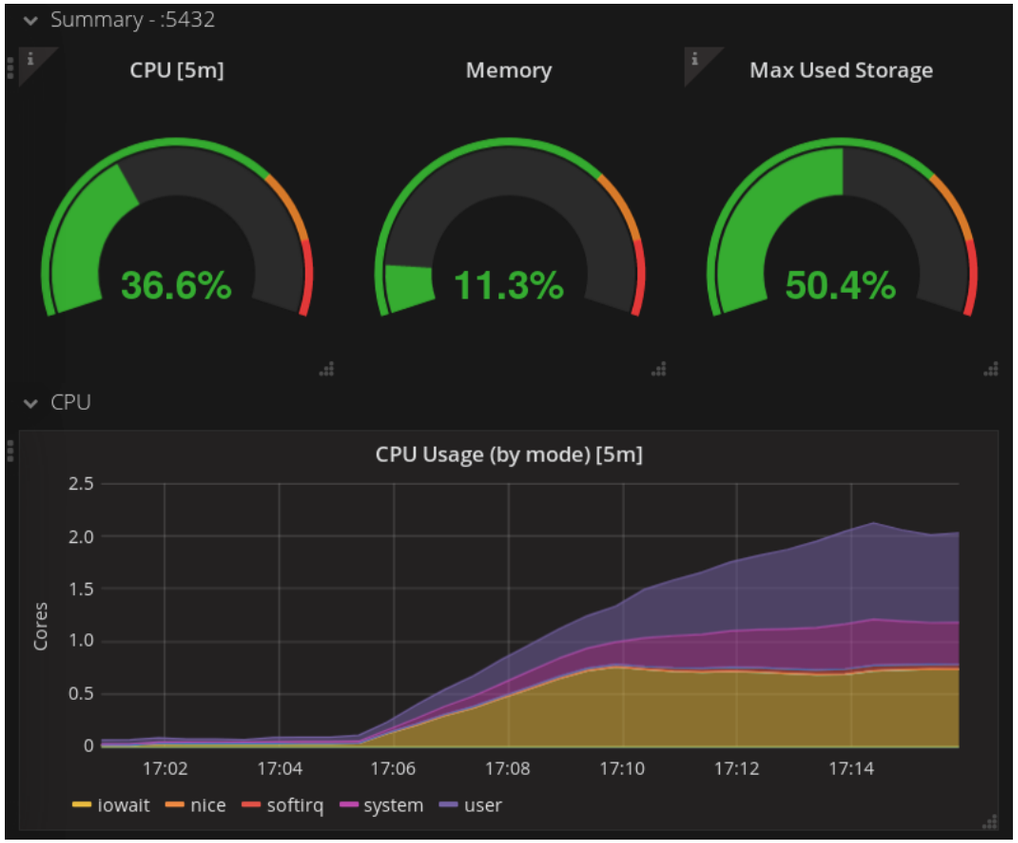
-

Analytics

Visualization

Monitoring

Dashboard with data from different sources



Grafana

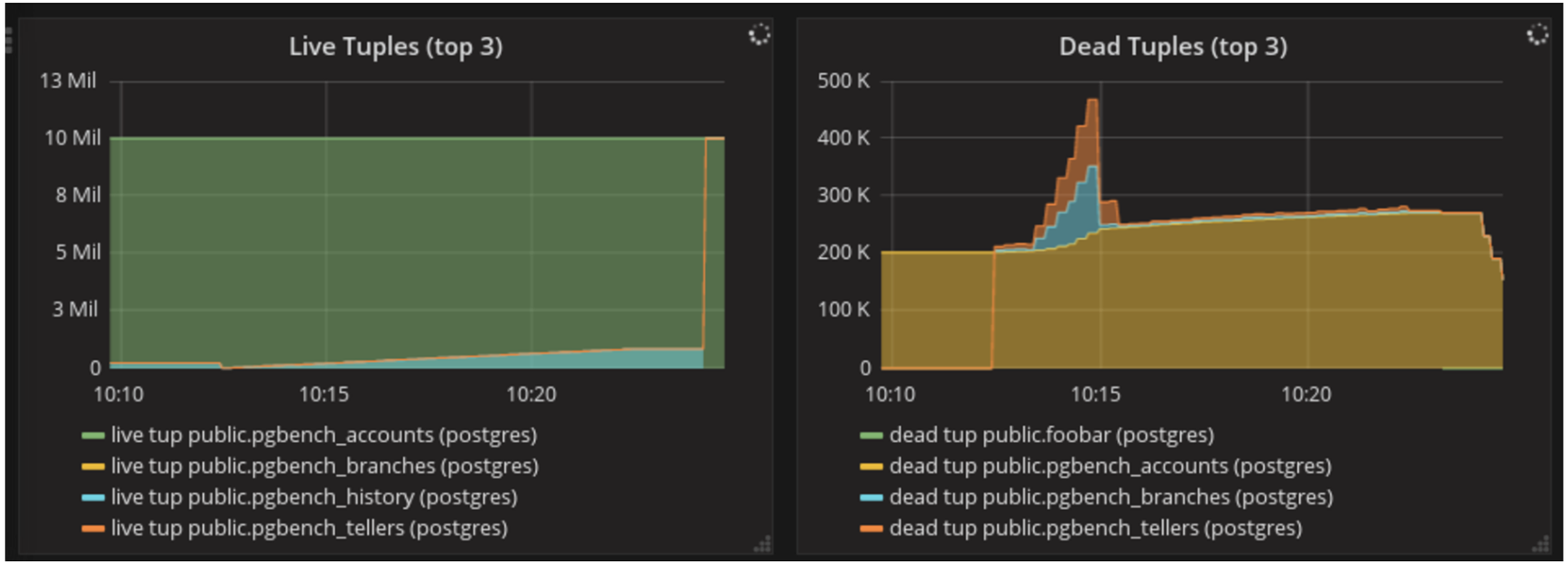
-

Analytics

Visualization

Monitoring

Dashboard with data from different sources



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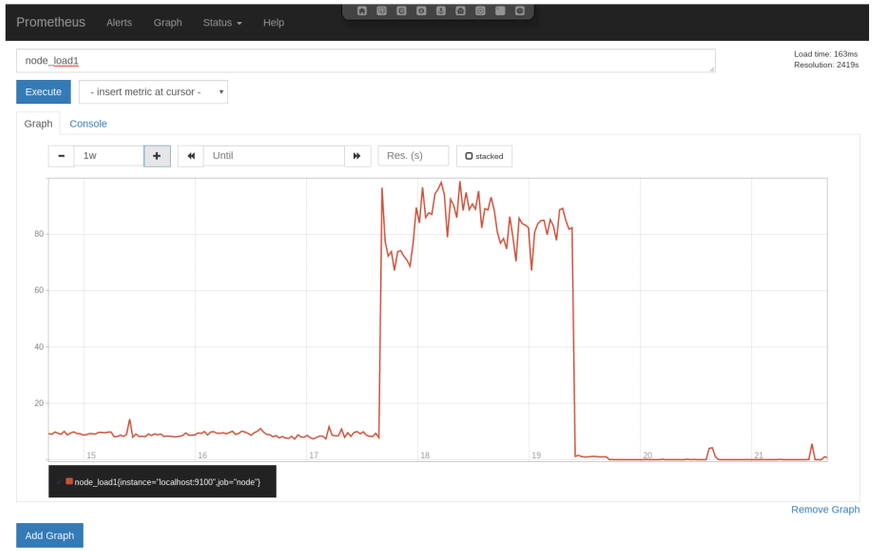
Prometheus

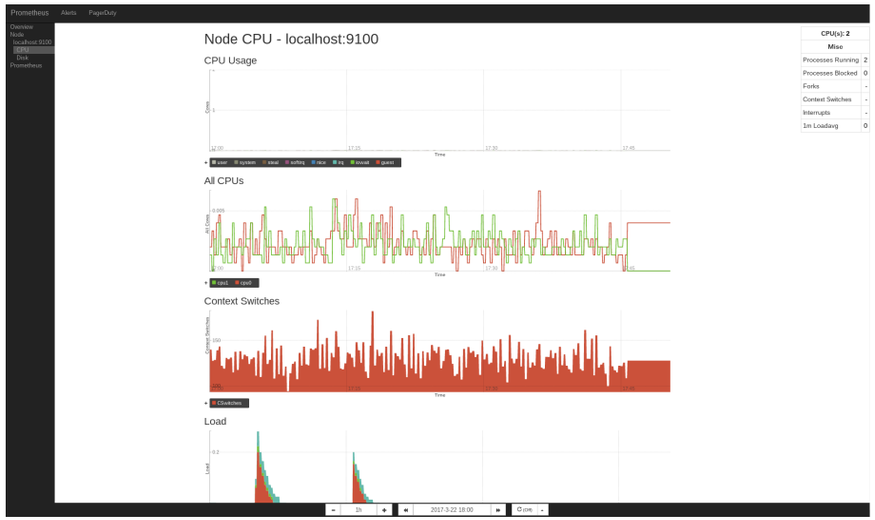
-

Monitoring



Collect and display metrics

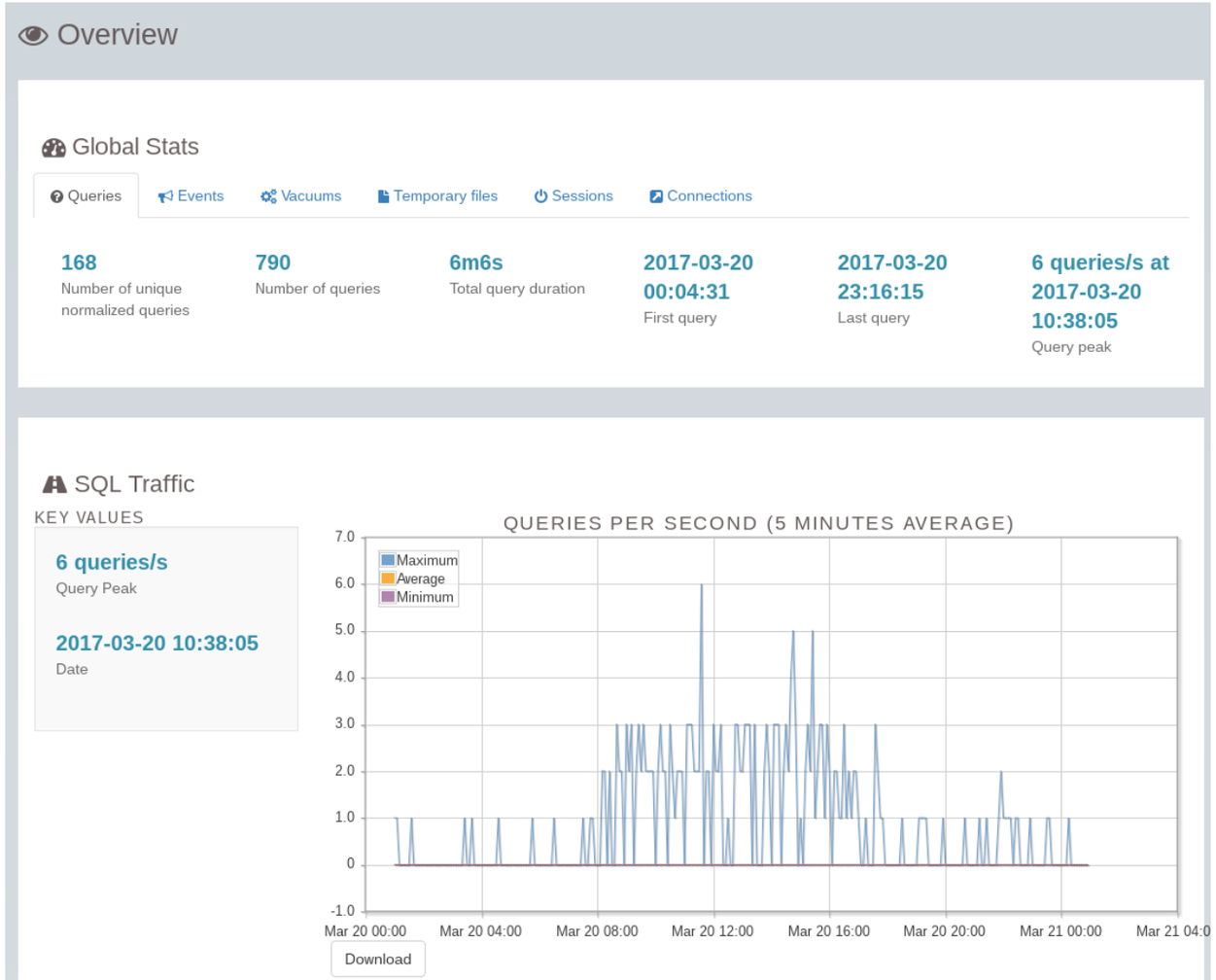
Time series



pgBadger

-

Reporting



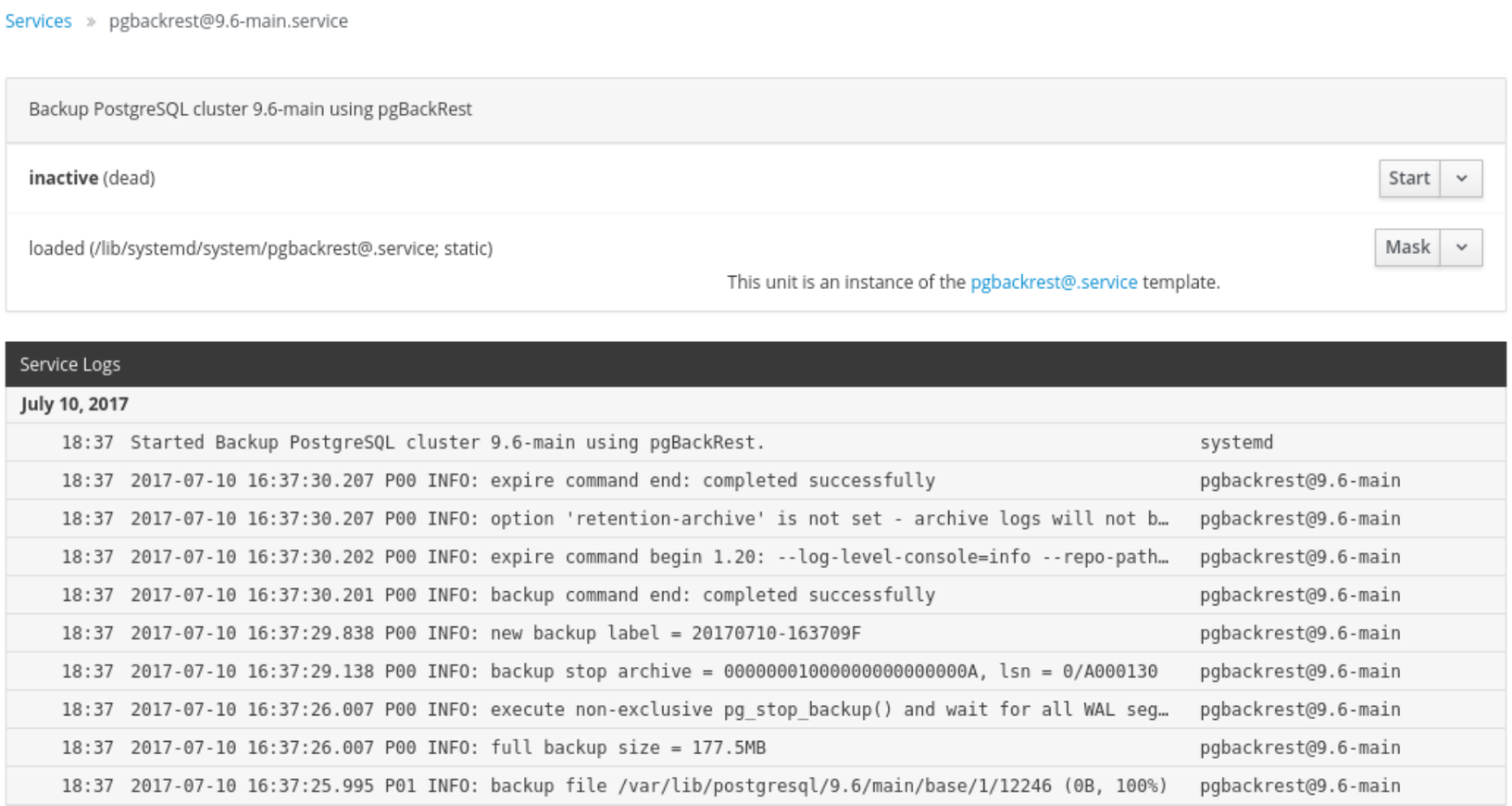
pgBackRest

-

Backup

&

Restore



Services » pgbackrest@9.6-main.service

Backup PostgreSQL cluster 9.6-main using pgBackRest

inactive (dead) Start

loaded (/lib/systemd/system/pgbackrest@.service; static) Mask

This unit is an instance of the pgbackrest@.service template.

Service Logs

July 10, 2017

```
18:37  Started Backup PostgreSQL cluster 9.6-main using pgBackRest.                          systemd
18:37  2017-07-10 16:37:30.207 P00 INFO: expire command end: completed successfully          pgbackrest@9.6-main
18:37  2017-07-10 16:37:30.207 P00 INFO: option 'retention-archive' is not set - archive logs will not b…  pgbackrest@9.6-main
18:37  2017-07-10 16:37:30.202 P00 INFO: expire command begin 1.20: --log-level-console=info --repo-path…  pgbackrest@9.6-main
18:37  2017-07-10 16:37:30.201 P00 INFO: backup command end: completed successfully          pgbackrest@9.6-main
18:37  2017-07-10 16:37:29.838 P00 INFO: new backup label = 20170710-163709F                 pgbackrest@9.6-main
18:37  2017-07-10 16:37:29.138 P00 INFO: backup stop archive = 000000010000000000000000A, lsn = 0/A000130  pgbackrest@9.6-main
18:37  2017-07-10 16:37:26.007 P00 INFO: execute non-exclusive pg_stop_backup() and wait for all WAL seg…  pgbackrest@9.6-main
18:37  2017-07-10 16:37:26.007 P00 INFO: full backup size = 177.5MB                          pgbackrest@9.6-main
18:37  2017-07-10 16:37:25.995 P01 INFO: backup file /var/lib/postgresql/9.6/main/base/1/12246 (0B, 100%)  pgbackrest@9.6-main
```

Additional Tools

- Shell In A Box – Web based terminal
- Ferm – Firewalling toolkit for creating iptables rules
- Tmate – Remote control
- Etckeeper – Configuration revisioning

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Roadmap

-

Always

100%

Open

Source

- Port to RPM
- Central control of multiple instances
- Optimized cloud versions
- Hot Stand-By
- Failover

PGApi

-

Next

Version

- Remote management of PostgreSQL instances
- Cluster-Management:
  - Create / Drop
  - Start / Stop / Restart / Reload / Promote
- Cluster configuration: Port / shared_buffers / …
- pg_hba management
- Standby creation via pg_basebackup
- Management of pgBackrest tasks
- Portal re-design for new functionality

Michael

Meskes

Taking Care of the Elephant

https://elephant-shed.io/