

External Monitoring

How to monitor Valkey/Redis with PMM



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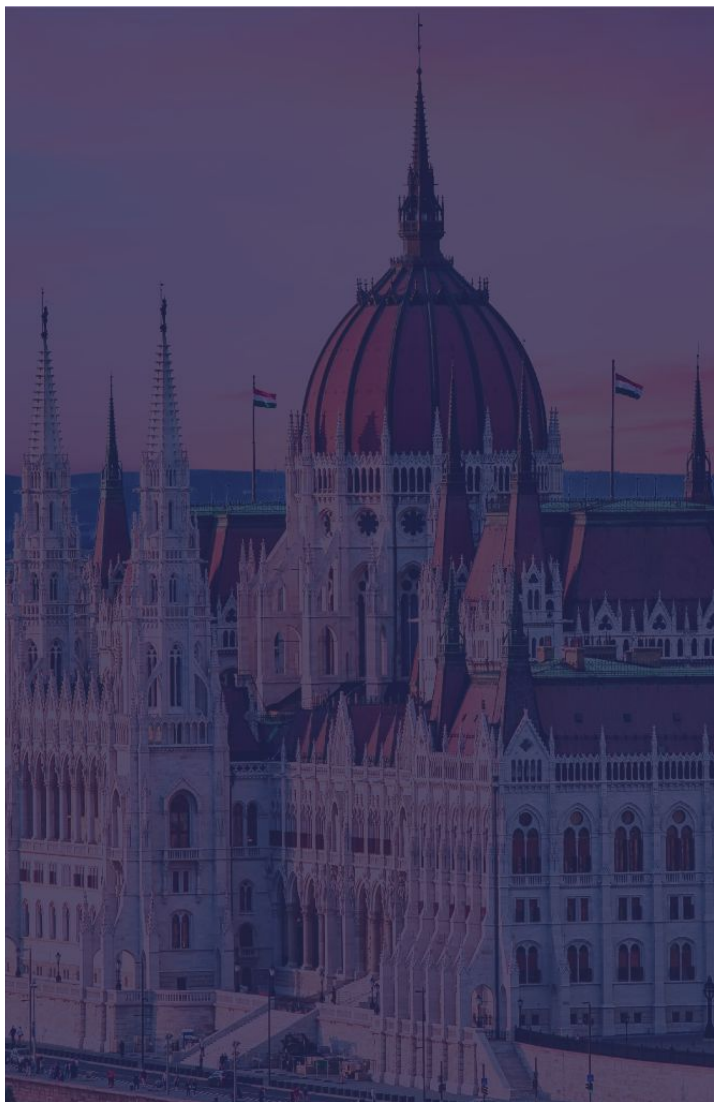
Budapest, Hungary 2024

PERCONA
UNIVERSITY

Open Source Databases Meetup

In partnership with





Agenda:

- Quick PMM introduction
- External Monitoring
- Demo



Database Monitoring

- **Real-time Processing:**
 - Ensuring insights are provided in real-time.
- **Root Cause Analysis:**
 - Quickly identifying and resolving performance issues.
- **Expertise:**
 - Need for deep knowledge of database technology and monitoring tools.
- **Overhead:**
 - Balancing monitoring detail with performance impact.



Percona Monitoring and Management

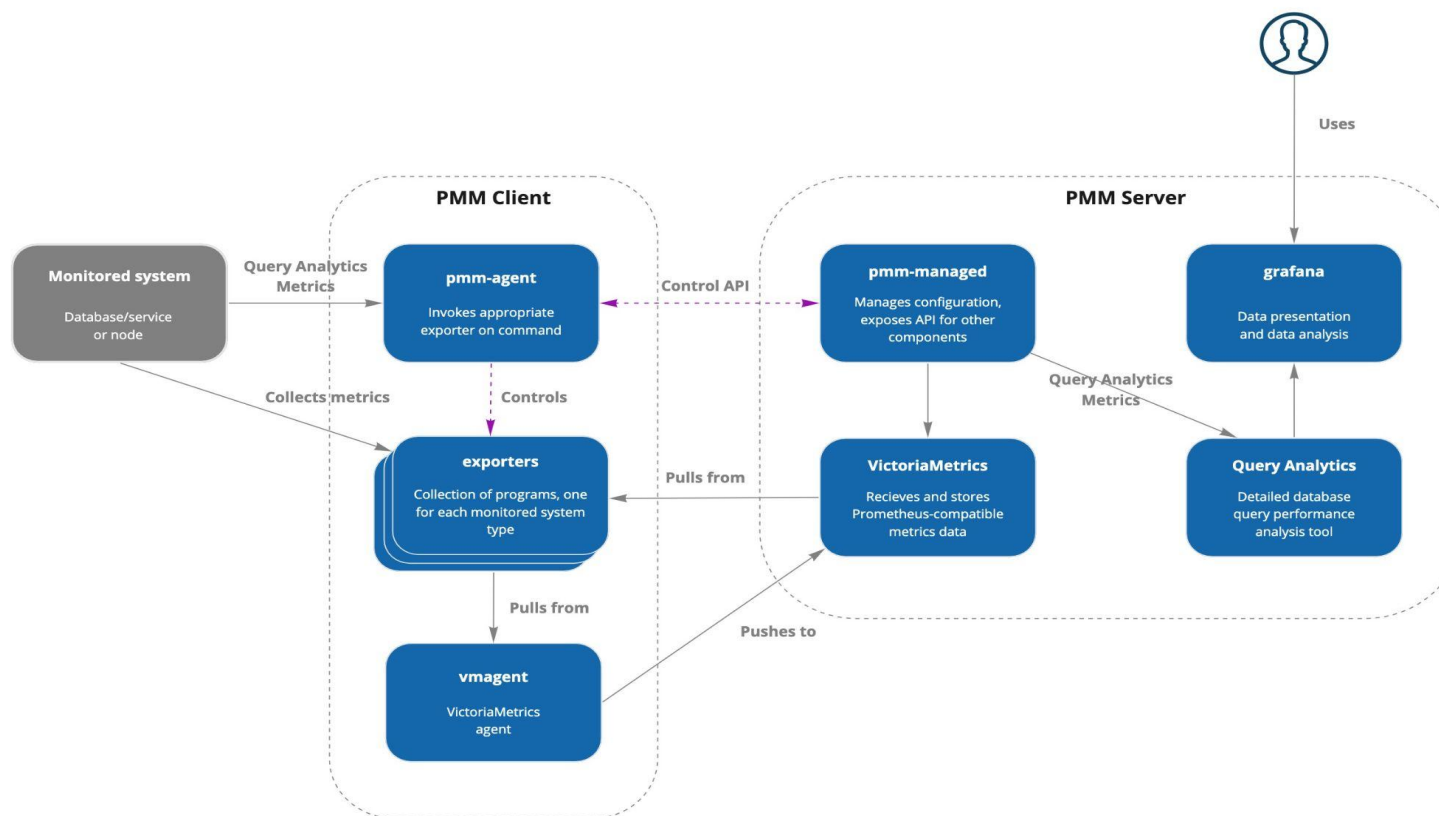
- Purpose build Monitoring/Observability platform focused on Databases
- 100% Free and Open Source
- Roll your own, On Prem and In the Cloud
- Supports MySQL, MongoDB, PostgreSQL
- Supports Cloud Based database deployments such as Amazon RDS



Percona Monitoring and Management

- **Performance Optimization:**
 - PMM provides detailed performance insights, enabling DBAs to identify and resolve performance bottlenecks.
- **Monitoring and Alerts:**
 - It offers continuous monitoring with customizable alerts to ensure database availability and performance.
- **Query Analytics:**
 - PMM includes advanced query analytics to help analyze and improve query performance.
- **Advisors:**
 - It includes features for security monitoring and ensuring compliance with best practices.

PMM Client-Server Interaction





Built in Exporters

- **node_exporter** is an exporter that collects general system metrics.
- **mysqld_exporter** is an exporter that collects MySQL server metrics.
- **mongodb_exporter** is an exporter that collects MongoDB server metrics.
- **postgres_exporter** is an exporter that collects PostgreSQL performance metrics.
- **proxysql_exporter** is an exporter that collects ProxySQL performance metrics.
- **rds_exporter** is an exporter that collects Amazon RDS performance metrics.
- **azure_database_exporter** is an exporter that collects Azure database performance metrics.

External Exporters

Databases

- Aerospike exporter
- AWS RDS exporter
- ClickHouse exporter
- Consul exporter (official)
- Couchbase exporter
- CouchDB exporter
- Druid Exporter
- Elasticsearch exporter
- EventStore exporter
- IoTDB exporter
- KDB+ exporter
- Memcached exporter (official)
- MongoDB exporter
- MongoDB query exporter
- MongoDB Node.js Driver exporter
- MSSQL server exporter
- MySQL router exporter
- MySQL server exporter (official)
- OpenTSDB Exporter
- Oracle DB Exporter
- PgBouncer exporter
- PostgreSQL exporter
- Presto exporter
- ProxySQL exporter
- RavenDB exporter
- Redis exporter
- RethinkDB exporter
- SQL exporter
- Tarantool metric library
- Twemproxy

Hardware related

- apcupsd exporter
- BIG-IP exporter
- Bosch Sensortec BMP/BME exporter
- Collins exporter
- Dell Hardware OMSA exporter
- Disk usage exporter
- Fortigate exporter
- IBM Z HMC exporter
- IoT Edison exporter
- InfiniBand exporter
- IPMI exporter
- knxd exporter
- Modbus exporter
- Netgear Cable Modem Exporter
- Netgear Router exporter
- Network UPS Tools (NUT) exporter
- Node/system metrics exporter (official)
- NVIDIA GPU exporter
- ProSAFE exporter
- Waveplus Radon Sensor Exporter
- Weathergoose Climate Monitor Exporter
- Windows exporter
- Intel® Optane™ Persistent Memory Controller Exporter

Issue trackers and continuous integration

- Bamboo exporter
- Bitbucket exporter
- Confluence exporter
- Jenkins exporter
- JIRA exporter

Messaging systems

- Beanstalkd exporter
- EMQ exporter
- Gearman exporter
- IBM MQ exporter
- Kafka exporter
- NATS exporter
- NSQ exporter
- Mirth Connect exporter
- MQTT blackbox exporter
- MQTT2Prometheus
- RabbitMQ exporter
- RabbitMQ Management Plugin exporter
- RocketMQ exporter
- Solace exporter

Storage

- Ceph exporter
- Ceph RADOSGW exporter
- Gluster exporter
- GPFS exporter
- Hadoop HDFS FSImage exporter
- HPE CSI info metrics provider
- HPE storage array exporter
- Lustre exporter
- NetApp E-Series exporter
- Pure Storage exporter
- ScaleIO exporter
- Tivoli Storage Manager/IBM Spectrum Protect exporter

HTTP

- Apache exporter
- HAProxy exporter (official)
- Nginx metric library
- Nginx VTS exporter
- Passenger exporter
- Squid exporter
- Tinyproxy exporter
- Varnish exporter
- WebDriver exporter

APIs

- AWS ECS exporter
- AWS Health exporter
- AWS SQS exporter
- Azure Health exporter
- BigBlueButton
- Cloudflare exporter
- Cryptowat exporter
- DigitalOcean exporter
- Docker Cloud exporter
- Docker Hub exporter
- Fastly exporter
- GitHub exporter
- Gmail exporter
- InstaClustr exporter
- Mozilla Observatory exporter
- OpenWeatherMap exporter
- Pagespeed exporter
- Rancher exporter
- Speedtest exporter
- Tankerkönig API Exporter

There are even more. Visit

<https://prometheus.io/docs/instrumenting/exporters/>



Demo Time

- Installing PMM Server
- Installing PMM Client
- Setup Database Monitoring
- Have a quick look around in PMM
- Setup External Monitoring for Valkey/Redis



Executed Commands

Install PMM Server:

```
> curl -fsSL https://www.percona.com/get/pmm | /bin/bash
```

Setup DB node:

```
> sudo apt update  
> curl -O https://repo.percona.com/apt/percona-release_latest.generic_all.deb  
> sudo apt install gnupg2 lsb-release  
> sudo dpkg -i /home/ubuntu/percona-release_latest.generic_all.deb  
> sudo apt update  
> sudo percona-release setup ps80  
> sudo apt install percona-server-server  
> sudo apt-get install pmm2-client  
> sudo apt-get install redis-server
```



Setup PMM client

```
> sudo pmm-admin config --server-insecure-tls --server-url=https://admin:XXX@YYYYYYY
> CREATE USER 'pmm'@'localhost' IDENTIFIED BY 'XXXX' WITH MAX_USER_CONNECTIONS 10;
> GRANT SELECT, PROCESS, SUPER, REPLICATION CLIENT, RELOAD, BACKUP_ADMIN ON *.* TO
'pmm'@'localhost';
> sudo pmm-admin add mysql --username=pmm --password=XXXX --query-source=perfschema
```



Setup Redis

- > `wget https://github.com/oliver006/redis_exporter/releases/download/v1.61.0/redis_exporter-v1.61.0.linux-amd64.tar.gz`
- > `sudo groupadd --system prometheus`
- > `sudo useradd -s /sbin/nologin --system -g prometheus prometheus`
- > `sudo cp redis_exporter-v1.61.0.linux-amd64/redis_exporter /usr/local/bin/`



Setup Redis

```
> sudo vim /etc/systemd/system/redis_exporter.service
```

```
[Unit]
Description=Prometheus
Documentation=https://github.com/oliver006/redis_exporter
Wants=network-online.target
After=network-online.target
```

```
[Service]
Type=simple
User=prometheus
Group=prometheus
ExecReload=/bin/kill -HUP $MAINPID
ExecStart=/usr/local/bin/redis_exporter \
  --log-format=txt \
  --namespace=redis \
  --web.listen-address=:9121 \
  --web.telemetry-path=/metrics
```

```
SyslogIdentifier=redis_exporter
Restart=always
```

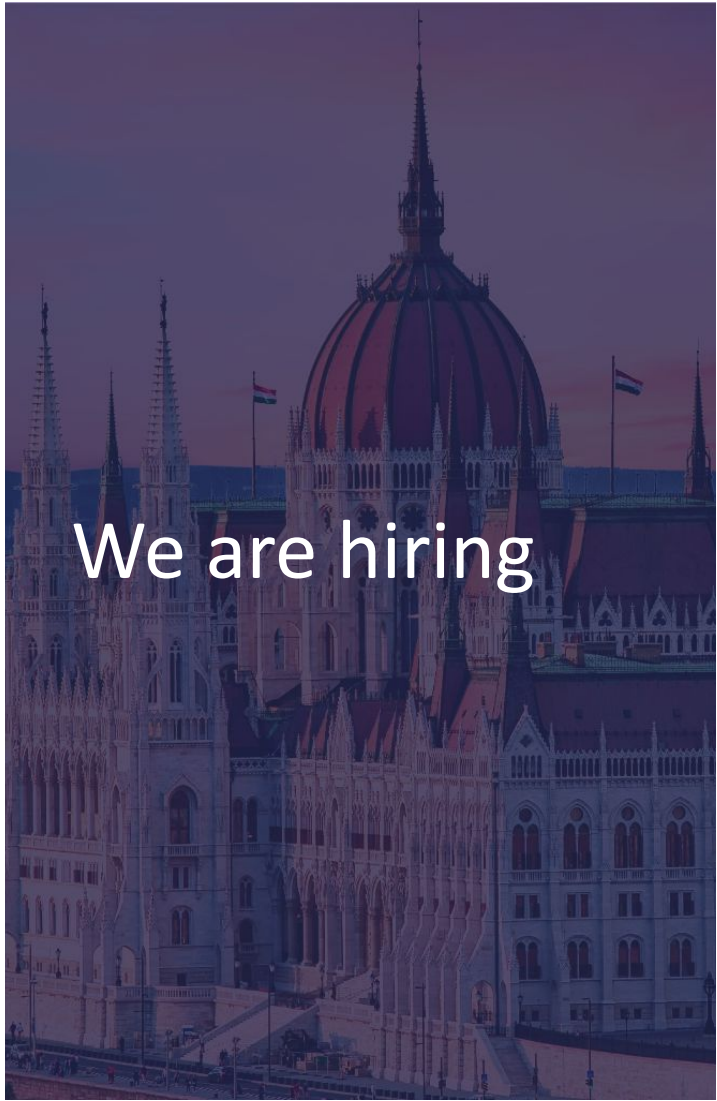
```
[Install]
WantedBy=multi-user.target
```

```
> sudo systemctl daemon-reload
> sudo systemctl start redis_exporter
> sudo systemctl status redis_exporter
```



Add Redis Exporter to PMM

```
> pmm-admin add external --service-name=redis --listen-port=9121
```



We are hiring

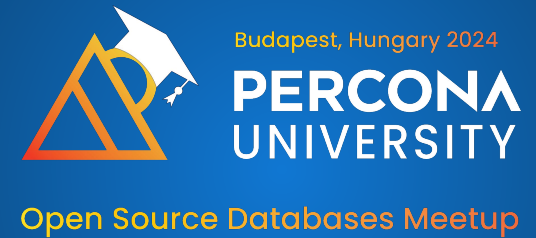
[Redis/Valkey Engineer](#)

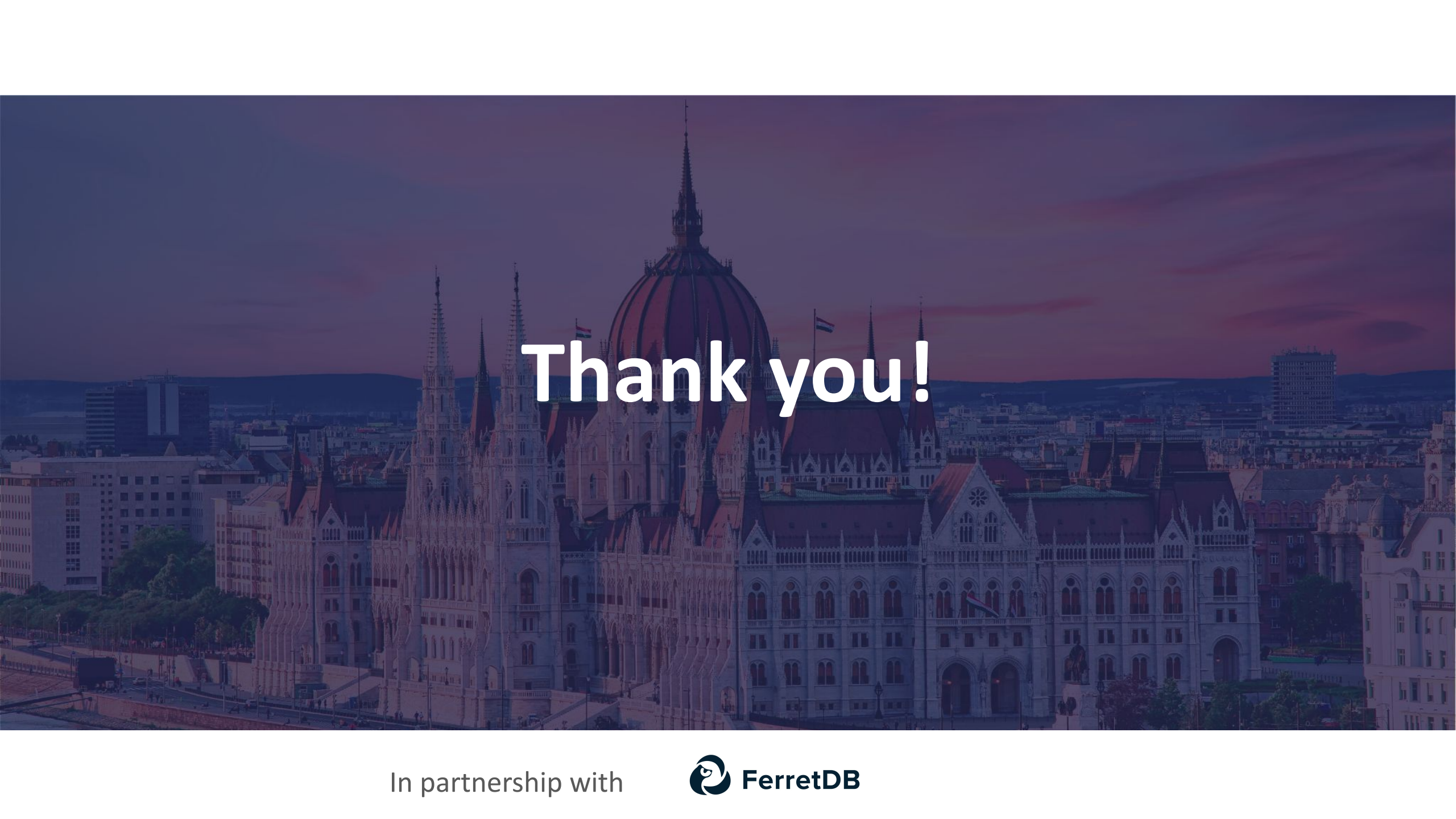
[Redis/Valkey Tech Lead](#)

[C/C++ Engineer](#)

[PostgreSQL Consultant](#)

[MongoDB Consultant](#)



A wide-angle photograph of the Hungarian Parliament Building in Budapest at dusk. The building's iconic red-tiled dome and Gothic architecture are silhouetted against a deep purple and blue twilight sky. The city lights and other buildings of Budapest are visible in the background and foreground.

Thank you!

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