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# TRUSTNEST MANAGED DATABASES

# AGENDA

1. Our mission & key figures & maturity
2. Technical Stack & Rationale
3. Our Services
4. Cycle 7 KPI & Learnings
   1. Engineering
   2. Operation
   3. Business

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# MISSION & MATURITY

# SERVICE DESCRIPTION

## WHO

- Project Design Authority
- Software Engineer
- Security Devops

## WHAT

- Provide a competitive database service offer
- Improve performance and stability of using Azure PaaS databases
- Extend azure PaaS database service catalog

## HOW

- Managed services (SLA, Upgrades, support)
- Dedicated cloud resources to the project
- Mutualize transversal cloud resources (CSOC, Infrastructure as Code, Monitoring)
- Provide indexing databases based on Opensearch
- Use mature observability stack

## USE CASES AND EXAMPLES

- Perform a data exploration and data visualization
- Optimize stability and performance of databases
- Optimize cost of a digital product

## BENEFITS

- Reduce data exploration and visualization by 30%
- Reduce time to investigate performance issues and latencies by 80%
- Reduce Trustnest billing until 70%

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# CURRENT MATURITY – SEPTEMBER 2022

**9** instances of DBAAS:

- 3 DBAAS opensearch in **production** *(DTP from AVS, Digital Test Bench from TGS, URS Analytics from URS)*
- 5 DBAAS opensearch sandbox
- 1 DBAAS postgresql sandbox

Maturity:

- DBAAS Opensearch in General Availability
- DBAAS Postgresql and CosmoDB in Early Adopter

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# Mission: Provide a **dedicated*** Databases up to **Production.**

- Provide the best performances (avoiding side effect)
- Facilitate customization (sizing, region, custom integration with third parties)

- Implement gradual security measures (according to the project phase)
- Enhance development activities (engineering tool integration, BYOD)
- Help to go to production by accepting commitments (Shared responsibilities)
- Contribute to project scalability (scalable pricing model)

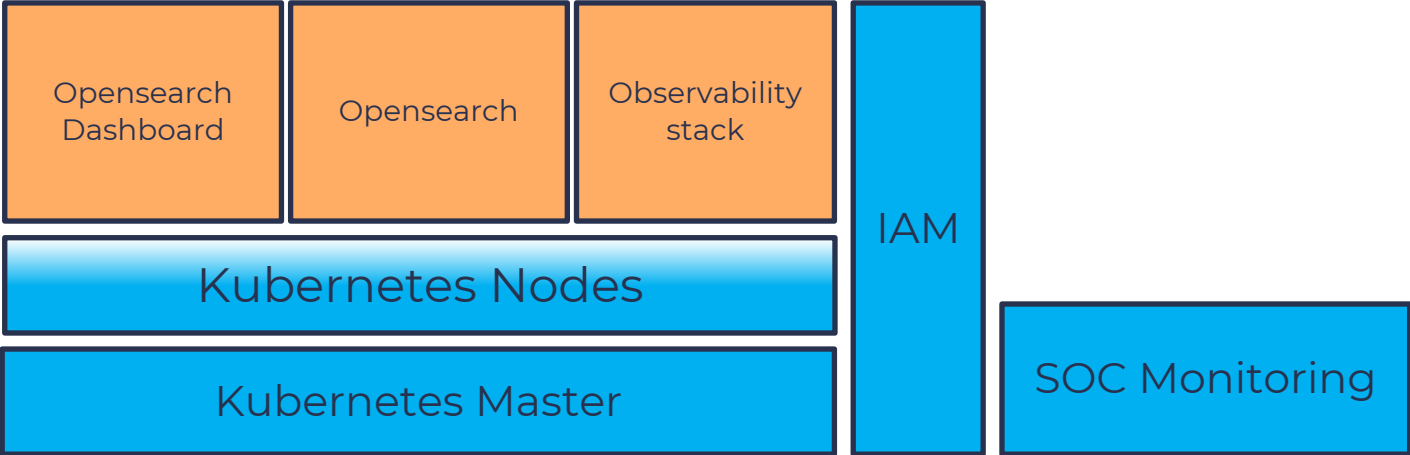*managed databases, ie deployed in the trustnest dbaas infrastructure

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TECHNICAL STACK & RATIONALE

# RATIONAL

1. First choice: Use Azure PaaS Databases by default
   - Benefit from Azure roadmap
   - Provide Ready to use service in short term
   - Delegate low level operation to Microsoft
2. Second: Use Component of the shelf (COTS) over Kubernetes
   - Benefit from k8saas roadmap and maturity
   - Delegate low level operation to k8saas team
3. Third: Use Component over IaaS Landing Zone
   - Special case

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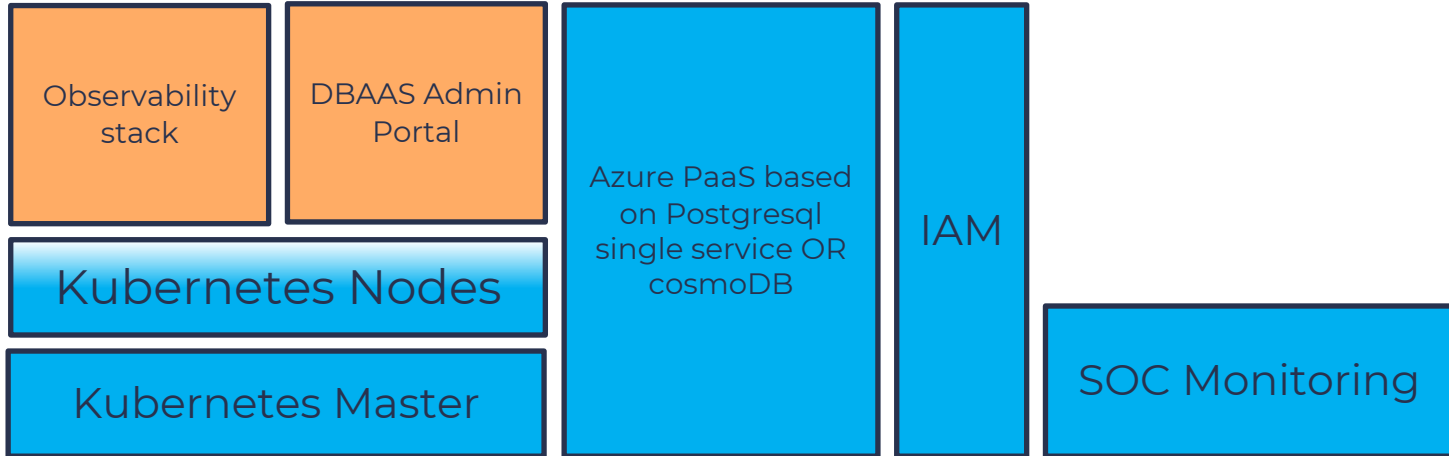# WHAT IS TRUSTNEST DATABASE OPENSEARCH ?

AZURE

Open Source

| Opensearch Dashboard | Opensearch | Observability stack |
|---|---|---|

Kubernetes Nodes

Kubernetes Master

IAM

SOC Monitoring

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# WHAT IS TRUSTNEST DATABASE POSTGRESQL & COSMODB ?

AZURE

Open Source

Observability stack

DBAAS Admin Portal

Kubernetes Nodes

Kubernetes Master

Azure PaaS based on Postgresql single service OR cosmoDB

IAM

SOC Monitoring

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# HOW TO CHOOSE THE RIGHT DATABASE FOR YOUR APPLICATION ?

| Consider Postgresql when… | Consider CosmosDB when… | Consider Opensearch when… |
|---|---|---|
| Your **data is highly structured**, and that structure doesn't change frequently | You're working with **large amount**s of **unstructured data** that doesn't fit the relational model | You're working with unstructured application **traces, events and logs** |
| You support **transaction-oriented** systems | You require the flexibility of a dynamic schema or want **more choice over the data model** | You want to build your structure around **indexes** |
| You require a high degree of data **integrity** and security | You require a database system that can be **scaled horizontally** | You want to easily create **dashboards**, based on search patterns |
| You routinely perform **complex queries** | You want to **streamline development** and avoid the overhead of a more structured approach | You want to **search in plain text** in your data for discovering patterns, deviations, and enhance analytics |

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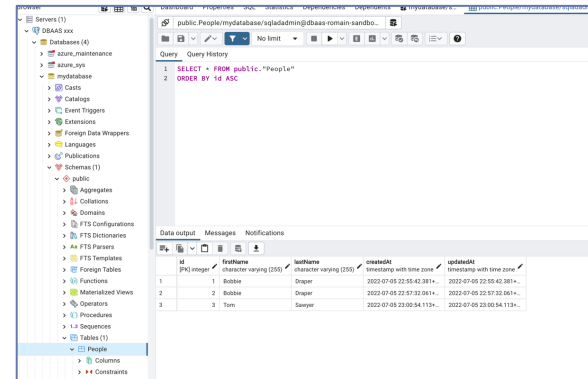
# DBAAS OVER AZURE DATABASES

## Observability

- Azure: 50 Metrics

- DBAAS: 200+ metrics

- Per customer metrics + single pane of glass

## Operability

- Postgresql administration with DBAAS managed pgAdmin
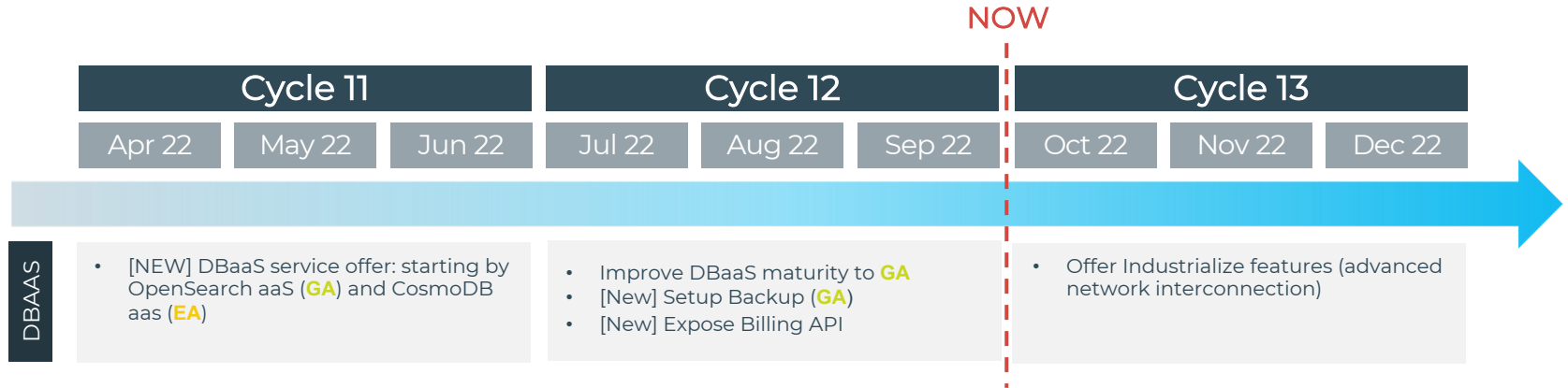
- Continuous backups

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# OUR SERVICES

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# DBAAS SERVICE OFFER

| | Postgresql Single Server | CosmoDB | Opensearch |
|---|---|---|---|
| Description | Relational database | Non relational database | Indexing database |
| Discover | Fixed fees free for 6 months | | |
| Innovate | (on demand) | | |
| Industrialize | *Not available* | *Not available* | (on demand) |

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# DBAAS LAST DELIVERIES & ROADMAP

**EA:** Early Access
**GA:** Global Availability

Managed Cloud

**NOW**

| Cycle 11 | | | Cycle 12 | | | Cycle 13 | | |
|---|---|---|---|---|---|---|---|---|
| Apr 22 | May 22 | Jun 22 | Jul 22 | Aug 22 | Sep 22 | Oct 22 | Nov 22 | Dec 22 |

**DBAAS**

- [NEW] DBaaS service offer: starting by OpenSearch aaS (**GA**) and CosmoDB aas (**EA**)

- Improve DBaaS maturity to **GA**
- [New] Setup Backup (**GA**)
- [New] Expose Billing API

- Offer Industrialize features (advanced network interconnection)

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