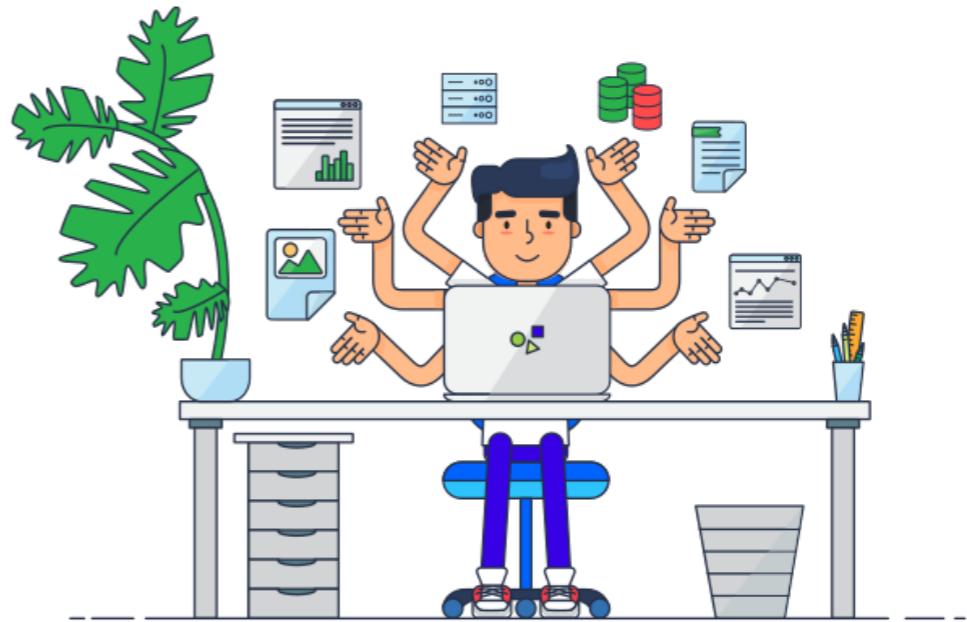


Autonomous Databases



Ndongo Tonux SAMB

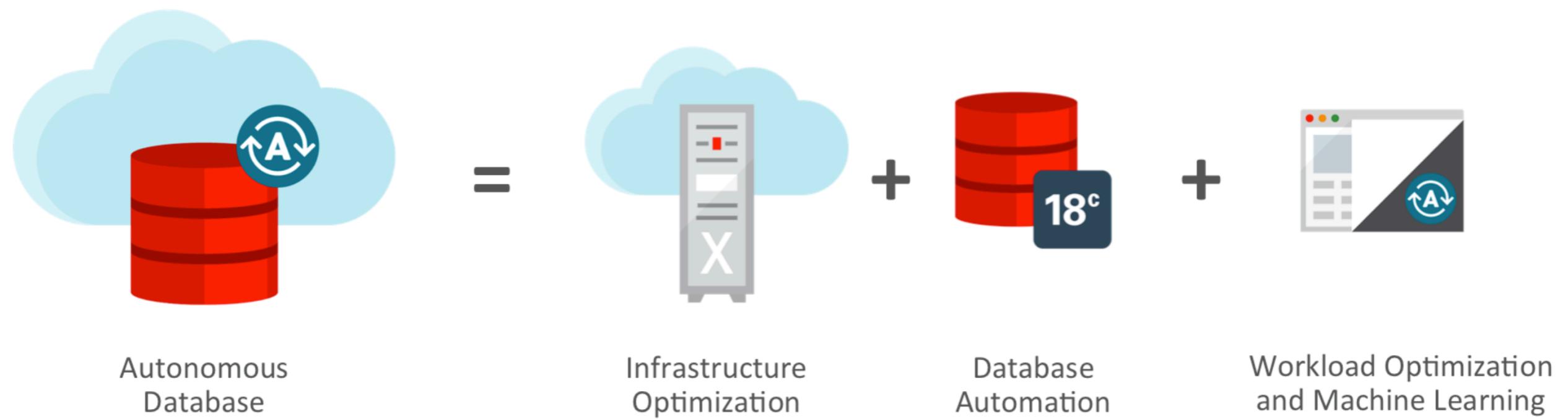
Why autonomous?



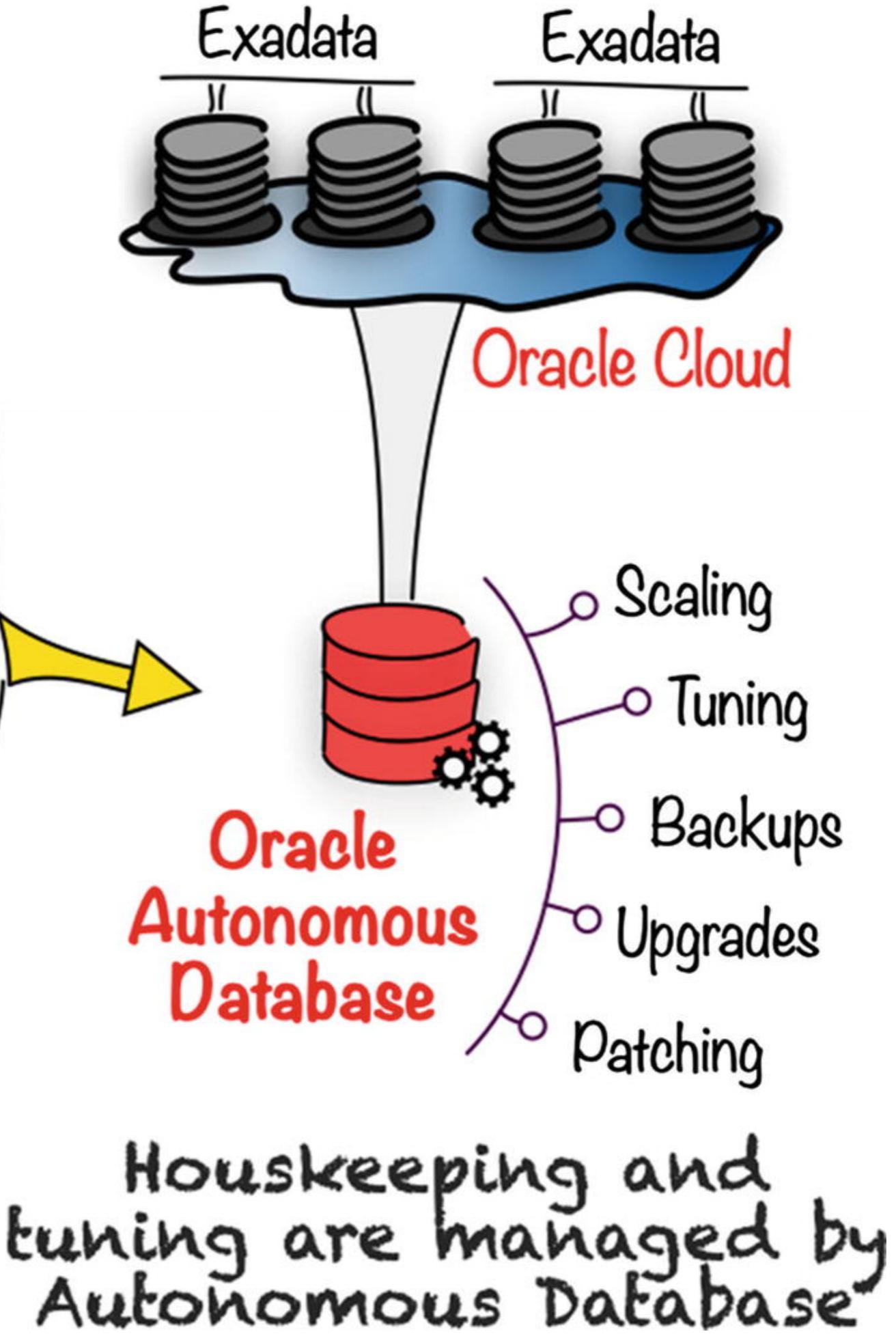
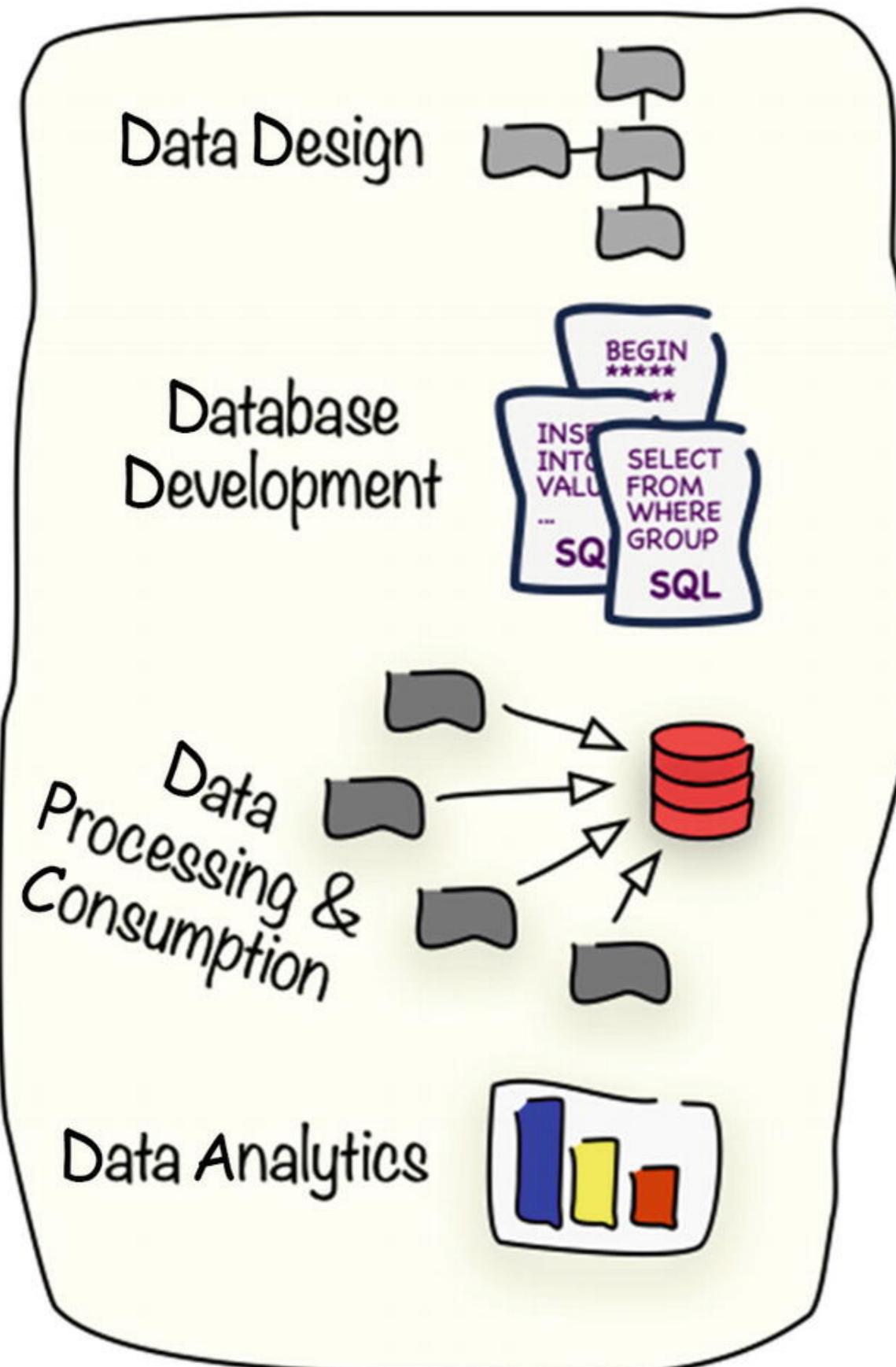
• 72% of IT budgets are spent on maintenance rather than innovation.

A big part of this maintenance burden involves monitoring, tuning, updating, and securing data management systems

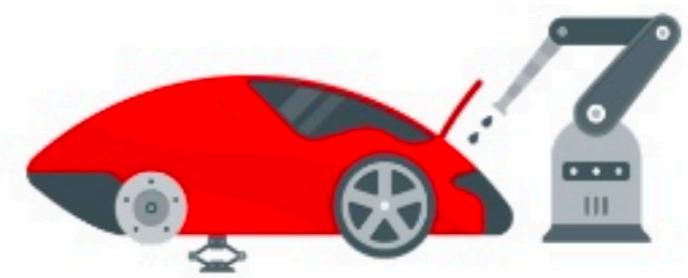
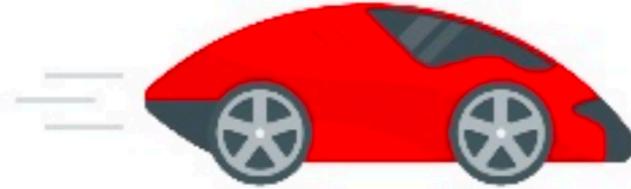
Autonomous Database?



User is free to focus
at work with data



3 principles



Self-Driving

Users simply define workloads and policies, and database automation makes them happen.

Save on Human Labor

Self-Securing

Protection from both external attacks and internal users.

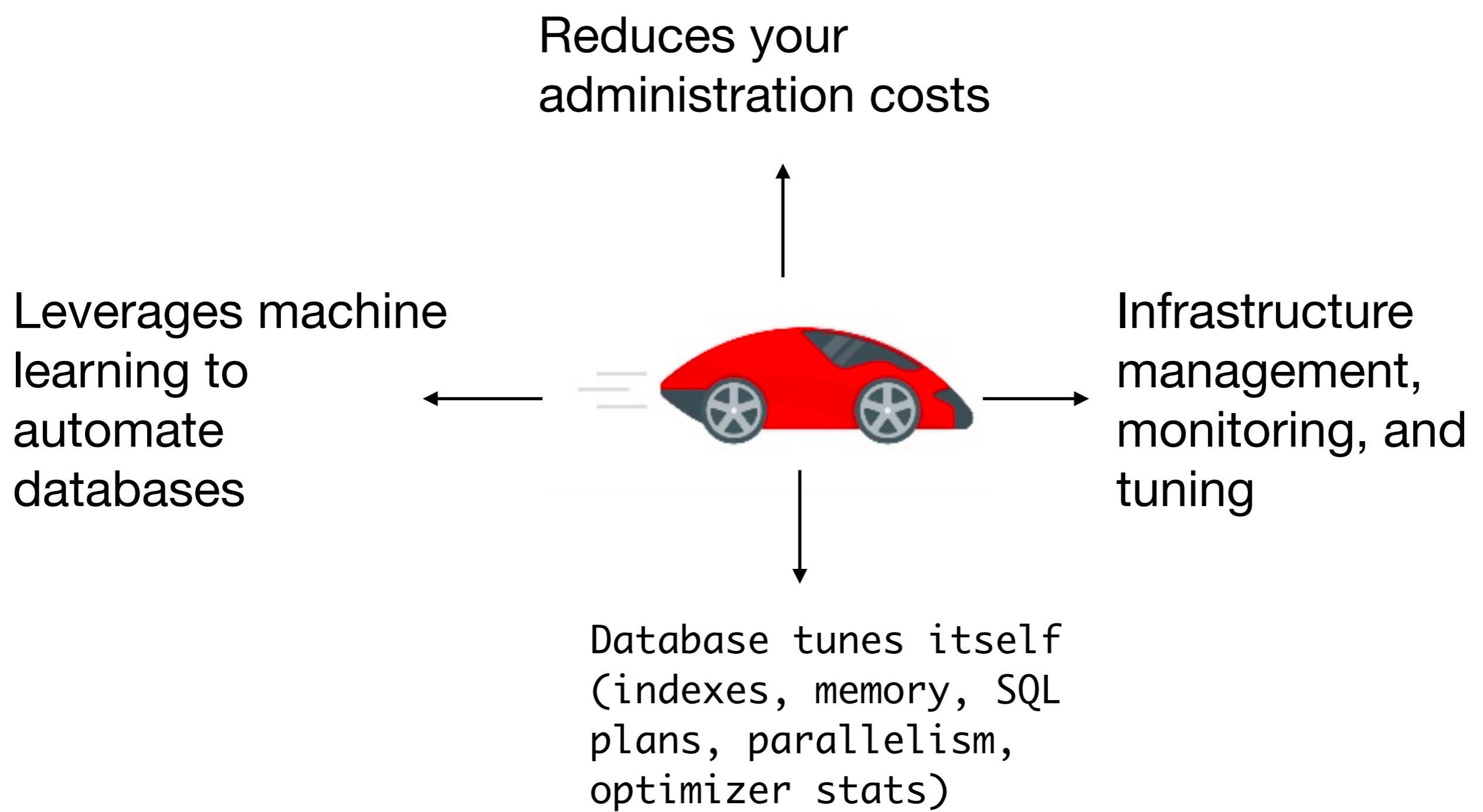
Prevent Human Error

Self-Repairing

Automated protection from all downtime.

No Human Intervention

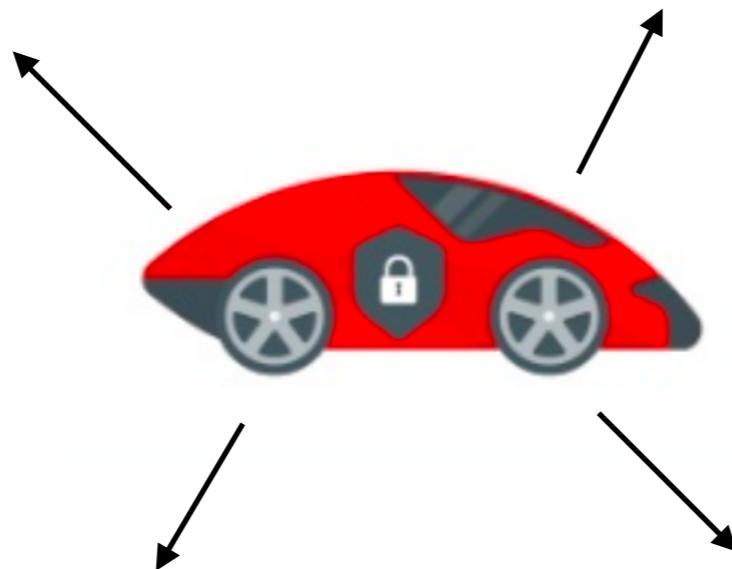
Self driving



Self Securing

Isolates operational users from application data

Ensures up-to-date security patching via software update automation



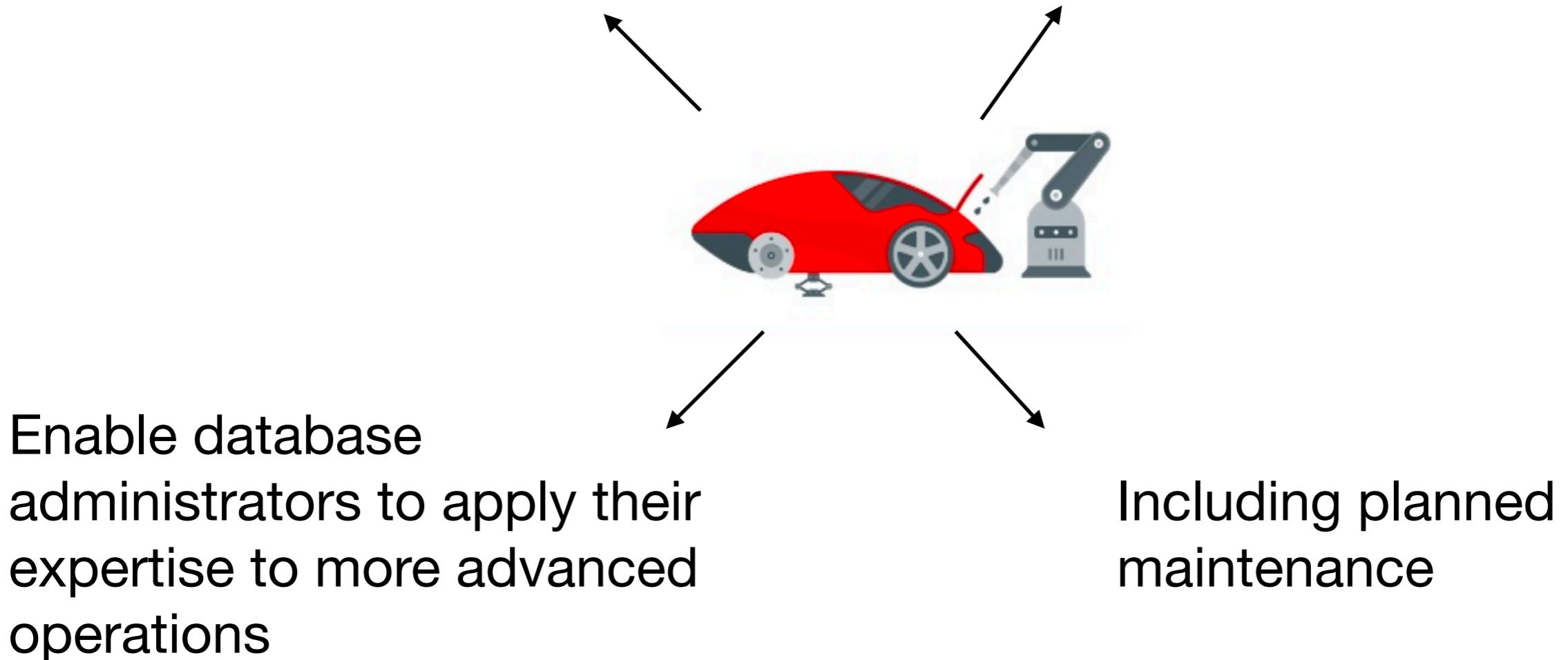
Protects from both external attacks and malicious internal users

Enable database administrators to apply their expertise to more advanced operations

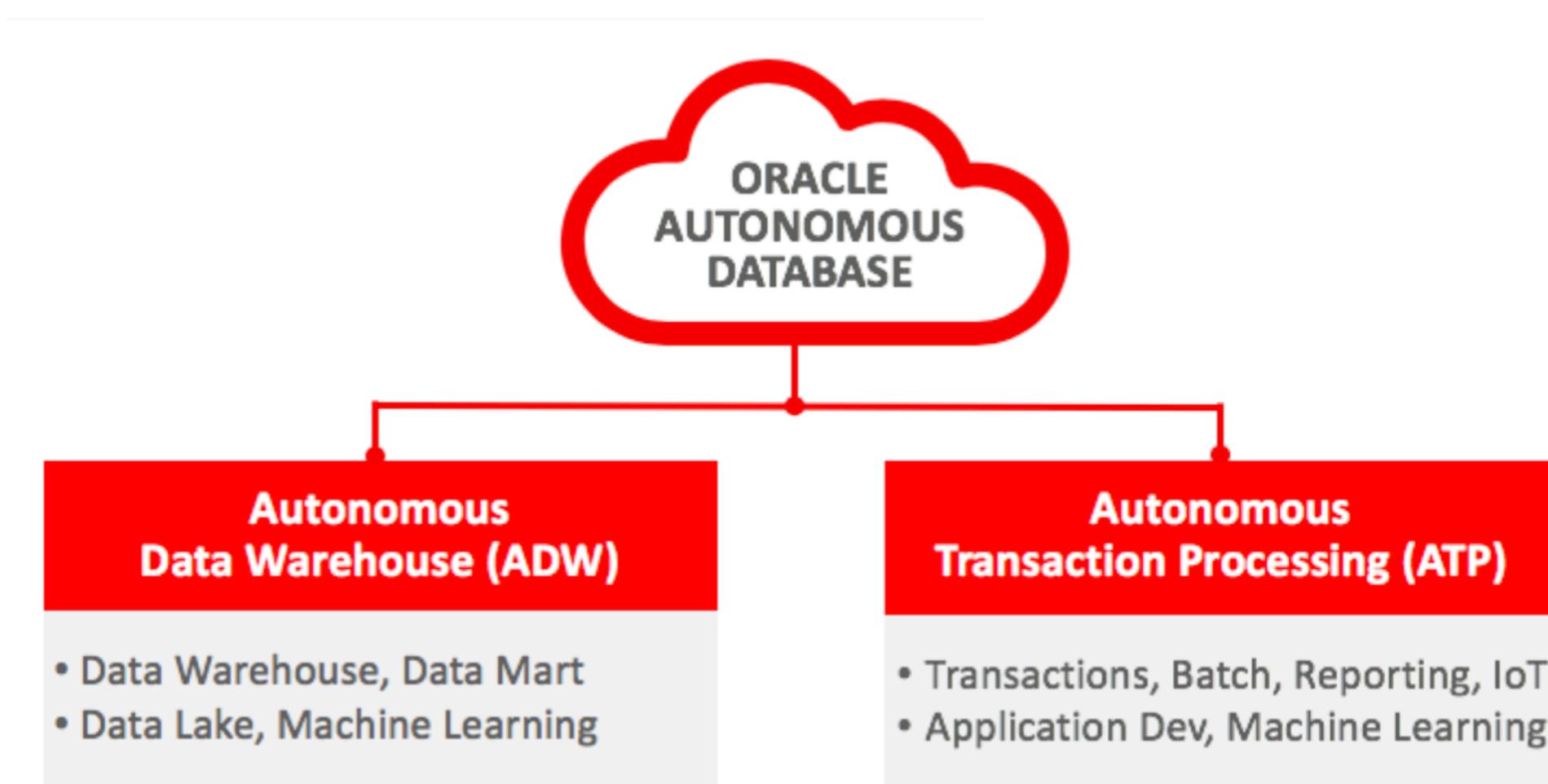
Self Repairing

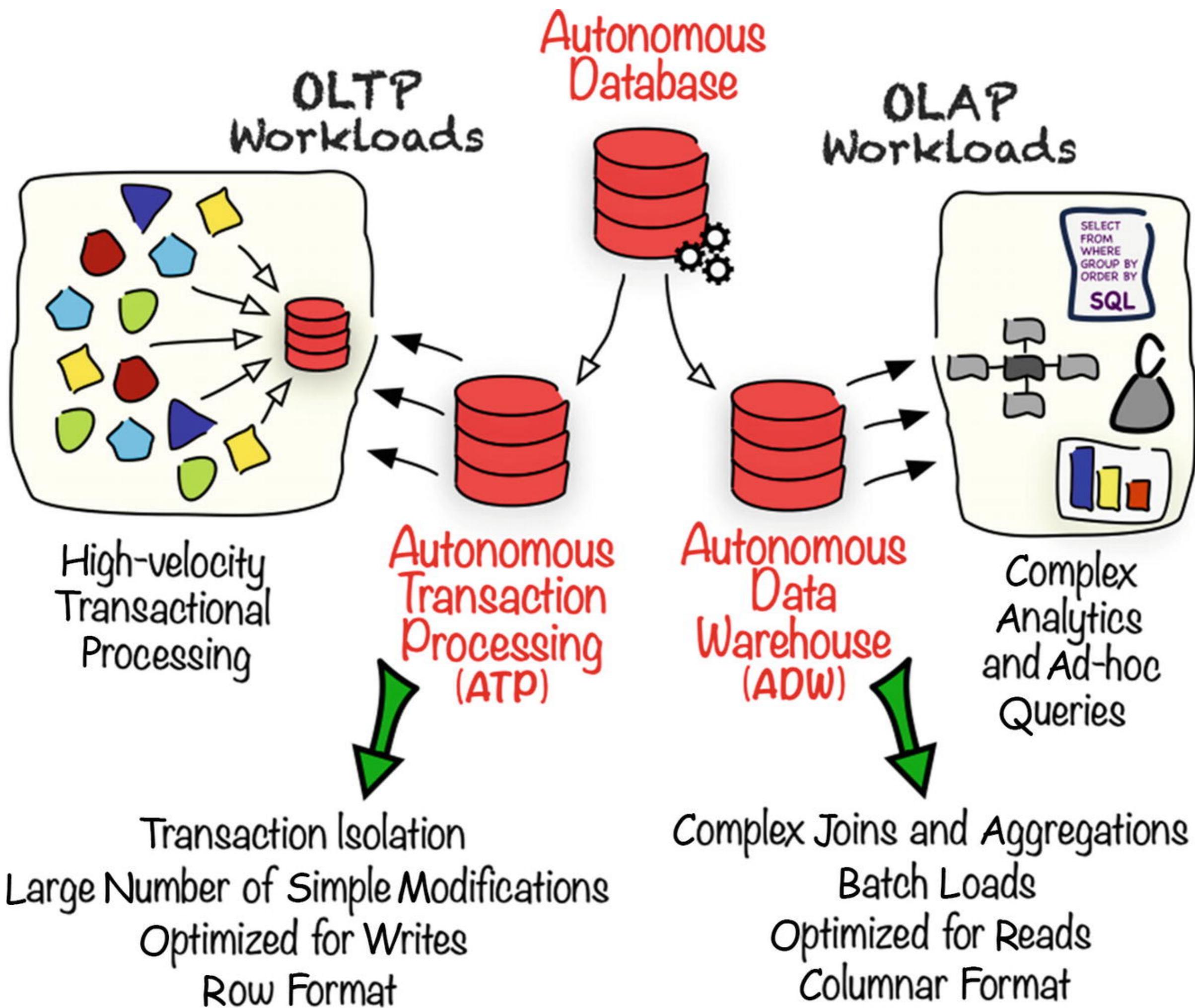
Protects from all downtime

Enables online application schema updates.



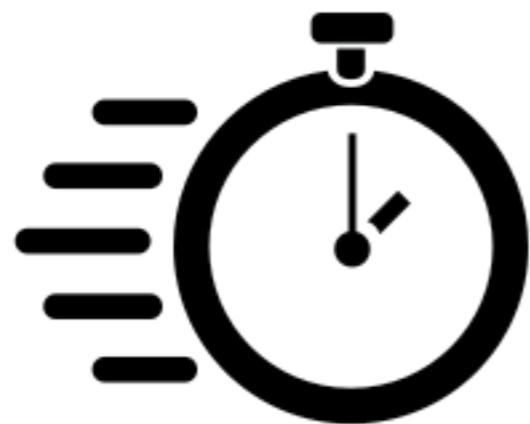
Autonomous Database Services





Autonomous Data Warehouse

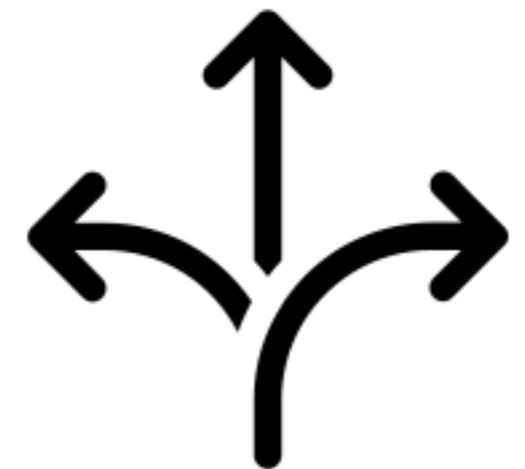
- **ADW** uses adaptive machine learning to deliver unprecedented simplicity, performance, and highly elastic data management that enables data warehouse deployment in seconds.



Easy



Fast



Elastic

Autonomous Transaction Processing

- ATP uses machine learning and automation to eliminate human labor, human error, and manual tuning, delivering unprecedented cost saving, security, availability, and productivity.



Self Driving



Self Securing



Self Repairing

Autonomous Database Developers

- Faster and simplest creation of database
 - * Just specify capacity and name
- No database management, no support from IT
 - * Fully automated tuning, calling, updating, upgrading
- Most Flexible and Productive development
 - * Single database for Relational, JSON, Graph, Text, etc.
 - * Full set of SDKs- Java, Python, Node, Go, .NET, Ruby
 - * Industry standard compliant; ISO SQL, JDBC

Developer tools

- **SQL Developer Web**
 - * Development environment for SQL and PL/SQL
 - * Worksheet for running queries and scripts, reports interface
- **Application Express (APEX)**
 - * Low-code web-based responsive application development and execution
- **Restful Data Services (ORDS)**
 - * Make Database access from applications super simple by automatically Building REST interfaces to database tables and procedures

Spatial Studio

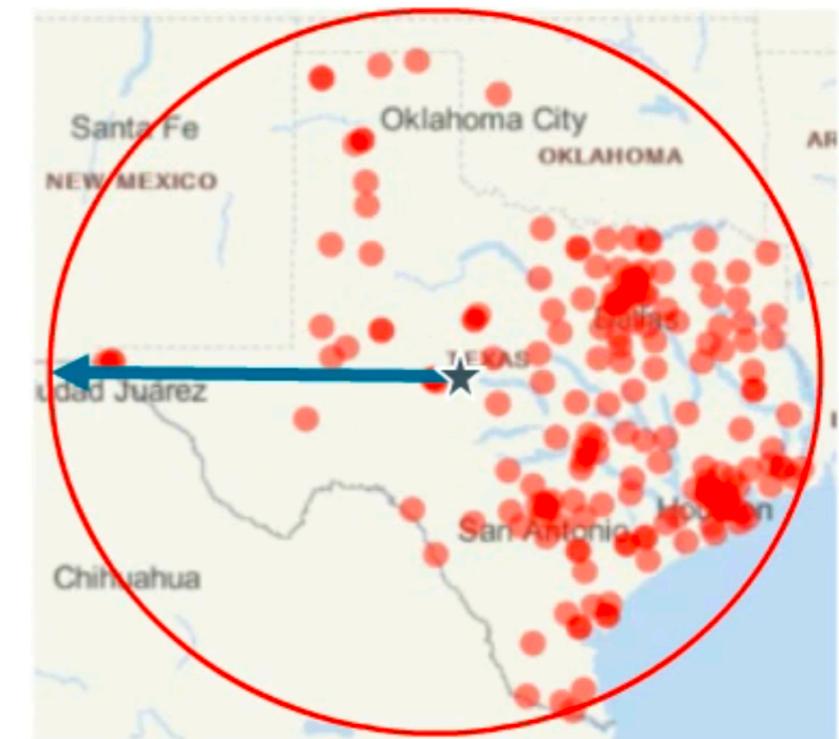


Example: Spatial Processing in Autonomous Database

Find Spatial Correlations – Spatial Analysis Through SQL

Find all competitors within 400 miles of San Angelo

```
SELECT c.holding_company, c.location
  FROM competitor c,
       bank b
 WHERE b.site_id = 1604
   AND SDO_WITHIN_DISTANCE(
      c.location,
      b.location,
      'distance=400 unit=mile'
    ) = 'TRUE'
```



Platform

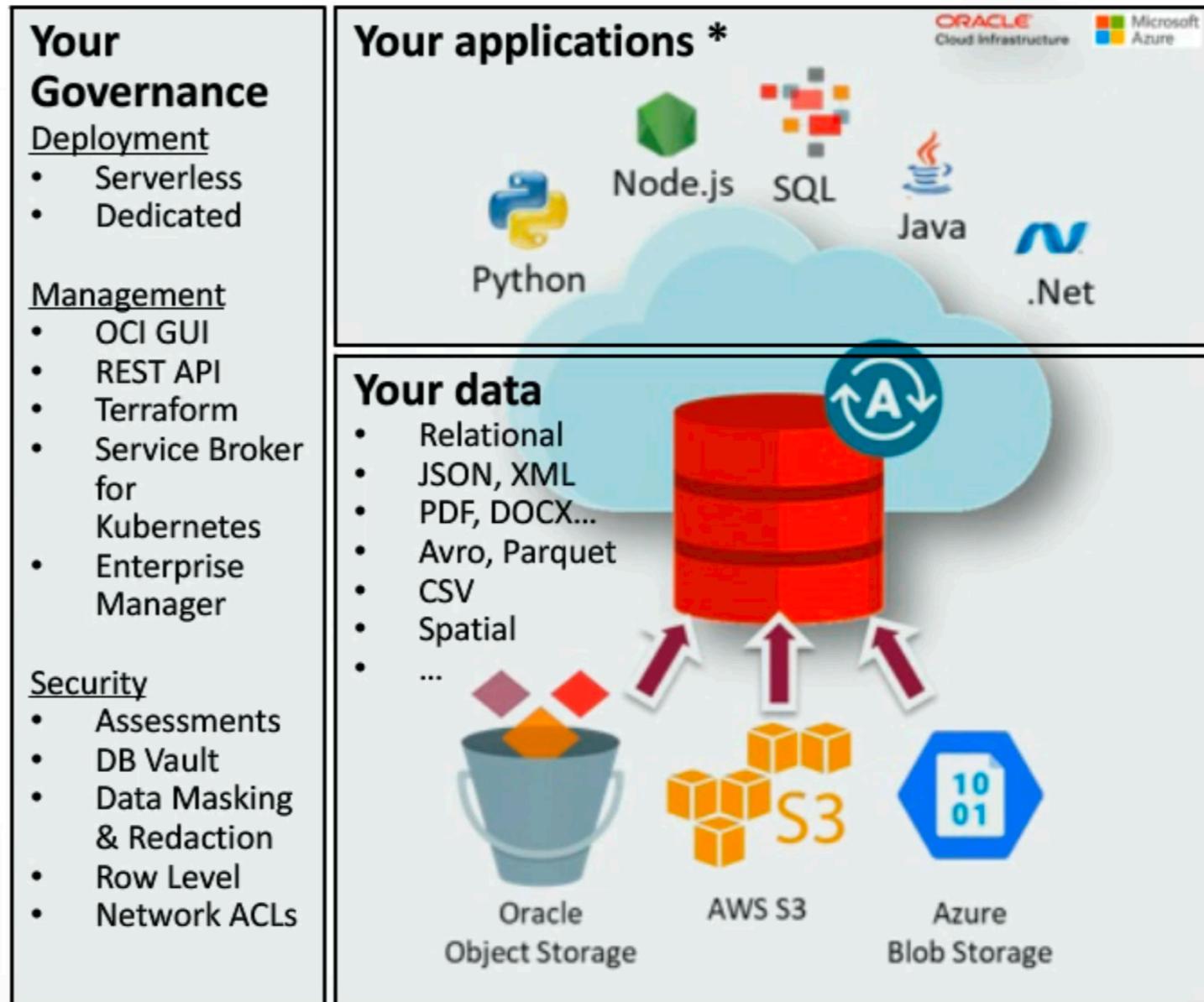
Your Autonomous Data Platform

Autonomous Transaction Processing

- Departmental and Mission Critical Applications
- Mixed Workloads combining OLTP and Analytics
- Cloud Native Application Development embracing DevSecOps

Autonomous Data Warehouse

- Data Warehouses and Data Marts for Business Analytics
- Sandbox for Data Scientists to leverage Advanced Analytics
- Data Lakes to Combine All your Data



Benefits

Autonomous Database – Benefits



Spend Less

- **Reduce Admin Cost:** Eliminates expensive, tedious, unsafe manual database management
- **Reduce Runtime Cost:** Cloud pay-per-use, Exadata speed, and self-tuning cuts costs up to 90%

Reduce Risk

- **Prevent cyber-attacks:** Secure configurations, fully automatic and online security updates
- **Always Available:** 99.995% uptime guaranteed including maintenance and DR
- **Proven:** Runs all your enterprise workloads, easy migration of existing databases

Innovate More

- **Refocus talent:** Focus on new projects, user experience, analytics, ML, instead of admin
- **Develop faster:** Instant provisioning, self-tuning, integrated database app development

Links

<https://www.youtube.com/watch?v=-eubsvC1aLY>

<https://www.oracle.com/fr/database/what-is-autonomous-database.html>

<https://video.oracle.com/category/videos/autonomous-database>

