

# Oracle Machine Learning in a True Enterprise Cloud

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# Safe Harbor Statement

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# Data – The World's Most Valuable Resource

Data driven organizations are **23 times** more likely to acquire customers, **6x as likely** to retain those customers, and **19x as likely** to be profitable as a result<sup>3</sup>



“Information has replaced technology as the central and **most critical asset** to be managed by organizations. As a result, business leaders must shift to using the value of information as basis for new planning and funding models.”  
– Doug Laney, Research Vice President, Gartner<sup>4</sup>



**Uber is Worth 70X More Than Hertz** – Uber is 52% corporate transport market share compared to rental cars total of 33% in Q4/16<sup>1</sup>



**\$430B Advantage to Data Driven Organizations<sup>2</sup>**

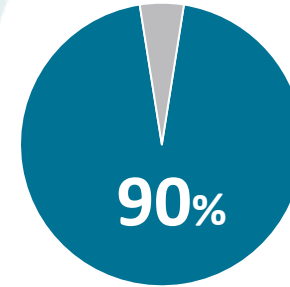
Source:  
1. wolfstreet.com  
2. IDC  
3. McKinsey Global Institute  
4. Gartner

# Managing Data Is Tough

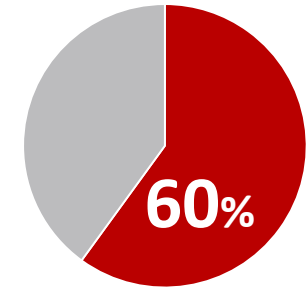
# Lack of Data Automation Prevents Business and IT Transformation

- **Manual provisioning and maintenance** increases time to market
- **Patching, scaling requires downtime** impacts business momentum
- **Data security, privacy and integrity** affects brand reputation
- **Limited data, different data sources** causes lost revenue opportunities

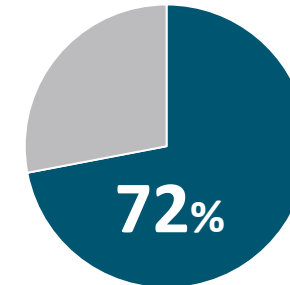
**Don't remain stuck with a rigid architecture  
unable to cope with rapid change**



AppDev: updating databases  
delay application releases



All\*: Database release  
delays application release



CIO: struggle to balance business  
innovation and operational excellence

Source: [CIO Magazine](#) \* All = CIOs, DBAs and AppDev

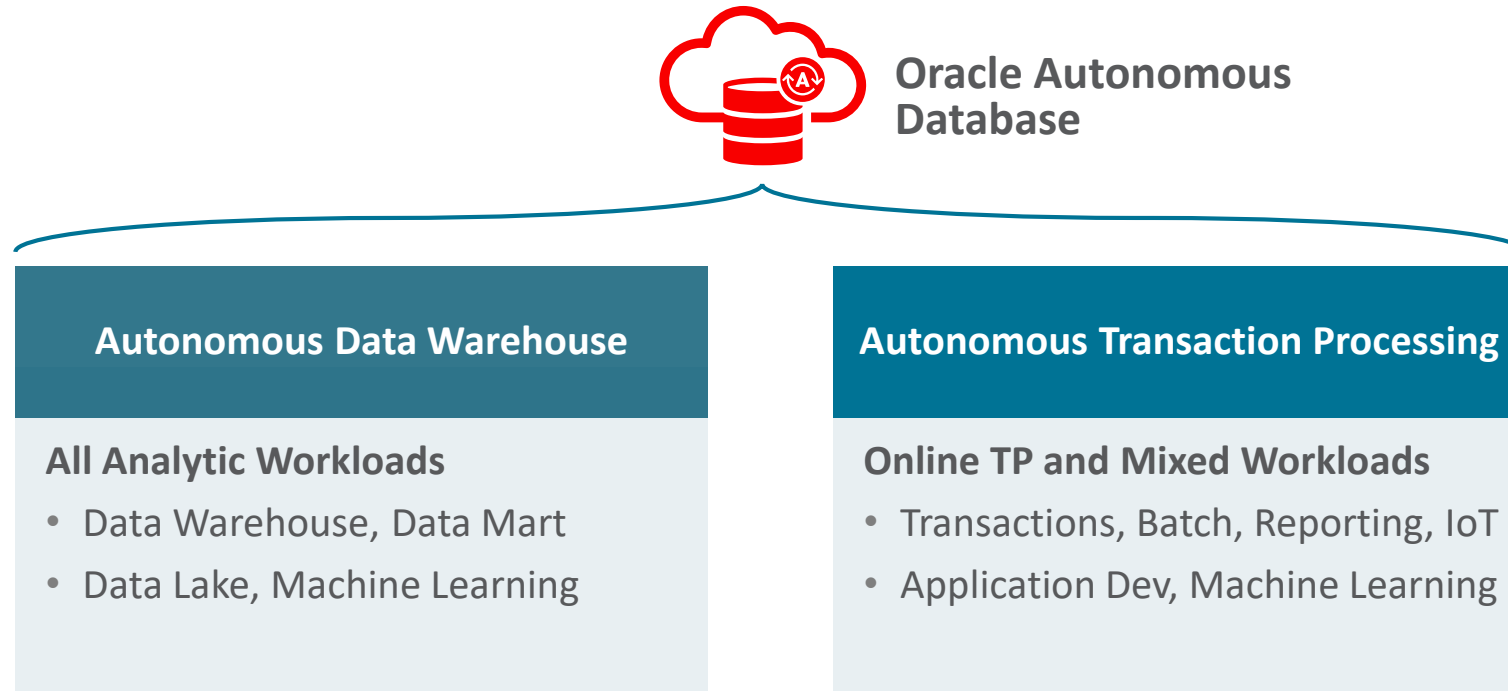


# Oracle Autonomous Database

New category of cloud services.  
Automation based on *machine learning*

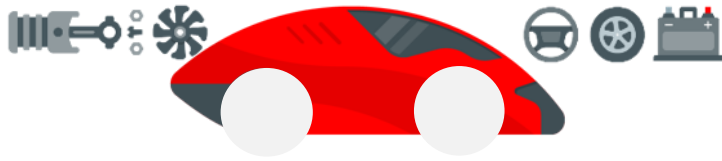
# Biggest Trend in Data Management Is Machine Learning

One Autonomous Family Optimized for Varied Workloads



**Select an Autonomous Database cloud solution that best meets your workload needs**

# Autonomous Database – What and How?



## Provision

Rapidly and easily creates **mission critical** databases

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Creates **Exadata<sup>+</sup>**  
Cloud Infrastructure,  
**RAC<sup>+</sup>** scale-out database, **Active  
Data Guard<sup>+</sup>** standby



## Secure

Protects data from  
external and internal threats

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Applies security **updates  
online<sup>+</sup>**, prevents admin  
snooping with **DB Vault<sup>+</sup>**,  
**encrypts** all data



## Manage

Automates all infrastructure  
and database maintenance

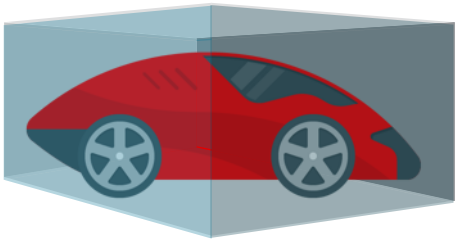
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Patches all software **online<sup>+</sup>**,  
tunes settings, performs  
**all OS and SYSDBA**  
operations, diagnoses **errors<sup>+</sup>**

**<sup>+</sup> Unique to Oracle**



# Autonomous Database – What and How?



## Protect

Recovers from any failure  
without downtime

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Automates backup, restore,  
**application transparent<sup>+</sup>**  
failover within cluster  
or to remote standby



## Scale

Scales online for highest  
performance and lowest cost

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**Scales up or out as needed<sup>+</sup>;**  
**instant, automatic, online<sup>+</sup>;**  
**Elasticity enables**  
**pay-per-use<sup>+</sup>**

**<sup>+</sup> Unique to Oracle**



## Optimize

Optimally runs workloads  
without human direction

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Automatically optimizes  
**data formats, indexes<sup>+</sup>,**  
**parallelism<sup>+</sup> and plans<sup>+</sup>** for  
each workload

# Autonomous Database with ML – Benefits



## Spend Less

Reduce Admin Cost

Eliminates 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  
which is less than 2.5 minutes of both planned AND unplanned downtime a month.

Proven

Runs all your enterprise workloads, easy migration of existing databases

## Innovate More

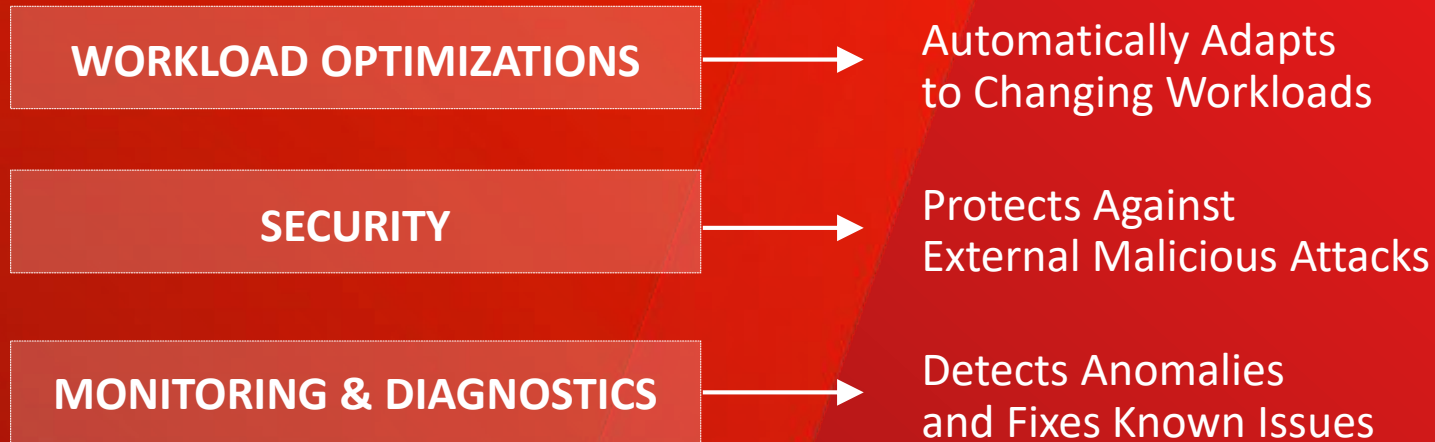
Refocus Talent

Focus on new projects, user experience, analytics, ML, instead of admin

Develop Faster

Instant provisioning, self-tuning, integrated database app development

# Using Machine Learning to Drive Autonomous Database



# What Autonomous Database Means for DBAs

## Tasks Specific to the Business

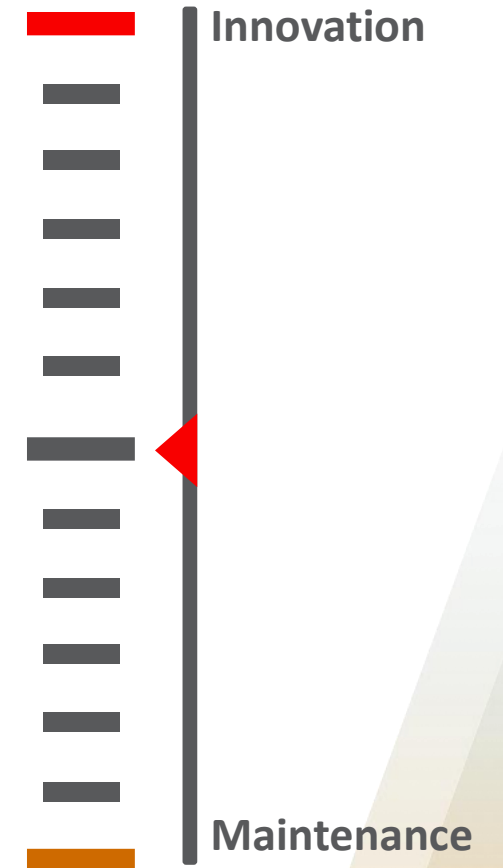
- Architecture, planning, data modeling
- Data security and data lifecycle management
- Application-related tuning
- End-to-End service level management

## Tactical Operations

- Configuration and tuning of systems, network, storage
- Database provisioning, patching
- Database backups, H/A, disaster recovery
- Database optimization



### Value Scale





# What Autonomous Database Means for DBAs

Removes tactical drudgery, more time to innovate

## Tasks Specific to the Business

- Architecture, planning, data modeling
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## ~~Tactical Operations~~

- ~~Configuration and tuning of systems, network, storage~~
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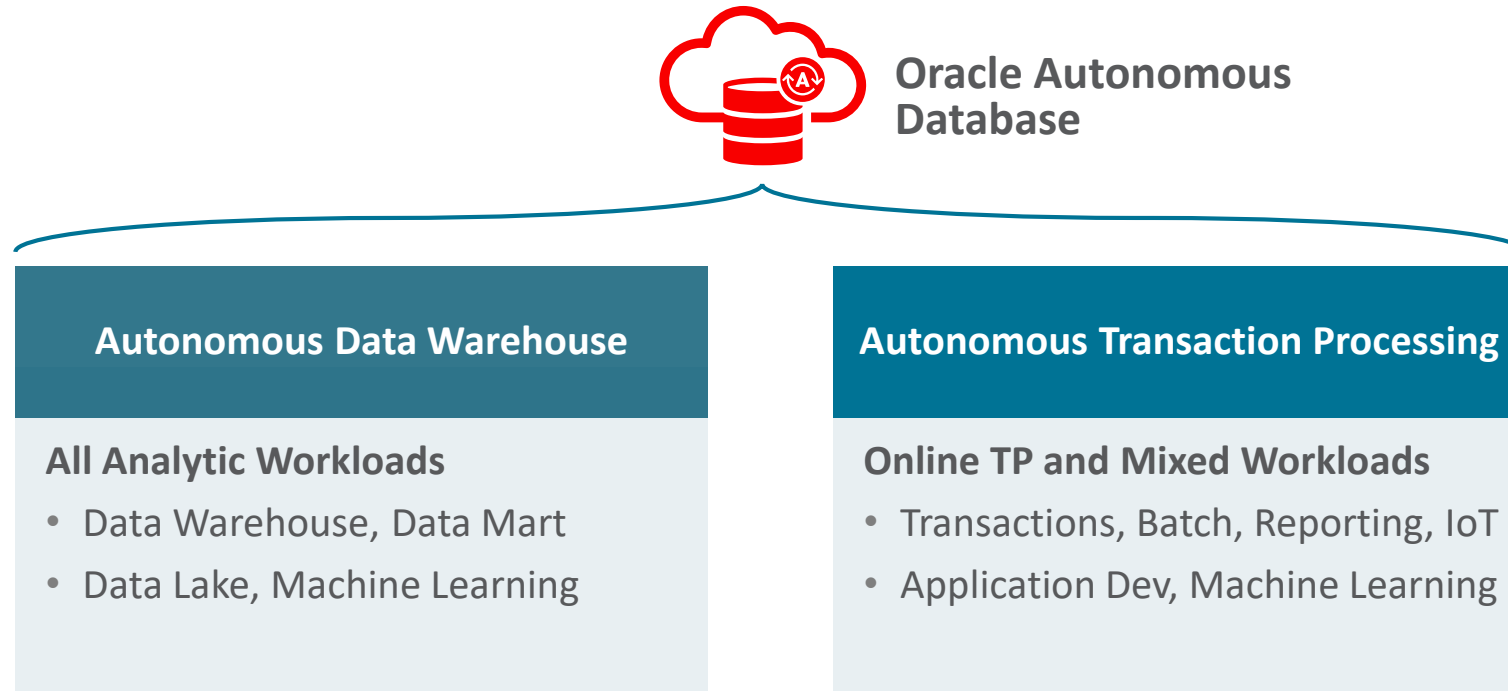


Value Scale



# Biggest Trend in Data Management Is Machine Learning

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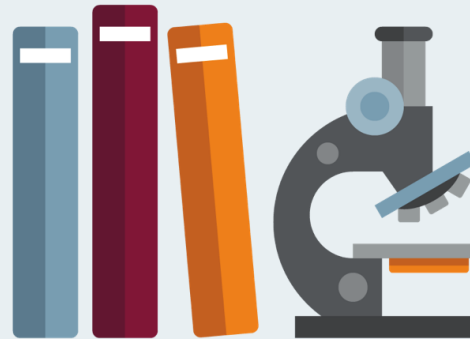
# Autonomous Data Warehouse | Key Use Cases

## Data Marts / Warehouses



Business Analytics

## Sandboxes for Data Scientists



Machine Learning

## Data Lakes



Query All Data

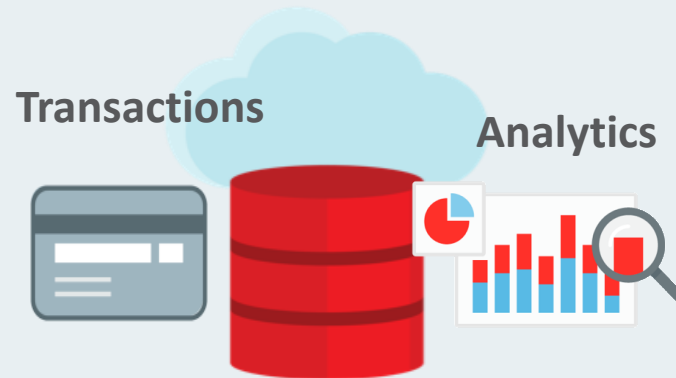
# Autonomous Transaction Processing | Key Use Cases

## Departmental or Mission Critical Applications



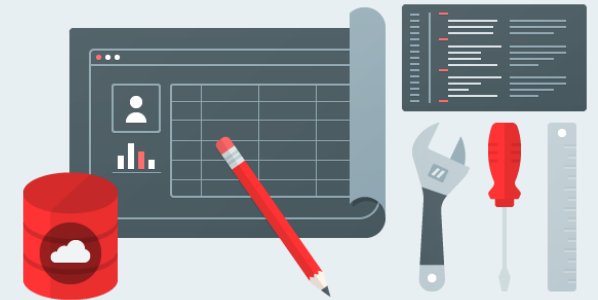
Support Business Operations

## Mixed Workloads



Real-Time Analytics and Machine Learning

## Application Development



Innovate Faster



# Introducing Oracle APEX on ATP

High-productivity, low code development platform



Develop desktop and mobile web apps



Visualize and manage data



Optionally leverage SQL skills and database capabilities

# Productivity and Departmental App Examples

Project Management

Customer Tracker

Team Calendar

Opportunity Tracker

Checklist Manager

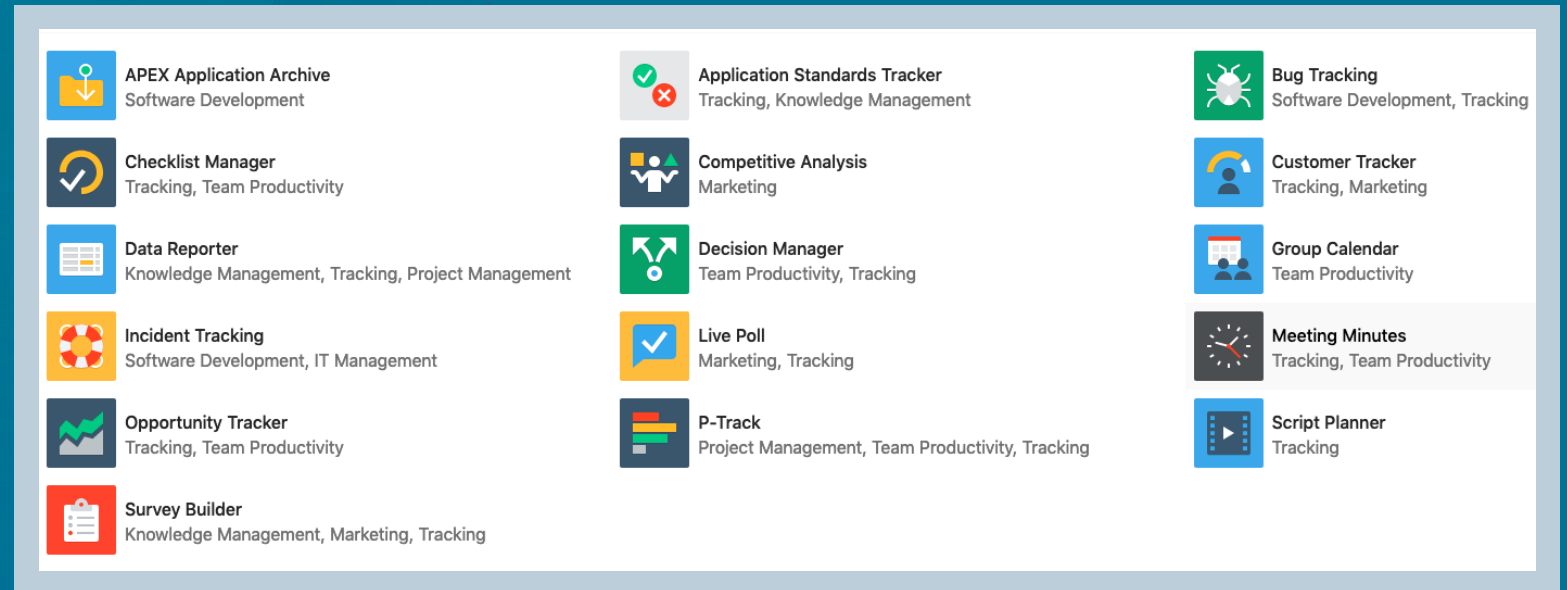
Incident Tracking

Survey Builder

Polling App

Meeting Minutes

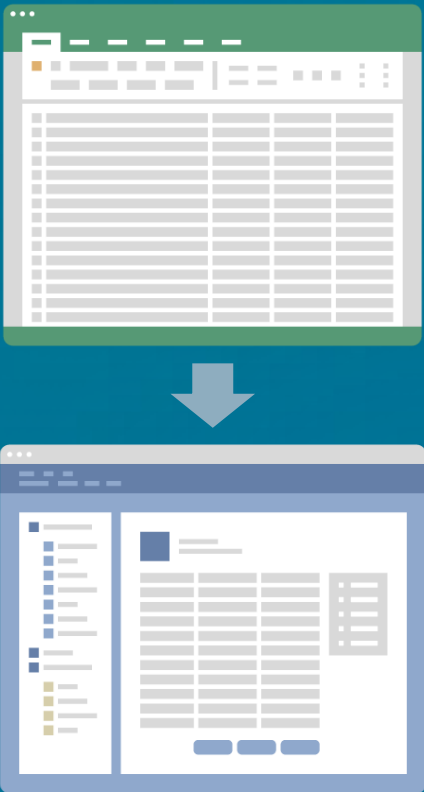
Data Reporter and Many  
More Possibilities



Over 30 Pre-Built Apps Included with APEX

# Load and Convert Your Spreadsheets Quickly

Transform spreadsheets to web apps in few clicks



- Upload a spreadsheet file
- Add validations to improve data quality
- Create a Secure, scalable, multi-user app instantly
- Extend with charts, calendars, and more
- Share new Web App URL with team not file

# Build New and Productivity Apps



**Build apps in days / weeks not months**

**Create fully featured apps in Wizard Driven**

**Low-code platform allow non-IT professionals to be instantly productive**

**Rapidly iterate to meet changing business requirements**



# Hertz®

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**“The Autonomous Data Warehouse Cloud will allow Hertz to reduce costs and re-invest savings into improving our customer service and rewarding our customers”**

**Benjamin Arnulf, Director, BI & Analytics, Hertz**



“We are at the dawn of the intelligent, autonomous age and having a self-driving database is a natural progression. Freeing DBAs from the basic operational nuances of running a database is of tremendous value. I feel that autonomous databases will become ubiquitous in the future”

**Clark A. Kho , Senior Technology Architect, Accenture**

Aker BP is a fully-fledged E&P company with exploration, development and production activities on the Norwegian Continental Shelf.

Aker BP is one of the largest independent oil companies in Europe.

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**“The flexibility of Autonomous Data Warehouse Cloud in terms of delivering instantaneous, fully elastic scalability is truly outstanding and unique in the market.”**

**Erik Dvergnes – Architect, Aker BP**





# MINNESOTA STATE

Minnesota State - Minnesota State  
Colleges and Universities)

5th Largest Higher Education System  
in the US

Over 3,700 academic programs

Nearly 400,000 students annually



**“We've found that the Autonomous Data Warehouse Cloud is very easy to use, very easy to load data, and the performance has been amazing”**

***Miles Oustad, Data Integration Team Manager, Minnesota State***

**QMP - Dallas based healthcare holdings company specializing in ancillary service management e.g lab management and testing**

**Sensa Analytics – technology company offering cloud based solutions for healthcare management and operations**



**“When you're dealing with human lives, time is everything. Having Autonomous Data Warehouse Cloud automatically tune and manage itself with no downtime means faster response times and quicker decisions - that's critical for us and our patients”**

**Michael Morales, CEO, QMP Health**



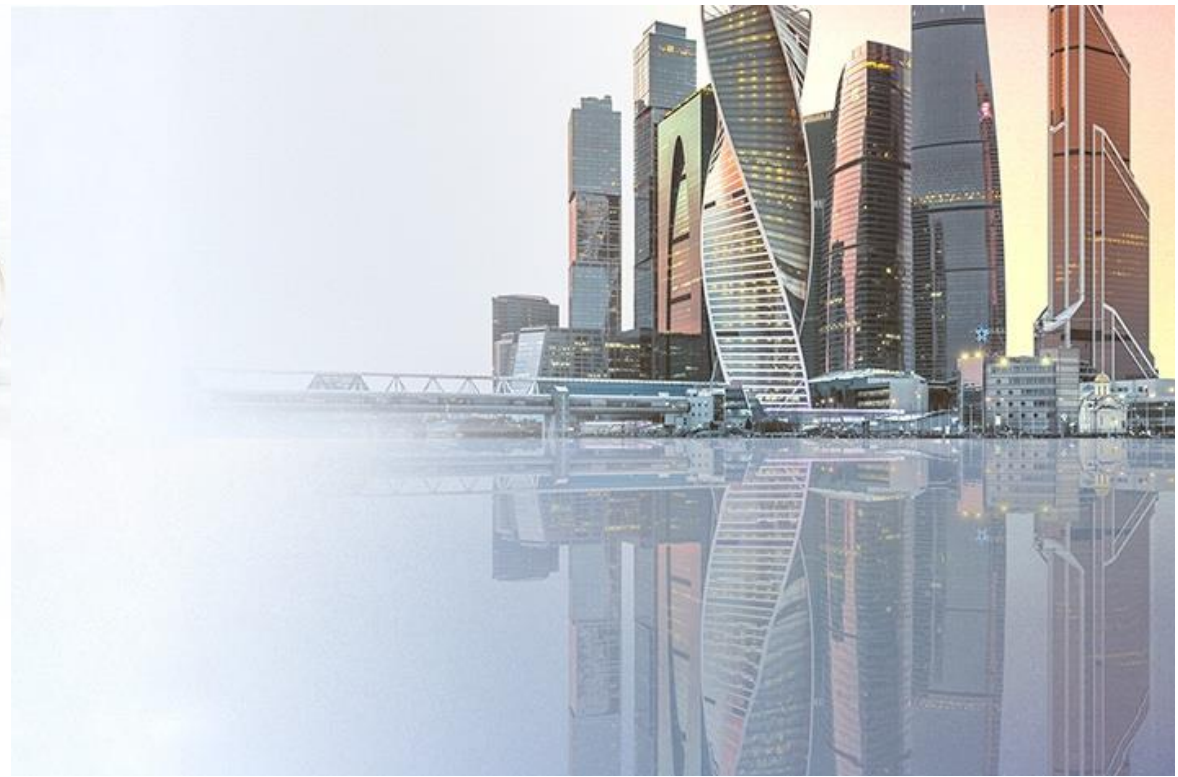
**VTB PJSC is second largest bank  
in Russia**

**80 000 employees / 40 million  
clients**

**327 cities / 20 countries**

**15000 ATM / 106 000 POS**

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**“Technologies like Autonomous Data Warehouse Cloud dramatically  
simplify the lives of sysadmins making science fiction a reality”**

**Alexander Khokhlov, Head of IT Division**



# Always Free – Autonomous DB + ML

## What's Included



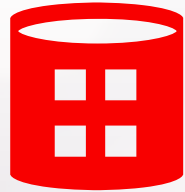
### Autonomous Database

*2 x Databases  
20 GB each*



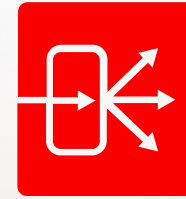
### Compute

*2 x VMs  
1 GB Memory each*



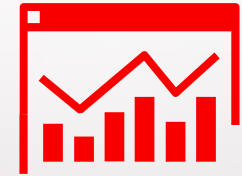
### Storage

*100 GB Block  
10 GB Object  
10 GB Archive*



### Networking/ Load Balancing

*10 Mbps LB  
10 TB Outbound  
Data Transfer*



### Monitoring / Notifications

*500M Metrics Ingestion  
1B Metrics Retrieval  
1M Notifications  
1K Emails*

## Available to All New and Existing Cloud Accounts





Always Free – Autonomous DB + ML  
More

**Always Free**

Services you can use for unlimited time



**30-Day Free Trial**

Free credits you can use for more services



# Oracle Autonomous Database

New category of cloud services.  
Automation based on *machine learning*

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