

CUSTOMER CASE

DNS Belgium – Amazon RDS

Customer Fiche

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| INDUSTRY | ICT |  |
| EMPLOYEES | 30 | |
| ANNUAL REVENUE | €6.3 Million | |
| LOCATION | Leuven | |



Challenges

DNS Belgium manages the .be, .vlaanderen and .brussels domain name registrations.

All .be registrations are stored in a central Oracle database, making this database a critical resource for DNS Belgium.

In 2016 DNS Belgium decided to move the entire .be registration system to the cloud. By outsourcing the management of the infrastructure (datacentre, hardware, connectivity, ...) the engineers of DNS Belgium can focus on improving the software itself and automating all deployments.

DNS Belgium chose to replace their on-premises Oracle Real Application Cluster with a high available Amazon RDS (Relational Database Service) instance. This solution offers a “database as a service” and makes it very easy to set up, operate and scale a relational database in the cloud.

Amazon RDS handles routine database tasks such as provisioning, patching, backup, recovery, failure detection, and repair.

To make the migration successful DNS Belgium had to face the following challenges:

- Check the feasibility of the Amazon RDS for Oracle solution
- Identify the limitations and operational changes when using a database in the cloud
- Migrate the database (+300Gb) to Amazon RDS with minimal downtime and absolutely no data loss
- Assess and implement high availability and disaster recovery options

Solutions

In March 2016, DNS Belgium teamed up with Exitas to tackle these challenges.

Exitas started with a feasibility study and concluded that the Amazon RDS solution covered all the requirements of DNS Belgium, including high availability, performance and encryption of data at rest.

In the summer and autumn of 2016 Exitas developed, tested and compared different migration scenarios, taking into account the requirement of completing the migration within a maximum of 6 hours of downtime. Special attention was given to guarantee and verify zero data loss, since not a single entry in the .be registration database can be lost during the migration.



EXITAS

A lot of experience about the operational tasks and limitations of Amazon RDS was gained during the development of this scenario. However, none of these limitations were a blocking factor for the project.

To ensure high availability of the Oracle database, a multi-AZ (availability zone) configuration was chosen, i.e. a synchronous storage-based replication technology offered by Amazon RDS. This allows the database to automatically failover to a synchronously replicated secondary database in another datacenter in case of failure on the primary site.

Additionally, Amazon DMS (Data Migration Services) was used to keep an on-premises database in sync with the primary database, using logical replication. This avoids that block corruptions propagate from the primary to the DR database.

The final migration took place on 11 Feb 2017 within the foreseen 6-hour downtime and everything went smoothly.

The database has been running without issues in Amazon RDS since then. After monitoring the database during a couple of weeks, Exitas concluded that the database could be downscaled to a smaller instance type, without performance issues. This significantly reduced the cost of the Amazon services and the Oracle licenses.

Conclusion

Thanks to a thorough preparation, the migration of the +300Gb database to Amazon RDS for Oracle was completed with minimal downtime and zero data loss.

Why Exitas?

“Exitas is the biggest Oracle partner in Belgium and has over 25 years of Oracle DBA experience. They have a constant focus on new evolutions in Oracle and also keep an eye on Cloud solutions like AWS, Azure and Oracle Cloud. This makes Exitas the preferred partner for assisting us with the migration to Amazon RDS.”

Maarten Bosteels
Director Engineering



| managed services team dedicated consultant | |
|--|---|
| Geert de Paep |  |
| 2016-2017 | |
| Oracle Database, Cloud | |

