DBPLUS
better performance

Case study

Upgrading the database version without interrupting the application

INDUSTRY:
Telco, Finance

MARKET:
Germany, Poland

SOLUTION:
DBPLUS Data Replicator

ENVIRONMENT:
Oracle®

Initial situation

Due to the end of technical support by the manufacturer, the customer decided to **upgrade the database to new version.** At the same time they made plans to implement new functionalities in the business application and to migrate to a new hardware platform.

Business expectations

- Seamless application operation on the new version of the database post-migration.
- Shortening the migration process (including tests) and eliminating work at the weekends.
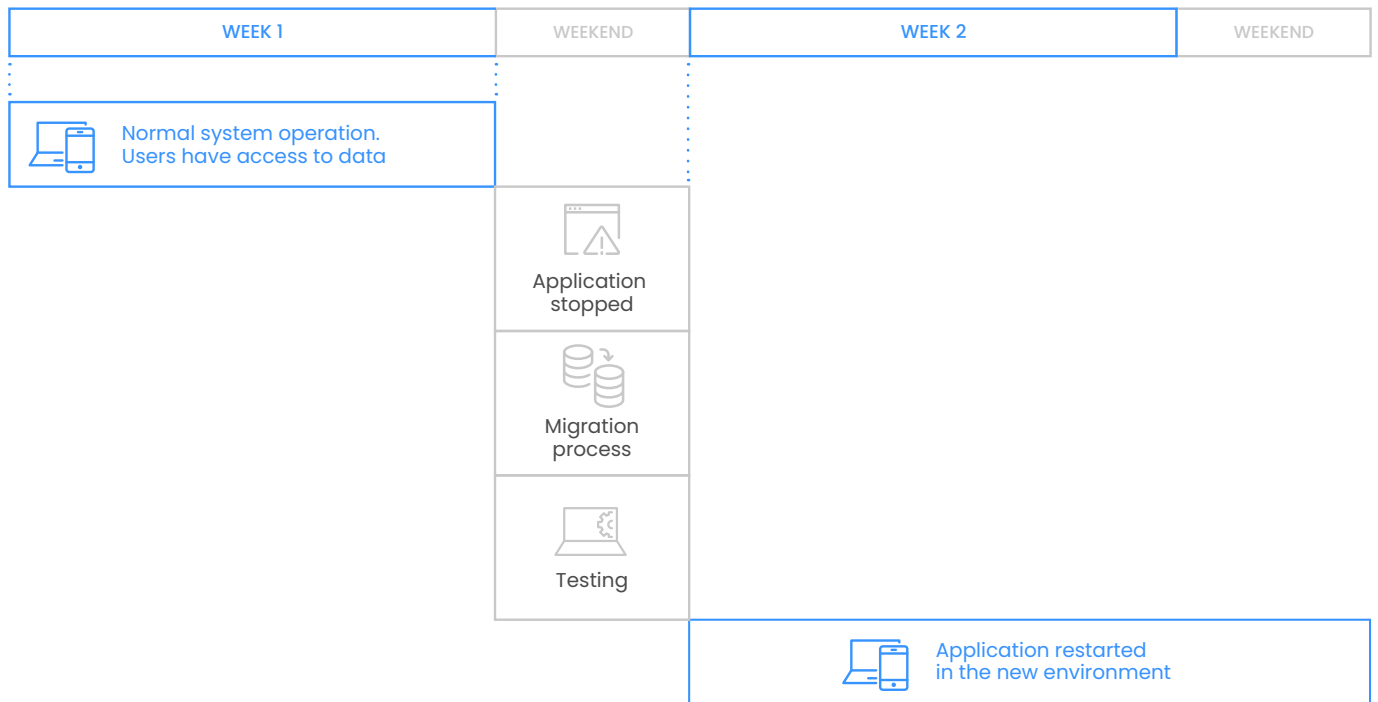- Security of migrated business data.

Problem

- The business data migration operation was time-consuming (the physical data transfer operation itself took 36 hours) and required additional time from the business to verify the correctness of the migration. A major inconvenience was the need to perform work at the weekends and stop the service processes. In addition, the increasing volume of data automatically extended the time needed to complete the full migration.
- In the case of upgrading the database environment, additional time was required to test the new database functionalities in the business application.
- The operation of changing the database was practically irreversible in the case of problems with a newer version of the database or hardware platform. The client was not able to downgrade to the old platform, which was a significant risk for the continuity of business processes.
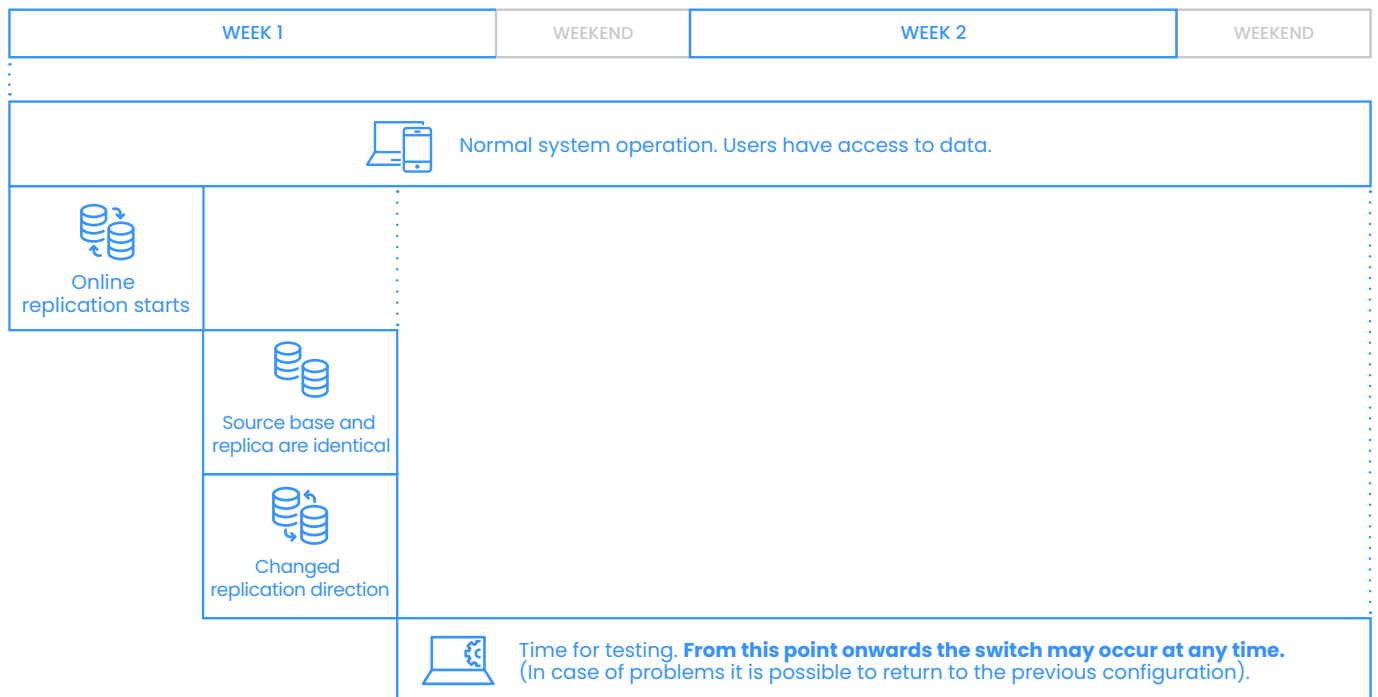
Architecture

- Due to the lower workload of the system by business users at weekends, migration operations were performed on non-working days. During this time, the system was unavailable.
- The application used by the client connected to the Oracle® database.

Current migration model using Oracle® Data Pump

WEEK 1	WEEKEND	WEEK 2	WEEKEND

Normal system operation. Users have access to data

Application stopped

Migration process

Testing

Application restarted in the new environment

Migration model using online replication

WEEK 1	WEEKEND	WEEK 2	WEEKEND

Normal system operation. Users have access to data.

Online replication starts

Source base and replica are identical

Changed replication direction

Time for testing. **From this point onwards the switch may occur at any time.** (In case of problems it is possible to return to the previous configuration).

Solution

Performing replication of business data from the old database to the test environment with the new version of the database. Implementation of tests and final migration of the application to the new database and hardware infrastructure.

Benefits

- The tests are conducted in a new environment with current data on which the business application works in the current database environment.
- The access to the test system is provided to business users as well as the IT team and system provider almost 24/7.
- Business users can perform unlimited tests during standard business hours, and switching the system to a new version of the database can be performed at any time after the completion of all the test scenarios.

Architecture

- Data replication is performed without stopping the work of a business application.
- Using the DBPLUS Data Replicator, any changes made to the source database are transferred with a few seconds delay to the new database.
- After closing the source database, the databases are swapped and the application continues to work on the new version of the database.
- With the transition to the new version of the database, the direction of replication is changed so that the changes taking place in the new database are mapped in the original source database - in case of a need to return to the old database (e.g. as a result of a failure or application error). In the event of such problems, it is possible to return to the old platform within a few minutes without affecting the business data.