SharePlex for Oracle
How to replicate databases

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Highlights

- Overview: reasons for migration
- Traditional data migration methods
- Drawbacks
- Data migrations using log-based replication
- Benefits
- Q&A
Reasons for migrations

• OS migrations/change hardware vendor
  – Moving to new servers (e.g. IBM Power7 to Linux)
  – RAC or virtualized environments

• Oracle database migrations
  – Expired support on older versions cost prohibitive
  – Need new features/functionality in newer versions

• Application migrations
  – Upgrading the application to a newer version
  – May coincide with a hardware and or database upgrade
Traditional Oracle migration methods

• Export / Import or Data Pump
  – **Pro:** simple, cross platform regardless of DB version
  – **Con:** requires downtime, slow, regression = restore backup

• Database upgrade wizard
  – **Pro:** no extra hardware/resources required
  – **Con:** in place, downtime required, downgrade scripts unreliable

• Cold copy
  – **Pro:** Simple, fast
  – **Con:** requires downtime, restricted to same platform, regression = restore backup

• Manual scripts, transportable tablespaces
  – **Con:** DBA requires expert knowledge of application, requires downtime, regression = restore backup

• Online backup (Mirror/RMAN/Dataguard)
  – **Pro:** online, from 10g 11 cross platform
  – **Con:** restricted to same platform unless migrating from 10g (downtime required to upgrade DB), regression = restore backup
Drawback of traditional migrations

• Downtime components
  – Length of downtime for data movement and upgrade
  – Test & verify occurs during downtime

➢ Risk Factors
  – Time constraint to finish
  – Complex, error prone process
  – Hardware reliability
  – Post upgrade database performance issues
  – No ability to test production load
  – Limited regression strategy
High speed, streaming replication

- Selectively replicate & manipulate only the necessary data
  - Any combination: table, row, column or the entire database
- Target remains live & accessible
- Very high performance and easy administration
- Works in heterogeneous environments
- Failback capability

Replicate from A to B with very few limitations
ZeroIMPACT migrations, patches and upgrades

- Migration of application version, database version, hardware platform or sometimes all three.
- Decrease downtime by switching users to the replica system while the migration is being performed on production.
- Eliminate risk providing a failback if the changes have undesired effect. Supports multiple dry-runs.
- Reduce costs and mistakes by performing the changes during working hours.
Oracle database migrations

- With **traditional migrations**, extensive downtime is required:
  - Export/import data
  - High risk with in-place upgrades
  - Increase costs for failures
  - Can not test new functionality

- With **replication**, end user downtime is minimized:
  - The process includes a failback position, rather than forcing you to "go for broke!"
  - The process allows you to take the time required to be careful, and to be successful.

Oracle 9i — Replication — Oracle 11g
Migration steps

- Backup from Prod, Restore to new production (Recover to SCN or LOG Number)
- SNAPSHOT, TimeFinder, BCV, RMAN, Export, Datapump, etc.

1. Current Production
2. Capture Queue
3. Export Queue
4. Replication
5. New Production
6. Post Queue
7. Reconcile
Migration steps

Move users to new production (Considering Application is ready to accept user connection)
Migration steps – reverse replication (for failback)
Hardware migrations

- With **traditional methods**, extensive downtime is required:
  - Export/Import data
  - Rebuild the database
  - Verify the migration

With **replication**, end user downtime is minimized:
- Off load the export from the production database
- Optimize database, test new features
- Ability to repeat migration with no extra downtime
Migration steps

Export, Datapump, RMAN, or Transportable Tablespaces

Export Queue

Capture Queue

 Intermediate Server must be same platform as Production

Backup from Prod, Restore to Intermediate (Recover to SCN or LOG number)

Current Production

Intermediate Server

Replication

New Production

Export from Intermediate, Import to new platform

Post Queue

Reconcile

Current Production
Migration steps

- Export from Intermediate, Import to new platform
- Export, Datapump, RMAN, or Transportable Tablespaces
- Current Production
- Intermediate Server must be same platform as Production
- Backup from Prod, Restore to Intermediate (Recover to SCN or LOG number)
- Export Queue
- Capture Queue
- Replication
- New Production
- Post Queue
Migration steps
Migration steps – reverse replication (for failback)
SharePlex® for Oracle overview

SharePlex® for Oracle is a “High Availability Solution” for Oracle databases that is affordable, simple to use & manage.

- IDC 2010 Worldwide Database Replication Market Share:
  - Oracle 25% (includes GG, ADG, DG, Streams, Standby)
  - Quest = SharePlex for Oracle 19.1%

Key Functionality:
- SharePlex comes packaged with all the tools needed to manage & maintain your replication environment
  - Compare/Repair
  - Sync Utility
  - SharePlex Manager GUI
SharePlex® ZeroIMPACT Use Case Scenarios
Local, remote or in-the-cloud

Operational Reporting, Archiving or Data Warehousing

Data Distribution/Distributed Processing

Load Balancing

High Availability/Disaster Recovery

Centralized Reporting (Consolidation)

Cascading Using Intermediary Systems

8i/9i/10g  
Migrations, Patches & Upgrades

10g/11g

Change Tracking
To learn more about

SharePlex®

for Oracle

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Thank you.