Empowering your data sharing architecture for continuous availability

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Agenda

- Data sharing challenges

- Benefits of data distribution and consolidation using replication

- Change Data Capture

- Architecture

- Use cases

- Q&A

Business challenge

- Ever increasing amounts of data

- Multiple groups need access to current, up-to-the-minute data

- Access critical data faster (local)

- Database resources maxed out – too much processing

- Instance can't be tuned for purpose – reporting vs OLTP

- Too much data available (proprietary)

- Need to consolidate data from remote locations

- Query versus write capability

Solution

- Database replication
- Maintain a near real time copy of the database
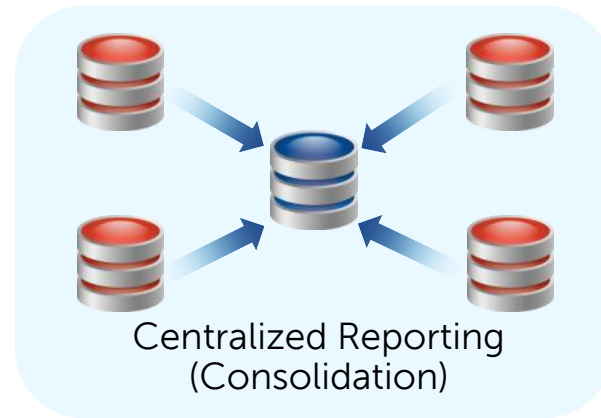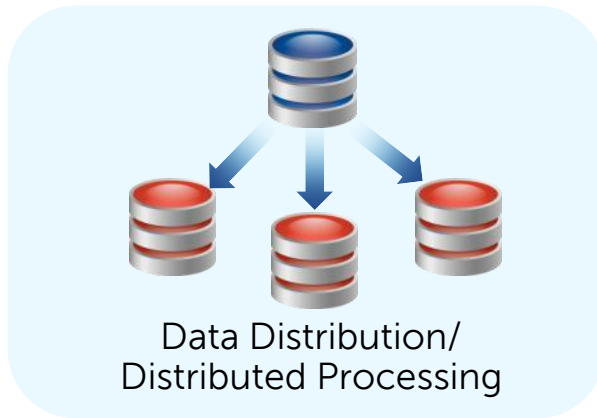
Data Distribution/
Distributed Processing

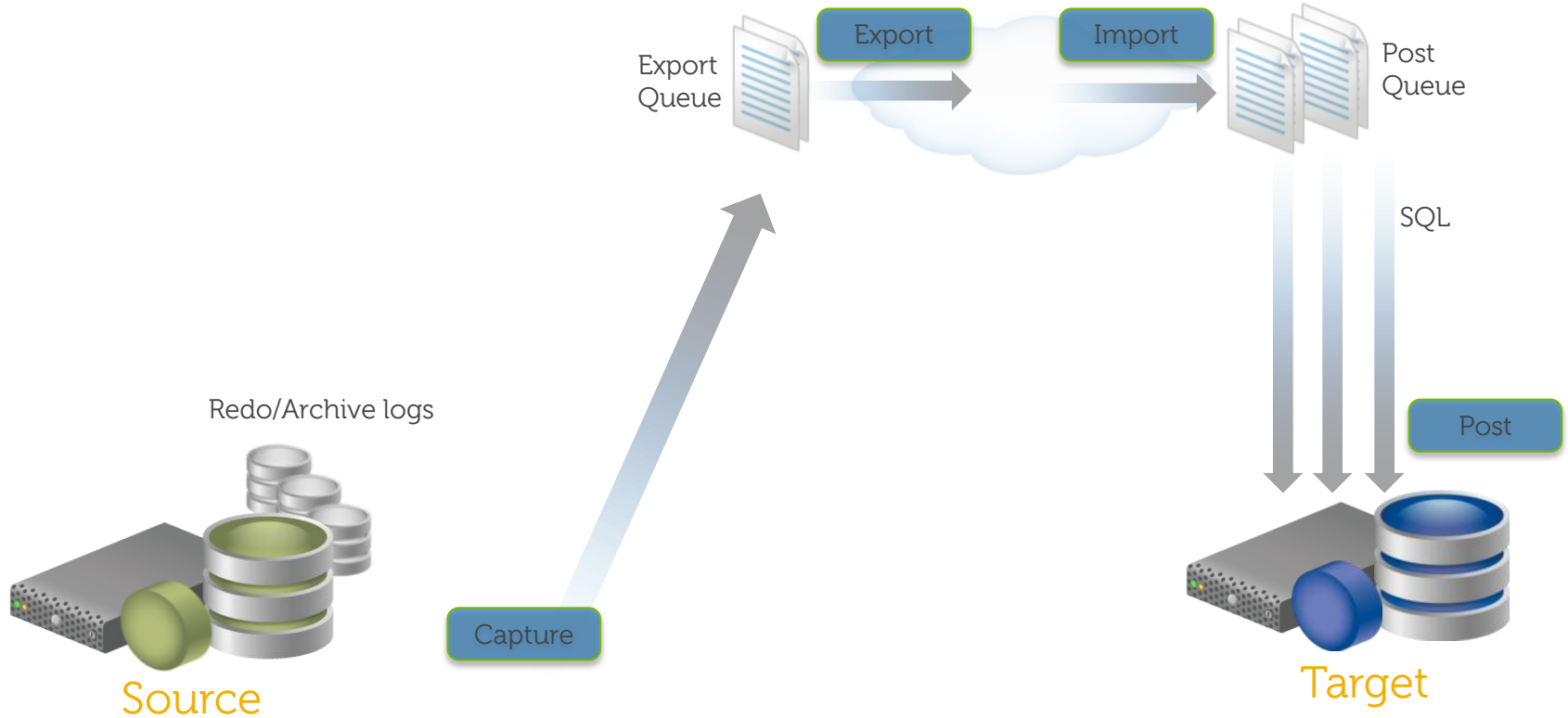Centralized Reporting
(Consolidation)

Benefits of data distribution & consolidation using replication

- Local access to data

- Real-time data for up-to-the-minute reporting

- Source and Target Independence

- Instance tuned optimally for performance

- Offload report processing from main OLTP instance

- Only the required data is made available
  - Minimizes bandwidth requirements
  - Eliminates access to proprietary data

- No impact to performance or productivity on users and/or customers

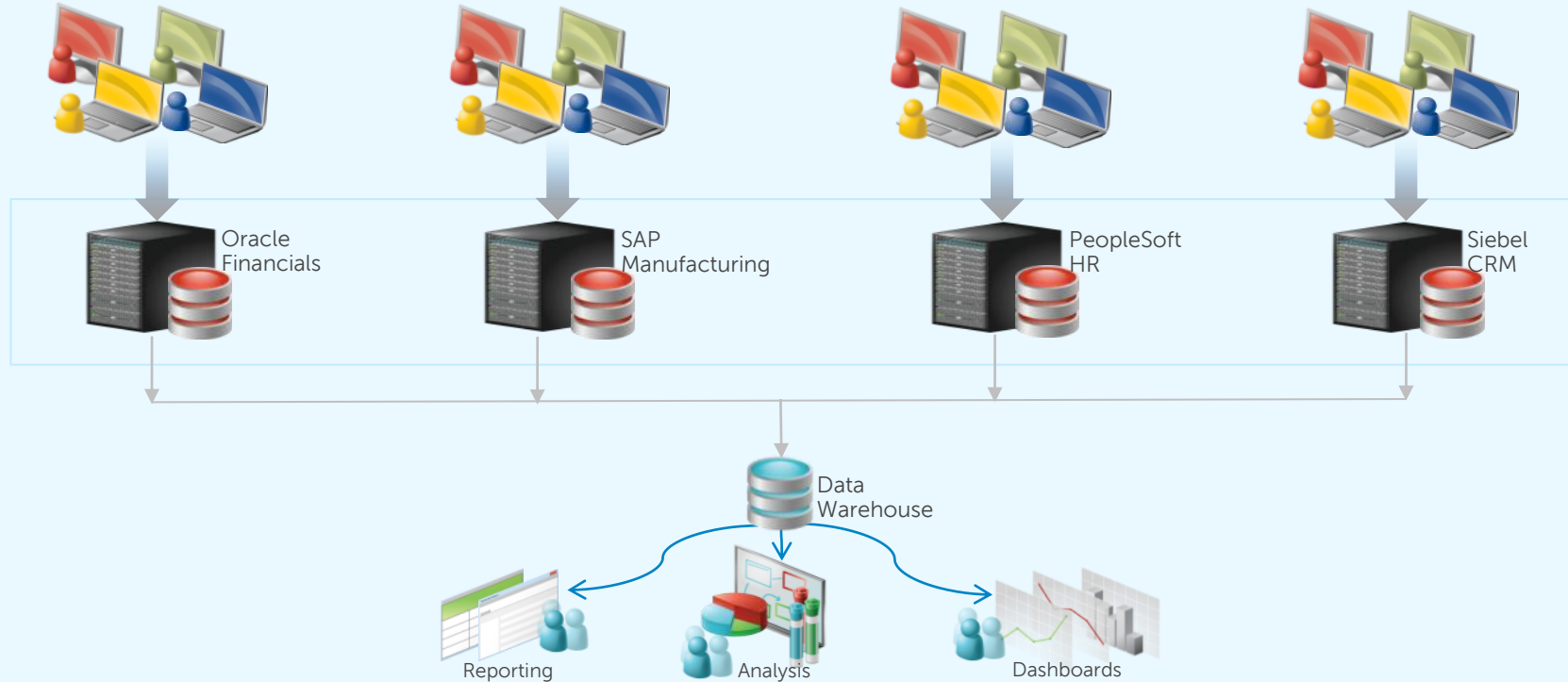- Real-time instance for high availability

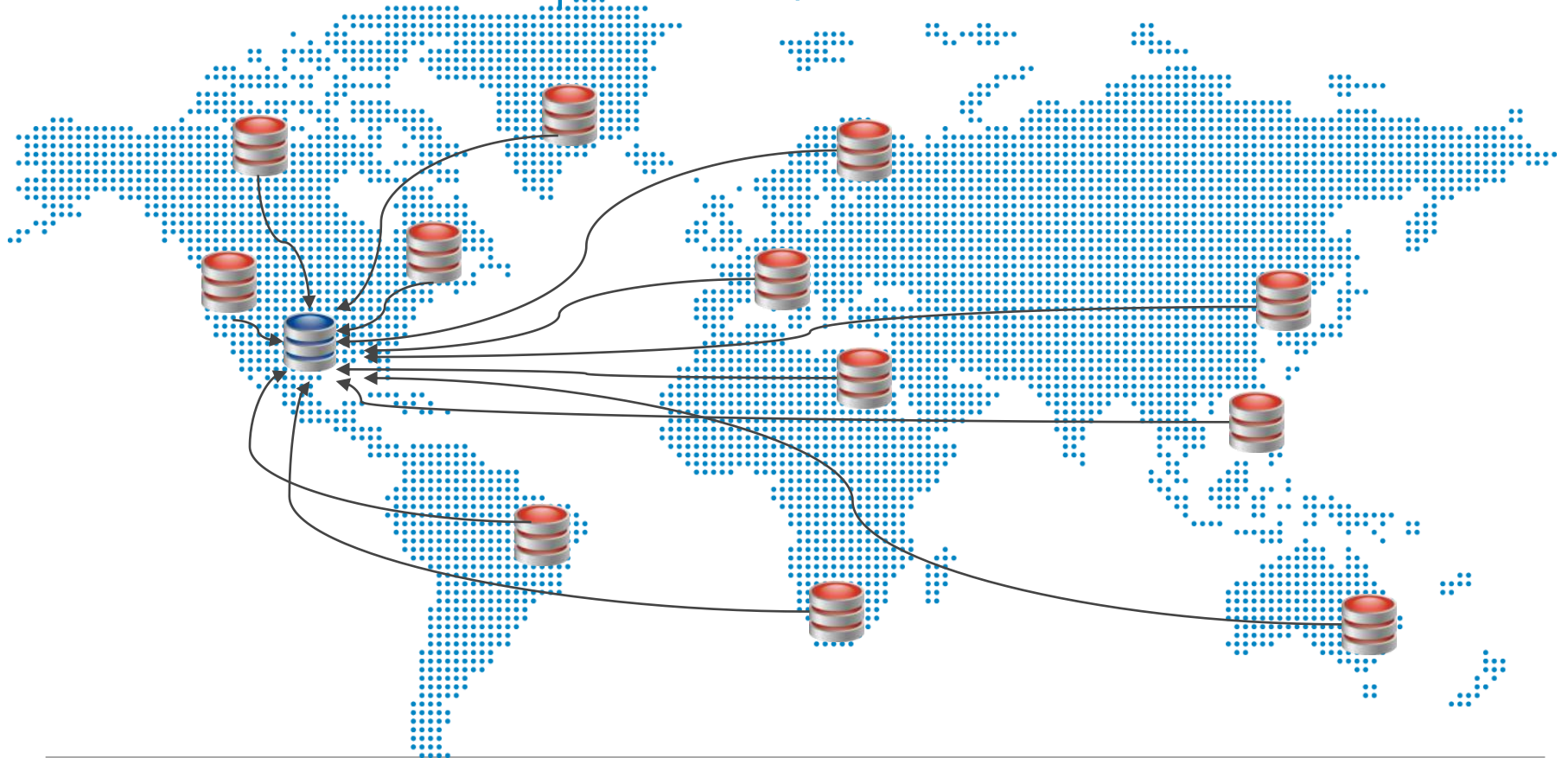# Database Replication - Product architecture
Local, Remote or in-the-Cloud

Export
Import
Export Queue
Post Queue
SQL
Post
Redo/Archive logs
Capture
Source
Target

Consolidation: Operational BI data stores

Oracle Financials

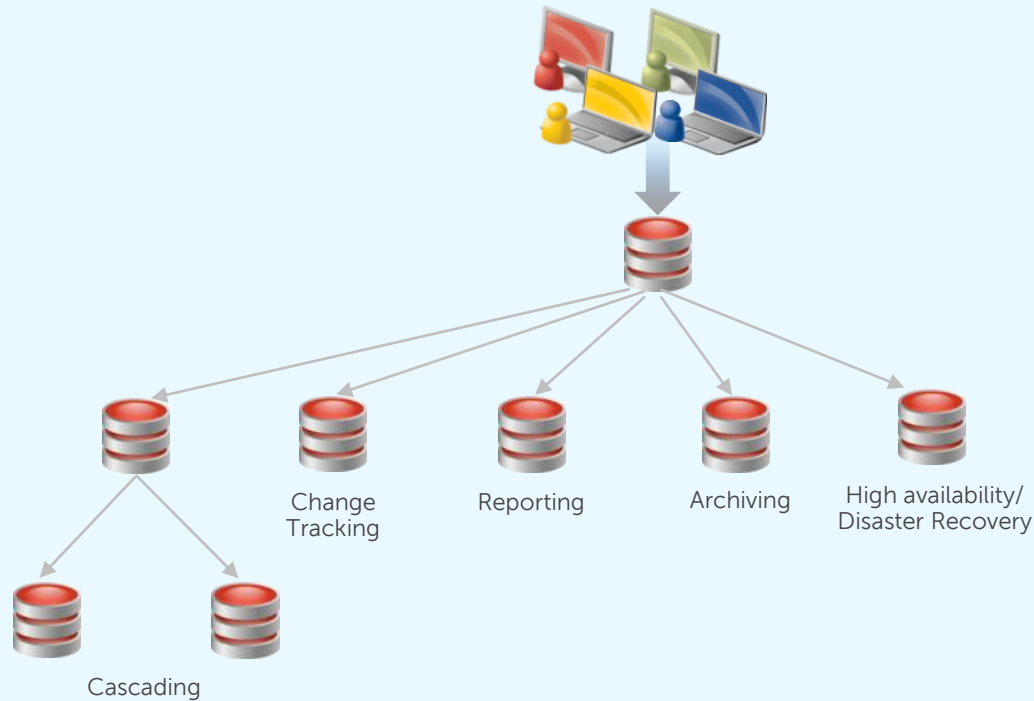SAP Manufacturing

PeopleSoft HR

Siebel CRM

Data Warehouse

Reporting

Analysis

Dashboards

Consolidation: Multiple stores/locations to central database

Distribution: Reporting, high availability/disaster recovery, archiving, change tracking, cascading

Change Tracking

Reporting

Archiving

High availability/
Disaster Recovery

Cascading

High availability and disaster recovery (Uni-directional)

Production Database → Replication → DR/HA Database
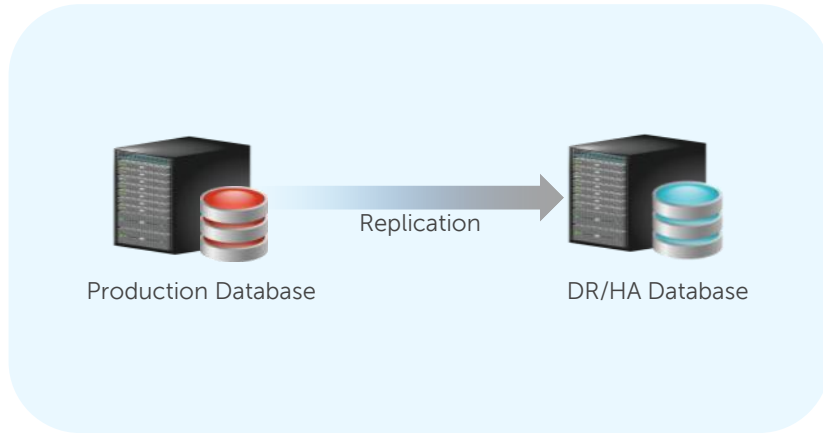
- Increased availability.

- Provides an alternate copy of production data for failover in the event of maintenance or unplanned downtime.

- Better than Oracle standby database—near ZeroIMPACT failover/failback.

Global Marketing

Data archiving (Uni-directional)

Production Database

User-level Filter

Transaction-level Filter

Selective Replication
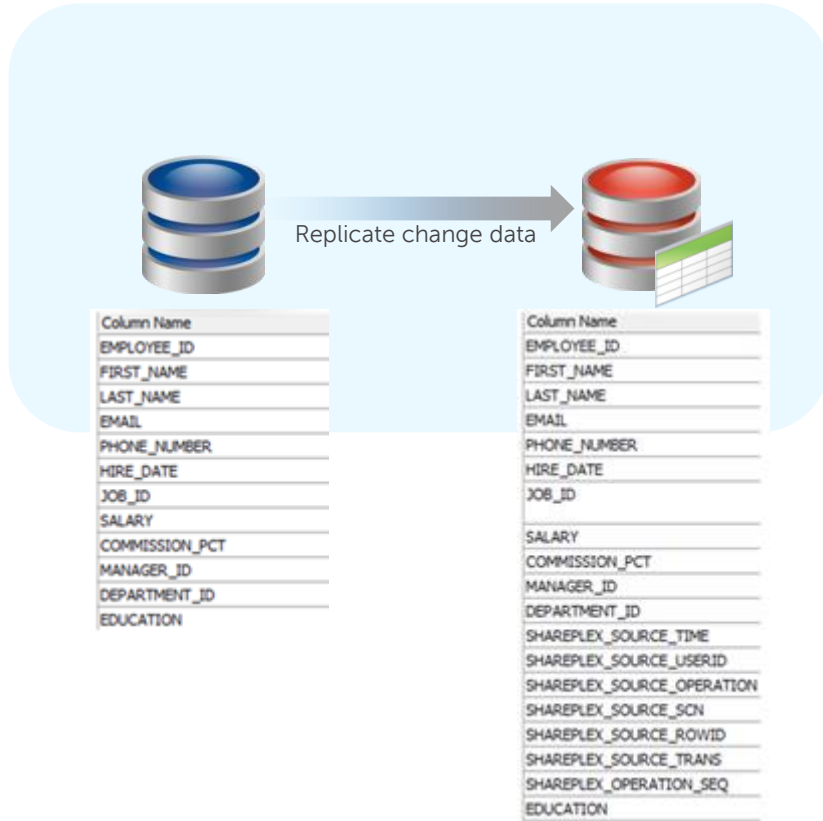
Archive Database
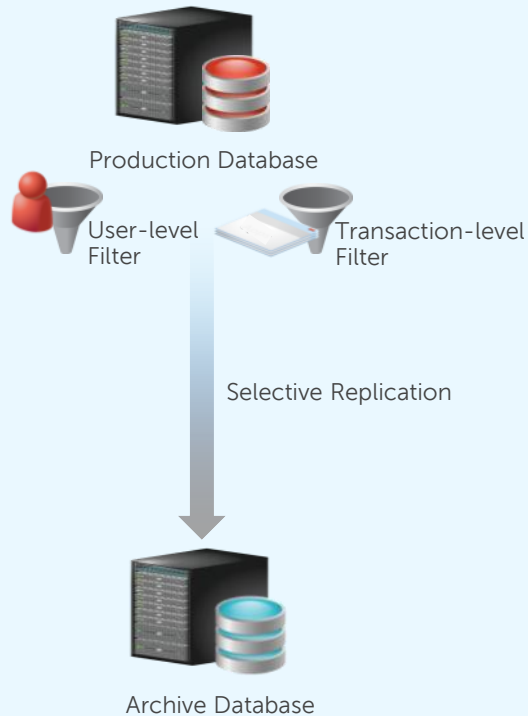
- Ability to filter data propagation at transaction level or user level.

- Purge jobs run on the source database
  - Can be selectively prevented from replicating over to the target database, thereby maintaining the copy of the purged data on-line.

Live reporting (Bi-directional: active-active/passive)
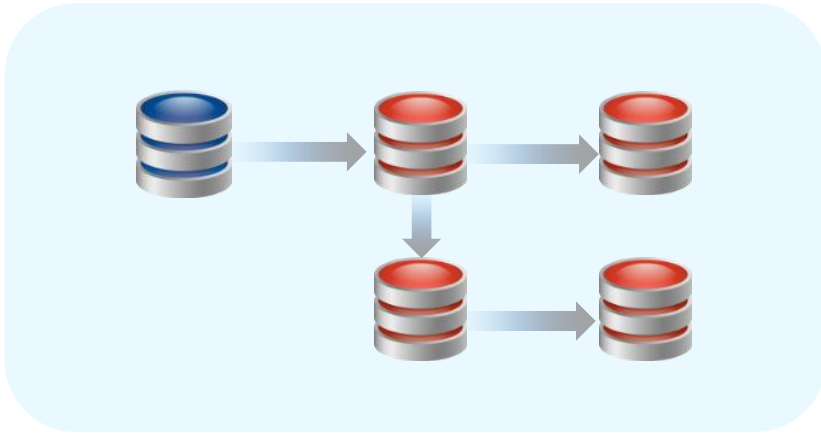

Replication
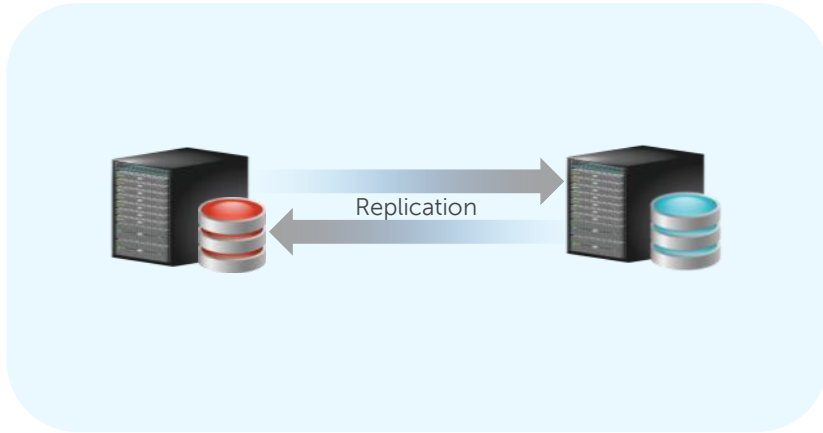
- Better Performance, reduces contention, data footprint

- Live reporting: ad hoc querying, reporting, data warehousing or Business Intelligence can be run from a secondary copy of the instance (all or a subset).

- Can be placed on Standard Edition database or in-the-cloud

Change tracking

Replicate change data

Column Name
EMPLOYEE_ID
FIRST_NAME
LAST_NAME
EMAIL
PHONE_NUMBER
HIRE_DATE
JOB_ID
SALARY
COMMISSION_PCT
MANAGER_ID
DEPARTMENT_ID
EDUCATION

Column Name
EMPLOYEE_ID
FIRST_NAME
LAST_NAME
EMAIL
PHONE_NUMBER
HIRE_DATE
JOB_ID
SALARY
COMMISSION_PCT
MANAGER_ID
DEPARTMENT_ID
SHAREPLEX_SOURCE_TIME
SHAREPLEX_SOURCE_USERID
SHAREPLEX_SOURCE_OPERATION
SHAREPLEX_SOURCE_SCN
SHAREPLEX_SOURCE_ROWID
SHAREPLEX_SOURCE_TRANS
SHAREPLEX_OPERATION_SEQ
EDUCATION

- For auditing and discovery purposes

- Keep track of changes made to a defined set of tables

- Records all changes including user id, timestamp, SCN, source row id, key values, transaction id, operation type

- Store the change tracking data on the primary server or a secondary server

Cascading to intermediary systems

- Provides regional distribution then allows for district and store distribution of data.

- Replicate data between long distances and to targets not directly connected.

- No Oracle software is required on this node if it will only be acting to store and forward.

- Cascading or Fanning the data allows for different data to reach desired targets without sending all the network packets forward to every target location.

- Move data past firewall thru secure servers without the need of Oracle licensing on transporting servers.

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- Real-time instance for high availability

Key points to consider when choosing a replication solution

- Application availability

- Read/Write access

- Platform environment combinations

- Time saving features: Compare & Repair, Migration fail-back and data integrity

- 24/7 expert support

- Cost (affordable, flexible pricing) – comprehensive all in one packaged solution (no need to purchase add-ons)

Supporting documents

- Technical Brief:
  - Data Consolidation and Distribution
    http://www.quest.com/techbrief/data-consolidation-and-distribution-with-shareplex-for-oracle818890.aspx

- White Paper:
  - Taming the Data Beast – Using Changed Data Capture in Place of Extract, Transform and Load to Improve Data Integration
    http://www.quest.com/whitepaper/taming-the-data-beast818927.aspx

- SharePlex Data Sheet:
  http://www.quest.com/documents/shareplex-for-oracle-datasheet-1934.pdf

Questions

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