
SharePlex™

Empowering your data sharing architecture for
continuous availability

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Agenda

- Data sharing challenges
- Benefits of data distribution and consolidation using replication
- Help from SharePlex
- Data replication architecture
- Data replication use cases
- Customer examples
- 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

- SharePlex database replication
- Maintain a near real time copy of the database



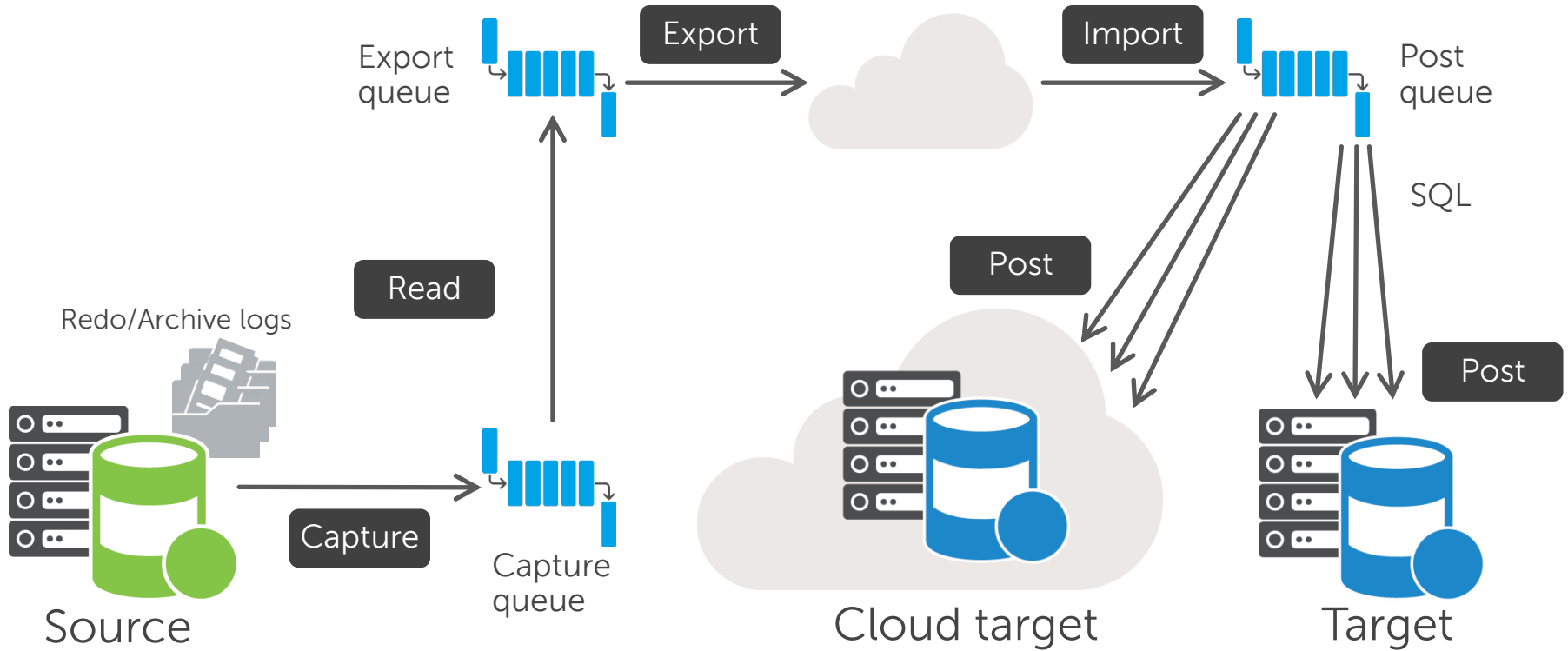
Benefits of data distribution & consolidation using replication

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



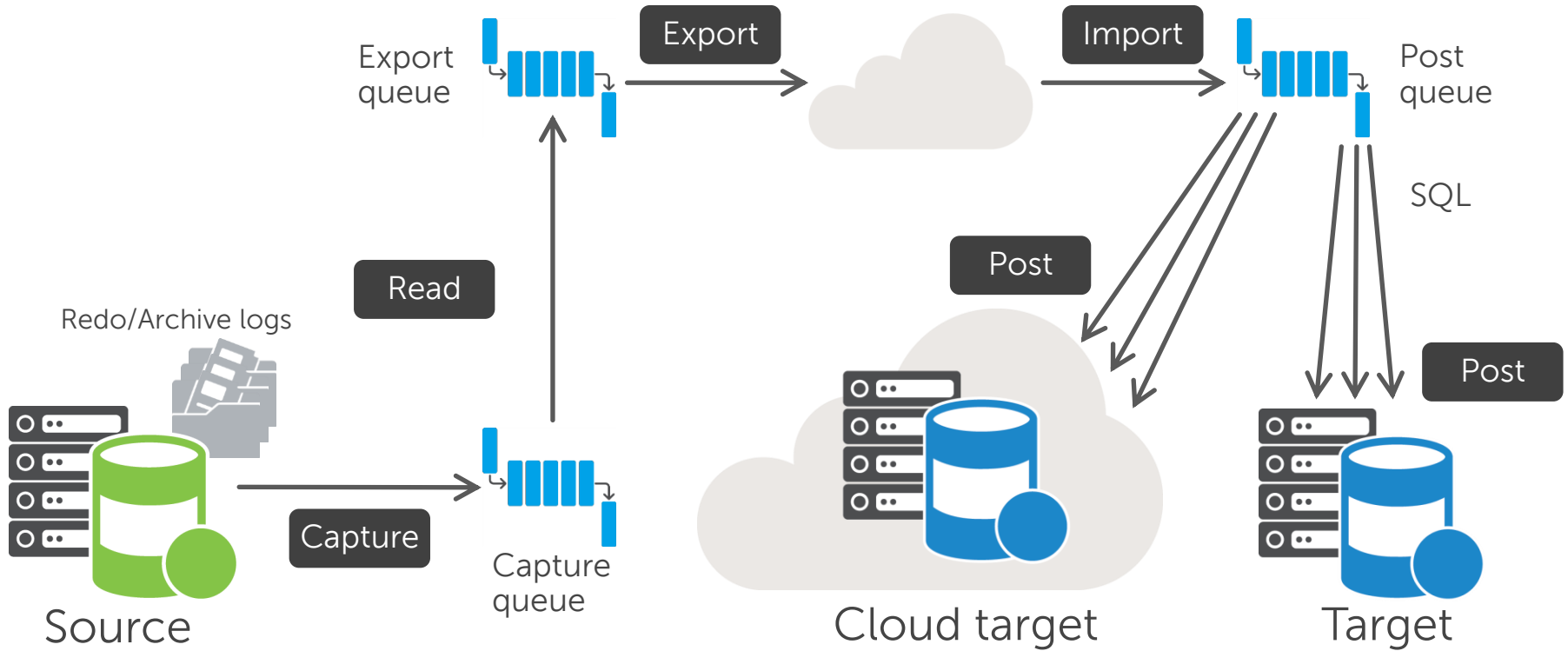
SharePlex architecture – Oracle to Oracle

On-premises, remote, or in-the-Cloud

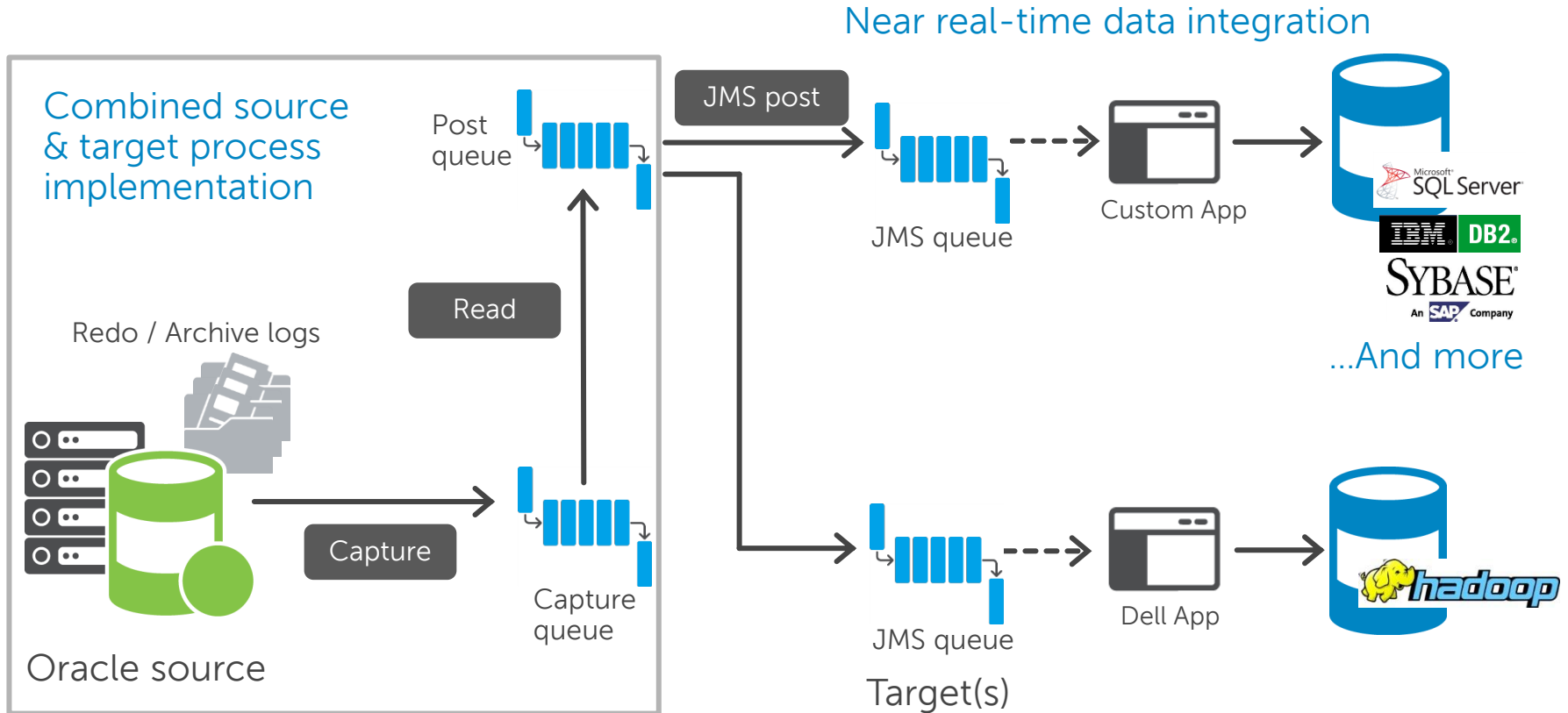


SharePlex architecture – Oracle to Oracle

On-premises, remote, or in-the-Cloud

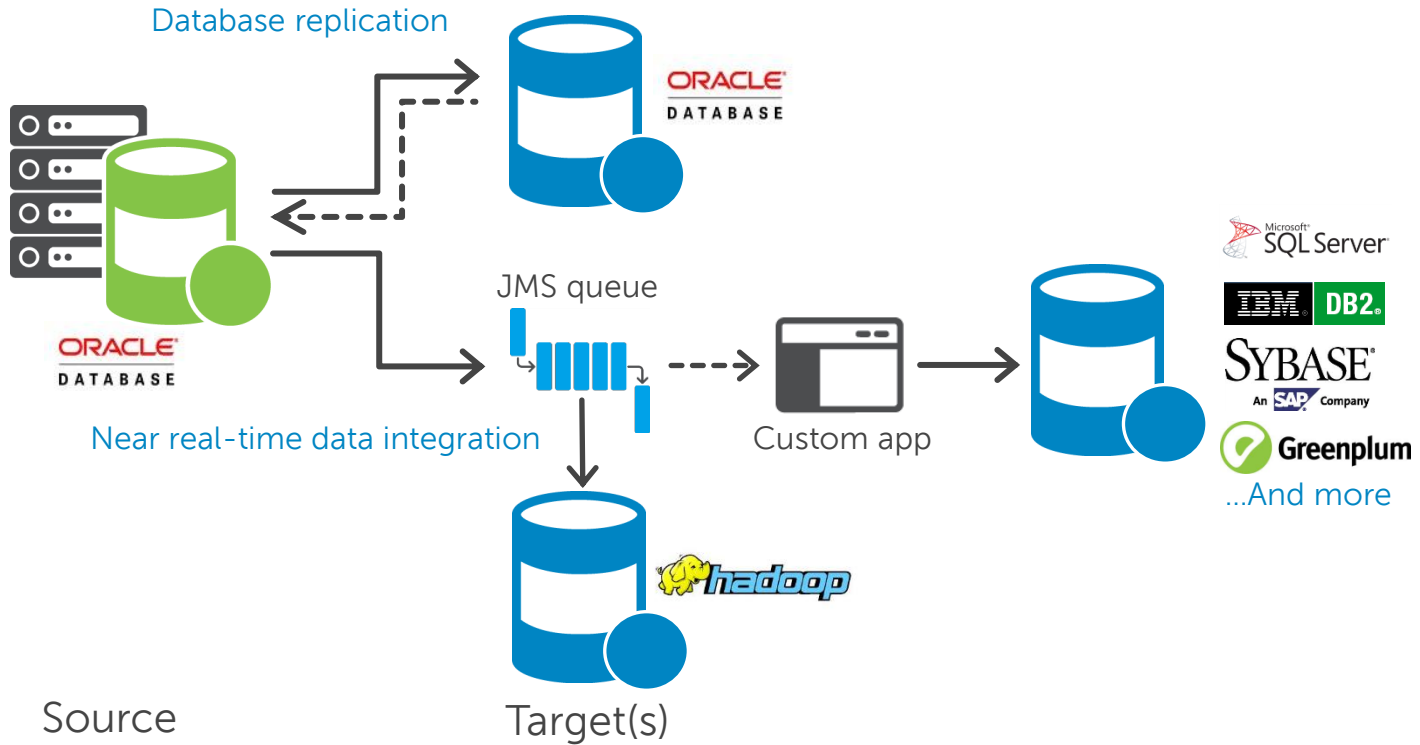


SharePlex architecture - data integration

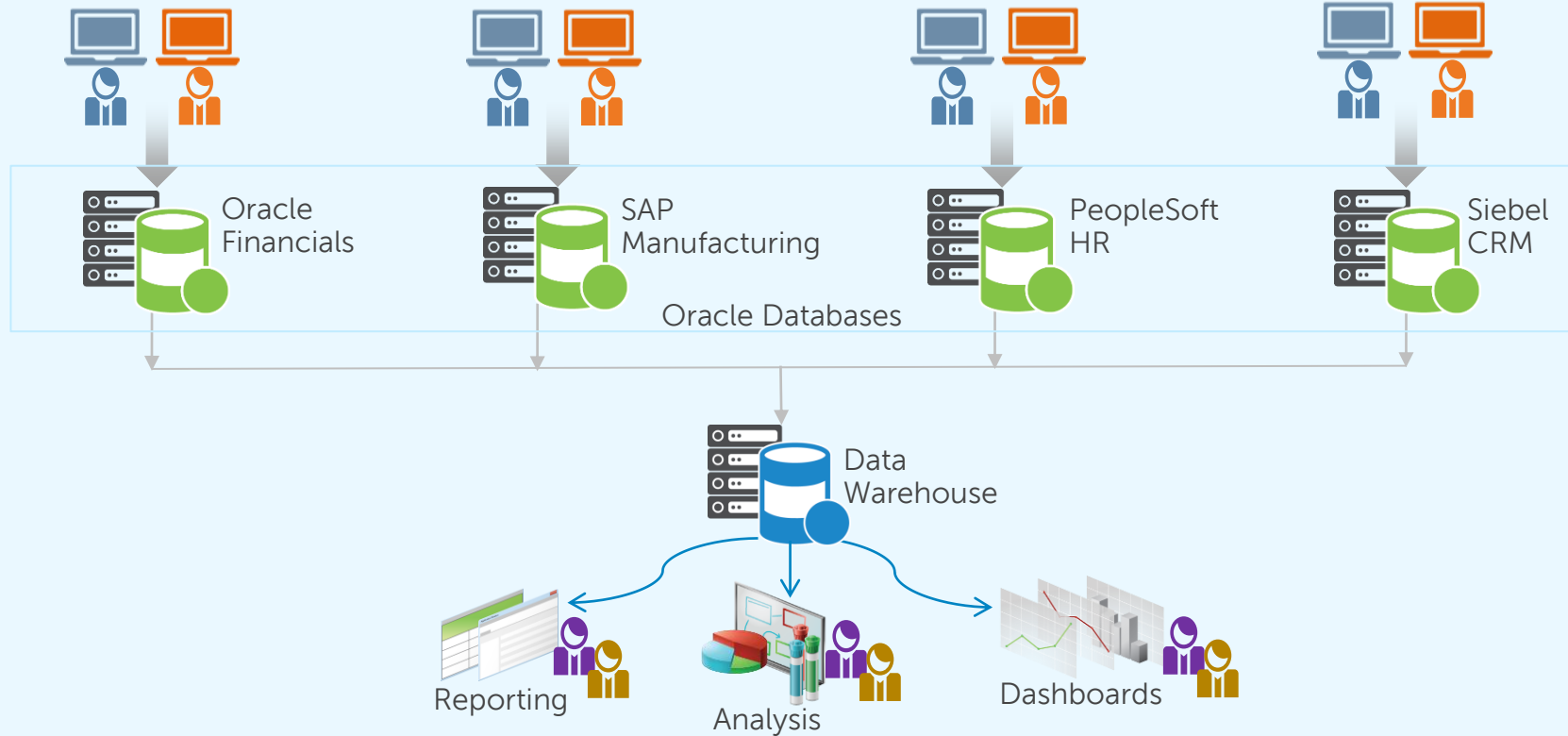


SharePlex v8.0

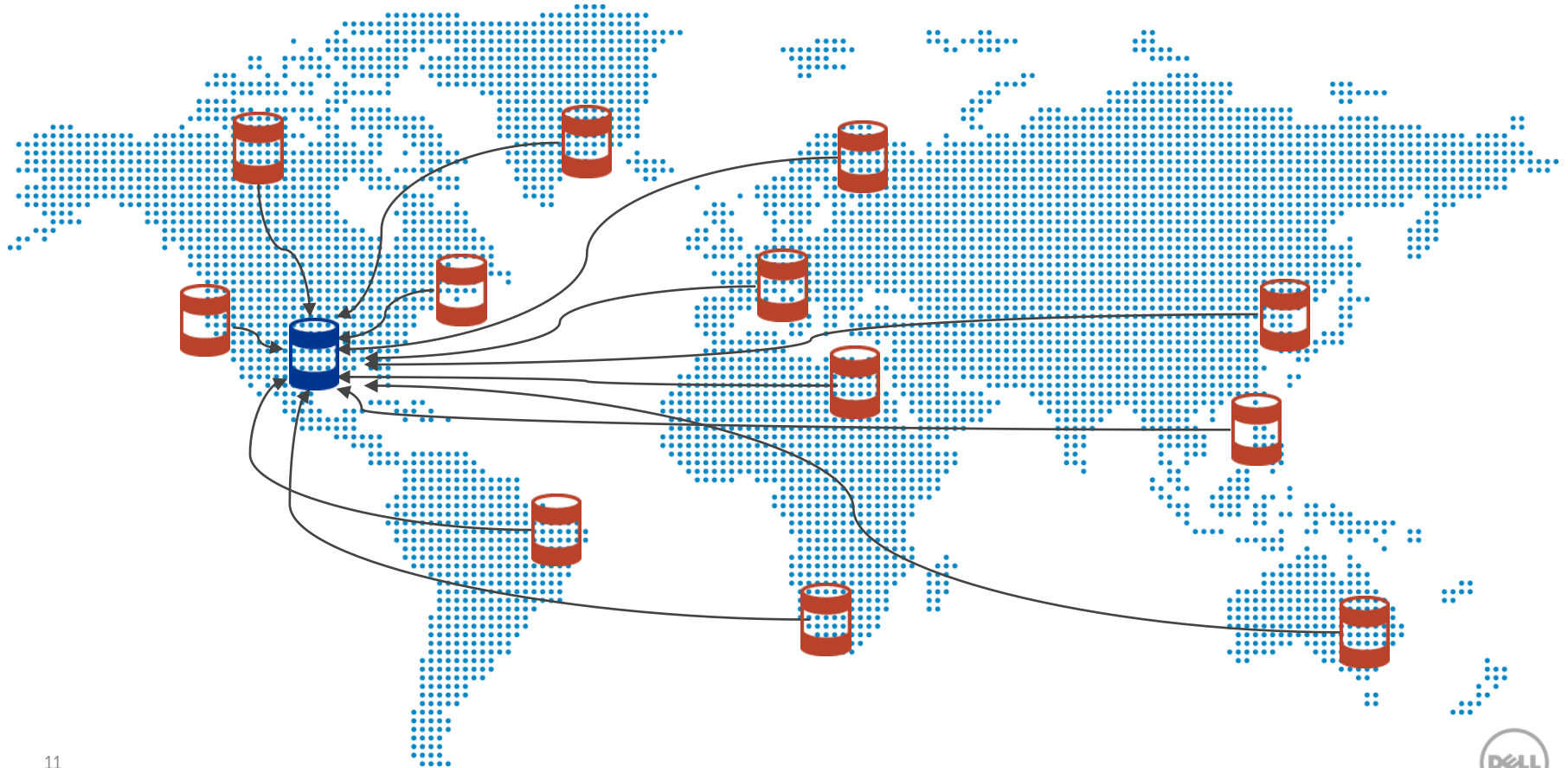
Database replication & near real-time data integration



Consolidation: operational BI data stores



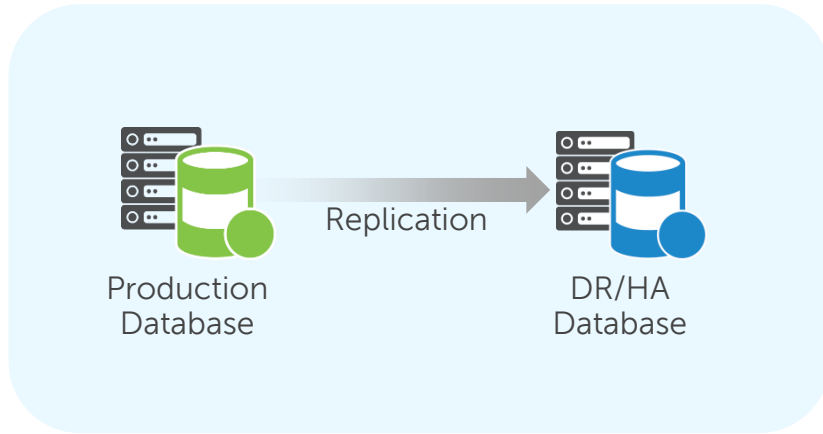
Consolidation: Multiple stores/locations to **central database**



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

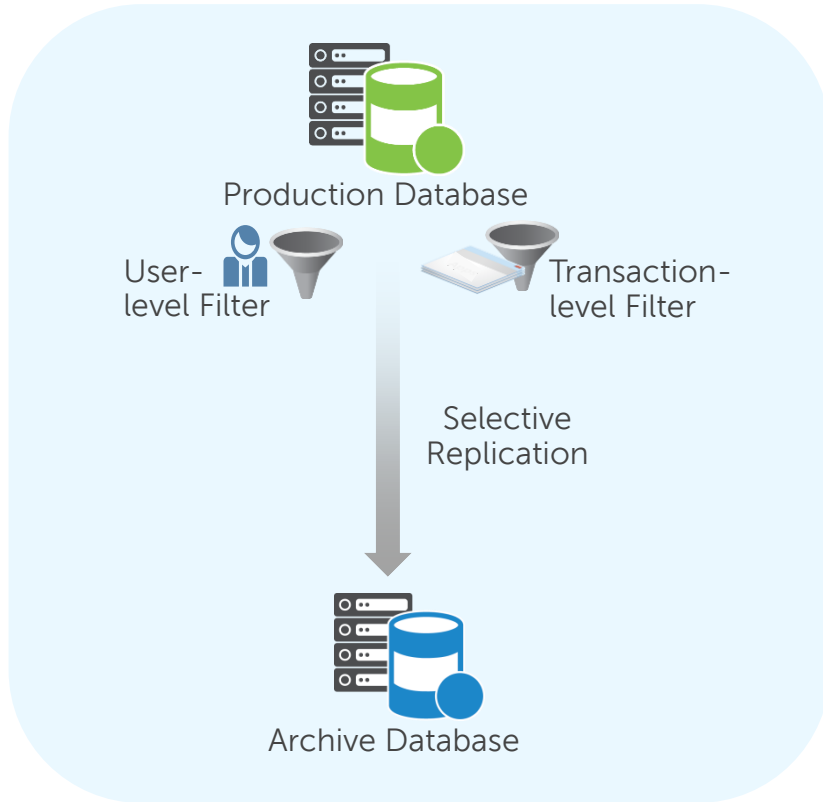


High availability and **disaster recovery** (Uni-directional)



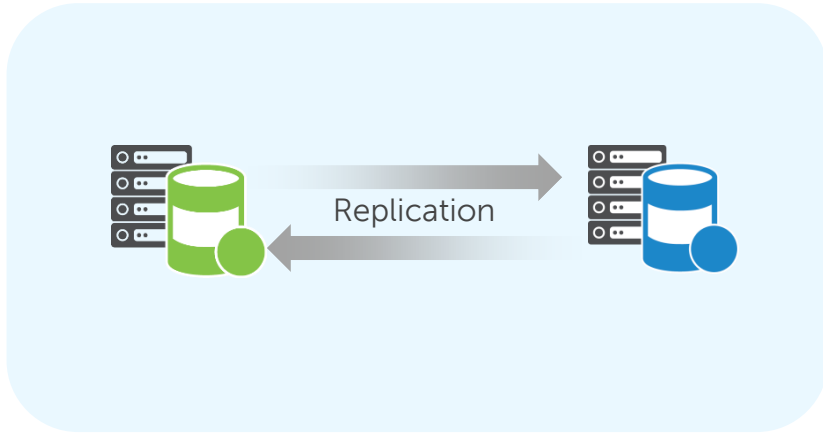
- Increased availability.
- Provides an alternate copy of production data for failover in the event of maintenance or unplanned downtime.
- Better than Oracle standby database—near ZeroIMPACT failover/failback.

Data archiving (Uni-directional)



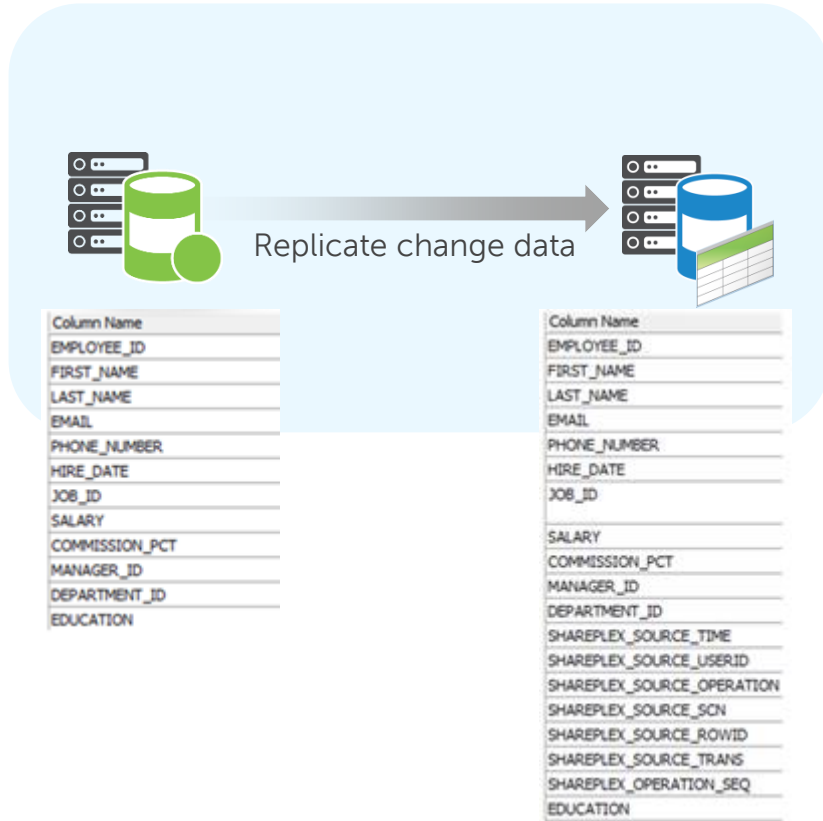
- Ability to filter data propagation at transaction level or user level.
- Purge jobs run on the source database
 - Can be selectively prevented from replicating over to the target database, thereby maintaining the copy of the purged data on-line.

Live reporting (Bi-directional: Active-Active/Passive)



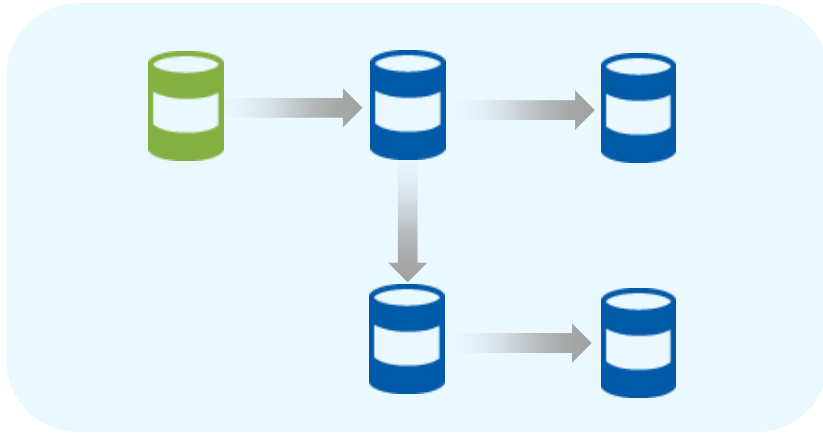
- Better Performance, reduces contention, data footprint
- Live reporting: ad hoc querying, reporting, data warehousing or Business Intelligence can be run from a secondary copy of the instance (all or a subset).
- Can be placed on Standard Edition database or in-the-cloud

Change tracking



- 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

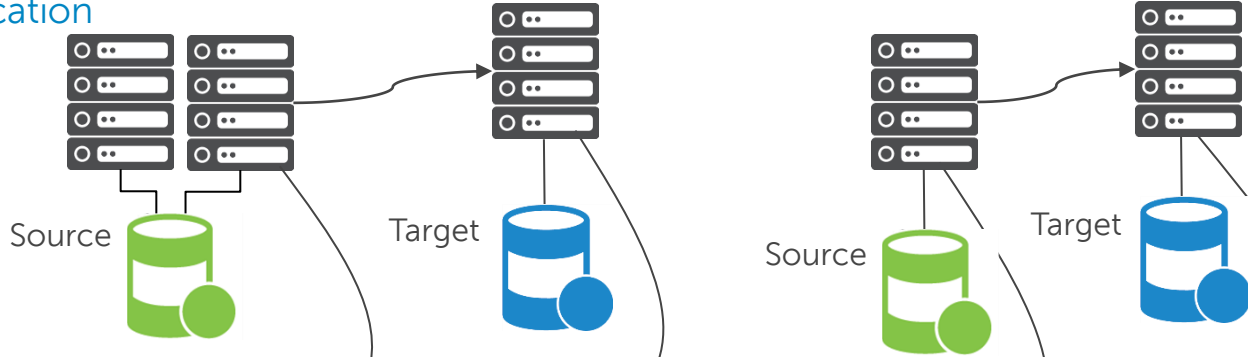


- Provides regional distribution then allows for district and store distribution of data.
- Replicate data between long distances and to targets not directly connected.
- No Oracle software is required on this node if it will only be acting to store and forward.
- Cascading or Fanning the data allows 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.

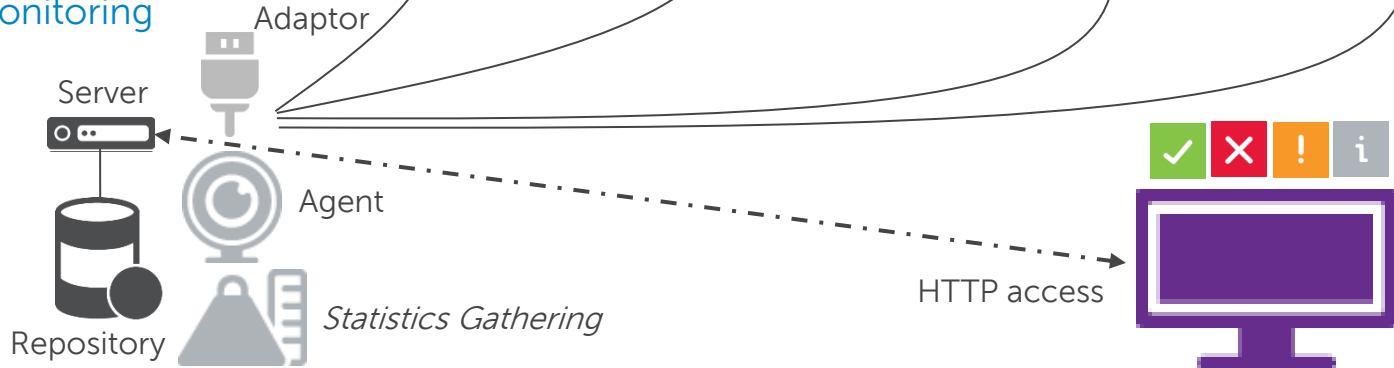
SharePlex™ Manager

SharePlex Manager (GUI) architecture diagram

SharePlex Replication



SharePlex Monitoring



Discovery #1

- After installation, discover a SharePlex infrastructure at first time.

Replication Overview > SharePlex Administration > **Manage Monitoring**



Welcome

Define Replication Model

Discovery

Manage View

Finished

The Discovery Wizard is used to identify a replication model in your SharePlex infrastructure.

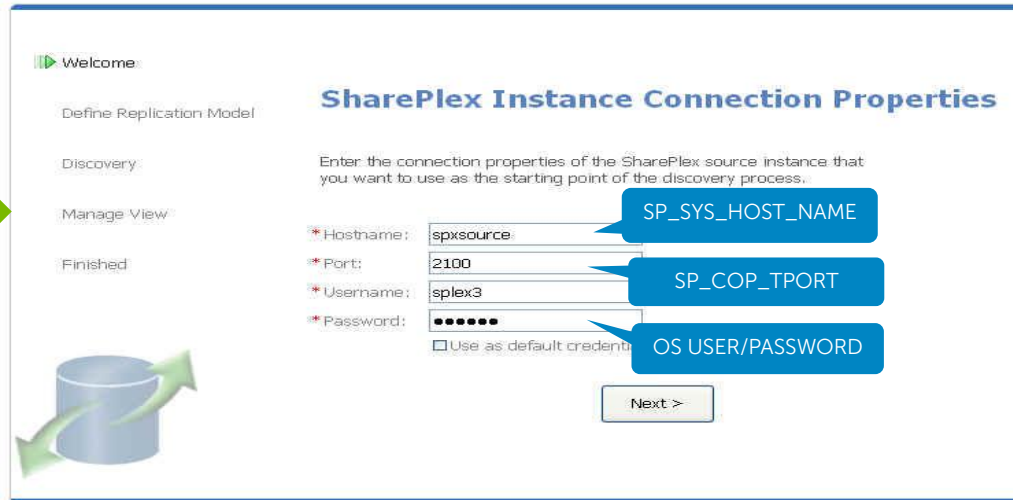
You will begin by specifying the connection properties instance. The Discovery Wizard will then identify the instances of that stream and then the instances of any that may be connected to it.

If the instance specified has not been activated, you will have the option to create a new replication stream.

Make sure that SharePlex is properly installed and run the option to begin the discovery process.

Next >

Replication Overview > SharePlex Administration > **Manage Monitoring**



SharePlex Instance Connection Properties

Define Replication Model

Discovery

Manage View

Finished

Enter the connection properties of the SharePlex source instance that you want to use as the starting point of the discovery process.

* Hostname: spxsource

* Port: 2100

* Username: splex3

* Password: ●●●●●●

Use as default credentials

Next >

SP_SYS_HOST_NAME

SP_COP_TPORT

OS USER/PASSWORD

Instance overview

- Rate
- Time remaining

The screenshot shows the 'Instance Overview' page in the SharePlex Manager web interface. The browser window title is 'Investigate - SharePlex Manager - Microsoft Internet Explorer'. The address bar shows 'http://10.1.12.176:8080/console/page/monitor/system:shareplexoverview.33/7'. The page has a navigation menu with 'Organize', 'Investigate', and 'Configure'. The main content area is titled 'Instance Overview' and contains a table of replication instances.

| Status | Stream Name | Instance Name | Rate | Time Remaining | Events |
|--------|--------------------------|--------------------------|------|----------------|--------|
| ✓ | irvqasu12.quest.com:8404 | irvqasu12.quest.com:8404 | 0 | 0.0 min | |
| ✓ | irvqasu12.quest.com:8404 | irvqasu11.quest.com:8404 | 0 | 0.0 min | |
| ✓ | irvqasu11:8404 | irvqasu11:8404 | 198 | 3.6 min | |
| ✓ | irvqasu11:8404 | IRVqasu12.quest.com:8404 | 54 | 1.0 min | |
| ✓ | irvqasu11:8404 | irvqasu19.quest.com:8404 | 0 | 0.0 min | |



Instance detail

- Processes
- Queues
- How replication is set up

The screenshot displays the 'Instance Detail' page in the SharePlex Manager web interface. The page shows the configuration for a replication instance named 'irvqasu11:8404' on host 'irvqasu11' with source database 'o920v64a'. The instance is currently in a 'Capture' state, with a 'Read' operation in progress, taking 3.6 minutes. A table below lists four target instances (test1 through test4) with their respective configurations and replication status.

| Status | Instance Name | Host Name | Source DB | Events |
|--------|----------------|-----------|-----------|--------|
| ● | irvqasu11:8404 | irvqasu11 | o920v64a | |

| Target | Import | Target Status | Instance Name | Target Host Name | Target DB | Target Ever |
|--------|--------|---------------|--------------------------|---------------------|-----------|-------------|
| test1 | 902 | ● | irvqasu12.quest.com:8404 | irvqasu12.quest.com | a102a64f | |
| test2 | 0 | ● | irvqasu12.quest.com:8404 | irvqasu12.quest.com | a102a64f | |
| test3 | 0 | ● | irvqasu12.quest.com:8404 | irvqasu12.quest.com | a102a64f | |
| test4 | 0 | ● | irvqasu12.quest.com:8404 | irvqasu12.quest.com | a102a64f | |

Monitoring Instance Detail > Show Post Detail

The screenshot displays the 'Post Process Detail' page in a monitoring tool. At the top, there are navigation buttons: 'Stop Post', 'Abort Post', and 'Back to Instance Detail'. Below this is a table with the following data:

| Target Status | Stream Name | Target Instance Name | Target Host Name |
|--------------------------------------|----------------|----------------------|------------------|
| ■ | spxsource:2400 | spxtarget:2400 | spxtarget |

| Process Status | Queue Name | Source DB | Target DB | State | Activation ID | Checkpoint | Last Record Processed | SQL Cache Hit Ratio | Events |
|--------------------------------------|------------|-----------|-----------|---------|---------------|------------|-----------------------|---------------------|--------|
| ▶ | QP_Q1 | SPX_SRC | SPX_TRG | Unknown | 16 | 243,096 | 87. 12. 31 오후 11:59 | | 106% |

Below the table are several performance graphs:

- Latency:** A line graph showing a sharp spike in latency around 10:30, reaching approximately 24.
- Transaction Rate:** A line graph showing a sharp spike in transaction rate around 10:30, reaching approximately 80 transactions/s.
- Operation Rate:** A line graph showing a sharp spike in operation rate around 10:30, reaching approximately 800 operations/s.
- Operation Mix:** A stacked area chart showing the distribution of operations. It includes Inserts (red), Deletes (blue), and Updates (green). Updates are the most frequent operation during the spike.
- Transaction Concurrency:** A line graph showing transaction concurrency, which remains very low throughout the period.

At the bottom, there is a 'Non-Default Parameters' section with a 'Set Parameters' button and a table:

| Parameters | Value |
|-----------------------------|-------|
| SP_OPO_READRELEASE_INTERVAL | 10000 |



Manage monitoring Instance Detail > Manage Monitoring

| Status | Instance Name | Host Name | Source DB | Events |
|--------|---------------|-----------|-----------|--------|
| | spxsourc:2400 | spxsource | SPX_SRC | |



Replication Overview > Instance Detail > Manage Monitoring

- Instances
- Streams
- Views
- Permissions
- Discovery
- Setup Replication Stream
- Return to Monitoring

To make a new config

SharePlex Instance

spxsourc:2400

Connection Information

Host: spxsourc
Port: 2400
IP Address: 10.30.104.220
Datasource: SPX_SRC
Username: splex3
Password: *****

Configurations

| Filename | Datasource | Date Activated | State |
|---------------|------------|--------------------------|--------|
| test_config_1 | o.SPX_SRC | Sep 28, 2009 10:04:33 AM | Active |
| test_config | o.SPX_SRC | - | Inac |

Previous Connection to this Instance

Date: Sep 28, 2009 11:35:54 AM
SharePlex Version: 7.0.0.30
Connection Status: Connection Validated

Can see the status or can do activate/deactivate

SharePlex Configuration File Property

test_config_1

Date Activated: Sep 28, 2009 10:04:33 AM
Datasource: o.SPX_SRC
SharePlex Instance: spxsourc:2400

| # | datasource:o.SPX_SRC | | |
|----|-----------------------|-----------------------|-------------|
| # | #source tables | target tables | routing map |
| 5 | TESTUSER.C_ITEM | TESTUSER.C_ITEM | spxsource |
| 6 | TESTUSER.C_ORDER_LINE | TESTUSER.C_ORDER_LINE | spxsource |
| 7 | TESTUSER.C_CUSTOMER | TESTUSER.C_CUSTOMER | spxsource |
| 8 | TESTUSER.C_NEW_ORDER | TESTUSER.C_NEW_ORDER | spxsource |
| 9 | TESTUSER.C_DISTRICT | TESTUSER.C_DISTRICT | spxsource |
| 10 | TESTUSER.C_STOCK | TESTUSER.C_STOCK | spxsource |
| 11 | TESTUSER.C_WAREHOUSE | TESTUSER.C_WAREHOUSE | spxsource |
| 12 | TESTUSER.C_ORDER | TESTUSER.C_ORDER | spxsource |
| 13 | TESTUSER.C_HISTORY | TESTUSER.C_HISTORY | spxsource |



Alarms Administration > Rules & Notifications > Manage Rules

foglight | Operations | Help

Home | Agents | Data | Schedules | Rules & Notifications | Cartridges | Setup & Support | Users & Security

Rules & Notifications

Manage Rules(Filter By Cartridge: SharePlexManager)

Filter: By Cartridge

Showing rules 1 - 23 of 23 Show rules per page

| <input type="checkbox"/> | <input type="checkbox"/> | Rule Name | Rule Scope | Cartridge Name | | | | | |
|-------------------------------------|--------------------------|--|-------------------------|------------------|--|--|--|--|--|
| <input type="checkbox"/> | <input type="checkbox"/> | Capture RAC Status | SharePlexCaptureProcess | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Events | SharePlexInstance | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Instance Not Monitored | SharePlexInstance | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Source Capture Process | SharePlexCaptureProcess | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Source Connection Status | SharePlexSource | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Source Export Process | SharePlexExportProcess | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Source Reader Process | SharePlexReadProcess | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Target Connection Status | SharePlexTarget | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Target Import Process | SharePlexImportProcess | SharePlexManager | | | | | |
| <input type="checkbox"/> | <input type="checkbox"/> | Halogen Target Post Process | SharePlexPostProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Capture Process Latency | SharePlexCaptureProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Capture Process Time Remaining | SharePlexCaptureProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Capture Queue | SharePlexReadProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Export Process Time Remaining | SharePlexExportProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Export Queue | SharePlexExportProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Post Process Latency | SharePlexPostProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Post Process Time Remaining | SharePlexPostProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Post Queue | SharePlexPostProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Read Process Latency | SharePlexReadProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Read Process Time Remaining | SharePlexReadProcess | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Replication Stream Latency | SharePlexStream | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Source Instance Time Remaining | SharePlexSource | SharePlexManager | | | | | |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | SharePlex Target Instance Time Remaining | SharePlexTarget | SharePlexManager | | | | | |



Alarms administration Rule Definition

The screenshot displays the Foglight web interface for managing rules. The top navigation bar includes 'Home', 'Agents', 'Data', 'Schedules', 'Rules & Notifications', 'Cartridges', 'Setup & Support', and 'Users & Security'. The main content area is titled 'Rules & Notifications' and shows a 'Rule Summary' tab for 'SharePlex Capture Process Latency'. Below this, there are tabs for 'Rule Definition', 'Conditions, Alarms & Actions', 'Schedules', 'Behavior', and 'Rule Variables'. The 'Rule Definition' tab is active, showing the rule name, type, and a list of severity levels: Fatal, Critical (Not active), Warning, Normal, and Undefined (Not active). A red arrow points to a button in the top right of the 'Rule Definition' tab area, with the text 'Click here' next to it.

Home Agents Data Schedules Rules & Notifications Cartridges Setup & Support Users & Security

Rules & Notifications Rule Summary

Edit Rule - SharePlex Capture Process Latency

Rule Definition Conditions, Alarms & Actions Schedules Behavior Rule Variables

Conditions, Alarms & Actions
Rule Name: SharePlex Capture Process Latency
Rule Type: Multiple-Severity Rule
Successfully saved the changes

- Fatal
- Critical (Not active)
- Warning
- Normal
- Undefined (Not active)

Save All

Click here

Dashboard report

Foglight®

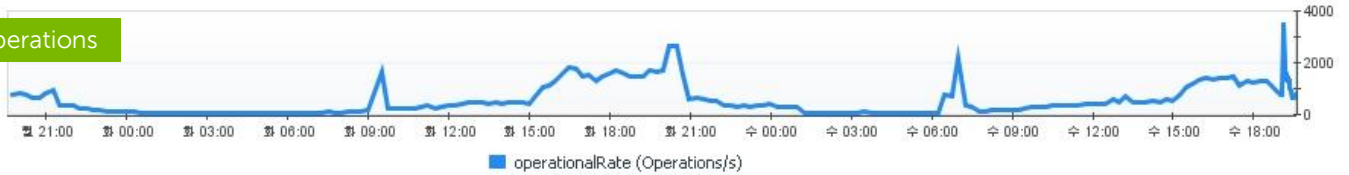
foglight | Sign Out

Performance View

2009, 12, 21 - 2009, 12, 23 2.0 days

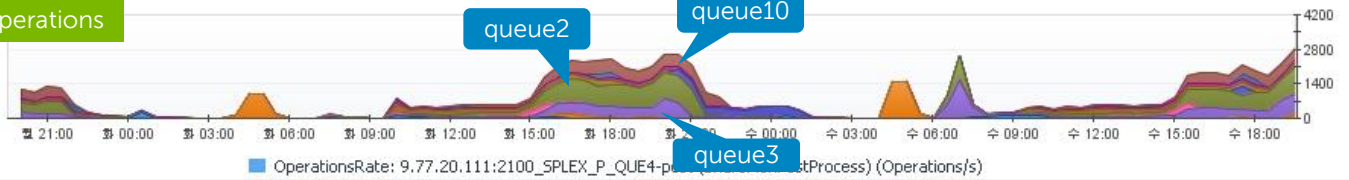
Capture's Operation

Capture operations



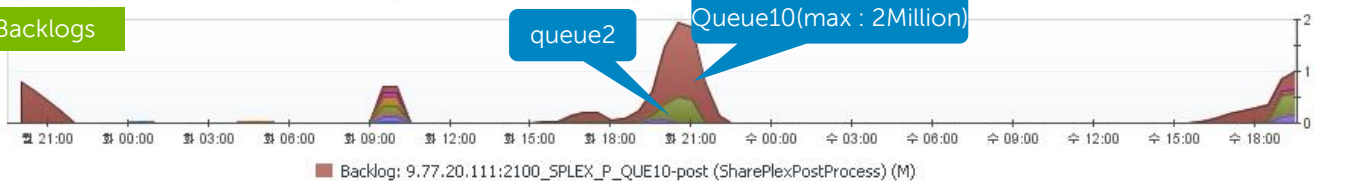
Post's Operations

ALL Post operations



Metrics for: 9.77.20.111:2100_SPLEX_P_QUE4-post (SharePlexPostProcess), 9.77.20.111:2100_SPLEX_P_QUE8-post (SharePlexPostProcess), 9.77.20.111:2100_S...

ALL Post Backlogs



SharePlex™ Customers



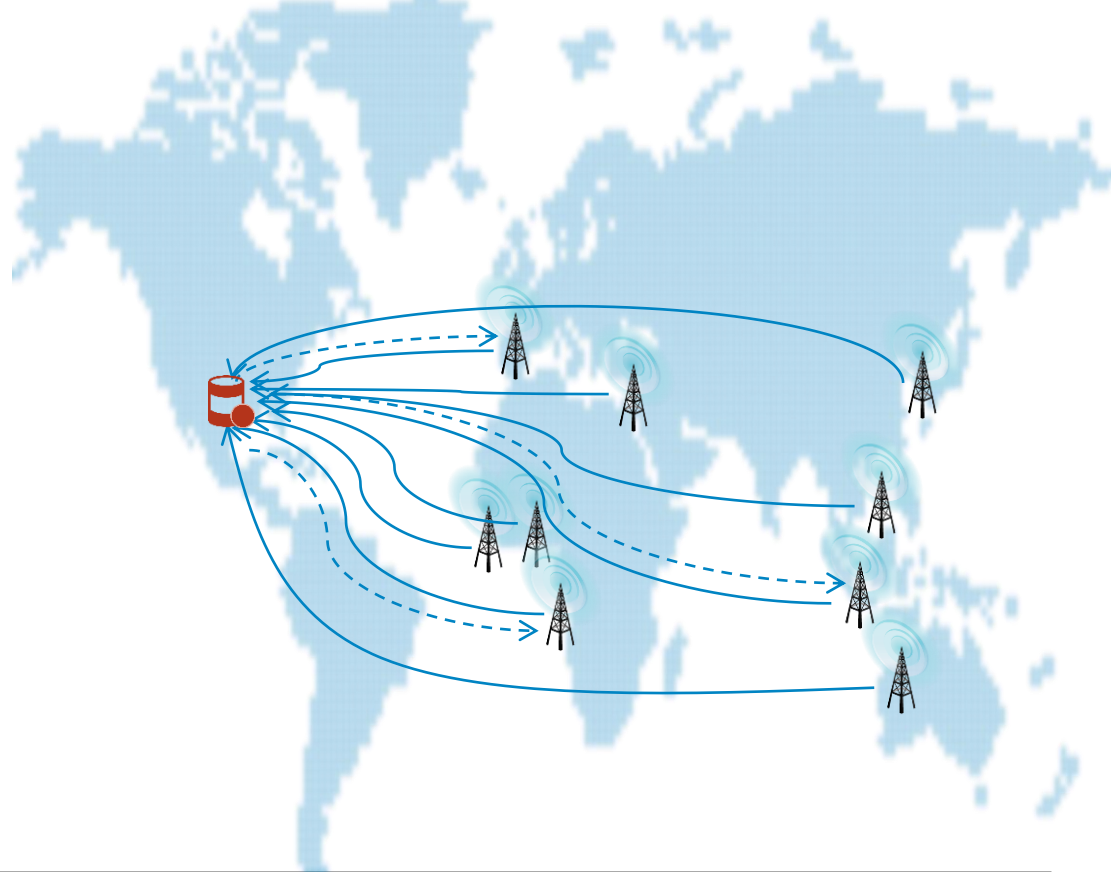
Customer use case: **data consolidation**

Environment

- Offshore oil drilling rigs at 9 locations around the world to a central database in Houston
- 512 kbps satellite network from rigs to Houston
- Select row data replication from central to selected instance

Goals/Benefits:

- Local access to data for optimal application performance
- Less data volume for data searches – better performance



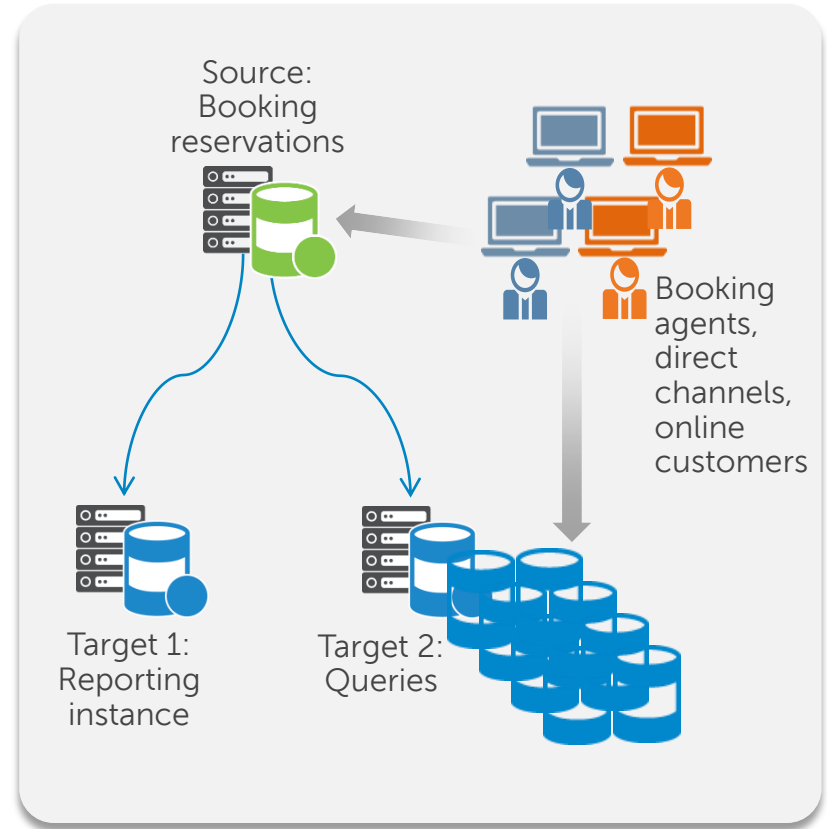
Customer use case: data distribution

Environment

- Well known hotel chain
- Main database for booking reservations
 - One target with 9 databases for queries by booking agents, direct channels, and online customers
- Second target for reporting instance—nightly batch jobs

Goals/Benefits:

- Offload querying and report processing
- Tune instance specific to need (queries, reporting, or OLTP)
- Distribute load per process type
- Improve performance of all activities
- Better customer satisfaction



Use case: offload **operational reporting**

Oracle Enterprise Edition to Oracle Standard Edition

Environment

- Credit Union's high availability database with 250 GB
- SharePlex replication between two data center locations – same city
- Oracle 10g→11gR2
- AIX OEE, Windows 2008 OSE, SQL Server

Business Problem

- Ad hoc business reports for the customer
- Impacting production system is critical
- Error prone Export/Import, ETL process = 6 hours nightly

Goals/Benefits

- Offload 150GB of data to OSE
- Resource and cost savings
- Improved IT staff's reputation and relationship with BU's



“Using SharePlex to automate the replication of our core banking system data, we’ve reduced the number of support incidents related to data reporting by 85% with a cost savings of approximately 20 hours per week. With that we’ve been able to assign the DBA resources to other projects, for an overall gain in efficiency of approximately 1 DBA resource—a savings of \$80,000 annually.”

SharePlex Customer, Manager Business Systems

Why SharePlex?

Mature technology: Since 1998 with Over +1400 customers, +24,000 installs, +350 industries

Saves time

- Simplistic manageability
- Proven reliability
- Less complexity
- Application transparency
- Hardware commoditization
- Use case discovery

Quality of investment

- Performance & scalability
- Data accuracy
- Data repair
- Flexibility

Return on investment

- Lower price point
- Unmatched support
- Expert services

Next Steps

For more information, visit SharePlex

URL Link: www.software.dell.com/shareplex

- Datasheets, videos, case studies, white papers, technical briefs, events, and webcasts

Ask a Dell Software Account Manager for a Proof of Concept (POC)

- Download 30-day trial software (SC and Support assistance is included)
- On your own test environment
- Dell cloud sandbox

Join our SharePlex Community:

URL Link: www.QUEST.com/Community-SharePlex

- Discussions, blogs, expert advice, polls, demo's, and technical documents

Supporting documents

- Technical Brief: Data Consolidation and Distribution with SharePlex
<http://software.dell.com/techbrief/data-consolidation-and-distribution-with-shareplex-for-oracle822958/>
- White Paper: Taming the Data Beast – Using Changed Data Capture in Place of Extract, Transform and Load to Improve Data Integration
<http://software.dell.com/whitepaper/taming-the-data-beast822972/>
- SharePlex Data Sheet:
<http://software.dell.com/documents/shareplex-for-oracle-datasheet-19775.pdf>
- SharePlex Video:
<http://bcove.me/sa85yb6j>

A high-angle photograph of a group of approximately 25 students sitting in a large circle on a paved surface. The students are dressed in school uniforms, including dark jackets, white shirts, and ties. They are arranged in a circle, with some sitting on the ground and others on their knees. The word "Questions" is overlaid in a large, white, sans-serif font on the left side of the image. The background is a plain, light-colored paved area with some faint circular markings. The lighting is bright, casting shadows on the ground.

Questions

To learn more about

SharePlexTM

Visit software.dell.com/SharePlex



The power to do more