Beyond High Availability– Replication's Changing Role

Wednesday, November 19th, 2014

Susan Wong
SharePlex Solutions Architect

Agenda

- Replication becomes Mainstream
- Dell's approach to replication solutions
- Architecture of SharePlex
- Logical vs. Physical Replication
- Use cases of replication

Replication becomes **mainstream**

September 2007
- Data Mirror → IBM

October 2009
- GoldenGate → Oracle

September 2012
- Quest → Dell

3 Premiere IT solution providers adopt replication in 5 years
The conversation changed from being an edge case component to an expected approach in infrastructure design.

< 2007	Explaining replication
2007-2013	Awareness increasing
2014+	Sophistication surges

State of the **replication market**

> Replication needs to be part of every Data Protection plan, to ensure agility for recovery – and often to increase the overall usability/ROI of one's data protection infrastructure by enabling additional ways to leverage the secondary/tertiary data copies.

Jason Buffington
Senior Analyst
ESG-Global
July 2014

Core service

Often high volume

Across the enterprise

Risk mitigation providing high availability & scalability

- Commonly a Core part of infrastructure
- Ever increasing data volumes
- Slow convergence in data integration of:
  - EAI
  - ETL
  - Replication
- Heterogeneous database support is expected
- Often, replication is part of mission critical application services, ie business continuity plan

Logical replication: mix and match

Operating system migrations

- Change hardware vendor
- Migrate to new servers (e.g. Solaris to Linux)
- RAC or virtualized environments

Oracle database migrations

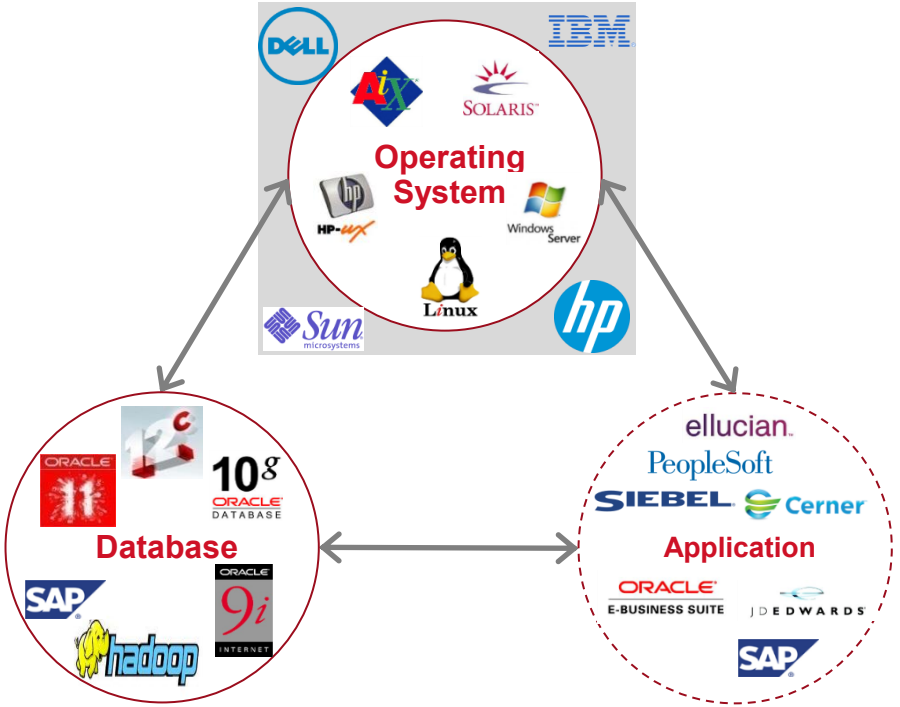
- Expired support on old versions cost prohibitive
- Need new features in newer versions

Storage migration

- Replace with newer/faster disc array

Application migrations

- Upgrade the application to a new version
- Coincides with a hardware and or DB upgrade
- Real-time copy to a different platform



Dell's Approach to **Database Replication**

Past, Present & Future: **continually evolving** to meet and exceed market demands

Performance

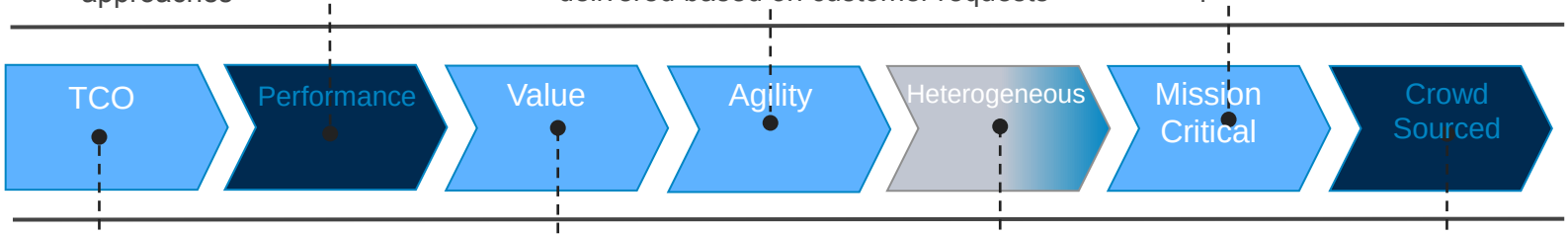
1. Every release contains performance enhancements
2. Combination iterative & big bang approaches

Agility

1. Product features are combination of deliberate product planning
2. Nearly every week, custom features are delivered based on customer requests

Mission Critical

1. 7x24 support
2. Expanding Multi-lingual
3. Average of 7+ years of support experience



Lowest TCO

1. Cohesive/Integrated experience
2. Content in documentation, knowledge base, videos & more
3. Error conditions to solution
4. Compare/Repair is just the start in manageability

Value

1. Priced to bring maximum value to customers.
2. First to market with term
3. Single solution without add-ons, comprehensive
4. Flexible licensing & support with complicated ELA

Heterogeneous

1. Oracle legacy
2. Oracle source
3. Six targets and many more in the works

Crowd Sourced

1. Sharing the best practices
2. Zero exposure of customer data

SharePlex database replication: scalability, availability and near real-time data integration

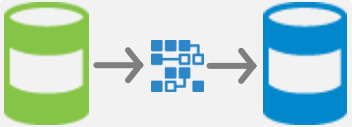
Affordably replicate Oracle data on-premises, remotely or in-the-cloud for special purposes:

- Ensure high availability and disaster recovery
- Minimize risk and downtime associated with migrations and upgrades
- Improve performance of OLTP systems
- Harness real-time reporting and data warehousing
- Optimize analytics and the use of business intelligence applications

High availability/
Disaster recovery

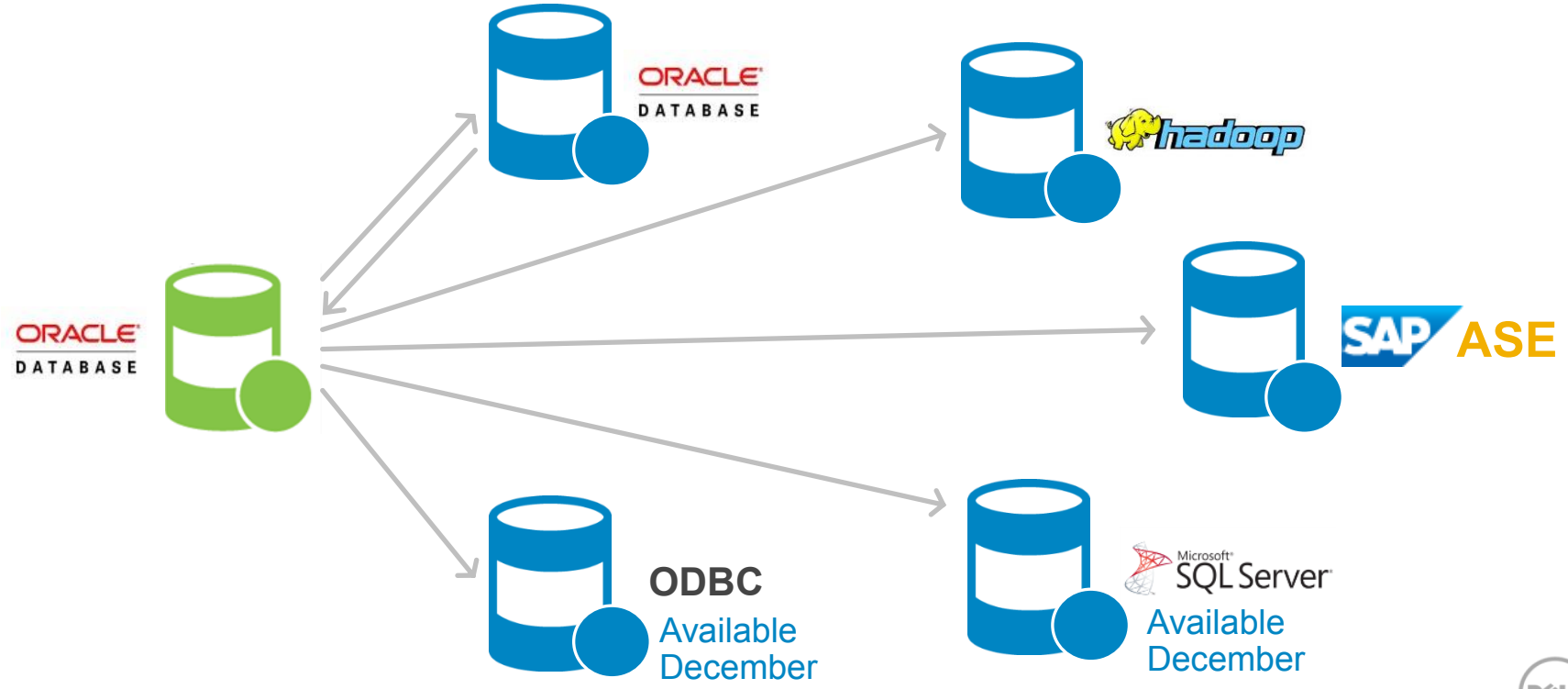
Migrations, patches
& upgrades

Operational reporting,
Data warehousing

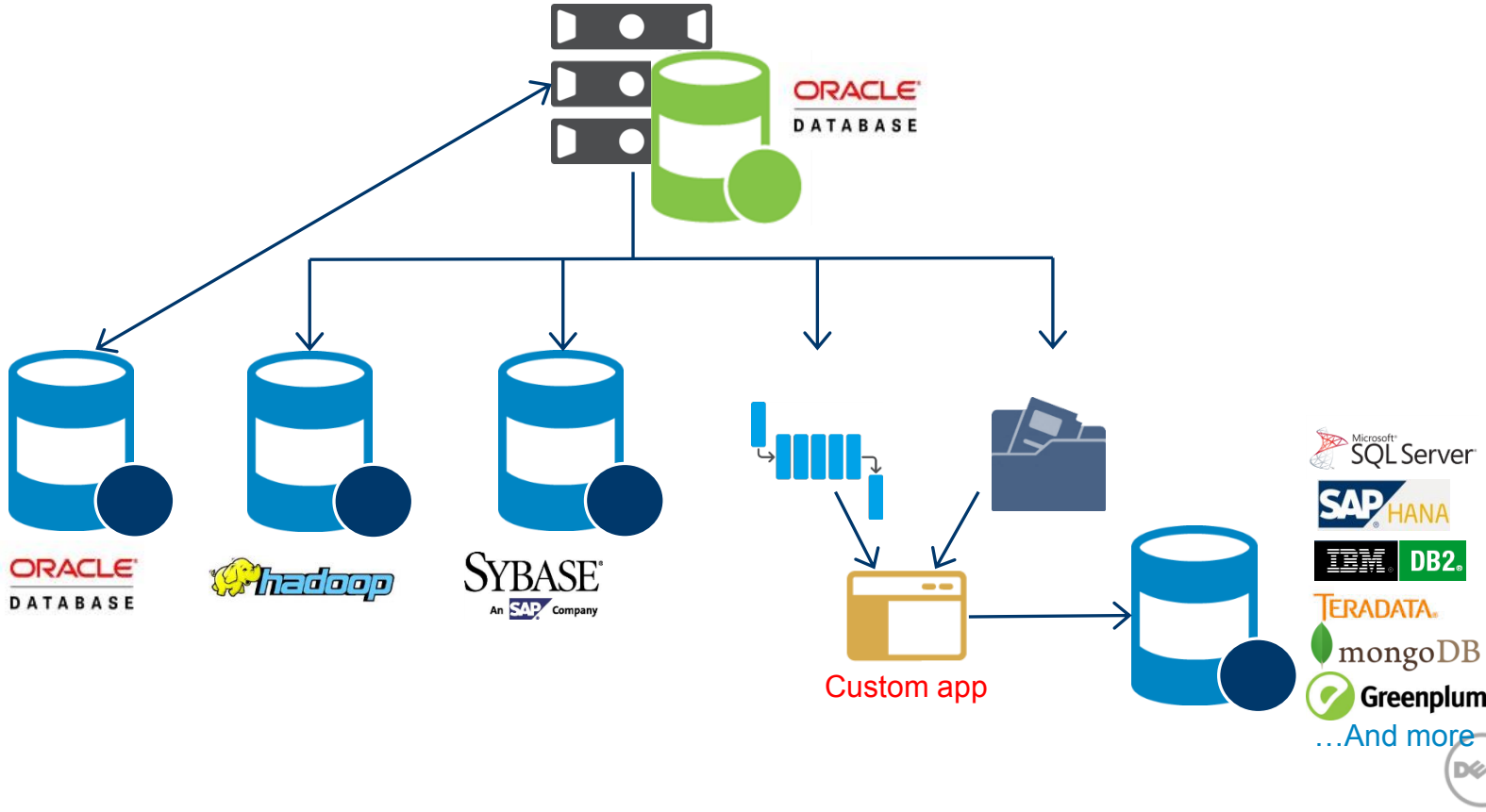


Data integration and
Change Data Capture (CDC)

Empower your **real-time enterprise** with 24-hour operations and **dynamic business adaptability**

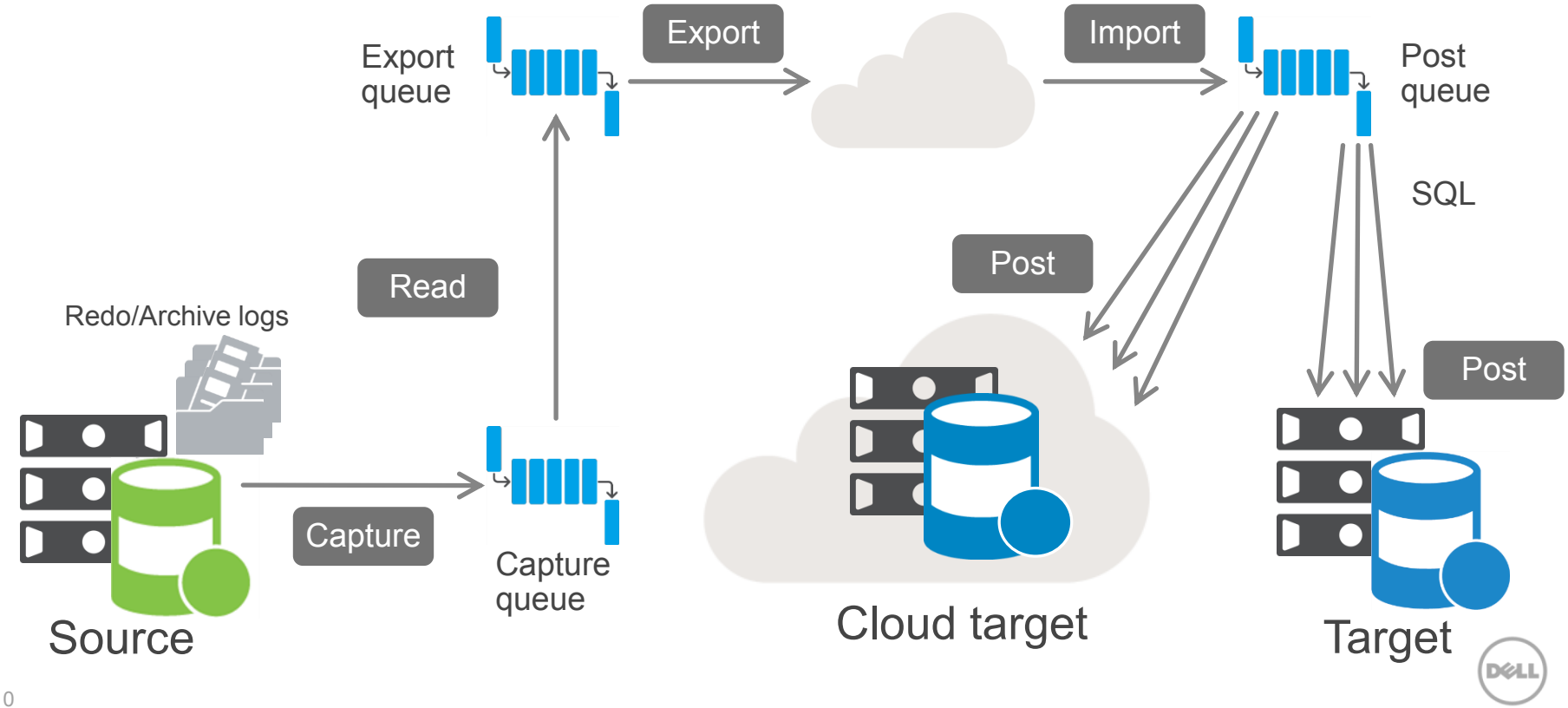


SharePlex "**Open Target**" - real-time data replication & integration

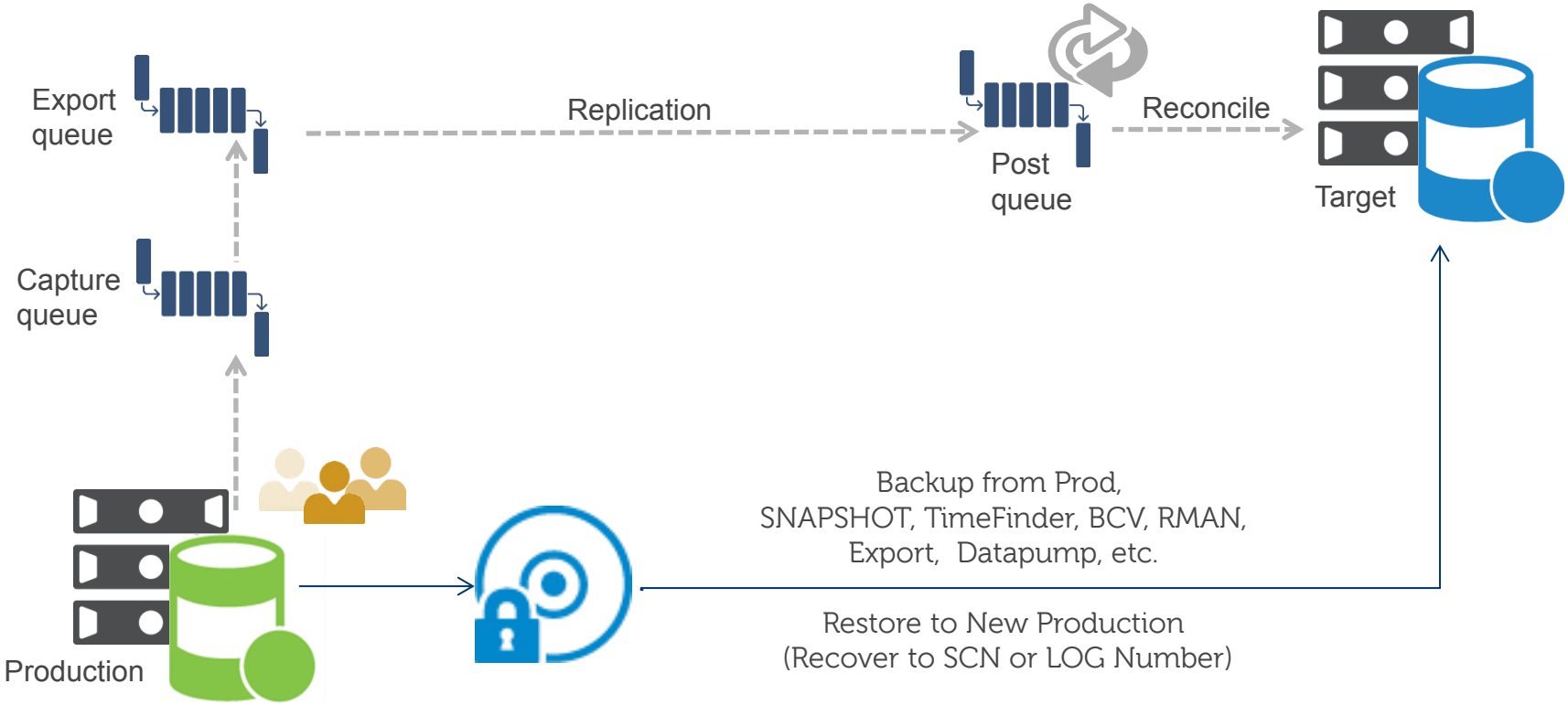


SharePlex **product architecture**

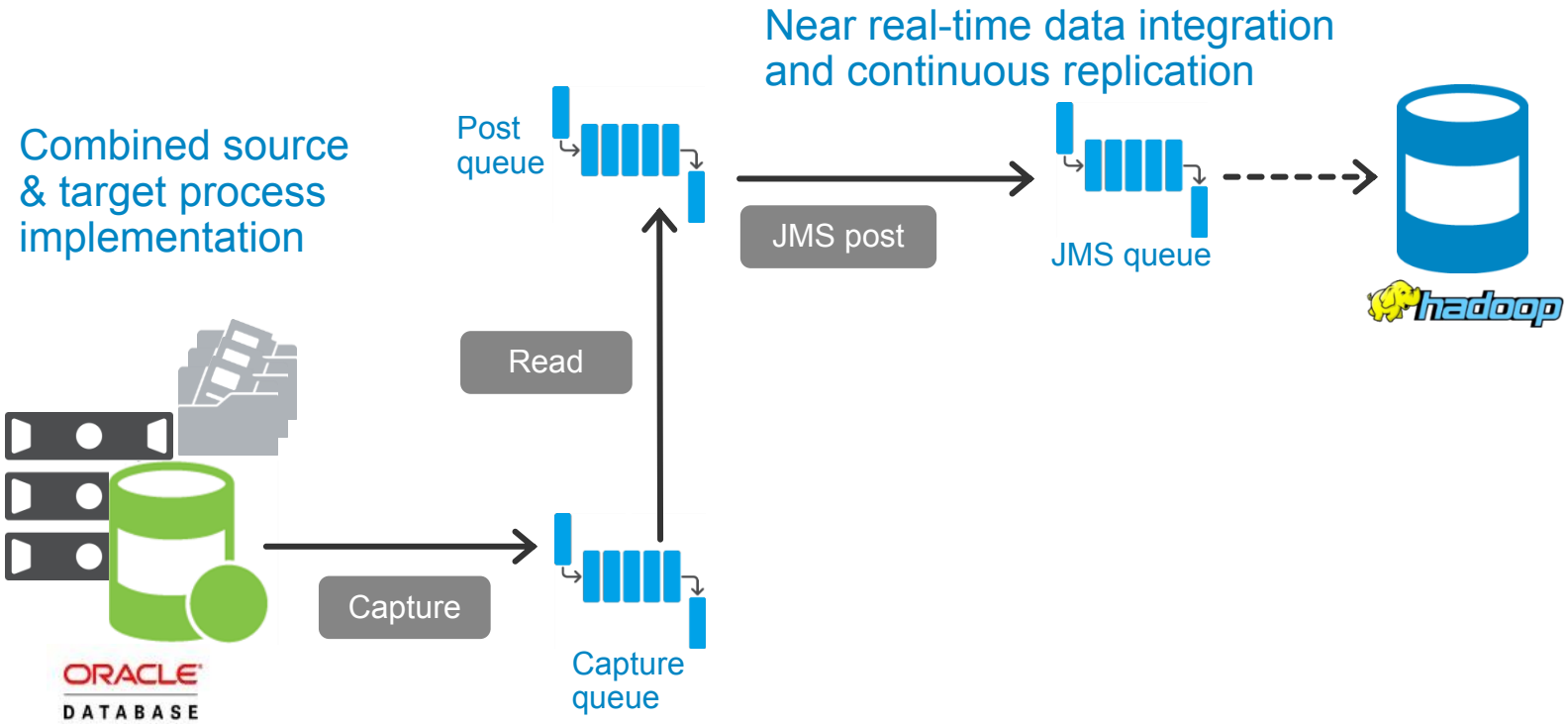
On-premises, remote, or in-the-Cloud



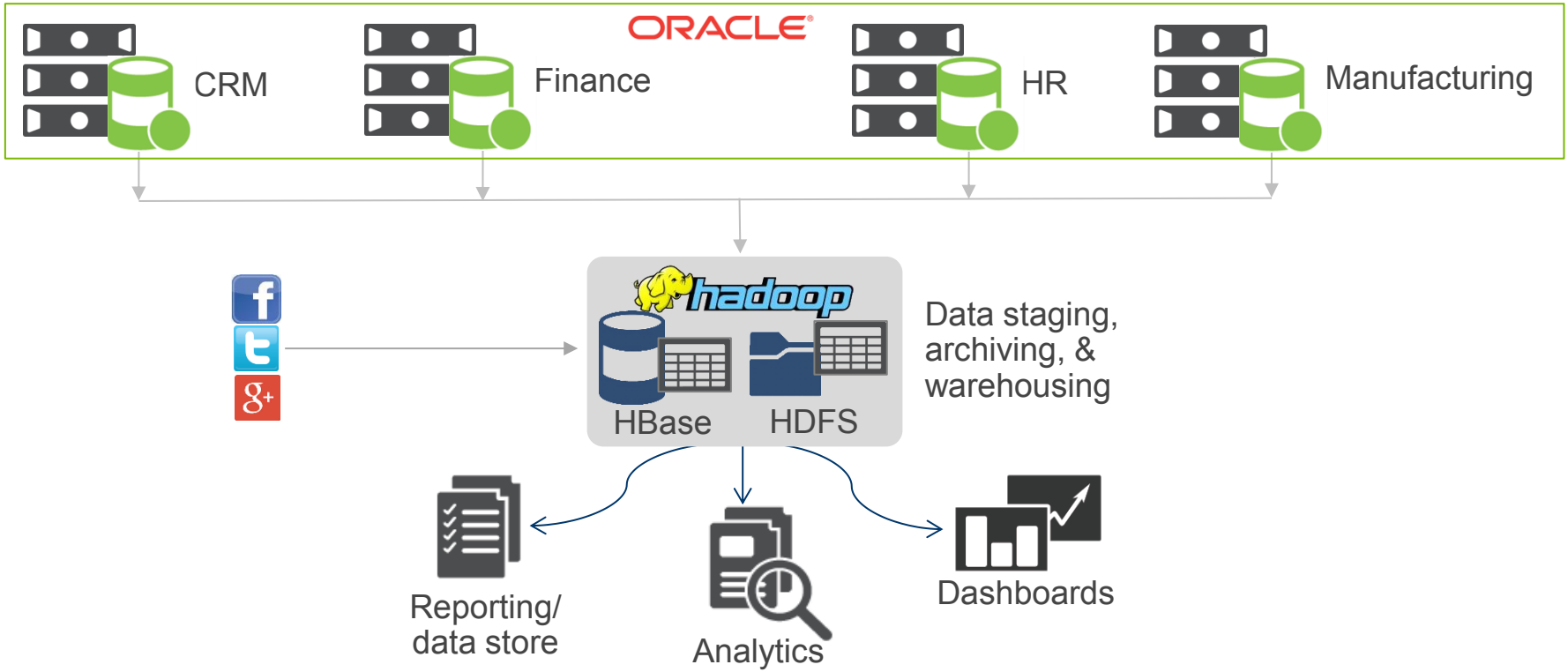
SharePlex replication process



SharePlex **Connector for Hadoop**

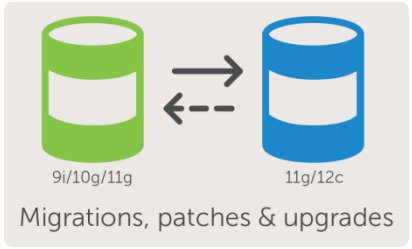


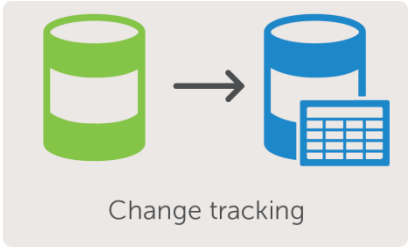
Near real-time **application integration – Oracle to Hadoop**

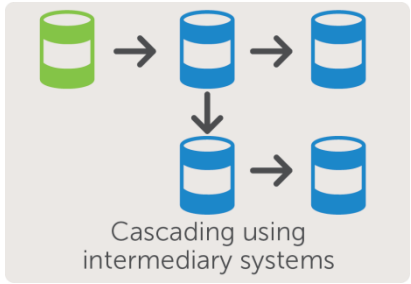


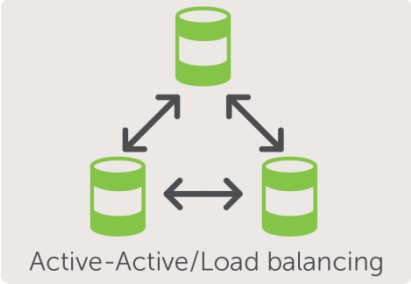
Replication **use cases – SharePlex™**

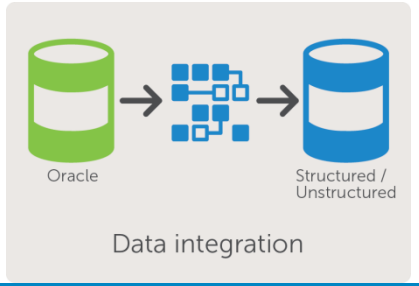
On-premises, remote, or in-the-cloud



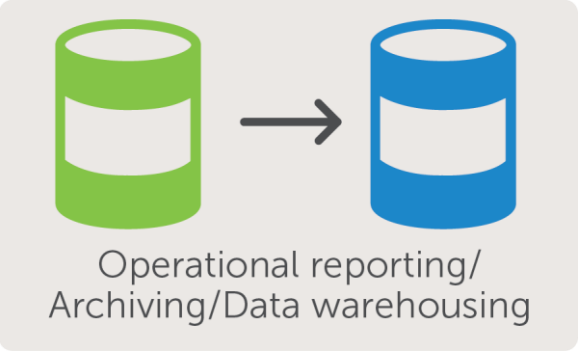








Offload **operational reporting** for better performance



- Load isolation provides more consistent response time experience than possible with any vertical upgrade
- Selective down to:
  - Object
  - Columns
  - Rows
- Optimized reporting environment with different tablespaces, indexes, partitioning, block sizes and more.
- Archive systems allow the OLTP to run lean with high performance

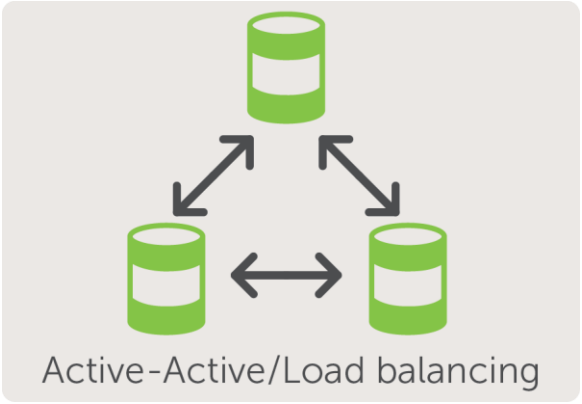
Reliable **data distribution** and distributed processing

- Unlimited number of targets and scaling
- Provides local copies to:
- Provide better response times
- Lower network costs
- Provide only the data required in the select locations

Effective and efficient **centralized reporting and consolidation with auditing**

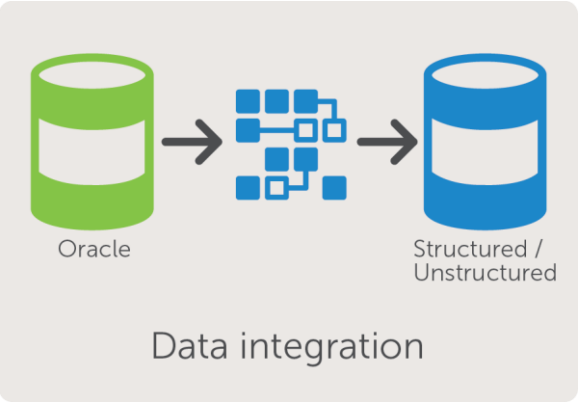
- Simple consolidation to supply downstream extract processing
- Can be combined with zero overhead auditing capability to supply:
  - Environment: Host, Oracle Database,
  - Who/When: User & Timestamp
  - Audit: Type of operation (I/U/D)
    Before / After images, complete audit trail
  - Much more.. Sequence ID, SCN, USN, Slot, etc

Active-active replication and scalability through load balancing



- Data replication in place of Real Application Clusters (RAC)
- Bi-directional replication: active-active, master-to-master, peer-to-peer, multi-master configurations
- Applies conflict resolution as required by the circumstance and as defined by your business rules and needs.
- Provides the fastest possible fail over time that can be achieved using any technology in a WAN environment.
- Copies can all be different database versions & indexed differently (useful for reporting scenarios).

Near **real-time integration** with change data capture (CDC)

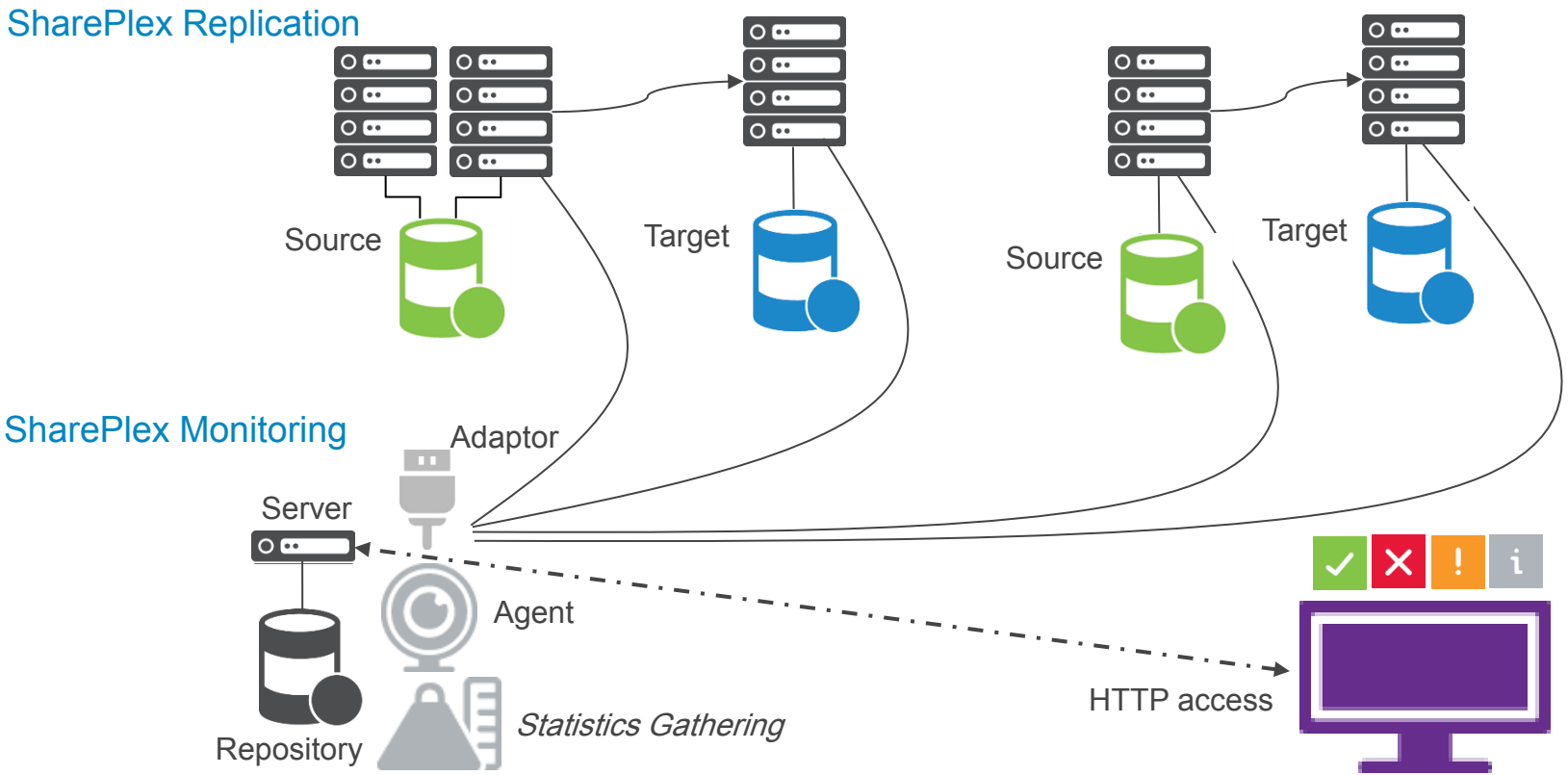


- Near real-time data integration using change data capture to Hadoop, SAP ASE, JMS Queue, Files
- Custom applications reading JMS queues, SQL/XML Files to nearly anything:
  - SQL Server, DB2, Teradata, Netezza, Greenplum, and more)
    - Structured
    - Unstructured
- Separates operational and analytical systems without impacting performance
- Provides near real-time access to accurate information
- Migrate Oracle databases to modern platforms
- Allows enterprises to leverage new data warehousing and business intelligence technology as it is made available
- Cost effectively grow and expand infrastructure as needed

SharePlex Manager -
Monitoring and Administration Console

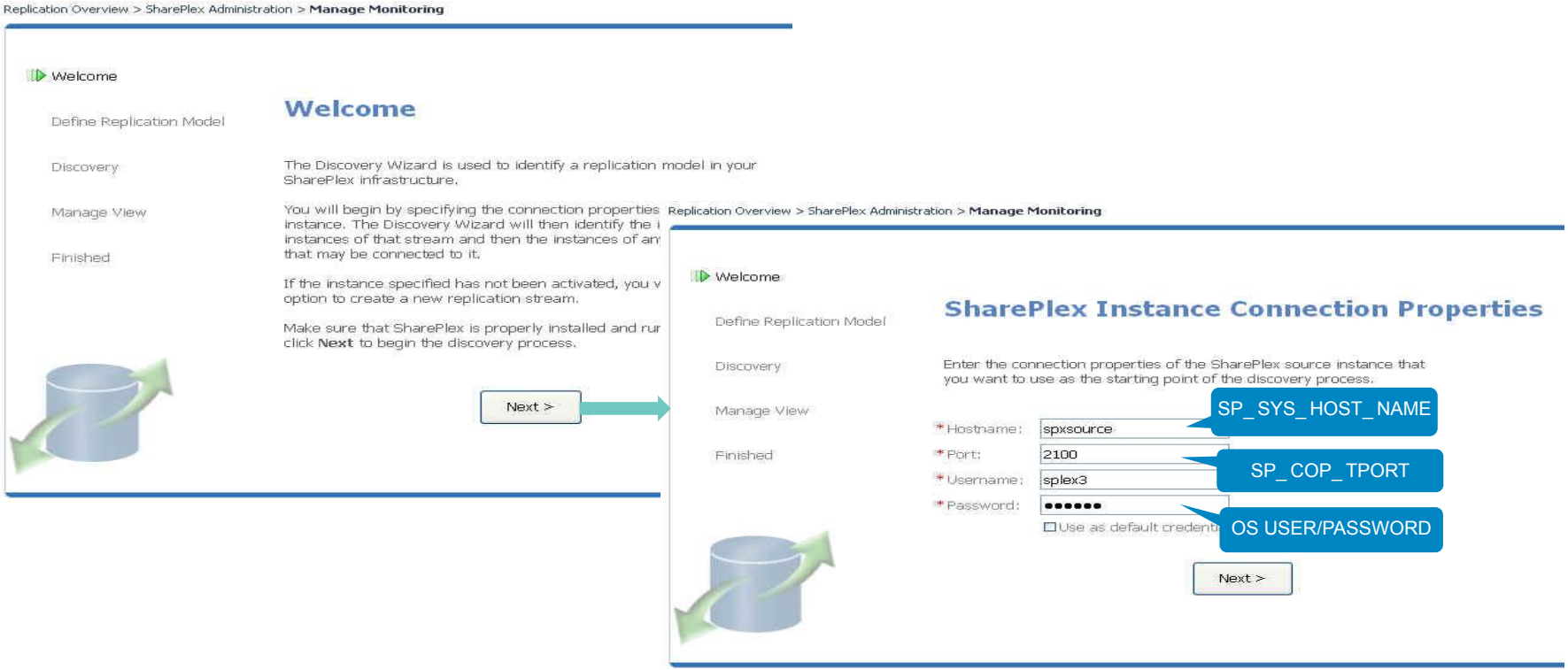
Dell - Restricted - Confidential

SharePlex Manager (GUI) architecture diagram



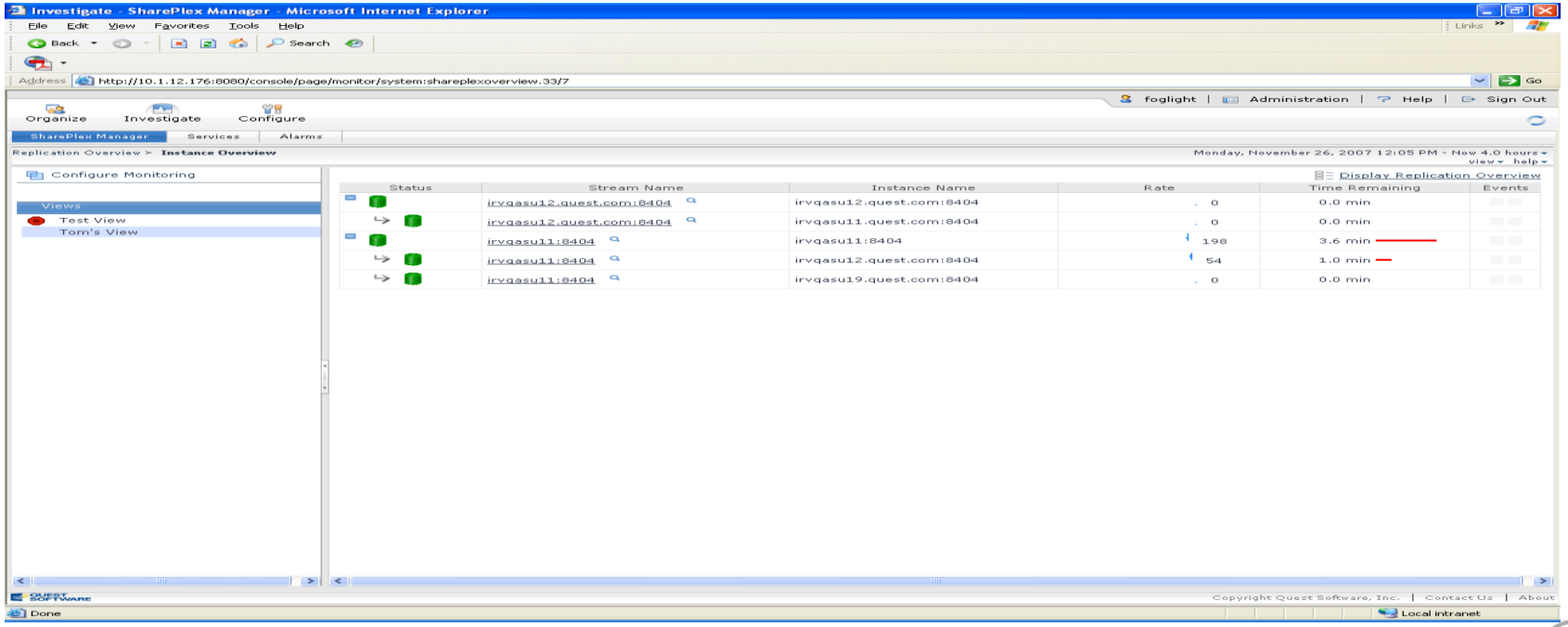
Discovery #1

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



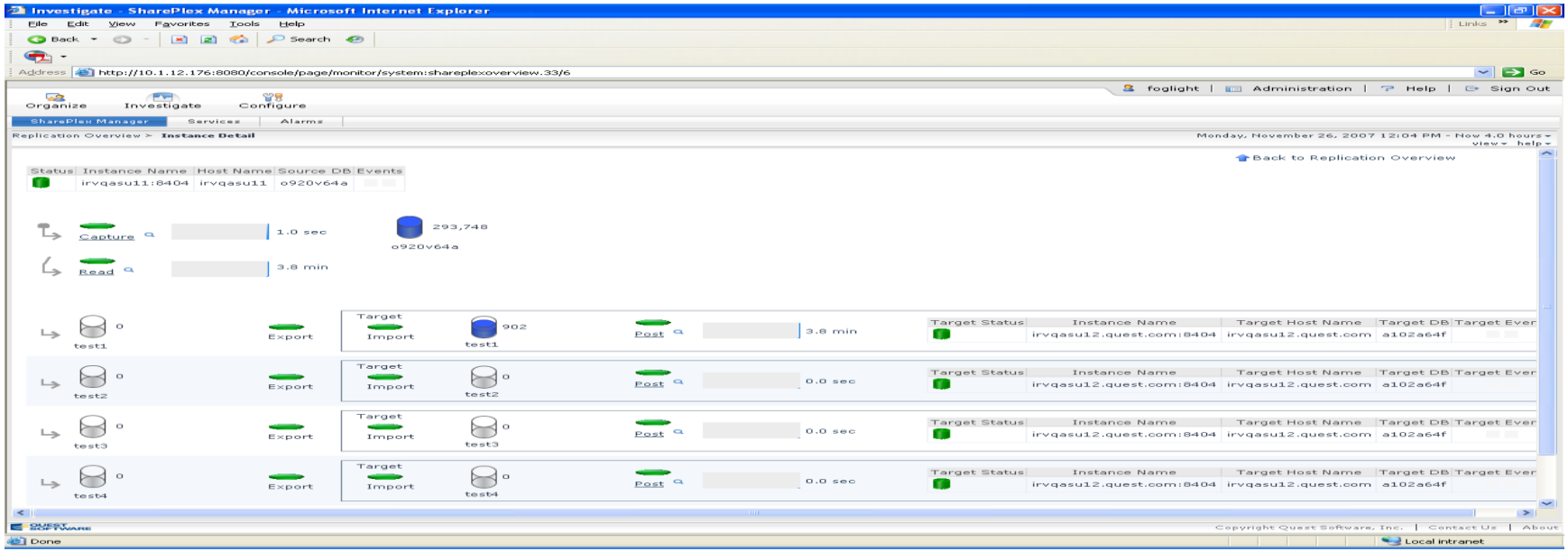
Instance Overview

- Rate
- Time Remaining

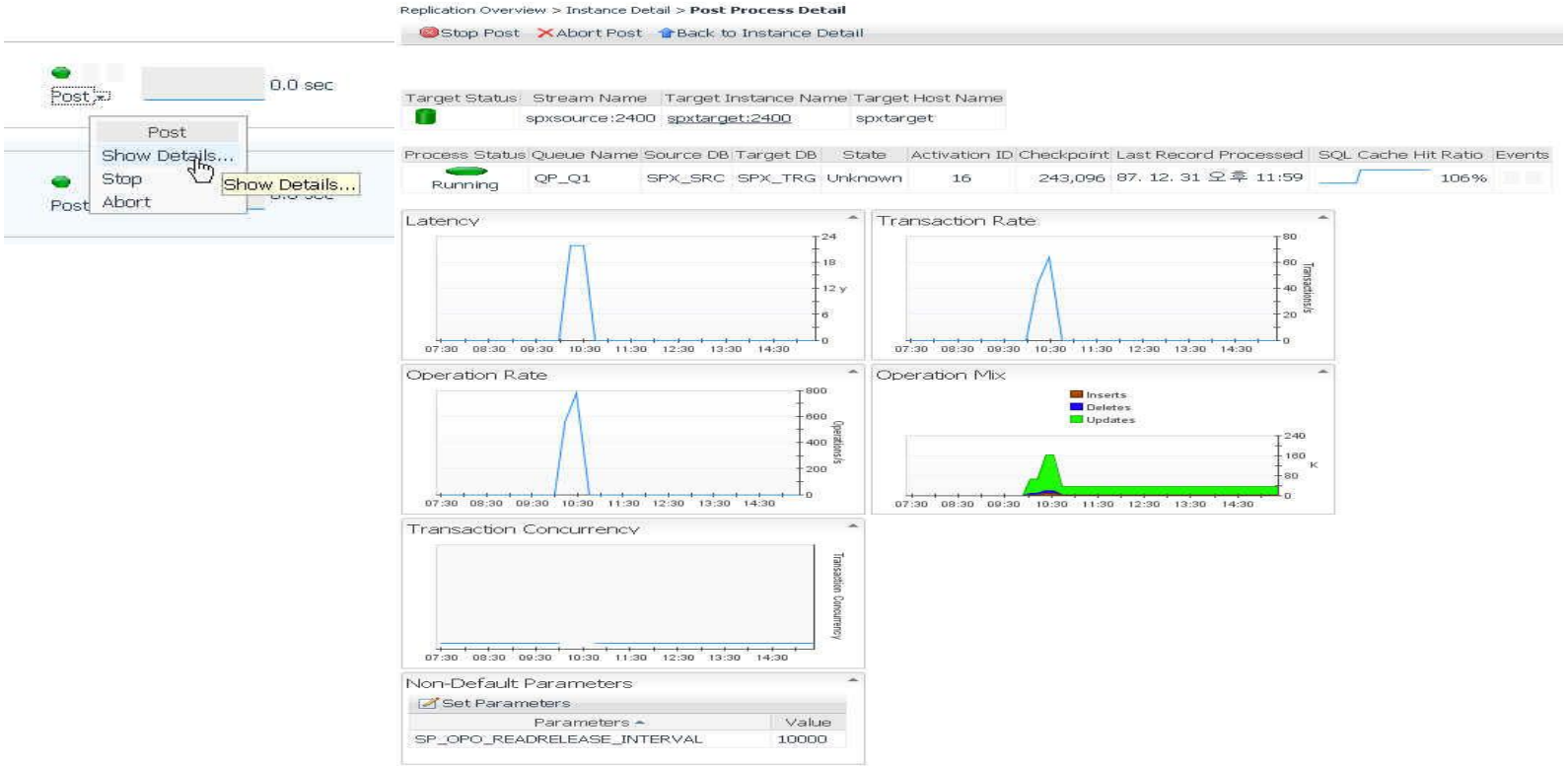


Instance Detail

- Processes
- Queues
- How replication is set

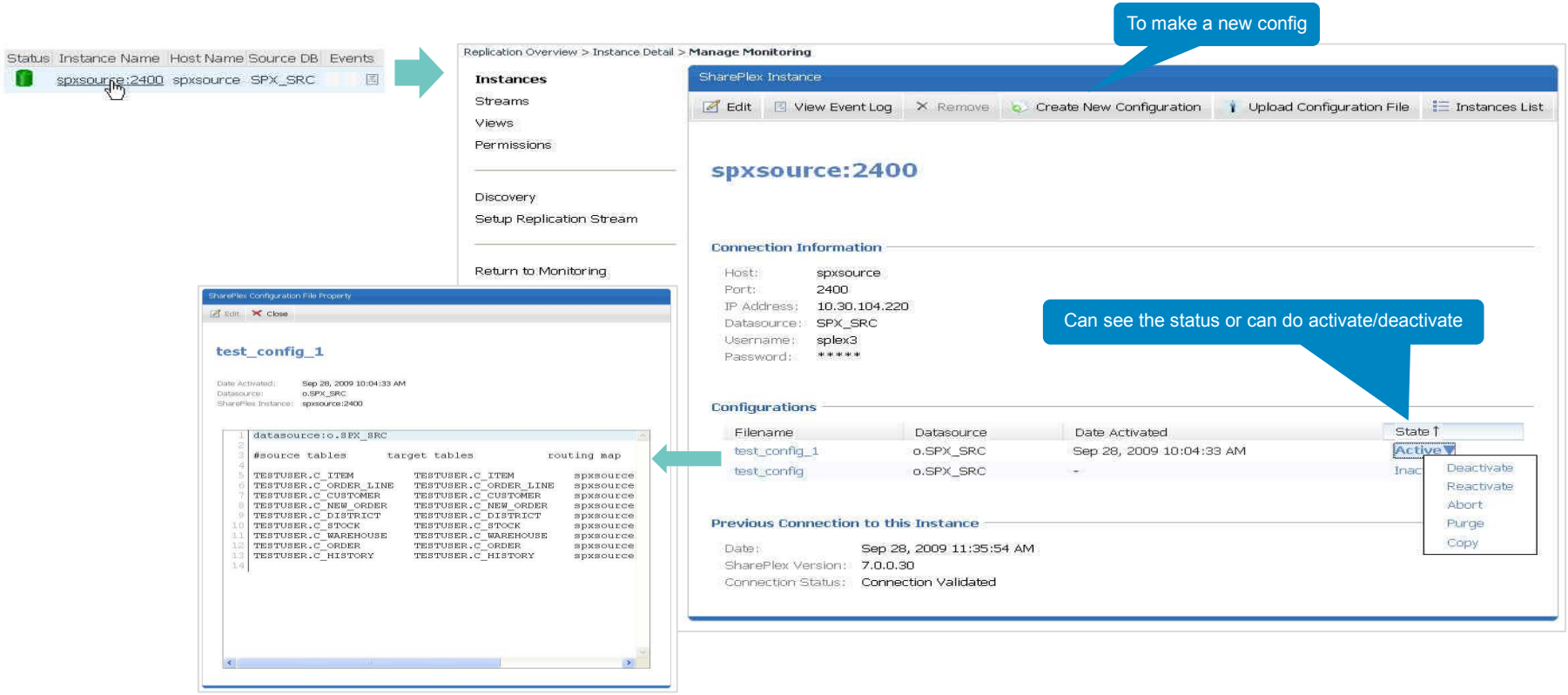


Monitoring Instance Detail > Show Post Detail

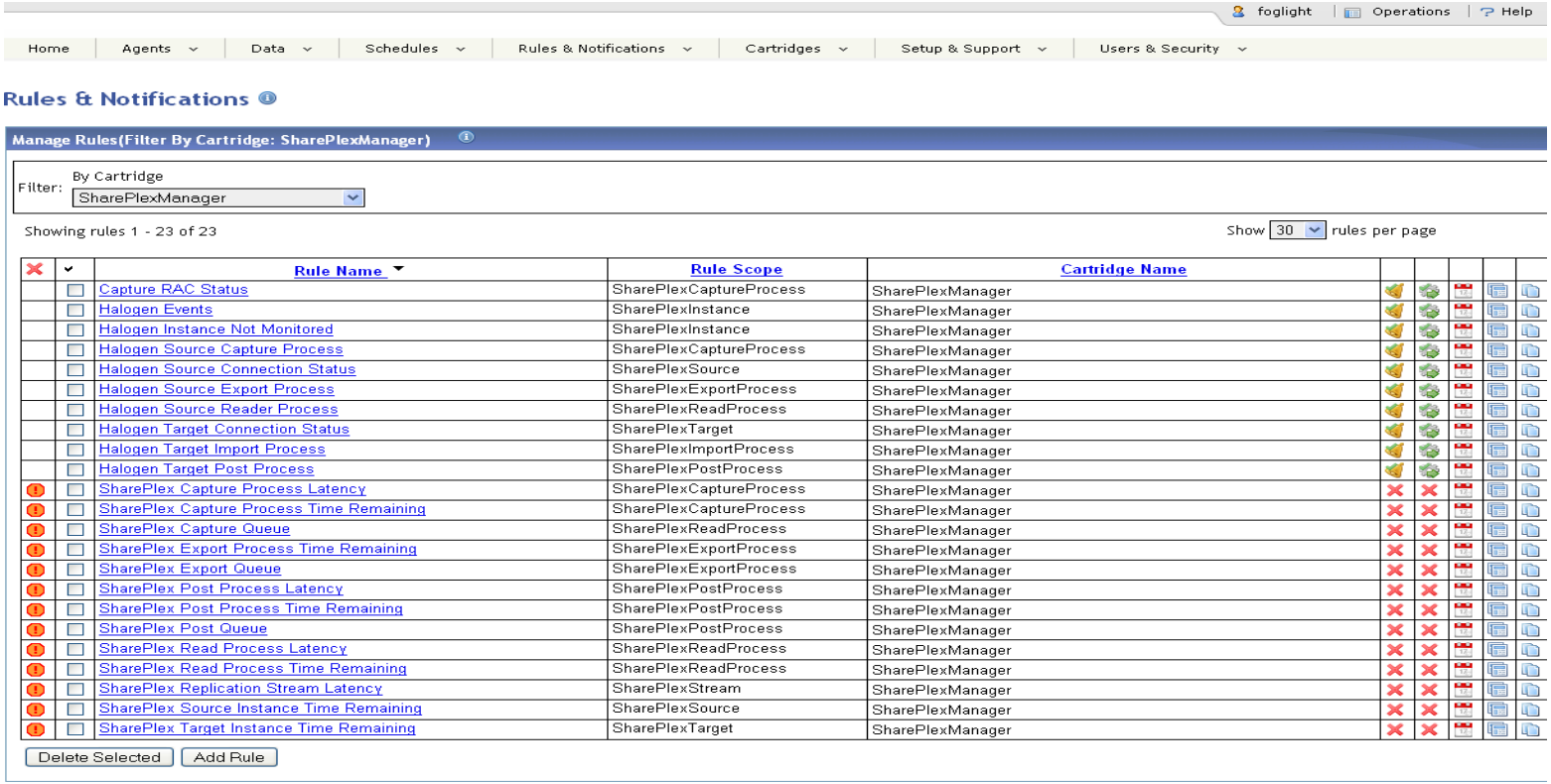


Manage Monitoring

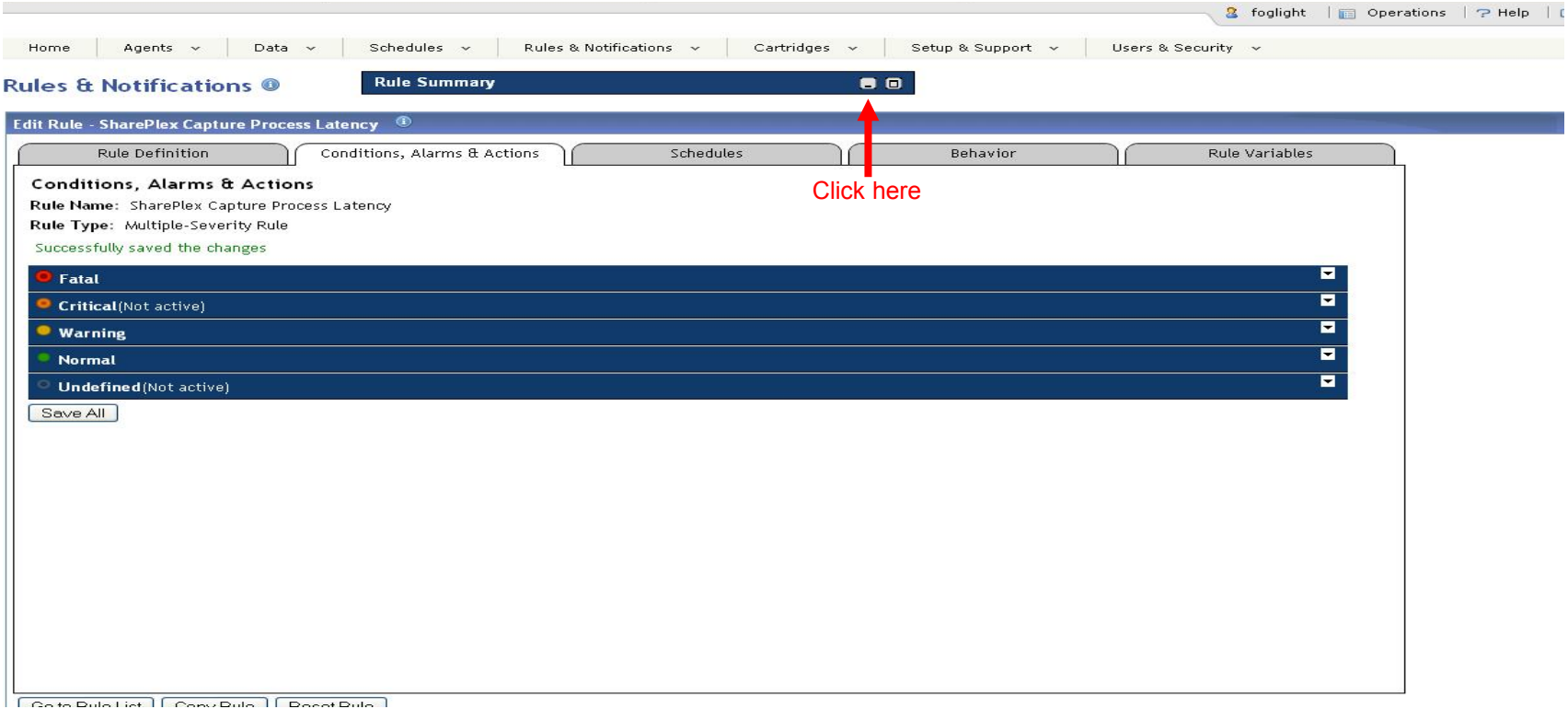
Instance Detail > Manage Monitoring



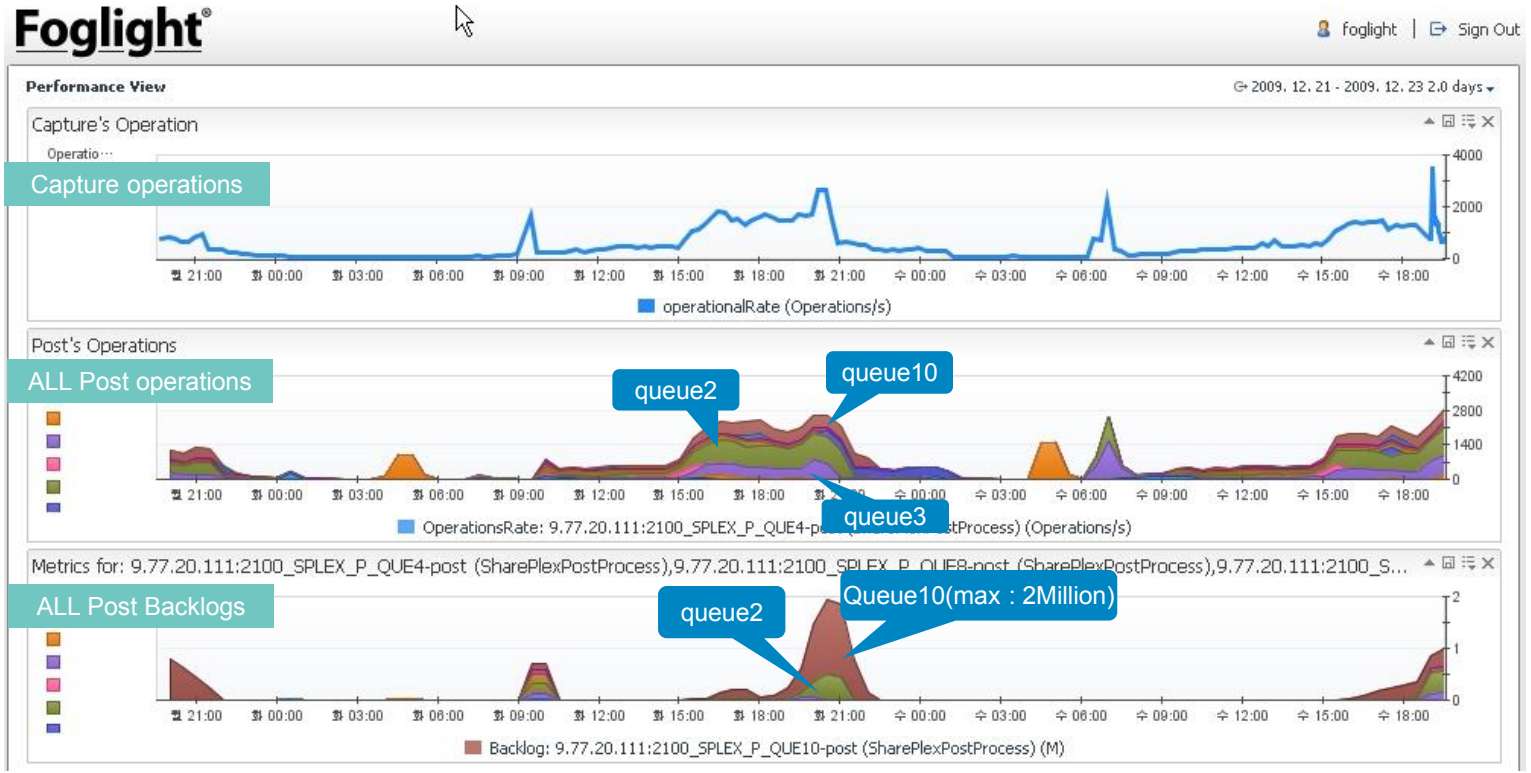
Alarms Administration > Rules & Notifications > Manage Rules



Alarms Administration Rule Definition



Dashboard Report



What makes SharePlex different?

- **Fully automated and easiest to use**
  - Cohesive approach, i.e SharePlex 8.6 extends the existing replication experience
  - Download, install and **test** in just 15 minutes **(5:39 actual time to replicate prior to install)**
  - Expedite staff learning curve with 5 minute how-to videos
  - Learn from the experts 24x7 in the SharePlex Community with online forums & blogs
- **Agile Development Organization**
  - Our capabilities are introduced into the product by product management & customers
  - Turn around is typically in days, often a couple of days.
- **World Class Support – Award winning**
  - Awards are the norm and consistent
  - Sophisticated support systems with KB suggests
  - Multi language
- **Compare/Repair – Continuously improved**
  - In flight
  - Manages a spectrum of resource usage from light to fast
  - Sophisticated picking the optimum method
- **Comprehensive Solution**
  - Replication / Management / Monitoring, all in one
  - Best value in the market place, invented term licenses in the replication market

eHarmony

Online matches made in heaven

Business need

To deliver the best personalized services for subscribers and help them make a lasting match, eHarmony needs to replicate and analyze data from its production database in real time.

Solution

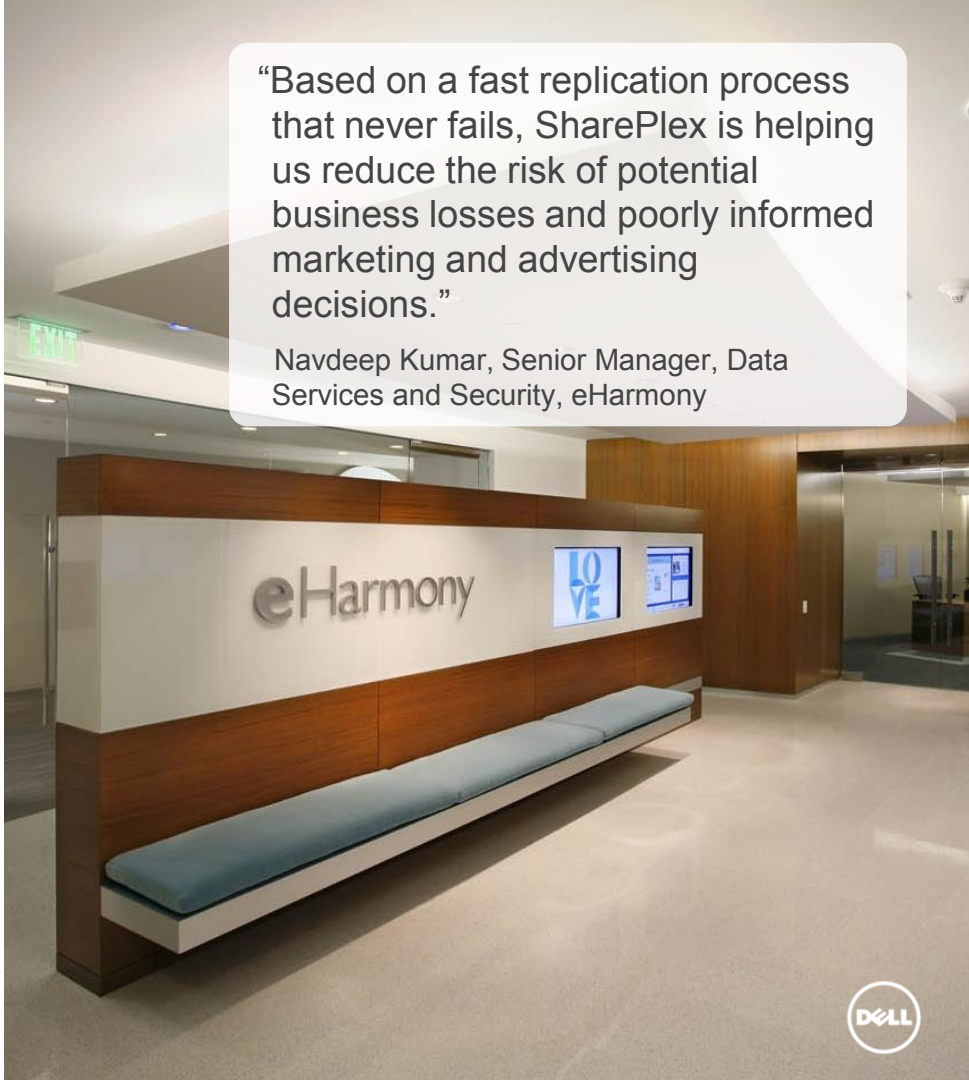
The dating site replaced complex, legacy replication technology from Oracle with SharePlex from Dell Software, which is reliable, stable, fast and easy to use.

Benefits

- Improved decision making and customer-facing services
- Fast data replication at a third of the cost of Oracle GoldenGate
- Reliable, robust, well-documented solution

Read the full case study >

Published: May 2014



"Based on a fast replication process that never fails, SharePlex is helping us reduce the risk of potential business losses and poorly informed marketing and advertising decisions."

Navdeep Kumar, Senior Manager, Data Services and Security, eHarmony

Questions

Next steps

Visit the SharePlex webpage
www.software.dell.com/SharePlex
- Datasheets, videos, case studies, white papers, technical briefs, events, webcasts, etc.

Schedule a Proof of Concept (POC)
- Download 30-day Trial Software (SC and Support Assistance)
- On your own test environment
- Dell Cloud Sandbox

Join the SharePlex Community
http://en.community.dell.com/techcenter/information-management/shareplex/
- Beta's, discussions, blogs, expert advice, demo's, technical documents, etc.

Thank you.

Dell - Restricted - Confidential

The power to do more