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Heterogeneous Data Replication – Sybase Replication Server

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Heterogeneous Data Replication – Sybase Replication Server



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Agenda

- **Replication Server 15 Overview**
- **Replication Server Oracle Option 12.6 Overview**
- **Replication Server Roadmap**
- **Q&A**

Replication Server 15.0

Data Movement

- **Sybase Replication server performs real-time data movement while providing:**
 - Non-intrusive transaction capture
 - Flexible transformation of data
 - Efficient routing across networks
 - Real-time synchronization across heterogeneous databases

Replicate Targets



- ASE
- SQL Anywhere
- Sybase IQ



- Oracle
- Microsoft
- DB2
- AS/400
- ODBC



- TIBCO
- JMS
- MQSeries

Primary Sites

Replication Agent

Replication Server

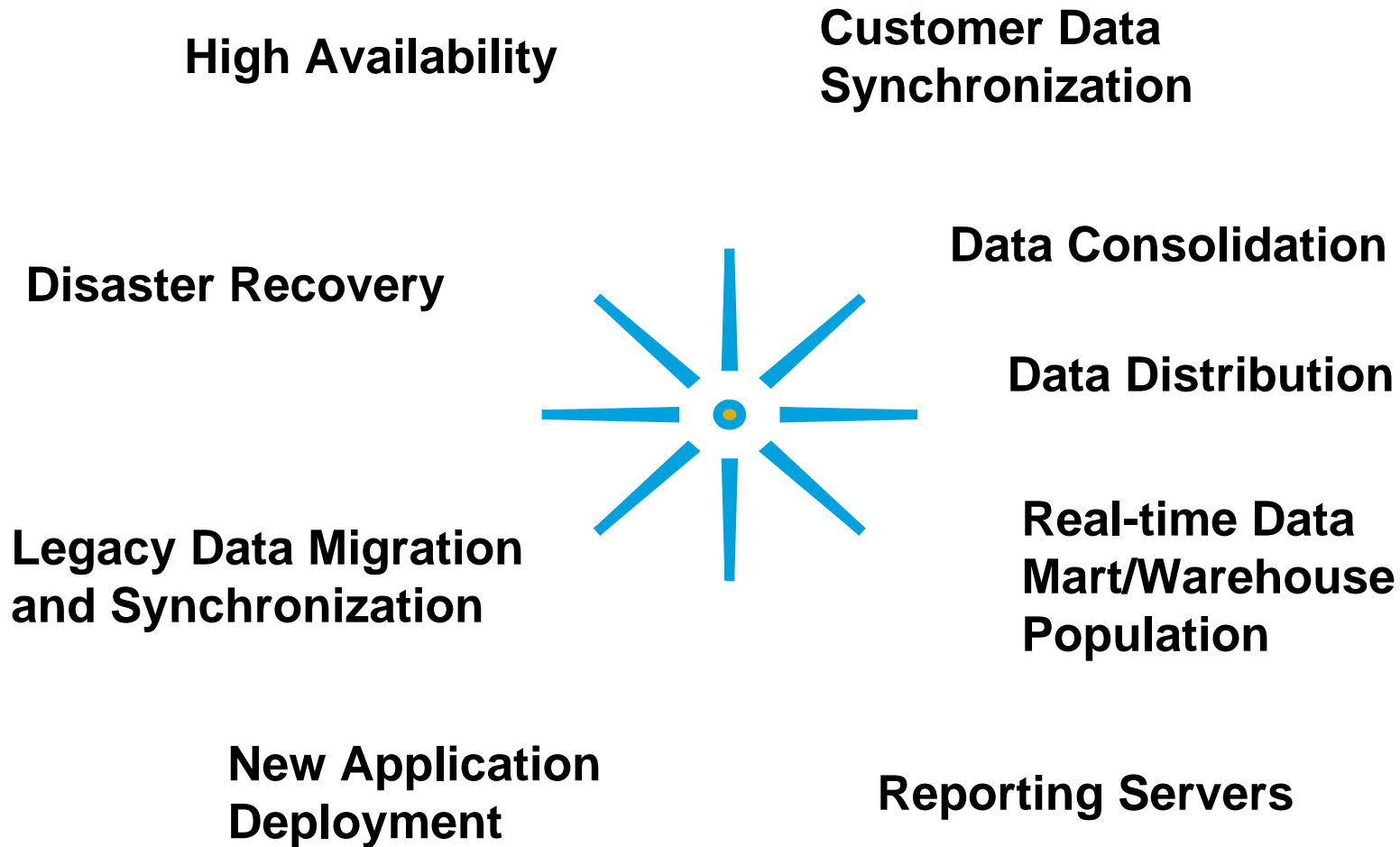
RTDS

Data Sources

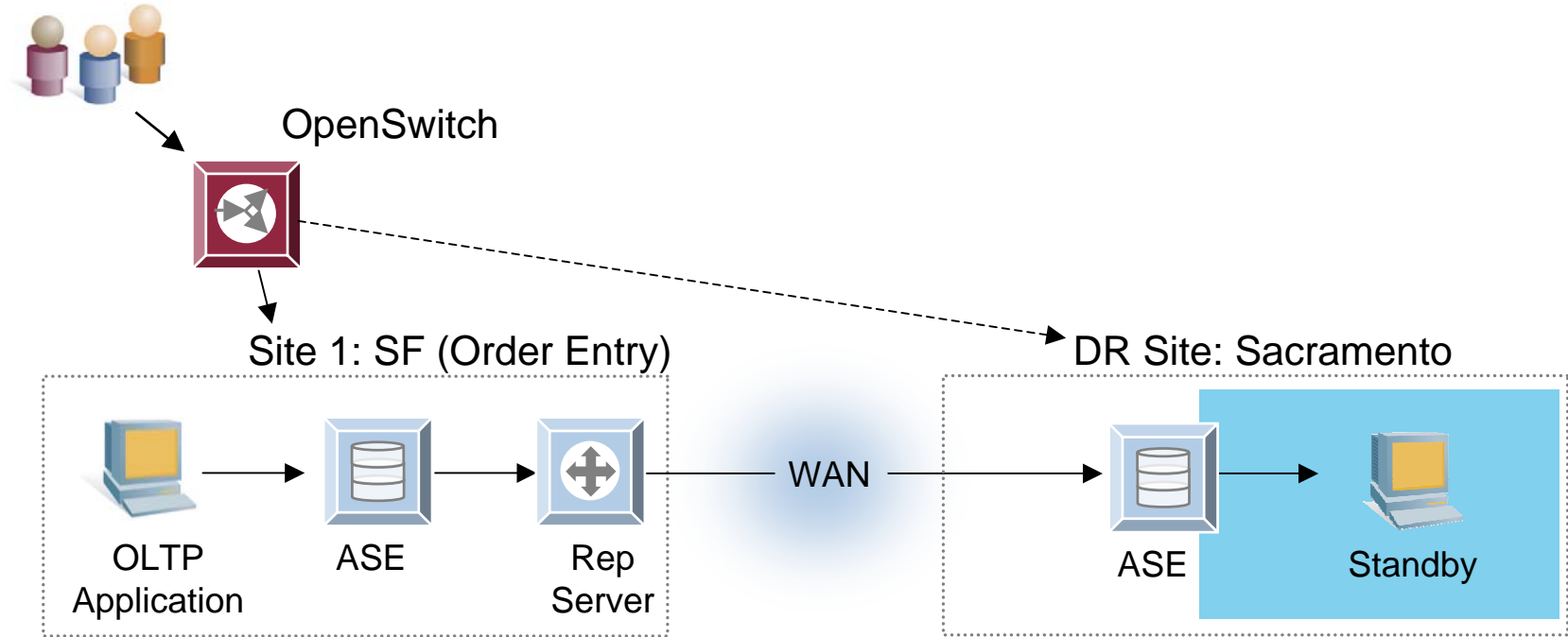
- ASE
- SQL Anywhere
- Oracle
- Microsoft SQL Server
- DB2 UDB (Unix, NT, OS/390)
- OS/390 (IMS, VSAM)



Replication Server

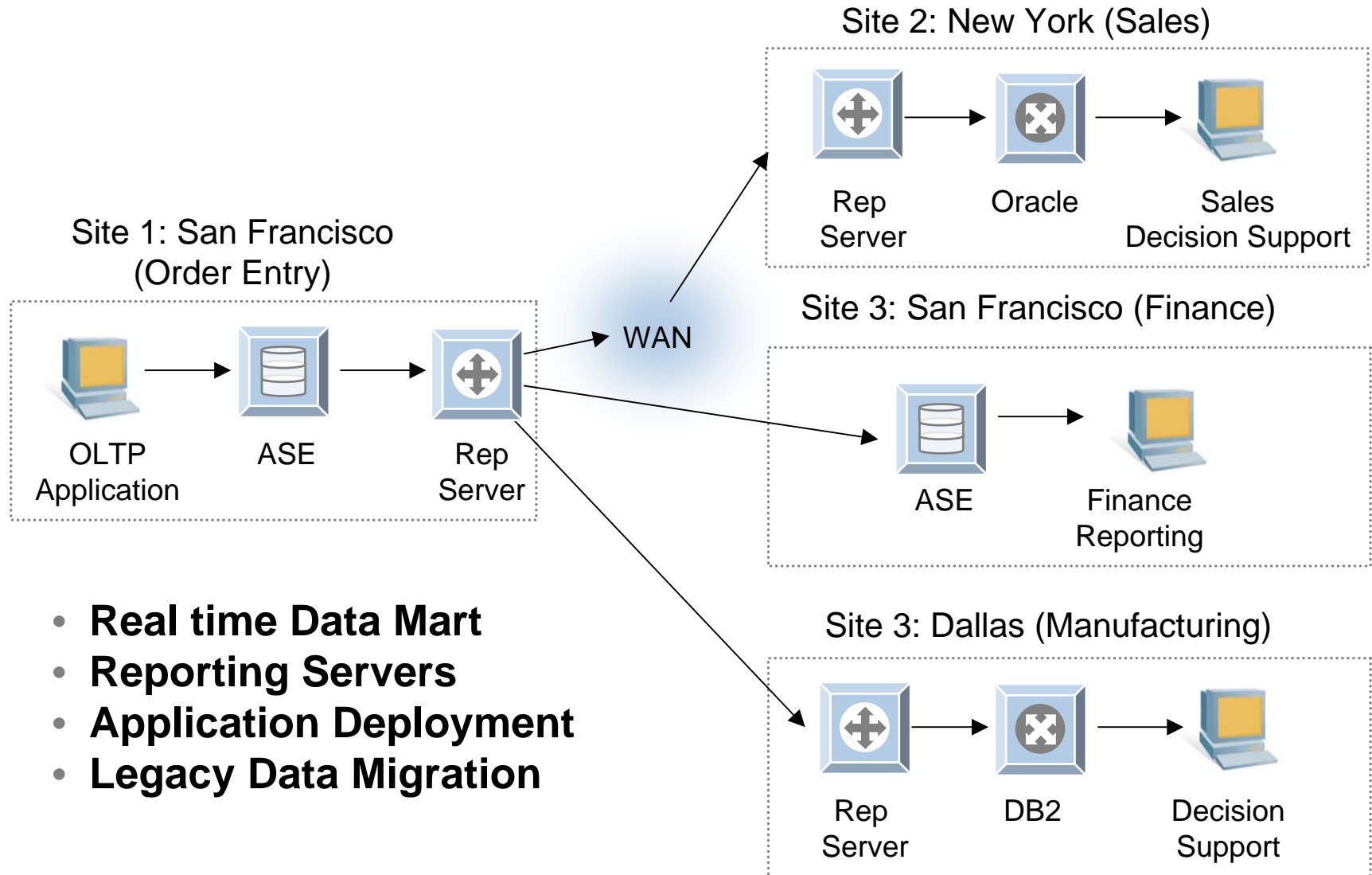


Product Usage: Disaster Recovery

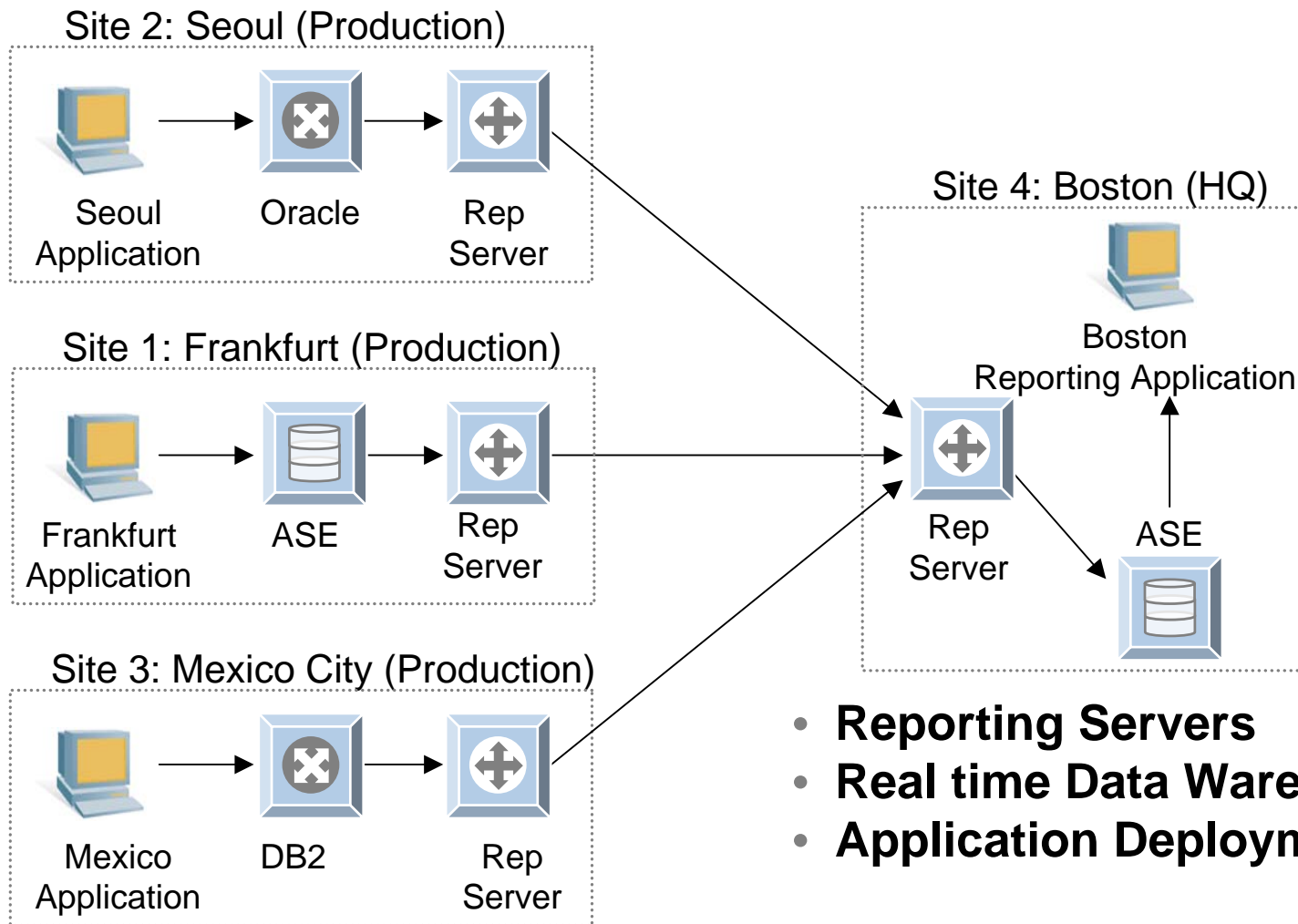


- **Disaster Recovery**
- **Business Continuity**

Product Usage: Data Distribution

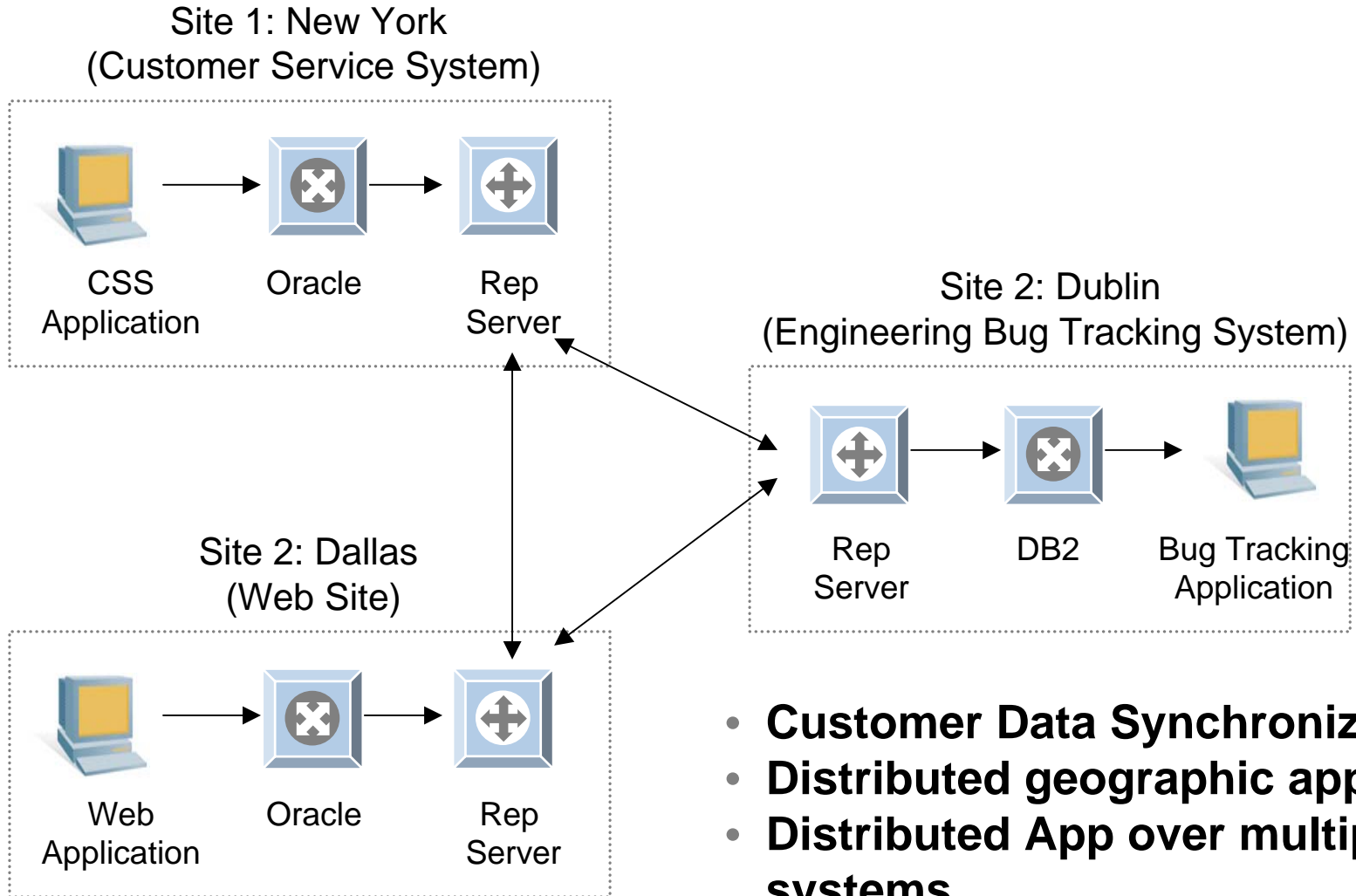


Product Usage: Data Consolidation



- Reporting Servers
- Real time Data Warehouse
- Application Deployment

Product Usage: Data Synchronization



- **Customer Data Synchronization**
- **Distributed geographic apps**
- **Distributed App over multiple systems**

Generic Benefits

- Replication to secondary can be done, regardless of network outages (due to local storage of transactions)
- Independent of Central Server downtime – as exact replica of primary is available on secondary
- Central management of distributed data

Sybase Strengths

- High Performance Data Distribution and Consolidation (via batch tuning, SMP)
- Flexible Transformations of primary data, before being applied to secondary
- Centralized Administration of complex deployments
- Distributed Architecture with guaranteed delivery
- Bi-directional synchronization across heterogeneous data sources
- Platform and Database independent
- Ability to compare data values across replicate sites

RS 15 Features

REQUIREMENT	NEW FEATURE	ADVANTAGE
Integrated from Top to Bottom	PowerDesigner Modeling	Configuration integrated with PowerDesigner
	Systems Management	Full Functionality through Sybase Central Java Plug-in Admin & Troubleshooting Assistance
	Health Monitoring	Monitor the availability of the servers and the state of the connections and routes

- PowerDesigner Modeling

The screenshot displays the PowerDesigner interface. The main workspace shows a diagram with a central 'ReplicationProcess (Replication Server 12.6)' icon connected to two server icons, 'Server_1.rstest' and 'Server_1.rsrep'. The left-hand tree view shows the project structure, including 'InformationLiquidityModel_1' and its sub-components. The bottom status bar indicates a model error: '1 error(s), 1 warning(s). The Information Liquidity Model is incorrect there are 1 error(s).

The 'Replication Process Properties - ReplicationProcess (Repli...' dialog box is open, showing the 'General' tab. The 'Logical Connections' section contains the following SQL script:

```

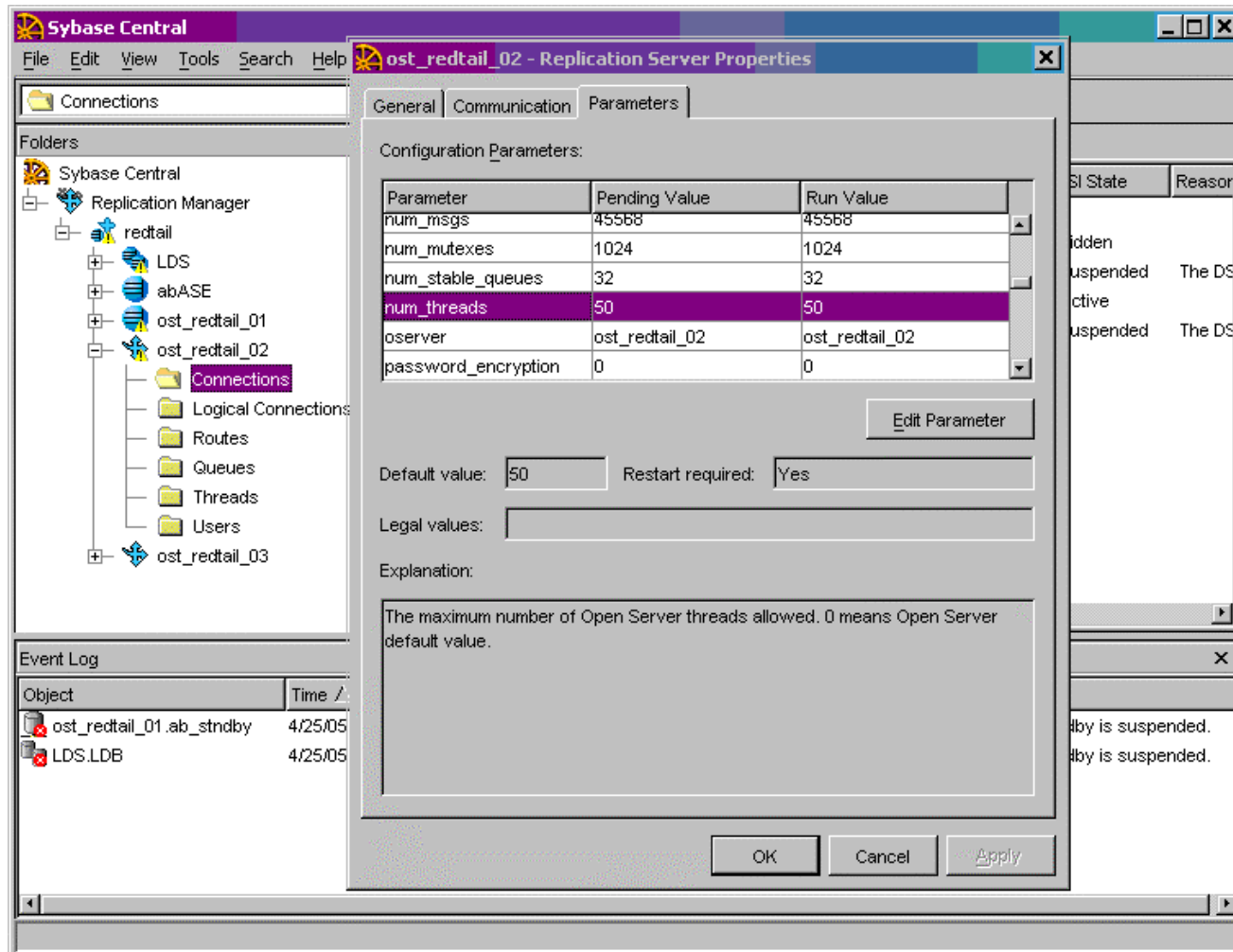
/*=====
/* Sybase Replication Server Script
/* Replication server: ReplicationProcess
/* Created on: Thursday, April 07, 2005 3:09:49 PM
/*=====

/* Connection: DataConnection_1 */
create connection to "Server_1"."rstest"
set error class to rs_sqlserver_error_class
set function string class to rs_sqlserver_func
set username maint
set password maint_ps
with log transfer on

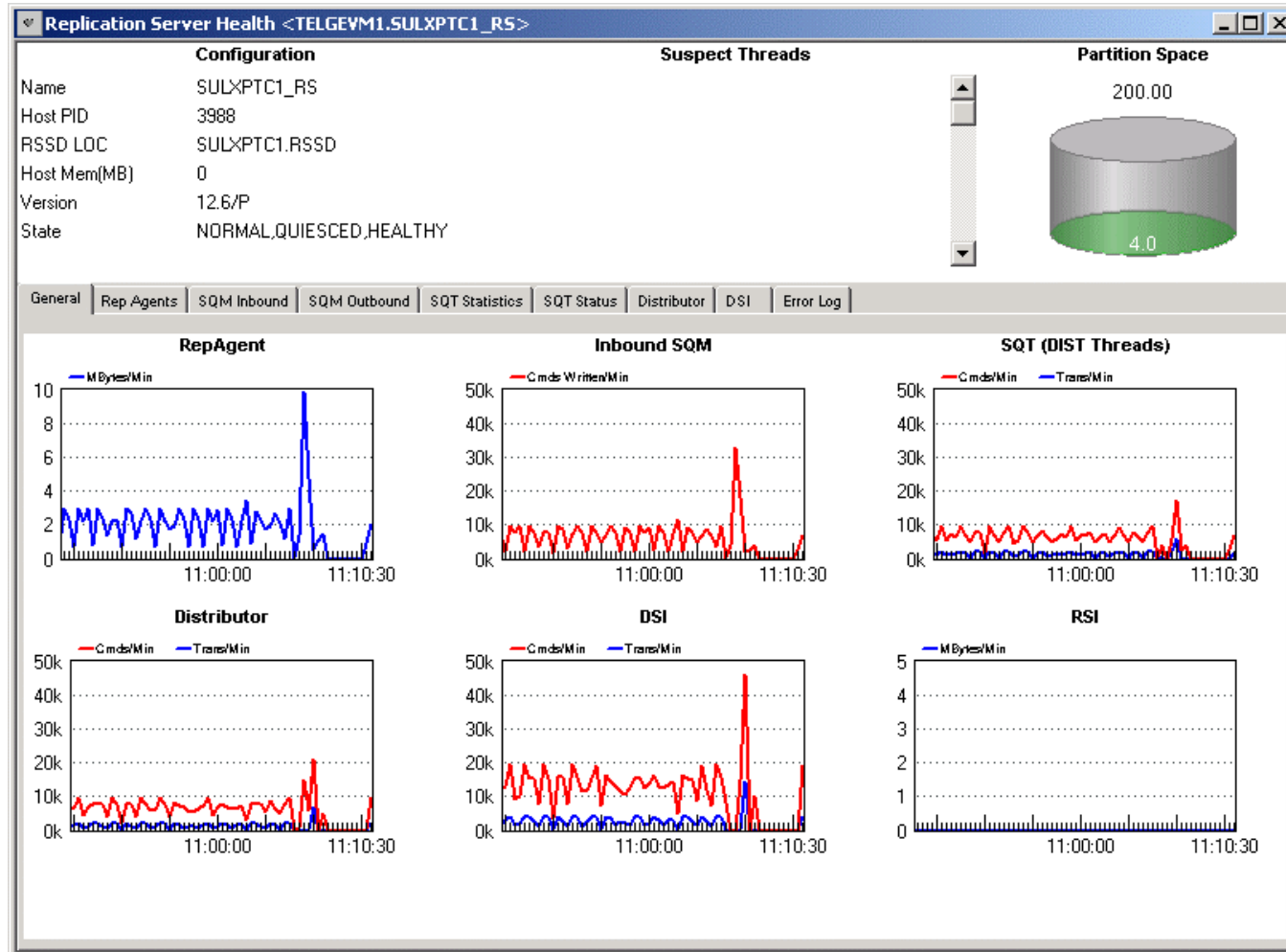
go

alter connection to "Server_1"."rstest"
set dsi cmd separator to '\n'
    
```

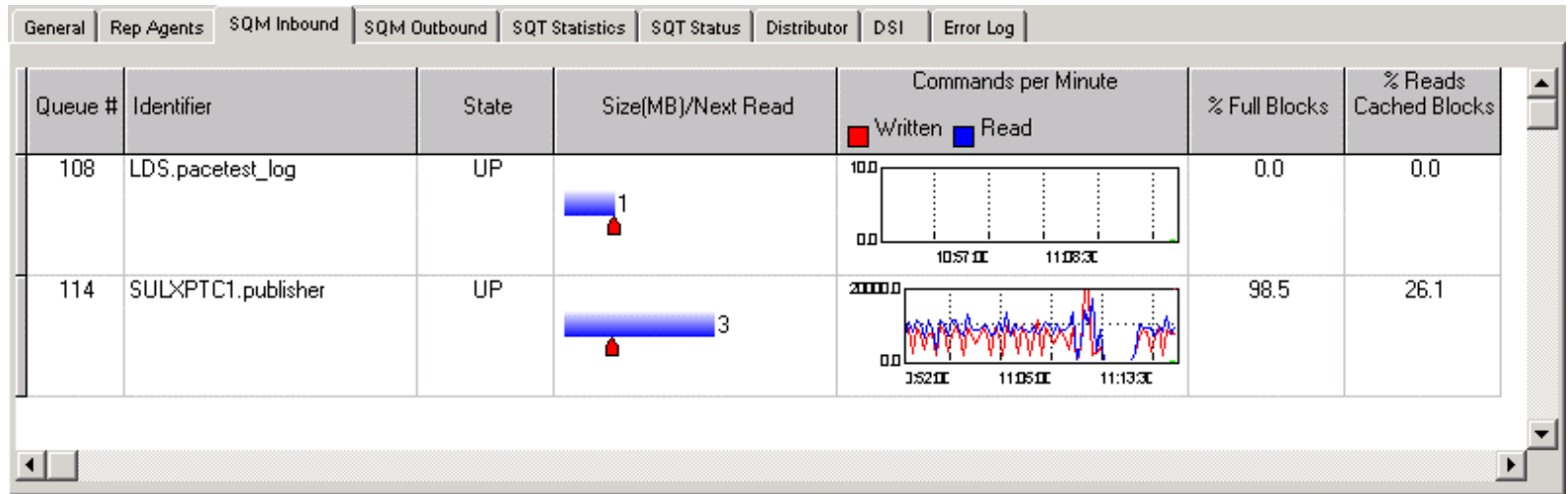
- Sybase Central Java Plug-in



- General Tab Health View



- Inbound Tab Health View



RS 15 Features

REQUIREMENT	NEW FEATURE	ADVANTAGE
Support of ASE 15.0 Features	Computed Columns	Support replication of materialized computed columns as source and target
	Data Partitioning	Support of DDL and DML replication of ASE partitioned tables
	Long Identifiers	Support for increased identifier max length from 30 bytes to 255 bytes
	New Datatypes	Support for Unitext and Big and Unsigned Integers

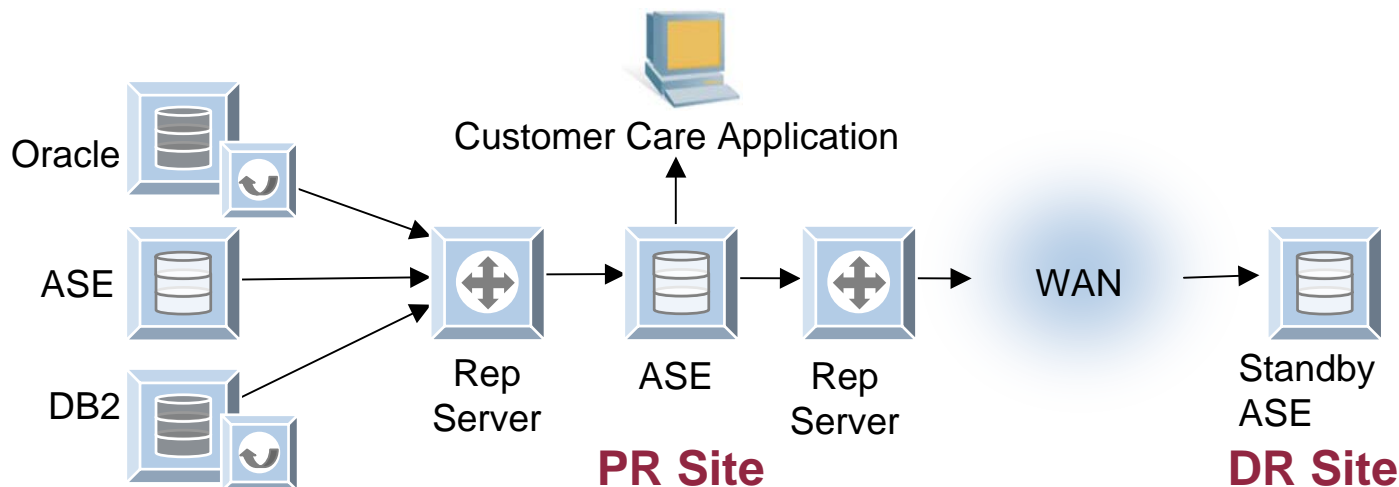
RS 15 Features

REQUIREMENT	NEW FEATURE	ADVANTAGE
Maintain Performance	Batch Serialization	Optimal Transaction Delivery Solution
Replication Flexibility	ERSSD Routing Support	<p>Routes from a RepServer with ERSSD to a RepServer with ERSSD</p> <p>Routes from a RepServer with ERSSD to a RepServer with ASE RSSD</p>
System Data Replication	User and Role Replication	Logins automatically synchronized between primary and replicate

RS 15 Features

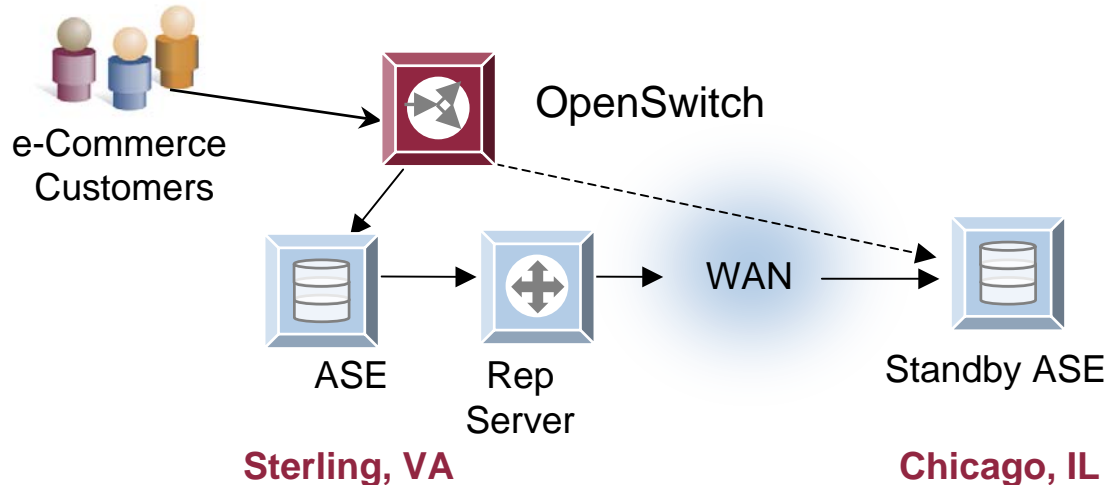
REQUIREMENT	NEW FEATURE	ADVANTAGE
Security	EAL2	Common Criteria EAL2 Certification
	FIPS Support	Certified AES Algorithm using 128-bit Encryption Key
Simplified Administration	Expanded Queue Size	Large disk can be used as one partition

Customer Success Story: Major Credit Card Issuer



- **Call center needs database availability**
 - Call Center has to support over 40 millions credit card customers
 - Customers seek immediate assistance when: requesting new cards, increasing credit limits, and applying for loans
 - Database availability required for service rep to handle request
- **Sybase Replication Server synchronizes customer data**
 - Collects data from heterogeneous sources
 - Stores customer info in Sybase ASE. Warm standby for HA
- **Achieved 99.95% database availability**
 - Which contributed to customer acquisition and retention
 - The warm standby ensures fast failover, limits latency, and enables geographic separation
 - The ROI of replicating customer data across customer-facing applications has become clear in terms of customer satisfaction and retention

Customer Success: GSA Advantage



- **Hosting the world's largest e-commerce site, GSA requires non-stop operations, servicing customers around the globe. Stats:**
 - 11 million products and services offered
 - 2,500 orders/day @ \$724/order
 - 500,000 registered users
- **Sybase solution:**
 - ASE, Rep Server, Open Switch
 - Primary site in Sterling, VA – Secondary Site in Chicago, IL
- **Results:**
 - Fallover to second site transparent to users – occurs within seconds

Replication Server:

- Sybase heterogeneous replication supports sophisticated enterprise-level distributed environments with high-performance, low overhead, scalable solutions
- Known as a cost-effective technology solution with Wall-Street class performance and reliability
- Replication capabilities span DR, HA, reporting, data consolidation, data synchronization and data integration
- Broad set of tools, value-adds for replicated environment (event delivery, archiving, auditing, etc.)
- Strong replication customer base

Replication Server Oracle Option 12.6

Heterogeneous Replication

- **Sybase Replication Server supports multiple databases (Oracle, DB2, SQL Server) – with large numbers of customers in production**
 - Customers prefer one vendor for all their replication needs
 - Same product can be deployed for replication for ASE as well as other databases
- **Oracle**
 - Log Based
 - Supports Oracle 9i, with 10g/RAC on roadmap
- **DB2**
 - Log Based
 - Supports V7, with upcoming support for V8
- **SQL Server**
 - Trigger based. Log based solution on roadmap, which will support SQL Server 2005
 - Supports SQL Server 2000

New releases for heterogeneous replication:

12.6 **Log-based Sybase Replication Server Oracle Option**
Log-based Mirror Activator for Oracle

- Extends Sybase well-known replication strength and performance capabilities for mixed environments
- High demand from market for reliable, heterogeneous replication solutions
- Fundamental element of Data Services solutions

Sybase Replication Server Oracle Option 12.6

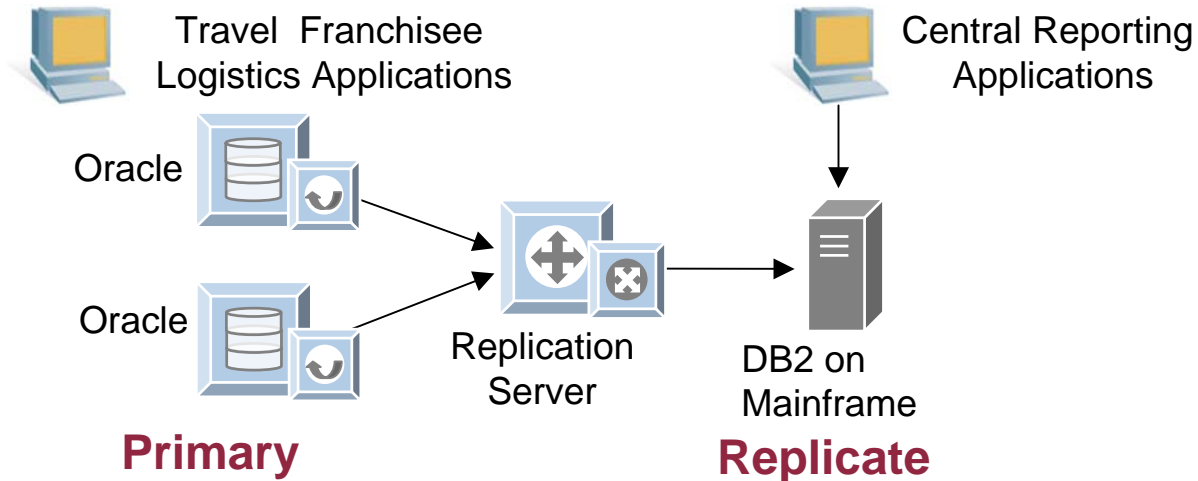
- **Sybase has supported Oracle replication for over 10 years**
 - Has been trigger-based
- **Replication Server Oracle Option 12.6 is log-based**
 - Better performance
 - Reduce impact on primary
- **Supports Oracle 9i (9.0.1 and 9.2.0) on:**
 - Solaris 2.8, 2.9
 - Windows 2000, 2003
 - AIX 5.1, 5.2, 5.3
 - HP-UX 11i
 - RedHat Linux Enterprise 2.1, 3.0

Major Features, Sybase Replication Server Oracle Option 12.6

- **Supports Oracle 9i**
 - 10g and RAC in product roadmap
- **Supports Stored Procedure Replication**
 - Key differentiator for solving performance issues
- **Supported by PowerDesigner for Integrated Modeling**
 - Integrated modeling of database and replication environments
- **Supports DDL replication**

Heterogeneous Replication Success Story

A Major Travel Service Provider



- **Travel service provider needs data integration to improve customer satisfaction**
 - Legacy implementation was a manual script-driven batch process. Logistics information updated local agencies weren't captured and delivered to Central site. Hence, customers weren't able to get accurate information on time.
- **Sybase Replication Server synchronizes logistics data in heterogeneous environment**
 - Collects changed data from heterogeneous sources
 - Replicate in real-time to other heterogeneous targets
- **Achieved real-time data integration**
 - This solution enables this customer to provide better services and improve customer satisfaction, which contributed to customer acquisition and retention

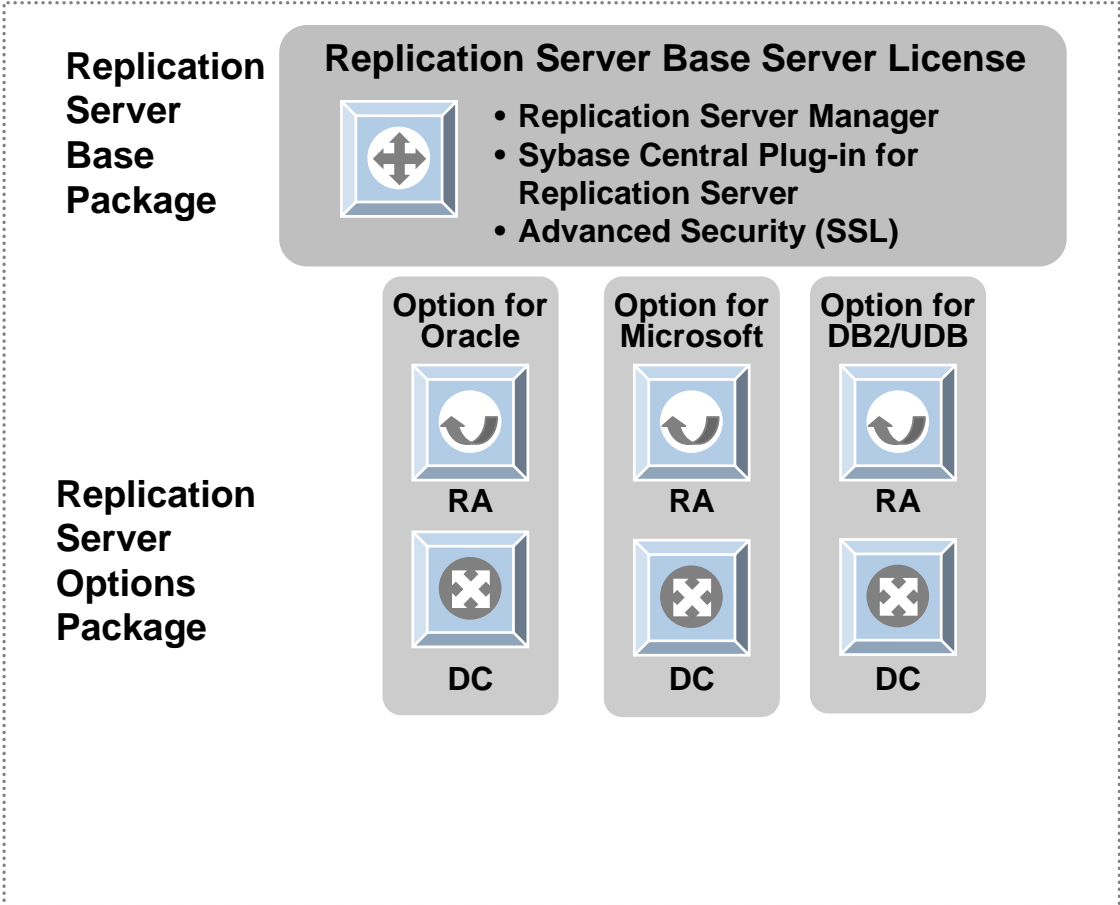
One Architecture For Data Movement and Disaster Recovery

Increased requirement to support multiple databases:

- Mergers, acquisitions, 3rd party applications, legacy applications
- Need to staff DBA skills for all databases in environment
- Data movement and disaster recovery efforts require a different set of DBA skills
- If data movement or disaster recovery solutions are the same across databases then only one set of skills is required
- Numerous sites currently use Replication Server and have these skills
- Replication Server skills are easily extended to replicating other databases

Replication Server 15 Packaging

- **Base**
 - Replication to and from Sybase ASE databases
- **Heterogeneous Replication Options**
 - Each option enables replication to and from the corresponding database



- **Sybase Replication Server is used by ASE and non-ASE customers in mixed database environments in production – with thousands of customers worldwide**
 - Typical usage of Sybase Replication Server is in financial services (for trade processing), healthcare, telecom and public sector
- **Replication Server provides capabilities for:**
 - High Availability
 - Disaster Recovery
 - Reporting
 - Data Distribution
 - Master Data Management
- **Sybase is continually enhancing replication server to provide enhanced capabilities:**
 - Support for all current versions of major databases
 - Continuing to make management and performance in large environments easier
 - Supporting use of replication in data integration
 - Working with third party development and management tools vendors, including in-house development products like PowerDesigner
 - Enhance data comparison capabilities in mixed database environments
 - Provide continuous data protection capabilities

Replication Server Roadmap

