

ASGC Site Update

Yi-Ping Wu

Jeng-Hsueh Wu

Two Significant Researches

1. Oracle Security issues and Studies for 3D
2. Streams Replications Study Report in Oracle 10.2g

1.Oracle Security issues and Studies for 3D

2.Streams Replications Study Report in
Oracle 10.2g

Oracle Security issues and Studies for 3D

Yi-Ping Wu

Outline

- Enterprise User Security Introduction
- Oracle Advanced Security Introduction and SSL Configuration
- Enterprise User Security Configuration

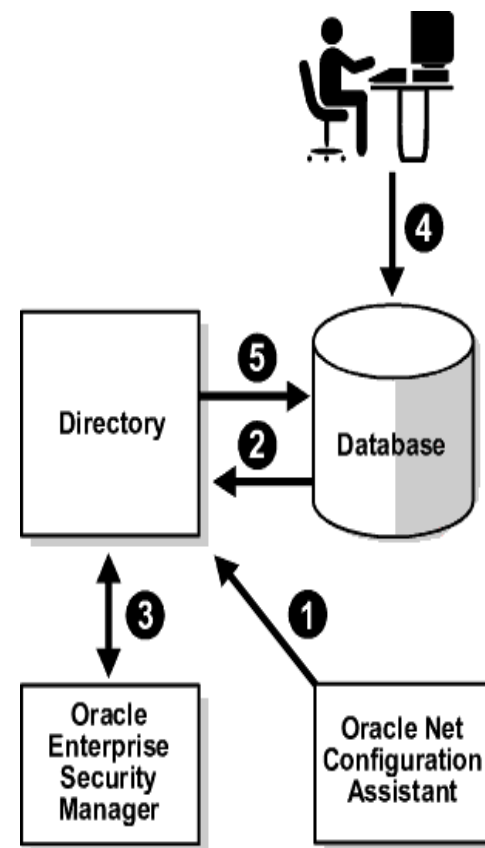
- Enterprise User Security Introduction
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Oracle Enterprise Security

- A distributed environment makes the issues more critical about “who is a user” and “what are they allowed to do”. However, the user management price may deduct the cost saving gained from grid computing. Oracle Advanced Security provides the solution to the security in enterprise grid computing environments.

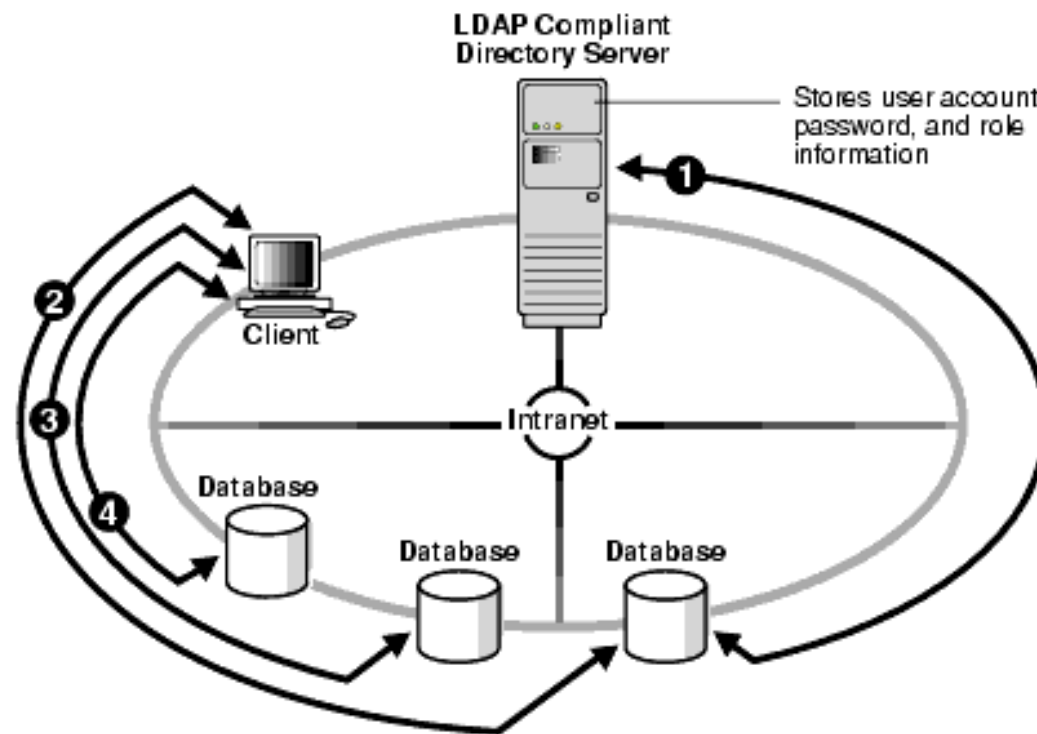
How Enterprise User Security Works

- An administrator uses Oracle Net Configuration Assistant to (i) select the Oracle Context in the directory, or to (ii) create an Oracle Context as necessary.
- A member of the OracleDBCreators group uses the Database Configuration Assistant or Oracle Enterprise Security Manager to register the database with the directory.
- An administrator uses Oracle Enterprise Security Manager to set up both enterprise users and enterprise roles in the directory and relevant domains.
- A user initiates an SSL connection to the database by logging on with "connect /", and the database uses SSL to authenticate the user.
- The database searches locally on the database for a schema exclusively owned by this user.
- If no appropriate user schema is found locally, the database searches for one in the directory. If it finds one, the database retrieves the user's enterprise roles from the directory, and enables any associated global roles applicable to that database.



Directory Server

- A directory server can be used to provide centralized storage and management of user and authentication information.



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Oracle Advanced Security Configurations

Configuring
Secure Sockets Layer (SSL)
Authentication

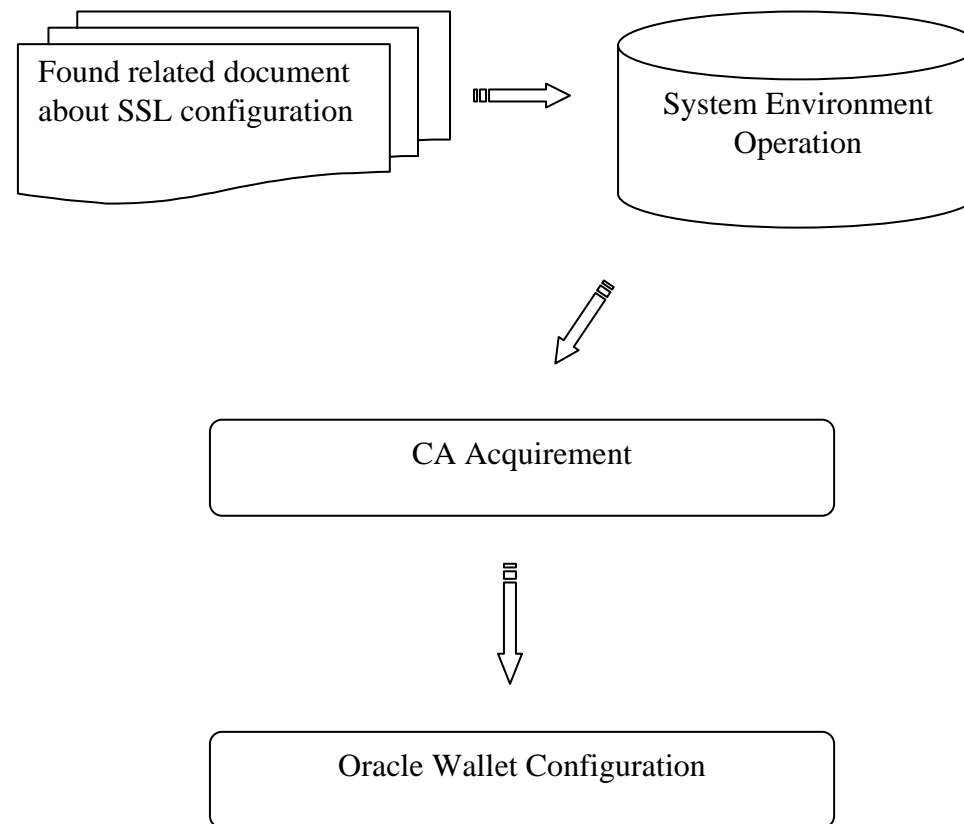
Authentication by the Secure Socket Layer Protocol

- SSL can be used for user authentication to a database, independent of global user management in Oracle Internet Directory. That is, users can use SSL to authenticate to the database without implying anything about their directory access. However, if you wish to use the enterprise user functionality to manage users and their privileges in a directory, the user must use SSL to authenticate to the database.

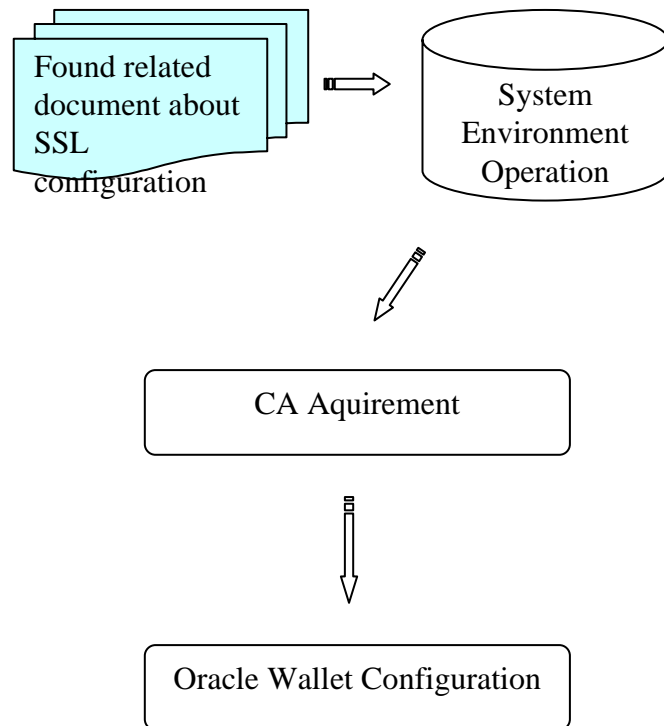
Tasks for SSL Configuration

- Task 1: Install Oracle Advanced Security and Related Products
- Task 2: Configure SSL on the Client
- Task 3: Configure SSL on the Server
- Task 4: Log on to the Database

Process of SSL Configuration

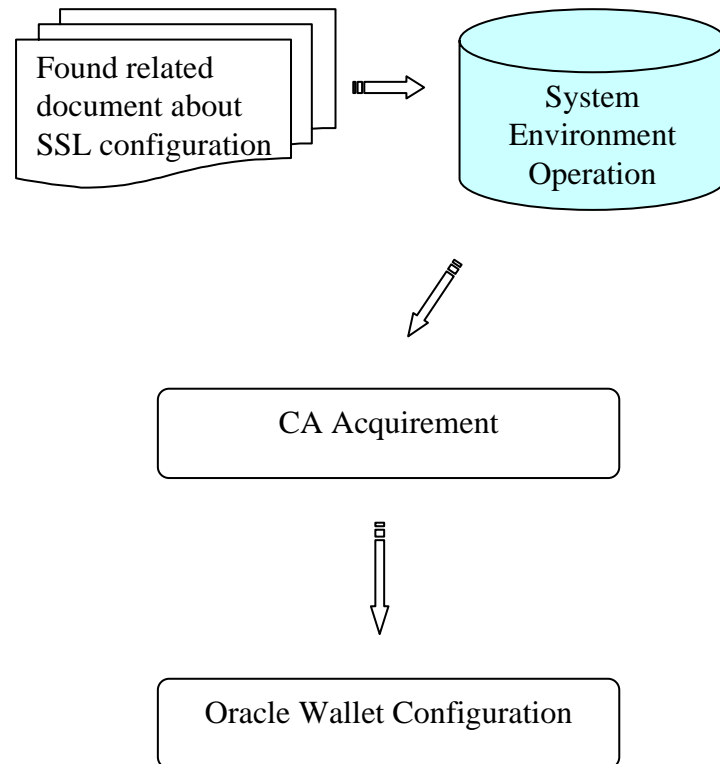


SSL Related Documents



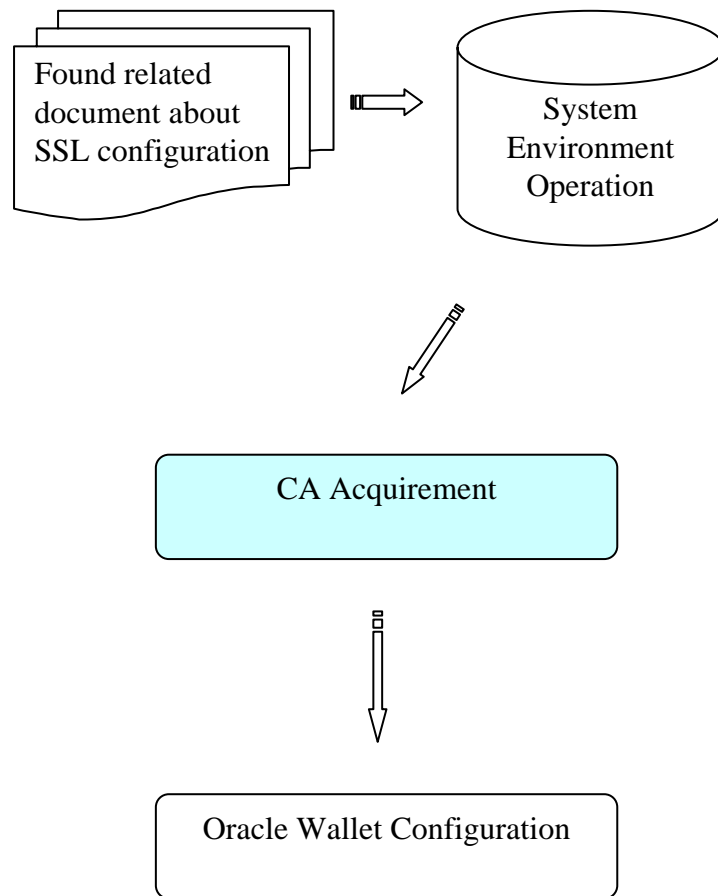
- Oracle Database Advanced Security Administrator's Guide 10g
- Database Security Guide 10g
- METALINK
NOTE:112490.1:
Configuring Net8 TCP/IP via SSL

System Environment Operation



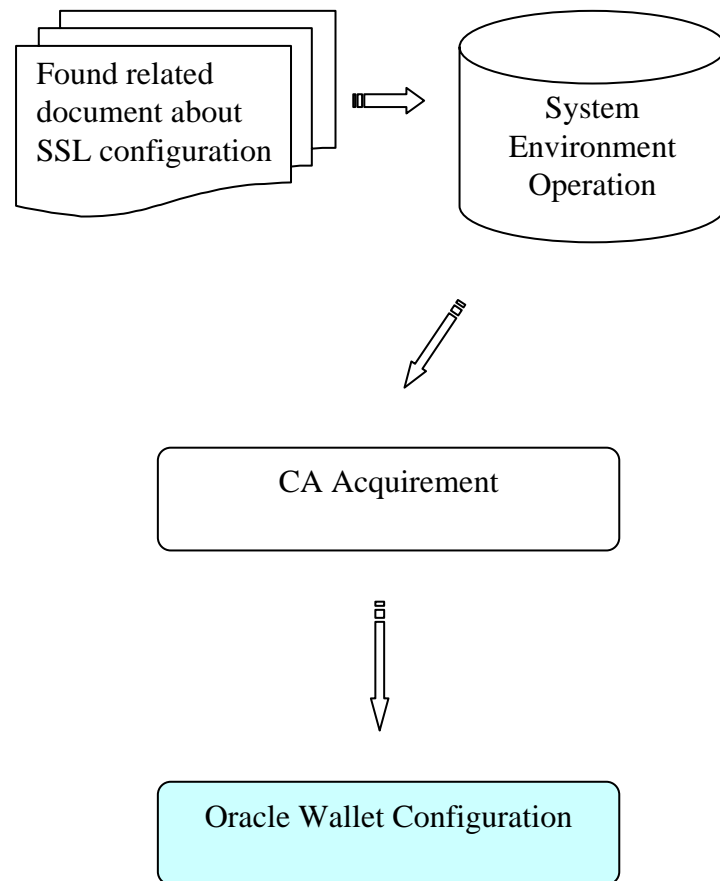
- Operating System
- Oracle 10g Enterprise Edition installation
- Oracle Net Configuration

CA Acquirement



- Globus ToolKit
- Oracle Certificate Authority

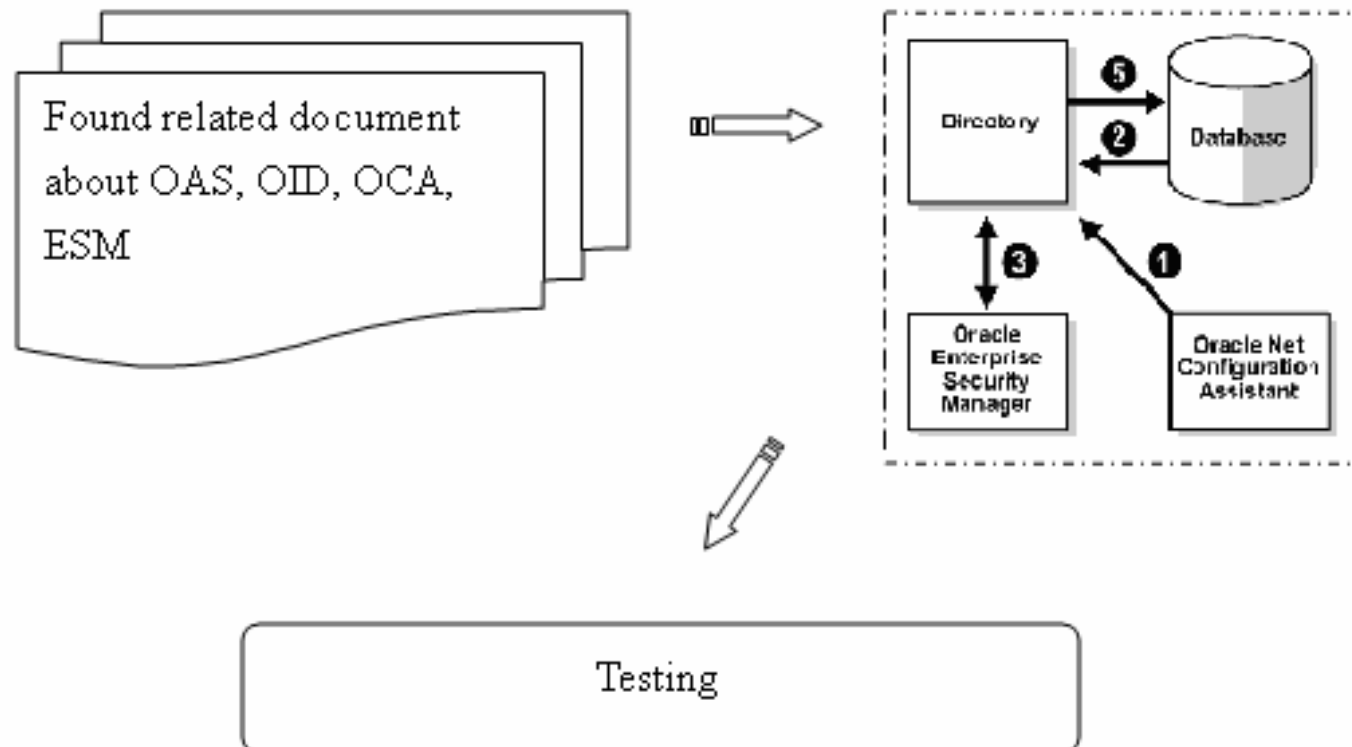
Oracle Wallet Configuration



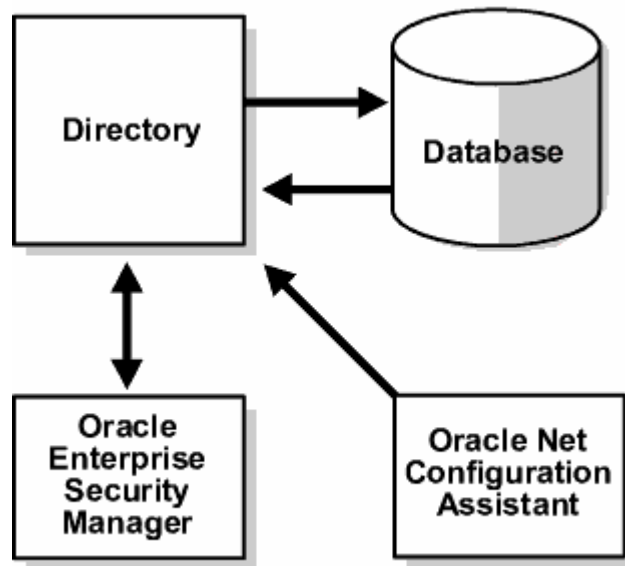
- Import the Entrust Certificate and User Certificate into the Wallet
- Indicate the wallet location path at Oracle Net Manager

- Enterprise User Security Introduction
- Oracle Advanced Security Introduction and SSL Configuration
- **Enterprise User Security Configuration**

Process of Enterprise User Security Configuration



Main steps to set up Enterprise Security



1. Enabling database for LDAP network connectivity
2. Configuring database for LDAP authentication with OID
3. Configure your database schema mappings using Enterprise Security Manager
4. Test user authentication against the database
5. Configuring a Shared Schema for Groups
6. Configure "Enterprise Role" for group authentication

Testing

- Verify that the database server can bind to the OID server → `ldapbind -h <oid_hostname> -p <SSL_port> -U 3 -W "file:<Wallet_path> -P <wallet_password>`
- Verify that the database is registered with OID → `RDBMS_SERVER_DN='CN=ORA9pc,cn=OracleContext,dc=oracle,dc=com'` corresponding to user wallet DN entry
- Verify that the new user has been created
- Verify that the database locate the enterprise domain → `ldapsearch -h <OID host> p- <OID SSL port> -U 3 -W "file:,database wallet location>" -P <wallet password> -b"cn=OracleDBSecurity,cn=Products,dn=OracleContext,<DN of domain>" "objectclass=orclbdbenterprisedomain"`

Conclusion

- Oracle provides a complete infrastructure, Identity Management, for the security solution. During the past months, we have already collected sufficient documents and have the general understanding of Oracle Identity Management and Advanced Security.
- SSL authentication has been successfully configured, which is essential for the future security environment settings. We are currently testing the Enterprise User Security with password authentication, and our next step will be Enterprise User Security with SSL authentication.

Related Documents

- Oracle Database Advanced Security Administrator's Guide 10g
- Database Security Guide 10g
- Oracle Identity Management Online Training
http://www.oracle.com/technology/products/oid/oid_html/sec_idm_training/html_masters/gsmain.htm
- Oracle Internet Directory Online Training
http://www.oracle.com/technology/products/oid/oid_html/oidqs/html_masters/gsmain.htm

Streams Replications

Study Report in Oracle 10.2g

Official Docs and References

- [Oracle Streams configuration by Eva](#)
- Sample Scripts by EM in 10g R2
- [Streams Concepts and Administration](#)
- [Streams Replication Administrator's Guide](#)
- [PL/SQL Packages and Types Reference](#)

Streams Replications Study Report in Oracle 10.2g

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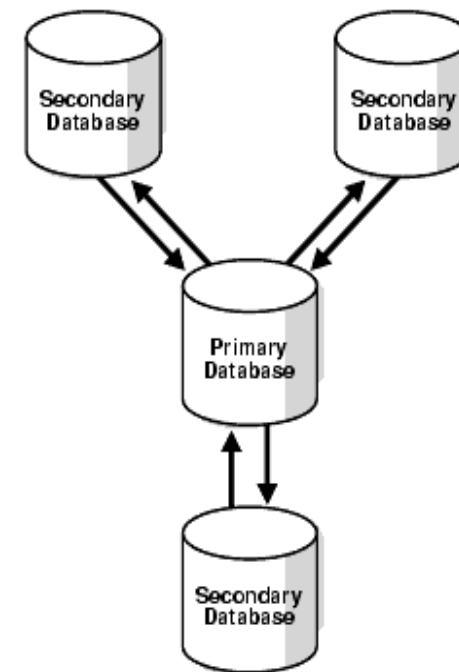
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Environment

- SLC 305
- Oracle 10.2.0.1
- Hardware
 - Intel Pentium 1.8G
 - 1G physical memory
 - 15G partition for oracle



3 Stages

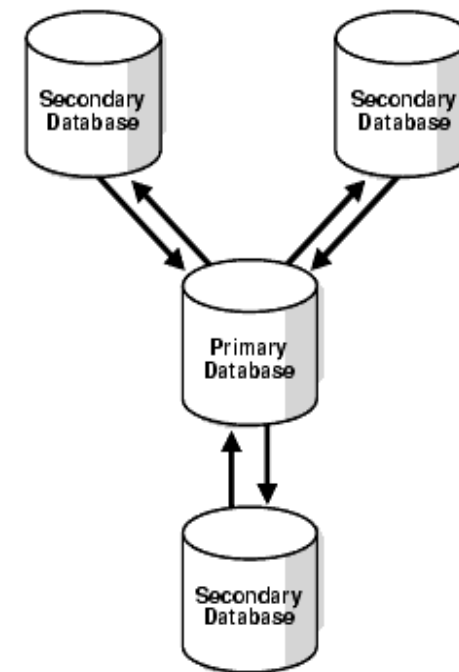
Stage	DB	Bi-directional
1	One DB to One DB	No
2	One DB to One DB	Yes
3	One DB to Many DB	Yes

Scripts and Notes by ASGC

- Concepts for Oracle Streams Replications
 - <http://gate.sinica.edu.tw/~jhwu/streams/streams.concepts.050929.pdf>
- Scripts for building the streams with type "hub and spoke" and bi-directional
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