Group 10

CNSCC.311
Distributed Systems

Presentation

Eshopool: Android Application Development

Group Member List

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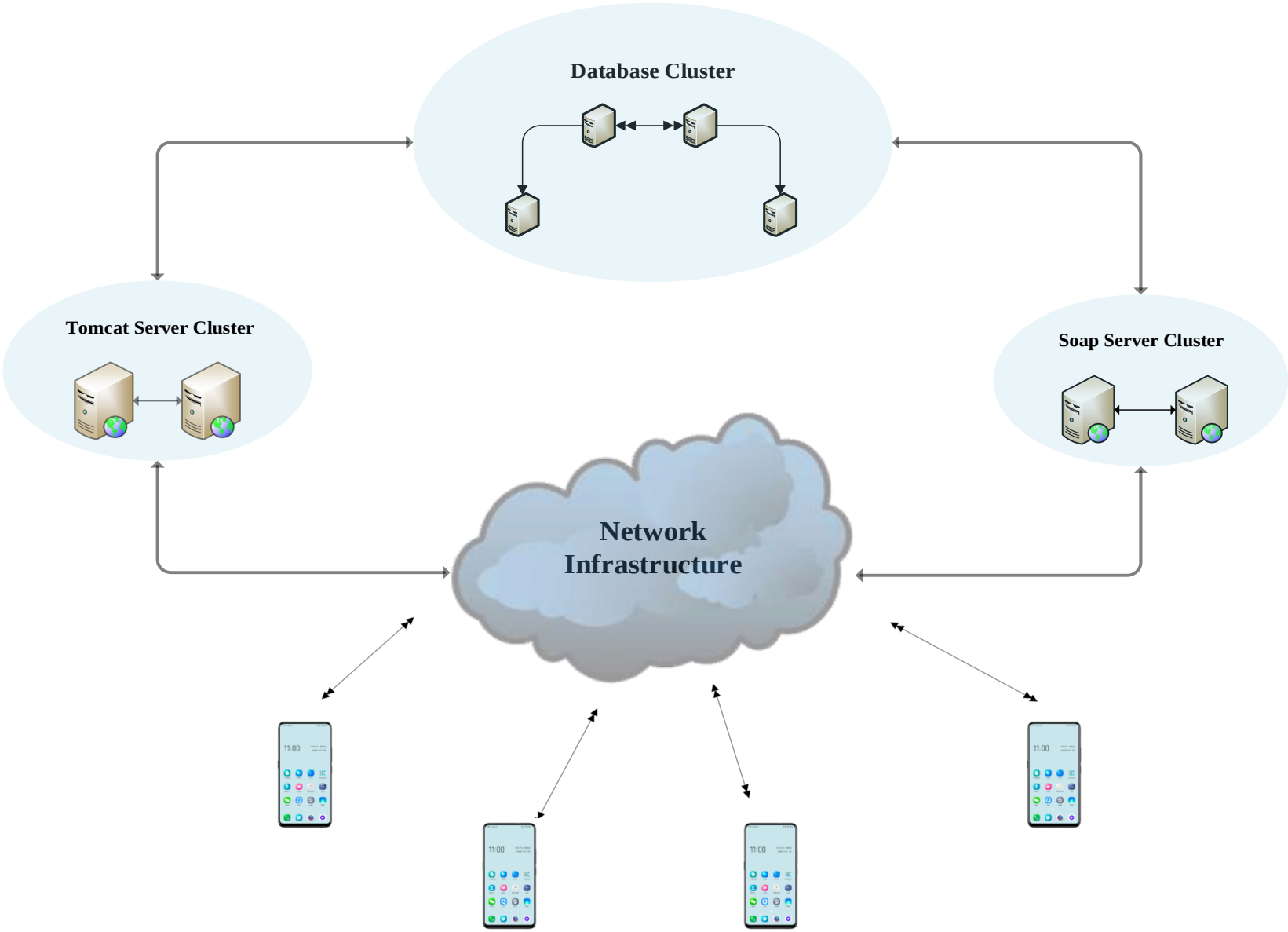
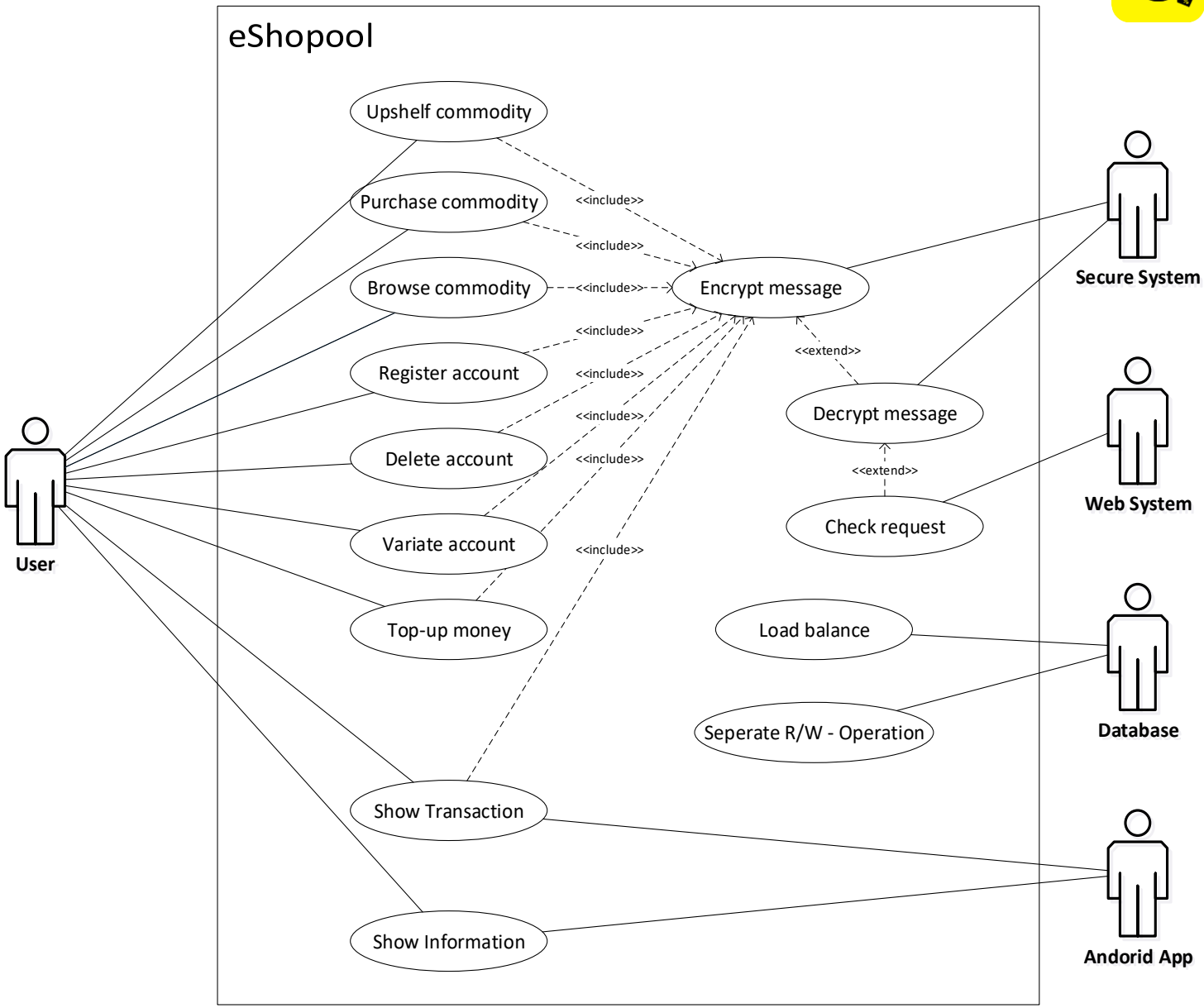
System Architecture

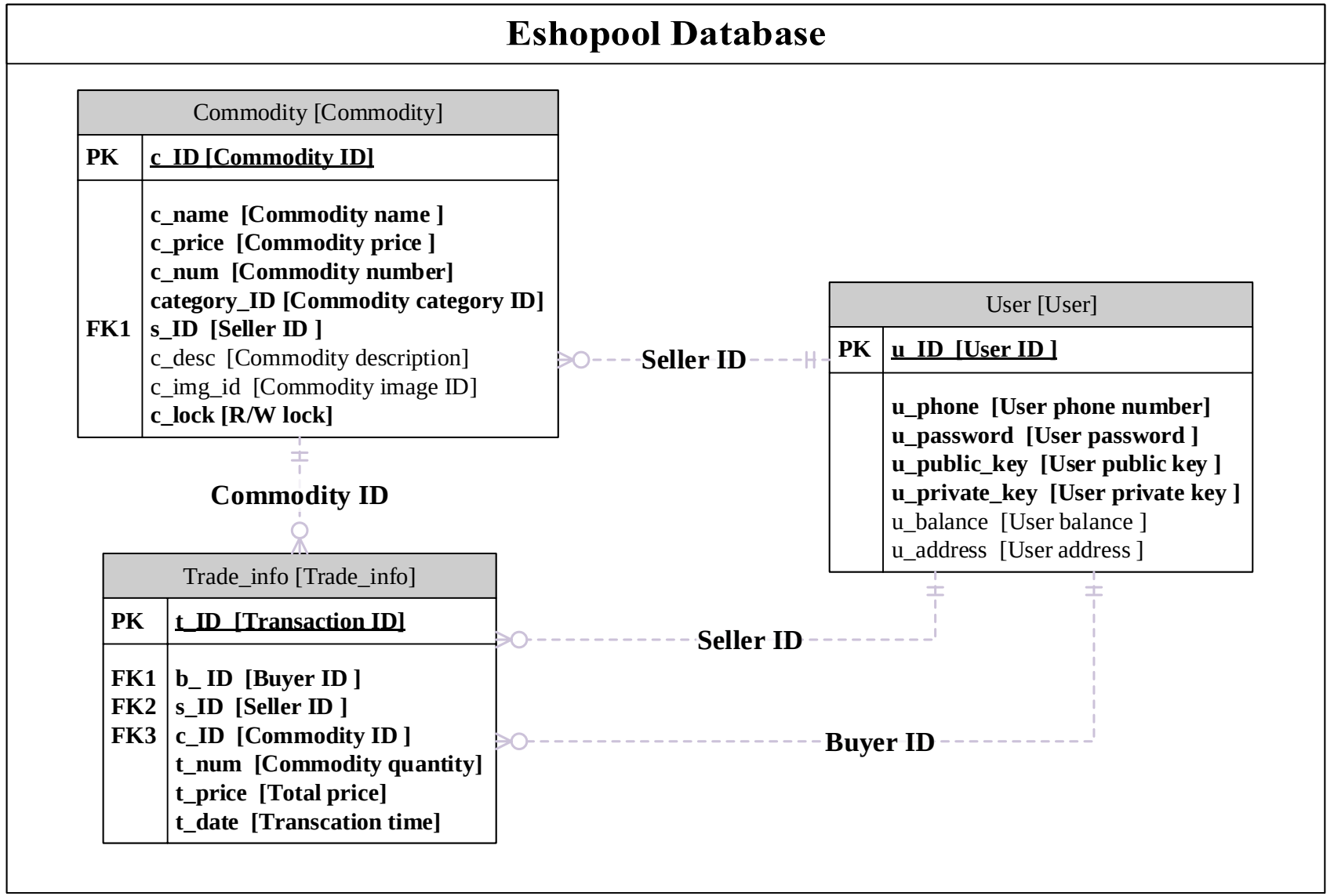


Use Case


eShopool
Upshelf commodity
Purchase commodity
Browse commodity
Register account
Delete account
Variate account
Top-up money
Encrypt message
Decrypt message
Check request
Load balance
Seperate R/W - Operation
Show Transaction
Show Information
<<include>>
<<extend>>
User
Secure System
Web System
Database
Andorid App

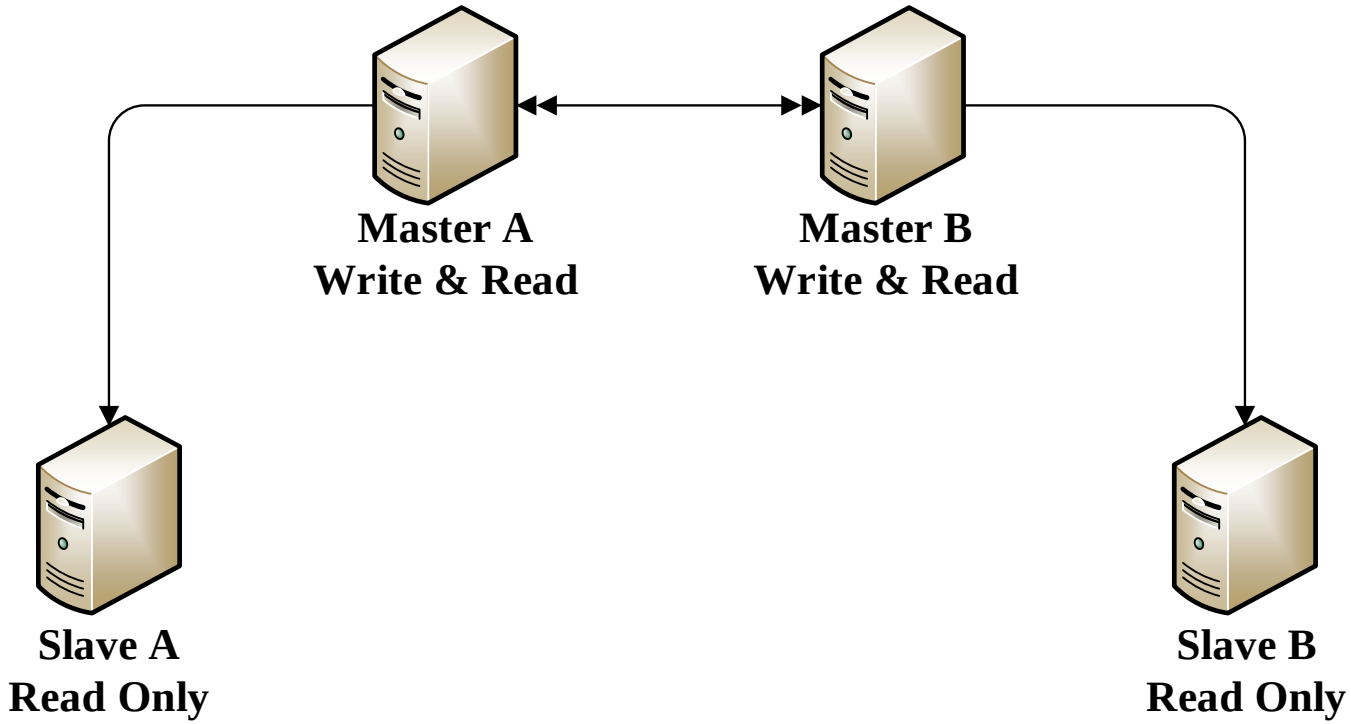
Tasks Description

Database


Eshopool Database
Commodity [Commodity]
PK
c_ID [Commodity ID]
FK1
c_name [Commodity name]
c_price [Commodity price]
c_num [Commodity number]
category_ID [Commodity category ID]
s_ID [Seller ID]
c_desc [Commodity description]
c_img_id [Commodity image ID]
c_lock [R/W lock]
Seller ID
User [User]
PK
u_ID [User ID]
u_phone [User phone number]
u_password [User password]
u_public_key [User public key]
u_private_key [User private key]
u_balance [User balance]
u_address [User address]
Commodity ID
Trade_info [Trade_info]
PK
t_ID [Transaction ID]
FK1
FK2
FK3
b_ ID [Buyer ID]
s_ID [Seller ID]
c_ID [Commodity ID]
t_num [Commodity quantity]
t_price [Total price]
t_date [Transcation time]
Seller ID
Buyer ID

Database Cluster Architecture

Multi-Master-Slave Architecture



Middleware

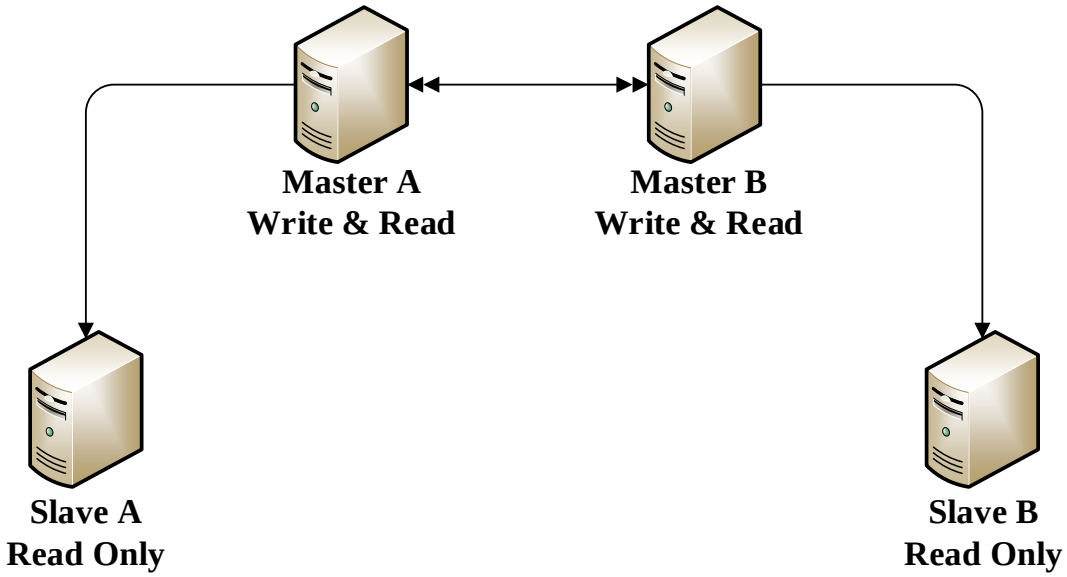
Load Balance

-Weighted Round Robin

R/W Splitting

-Master: Read & Write

-Slave: Read Only



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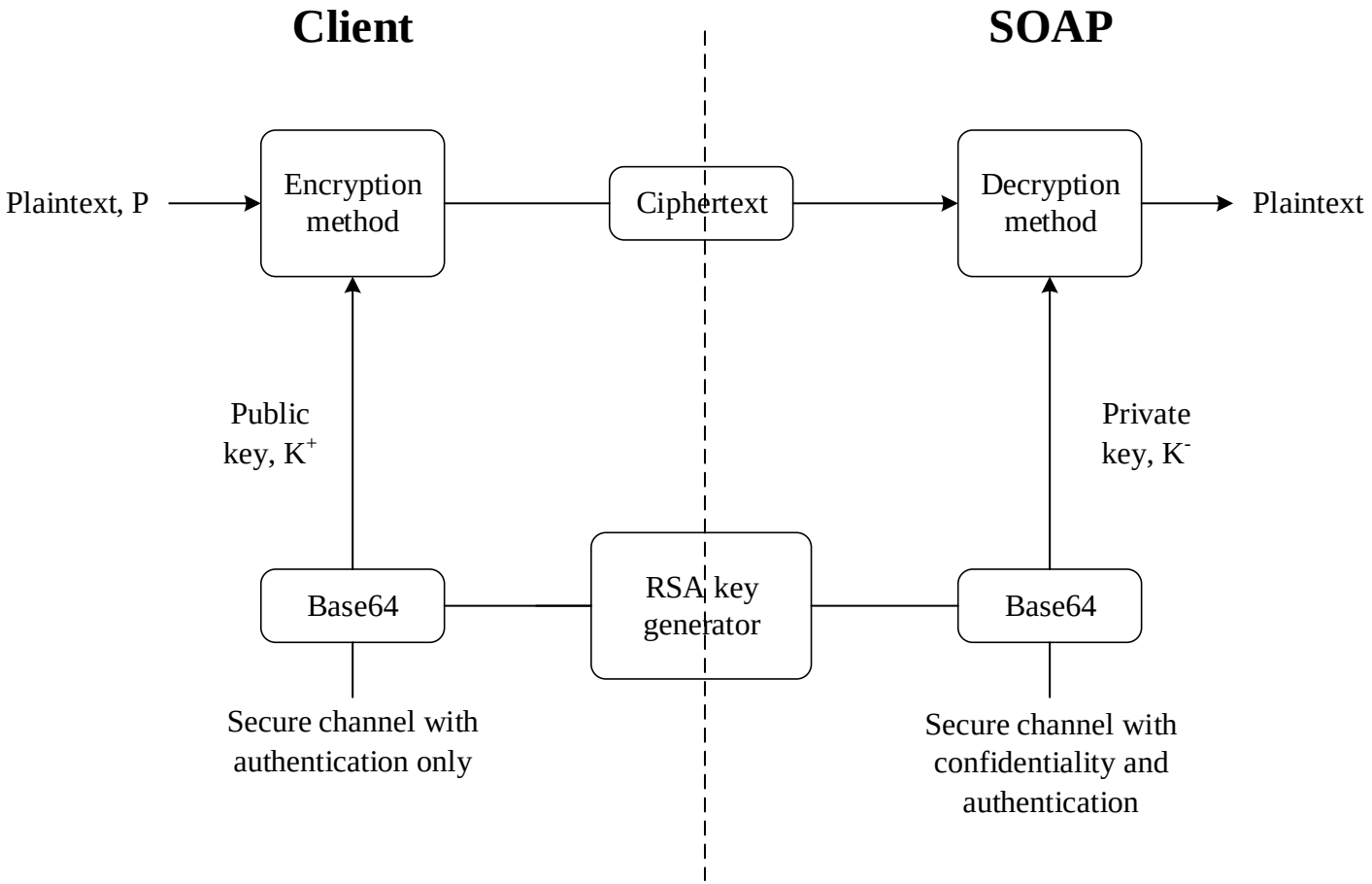
Security & Cryptography

1. RSA
2. AES

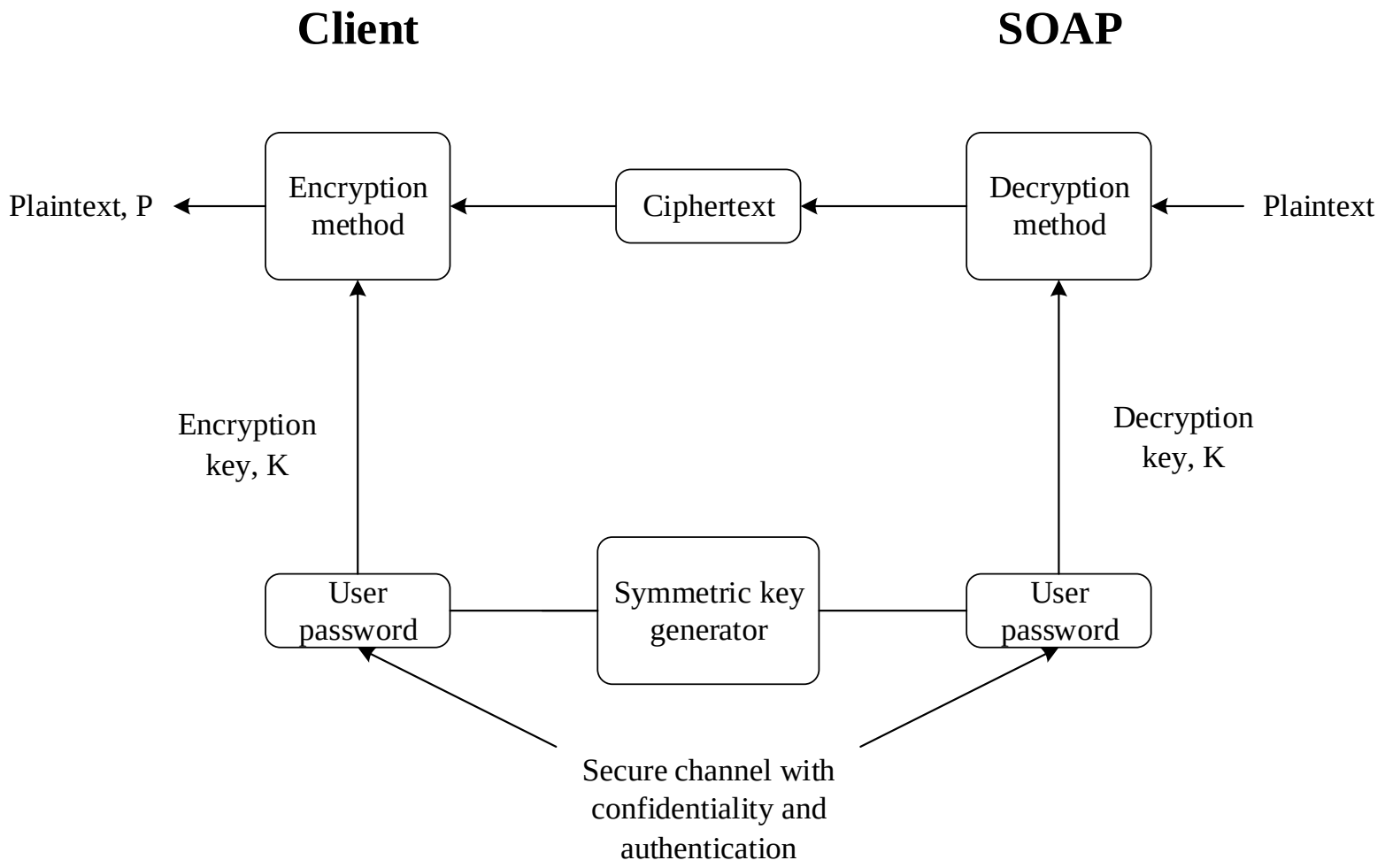
RSA

Asymmetric Cryptosystem



AES

Asymmetric Cryptosystem



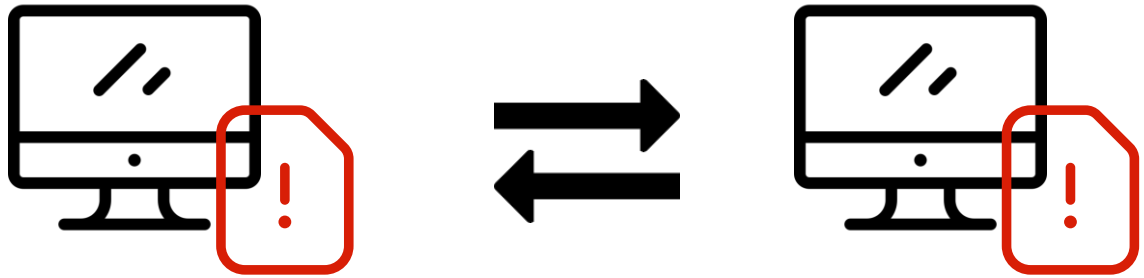
Web Service

Two-phase Lock

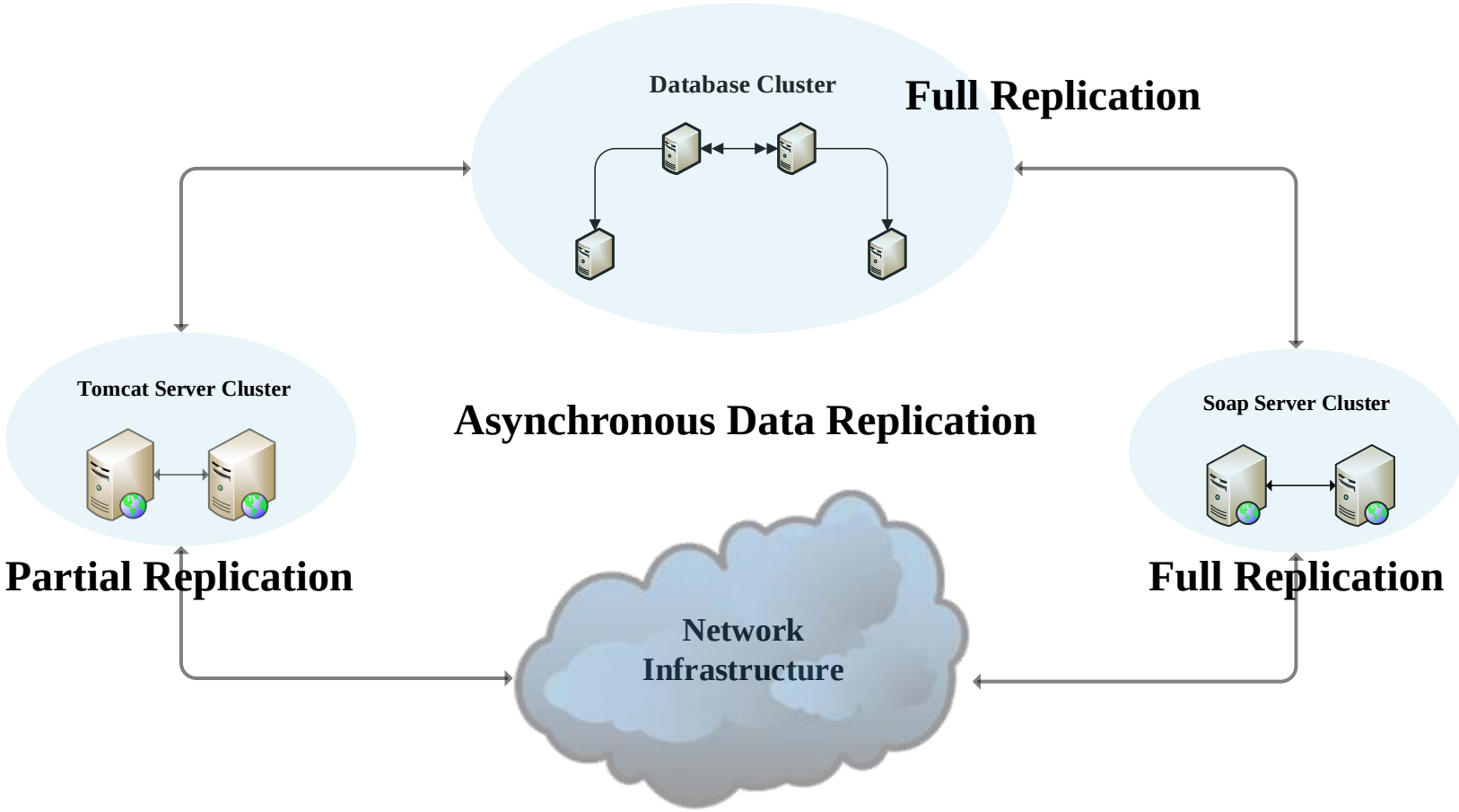
To ensure the atomic operation, we added the Two-phase lock to each item.

Exception Log Synchronization

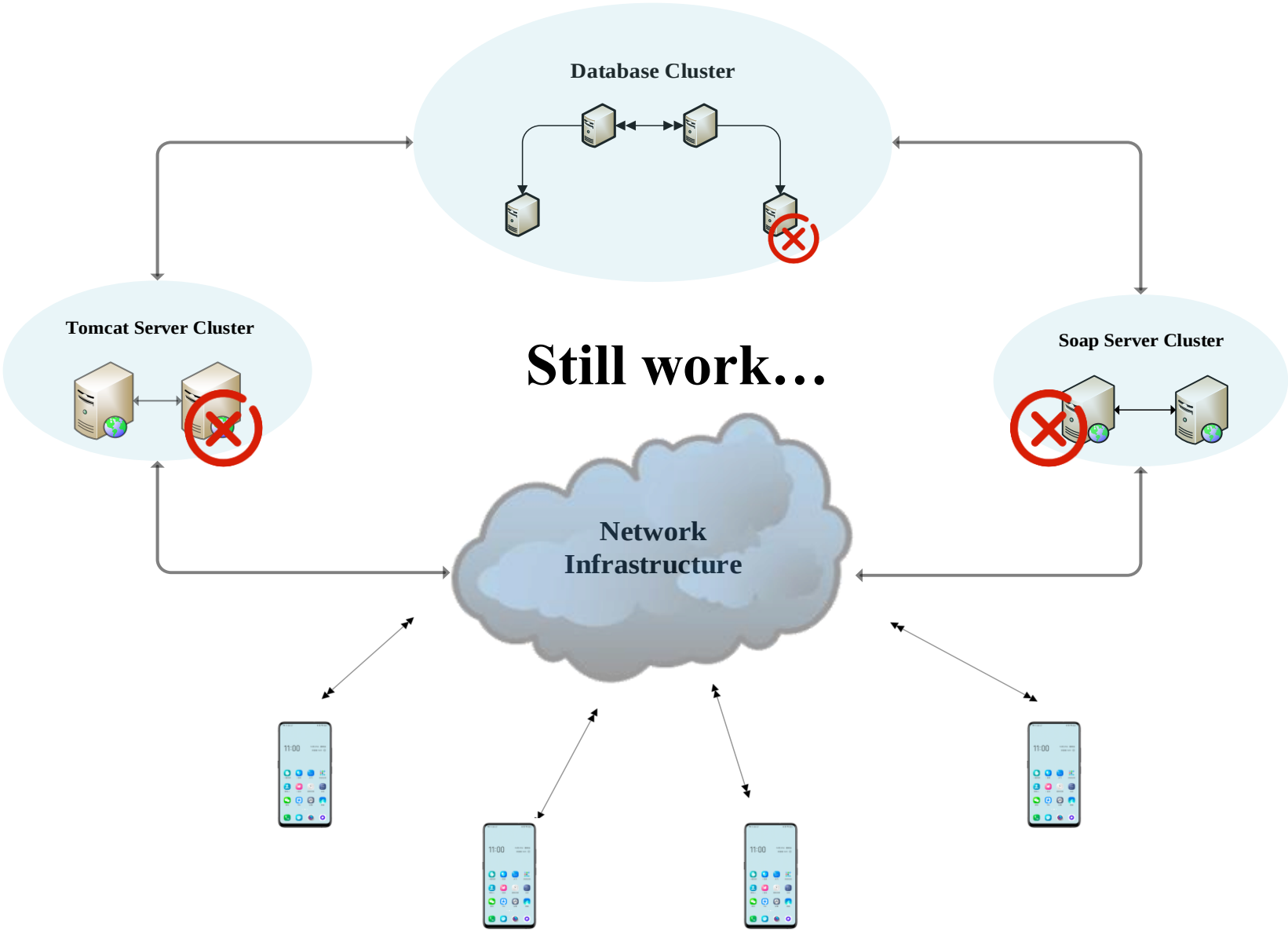
Two soap servers can synchronize each other according exception log.



Data Replication



Fault-Tolerance & Transparency



Presentation

Thank you for listening!

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