



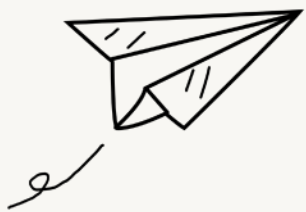
重慶大學  
CHONGQING UNIVERSITY



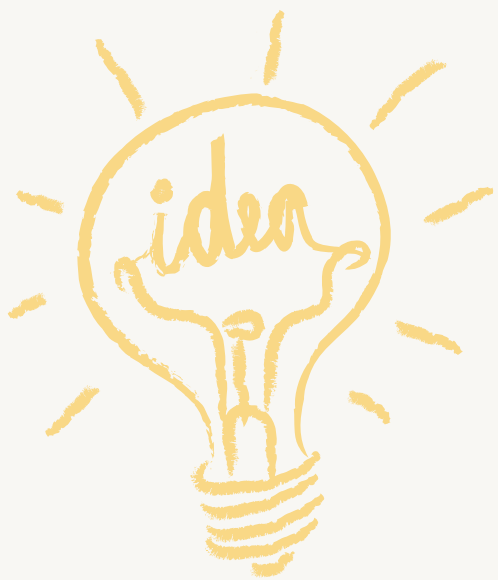
# eBidding 債券在线竞价系统

--花旗金融实训项目结项汇报

第四组

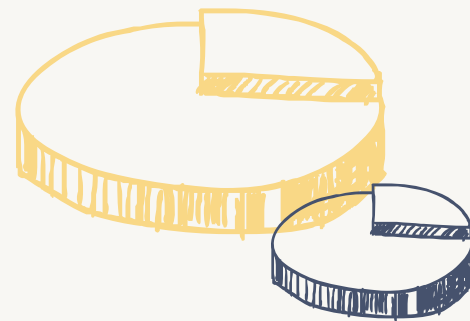


# 目录



## contents

- 01 项目介绍
- 02 项目实施
- 03 难点和亮点
- 04 项目演示

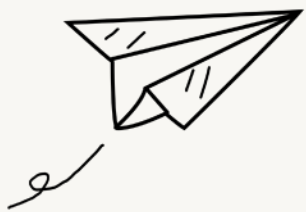




→ 第一部分

# 项目介绍

- 业务背景
- 功能介绍



## 业务背景



BWIC全称为Bids  
Wanted in Competition,  
是对一揽子证券的正式  
竞价请求。



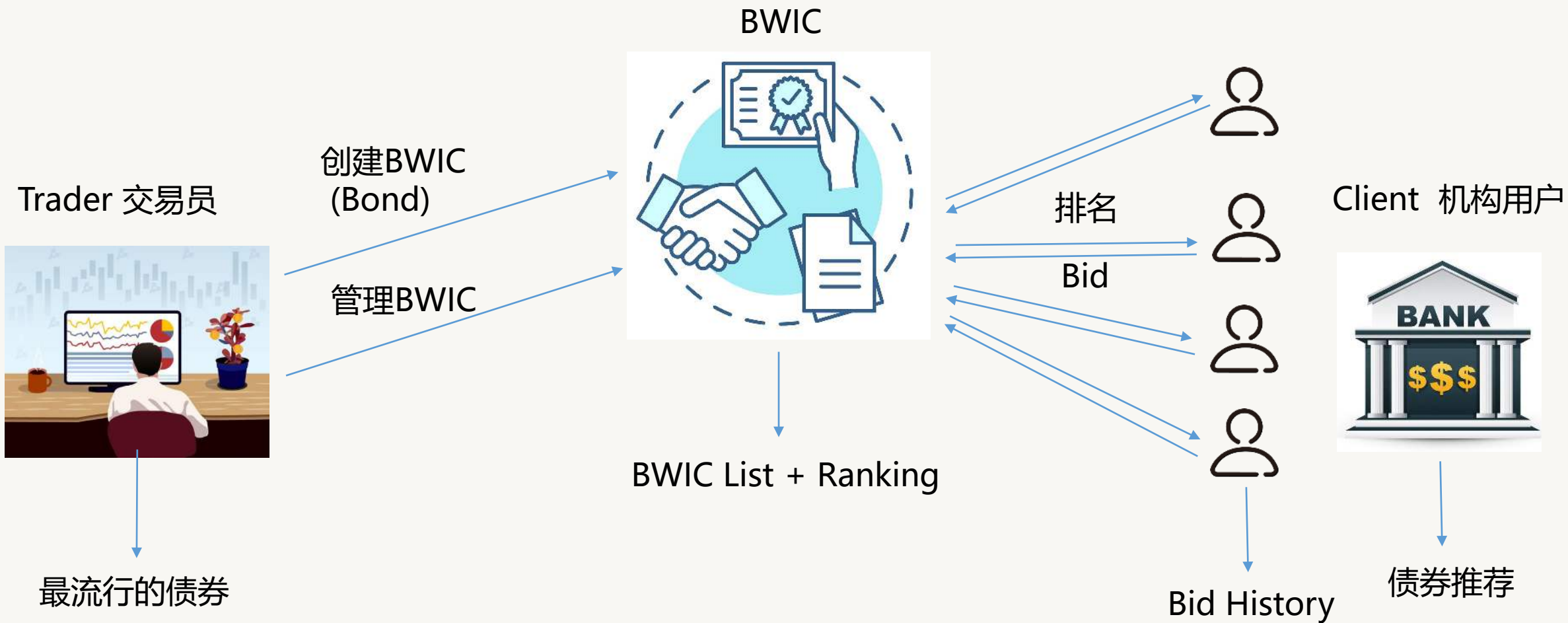
使 BWIC业务自动化



eBidding债券在线竞价系统



# 功能介绍





→ 第二部分

# 项目实施

- 软件架构
- 数据库设计
- 开发流程



# 微服务架构



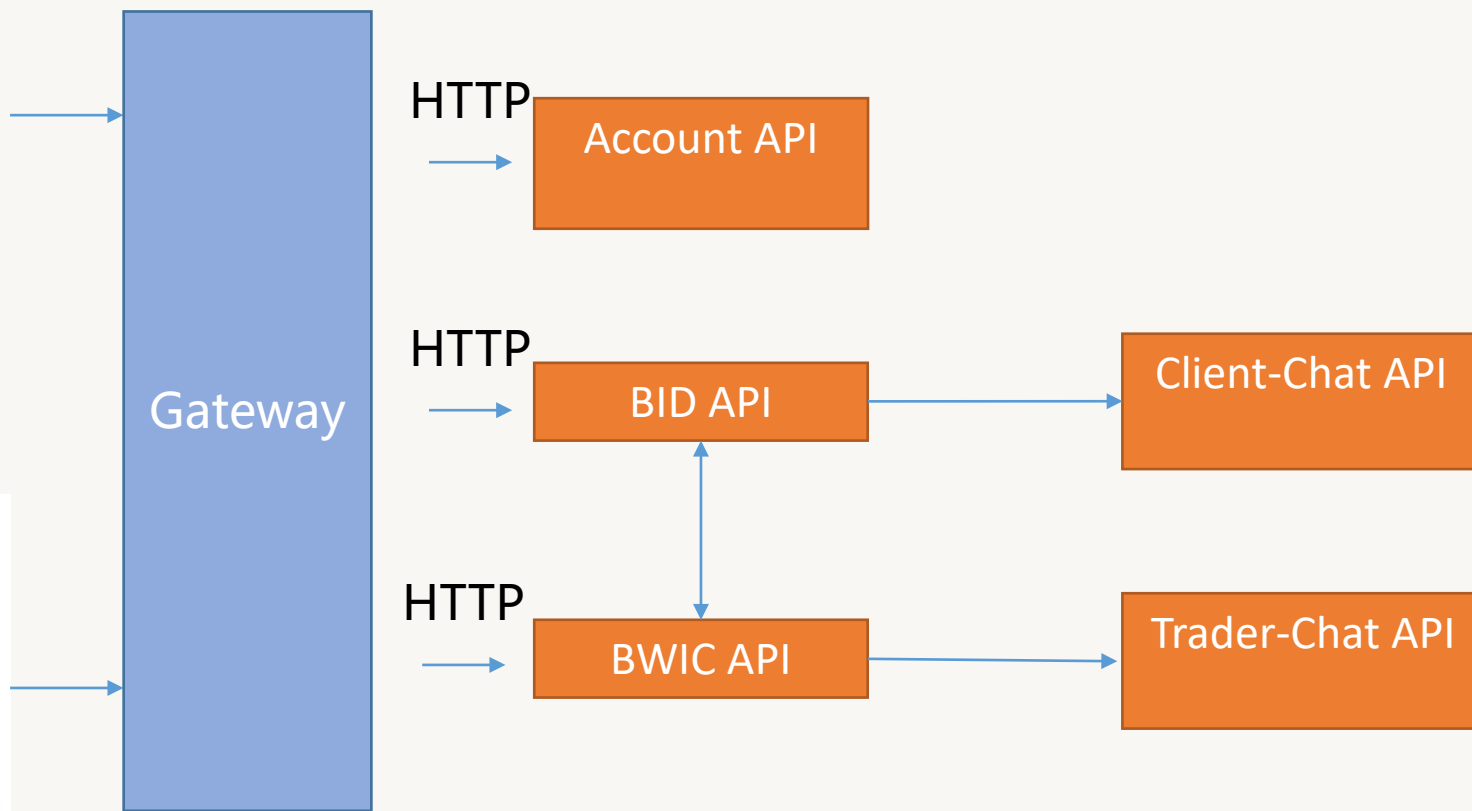
kubernetes

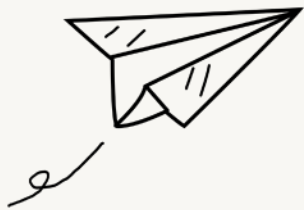


Trader 交易员



Client 机构用户





# 数据库设计



ebidding\_account

ebidding\_bid

ebidding\_bwic

account	
123	<b>account_id</b>
ABC	name
ABC	role
ABC	password_hash

bidrank	
123	<b>account_id</b>
ABC	<b>bwic_id</b>
123	price
🕒	time

bid	
123	<b>bid_id</b>
123	account_id
123	price
123	ranking
🕒	time
ABC	bwic_id

bwic	
123	<b>bwic_id</b>
ABC	bond_id
123	size
123	start_price
123	present_price
🕒	start_time
🕒	due_time
🕒	last_bid_time
123	bid_counts

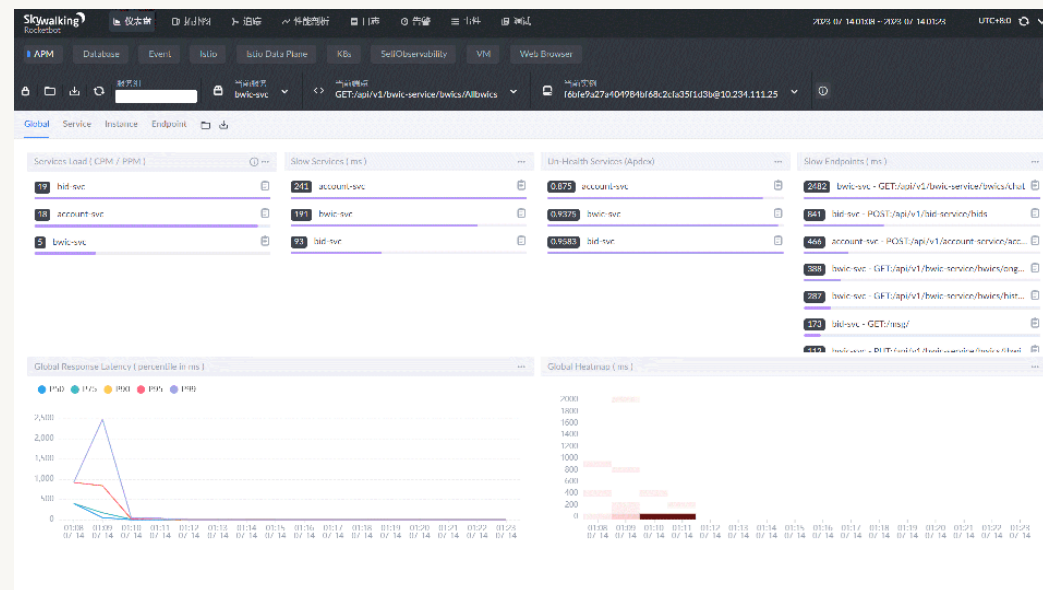
bond	
ABC	<b>bond_id</b>
ABC	cusip
ABC	issuer
ABC	rating
ABC	coupon
🕒	maturity_date
123	transaction_counts

Relationship: bwic.bond\_id (ABC) --- bond.bond\_id (ABC)





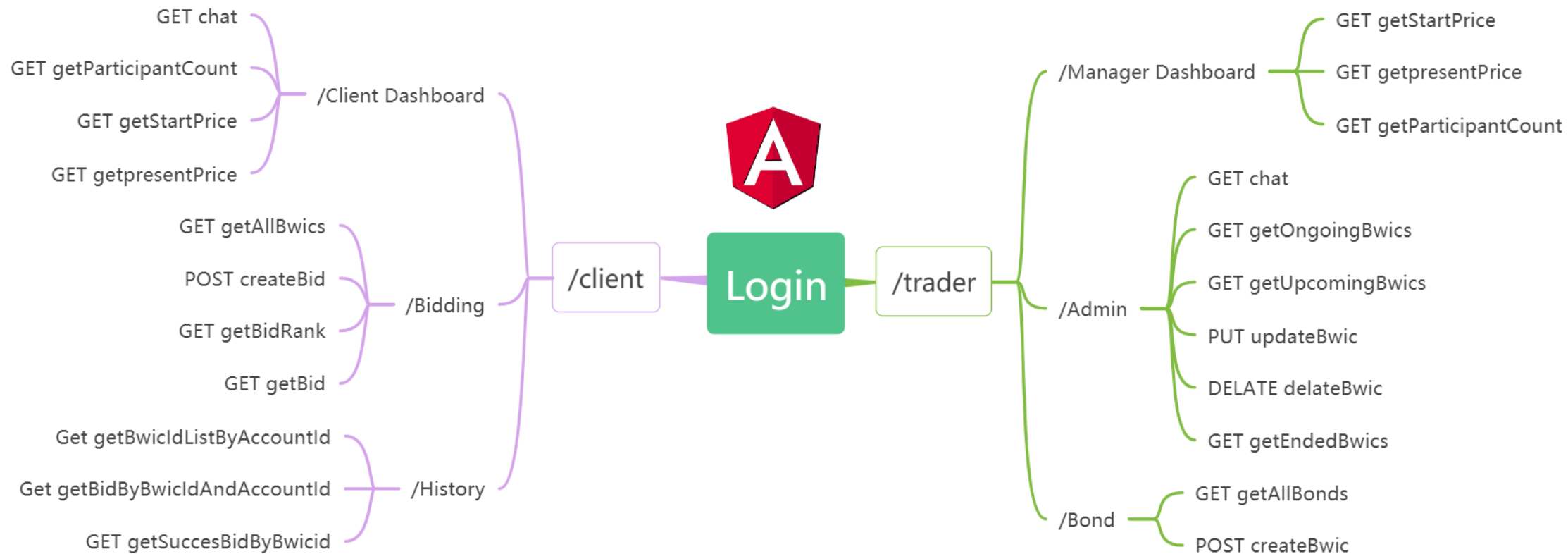
# Skywalking--追踪监控后端服务



使用skywalking对服务进行监控

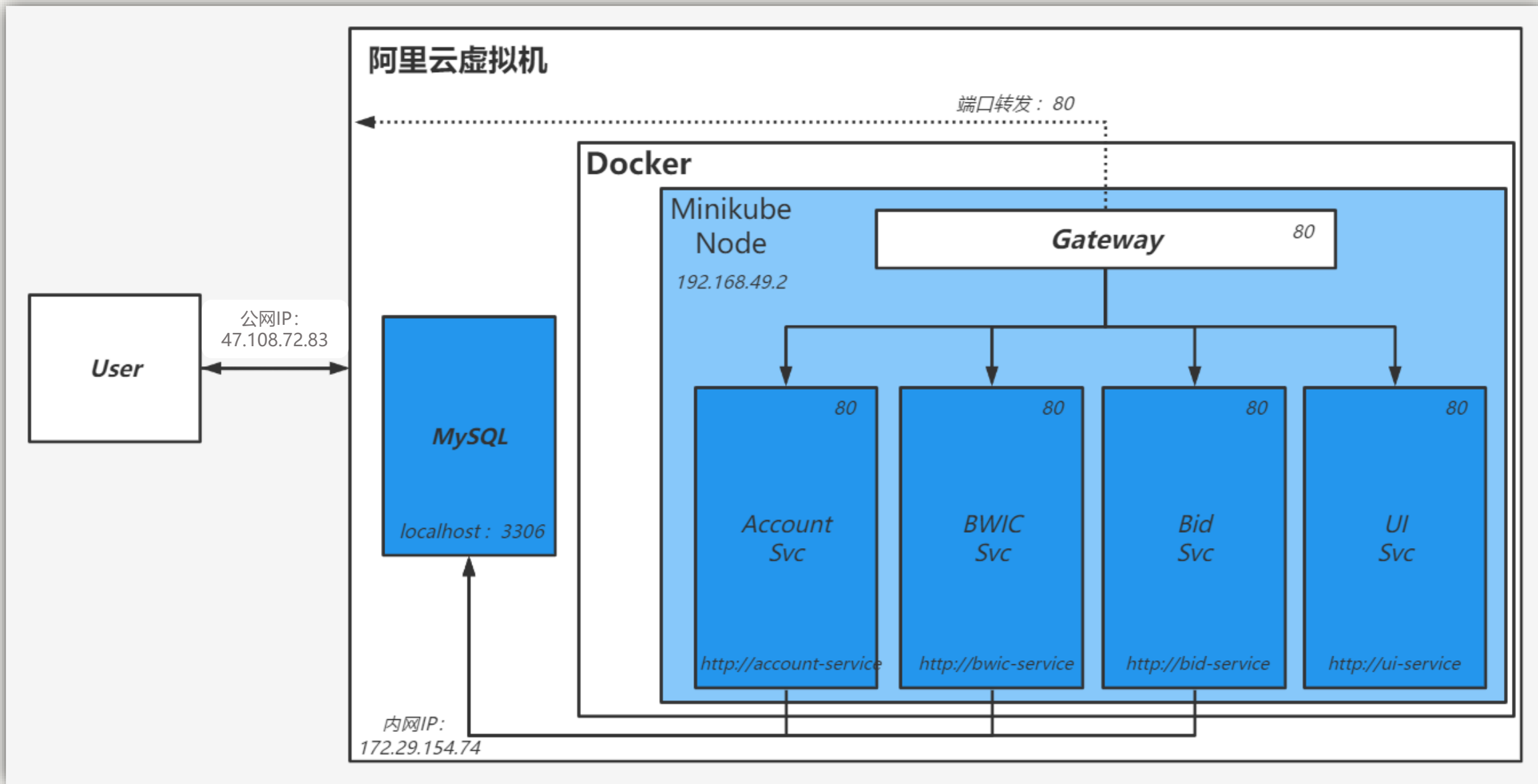


# 前端路由结构和交互接口



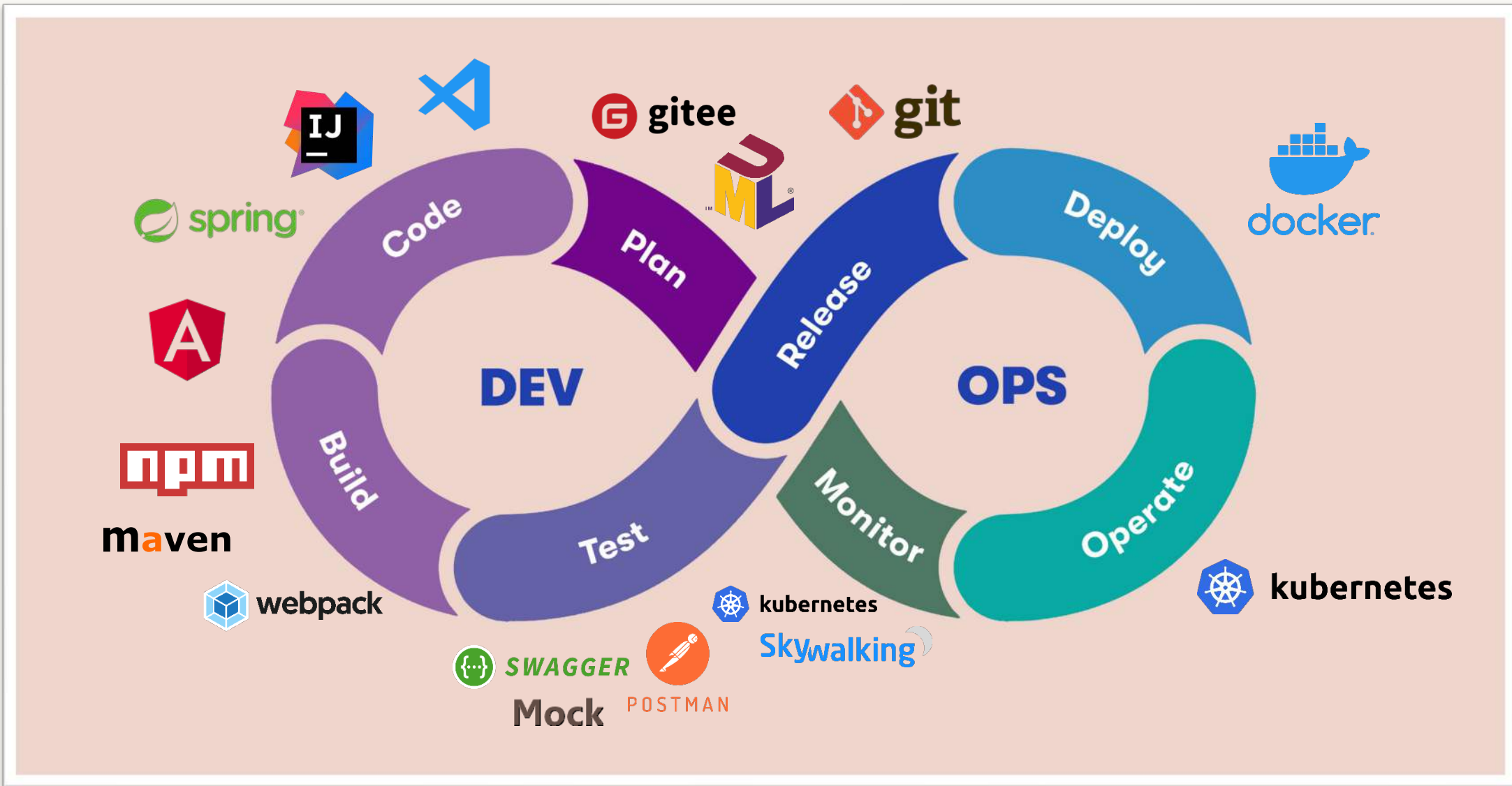


# Docker容器化部署与K8s运维





# 项目开发流程——DevOps模式

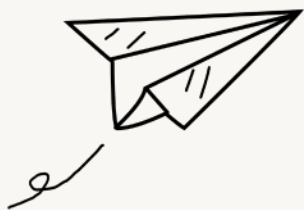




→ 第三部分

# 难点和亮点

- 遇到的问题，解决的办法
- 亮点



# 1. BWIC GPT——智能推荐



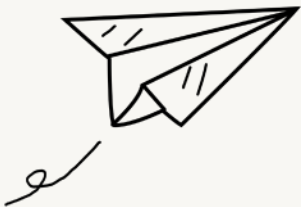
Chat with GPT

Client Chat



Feel free to ask!

0 / 256

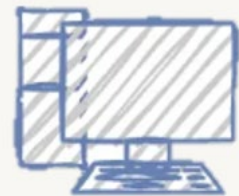


# 1. BWIC GPT——智能推荐



## Trader

GPT-API  
FOR TRADER



## Client

GPT-API  
FOR CLIENT



The screenshot shows a Deno deployment page for a project named 'rich-ape-56'. The page includes a 'Production Deployment' section with details on domains (rich-ape-56-xm8vahkzd00.deno.dev and rich-ape-56.deno.dev), update time (11 hours ago), and a 'Latest Deployments' section showing the most recent deployment to production.

OpenAI Proxy  
Deployed in Deno



## Server





# Trader



## GPT-API FOR TRADER



# Client



## GPT-API FOR CLIENT



TRADER DASHBOARD Logout

Chat with GPT

Trader Chat 😊

Feel free to ask! 0 / 250

Ongoing Upcoming Ended

BWIC ID	Bond ID	Cusip	Issuer	Size	Start Price	Max Price	Start Time	Due Time	Last Bid Time	Bid Counts	
+	2	1	453012028	Greenery Fuels Holdings	56.034461647394285	46.00114187598335	83.97239114527912	2023-04-05 10:46:28	2023-08-17 12:46:28	2023-07-13 01:46:28	204
-	24	23	145693949	HINDUSTAN PETROLIUM	188.89816156336688	48.44831557241111	54.591793487780075	2023-04-06 01:46:28	2023-07-22 16:46:28	2023-07-13 07:46:28	47
-	7	6	9283740F3	ORACLE	67.44119402784491	45.88704725481745	150	2023-04-10 04:46:28	2023-09-22 22:46:28	2023-07-13 21:22:25	139
+	11	10	346067FV8	CHINA MINSHENG BANKING	78.71399685916468	46.465268483818754	1234	2023-04-11 11:46:28	2023-08-07 19:46:28	2023-07-13 21:21:28	152
+	4	3	572816A58	ACS	185.75968950196485	6.9047984836831451	50	2023-04-22 12:46:28	2023-09-10 16:46:28	2023-07-13 28:01:51	184
-	15	14	813569FMS	LOCKHEED MARTIN	153.22928810751986	16.088468720889155	43.28890575469733	2023-04-25 07:46:28	2023-07-28 03:46:28	2023-07-13 08:46:28	249



# Server



TRANSACTION Logout

Chat with GPT

Client Chat 😊

Feel free to ask! 0 / 250

Upcoming BWIC

○ Size ● Start Price

0 50 100 150 200 250

26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

Market





## 2. 大数据高并发性能调优



### Account Database

account
account_id: bigint
name: varchar(255)
role: varchar(255)
password_hash: varchar(255)

### Bid Database

bid
bid_id: bigint
account_id: bigint
price: double
ranking: bigint
time: timestamp
bwic_id: varchar(255)

bidrank
account_id: bigint
bwic_id: varchar(255)
price: double
time: timestamp

bwic
bwic_id: bigint
bond_id: varchar(255)
size: double
start_price: double
present_price: double
start_time: timestamp
due_time: timestamp
last_bid_time: timestamp
...

### Mysql/JDBI/Statement/executeQuery

33 ms 2023-07-14 00:45:14

### Mysql/JDBI/Statement/executeQuery

28 ms 2023-07-14 00:45:13

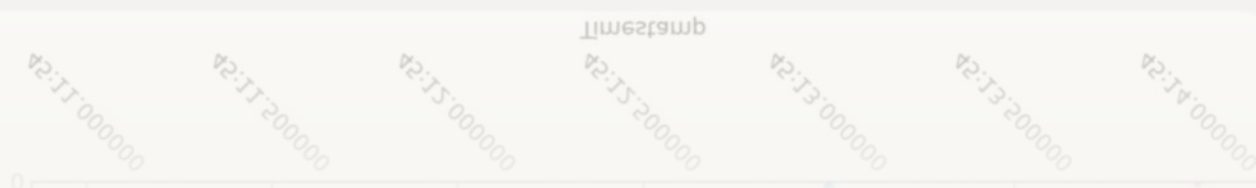
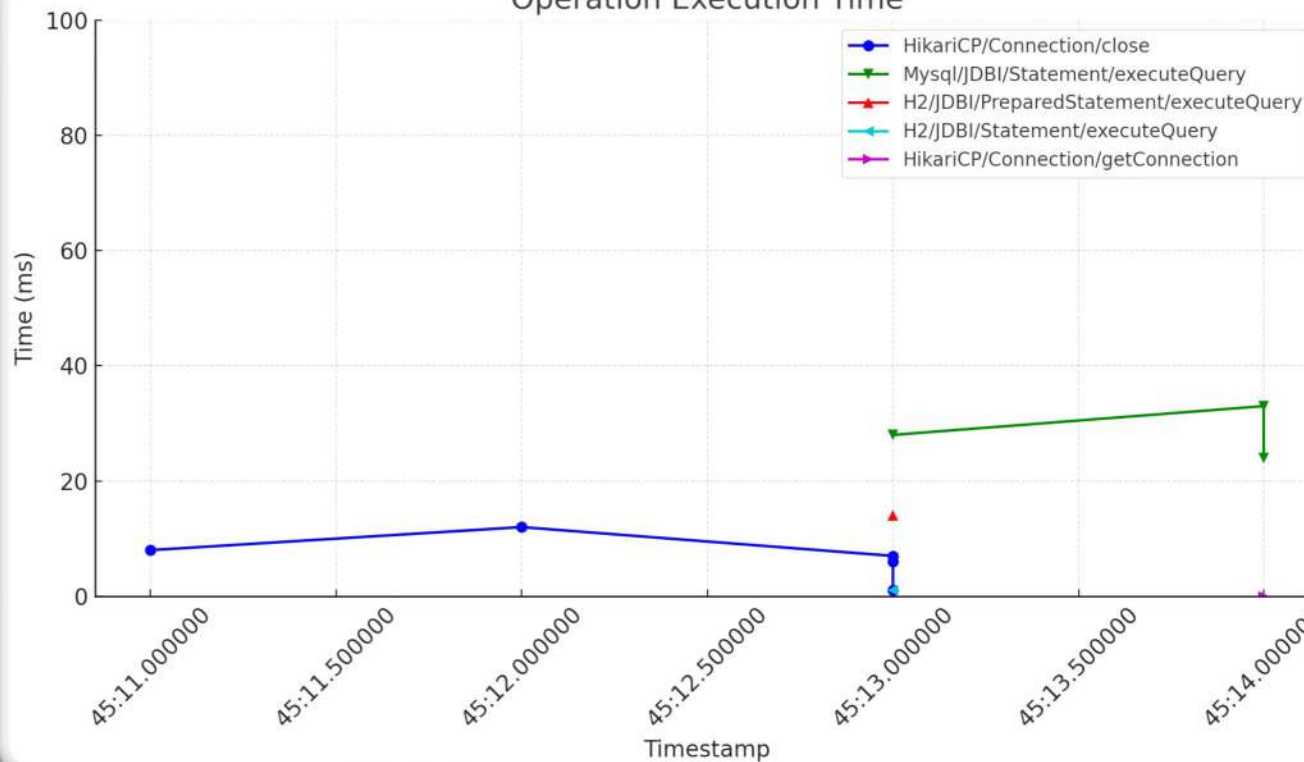
### Mysql/JDBI/Statement/executeQuery

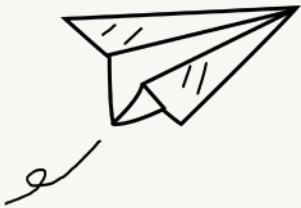
24 ms 2023-07-14 00:45:14

### H2/JDBI/PreparedStatement/executeQuery

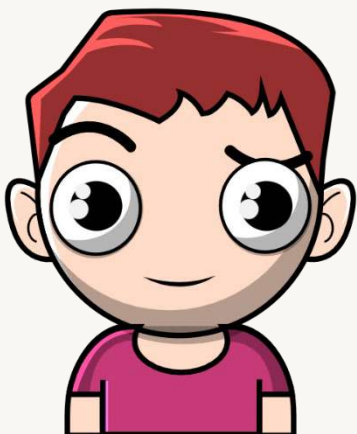
14 ms 2023-07-14 00:45:13

### Operation Execution Time





### 3. Websocket——实时响应



Connected

Bid!

U are Rank 1!  
Rank 2 is ...



Connected

Bid!

U are Rank 1!  
Rank 2 is ...

Your Rank is  
updated to 2





# 4.Websocket——实时响应



The image displays two overlapping 'Bidding' modal windows on a web application interface. The left window is for user 'XWX' and the right for 'TYX'. Both windows show the same bidding details: Bwic Id :11, Issuer :CHINA MINSHENG BANKING, and Cusip :346087FV8. The left window has an empty input field, while the right window has '2050' entered. The background shows a 'Client Dashboard' with a 'Bidding' button and a 'History' section.

Token校验

修改网关

路径过滤



→ 第四部分

# 项目演示

- Trader
- Client



重慶大學  
CHONGQING UNIVERSITY



# 谢谢聆听

