

[Cash Manager Service]

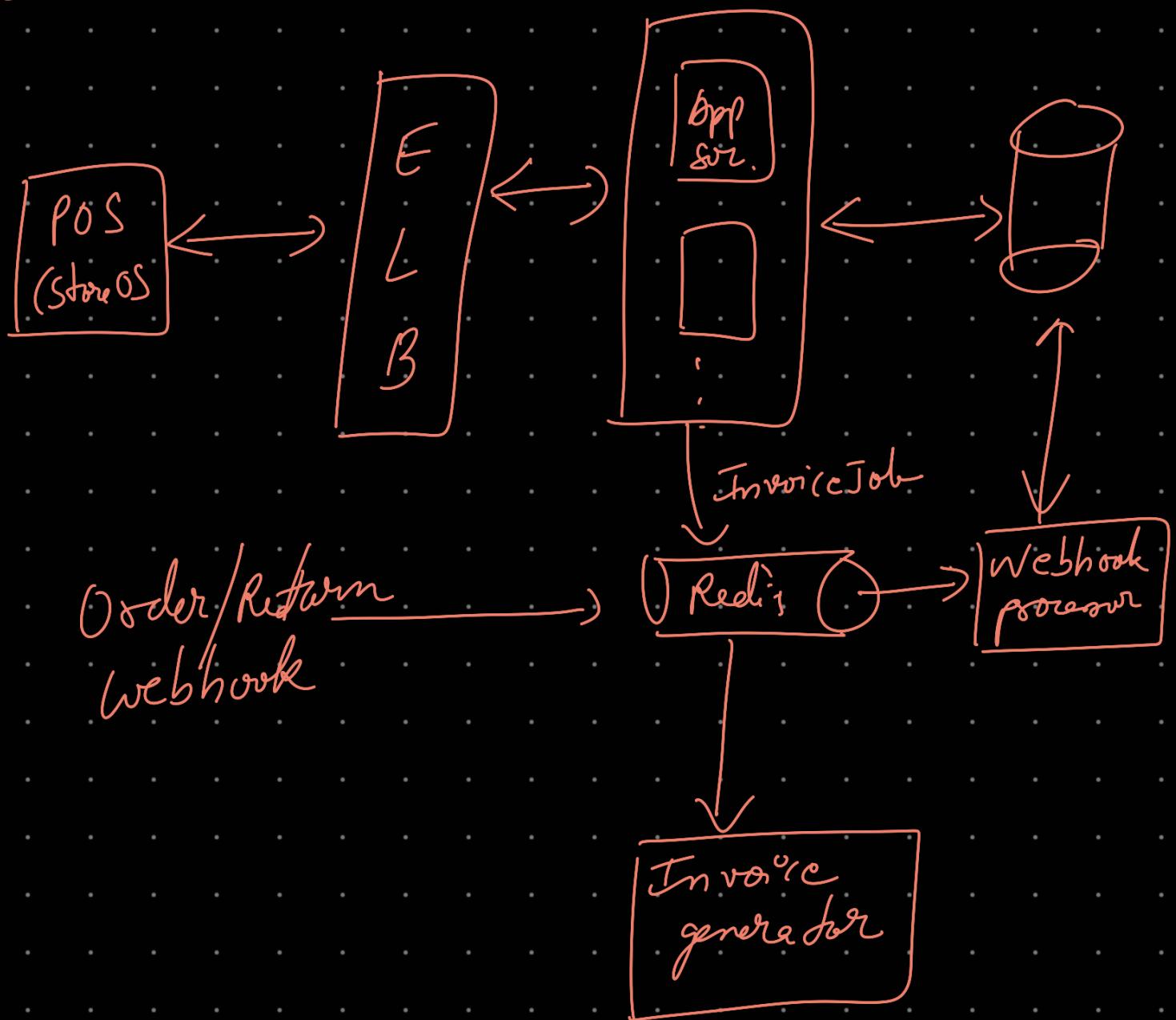
Functional Requirements

- ① Store staff able to open/close register
- ② On add cash movements
Cash In/out
- ③ On add deposits
- ④ Able to see discrepancy after closing Register.

Non-functional

- ① Highly available
- ② Consistency and scalable

[HLD]



```
_id: ObjectId('65ae99079333b920b35ddb98')
application_id: "649c1abece3fb4af7362edcd"
company_id: "661"
__v: 0
created_at: 2024-01-22T16:34:15.530+00:00
denominations: Array
  0: 50
  1: 100
updated_at: 2024-12-04T08:56:37.139+00:00
```

Denomination
Scheme

```
_id: ObjectId('657c352c9070b9646d1d7b16')
company_id: "1"
application_id: "6369fc8124ab1b2008130d8a"
▼ settings: Object
  mode: "SINGLE"
created_at: 2023-12-15T11:14:52.727+00:00
updated_at: 2023-12-15T11:14:52.727+00:00
__v: 0
```

↳ General settings

```
_id: ObjectId('65fd09d4d9511c3d40441726')
company_id: "4007"
application_id: "656f082566fee5bca409d96e"
▼ store: Object
  name: "Store OS Dubai Shopping Mall"
  id: "657c001be2eace47565e1494"
  code: "8232"
▼ active_terminal: Object
  name: "21051182G"
  id: "883868409922c4c3"
▼ cashier: Object
  id: "32ba4f5b740f24440cf5cad5"
  name: "Tester"
  code: "12356"
  email: "chiragmatkar@gofynd.com"
is_active: false
▼ history: Array
  ▼ 0: Object
    type: "open"
    terminal_name: "21051182G"
    time: 2024-03-22T04:32:20.006+00:00
▼ opening_details: Object
  terminal_id: "883868409922c4c3"
  terminal_name: "21051182G"
  amount: 666
  opened_at: 2024-03-22T04:32:20.006+00:00
  note: ""
created_at: 2024-03-22T04:32:20.010+00:00
updated_at: 2024-03-22T04:42:33.478+00:00
__v: 0
▼ invoice: Object
  status: "completed"
  generated_at: 2024-03-22T04:42:33.478+00:00
  url: "https://cdn.fynd.com/v2/falling-surf-7c8bb8/fyndnp/wrkr/x5/platform/ex..."
```

↳ Register Schema

```
_id: ObjectId('65aa181c5f3c6a27aee9ca49')
register_id: ObjectId('65aa181c5f3c6a27aee9ca47')
type: "OPENING_BALANCE"
mode: "CAS"
label: "Opening Balance"
▼ details: Object
  ▼ denominations: Array
    ▼ 0: Object
      value: "100"
      count: 5
▼ prices: Object
  opening_balance: 500
  created_at: 2024-01-19T06:35:08.619+00:00
  updated_at: 2024-01-19T06:35:08.619+00:00
__v: 0
```

Show actions

↳ Cash Movements

```
_id: ObjectId('65ae98d9a55e77ebc8971131')
company_id: "661"
application_id: "649c1abece3fb4af7362edcd"
amount: 340000
recipient: Object
  id: "HDFC-2234"
  name: "Sai Teja"
  terminal: null
  store: null
deposited_by: Object
  id: "072cd3e694523fd07027cfdb"
  name: "Siddharth Gusain"
  user_id: "072cd3e694523fd07027cfdb"
  created_at: 2024-01-22T16:33:29.359+00:00
  updated_at: 2024-01-22T16:33:53.358+00:00
  __v: 0
file: Object
  name: "1705941230163_20230803_133743.jpg"
  path: "https://cdn.fynd.com/v2/falling-surf-7c8bb8/fyndnp/wrkr/x5/platform/ex..."
```

→ Cash Deposits

[API Design]

```
v1Routes.use("/application", applicationRouter);
v1Routes.use(
  "/application/:application_id/cash-registers",
  currencyTimezoneMiddleware,
  cashRegisterRouter
);
v1Routes.use(
  "/application/:application_id/cash-deposits",
  currencyTimezoneMiddleware,
  cashDepositRouter
);
v1Routes.use(
  "/application/:application_id/set-denominations",
  currencyTimezoneMiddleware,
  setDenominationRouter
);
v1Routes.use("/application/:application_id/settings", generalSettingsRouter);
v1Routes.use("/file", fileRouter);
```

→ Platform Routs

```
v1Routes.use("/register", cashRegisterRouter);      You, 11 months ago • Api integ  
v1Routes.use("/denominations", setDenominationRouter);  
v1Routes.use("/file", fileRouter);  
v1Routes.use("/deposit", cashDepositRouter)
```

↳ store OS order

Challenges

- ↳ Syncing with webhook
 - ↳ Register can't be closed if Order not stored in DB
- ↳ Order Data size → decrease size to reduce storage
- ↳ Transaction API called by StorOS to sync order

Add to set on Redis

→ Webhook received → toggle or remove from set

Either API or Webhook can hit redis first

↳ This operation should be atomic → Used Lua script

→ If register have no order to sync in Redis → Register closing allowed

* On open order webhook for Kafka → worker → DB
LI if high volume