graph TD

    Client --> Router

    Router -- Accounts in different cells --> Orchestrator["Orchestrator (SAGA) "]

    Orchestrator --> Cell1["Cell 1"]

    Orchestrator --> Cell2["Cell 2"]

    Cell1 --> DepositMS1["Deposit/Transaction MS"]

    Cell1 --> AccountCmdMS1["Account Command MS"]

    Cell1 --> AccountInquiryMS1["Account Inquiry MS"]

    DepositMS1 --> DB1["Cell DB 1"]

    AccountCmdMS1 --> DB1

    AccountInquiryMS1 --> DB1

    Cell2 --> DepositMS2["Deposit/Transaction MS"]

    Cell2 --> AccountCmdMS2["Account Command MS"]

    Cell2 --> AccountInquiryMS2["Account Inquiry MS"]

    DepositMS2 --> DB2["Cell DB 2"]

    AccountCmdMS2 --> DB2

    AccountInquiryMS2 --> DB2

graph TD

Client --> Router[API Gateway / Router]

Router --> Cell1

Router --> Cell2

subgraph Cell1

DepositMS1["Deposit/Transaction MS"];

AccountCmdMS1["Account Command MS"];

AccountInquiryMS1["Account Inquiry MS"];

subgraph DataBase1["DB 1"]

DB1[("Transactional DB 1")];

Cell1Replica[(Local Config Replica 1 <br/> Read-Only)];

end

DepositMS1 -- Writes/Reads --> DataBase1;

AccountCmdMS1 -- Writes/Reads --> DataBase1;

AccountInquiryMS1 -- Reads --> DataBase1;

DepositMS1 -- Reads Config --> DataBase1;

AccountCmdMS1 -- Reads Config --> DataBase1;

AccountInquiryMS1 -- Reads Config --> DataBase1;

end

subgraph Cell2

DepositMS2["Deposit/Transaction MS"];

AccountCmdMS2["Account Command MS"];

AccountInquiryMS2["Account Inquiry MS"];

subgraph DataBase2["DB 2"]

DB2[(Transactional DB 2)];

Cell2Replica[(Local Config Replica 2 <br/> Read-Only)];

end

DepositMS2 -- Writes/Reads --> DataBase2;

AccountCmdMS2 -- Writes/Reads --> DataBase2;

AccountInquiryMS2 -- Reads --> DataBase2;

DepositMS2 -- Reads Config --> DataBase2;

AccountCmdMS2 -- Reads Config --> DataBase2;

AccountInquiryMS2 -- Reads Config --> DataBase2 ;

end

graph TD

    Client --> Router

    Router --> Cell1["Cell 1"]

    Router --> Cell2["Cell 2"]

    Cell1 --> DepositMS1["Deposit/Transaction MS"]

    Cell1 --> AccountCmdMS1["Account Command MS"]

    Cell1 --> AccountInquiryMS1["Account Inquiry MS"]

    DepositMS1 --> DB1["Cell DB 1"]

    AccountCmdMS1 --> DB1

    AccountInquiryMS1 --> DB1

    Cell2 --> DepositMS2["Deposit/Transaction MS"]

    Cell2 --> AccountCmdMS2["Account Command MS"]

    Cell2 --> AccountInquiryMS2["Account Inquiry MS"]

    DepositMS2 --> DB2["Cell DB 2"]

    AccountCmdMS2 --> DB2

    AccountInquiryMS2 --> DB2

graph TD

    Client --> Router

    Router --> Cell1

    Router --> Cell2

    subgraph Cell1

        DepositMS1["Deposit/Transaction MS"]

        AccountCmdMS1["Account Command MS"]

        AccountInquiryMS1["Account Inquiry MS"]

        DB1["DB 1"]

        DepositMS1 --> DB1

        AccountCmdMS1 --> DB1

        AccountInquiryMS1 --> DB1

    end

    subgraph Cell2

        DepositMS2["Deposit/Transaction MS"]

        AccountCmdMS2["Account Command MS"]

        AccountInquiryMS2["Account Inquiry MS"]

        DB2["DB 2"]

        DepositMS2 --> DB2

        AccountCmdMS2 --> DB2

        AccountInquiryMS2 --> DB2

    end

graph TD

    Client --> Router[API Gateway / Router]

    Router --> Cell1

    Router --> Cell2

    Admin[Admin Interface] -- Updates --> CentralDB[(Central Config DB <br/> Source of Truth)];

    CentralDB -- Reads Data --> Replication{Replication Process};

    Replication -- Writes Replica --> Cell1Replica;

    Replication -- Writes Replica --> Cell2Replica;

    subgraph Cell1

        subgraph "Services 1"

           DepositMS1["Deposit/Transaction MS"];

           AccountCmdMS1["Account Command MS"];

           AccountInquiryMS1["Account Inquiry MS"];

        end

        subgraph "Databases 1"

           DB1["Transactional DB 1"];

           Cell1Replica[(Local Config Replica 1 <br/> Read-Only)];

        end

        DepositMS1 -- Writes/Reads --> DB1;

        AccountCmdMS1 -- Writes/Reads --> DB1;

        AccountInquiryMS1 -- Reads --> DB1;

        DepositMS1 -- Reads Config --> Cell1Replica;

        AccountCmdMS1 -- Reads Config --> Cell1Replica;

        AccountInquiryMS1 -- Reads Config --> Cell1Replica;

    end

    subgraph Cell2

        subgraph "Services 2"

           DepositMS2["Deposit/Transaction MS"];

           AccountCmdMS2["Account Command MS"];

           AccountInquiryMS2["Account Inquiry MS"];

        end

        subgraph "Databases 2"

           direction TB

           DB2["Transactional DB 2"];

           Cell2Replica[(Local Config Replica 2 <br/> Read-Only)];

        end

        DepositMS2 -- Writes/Reads --> DB2;

        AccountCmdMS2 -- Writes/Reads --> DB2;

        AccountInquiryMS2 -- Reads --> DB2;

        DepositMS2 -- Reads Config --> Cell2Replica;

        AccountCmdMS2 -- Reads Config --> Cell2Replica;

        AccountInquiryMS2 -- Reads Config --> Cell2Replica;

    end

    style CentralDB fill:#f9f,stroke:#333,stroke-width:2px;

    style Cell1Replica fill:#ccf,stroke:#333,stroke-width:1px;

    style Cell2Replica fill:#ccf,stroke:#333,stroke-width:1px;

    style DB1 fill:#lightgreen,stroke:#333,stroke-width:1px;

    style DB2 fill:#lightgreen,stroke:#333,stroke-width:1px;

graph TD;

GW["API Gateway"] -->|Credit/Debit API Request| TMS["Transaction Microservice"];

GW -->|Account Create/Modify Request| ACMS["Account Command Microservice"];

GW -->|Account Inquiry Request| AIMS["Account Inquiry Microservice"];

subgraph "Sharded Database"

DB1["Shard 1 (Accounts 0-3)"];

DB2["Shard 2 (Accounts 4-6)"];

DB3["Shard 3 (Accounts 7-9)"];

end

TMS --> DB1;

TMS --> DB2;

TMS --> DB3;

ACMS --> DB1;

ACMS --> DB2;

ACMS --> DB3;

AIMS --> DB1;

AIMS --> DB2;

AIMS --> DB3;

graph TD

Client --> API\_Gateway

API\_Gateway -- Credit/Debit API Request --> DepositMS["Deposit/Transaction MS"]

API\_Gateway --Account Create/Modify Request--> AccountCmdMS["Account Command MS"]

API\_Gateway --Account Inquiry Request--> AccountInquiryMS["Account Inquiry MS"]

DepositMS --> DistributedDB

AccountCmdMS --> DistributedDB

AccountInquiryMS --> DistributedDB

subgraph DistributedDB ["Distributed DB<br>(Sharded by Account - Hashing)<br>"]

DB1["Shard 1 (Accounts 0-3)"];

DB2["Shard 2 (Accounts 4-6)"];

DB3["Shard 3 (Accounts 7-9)"];

end