



Commlink Real Time Gross Settlement Solution (C-RTGS)



C-RTGS

CRTGS provides a real-time settlement accounting environment to support the financial services sector. In the RTGS eco-system, Commlink has developed the middle ware software for commercial banks, which we call C-RTGS.

C-RTGS Middleware Software

Commercial Bank requires a middleware solution which should allow participants to establish connectivity between Central Bank RTGS system and commercial bank's core banking. This proposal serves to fulfill the above mentioned requirement.

CRTGS is RTGS Middleware is a software application that creates & receives ISO 20022 MX message for Payment settlement. It will be web based application software, having provision/interfaces to interact with 3rd party system/software.

It works through the STP (Straight Through Processing) Adapter and Bangladesh Bank central system for the real time transaction on gross basis for any settlement. The overall system diagram is as follows—

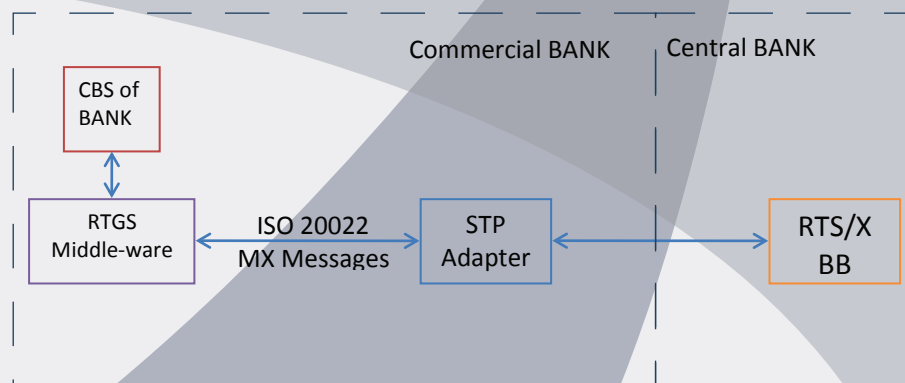


Figure 1: System Architecture

C-RTGS Architecture

Applications are usually broken into logical chunks called "tiers", where every tier is assigned a role. Traditional applications consist only of 1 tier, which resides on the client machine, but Internet based applications lend themselves to an n-tiered approach by nature. Though many variations are possible, the most common structure is the three-tiered application. Commlink has developed CRTGS following 3 tier architecture – presentation tier, core logic tier, and data tier.

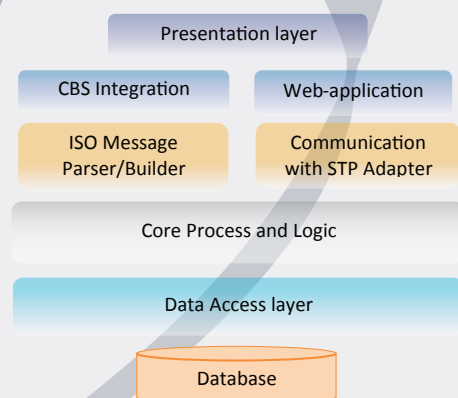


Figure : Solution Architecture

CRTGS is a web based application; it will be used by the bank employees in the intranet of commercial bank. The application is based on object oriented programming and contains several modules. Here we follow MVC (Model-View-Controller) architecture. Users will get access to Application's presentation layer. Application modules will get data from presentation layer. Application modules will communicate with database via data access layer. The middle application uses security mechanism to communicate with the STP adapter. As the STP adapter supports several interfaces for communication, CRTGS also supports similar interfaces.

CRTGS will provide various reports and report formats for bank users. System administrator of the bank will get an interface to administer the system as and when required. CRTGS has built in security mechanism to ensure access control and data security of the system

Salient Features of C-RTGS

- Dashboard for Bank Head office
- Role based Access Control
- Maker-Checker functionality for each transaction
- Support ISO 20022 MX message format
- MT to MX and MX to MT conversion facility
- Transaction management (both outward and inward)
- Notification for incoming transaction
- Provision for Data backup/Archival
- Interface for Integration with 3rd party system/software (STP Adapter, CBS of Commercial bank)
- Compliance with BB RTGS guidelines & functional specifications
- System Administration facilities
- Various Reports for Branch and Head office
- Audit trails

Functional Process

The main transactions are as follows-

- **Outward flow:**
 - Outward Credit Initiation
 - Inward Credit Return
- **Inward flow:**
 - Inward Credit Receive
 - Outward credit Return
- **Direct Debit**
- **ILF: Intraday Liquidity Facility**
 - Liquidity Receive
 - Liquidity Return

Other Features

Hybrid feature: The RTGS system will have facility to settle transactions on a Gross and off-setting basis (bilateral or multilateral offsetting) basis through its hybrid settlement features. The cycle of offsetting will be notified from time to time by the Bank. The transactions will be settled on a gross basis or liquidity optimization basis depending on priority of the messages in the relevant field tag. The Bank may, at its sole discretion, implement this mechanism after due notification to the members, subject to change from time to time.

Maker-Checker Workflow

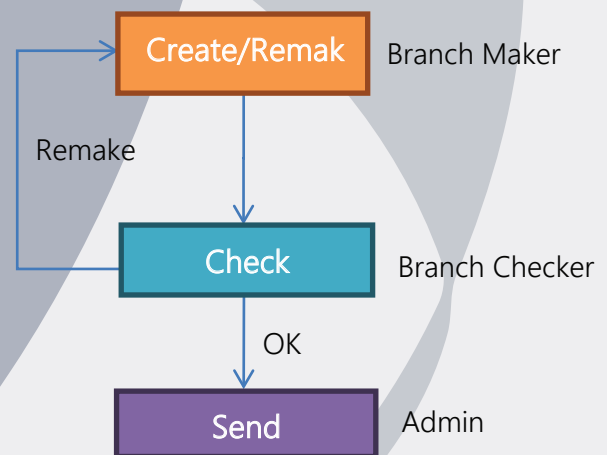


Figure 3: Maker-Checker Workflow

Setting bilateral and multilateral limit: The Bank may set bilateral and multilateral counter party limits at the request of the participants to discourage free riding on liquidity in the RTGS system. The Bank has the right to implement this after due notification to the members, subject to change from time to time.

Future value dated transactions: The RTGS system will accept future value dated transactions from the participants for settlement on future RTGS working days. Such transactions will be placed in the queue and shall be settled on the basis of value date of the transactions. The Bank has the right to implement this after due notification to the members, subject to change from time to time.

Centralized Anti Money Laundering Filtering: The RTGS system will validate payment transactions with the negative list databases for AML / CFT as per the guidelines issued by the Bank. The Bank has the right to implement this after due notification to the members.

Multicurrency: The RTGS system will process multicurrency transactions as per the guidelines issued by the Bank from time to time. The Bank has the right to implement this after due notification to the members.

Security Features for Application and Database

Application level security

- Role based access
- Data encryption (MD5/hash/SSL) during client-server communication
- PKI based authentication and encryption
- Audit trail of application operations
- Real time backup for business continuity
- Data Export in encrypted format for consolidation to central repository

Database level Security

- Important/financial data will be preserved encrypted
- Limited access privileges for general users
- Automated/scheduled backup of database

Disaster recovery and business continuity

C-RTGS is a full-fledged web based application. It is capable to recover from disaster if database can be restored from backup. So daily database backup is recommended to ensure smooth operation of the software. Another thing, bank is responsible to ensure IT infrastructure for Disaster recovery scenario. If DC-DR infrastructure is already in place, it won't be an issue to resume operation for C-RTGS.



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