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# INTRODUCTION

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## The Business Case

Most Indian Banks have been using Total Branch Automation (TBA) and/or Advanced Ledger Posting Machines (ALPM) systems from one or more vendors. After shifting to CBS (Centralized Banking Systems) these systems will be removed and the bank need not spend on their maintenance, right?

WRONG!

Banks still have to keep these systems running, keep the data accessible for reporting. This means software maintenance charges continue to be paid, probably costing the bank Rs 60-75,000 every year for the mere privilege of being able to access old reports. If you have data in more than one systems (because you made one system change already) then the situation becomes even more lamentable as you shell out Rs 80-120,000 per year, year-after-year.

## What is DARB

Fortunately for you, we thought about it and we have a solution which can:

- 1) Save you a packet in maintenance & support costs
- 2) Save you the bother of keeping the old system
- 3) Run the risk of the old system crashing (God forbid) and leaving you without a clue on what to do

DARB (Data Archival & Retrieval for Banks) is a software product and associated services offering.

## DARB 1.00

DARB (Data Archival & Retrieval for Banks) version 1.00 was launched in 2003. DARB 1.00 comprises of the first phase of the solution now suggested by us. In DARB 1.00 we collect data from branches and convert it to a common format. We transfer it to durable media (CD's) and make it accessible directly from the media (retrieval and view programs are included in each CD).

## DARB 2.00

DARB 2.00 is a centralized web-based system accessible from multiple branches. It can also be offered to customers.

## Solution Outline

A customer can go for DARB 1.00 first and then go for DARB 2.00 or they can directly go for DARB 2.00.

# INTRODUCTION

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The solution comprises of:

## **Phase-1 - Branch wise Data Archival**

- 1) Converting your old data from floppies and tapes to a more durable media (CD-ROM); we work with data from ALL vendors whether the platform be Unix or Netware or some other specific platform
- 2) Organizing the old to a Windows standard format
- 3) Giving you CDs with the new data
- 4) Making the old data accessible, searchable, browsable and printable from your standard Windows dialog box
- 5) Providing copies of our browse-out-of-the-CD software

## **Phase-2 - Merge Archived Data (Anywhere Anytime Access)**

- 1) Merge archived data into an online Data Warehouse using Oracle or SQL Server
- 2) Implementing Access Controls based on User, Branch etc.
- 3) Implementing bank-wise online access
- 4) Providing our software

## DARB 1.00 FEATURES

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DARB 1.00 features include:

- 1) Support for multiple source platforms:
  - a) DOS
  - b) Novell Netware LAN
  - c) UNIX
- 2) Access to all previous ledger data on CDs, which are tamper-proof; just insert the CD in the drive & all the information that you need is just a click away.
- 3) DARB CD does not require additional software (banking or non-banking) to run. All the software needed is on the CD itself; we couldn't have made it simpler.
- 4) DARB CD is compatible with all Microsoft Windows Operating system versions.
- 5) You can copy the CD as many times as you want & preserve it different sites (for example you may keep one copy at your branch & one at your regional office).
- 6) DARB CD is same regardless of the TBA or ALPM software (Nelito or Kale or ISBS or Finacle). So if your branch was earlier on Onward & then changed to Nelito & then to CBS, DARB really makes life simple for you, our output CD will look the same and work in the same way.
- 7) Single consolidated statement of account from the day the account was opened.
- 8) DARB's powerful search options let you locate transactions in seconds. Searches can be made based on Amount or Date or Instrument Number. Combinations are also allowed. This saves lots of time for the user.
- 9) You cannot be sure if the backups on floppies or tapes are accurate and readable. Our experience has been that it is very difficult to extract or read data from floppies as backup media as its condition generally is bad.
- 10) Statements can be printed based on Specific Page or on Account or Date Range. You can take printouts on any printer (supported by Windows).
- 11) You Save on Paper. As there is no need to print, bind & store bulky Ledgers. All available electronically so you save time, space & money
- 12) Saving on maintenance & support charges for old hardware and software

## **VENDOR FORMATS SUPPORTED**

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We are constantly adding support for additional vendor formats. As on date the following vendor formats are supported:

- ESPL
- Infosys
- Infracsoft
- Kale
- Nelito
- Next Step
- Onward
- Polaris
- TCS
- Veermati

# DARB 2.00 FEATURES

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DARB 2.00 features include:

## **1) Web 2.0 Enabled**

DARB 2.00 enables users with access to a browser and the necessary access permissions to access the system.

Not only is DARB 2.00 web enabled, it also uses the features of Web 2.0 such as use of AJAX (Asynchronous Javascript And XML) to provide what are called RIA (Rich Internet Application) client features.

## **2) Robust Data Warehouse**

DARB 2.00 uses either Oracle 10i or Teradata 8.1 as the robust backend platform for the data warehouse. Worldwide these platforms are used by large corporations to build databases of several terabytes.

## **3) Star/Snowflake Schema Design**

DARB 2.00 is not a mere database access system. It uses the latest concepts such as Star Schema and Snowflake Schema design to render the warehouse, which if needed can be deployed as Data Marts also, intrinsically without making any changes to the database.

## **4) Stateless Backend with a Web Services Interface**

DARB 2.00 backend is designed as a stateless backend with a web services interface. This is the preferred architecture of choice for all major systems. By deputing session management to the client-side, DARB 2.00 enables large scalability.

## **5) Passbook Printer Interface**

DARB 2.00 provides a flexible interface for passbook printing. The system includes configurable drivers for most passbook printers in India. Using Chrysalis' rich experience of interfacing devices to browser clients, DARB 2.00 uses Signed Applets to render the interface.

## **6) Canned Reports & Queries**

All day-to-day reports and queries needed by the users are provided in canned form.

## **7) Fax-Out Capability**

DARB 2.00 can be used to send faxes of reports such as Statements to Customers, automatically.

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DARB 2.00 can be used to send faxes of reports such as Statements to Customers, automatically.

# DARB 2.00 FEATURES

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## 9) Enterprise Warehouse Capability

Since the schema for DARB 2.00 uses Star/Snowflake Schema model, it can be enhanced to become the sole warehouse for data before the Core Banking Cutoff as well as after that. What this means is that The Bank can adapt DARB 2.00 to become their single-point warehouse of choice, before as well as after Core Banking.

## 10)OLAP Front-end

Although DARB 2.00 primary purpose is to provide access to pre-Core Banking data gleaned from BankMaster installations, it can be enhanced to allow the bank to use modern OLAP (Online Analytical Processing) tools with features such as Splicing, Drill-downs for an interactive MIS.

## 11)Customer Login

The Bank can provide customers access to their old data. This can be implemented in 4 ways:

a) Separate URL

The Bank can define a separate URL for access to the old data

b) Integration to current URL

The Bank's current net banking system can be enhanced to make use of the integration capabilities of DARB 2.00. This can be done using one of the following integration options provided:

c) Backend Integration:

i) Web Services based Integration

ii) JCA (Java/J2EE Connector Architecture) based Integration

iii) JMS (Java Messaging Services) based Integration

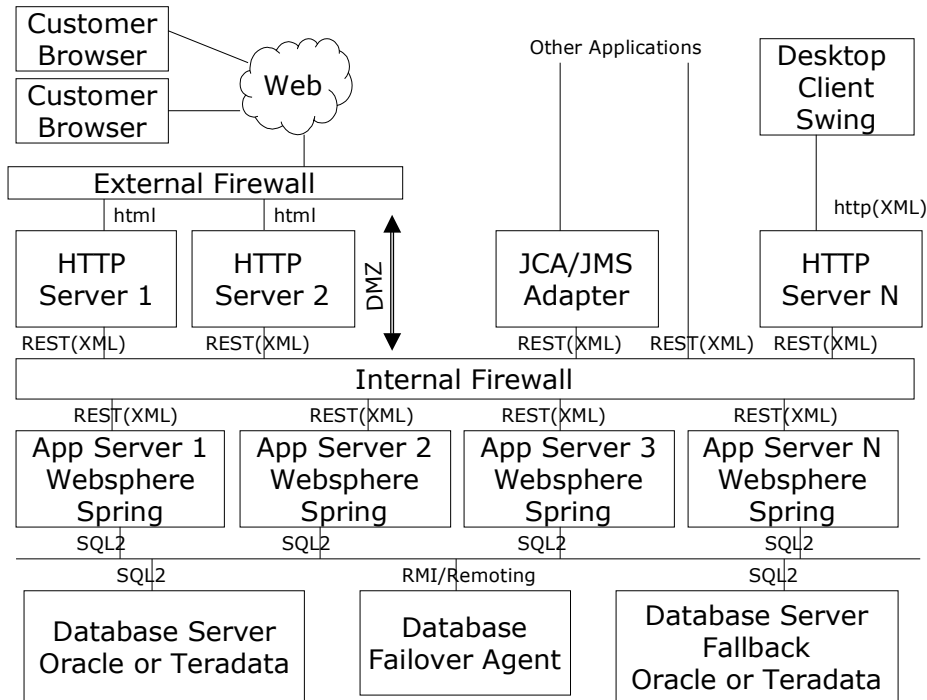
iv) Should The Bank opt to implement an ESB (Enterprise Service Bus) such as TIBCO RV or Sonic ESB or IBM Service Bus, DARB 2.00 can be integrated to the same as well.

d) Look & Feel Merge

Since DARB uses XHTML/CSS2 for presentation the Stylesheet can be merged with the look & feel of current The Bank site.

# DARB 2.00 PLATFORMS

## System Schematic



## Deployment Platforms

Database Server	Operating System	IBM Linux or HPUX or Solaris
	Database	Oracle 10i or NCR Teradata 8.1
Application Server	Operating System	IBM Linux or HPUX or Solaris
	Framework	Spring 4.2
	O2R Mapper	Hibernate
	EJB Container	BEA Weblogic or IBM Websphere
	Language/IDE	Eclipse, J2EE, XML/XSLT
	Interface - Web	XHTML, CSS2
	Interface - Desktop	Java Web Start
	Interface - Text Mode	Custom Routines
	Interface - Integration	REST/SOAP, WSDL, WSIF, JCA, JMS
Security	JAAS	
Client - Web	Operating System	Linux or Windows etc.
	Browser	IE6+, Firefox, Mozilla, Opera
	Language/IDE	AJAX, DHTML, XML, XSLT
	Device Integration	Passbook Printers
Client - Desktop	Operating System	Linux or Windows etc.
	Language/IDE	Java Swing, Custom Inversion-of-Control (IoC) Framework
	Device Integration	Passbook Printers
Client - Text Mode	Environment	VT220 Emulator on PC
	Terminal Type	VT220
	Device Integration	Passbook Printers

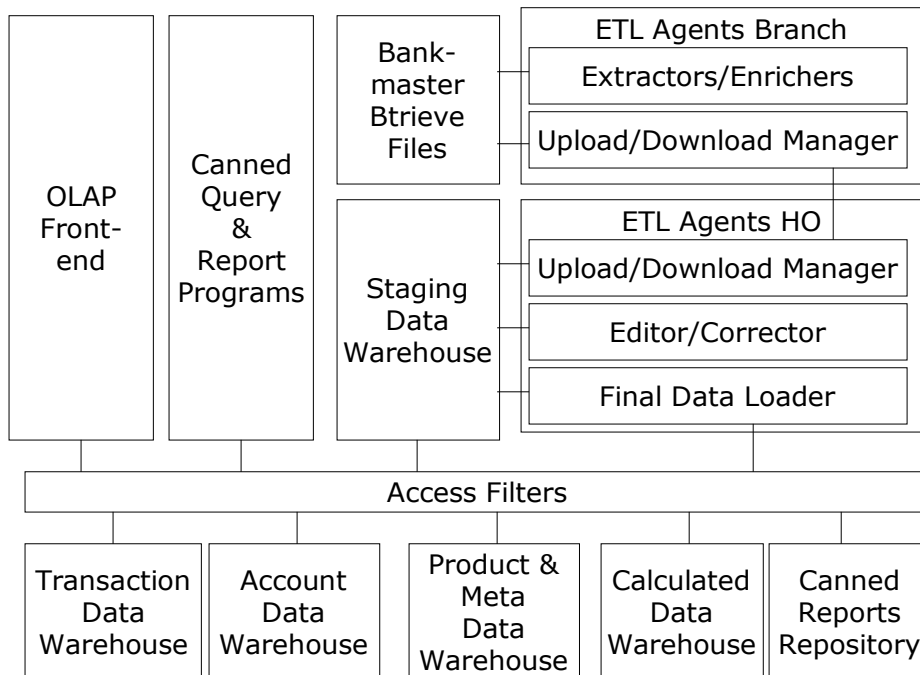
## DARB 2.00 PLATFORMS

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### ETL Platforms

Branch Data Server	Operating System	Netware
	Database	Btrieve Record Manager
ETL Client	Operating System	MS-DOS
	Language/IDE	Borland C/C++, MF Cobol
Upload Client	Operating System	Linux or Windows etc.
	Browser	IE6+, Firefox, Mozilla, Opera
	Language/IDE	AJAX, DHTML, XML, XSLT

## Application Schematic



## Application Components

### AT HO

#### Transaction Data Warehouse

The Transaction Data Warehouse contains the details of each branch transaction. DARB 2.00 provides a flexible record structure to incorporate the various transaction numbering schemes and coding structures. DARB 2.00 can also store Transaction Amount break-ups by Cashflow Code (example Installment break-up into Principal & Interest), where available.

#### Account Data Warehouse

Account Data Warehouse is the store for all types of Accounts such as Demand Deposit, Demand Loan, Term Deposit, Term Loan, Foreign Exchange Contracts, Deposit Vaults. DARB 2.00 keeps history versions of these accounts. It also keeps Customer database in its totality including Signature and Document Images.

#### Product & Meta Data Warehouse

This warehouse section contains details of the products along with pricing information such as Interest Rates, Charges etc. It also contains details of other masters.

# DARB 2.00 COVERAGE

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## Calculated Data Warehouse

Since DARB 2.00 provides an OLAP platform, it provides a storage for calculated values as well. These could be directly gleaned from branch data or calculated using Agents/Stored-Procedures in the Warehouse Server. This warehouse area can be used in future to enhance the OLAP platform provided by DARB 2.00.

## Canned Reports Repository

The system can be configured to automatically generate and store canned reports and then provide access using standard formats such as:

- a) HTML
- b) Printed Form
- c) PDF

## Access Filters

This is the rule-engine for Access Control using which access for the user is limited to:

- a) Branch Level
- b) Area Level
- c) Region Level
- d) Zone Level

Further access control can be implemented by Functional Area or Department such as Savings Accounts, Deposits, Trade Finance etc.

## Upload/ Download Manager

This component has 3 functions:

It allows a branch user to download the Branch Software; once downloaded the branch software can be installed easily by the branch user.

It allows the branch user to upload the data extracted from the Bank Master database. Since these datafiles can be large, DARB 2.00 allows upload in multiple sessions and maintains the integrity of the branch data across these multiple sessions.

Once the branch data has been uploaded it is added to a temporary data store called Staging Data Warehouse.

Please note all data files are zipped and encrypted before they are sent across on the network.

## Editor Corrector

These are components that enable HO users to correct, massage and enrich the data uploaded from the branch, manually as well as using custom programs written to insert/update data values.

All changes to the data are made in the Staging Data Warehouse only.

# DARB 2.00 COVERAGE

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## Final Data Loader

This component validates the data in Staging Data Warehouse using rules for data integrity and completeness. After the data is found to be valid, it is added to the main Warehouses.

## AT BRANCH

### Upload/ Download Manager

This component comprises of programs enabling the branch user to:

Download the Branch Software; once downloaded the branch software can be installed easily by the branch user.

Upload the data extracted from the Bank Master database. Since these datafiles can be large, DARB 2.00 allows upload in multiple sessions and maintains the integrity of the branch data across these multiple sessions.

Please note all data files are zipped and encrypted before they are sent across on the network.

### Extractors/ Enrichers

These are programs custom written to extract Bank Master data from Btrieve files and convert them to DARB 2.00 Data Exchange format.

DARB 2.00 Data Exchange formats include:

- a) Verbose Format – XML
- b) Non-Verbose Format – CSV (Comma Separated Values)

### Canned Query & Report Programs

These programs generate standard reports and keep them in ready form. This cuts down the time a user may take to generate standard reports such as P&L Statement, Balance Sheet etc.

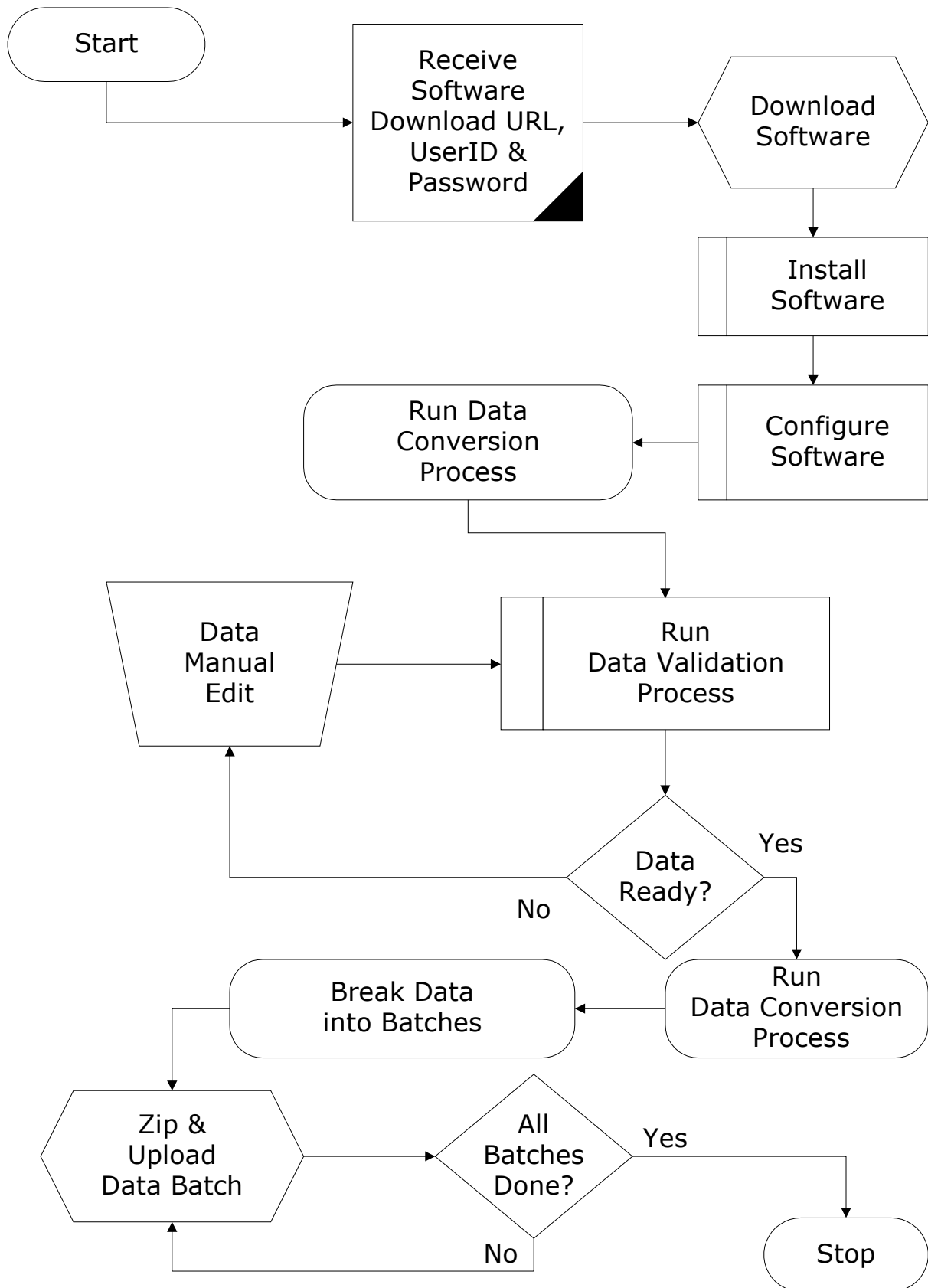
In times gone by this feature was known as COLD (Computer Output to Laser Disk).

### OLAP Front-ends

This is a third-party tool such as COGNOS or Brio etc., used to work on the data warehouse with features such as Splicing, Dicing & Drill-downs.

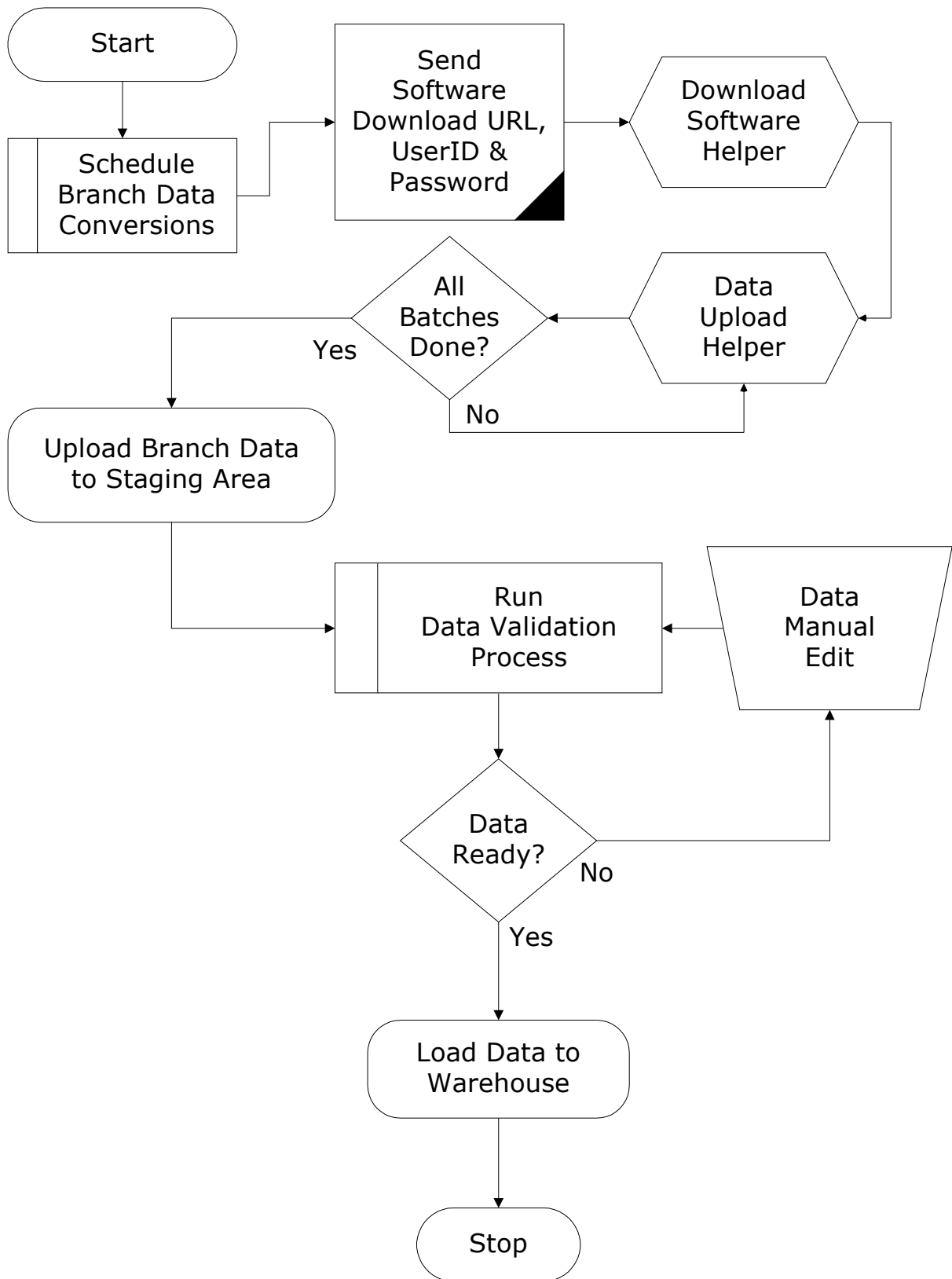
# DARB 2.00 FLOW-CHARTS

## BRANCH FLOW CHART



# DARB 2.00 FLOW-CHARTS

## HO FLOW CHART



## DARB 2.00 CONTACTS

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