

Now for the tactical presentations...

What does it mean to add a data administrator to your organizational chart?

Tactic #1:

Build the data warehouses...and the mentality

SO YOU'VE HIRED A DATABASE ADMINISTRATOR – WHAT WILL THEY ADMINISTER?

- Today, most CUs have key vendors who have data, and have assigned key leaders in the CU to specialize in understanding this data
 - In other words, who knows the data that's important to your credit union via your relationship with CU*Answers?
- A database administrator sees the forest, not the trees
 - Sooner or later, they'll want a warehouse that gives the forest perspective, as a central place from which to work

Database administrator Share



Database administrators use specialized software to store and organize data. The role may include capacity planning, installation, configuration, database design, migration, performance monitoring, security, troubleshooting, as well as backup and data recovery.



Data warehouses are simply places where people store data
But getting your hands around the data that is stored in dozens of places can be a daunting task, and sooner or later, a data administrator will a special storage place



Why these people get excited about data warehouse strategies

ANALYSIS IS INTANGIBLE, DATA AND DATA WAREHOUSES ARE TANGIBLE (AND BUYING IS FUN)

FILExx

Your primary production database

FILExxSS

A constant view as of previous EOD

FILExxE

EOM snapshots

QUERYxx

Storing your analytical approaches

FILExxDW

You control the data as it merges for your tactics

Analytics Booth

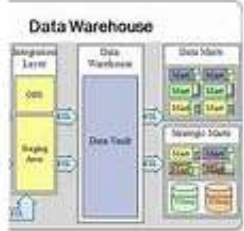
Outside of the POWER i, space for innovation

What will you buy, and how will you use it?

ASTERISK INTELLIGENCE IS ENTERING THE DATA WAREHOUSING BUSINESS

- When you complete your due diligence you may want to use our data warehouse and create your own data lake
 - You may want to do neither, but after you send someone to learn about it, they'll want you to make the call

Data warehouse



In computing, a data warehouse (DW or DWH), also known as an enterprise data warehouse (EDW), is a system used for reporting and data analysis. DWs are central repositories of integrated data from one or more disparate sources. They store current and historical data and are used for creating analytical reports for knowledge workers throughout the enterprise.

[Data warehouse - Wikipedia](#)

Data lake

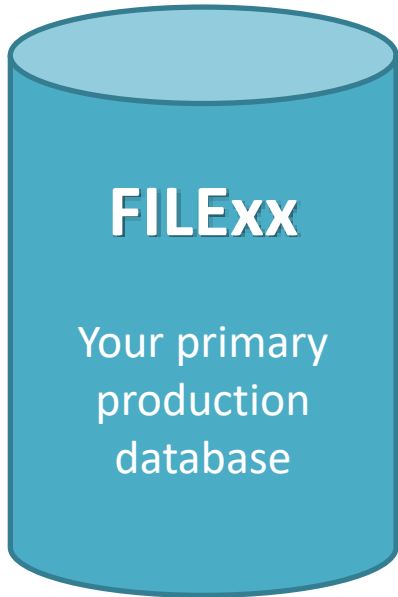
A **data lake** is a large storage repository and processing engine. They provide "massive storage for any kind of data, enormous processing power and the ability to handle virtually limitless concurrent tasks or jobs".

[Data lake - Wikipedia, the free encyclopedia](#)

Remember this: you have already paid for two-thirds of the data in the CU*Answers data warehouse, and the fees for the final third are low and based on participation

CU*Answers Data Warehouse Strategies

PART OF THE TWO-THIRDS YOU'VE ALREADY BOUGHT

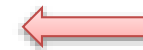


In 2017:

- We doubled the amount of transaction history retained by CU*BASE
- We added UDM (Unique Data Management)
 - Data customized by your CU
 - For accounts and general membership information

In 2018:

- Envisioning new CU self-directed data flood features
- Additional files for UDM
- CU self-directed floods for UDM data



Keep an eye on the Kitchen
for news about this project!

CU*Answers Data Warehouse Strategies

PART OF THE TWO-THIRDS YOU'VE ALREADY BOUGHT



In 2017:

- A new library for consistent data transfer processing
- Daily snapshot of the prior day's activity
- Data transfer programs are now being migrated to the FILExxSS library

In 2018:

- Introduce FILExxSS as a CU-employee accessible file for Query

Specify File Selections

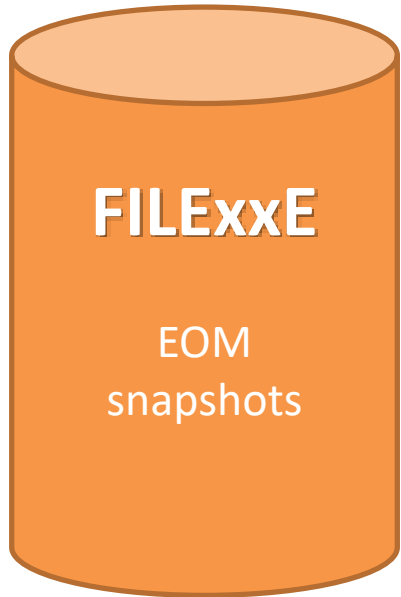
File name	<input type="text" value="MEMBER2"/>		(Name of file)
Location	<input type="text" value="FILExxSS"/>		(Location where the
Member	<input type="text" value="*FIRST"/>		(Set of data within th
Format	<input type="text" value="*FIRST"/>		(An arrangements of

CU*Answers Data Warehouse Strategies

PART OF THE TWO-THIRDS YOU'VE ALREADY BOUGHT

In 2017:

- Doubled the number of month-ends available to online clients, from 3 to 6



Session 0 CU*BASE GOLD - ABC CREDIT UNION
File Edit Tools Help

Search for Database Tables (Files) and Columns (Fields)

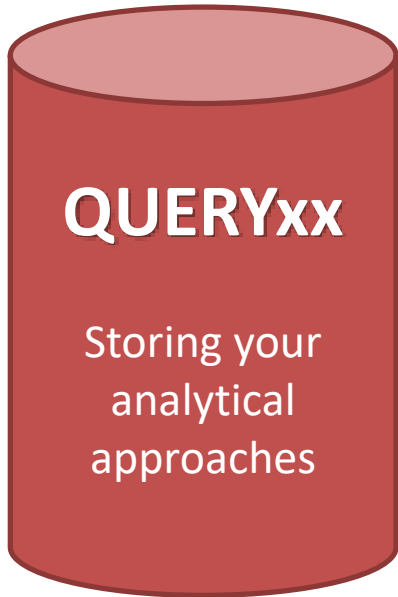
Search for Column Table containing in the Description
 Show exact matches only Jump to table name starting with Number of tables: 681

Action	Table (File)	Table (File) Description	EOM Table (File) Name	Notes	View
	MEMBER2	Member Accounts (Share Drafts/Checking)	EMBanner2		
	PANSDG	ATM/Debit Card Service Charge Group Configuration			
	ACHIST1	Closed Member Accounts (Shares and IRA Shares)	EABanner1		
	ACHIST2	Closed Member Accounts (Share Drafts/Checking)	EABanner2		
	ACHIST3	Closed Member Accounts (Certificates)	EABanner3		
		Escrow)	EABanner4		
		ans - Closed End)	EABanner5		
		ates)			
	ACHIST6	Closed Member Accounts (Loans - Line of Credit)	EABanner6		
	ACTSEC	Employee ID Account Security			
	APYTIS	Annual Percentage Yield Earned (TIS) Information			
	MEMBER4	Member Accounts (Tax Escrows)	EMBanner4		
	MEMBER1	Member Accounts (Shares and IRA Shares)	EMBanner1		
	FTHM070601	Credit Card Maintenance File			
	FTHT070601	Credit Card Daily Card Orders			
	FTHC070601	Vantiv Credit Card Card Extract File			
	FTHM070602	Credit Card Maintenance File			

Tool #332 Database Search Assistant

CU*Answers Data Warehouse Strategies

PART OF THE TWO-THIRDS YOU'VE ALREADY BOUGHT



In 2017:

- Added a new Library Dashboard to analyze the database files your teams create via Query

In 2018:

- Add another premium tool for Query and presentation

Tool #1980 Library Dashboard

Session 0 CU*BASE GOLD - ABC CREDIT UNION
File Edit Tools Help

Library Dashboard

Library QUERY

Search for description containing

Date created: From To [MMDDYYYY]
Last changed: From To [MMDDYYYY]

Created by

Total library size	288313 k	Total # of tables	793
Average table size	363 k	Largest table size	31498 k

Table Name	Table Description	Created By	Date Created	Last Changed	# Records	Table Size [k]
DATE		MARYV	Jul 08, 2016	Jul 08, 2016	46	53
DAUNTEST2	this is a test with deb	DAUNM	May 25, 2016	May 25, 2016		49
DAMIMPORT	DAUN TESTING IMPORT VIA WIZARD	DAUNM	May 23, 2016	May 23, 2016	48	49
DAMTEST2	Upload test for acctbs/type/email - field names	DAUNM	Sep 23, 2016	Sep 23, 2016	13	49
DAUNTEST3	UPLEAD TEST OF ACCTBS, TYPE, AND EMAIL ADDR3	DAUNM	Sep 23, 2016	Aug 07, 2016	13	49
DAMTEST4	testing email shortened	DAUNM	Sep 27, 2016	Sep 27, 2016	13	49
DAMIMPORT	Work file for Direct Mail Post import	DAUNM	Oct 26, 2017	Oct 26, 2017		40
FILEGCSMHD		SARAHM	Oct 10, 2017	Oct 10, 2017	60	61
FLATFR	IMPORT AS FLAT FORMAT	MARYV	Feb 12, 2015	Feb 06, 2016	40	28
FLATW_FR1	IMPORT AS FLAT FORMAT	MARYV	Feb 12, 2015	Feb 06, 2016	40	28
HOPEFUL	Local Philanthropy Outreach Marketing List	STACYB	Oct 19, 2017	Oct 26, 2017		90
LIND074617	Loan Report Selection Parns work file	CUT DALEH	Oct 31, 2017	Oct 31, 2017		81
LIND082210	Loan Report Selection Parns work file	CUT DENNISL	Oct 08, 2017	Oct 08, 2017		90
LIND082721	Loan Report Selection Parns work file	CUT DENNISL	Oct 08, 2017	Oct 08, 2017		90
LIND082754	Loan Report Selection Parns work file	CUT DENNISL	Oct 08, 2017	Oct 08, 2017	3	90
LIND083022	Loan Report Selection Parns work file	CUT DALEH	Oct 06, 2017	Oct 06, 2017		90

Change Copy Delete Rename

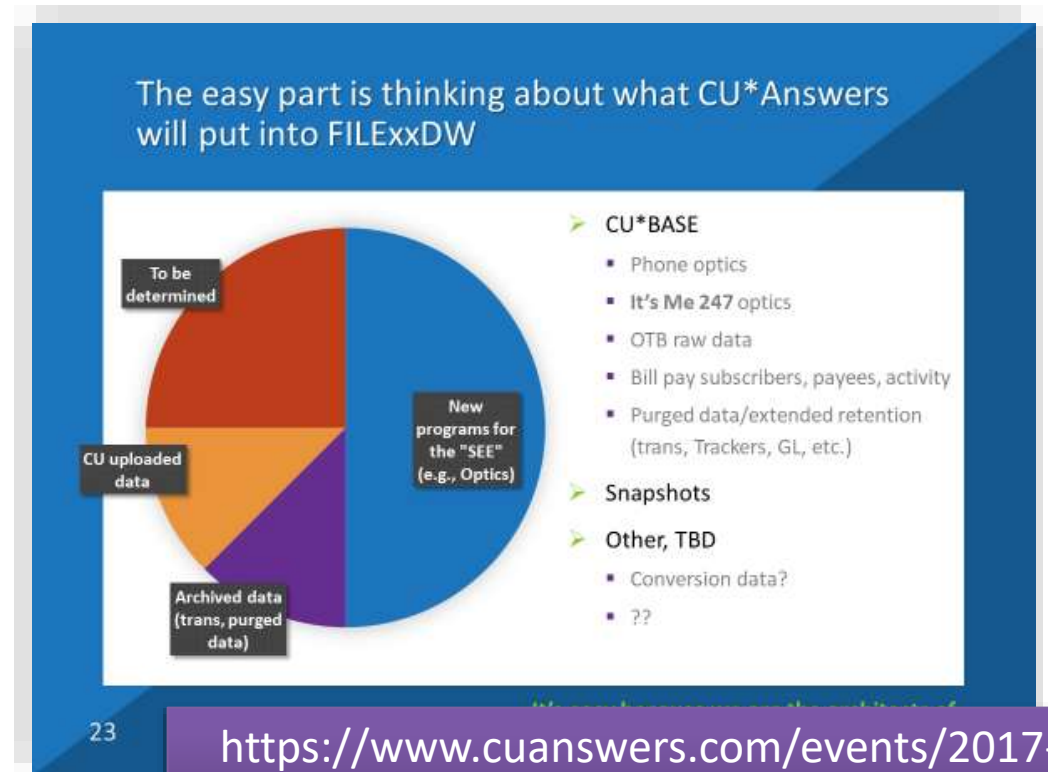
FR (8521) 10/31/17

Tactic #2:

FILExxDW as a new frontier

WORKING WITH CU ARCHITECTS, BUILDING THE DATA WAREHOUSE THEY WISH TO HAVE

- Today, CUs want to design their own approach and value propositions for the data they put into their individual warehouses
 - Share someone else's computer (*coming in 2018*)
 - Have your own (*selling turn-key in 2019*)
- Our FILExxDW warehouse will be a CU-directed space
 - The only data in it will be what you tell us to put there
 - We'll create unique data opportunities for CU*BASE users, but CUs will choose whether or not to put that data into their warehouse



<https://www.cuanswers.com/events/2017-data-investment-symposium/>

CU*Answers Data Warehouse Strategies

WILL START SLOW, BUT BASED ON THE ATTENTION CUS ARE GIVING TO DATA WAREHOUSES, WILL PICK UP SPEED

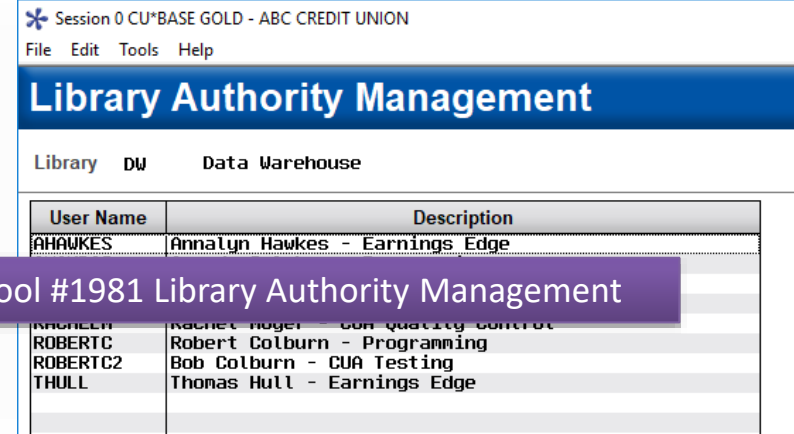


In 2017:

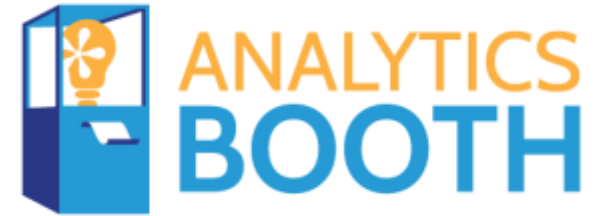
- Created the Library Authority Management tool

In 2018:

- Rolling out to clients late 2nd half of 2018
- CU-defined data
 - About 80% sourced from CU*BASE data warehouses
 - About 20% sourced from third-party sources
- Priced based on CU sign-ons + space used
- Premium tool for Query and presentation
- Developing DEX (Data Exchanges) with analytical warehouses as a transfer approach



ANALYTICS BOOTH WILL BECOME A HYBRID: PRESENTATION + DIRECT ANALYSIS + WEB REPOSITORY



In 2017:

- ❑ Sanitized database, safe for external web users
- ❑ Time-sliced based on short feedback loops
- ❑ Browser-based presentation
- ❑ Accessible anywhere WiFi or Internet services are available
- ❑ Foundation for audience expansion for both CU*Answers as a CUSO and for CUs and their communities

In 2018:

- ❑ Add ability for analysts to sign on directly to the AB database and work with their own presentation tools and skills
- ❑ Expand sales of AB from the CU*Answers network to any CU in the country, independent of their core processing solution

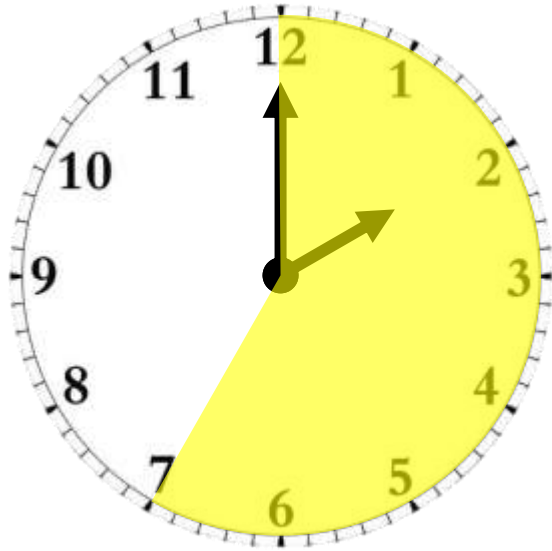
Tactic #3:

Develop a data transfer business

WHAT IF DATA TRANSFER ROUTINES INCREASED BY 10X?

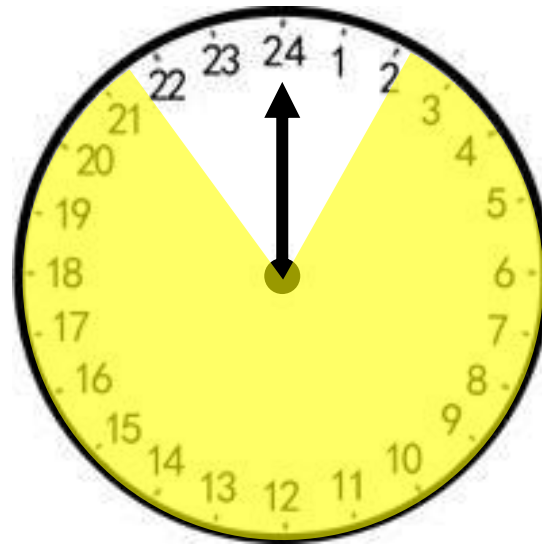


□ We would have to build a new machine



Daily Operations

Limited time window before CUs are open for business



Data Transfers (FILExxSS)

Unlimited time window for data transfers and other vendor interactions

- DEX is a transfer protocol and service from CU*Answers that will grow from 1x today (2 CUs) to 10x or more in the next two annuals
- DEX moves data to analytical databases where CU administrators and analysts do their work
- Today, DEX is a technical setup, tomorrow it will be an AI setup, and the day after that, it will be a self-service tool for a database administrator