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Concentration Risk and Abnormal Activity Monitoring Best Practice

August 14, 2012

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Concentration Risk

- **In accordance with NCUA letter 10-CU-03 credit unions must:**
  - **Develop a methodology for monitoring loan segments that have similar exposures to risk including any named borrowers**
  - **Test segments that exceed 100% of capital on a quarterly basis and determine the impact on capital for economic downturns**
  - **Establish Board approved limits for each segment including a loss mitigation plan**

Methodology

- **Five Step Process**
  - **Identify** find risks by dividing up the portfolio into segments and review all named borrowers
  - **Test** determine the amount of loss the portfolio can withstand before threatening the safety and soundness of the CU
  - **Monitor** regularly review to performance to ensure readiness in the face of economic crisis
  - **Justify** set limits on the growth of each segment that can be validated against portfolio performance
  - **Actions** take action once limits are reached or portfolio performance threatens the safety and soundness of the credit union

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PCA Standards For Capitalization

STATUTORY DEFINITION	NET WORTH RATIO
WELL CAPITALIZED	7% OR ABOVE
ADEQUATELY CAPITALIZED	6% TO 6.99%
UNDERCAPITALIZED	4% TO 5.99%
SIGNIFICANTLY UNDERCAPITALIZED	2% TO 3.99%
CRITICALLY UNDERCAPITALIZED	LESS THAN 2%

Named Borrower

- One individual or a group of individuals with similar income streams
- Generally test against 15% of capital
- Develop a narrative which demonstrates you have performed your due diligence and have additional loan covenants to protect the credit unions position

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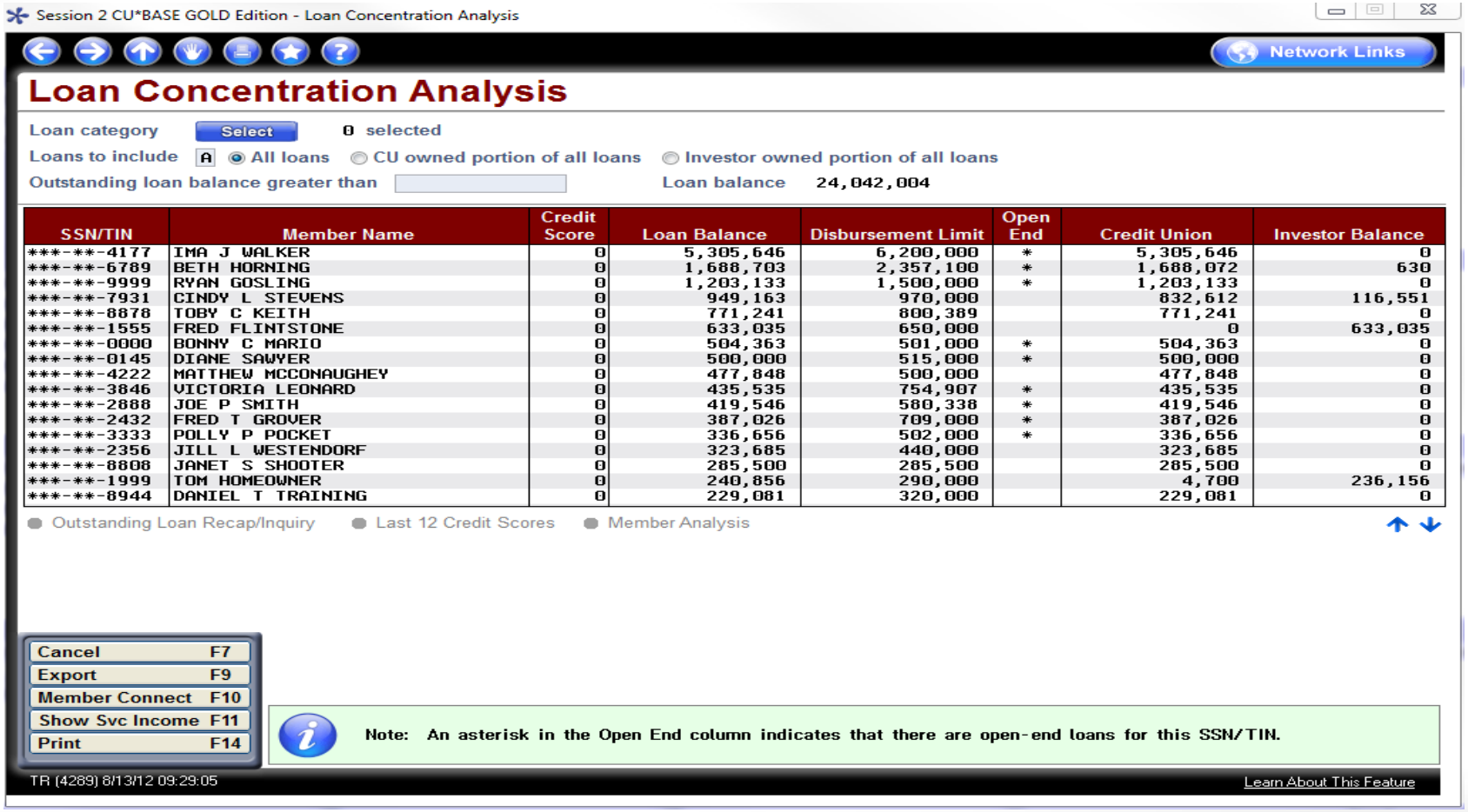
Named Borrower

MNAUDT #15 (15% of capital)



SSN/TIN	Member Name	Credit Score	Loan Balance	Disbursement Limit	Open End	Credit Union	Investor Balance
***-**-4177	IMA J WALKER	0	5,305,646	6,200,000	*	5,305,646	0
***-**-6789	BETH HORNING	0	1,688,703	2,357,100	*	1,688,072	630
***-**-9999	RYAN GOSLING	0	1,203,133	1,500,000	*	1,203,133	0
***-**-7931	CINDY L STEVENS	0	949,163	970,000		832,612	116,551
***-**-8878	TOBY C KEITH	0	771,241	800,389		771,241	0
***-**-1555	FRED FLINTSTONE	0	633,035	650,000		0	633,035
***-**-0000	BONNY C MARIO	0	504,363	501,000	*	504,363	0
***-**-0145	DIANE SAWYER	0	500,000	515,000	*	500,000	0
***-**-4222	MATTHEW MCCONAUGHEY	0	477,848	500,000		477,848	0
***-**-3846	VICTORIA LEONARD	0	435,535	754,907	*	435,535	0
***-**-2888	JOE P SMITH	0	419,546	580,338	*	419,546	0
***-**-2432	FRED T GROVER	0	387,026	709,000	*	387,026	0
***-**-3333	POLLY P POCKET	0	336,656	502,000	*	336,656	0
***-**-2356	JILL L WESTENDORF	0	323,685	440,000		323,685	0
***-**-8808	JANET S SHOOTER	0	285,500	285,500		285,500	0
***-**-1999	TOM HOMEOWNER	0	240,856	290,000		4,700	236,156
***-**-8944	DANIEL T TRAINING	0	229,081	320,000		229,081	0

Developing Loan Segments

- Generally segments are grouped by loan category or general ledger code

- The following is a list of common segments which Audit Link uses when completing the analysis
  - Consumer secured
  - Indirect (if large enough)
  - Consumer unsecured
  - 1st mortgage real estate
  - Other real estate
  - Commercial

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Developing Loan Segments

MNAUDT #16

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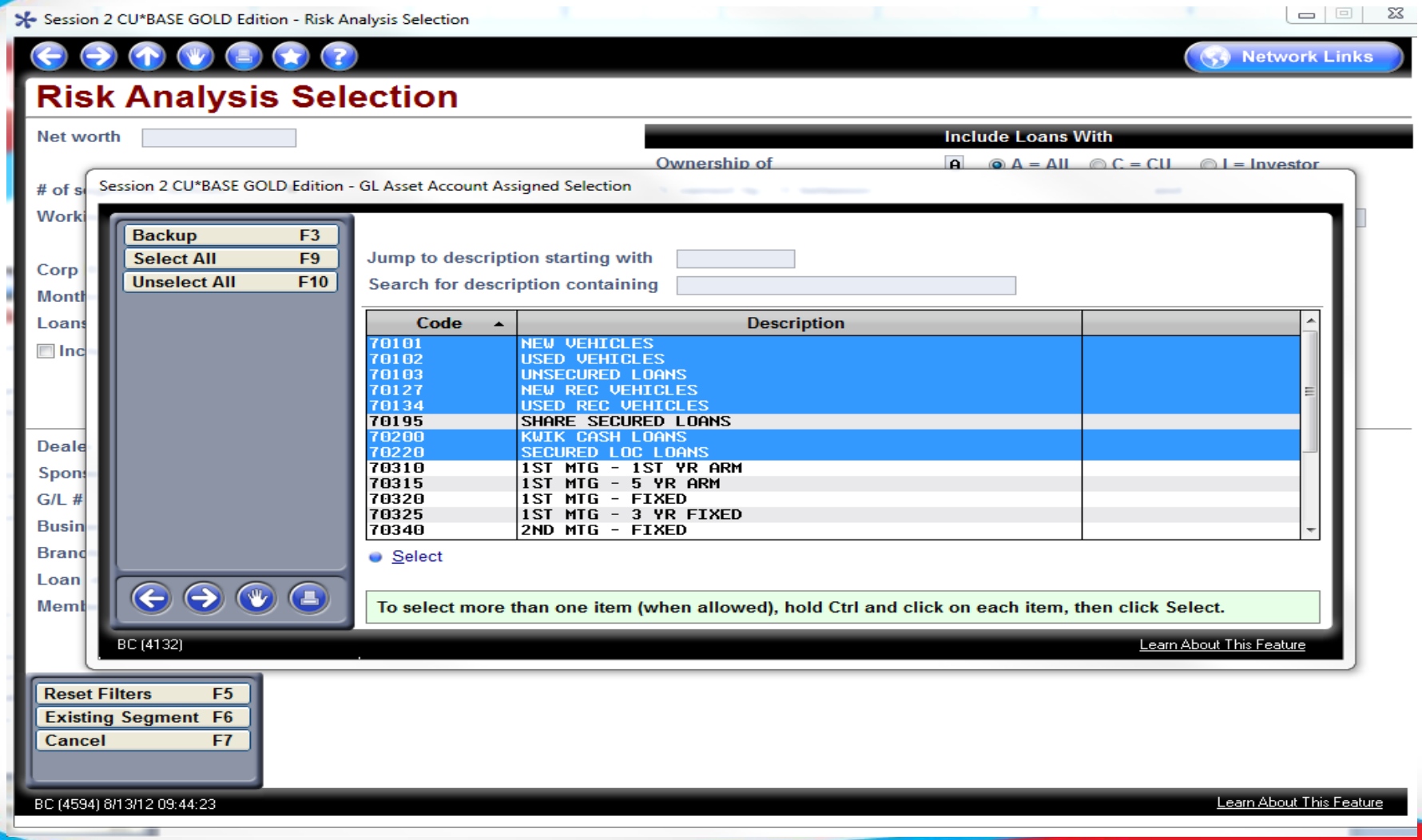
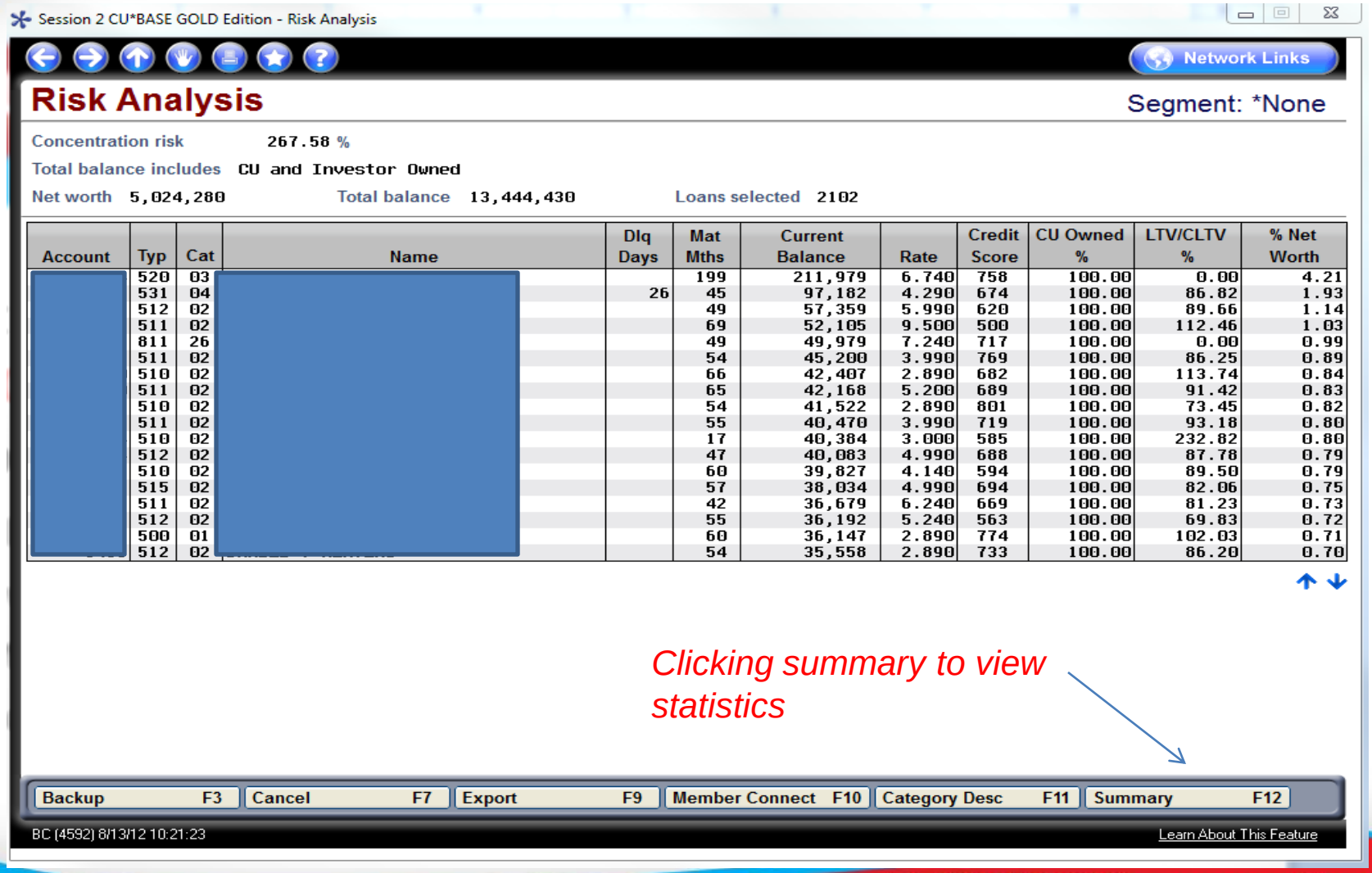
Configuring Loan Segments



Segment Analysis



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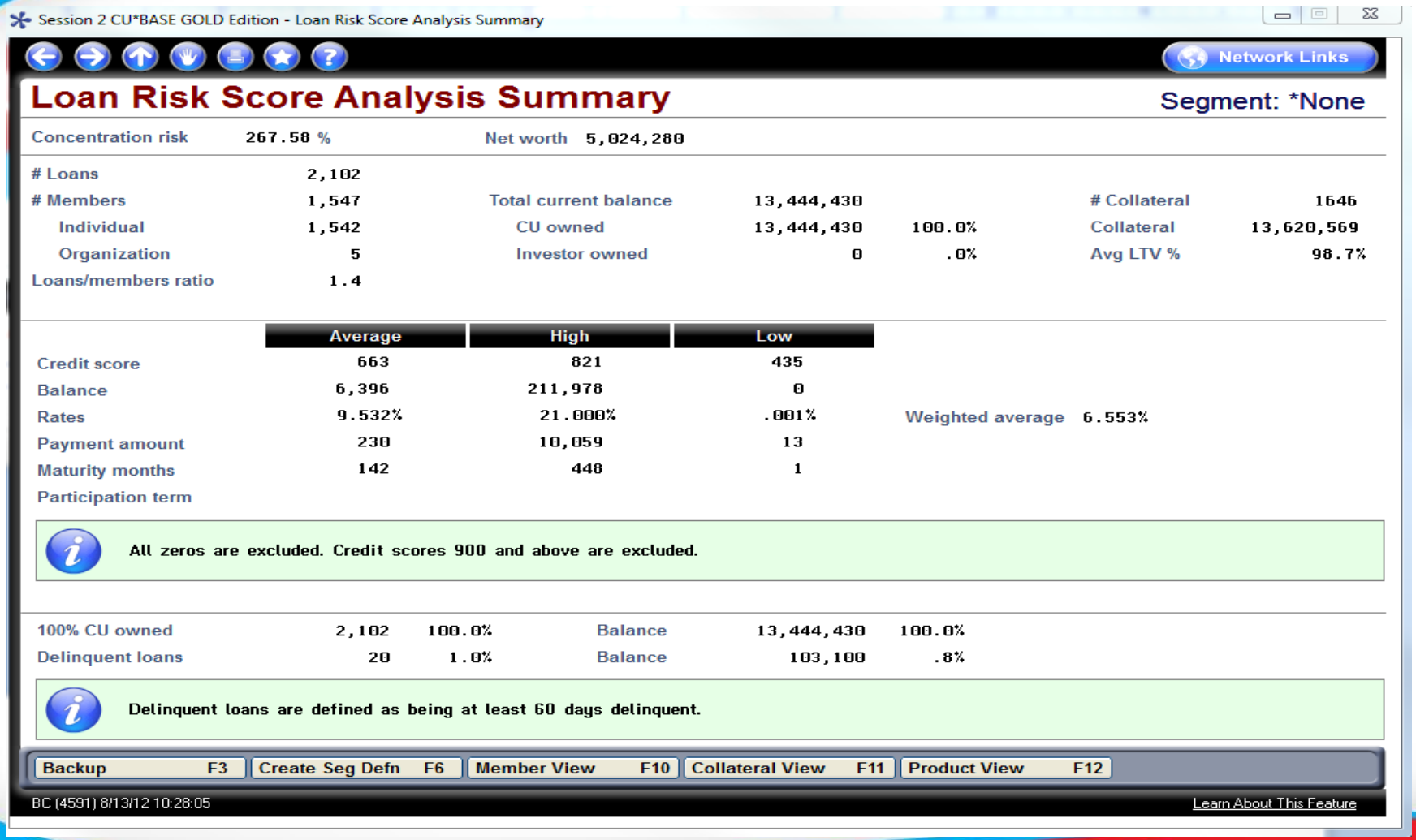
Summary Statistics



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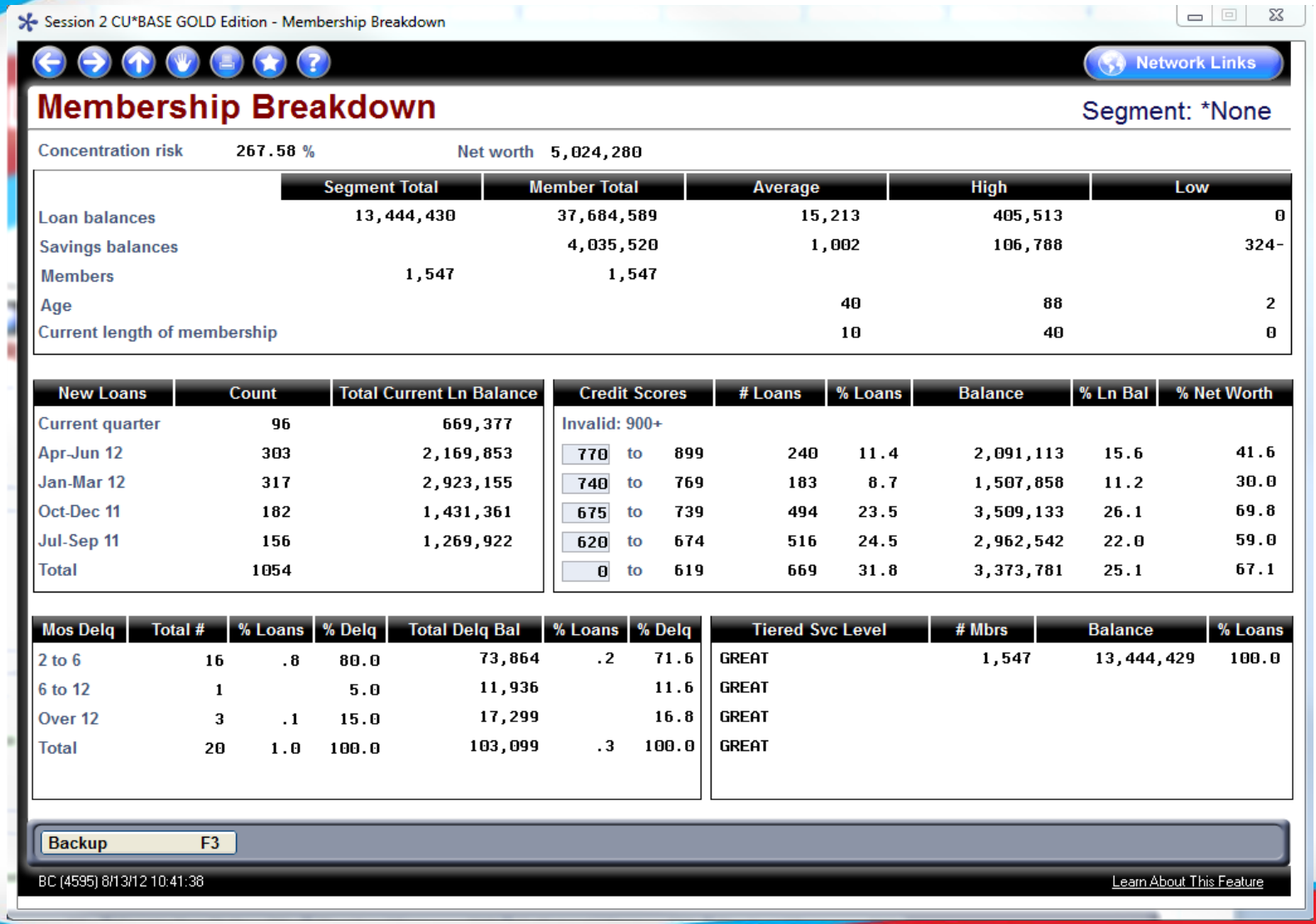
Summary Statistics (member view)



Session 2 CU*BASE GOLD Edition - Membership Breakdown

Network Links

Membership Breakdown

Segment: *None

Concentration risk 267.58 % Net worth 5,024,280

	Segment Total	Member Total	Average	High	Low
Loan balances	13,444,430	37,684,589	15,213	405,513	0
Savings balances		4,035,520	1,002	106,788	324-
Members	1,547	1,547			
Age			40	88	2
Current length of membership			10	40	0

New Loans	Count	Total Current Ln Balance
Current quarter	96	669,377
Apr-Jun 12	303	2,169,853
Jan-Mar 12	317	2,923,155
Oct-Dec 11	182	1,431,361
Jul-Sep 11	156	1,269,922
Total	1054	

Credit Scores	# Loans	% Loans	Balance	% Ln Bal	% Net Worth
Invalid: 900+					
770 to 899	240	11.4	2,091,113	15.6	41.6
740 to 769	183	8.7	1,507,858	11.2	30.0
675 to 739	494	23.5	3,509,133	26.1	69.8
620 to 674	516	24.5	2,962,542	22.0	59.0
0 to 619	669	31.8	3,373,781	25.1	67.1

Mos Delq	Total #	% Loans	% Delq	Total Delq Bal	% Loans	% Delq
2 to 6	16	.8	80.0	73,864	.2	71.6
6 to 12	1		5.0	11,936		11.6
Over 12	3	.1	15.0	17,299		16.8
Total	20	1.0	100.0	103,099	.3	100.0

Tiered Svc Level	# Mbrs	Balance	% Loans
GREAT	1,547	13,444,429	100.0
GREAT			
GREAT			
GREAT			

Backup F3

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Learn About This Feature

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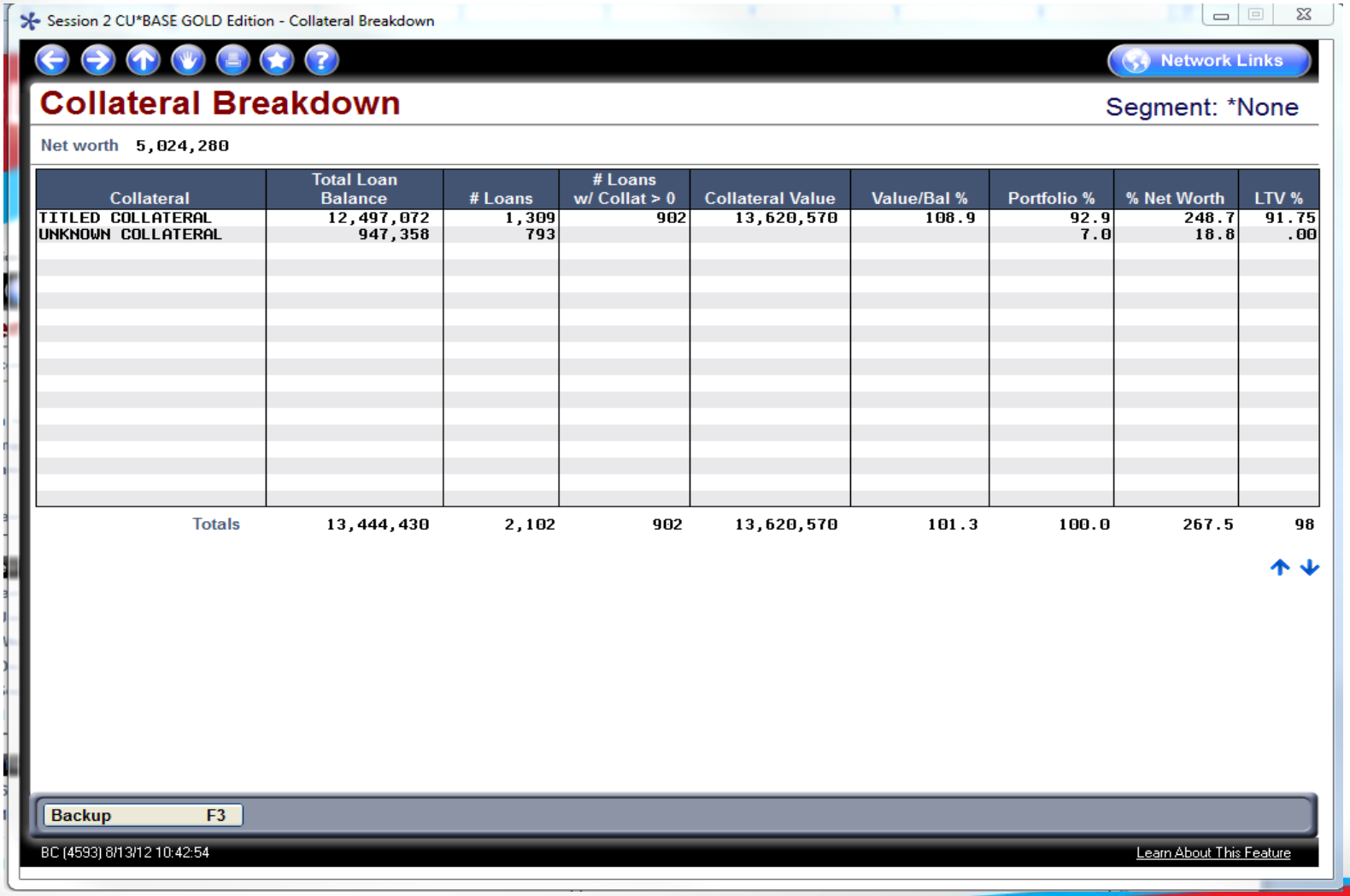
Summary Statistics *(collateral view)*



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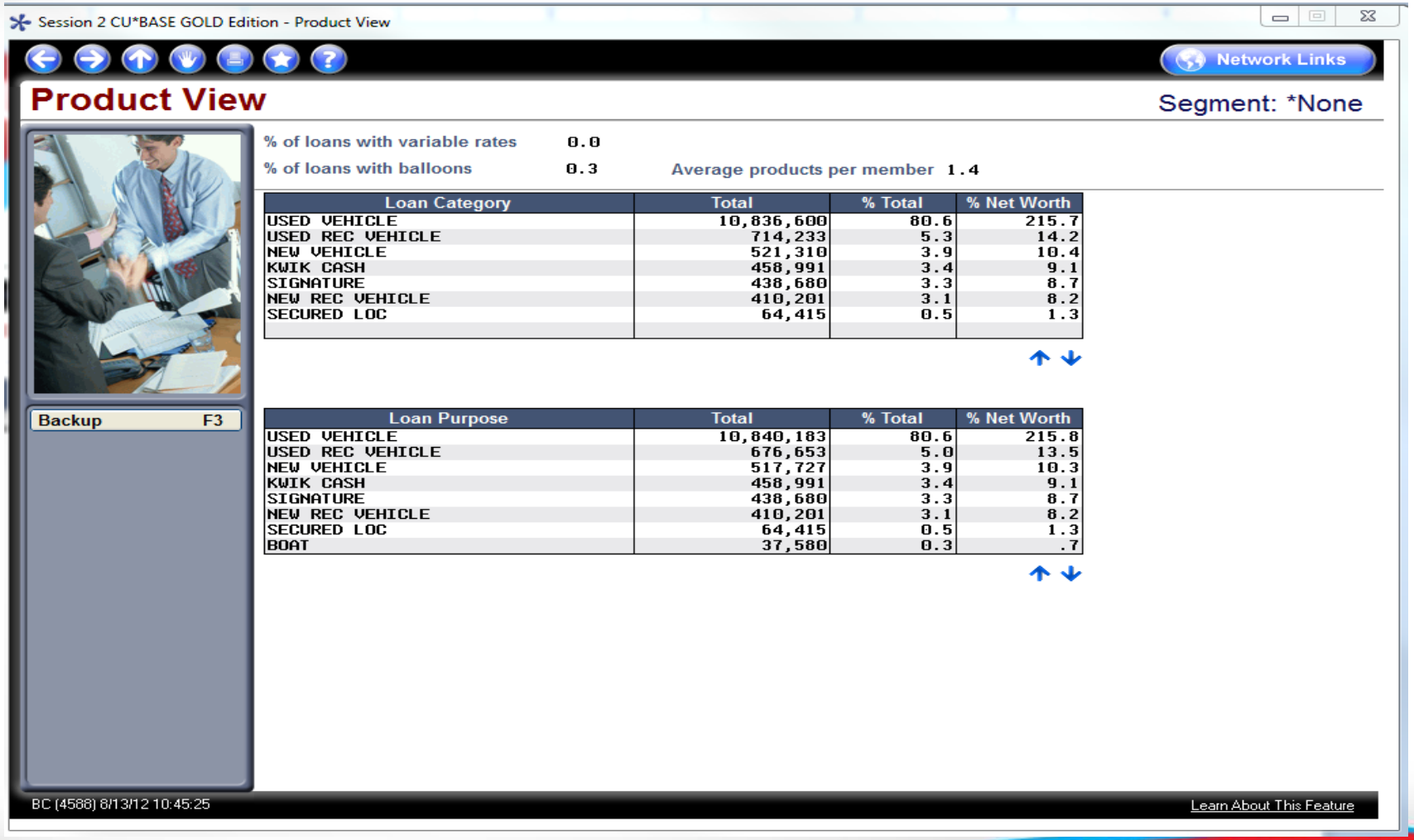
Summary Statistics *(product view)*



Loan Category	Total	% Total	% Net Worth
USED VEHICLE	10,836,600	80.6	215.7
USED REC VEHICLE	714,233	5.3	14.2
NEW VEHICLE	521,310	3.9	10.4
KWIK CASH	458,991	3.4	9.1
SIGNATURE	438,680	3.3	8.7
NEW REC VEHICLE	410,201	3.1	8.2
SECURED LOC	64,415	0.5	1.3

Loan Purpose	Total	% Total	% Net Worth
USED VEHICLE	10,840,183	80.6	215.8
USED REC VEHICLE	676,653	5.0	13.5
NEW VEHICLE	517,727	3.9	10.3
KWIK CASH	458,991	3.4	9.1
SIGNATURE	438,680	3.3	8.7
NEW REC VEHICLE	410,201	3.1	8.2
SECURED LOC	64,415	0.5	1.3
BOAT	37,580	0.3	.7

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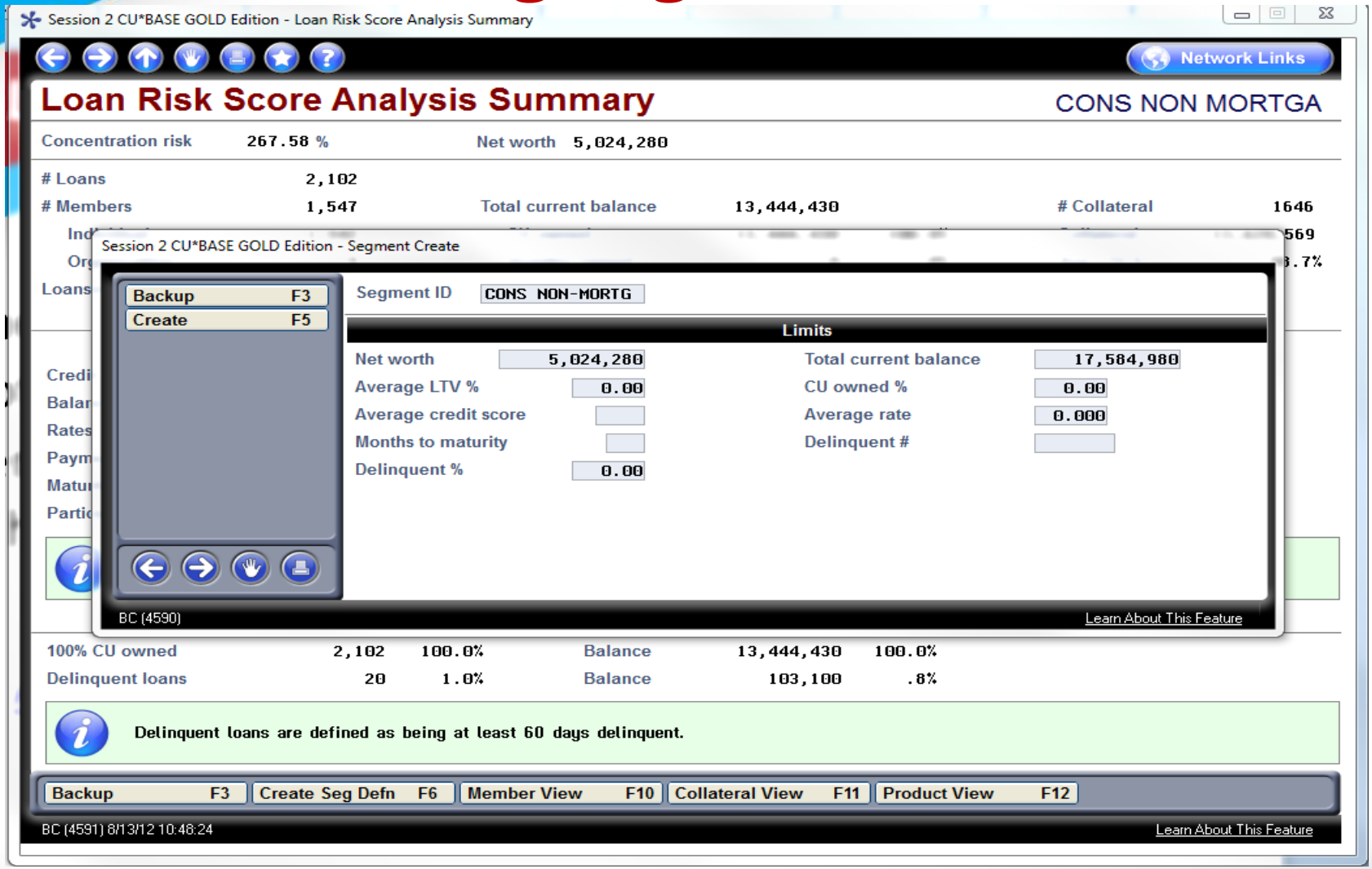
Saving Segments With Limits



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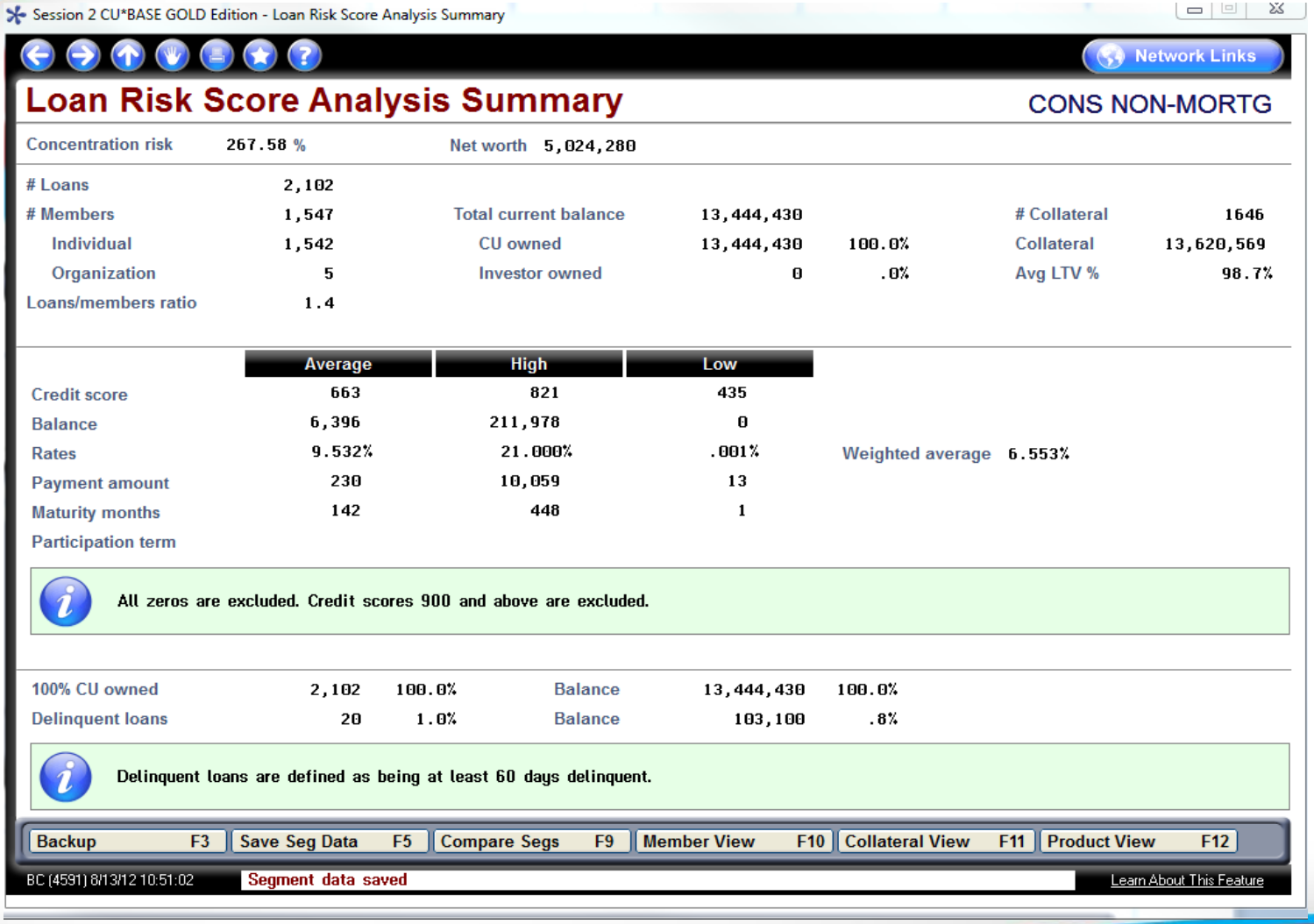
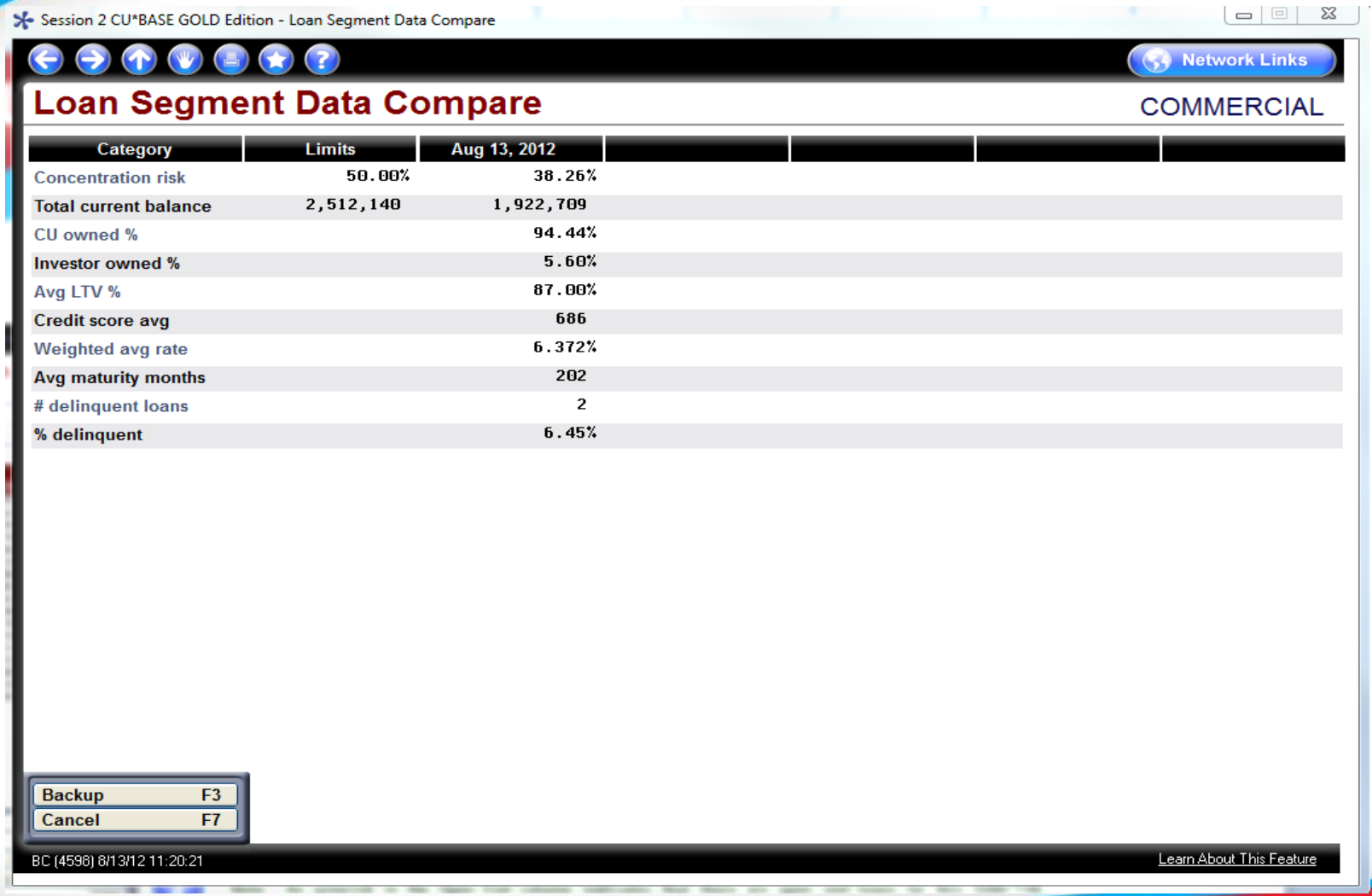
Saving Segment Data



Trending Segment Data



Category	Limits	Aug 13, 2012
Concentration risk	50.00%	38.26%
Total current balance	2,512,140	1,922,709
CU owned %		94.44%
Investor owned %		5.60%
Avg LTV %		87.00%
Credit score avg		686
Weighted avg rate		6.372%
Avg maturity months		202
# delinquent loans		2
% delinquent		6.45%

Trending and Final Analysis

- **Other Significant Data Elements to Trend by Segment**
  - Three year loss history by year (not rolling)
  - Three year unemployment rate for the counties served
  - 30 day delinquency
  - Weighted average yield
  - Net yield after charge-offs
  - Net decline in housing values for each county or other geographic boundary
  - Percentage of loan dollars in each risk bucket

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If Necessary a Deeper Dive

A service of Audit Link

STATIC TESTING STATIC TESTING				
	NO SHOCK	EVENT RISK SHOCK	DOWNTURN	CRISIS
DIRECT AUTO LOANS	$150,842.80	$215,979.46	$233,799.26	$279,200.77
INDIRECT AUTO LOANS	$44,970.67	$64,389.82	$69,702.43	$83,237.95
PERSONAL AND PERSONAL LINES OF CREDIT	$8,320.53	$11,913.49	$15,942.93	$20,033.63
FIRST MORTGAGES	$37,572.69	$53,797.26	$128,082.55	$179,949.19
OTHER REAL ESTATE	$3,830.53	$5,484.62	$9,310.91	$12,113.11
BUSINESS REAL ESTATE	$4,574.01	$6,549.15	$13,590.51	$18,029.98
OTHER BUSINESS LENDING	$870.78	$1,246.80	$2,587.30	$3,432.46
TOTAL	$250,982.00	$359,360.59	$473,015.89	$595,997.11
NEW NET WORTH RATIO	8.27%	8.19%	8.11%	8.03%
DYNAMIC TESTING				
	NO SHOCK	EVENT RISK SHOCK	DOWNTURN	CRISIS
DIRECT AUTO LOANS	$218,655.43	$313,074.82	$338,905.66	$404,717.80
INDIRECT AUTO LOANS	$73,154.24	$104,743.58	$113,385.65	$135,404.02
PERSONAL AND PERSONAL LINES OF CREDIT	$13,604.79	$19,479.59	$26,068.08	$32,756.72
FIRST MORTGAGES	$41,490.84	$59,407.34	$141,439.26	$198,714.67
OTHER REAL ESTATE	$4,794.56	$6,864.94	$11,654.19	$15,161.61
BUSINESS REAL ESTATE	$5,687.78	$8,143.87	$16,899.79	$22,420.29
OTHER BUSINESS LENDING	$1,331.79	$1,906.88	$3,957.07	$5,249.68
TOTAL	$358,719.43	$513,621.01	$652,309.70	$814,424.80
NEW NET WORTH RATIO	8.19%	8.08%	7.99%	7.87%

Abnormal Activity Monitoring

- **Review Regulatory Requirements**
  - **NCUA**
  - **FFIEC**
- **Review transaction types to monitor for**
- **Review and configure new CU*BASE tools**
- **Update on new examiner checklists**
- **Determine necessity and document additional controls**

NCUA Expectations

"Federally insured credit unions will be expected to adapt appropriate strategies from the supplement to strengthen and enhance controls by January 2012. Beginning in 2012, at credit unions offering electronic services, NCUA examiners will evaluate these controls under the enhanced expectations outlined in the supplement"

Debbie Matz
Chairman, NCUA

http://www.ffiec.gov/pdf/Auth-ITS-Final%206-22-11%20(FFIEC%20Formated).pdf

http://www.ncua.gov/Resources/Pages/LCU2011-09.aspx

FFIEC Supplement

What Transactions are Covered

Remains unchanged from the original 2005 guidance and is defined as:

Electronic transactions involving assess to customer information or the movement of funds to other parties. Not every on line transaction poses the same amount of risk. More controls should be added as the risk level increases.

- **In itsme247**
  - **Transfers to other members accounts**
  - **Bill Pay**
  - **A2A**

FFIEC Supplement

Retail vs. Business Commercial Banking

- **Retail poses comparatively lower risk as the frequency and dollar amount or lower**
  - ***Implement layered security for those accounts consistent with the risk***
- **Business transactions generally involve ACH file origination and frequent interbank wire transfers**
  - ***Implement layered security for those accounts consistent with the risk***
  - ***Offer multi factor authentication***

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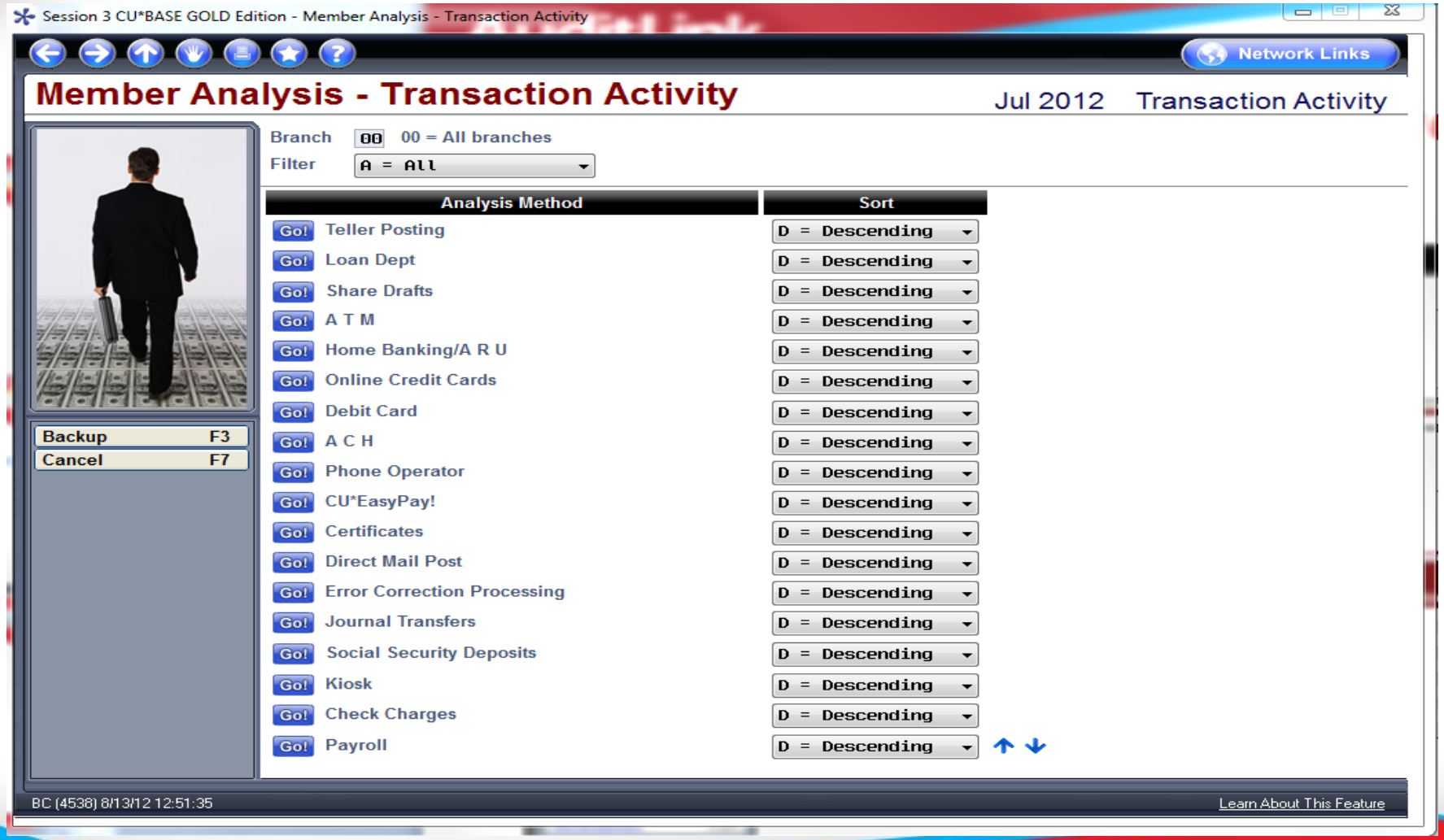
Determining What is Normal

Start by using the sampling tool MNAUDT #10



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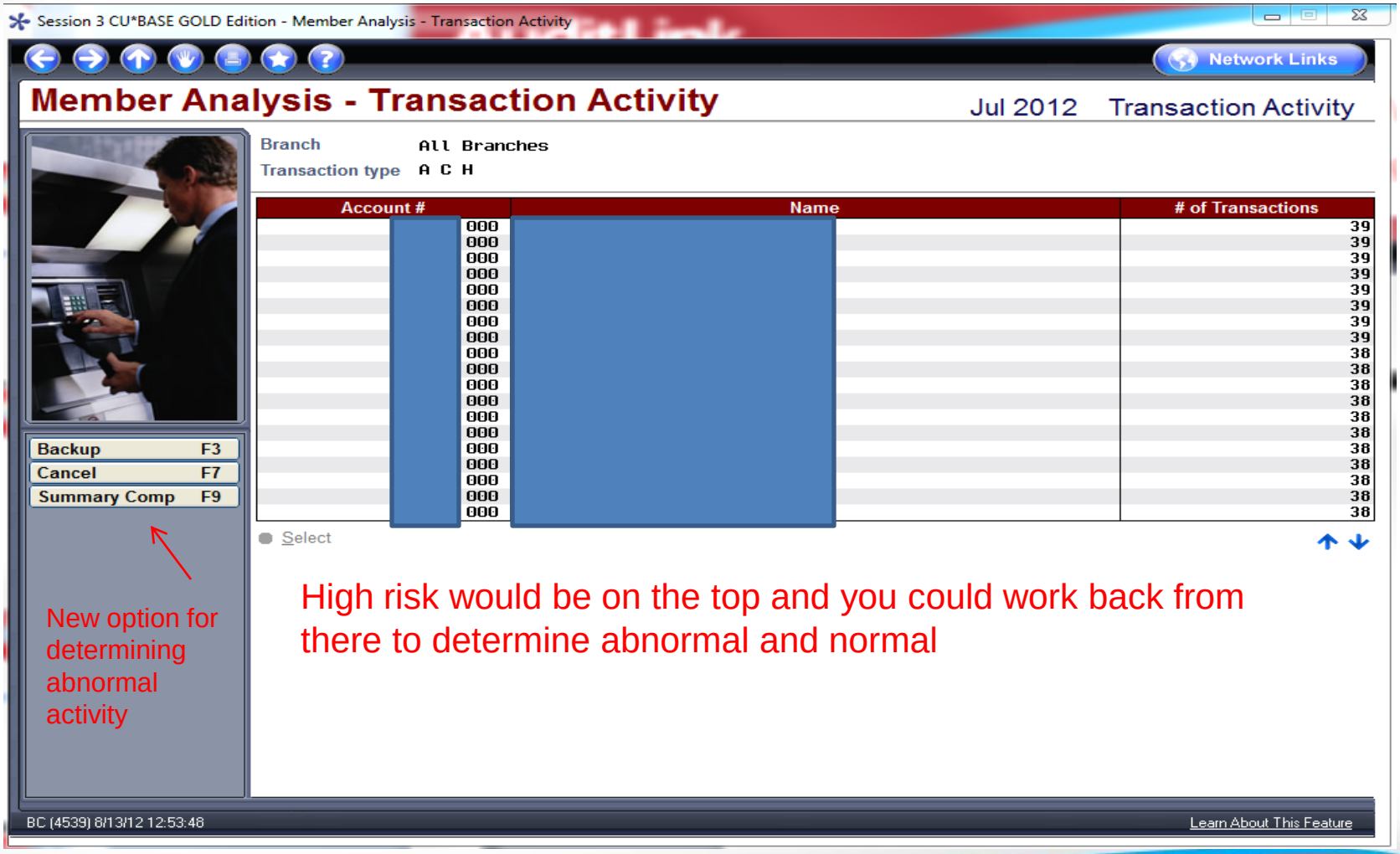
Determining What is Normal

Pick a few names in the middle of the scan



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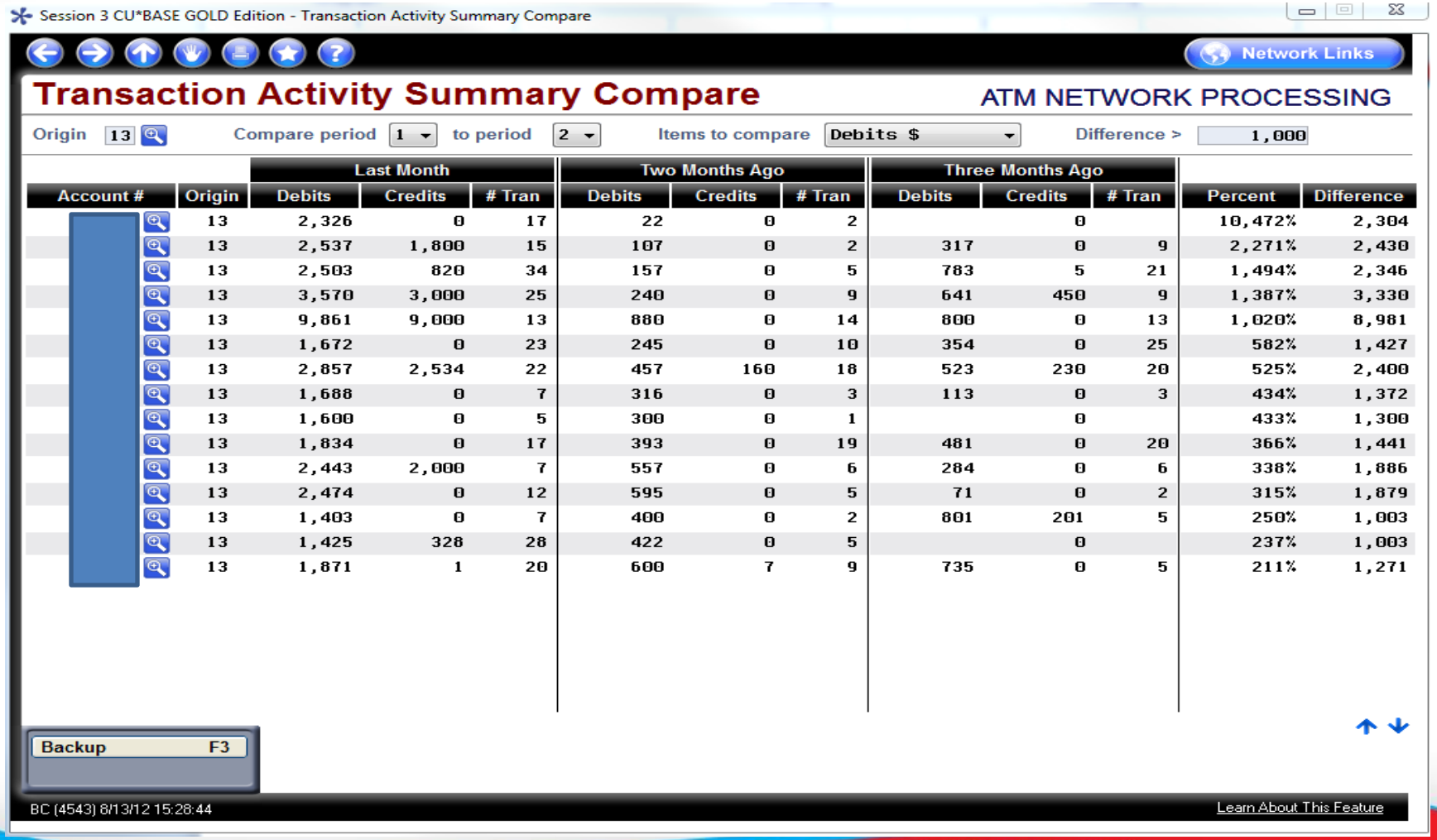
Summary Comparison

When using the sampling tools a new "compare" option has been added to let you deep dive into that specific origin



Account #	Origin	Last Month Debits	Last Month Credits	Last Month # Tran	Two Months Ago Debits	Two Months Ago Credits	Two Months Ago # Tran	Three Months Ago Debits	Three Months Ago Credits	Three Months Ago # Tran	Percent	Difference
	13	2,326	0	17	22	0	2		0		10,472%	2,304
	13	2,537	1,800	15	107	0	2	317	0	9	2,271%	2,430
	13	2,503	820	34	157	0	5	783	5	21	1,494%	2,346
	13	3,570	3,000	25	240	0	9	641	450	9	1,387%	3,330
	13	9,861	9,000	13	880	0	14	800	0	13	1,020%	8,981
	13	1,672	0	23	245	0	10	354	0	25	582%	1,427
	13	2,857	2,534	22	457	160	18	523	230	20	525%	2,400
	13	1,688	0	7	316	0	3	113	0	3	434%	1,372
	13	1,600	0	5	300	0	1		0		433%	1,300
	13	1,834	0	17	393	0	19	481	0	20	366%	1,441
	13	2,443	2,000	7	557	0	6	284	0	6	338%	1,886
	13	2,474	0	12	595	0	5	71	0	2	315%	1,879
	13	1,403	0	7	400	0	2	801	201	5	250%	1,003
	13	1,425	328	28	422	0	5		0		237%	1,003
	13	1,871	1	20	600	7	9	735	0	5	211%	1,271

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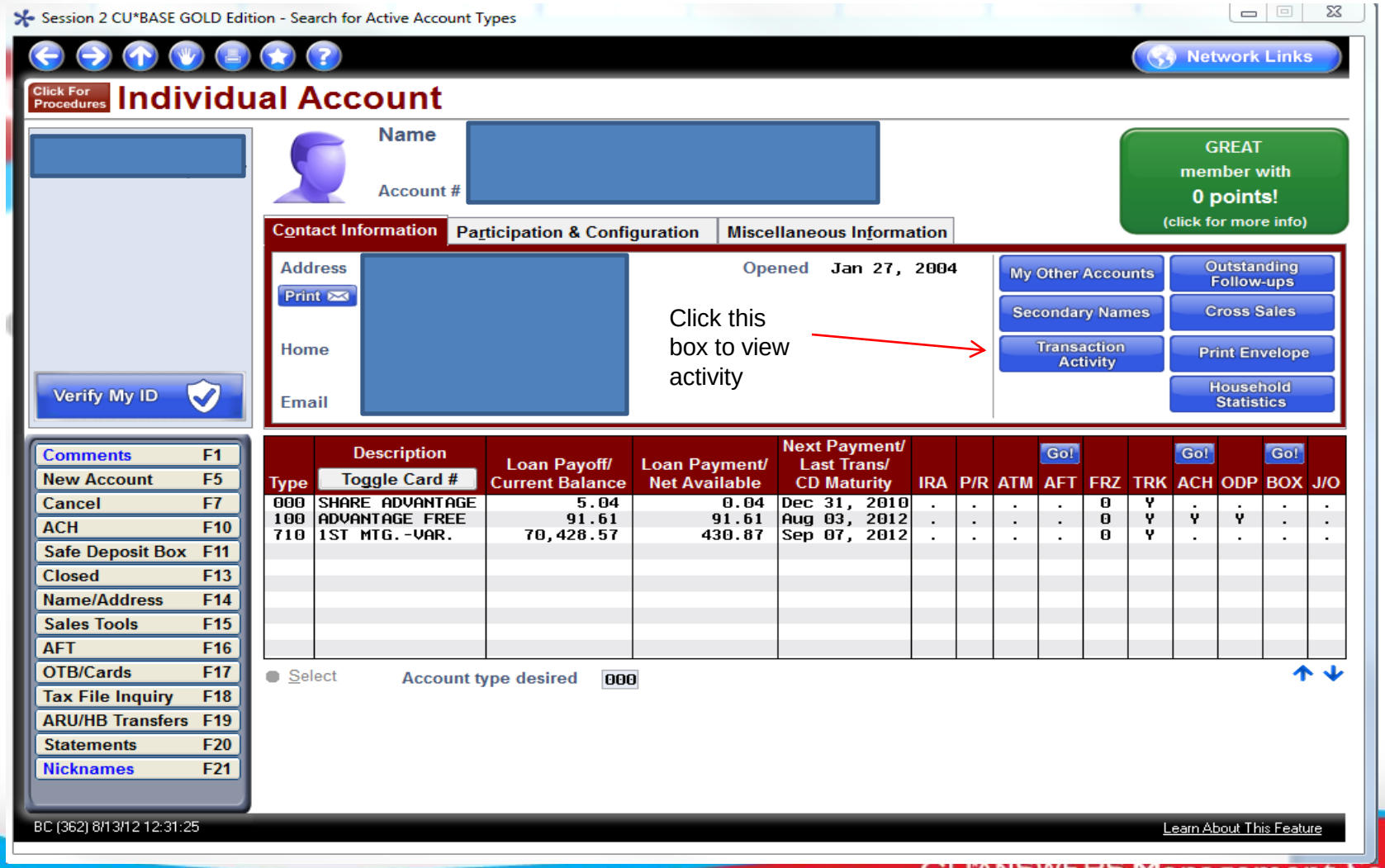
Determining What is Normal

Viewing transaction activity



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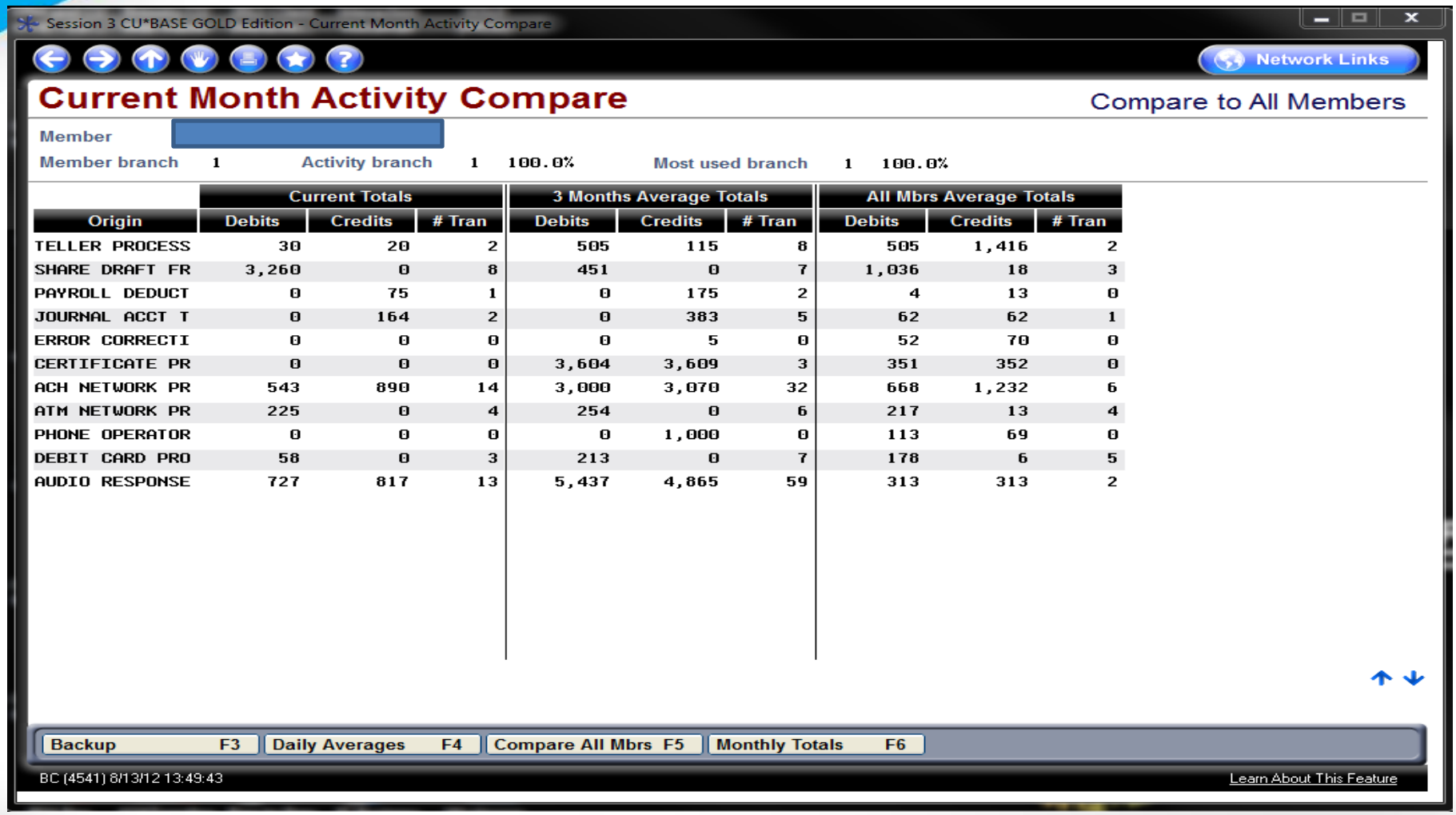
Determining What is Normal

Comparing all members to get averages



	Current Totals			3 Months Average Totals			All Mbrs Average Totals		
Origin	Debits	Credits	# Tran	Debits	Credits	# Tran	Debits	Credits	# Tran
TELLER PROCESS	30	20	2	505	115	8	505	1,416	2
SHARE DRAFT FR	3,260	0	8	451	0	7	1,036	18	3
PAYROLL DEDUCT	0	75	1	0	175	2	4	13	0
JOURNAL ACCT T	0	164	2	0	383	5	62	62	1
ERROR CORRECTI	0	0	0	0	5	0	52	70	0
CERTIFICATE PR	0	0	0	3,604	3,609	3	351	352	0
ACH NETWORK PR	543	890	14	3,000	3,070	32	668	1,232	6
ATM NETWORK PR	225	0	4	254	0	6	217	13	4
PHONE OPERATOR	0	0	0	0	1,000	0	113	69	0
DEBIT CARD PRO	58	0	3	213	0	7	178	6	5
AUDIO RESPONSE	727	817	13	5,437	4,865	59	313	313	2

Configuring Groups

- **Considerations for Grouping**
  - **Start by grouping the members by designation**
    - **Consider likely patterns to group designations**
      - **Rep Payee, Custodian, Trust (Fiduciary)**
      - **Organizational, Business, Corporate (Non-natural person)**
      - **Individual member**
- **Types of activity to monitor for**
    - **Not all origin codes need to be used**
    - **Consider those origins where the credit union has lost money by fraud**
    - **Consider those origins which are identified in the FFIEC Supplement**

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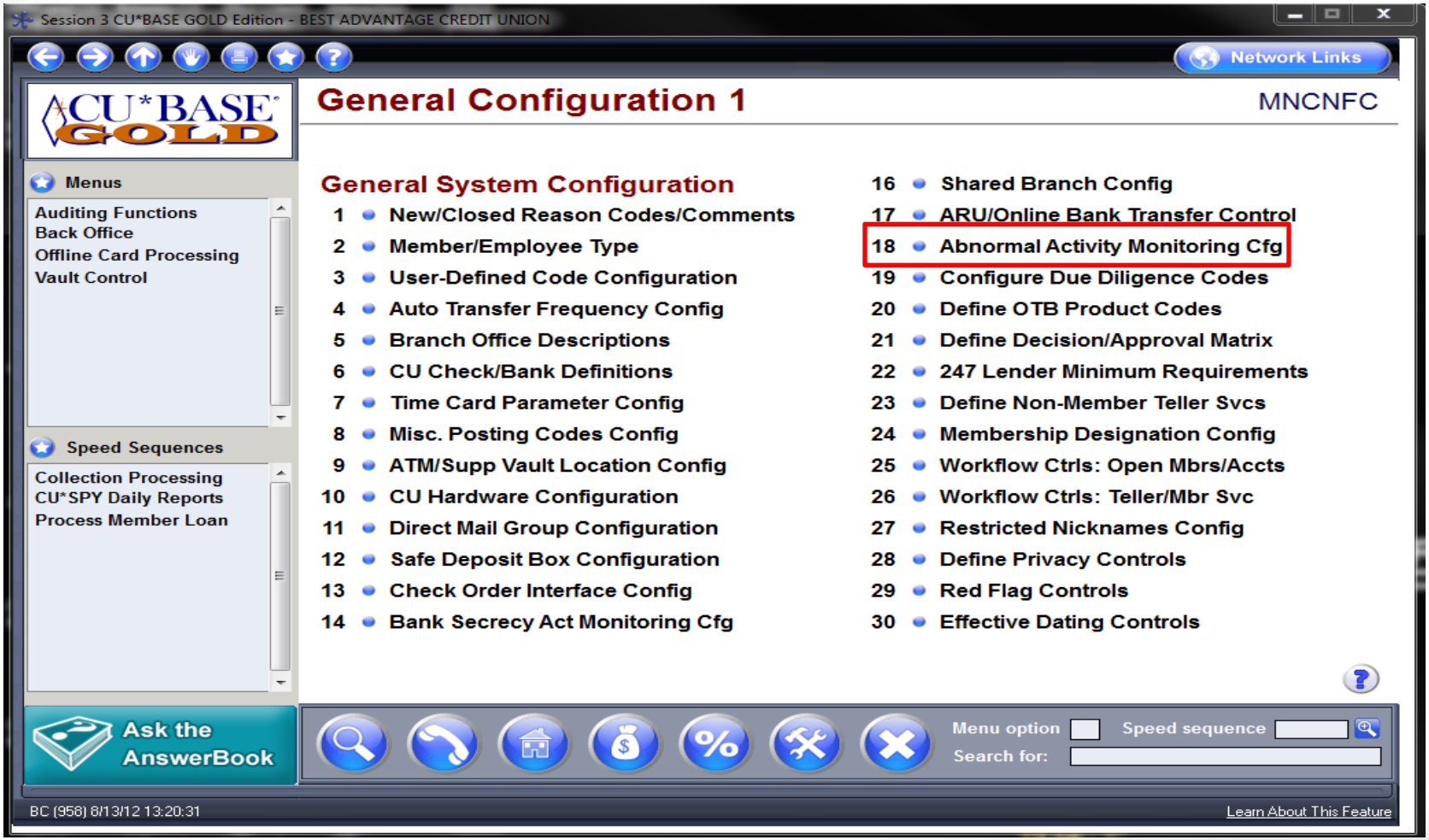
Configuring Groups

MNCNFC #18



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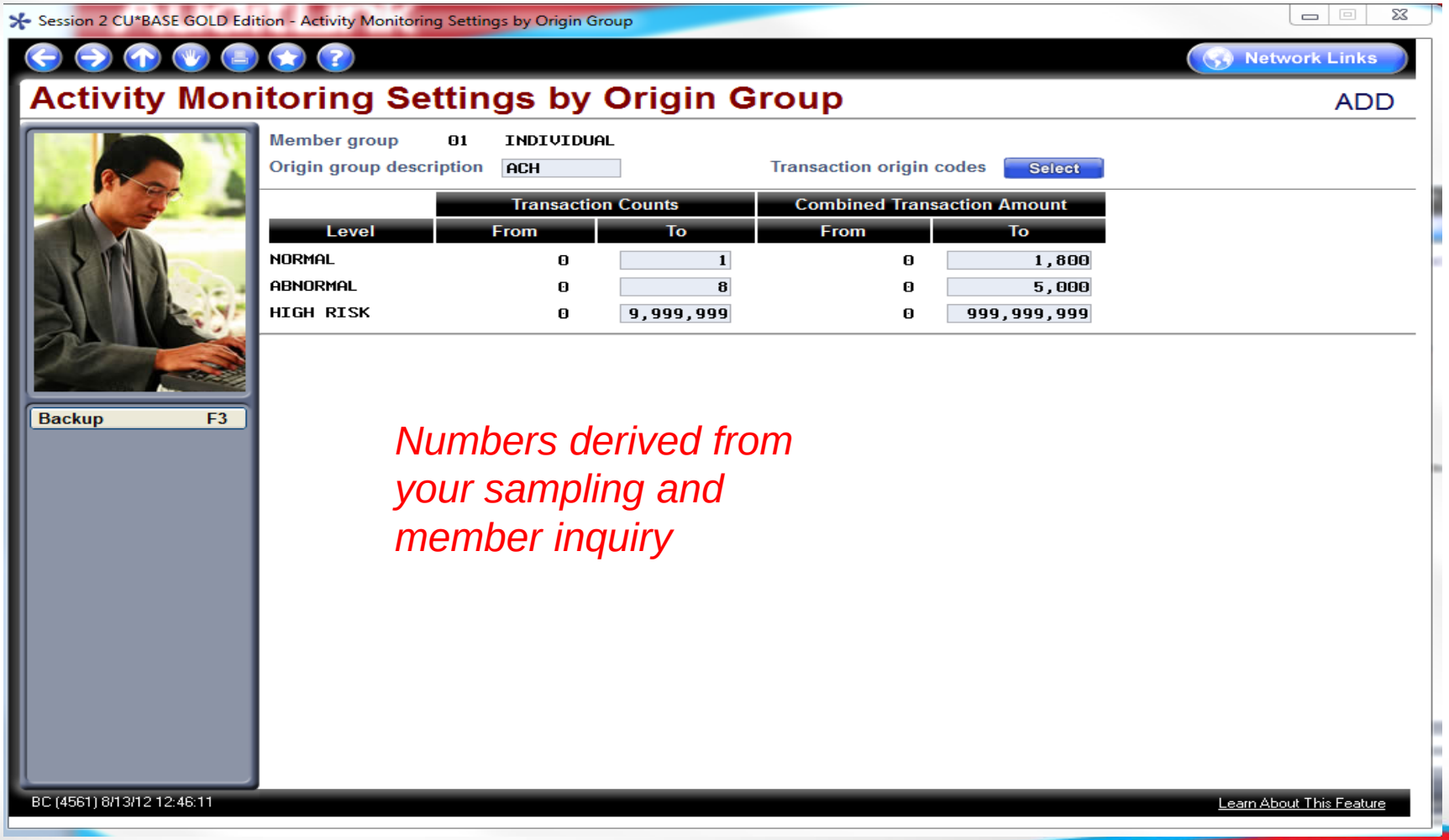
Configuring Groups

MNCNFC #18



Numbers derived from your sampling and member inquiry

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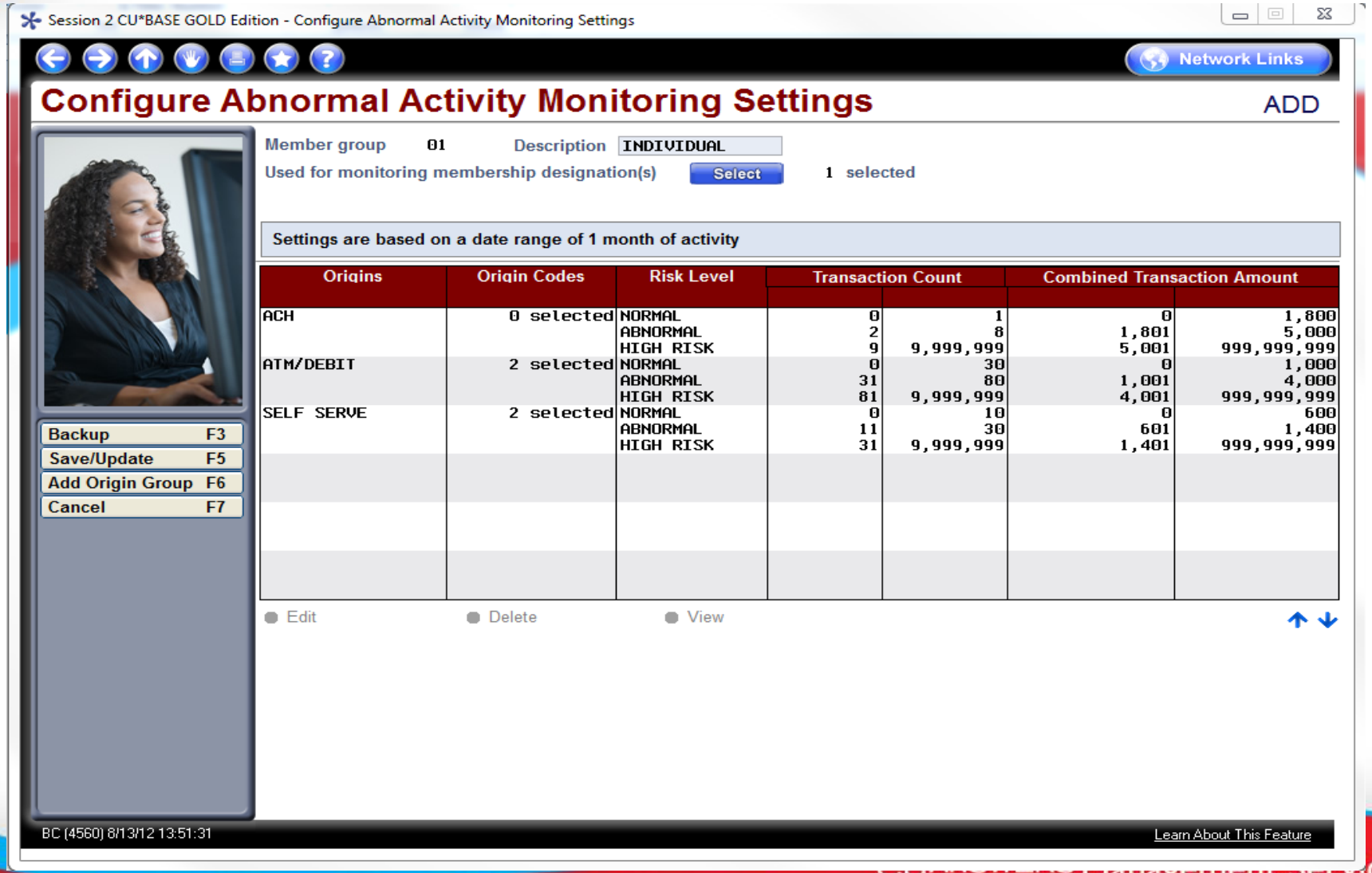
Configuring Origins



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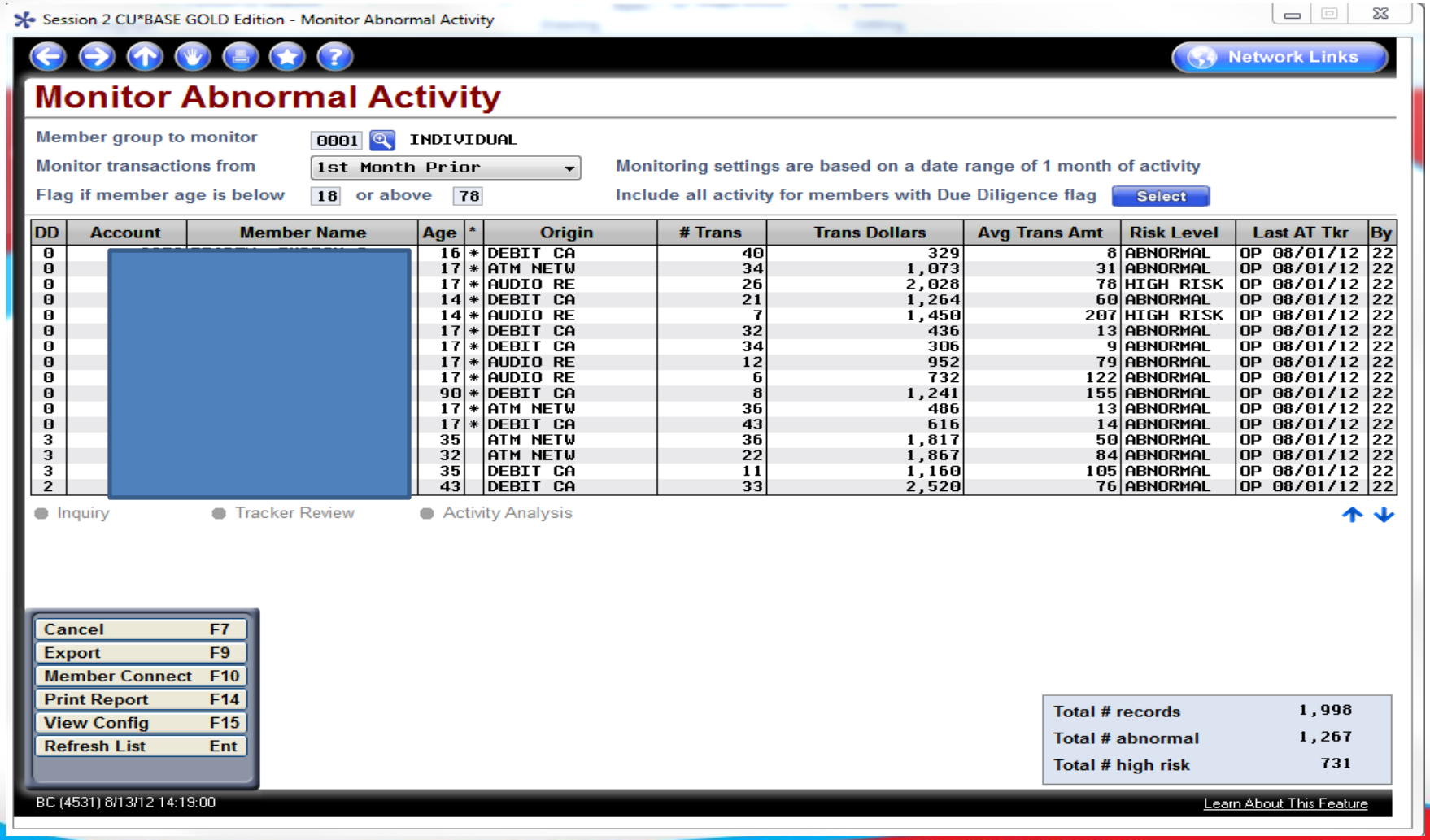
Running Report

MNAUDT #28 sorted by Age Indicator (Elderly abuse)



DD	Account	Member Name	Age	*	Origin	# Trans	Trans Dollars	Avg Trans Amt	Risk Level	Last AT Tkr	By
0			16	*	DEBIT CA	40	329	8	ABNORMAL	OP 08/01/12	22
0			17	*	ATM NETW	34	1,073	31	ABNORMAL	OP 08/01/12	22
0			17	*	AUDIO RE	26	2,028	78	HIGH RISK	OP 08/01/12	22
0			14	*	DEBIT CA	21	1,264	60	ABNORMAL	OP 08/01/12	22
0			14	*	AUDIO RE	7	1,450	207	HIGH RISK	OP 08/01/12	22
0			17	*	DEBIT CA	32	436	13	ABNORMAL	OP 08/01/12	22
0			17	*	DEBIT CA	34	306	9	ABNORMAL	OP 08/01/12	22
0			17	*	AUDIO RE	12	952	79	ABNORMAL	OP 08/01/12	22
0			17	*	AUDIO RE	6	732	122	ABNORMAL	OP 08/01/12	22
0			90	*	DEBIT CA	8	1,241	155	ABNORMAL	OP 08/01/12	22
0			17	*	ATM NETW	36	486	13	ABNORMAL	OP 08/01/12	22
0			17	*	DEBIT CA	43	616	14	ABNORMAL	OP 08/01/12	22
3			35		ATM NETW	36	1,817	50	ABNORMAL	OP 08/01/12	22
3			32		ATM NETW	22	1,867	84	ABNORMAL	OP 08/01/12	22
3			35		DEBIT CA	11	1,160	105	ABNORMAL	OP 08/01/12	22
2			43		DEBIT CA	33	2,520	76	ABNORMAL	OP 08/01/12	22

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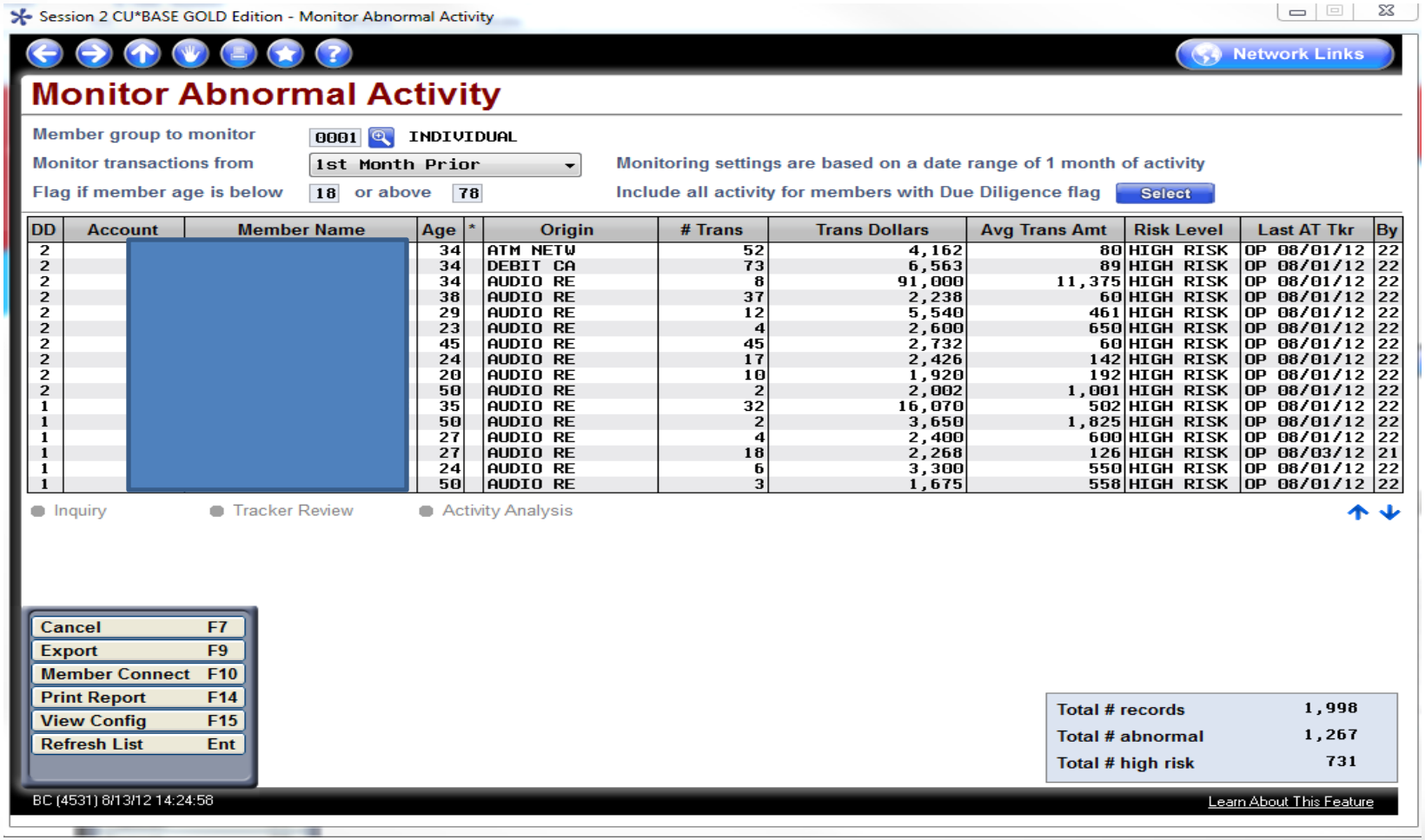
Running Report

MNAUDT #28 sorted by Risk Level

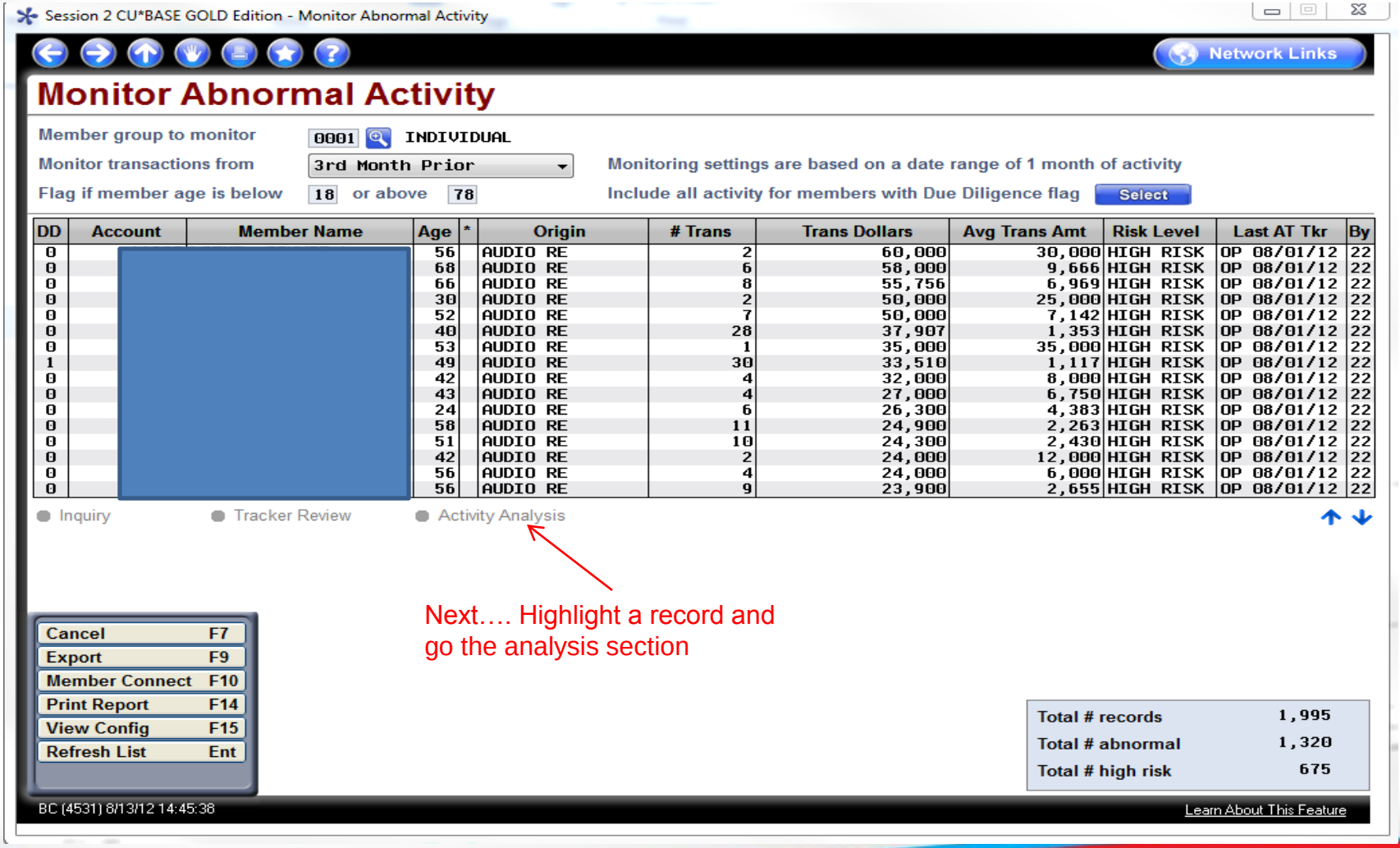


DD	Account	Member Name	Age	*	Origin	# Trans	Trans Dollars	Avg Trans Amt	Risk Level	Last AT Tkr	By
2			34		ATM NETW	52	4,162	80	HIGH RISK	OP 08/01/12	22
2			34		DEBIT CA	73	6,563	89	HIGH RISK	OP 08/01/12	22
2			34		AUDIO RE	8	91,000	11,375	HIGH RISK	OP 08/01/12	22
2			38		AUDIO RE	37	2,238	60	HIGH RISK	OP 08/01/12	22
2			29		AUDIO RE	12	5,540	461	HIGH RISK	OP 08/01/12	22
2			23		AUDIO RE	4	2,600	650	HIGH RISK	OP 08/01/12	22
2			45		AUDIO RE	45	2,732	60	HIGH RISK	OP 08/01/12	22
2			24		AUDIO RE	17	2,426	142	HIGH RISK	OP 08/01/12	22
2			20		AUDIO RE	10	1,920	192	HIGH RISK	OP 08/01/12	22
2			50		AUDIO RE	2	2,002	1,001	HIGH RISK	OP 08/01/12	22
1			35		AUDIO RE	32	16,070	502	HIGH RISK	OP 08/01/12	22
1			50		AUDIO RE	2	3,650	1,825	HIGH RISK	OP 08/01/12	22
1			27		AUDIO RE	4	2,400	600	HIGH RISK	OP 08/01/12	22
1			27		AUDIO RE	18	2,268	126	HIGH RISK	OP 08/03/12	21
1			24		AUDIO RE	6	3,300	550	HIGH RISK	OP 08/01/12	22
1			50		AUDIO RE	3	1,675	558	HIGH RISK	OP 08/01/12	22

AuditLink

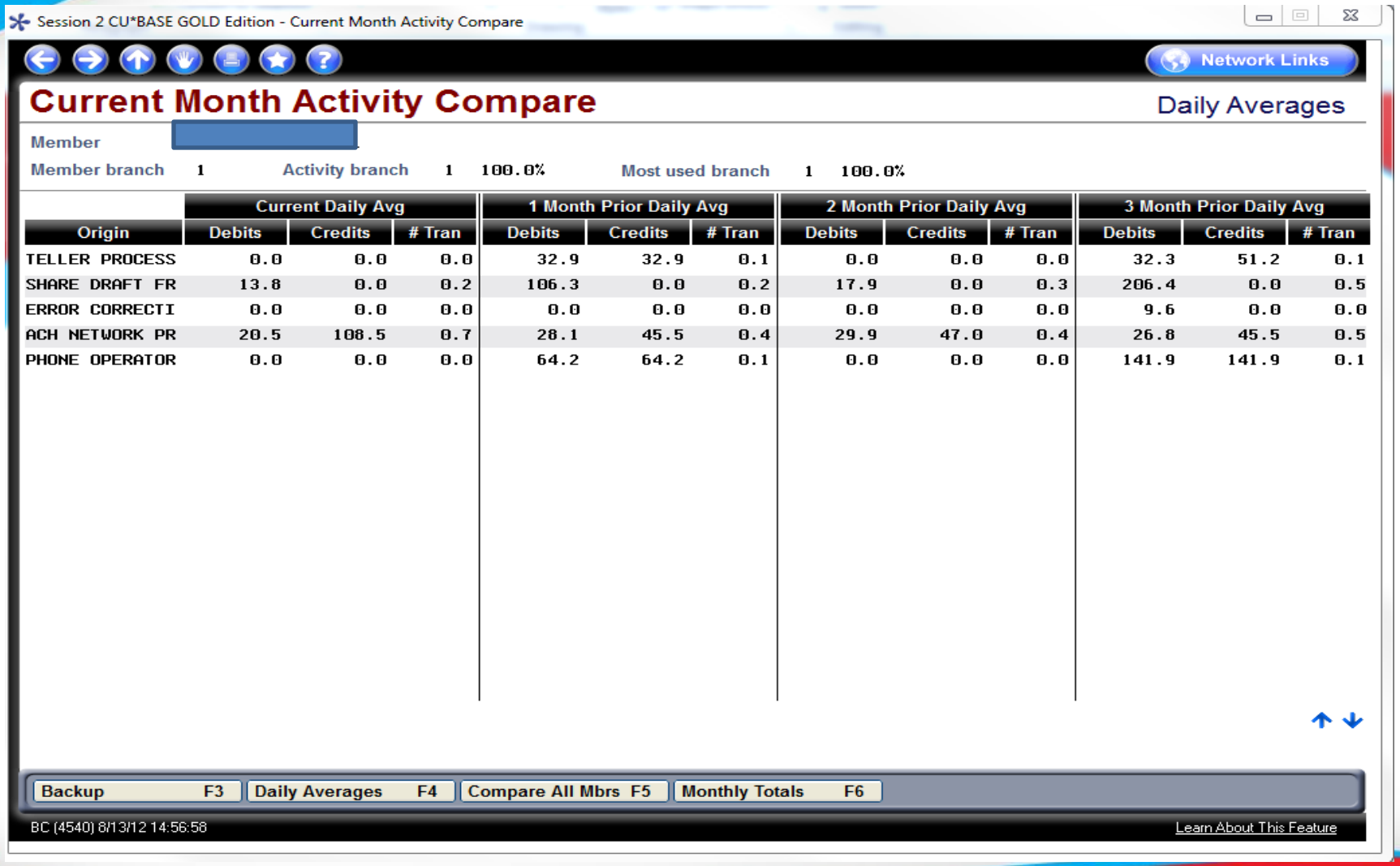
Running Report

MNAUDT #28 sorted by Transaction Dollars



Next…. Highlight a record and go the analysis section

Deep Diving on Accounts



	Current Daily Avg			1 Month Prior Daily Avg			2 Month Prior Daily Avg			3 Month Prior Daily Avg		
Origin	Debits	Credits	# Tran	Debits	Credits	# Tran	Debits	Credits	# Tran	Debits	Credits	# Tran
TELLER PROCESS	0.0	0.0	0.0	32.9	32.9	0.1	0.0	0.0	0.0	32.3	51.2	0.1
SHARE DRAFT FR	13.8	0.0	0.2	106.3	0.0	0.2	17.9	0.0	0.3	206.4	0.0	0.5
ERROR CORRECTI	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.6	0.0	0.0
ACH NETWORK PR	20.5	108.5	0.7	28.1	45.5	0.4	29.9	47.0	0.4	26.8	45.5	0.5
PHONE OPERATOR	0.0	0.0	0.0	64.2	64.2	0.1	0.0	0.0	0.0	141.9	141.9	0.1

Additional Features

- Data Center Employee Security report MNAUDT #23
- Configuration for Due Diligence codes MNCNFC #19
- No Notice Printed option for Courtesy Pay accounts
- Branch Indicator on the BSA report
- Permanent underwriting comments
- *ATM* Activity dashboard MNMGMT #10
- Member and Account Retention by Year Opened dashboards
  - MNMGMA #22, all the stats you need for ALM duration analysis for non-term shares
- OFAC scan archived to OUTQ
- Loan to Value report now has CLTV MNRPTE #18

CMS Reasources

- **Audit Link Advisor**
  - http://advisor.cuanswers.com/

- **We can tie all of this together for you**
  - One time setup or permanent engagement
  - Training
  - Prices scaled to size of credit union/complexity