



Your Trusted Partner for Audit Analytics

# Fraud Workshop

## Finding the truth in the transactions



Copyright © 2011 ACL Services Ltd.

**Robin Clough, ACDA**  
ACL Certified Trainer



Your Trusted Partner for Audit Analytics

# Agenda

- ACL and fraud detection
- Creating a fraud detection program
- Features in ACL that can assist with fraud detection
- Sample analytics / Analytics in AX
- Questions

# ACL and fraud detection

# ACL and fraud detection

## Trawl large volumes of data

- Evidence could be hidden behind millions of transactions
- Don't rely on lottery approach, focus on 100% of the transactions
- Use ACL 'profiling' commands to find trends/outliers
- Use ACL 'filtering' to home in on unusual transactions

# ACL and fraud detection

## Span more than one dataset

- Bring several sets of data into the analysis from different systems
- Use ACL 'combining' commands to cross compare data

# ACL and fraud detection

## Use a continuous approach

- Look at implementing AX
- Fraud occurs on an ongoing basis
- Run analytics on a regular basis
- Ensure results are reviewed – 'Exception'
- Ensure analytics are kept fresh and current

# Creating a fraud detection program

# Creating a fraud detection program

## Build a profile of potential frauds

- Identify high risk areas
- Look at historical fraud
- Inside/outside organisation
- What's happening elsewhere – media, industry groups

# Creating a fraud detection program

## Develop analytics to look for possible indicators of fraud

- Use full breath of ACL features
- Convert to scripts
- Refine and repeat over time

# Creating a fraud detection program

## Improve controls by implementing continuous controls monitoring

- Don't wait too long to detect the fraud – it could be too late
- Best caught in early stage before real damage is done

# Features in ACL that can assist with Fraud Detection

# Features in ACL that can assist with Fraud Detection

## STATISTICS Command

- Gives averages, value or date spans
- Lots of values stored as variables that could be used in filters and scripts

Payment Amount

	Number	Total	Average
Range	-	2,672.05	-
<a href="#">Positive</a>	16,573	6,884,996.23	415.43
<a href="#">Negative</a>	0	0.00	0.00
<a href="#">Zeros</a>	0	-	-
Totals	16,573	6,884,996.23	415.43
Abs Value	-	6,884,996.23	-

Highest	Lowest
<a href="#">2,684.65</a>	<a href="#">12.60</a>
<a href="#">2,684.65</a>	<a href="#">12.60</a>
<a href="#">2,636.16</a>	<a href="#">12.60</a>
<a href="#">2,636.16</a>	<a href="#">12.60</a>
<a href="#">2,636.16</a>	<a href="#">12.60</a>

Name	Type	Value
LOW1	N	12.60
HIGH1	N	2,636.16
RANGE1	N	2,672.05
ABS1	N	6,884,996.23
AVERAGE1	N	415.43
MIN1	N	12.60
MAX1	N	2,684.65
TOTAL1	N	6,884,996.23
COUNT1	N	16,573

# Features in ACL that can assist with Fraud Detection

## DUPLICATES Command

- Easy to use, key is in selection of data and computed fields
- Common application is in analysis of duplicate payments
- Suppliers may be deliberately double invoicing to exploit control weaknesses
- Could also be collusion between AP and Suppliers

Invoice Number	Payment Amount	Payment Date	Payment Number	Vendor Number
136649	£1,105.79	01/08/2002	PT-15262	102444
136649	£1,105.79	02/15/2002	PT-26397	102444
136654	£1,053.15	01/13/2002	PT-16706	102444
136654	£1,053.15	01/22/2002	PT-19178	102444
136654	£1,053.15	02/12/2002	PT-25449	102444
137545	£1,053.15	02/06/2002	PT-23469	102444
137545	£1,053.15	02/20/2003	PT-30303	102444
137828	£1,053.15	01/22/2002	PT-19268	102444
137828	£1,053.15	02/21/2003	PT-30304	102444

<< End of File >>

# Features in ACL that can assist with Fraud Detection

## CLASSIFY / SUMMARIZE Commands

- Great for spanning large datasets and seeing the data in a concise way
- Take vendor creation/modification
- Is the role of K\_DUDAK really to create/modify vendors?
- Why blanks?
- Use in combination with AVERAGE1 variable generated by STATISTICS
- Set tolerance boundaries e.g. 20% below AVERAGE1
- Sometimes good to view graphically also

CREATED_BY	Count	Percent of Count
R_PATEL	60	30.77
G_WILSON	50	25.64
S_JONES	39	20.00
J_SMITH	36	18.46
	5	2.56
K_DUDAK	5	2.56

<< End of File >>

LAST_MODIFIED	Count	Percent of Count
J_SMITH	63	32.31
S_JONES	46	23.59
G_WILSON	40	20.51
R_PATEL	39	20.00
	5	2.56
K_DUDAK	2	1.03

<< End of File >>

# Features in ACL that can assist with Fraud Detection

## STRATIFY Command

- Good way to quickly see outliers in a large population of numbers
- Could be used when viewing expenses

Expense Amount	Count	Percent of Count	Percent of Field	Expense Amount
<a href="#">0.60 - 152.53</a>	6,734	94.34%	42.16%	103,357.61
<a href="#">152.54 - 304.47</a>	211	2.96%	20.08%	49,220.00
<a href="#">304.48 - 456.41</a>	122	1.71%	17.9%	43,885.75
<a href="#">456.42 - 608.35</a>	34	0.48%	7.13%	17,483.00
<a href="#">608.36 - 760.29</a>	16	0.22%	4.43%	10,854.50
<a href="#">760.30 - 912.23</a>	14	0.2%	4.84%	11,874.00
<a href="#">912.24 - 1,064.17</a>	2	0.03%	0.81%	1,980.00
<a href="#">1,064.18 - 1,216.11</a>	2	0.03%	0.93%	2,268.00
<a href="#">1,216.12 - 1,368.05</a>	1	0.01%	0.53%	1,296.00
<a href="#">1,368.06 - 1,520.00</a>	2	0.03%	1.19%	2,920.00
<b>Totals</b>	7,138	100%	100%	245,138.86

# Features in ACL that can assist with Fraud Detection

## FIND Function

- Easy to locate key strings of data in large data sets
- Is not case sensitive and also looks within strings
- Famous Gym/Taxi scam

Filter:

	Report Number	Employee Number	Merchant Name	Expense Date	Expense Amount	Expense Type
3	017249	000988	Metro Taxi	03/27/2004	10.00	TAXICA
22	017249	000988	Metro Taxi	03/31/2004	10.00	TAXICA
34	017250	001781	Takeout Taxi	03/27/2004	15.00	TAXICA
65	017250	001781	Grove Taxi	04/02/2004	20.00	TAXICA
89	017251	001117	Atlanta Metro Taxi	03/30/2004	9.00	TAXICA
98	017252	002115	Metro Taxi	03/27/2004	10.00	TAXICA
130	017253	001107	Atlanta Metro Taxi	03/27/2004	9.00	TAXICA
158	017253	001107	Crown Taxi Cab	04/01/2004	6.00	TAXICA
170	017254	000243	Metro Taxi	03/30/2004	10.00	TAXICA
201	017254	000243	Atlanta Metro Taxi	05/04/2004	9.00	TAXICA
216	017255	001173	Metro Taxi	03/29/2004	11.00	TAXICA
217	017255	001173	Emerald Taxi Ltd	03/29/2004	4.20	TAXICA
218	017255	001173	Takeout Taxi	03/29/2004	13.50	TAXICA
219	017255	001173	Grove Taxi	03/29/2004	17.00	TAXICA
235	017255	001173	Atlanta Metro Taxi	04/01/2004	9.00	TAXICA
243	017256	001601	Atlanta Metro Taxi	03/30/2004	9.00	TAXICA
250	017256	001601	Crown Taxi Cab	03/31/2004	4.80	TAXICA
251	017256	001601	Takeout Taxi	03/31/2004	13.50	TAXICA

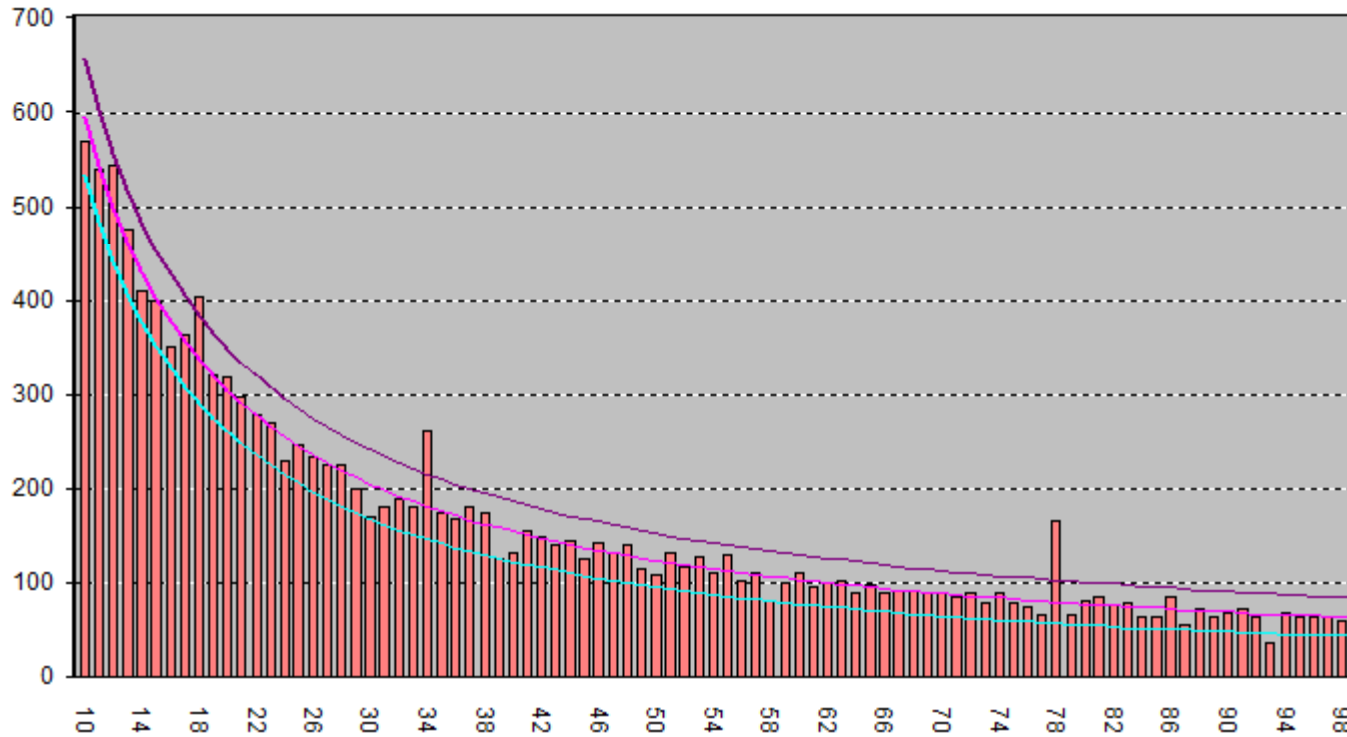
# Features in ACL that can assist with Fraud Detection

## BENFORD Command

- Probability theorem that makes predictions about distribution of digits in numerical data
- Can detect hidden trends occurring in the data
- Looks at first few digits of numbers and attempts to predict expected distribution
- Used frequently to detect spending just below authorisation levels
- Always worth running to see what it comes up with anything

# Features in ACL that can assist with Fraud Detection

## BENFORD Command




# Features in ACL that can assist with Fraud Detection

## FILTERS

- Allows you to home in on transactions that meet certain conditions
- Quick filter allows expressions to be built quickly with no syntax errors
- Use variables and functions to make your filters powerful
- Any guesses as to what this filter is doing?

Filter:

 DOW(transaction\_date)=1 AND (transaction\_amount > 55000)

	Transaction Number	Transaction Date	Employee Number	Transaction Amount
797	32421	02/16/2003	00447	£56,501.49
4169	35839	05/11/2003	00449	£55,188.16
5025	36703	06/01/2003	00450	£56,424.89
5031	36709	06/01/2003	00449	£58,776.29
8854	40591	08/03/2003	00447	£59,117.13
10477	42235	08/31/2003	00451	£57,384.58
11499	43273	10/12/2003	00450	£58,606.91




<< End of File >>

# Features in ACL that can assist with Fraud Detection

## COMPUTED FIELDS / WORKSPACES

- Add your own fields to existing data fields
- Confirm accuracy of calculations
- Store filters as logical computed fields i.e. T or F
- For widely used computed fields think about using Workspaces

Filter:

    F\_Sun\_Trans\_GT55000 <> F

	Transaction Number	Transaction Date	Employee Number	Transaction Amount	F_Sun_Trans_GT55000
797	32421	02/16/2003	00447	£56,501.49	T
4169	35839	05/11/2003	00449	£55,188.16	T
5025	36703	06/01/2003	00450	£56,424.89	T
5031	36709	06/01/2003	00449	£58,776.29	T
8854	40591	08/03/2003	00447	£59,117.13	T
10477	42235	08/31/2003	00451	£57,384.58	T
11499	43273	10/12/2003	00450	£58,606.91	T

<< End of File >>

# Features in ACL that can assist with Fraud Detection

## SCRIPTS

- Why reinvent the wheel every time?
- Share/swap your scripts with your friends!
- Easier than you think to create – recorder, log entries, create script from table history
- What's this script doing?

```
OPEN Transactions_2003
SET FILTER DOW( transaction_date)=1 AND (transaction_amount > 55000)
EXTRACT RECORD TO "Sun_Trans_GT_55000" OPEN
```

# Sample Analytics

# Sample Analytics

## Purchase to Pay

- Split purchases
- Inflated prices (collusion)
- Duplicate payments
- Appropriate authorisation
- Invoice amount doesn't match PO amount

# Sample Analytics

## Purchase to Pay

- Cross check between employees/contractors and suppliers
- Check key information is not fictitious – e.g. address details, VAT number
- Segregation of duty analysis – roles matrix
- Vendor creation and modification

# Sample Analytics

## Purchase cards

- Merchant profiling
- Personal use e.g. holiday travel instead of business travel!
- Weekend use, outside business hours
- Split purchases (Benford)
- Peer group comparison
- Restricted merchants

# Sample Analytics

## Travel and entertainment expenses

- Duplicate claims
- “No receipts”
- Inappropriate use
- Wrong rates
- Policy breach e.g. business travel v economy travel, meal allowance exceeded
- Peer group comparison
- Authorisation checks
- Benford

# Sample Analytics

## Journals

- Raised during non working days or hours
- Isolate manual journals
- Created by senior management
- Large amounts / Small amounts
- Round sum amounts
- Benford analysis

# Sample Analytics

## Others

- Timesheet/Swipe card analysis
- Point of Sale analysis
- Stock levels/Wastage levels

# Analytics in AX

The screenshot displays the AX Core Client application window. The title bar reads "AX AX Core Client". The menu bar includes "File", "Edit", "Analytics", "Tools", "Admin", "View", and "Help".

The left pane shows a tree view under "AX Core":
 

- Library
- Working
  - AntiFraud
    - Employee\_v\_Supplier
    - Expenses
      - Analytic Projects
      - Data
      - Related Files
      - Results
        - Employee Expenses Audit - May 23, 2011
          - Employee Expenses Audit.log
          - Expenses\_FirstClass
  - GhostEmployee
  - Payroll
    - Analytic Projects
      - Test4.ACL
    - Payroll audit of employees
      - Data
      - Related Files
      - Results
        - Payroll audit of employees - Jun 06, 2011
          - Employee\_Duplicate
          - Payroll audit of employees.log

The right pane is titled "Properties" and has two tabs: "Summary" and "Fields". The "Summary" tab is active, displaying the following information:

Created:	07:21:01 06 June 2011
Created by:	axadmin (DC-DEMO\axadmin)
Last modified:	07:21:01 06 June 2011
Last modified by:	axadmin (DC-DEMO\axadmin)
File size:	948 B
File modified:	07:21:01 06 June 2011
Record count:	6
Data source:	Data source is managed by AX Core.

Below the summary information is a horizontal scrollbar and a "Description" field which is currently empty.

# Questions?