

SQL I/O Example

Problem - Find the transaction that set Account #1000000's balance negative. Note that the account information is kept in the Accounts table.

```
TACL 1> run tpspy
```

Start the Shadowbase Audit Reader (TP-SPY) utility

```
Shadowbase Audit Reader (TP-SPY) Command Interpreter, COPYRIGHT CS Software GmbH and  
ITI Shadowbase, A Division of Gravic, Inc. 2003-2004 Version 3.810, November 24th,  
2004
```

```
*SHADOWBASE LICENSE EXPIRES ON 2005-02-08
```

```
TP-SPY 0> starttime 11:30:00
```

Enter Query selection commands and start the Query.

```
TP-SPY 1> endtime 11:32:00
```

```
TP-SPY 2> format LINEUP
```

```
TP-SPY 3> select * from ACCOUNTS where account_num = 1000000 and ACCOUNT_BAL < 0.00
```

```
TP-SPY 4> start
```

```
Start-Position MAT:
```

```
Audit-File : $AUDIT.ZTMFAT.AA000015  
Timestamp : 01.12.2004 11:30:37.393086  
SequenceNo : 15  
RBA : 300949568
```

Starting position in Master Audit Trail (MAT) for reading events.

```
Record-Type : UPDATE  
Compression : NONE  
Audit-File : $AUDIT.ZTMFAT.AA000015  
Timestamp : 01.12.2004 11:31:40.935325  
SequenceNo : 15  
RBA : 300963572  
Homenode : \S1  
Trans-ID : \S1(1).0.302455  
UndoFlag : 0 - AfterLen : 22 - BeforeLen : 22  
Datafile : \S1.$DATA4.PJHSAR.ACCOUNTS
```

Application "PROG1234" set the Account Balance negative (note that the LAST_UPDATER is an application-maintained program ID indicating the program that made this change; without it the program that made the change is not saved by TMF in the audit trail).

COLUMN	BEFORE	AFTER
ACCOUNT_NUM	1000000	1000000
ACCOUNT_BAL	10000.00	-1000.00
LAST_UPDATER	PROG1087	PROG1234

```
End-Position MAT:
```

```
Audit-File : $AUDIT.ZTMFAT.AA000015  
Timestamp : 01.12.2004 11:32:21.304307  
SequenceNo : 15  
RBA : 300974252
```

Ending MAT position for Query.

```
COUNT statistics:
```

Record-Type	Displayed	Total
ABORT	0	0
COMMIT	0	6
NETWORK ABORT	0	0
NETWORK COMMIT	0	0
NETWORK PREPARED	0	0
AUX POINTER	0	12
TMF SHUTDOWN	0	0
INSERT	1	1
UPDATE	1	1
DELETE	1	1
INSERT UNDO	0	0
UPDATE UNDO	0	0
DELETE UNDO	0	0
FILE CREATE	0	2
FILE ALTER	0	3
FILE RENAME	0	0
FILE PURGE	0	2
FILE CREATE UNDO	0	0
FILE ALTER UNDO	0	0
FILE RENAME UNDO	0	0
FILE PURGE UNDO	0	0
ALL	3	28

Totals of all events read and displayed during the Query (only those events that satisfy the event-selection criteria are displayed - SAR can selectively display events for Enscribe files and SQL tables, as well as all other audited changes made to your database).