

## Kevin K Test/Transaction Basics

### Session\_1 SPID 19

```
DELETE Solution
PRINT "Session %!", @@SPID

BEGIN TRAN Session_1
INSERT Solution VALUES (91, 11)
INSERT Solution VALUES (91, 12)
    -- PIT [1]
    -- switch to session 2
INSERT Solution VALUES (91, 13)
INSERT Solution VALUES (91, 14)
SELECT * FROM Solution
    -- PIT [3]

COMMIT TRAN Session_1
    -- PIT [4]
```

### Point in Time [3] Result Set

ProblemId	SolverId
91	11
91	12
91	13
91	14

### Server Locks

#### Point in Time [1]

spid	db_name	table_name	lock_type	page	row
19	staging	Person	Sh_page	1393	0
19	staging	Problem	Sh_page	1449	0
19	staging	Solution	Ex_intent	0	0
19	staging	Solution	Ex_page	1769	0

The locks for 19 show:

- Shared lock on parent Person
- Shared lock on parent Problem
- Exclusive Page lock on the 2 rows (same Page)
- Intent (table level) lock to do more Exclusive Page work

#### Point in Time [2]

spid	db_name	table_name	lock_type	page	row
19	staging	Person	Sh_page	1393	0
19	staging	Problem	Sh_page	1449	0
19	staging	Solution	Ex_intent	0	0
19	staging	Solution	Ex_page-blk	1769	0
22	staging	Person	Sh_intent	0	0
22	staging	Problem	Sh_intent	0	0
22	staging	Solution	Ex_intent	0	0

The locks for 22 show:

- Shared lock on parent Person
- Shared lock on parent Problem
- Intent (table level) lock to do some Exclusive Page work, which is blocked

The [19] lock on Page 1769 has now escalated to a blocking lock

#### Point in Time [4]

spid	db_name	table_name	lock_type	page	row
22	staging	Solution	Ex_intent	0	0

The locks for 19 have cleared.

The locks for 22 show:

- Intent (table level) lock to do some Exclusive Page work

### Session\_2 SPID 22

```
-- PIT [1]
PRINT "Session %!", @@SPID

BEGIN TRAN Session_2
INSERT Solution VALUES (91, 21)
    -- PIT [2] Suspended, waiting for 19
    -- PIT [4] After thread returns
INSERT Solution VALUES (91, 22)
INSERT Solution VALUES (91, 23)
INSERT Solution VALUES (91, 24)

COMMIT TRAN Session_2
```



At PIT[2] this session is suspended

At PIT[4] this session resumes.

- It is immediately interrupted, and [Solver Max 4 constraint violation err msg](#) is posted.
- The rest of the intended commands do not get executed.
- The transaction is open: it can be re-tried or aborted.

- Online (everything in Sybase is Online) [Interactive SQL program](#), showing Command submission and ResultSet windows.
- The Third Manifesto/Ostensibly Function-in-Constraint Issue but actually Transaction Basics which is apparently missing from Oracle.
- Testing shown here is Sybase ASE 15.0.2 on Windows/XP on Parallels on MacOSX.