

White Paper

# R11i Order Management Data Integrity Issues

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## R11i Order Management Data Integrity Issues

With any new or upgraded software come benefits and challenges. The latest release of Oracle 11i is no different. Since our focus at Absolute Technologies is on the Order Revenue Business Cycle, we have prepared a brief paper on a few 11i issues impacting our customers and how BBB Intelligence provided visibility to and aided in the resolution of these issues.

### 1. 10.7 to 11i Upgrade

#### a. Line Splits Create Extra Quantity.

The Oracle Upgrade converts order lines in 10.7 to multiple order lines in 11i if the 10.7 order line has multiple line details or multiple picking lines. This is designed to mimic the new “Split Line” functionality and architecture in 11i. Unfortunately, occasionally the upgrade program creates several order lines in 11i from the single order line in 10.7 such that the total ordered quantity of the lines exceeds that of the original 10.7 order line. Additionally troubling is that Oracle does not populate the “split\_from\_line\_id” column for split lines converted/upgraded within the upgrade. In normal 11i split line transactions, this column is populated with the line\_id from the original or parent line.

Example from actual customer that upgraded in July 03:

#### Order # 1001872

Release	Ord Qty	Can Qty	Line_id	Creation_Date
10.7	462	405	3515	31-Oct-98
Net Ord Qty	<u>57</u>			
11.5.8	75	405	3515	30-Dec-98
	57	0	101625*	5-Jan-99
Net Ord Qty	<u>132</u>			

(\*) This line is inserted/created as a split line by the Oracle upgrade routine.

The question that immediately comes to mind, other than the familiar anti-Oracle expletives, is “Where is Oracle getting the quantity of 75?” And, “Why are the creation dates in 11i different from 10.7?”

Both questions are critical, because both issues contribute to the loss of data integrity in Order Management reporting, specifically historical Bookings and Backlog reporting.

The answer is that Oracle is using a combination of Line Details, Picking Lines and Picking Line Details to create these new lines and respective creation dates. It is in these tables that Order Entry 10.7 stored schedule and quantity splits. Thus, as

the architecture in 11i Order Management moved scheduling events to the order line level, it does make sense that line split information would be derived from these tables. However, the upgrade logic supporting this effort was only half baked, as the evidence reveals.

Here's a look at the Line Details and Picking Line data for this line in 10.7:

#### Line Details

Qty	Released	Schedule Date
57	Y	15-Jan-99

#### Picking Lines

Req Qty	Shp Qty	Can Qty	Scheduled	Picking_header_id	Creation_Date
57	57		15-Jan-99	3785	5-Jan-99
387	0		15-Jan-99	3501	30-Dec-98
462		387	15-Jan-99	0	30-Dec-98

So, in this case the devil is in the picking lines. The first picking line which shipped for 57 units, was created on 05-Jan-99, thus accounting for the creation date and the ordered quantity of the new split line id 101625. The second picking line indicates that 0 units were shipped, and in fact is just a transition record used by 10.7 to handle backorders. Thus, the third picking line represents the backordered quantity. For those not familiar with 10.7 OE, a picking\_header\_id equal to 0 indicates that the picking line is in backordered status.

If we net the requested quantity of 462 with the cancelled quantity of 387, we get 75! Mystery solved, but unfortunately knowing how Oracle derives the creation of new split lines from old 10.7 order lines is only half the battle. Now you must determine the impact of and how to rectify your errant data.

These discrepancies between 10.7 and 11i were originally identified during the upgrade of BBB Intelligence from 10.7 to 11i, as part of a pre-upgrade reconciliation routine. Furthermore, diagnostic scripts packaged with BBB Intelligence were used extensively to identify and resolve reconciling items between 10.7 Order Entry and 11i Order Management.

Disclaimer: Although the derivation logic may seem clear in this one example, it is actually not this simple. There are several contextual considerations based on the state of your 10.7 data that will impact how the Oracle upgrade program functions. For more information or help in sorting this out, please contact us at [support@absolute-tech.com](mailto:support@absolute-tech.com).

#### b. OM Invoiced Line Splits do not exist in AR.

If a line was partially invoiced in 10.7, and then gets split during the 11i upgrade, the newly created split lines do not invoice for the correct quantities.

Example from actual customer that upgraded in July 03:

Here’s what the order looked like prior to the upgrade in 10.7. Note that line 1 had partially invoiced for 832 units.

**Order Number 1032517**                      **10.7**

Order Lines				Invoice Lines		
Line Number	line_id	ordered qty	Shipped/ invoiced qty	Invoice Num	invoice qty	trx_line_id
1	103948	5940	832	980368	832	356279
2	103949	1980				
3	103950	990				
4	103951	990				

Here’s what the order looked like after the upgrade had split line\_id 103948 into 103948 for 5108 units and 129384 for 832 units, and the remainder of line\_id 103948 invoiced for 4276 units, as well as line 2, line\_id 103949 for 1980 units.

**Order Number 1032517**                      **11i**

Order Lines				Invoice Lines			
Line Number	line_id	ordered qty	Shipped/ invoiced qty	Invoice Num	invoice qty	trx_line_id	Uninvoiced
1	103948	5108	5108	980368	832	356279	
1	103948	5108	5108	980730	4276	358104	
1	129384	832	832				
<b>Sum for 1</b>		<b>5940</b>	<b>5940</b>		<b>5108</b>		<b>832</b>
2	103949	1980	1980	980730	1980	358103	
3	103950	990					
4	103951	990					

The net result of this bug is that not all units shipped are invoiced. Line 1, line\_id 129384 is indicated in OM as having a shipped and invoiced quantity of 832, but no such line is represented as an invoice line in AR. Additionally, if your reporting mechanisms rely on data integrity within Order Management, and you are using the column invoiced\_quantity in OE\_ORDER\_LINES\_ALL, you will be accurately stating invoiced quantity. But, if you are using invoice\_quantity in RA\_CUSTOMER\_TRX\_LINES\_ALL, there will be no such corresponding invoice line, and you will understate invoiced quantity. And, more importantly, you will not generate an invoice or recognize revenue for the 832 units on the un-invoiced line\_id 129384!!

The sample reports above are provided using BBB Intelligence views.

c. Auto Price Calculation.

Feature or bug? New functionality introduced in 11i has caused confusion at several of our customers that have recently upgraded to 11i. In 10.7 when you applied a discount (or price adjustment) to a line, it remained intact for the life cycle of the order unless it was manually changed by a user. However, in 11i there is a nifty new setup option that allows a “price recalculation” of the line based on

currently active price and discount definitions when the line passes through any pre-defined workflow event.

Fortunately for BBB Intelligence customers, these unexpected price changes were identified and captured by our order change tracking engine, thus providing a clear audit trail of price changing events.

## 2. ATO Re-configurations Delete Booked Lines

Another nice feature, with a not so nice effect, introduced in 11i is the ability to re-configure an ATO item that has already been booked. The nice part is that you don't have to cancel and re-book the line. Oracle deletes the line with the old ATO item and inserts the newly re-configured item on a new line. The problem is that although the new line is treated as a new booking by Oracle, which is correct, the old line is deleted, not cancelled. That's right, DELETED. Gone forever with no record, no de-booking. Your bookings and backlog reports won't know what hit them, unless, of course, you have BBB Intelligence. If you do, then you'll have a complete audit trail of the deleted lines, and an accurate account of and de-booking of the old ATO item line.

For instance, take a look at this example:

Book Order on 29-Jan-03

Line Num	Item	Ord Qty	Can Qty	Creation Date	Last Update	Line_id
1	ATO Model	1		29-Jan-03	29-Jan-03	2000
1.1	Option A	2		29-Jan-03	29-Jan-03	2001
1.2	Option B	1		29-Jan-03	29-Jan-03	2002
1.3	Option C	1		29-Jan-03	29-Jan-03	2003
1.4	ATO Item R1	1		29-Jan-03	29-Jan-03	2004

Total booked qty for 29-Jan-03 is 6.

Re-configure Order on 05-Feb-03 - Change line 1.2 from Ord Qty 1 to 3.

Line Num	Item	Ord Qty	Can Qty	Creation Date	Last Update	Line_id
1	ATO Model	1		29-Jan-03	29-Jan-03	2000
1.1	Option A	2		29-Jan-03	29-Jan-03	2001
1.2	Option B	3		29-Jan-03	5-Feb-03	2002
1.3	Option C	1		29-Jan-03	29-Jan-03	2003
1.4	ATO Item R2	1		5-Feb-03	5-Feb-03	2005

Now, total booked qty for 29-Jan-03 is 7, and booked qty for 05-Feb-03 is 1.

Issues:

The line item "ATO Item R1" has been deleted. Line\_id 2004 no longer exists in the order lines table. If you had run an end of January bookings report, it would total 6 units, 1 unit of which allocated to the item "ATO Item R1".

But if you were to run the January Bookings report again on 6-Feb-03, "ATO Item R1" would have disappeared, and your bookings figures would be incorrect on two counts: first, line 1.2 would have changed from 1 unit to 3 units, and second, the 1 unit on line 1.4 would not show up because it wasn't booked in January. It would show up on February reports, but it will show the revised ATO Item, not the original.

Thus, you'll have no accounting of the original item booked to line 1.4, and therefore no de-booking of it either.

To accommodate this, you'll have to **manually** revise your January bookings report to reflect the original booking, and then deletion (de-booking) of line 1.4, line\_id 2004, "ATO Item R1". And, you'll have to **manually** adjust your January and February bookings report to reflect the change in qty to line 1.2 from 1 to 3, maintaining 1 unit booked in January and 2 units booked or added in February.

BBB Intelligence customers, however, need not worry about these issues as our order change tracking engine automatically accounts for these transactions.

Line Num	Item	Ord Qty	Creation Date	Last Update Date	Line_id	Trx ID	
1	ATO Model	1	29-Jan-03	29-Jan-03	2000	1	
1.1	Option A	2	29-Jan-03	29-Jan-03	2001	2	
1.2	Option B	1	29-Jan-03	5-Feb-03	2002	3	Original booking of 1.2
1.2	Option B	-1	5-Feb-03	5-Feb-03	2002	6	Backout original qty
1.2	Option B	3	5-Feb-03	5-Feb-03	2002	7	Add in updated qty
1.3	Option C	1	29-Jan-03	29-Jan-03	2003	4	
1.4	ATO Item R1	1	29-Jan-03	5-Feb-03	2004	5	Original booking of 1.4
1.4	ATO Item R1	-1	5-Feb-03	5-Feb-03	2004	8	Backout deleted line
1.4	ATO Item R2	1	5-Feb-03	5-Feb-03	2005	9	Insert/add new line.

With BBB Intelligence, total bookings for 29-Jan-03 equal 6 units and total bookings for 05-Feb-03 equal 2 units, as they should. And it provides a clear transaction history of how these values originated and changed over time and their impact of the relevant accounting periods.

In summary, although upgrading is never a smooth process, having access to an alternative means of reporting can provide insight and lead to rapid analysis and issue resolution. BBB Intelligence not only adds value throughout the normal cycle of business, but during periods of major system and process change and upgrade.

For more information on this topic or BBB Intelligence, please contact us at:

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Metalink References

Pricing Issues

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BUG 3063721: UNIT SELLING PRICE CHANGES WHEN SPLIT LINE

BUG 3061243: PRICE CHANGED DURING AN UPGRADE OF ORDER

(The price change was determined to occur on shipment, not during upgrade. It was a Price Calculation Flag issue. Please refer to the White Paper "Pricing Diagnostics and Troubleshooting" available on MetaLink.)

Related TARs: 13940064.6, 3199812.995, 3183802.995, and 13939740.6

Split Line Shipment/Invoicing Issue

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BUG 3103065: INVOICED QUANTITY/AMOUNT IS INCORRECT ON INVOICE FOR UPGRADED ORDERS

Related TAR: 3283574.995