



WAR STORY



"An outstanding novelist"
MAX HASTINGS



Vishnu Rao



BASED ON A
TRUE STORY

COMPOSE

Inbox (1,317)

Starred

Important

Sent Mail

Drafts (255)


All Mail

▶ Circles 

[erp] Writeback

2do imp

360

▶ a_cluster_restart 

Re: High priority production issue.



Inbox x



[redacted] <[redacted]>

to [redacted]

Do we have some DB issues? Last issue [redacted] I also indicated towards that?

[redacted]

On Wed, Feb 13, 2013 at 5:41 PM, [redacted] <[redacted]> wrote:

[redacted],

It is still coming. Just now three orders has failed.

REGD. NO. H/SD-23

INDIAN HERALD

NATIONAL ENGLISH DAILY

Founder & Editor: THAKUR V. HARI PRASAD

SPECIAL SUPPLEMENT

2 Pages

HYDERABAD, Thursday, June 26, 1975

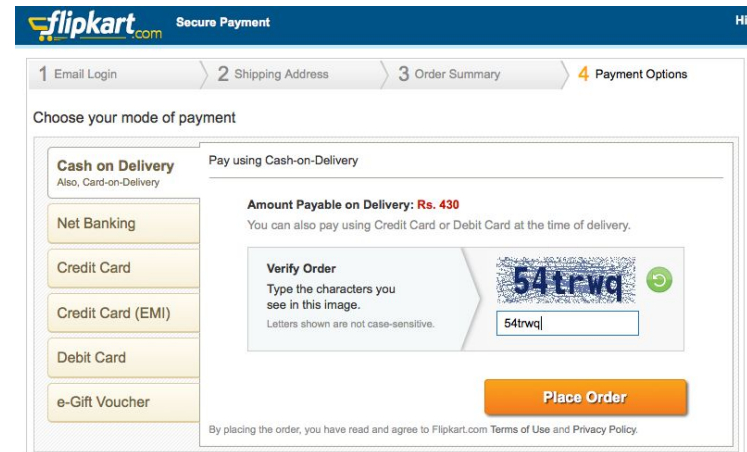
PRICE 15 Paise

EMERGENCY DECLARED

Where do we start ?

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- UI



The screenshot shows the Flipkart payment options page. At the top, there is a blue header with the Flipkart logo, "Secure Payment", and a user greeting "Hi,". Below the header is a progress bar with four steps: "1 Email Login", "2 Shipping Address", "3 Order Summary", and "4 Payment Options". The main heading is "Choose your mode of payment". On the left, there is a list of payment options: "Cash on Delivery" (with a sub-note "Also, Card-on-Delivery"), "Net Banking", "Credit Card", "Credit Card (EMI)", "Debit Card", and "e-Gift Voucher". The "Cash on Delivery" option is selected, and the sub-heading is "Pay using Cash-on-Delivery". To the right, it states "Amount Payable on Delivery: Rs. 430" and "You can also pay using Credit Card or Debit Card at the time of delivery." Below this is a "Verify Order" section with a CAPTCHA image showing "54trwq" and a text input field containing "54trwq". A "Place Order" button is at the bottom right. At the very bottom, there is a "Safe and Secure Shopping Guarantee" icon and text.

 Safe and Secure Shopping Guarantee

Where do we start ?

- UI

flipkart.com Secure Payment HI,

1 Email Login > 2 Shipping Address > 3 Order Summary > 4 Payment Options

Choose your mode of payment

Cash on Delivery
Also, Card-on-Delivery

Pay using Cash-on-Delivery

Amount Payable on Delivery: Rs. 430
You can also pay using Credit Card or Debit Card at the time of delivery.

Verify Order
Type the characters you see in this image.
Letters shown are not case-sensitive.

54trwq

54trwq

Place Order

By placing the order, you have read and agree to Flipkart.com Terms of Use and Privacy Policy.

Safe and Secure Shopping Guarantee

- Server Log

```
INFO [2013-07-23 09:44:06,270] org.eclipse.jetty.server.AbstractConnector: Started InstrumentedBlockingChannelConnector@0.0.0.0:8213
INFO [2013-07-23 09:44:06,274] org.eclipse.jetty.server.AbstractConnector: Started SocketConnector@0.0.0.0:8081
WARN [2013-07-23 09:44:36,342] [REDACTED] CHANGING INCIDENT HUB status to DISABLED
INFO [2013-07-23 09:59:10,688] org.eclipse.jetty.server.Server: Graceful shutdown SocketConnector@0.0.0.0:8081
```

The error message:

[errorMessage] => org.hibernate.exception.

LockAcquisitionException: Could not execute JDBC batch update; nested exception is javax.persistence.PersistenceException: org.hibernate.exception.LockAcquisitionException: **Could not execute JDBC batch update**

[trace] => Exception Thrown of type class org.springframework.orm.jpa.JpaSystemException with trace ::

Questions?

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- Names of Tables involved ?
-

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- Names of Tables involved ?
 - Storage Engine/Type of Tables involved ?
 - InnoDB or MyISAM or Memory or Blackhole
-



What's a Storage Engine in MySQL?

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Ans:

It decides how to store / retrieve data from the disk.

```
Interface StorageEngine{
```

```
    public void insertRow();
```

```
    public Rows selectRows(int to, int from);
```

```
    public void deleteRows(int pos);
```

```
}
```



```
class BlackHole implements StorageEngine{
```

```
    public void insertRow(){  
        // do nothing  
    }
```

```
    public Rows selectRows(int to, int from){  
        return EmptySet;  
    }
```

```
    public void deleteRows(int pos) {  
        // do nothing  
    }
```

```
}
```

Locks:

- Table Lock - happens only in MyISAM
 - Row Locks - happen only in Innodb
 - Index Locks - indexes on table columns
-

Questions?

- Names of Tables involved in TXN ?
 - Types of Tables involved ?
 - InnoDB or MyISAM or Memory or Blackhole
 - What are the queries hitting the tables ?
 - Updates/ delete / inserts / **SELECTS**
-

Most common Lock Error:

1205 (ER_LOCK_WAIT_TIMEOUT)
Lock wait timeout expired.

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1205 (ER_LOCK_WAIT_TIMEOUT)

Lock wait timeout expired.

The statement that waited too long was rolled back (not the entire transaction).

i.e. Txn - A waited for Txn - B & it timed out.

Most common Lock Error:

1213 (ER_LOCK_DEADLOCK)

Encountered a deadlock.

A waits for B which waits for A.



The tables, queries in TXN

Table:

PAYMENT (InnoDB)

Query (multiple update in txn):

UPDATE PAYMENT

set **payment_id = 'xyz'**

where

last_modified = <> and

payment_id = 'xyz'

and status = <> and user = <>

Guess work...

" Interesting fact:

I was looking for differences between database1 and database2 variables.

One variable which was distinctly missing from database1 while there in database2 is `innodb_merge_sort_block_size`.

This is used by `fast_index_creation` (which is set to ON for both servers) to create indexes faster.

The absence of it on database1 might be resulting in it taking more time in updating/creating indexes. "

Guess work...

Its some MySQL Bug



The screenshot shows a web browser window with the address bar containing 'bugs.mysql.com/bug.php?'. Below the address bar is a navigation menu with 'Most Visited' and 'MT When does'. The main content area features the MySQL logo and a navigation bar with 'Developer Zone' and 'Bugs Home'. The bug report details are as follows:

Developer Zone	Bugs Home
Bug #39653	
Submitted:	
Reporter:	
Status:	
Category:	
Version:	
Assigned to:	
Tags:	
Triage:	

At the bottom of the bug report, there are three buttons: 'View', 'Add Comment', and 'F'.

[25 Sep 2008 18:26] Zardosh

Description:

Lets do something else.

Lets do something else.

- Look at MySQL server Logs
-

Lets do something else.

- Look at MySQL server Logs.
- Since the table is InnoDB. lets see status of the engine.

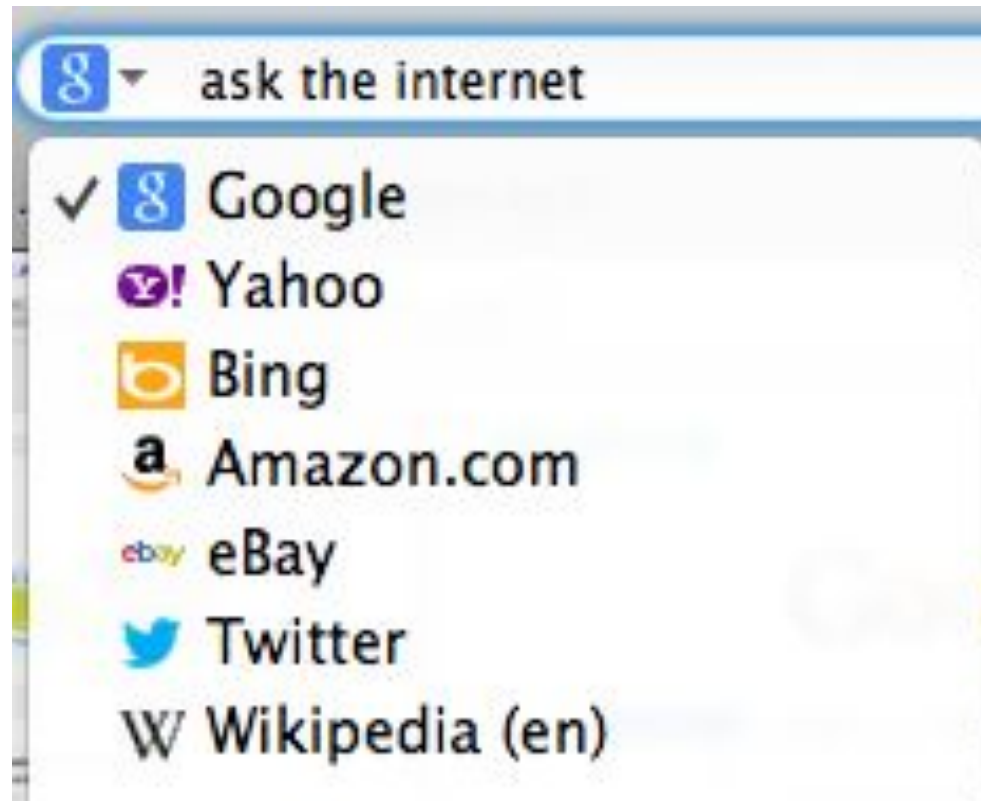
"show engine innodb status"

"show full processlist"

"show engine innodb status"

- current transactions
 - what locks they hold
 - how long they are active
 - status of mysql server threads
 - latest detected deadlocks
-

Search more...



Now the real questions ?

How frequently does the exception occur ?
[10/60 times]

what time did the last error occur ?
[08:28 pm Thursday, Feb 13, 2013 (**IST**)]



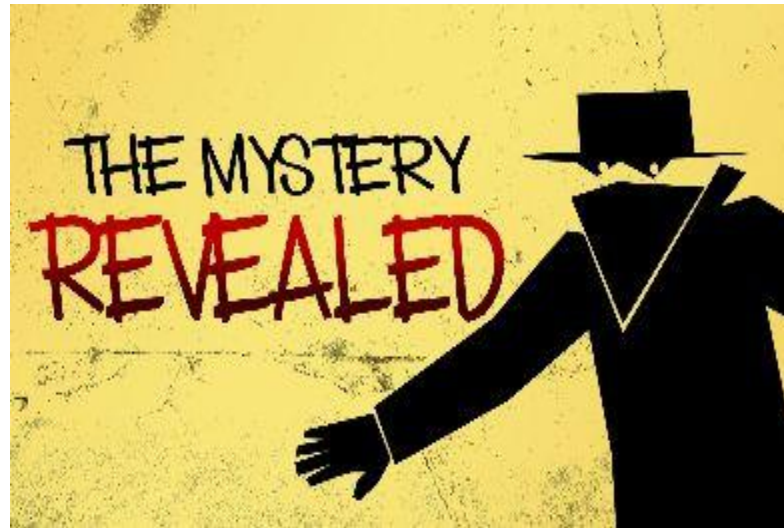
The most important



"The Exception was thrown immediately"

i.e.

when one tried to acquire lock through update
the exception was immediate



It was Deadlock

The latest detected deadlock in 'show engine innodb status' clearly listed down the same tables.

&

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time of deadlock = time of logged exception

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&

time of deadlock = time of logged exception

&

We all know - **deadlock resolution is immediate** hence the exception immediately thrown.

Then Y we no see it in logs?

Then Y we no see it in logs?

some where in hibernate-spring code.

```
try{
    //do some db operation
}catch ( Exception actual_cause ){
    String new_err_msg = "lock acquisition exception";
    throw new Exception(new_err_msg);
}
```

i.e. the actual cause was not propagated.

Lessons learnt:

- 1) do not do guess work
(prove your hypothesis - reproduce error)
 - 2) The cause/culprit mostly sits in front of you,
but you choose to ignore it.
 - 3) Never ignore Deadlocks - (<http://pt-deadlock>)
 - 4) MySQL is your friend - help her to help you.
-

Thank you.

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