

# Lost hour changing from daylight savings to standard time

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I was curious about what happens with time stamps (not the T-SQL datatype, but rather saving absolute time of insert/modification) during the changeover from daylight savings to standard time. Since we "fall back," the one o'clock hour gets repeated, once under daylight savings and a second time under standard time.

As an experiment, I set up a table called TEMP\_TimeChange

```
CREATE TABLE [dbo].[TEMP_TimeChange] (  
    [Id] [int] IDENTITY (1, 1) NOT NULL ,  
    [ServerTime] [datetime] NULL ,  
    [UTCTimeStamp] [datetime] NULL  
) ON [PRIMARY]  
GO
```

and job to run every five minutes starting at about 1:00 am (daylight savings time) on Sunday morning. The job simply inserted a new record into TEMP\_TimeChange each time it ran.

```
insert into TEMP_TimeChange (ServerTime) values (getdate())
```

I expected to see the ServerTime cycle through the one o'clock hour twice like this:

ServerTime UTCTimeStamp

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```
Oct 31 2004 1:45AM Oct 31 2004 8:45AM  
Oct 31 2004 1:50AM Oct 31 2004 8:50AM  
Oct 31 2004 1:55AM Oct 31 2004 8:55AM  
Oct 31 2004 1:00AM Oct 31 2004 9:00AM  
Oct 31 2004 1:05AM Oct 31 2004 9:05AM  
Oct 31 2004 1:10AM Oct 31 2004 9:10AM  
...  
Oct 31 2004 1:45AM Oct 31 2004 9:45AM  
Oct 31 2004 1:50AM Oct 31 2004 9:50AM
```

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Oct 31 2004 1:55AM Oct 31 2004 9:55AM  
Oct 31 2004 2:00AM Oct 31 2004 10:00AM  
Oct 31 2004 2:05AM Oct 31 2004 10:05AM  
Oct 31 2004 2:10AM Oct 31 2004 10:10AM

Instead, the job did not run the second time through the one o'clock hour (as indicated by a one hour gap in the UTC time stamp). Here is the actual result:

ServerTime UTCTimeStamp

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Oct 31 2004 1:45AM Oct 31 2004 8:45AM  
Oct 31 2004 1:50AM Oct 31 2004 8:50AM  
Oct 31 2004 1:55AM Oct 31 2004 8:55AM  
Oct 31 2004 2:00AM Oct 31 2004 10:00AM  
Oct 31 2004 2:05AM Oct 31 2004 10:05AM  
Oct 31 2004 2:10AM Oct 31 2004 10:10AM

The interesting/concerning thing is that the job did not run for an hour. The Windows task scheduler appears to have worked the same way as evidenced by the numerous pages our ops people received starting a few minutes after 1:00 am standard time. The concern is that critical jobs don't run. For example, We have a task that backs up the transaction log every 10 mins. It did not run at all during that hour. If we had experienced a severe database problem, at 1:55 am standard time, we would have lost all new data for the prior 65 minutes, dating back to the last transatcion log backup that occurred at 1:50 am daylight savings time.

To couch this as a question, is there MS documentation that discusses this issue and/or work arounds to ensure that critical jobs run as expected?

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