Why is 1899-12-30 the zero date in Access / SQL Server instead of 12/31?

Asked 14 years, 2 months ago   Modified 9 years, 8 months ago

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More out of curiosity than any real problem; the question came up today and I know I've seen 1899-12-30 used as a "default" date and a zero date in Access and older SQL Server apps. Just wondered why - where did that come from, and why isn't 1899-12-31 used then?

sql-server   ms-access

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asked Oct 18, 2010 at 21:37

Peter Tirrell
3,003 ● 4 ● 31 ● 53

1   Can you be more specific - in which version of SQL Server? I'd like to know – Gennady Vanin Геннадий Ванин Oct 19, 2010 at 5:23

Why is this Wikipedia-level question getting so many votes for both the question and the answer? I don't see how it belongs on SO at all. – David-W-Fenton Oct 19, 2010 at 23:03

He asked, I answered, I had no idea it would generate this response. – wkl Oct 20, 2010 at 3:29

<shrug> I figured it was a programming-ish related question, and didn't find anything good on the Internet in my searches. Which wikipedia page discusses this? Maybe it's been more of a convention thing - there's been Access and SQL7/SQL2000 databases I've worked on where the original developers defaulted datetime fields to that date.
– Peter Tirrell Oct 20, 2010 at 14:20

1 For Lotus compatibility, the same base is used in Open/LibreOffice and even Delphi's `TDateTime` type.
– Wolf Mar 14, 2017 at 12:23 ✏️

3 Answers

Sorted by: Highest score (default) ⇕

67

Maintaining compatibility with Lotus 1-2-3 back in the day, which had a bug in that it thought the year 1900 was a leap year (or pretended?).

The explanation is too long to quote, but for the sake of curiosity, here are some snippets.

- http://blogs.msdn.com/b/ericlippert/archive/2003/09/16/53013.aspx

- http://www.joelonsoftware.com/items/2006/06/16.html

> 1900 wasn't a leap year.
>
> "It's a bug in Excel!" I exclaimed.

> "Well, not really," said Ed. "We had to do it that way because we need to be able to import Lotus 123 worksheets."
>
> "So, it's a bug in Lotus 123?"
>
> "Yeah, but probably an intentional one. Lotus had to fit in 640K. That's not a lot of memory. If you ignore 1900, you can figure out if a given year is a leap year just by looking to see if the rightmost two bits are zero. That's really fast and easy. The Lotus guys probably figured it didn't matter to be wrong for those two months way in the past. It looks like the Basic guys wanted to be anal about those two months, so they moved the epoch one day back."

- http://www.cpearson.com/excel/datetime.htm

> Actually, this number is one greater than the actual number of days. This is because Excel behaves as if the date 1900-Feb-29 existed. It did not. The year 1900 was not a leap year (the year 2000 is a leap year). In Excel, the day after 1900-Feb-28 is 1900-Feb-29. In reality, the day after 1900-Feb-28 was 1900-Mar-1 . This is not a "bug". Indeed, it is by design. Excel works this way because it was truly a bug in Lotus 123. When Excel was introduced, 123 has nearly the entire market for spreadsheet software. Microsoft decided to continue Lotus' bug, in order to fully

> compatible. Users who switched from 123 to Excel would not have to make any changes to their data. As long as all your dates later than 1900-Mar-1, this should be of no concern.

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edited Jun 20, 2020 at 9:12

Community Bot
1 ● 1

answered Oct 18, 2010 at 21:42

wkl
79.8k ● 16 ● 169 ● 178

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1 @Andy read [My First BillG Review – Joel on Software](#), it was more an optimization, at least seems so. – Wolf Mar 14, 2017 at 12:24

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1 Eric Lippert's [blog entry](#) has moved. – Uber Kluger Sep 3, 2020 at 1:47 ✎

And this is the bit of it that answers the question. `Actually, it turns out that this is to work around a bug in Lotus 1-2-3! The details are lost in the mists of time; what I can tell you is that Lotus 1-2-3 used this date format, and wished to have "day one" be 1 January 1900. However, they forgot that 1900 was not a leap year, and therefore their "day count" was off by one for every day after 28 February 1900. Microsoft chose to use the Lotus date format for Excel, for compatibility, but "fixed" this bug by moving "day one" back one day. Therefore day zero is 30 December 1899.` – Uber Kluger Sep 3, 2020 at 1:55

SQL Server appears to return this date as a default if it cannot contact it's defined time source.

I've had this happen during cluster failover incidents when my biometric time attendance system is running / being used.

To defeat local clock manipulation, someone clocks in, I ask the SQL cluster instance what time it is.

It can't get a valid active time source and returns this date.

Workaround for me is straight forward by checking for this date in my `GetServerTime` Sub and using local PC time if this 'default' is returned.

I've seen this with SQL 2000/2005/2008, all via ADO and VB6.

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edited Apr 27, 2015 at 21:54

answered Apr 27, 2015 at 21:33

Dougie Lindsay
1 ● 3

To best of my knowledge, date type did not exist in "older SQL Server". It was introduced in SQL Server 2008 having zero date value corresponding to 0001/01/01.

```
select cast(0x000000 as date),cast(CONVERT(date, '0001
varbinary(max))
----------     --------
--0001-01-01   0x000000
```

The statements of questions do not make sense. Were date type existed in '' older SQL Server', it would have implied the broken backward compatibility of date type in SQL Server 2008.

There is no point in answering (and upvote posts) in the question with undefined or incorrectly defined terms.

Share Follow   edited Oct 20, 2010 at 3:13

answered Oct 20, 2010 at 2:51

Gennady Vanin Геннадий Ванин

10.4k ● 12 ● 80 ● 109

I meant the datetime type in SQL Server; I've seen that date used to set defaults in the past and wondered why. That's all.
– Peter Tirrell Oct 20, 2010 at 14:30