

## Design Tip #119 Updating the Date Dimension

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Most readers are familiar with the basic date dimension. At the grain of a calendar day, we include various labels for calendar and fiscal years, quarters, months, and days. We include both short and long labels for various reporting requirements. Even though the labels in the basic date dimension could be constructed at the time we design a report, we always build the date dimension in advance so that report labels are consistent and easy to use.

The date dimension gets new rows as time marches forward, but most attributes are not subject to updates once a row has been added. December 1, 2009 will, of course, always roll up to December, calendar Q4, and 2009.

However, there are some attributes you may add to the basic date dimension that will change over time. These include indicators such as `IsCurrentDay`, `IsCurrentMonth`, `IsPriorDay`, `IsPriorMonth`, and so on. `IsCurrentDay` obviously must be updated each day. The attribute is particularly useful for generating reports that always run for today – or, even better, a report which defaults to today but which can be run for any day in the past. A nuance to consider is the day that `IsCurrentDay` refers to. Most data warehouses load data daily, so `IsCurrentDay` should refer to yesterday (or more accurately, the most recent day of data in the system).

You might also want to add attributes to your date dimension that are unique to your business processes or corporate calendar. These are particularly valuable because they cannot be derived using SQL calendar functions. Examples include `IsFiscalMonthEnd`, `IsCloseWeek`, `IsManagementReviewDay`, and `IsHolidaySeason`.

Some date dimension designs include lag columns. The `LagDay` column would take the value 0 for today, -1 for yesterday, +1 for tomorrow, and so on. This attribute could easily be a computed column rather than physically stored. It might be useful to set up similar structures for month, quarter, and year. Many reporting tools, including all OLAP tools, include functionality to do prior period kinds of calculations, so the lag columns are often not required.

Developers are sometimes skeptical of the date dimension's value since many of the attributes can be derived by the report developer. There are many excellent reasons to have a date dimension, but by including valuable attributes that cannot be computed, you may avoid the argument altogether.