

# Dimension Design Requirement for Date Advanced Filter

## Background

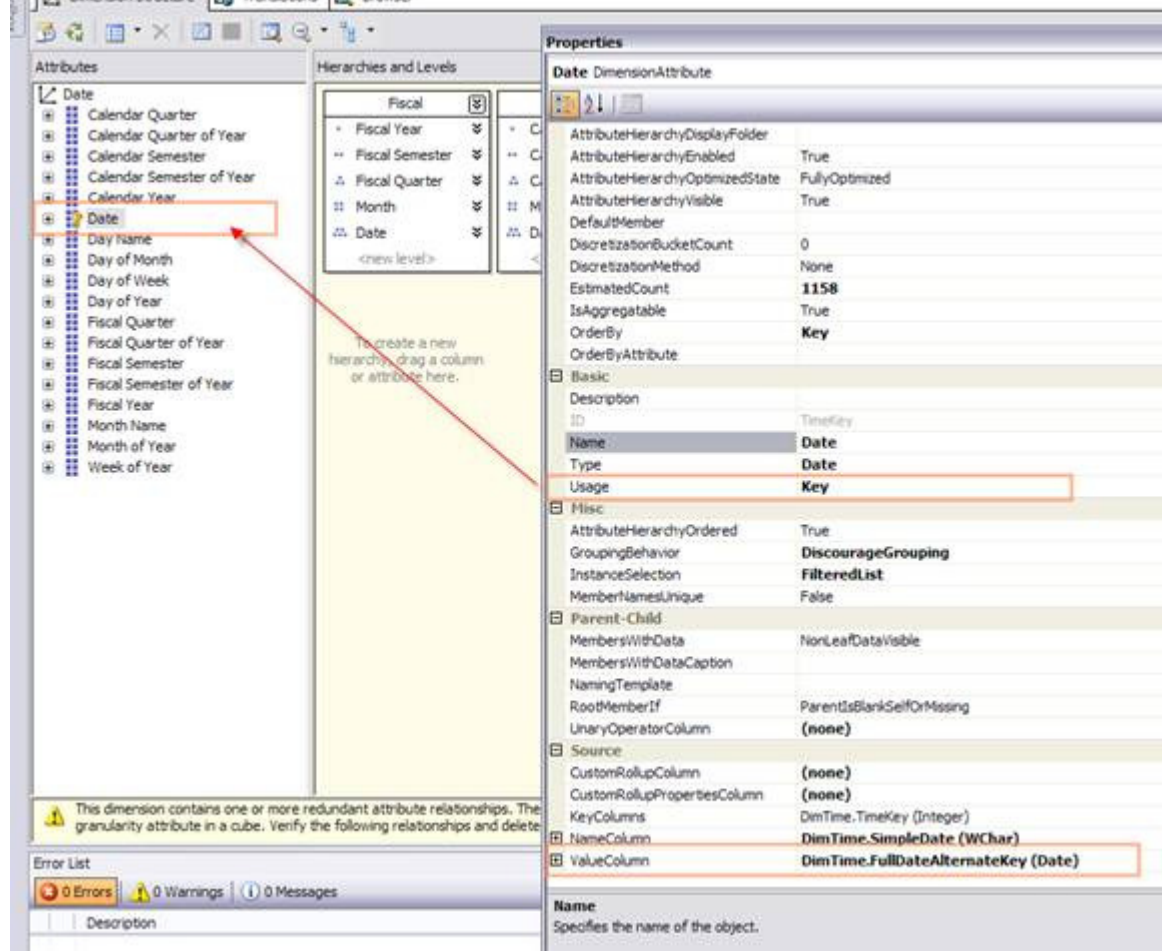
This document will describe the steps needed to setup or modify your existing Date dimension to support the use of Predefined Date Advanced Filter. The best example of how to properly set up your Date dimension is to take a look at the Adventure Works sample cube from Microsoft, as this document will use it as example.

## Requirements

In order to use the *Predefined Date* Advanced Filter, your date dimension design must follow the rules below:

1. Must set a "Date" attribute as the Key (Usage), see diagram 1 below.
2. And this attribute's ValueColumn must refer to a Date data column. See diagram 1 below.
3. And the type of the data column must be DateTime type. See diagram 2 below.

Diagram 1

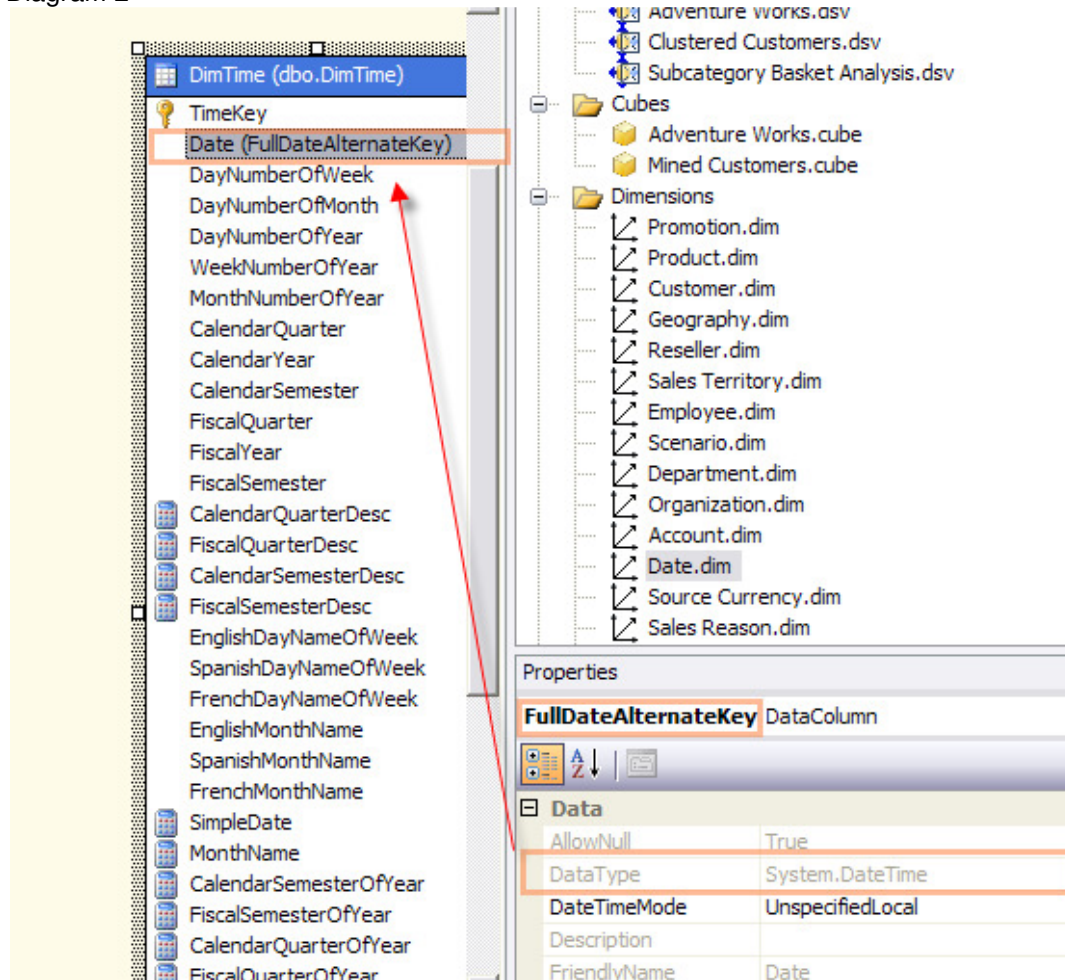


The screenshot shows the 'Dimension Structure' window in SQL Server Enterprise Manager. The 'Attributes' pane on the left lists various date-related attributes, with 'Date' highlighted and a red box around it. A red arrow points from the 'Date' attribute in the 'Attributes' pane to the 'Date' attribute in the 'Properties' pane on the right. The 'Properties' pane shows the following configuration for the 'Date' attribute:

Property	Value
AttributeHierarchyDisplayFolder	
AttributeHierarchyEnabled	True
AttributeHierarchyOptimizedState	FullyOptimized
AttributeHierarchyVisible	True
DefaultMember	
DiscretizationBucketCount	0
DiscretizationMethod	None
EstimatedCount	1158
IsAggregatable	True
OrderBy	Key
OrderByAttribute	
<b>Basic</b>	
Description	
ID	TimeKey
Name	Date
Type	Date
Usage	Key
<b>Misc</b>	
AttributeHierarchyOrdered	True
GroupingBehavior	DiscourageGrouping
InstanceSelection	FilteredList
MemberNamesUnique	False
<b>Parent-Child</b>	
MembersWithData	NonLeafDataVisible
MembersWithDataCaption	
NamingTemplate	
RootMemberIf	ParentIsBlankSelfOrMissing
UnaryOperatorColumn	(none)
<b>Source</b>	
CustomRollupColumn	(none)
CustomRollupPropertiesColumn	(none)
KeyColumns	DimTime.TimeKey (Integer)
NameColumn	DimTime.SimpleDate (WChar)
ValueColumn	DimTime.FullDateAlternateKey (Date)
<b>Name</b>	
Specifies the name of the object.	

At the bottom of the screenshot, there is a warning message: "This dimension contains one or more redundant attribute relationships. The granularity attribute in a cube. Verify the following relationships and delete..."

Diagram 2



The screenshot shows the SQL Server Enterprise Manager interface. On the left, the 'Date (FullDateAlternateKey)' dimension is expanded, showing a hierarchy of time-related attributes. A red arrow points from the 'Date (FullDateAlternateKey)' node to the 'Properties' window on the right. The 'Properties' window shows the following details:

Properties	
<b>FullDateAlternateKey</b>	DataColumn
<input type="checkbox"/> AllowNull <input type="checkbox"/> AllowEmptyResultSet	
<b>Data</b>	
AllowNull	True
DataType	System.DateTime
DateTimeMode	UnspecifiedLocal
Description	
FriendlyName	Date

## Query Examples

Here are query used when Analyzer is filter "This Year" and "This Month" using the Date Advanced Filter. As shown, the Analyzer uses a member's MEMBERVALUE to determine the date:

### 1. This Year

```

SELECT
  ...
FROM (
  SELECT FILTER
  (
    [Date].[Date].LEVELS(1).MEMBERS,
    (
      [Date].[Date].CURRENTMEMBER.MEMBERVALUE >= CDATE("1/1/2007") AND
      [Date].[Date].CURRENTMEMBER.MEMBERVALUE <= CDATE("12/31/2007")
    )
  )
) ON 0 FROM [Adventure Works]
  
```

The point is – Analyzer will first look for this dimension's key attribute and then use its MemberValue to do comparison.

```
[Date].[Date].CURRENTMEMBER.MEMBERVALUE >= CDATE("1/1/2007")
```

## 2. This Month

```
SELECT  
... ..  
FROM  
(  
  SELECT FILTER(  
    [Date].[Date].LEVELS(1).MEMBERS,  
    (  
      [Date].[Date].CURRENTMEMBER.MEMBERVALUE >= CDATE("6/1/2007") AND  
      [Date].[Date].CURRENTMEMBER.MEMBERVALUE <= CDATE("6/30/2007")  
    )  
  ) ON 0 FROM [Adventure Works]  
)
```