

QlikView Design Blog : Redefining the Week Numbers

Publicado por [Henric Cronström](#) 27-ene-2014

Week numbers are often used in calendars, although not as commonly in some countries as in others. In northern Europe, it is very common to refer to a week by its number, but in many other countries it is not used at all. Just as with the [week start](#), week numbers are defined differently depending on country, so you may need to add code in QlikView to generate your own week numbers.

So, how do you count the weeks? Is Jan 1st always part of week one? *Not necessarily.*

If week 53 starts as late as Dec 28th, does Jan 1st also belong to week 53? *Sometimes, yes.*

There is a definition made by the International Organization for Standardization ([ISO 8601](#)) that QlikView uses to calculate week numbers. It states that

1. The week starts on a Monday.
2. A week is always unbroken, i.e. some years week 1 starts already in December, and in other years week 52 or 53 continues into January.
3. Week 1 always contains Jan 4th. Or, differently put: Week 1 always has at least 4 days in January. A third way to say it is: The first Thursday of the year always lies in week 1.

These three bullets define the three parameters you need to define general week numbers:

```
Set vCal_FD = 0; // First Day of the week {0=Mon, 1=Tue, ... , 6=Sun}
```

```
Set vCal_BW = 0; // Broken Weeks allowed {0=No, 1=Yes}
```

```
Set vCal_RD = 4; // Reference day = This day in Jan defines week one {1..7}
```

How the first parameter influences the week number can be seen in the following table. It shows how the week number would change for the days around New Year 2013 if different week starts are used. The other parameters are kept constant.

Week Numbers for an "x/0/4" calendar																	
	Year	2012							2013								
	Month	Dec							Jan								
	Day	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9
First Day	WeekDay	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed
Mon		52	52	52	52	52	52	1	1	1	1	1	1	1	2	2	2
Tue		52	52	52	52	52	52	52	1	1	1	1	1	1	1	2	2
Wed		51	52	52	52	52	52	52	52	1	1	1	1	1	1	1	2
Thu		52	52	53	53	53	53	53	53	53	1	1	1	1	1	1	1
Fri		52	52	52	53	53	53	53	53	53	53	1	1	1	1	1	1
Sat		52	52	52	52	1	1	1	1	1	1	1	1	2	2	2	2
Sun		52	52	52	52	52	1	1	1	1	1	1	1	2	2	2	2

The second parameter concerns whether or not broken weeks should be used. If they are, a new week number will always be used on Jan 1st, and as a consequence the first and last weeks of the year can have less than 7 days.

Week Numbers for a "6/x/4" calendar																	
	Year	2013							2014								
	Month	Dec							Jan								
	Day	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9
Broken Weeks	WeekDay	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon	Tue	Wed	Thu
Broken weeks possible		52	52	52	52	53	53	53	1	1	1	1	2	2	2	2	2
No broken weeks		52	52	52	52	1	1	1	1	1	1	1	2	2	2	2	2

And finally, the third parameter, the reference day. It defines which day that always belongs to week 1. In the table below, the reference day is 4; hence Jan 4th always belongs to week 1, which can be clearly seen. This number also defines the minimal number of days of week 1 that fall in the new year.

Week Numbers for a "6/0/4" calendar																	
	year	Old Year							New Year								
	Month	Dec							Jan								
NewYear	Day	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9
2011		51	52	52	52	52	52	52	52	1	1	1	1	1	1	1	2
2012		52	52	52	52	52	52	52	1	1	1	1	1	1	1	2	2
2013		52	52	52	52	52	1	1	1	1	1	1	1	2	2	2	2
2014		52	52	52	52	1	1	1	1	1	1	1	2	2	2	2	2
2015		52	52	52	53	53	53	53	53	53	1	1	1	1	1	1	1
2016		51	51	52	52	52	52	52	52	52	1	1	1	1	1	1	1
2017		52	52	52	52	52	52	52	1	1	1	1	1	1	1	2	2

The ISO standard is thus a 0/0/4 week numbering. In countries where Sunday is used as first day of the week, I have seen several different variants: 6/1/1, 6/0/3 and 6/0/4.

If you copy the above parameters to your QlikView script and the following lines to your Master Calendar definition, you can redefine the week numbers any way you want:

Load * ,

Div(Date - WeekStart(WeekYearRefDate, 0, \$(vCa_FD)) + 7, 7) as WeekNumber,

Year(WeekYearRefDate) as WeekYear;

Load * ,

Date(YearStart(If(\$(vCa_BW), Date, WeekRefDate)) + \$(vCa_RD) - 1) as WeekYearRefDate ;

Load * ,

Date(WeekStart(Date, 1, \$(vCa_FD)) - \$(vCa_RD)) as WeekRefDate ;

The fields *WeekYearRefDate* (Jan 4th in the ISO definition) and *WeekRefDate* (the Thursday of the week in the ISO definition) are really not necessary, but the expressions become somewhat simpler if these are used.

Until we get a general week numbering functionality built into the QlikView standard functions (and, yes, we are looking into this) you will have to redefine the week numbers using the above script. Good luck!

HIC

689 Vistas Etiquetas: [week](#), [week_number](#), [weeknumber](#), [week\(\)](#), [iso_8601](#), [week_year](#), [us_week_number](#), [weekyear](#)



29-ene-2014 22:27 [Kalyan Sundaram](#)

Hi HIC,

Thanks for providing such a idea, really very nice post.



29-ene-2014 0:58 [putturudivya](#)

Thank u ! Very useful Post.

Regards,

Divya



29-ene-2014 0:19 [Sajid Mahmood](#)

Great logic for finding the week nos.

Regards

SM



28-ene-2014 23:57 [Henric Cronström](#) [Michael Solomonen](#) respuesta a [on page 7](#)

[Michael Solomon](#) : I wouldn't pass a modified date, because it would not be maintainable code (although I think you're right that it would work). I am right now investigating different ways of shifting the week-year and I am sketching on a third blog post in this series; one about financial years. It won't be for next week, but sometime later.

However I can already now say that if you want to shift the year a specific number of days, you can set the third parameter, the *vCal_RD* to *any* integer value: E.g. if you set it to -1, then Dec 30 will always be in week one.

HIC



28-ene-2014 20:16 [Debbie Pyykkonen](#) [Colin Alberten](#) respuesta a [on page 6](#)

I agree with the weeks in months but QOQ and YOY the discrepancies are minimal.

many companies want to compare their data YOY or QOQ on a weekly basis. the only way to do this is with #'s not dates. I agree, months is taking it too far, move to Days at the month level but Quarters and Years work very well especially for sales analytics for those businesses that run on a quarterly/annual quota.. It really helps to drive the sales managers to push to meet their quota when they look at this analysis. we used it religiously to fine tune forecasting because all of our sales team was held accountable for forecasting accuracy. when they see how their sales trend on a weekly basis QOQ, they start to forecast better.

Redefining the Week Numbers

new comment by Colin Albert - [View all comments on this blog post](#)

Having weeks months and calendar years on the same chart (or even sheet) can be a recipe for confusion. I would keep charts that use weeks and WeekYear separate from charts using months and calendar years.

Reply to this email to respond to Colin Albert's comment.

Following Redefining the Week Numbers in these streams: Inbox

© 1993-2014 QlikTech International AB Copyright & Trademarks | [Privacy](#) | [Terms of Use](#) | [Software EULA](#)

>



28-ene-2014 19:16 [Colin Albert](#) [Debbie Pyykkonenen respuesta a](#) [on page 6](#)

Having weeks months and calendar years on the same chart (or even sheet) can be a recipe for confusion. I would keep charts that use weeks and WeekYear separate from charts using months and calendar years.



28-ene-2014 19:01 [Debbie Pyykkonen](#) [Michael Solomonen respuesta a](#) [on page 7](#)

Some of the functions have to be tweaked a bit when working with week # because of the overlap in months, quarters and years but I find that using these dimensions is so important in period over period comparative analysis.. It has been awhile since I worked on these apps.

Debbie Pyykkonen

Archipelago IS, LLC | Director, Business Analytics| www.archipelagois.com

303 S. Broadway, Suite 200-169 | Denver, Colorado 80209

Twitter | LinkedIn | Facebook |

(: 303-304-6425 | *: dpyykkonen@archipelagois.com

Check out our Workshops and Events!

Download QlikView for FREE!



28-ene-2014 17:26 [Michael Solomon](#)

Great post. Thanks.

I take it this would also work if you wanted the Fiscal Week No where the fiscal year does not start in January, and that you could either pass a modified date instead of the Date field Eg AddMonths(Date, 6), or you could use the 3rd parameter in the YearStart function to set the 1st month of the year.



28-ene-2014 14:25 [Colin Albert](#)

Great post. Week numbers always cause confusion when customers ask for reports by week no. Often they have not considered issues such as week start day short week 1 etc. Your post concisely clarifies these points.

When I have calendars that use weeks, it is worth clearly identifying WeekYears with a W prefix so users are clear they are selecting a WeekYears not calendar year.

Dual('W' & Year(WeekYearRefDate), Year(WeekYearRefDate)) as WeekYear



28-ene-2014 12:49 [Henric Cronström](#) *Debbie Pyykkonenen respuesta a on page 8*

You should perhaps define your weeks as arbitrary 7-day periods counted from the beginning of the quarter:

$\text{Div}(\text{Date}-\text{QuarterStart}(\text{Date}),7) + 1$ as QuarterWeek

HIC



28-ene-2014 10:43 [Debbie Pyykkonen](#) [Henric Cronströmen respuesta a](#) *on page 8*

I use WeekNumbers for YOY comparison. You cannot use dates for that because the week end and week starts do not align.

I use a line chart with 2 dimensions, the week number in year (1-52) and year so you can see accumulated sales by week. You can also do this if you set up a WeekNuminQuarter field, Qtr over Qtr comparison.

For the values that fall into the next year or quarter I assign them to week 52 in year and in quarter I assign them to week 13. These values have always been so minimal but having a Week 53 with 1 day or a week 13 with 1 day in a chart doesnt look that great.



28-ene-2014 9:58 [Henric Cronström](#) [Stanislav Chernoven respuesta a](#) *on page 9*

@ [Stanislav Chernov](#) : It is just a matter of dragging and dropping the header of a dimension in a pivot table to that position.


@ [Antoine Frangieh](#) : "Bizarre"? Well it depends where you're coming from. To me, it is bizarre that a week can have one number in the beginning and an other in the end. If you want unbroken weeks, you will inevitable get some weeks where parts belong to the "wrong" year.

@ [paul yeo](#) : All the calendars - both paper and electronic - have week numbers in them. So when you discuss when to have a meeting, you look in your calendar and say "what about week 5?" instead of saying "what about the week starting Monday the 31st of January?" *It's shorter and to the point.* Apart from that, there is no advantage...

HIC

28-ene-2014 9:49  [paul yeo](#)

Why northern europe people so special like to use week number , any special advantage ? it is more precision to said let us meet at 4 Jan or Week one monday ? hope some europe people here can enlighten me.

28-ene-2014 6:55  [Car Bal](#)

Good explanation. Clear & deep, as always.

Thank you again.

CB.

28-ene-2014 6:18  [eruditio](#)

Great! I've been willing to ask about that

Getting 31/12/12 in week 1 was kind of bizarre

28-ene-2014 5:37  [Manish Kachhia](#)

Very useful post...



28-ene-2014 0:10 [Stanislav Chernov](#)

How you make this table in QlikView, HIC ? <http://community.qlikview.com/servlet/JiveServlet/showImage/38-3545-52096/Table+604.png>

With 3 lines in head? Year, Month, Day

using Load Inline ?

share qvw-file please?



27-ene-2014 22:38 [Stanislav Chernov](#)

Thanks, [HIC!](#) Very useful info!