

# Automating Scheduling using Dynamic Date Filters in Web Intelligence for SAP BW-based Universes



## Applies to:

Business Objects XI 3.1, SP 3 and FP 3.1, SAP BI EHP 1 for SAP NetWeaver 7.0, Release 701, Level 005. For more information, visit the [Business Objects homepage](#).

## Summary

This article explains how to create objects that can be used to automate the scheduling of dynamic date filters in Web Intelligence for SAP BW-based universes.

**Author:** Khaled McGonnell

**Company:** KM Consulting Ltd.

**Created on:** 7 February 2011

## Author Bio

Khaled McGonnell is the Director of KM Consulting Ltd., a consultancy specializing in Business Intelligence with a focus on SAP-enabled reporting, analytics and data warehousing. He has experience working at Accenture and Deloitte and has been working with SAP BI for over five years.

## Table of Contents

Introduction .....	3
Current Options Using Standard Functionality .....	3
Using Customer Exits and Calculated Key Figures for Automation .....	3
Customer Exit Variable .....	4
Formula Variables.....	4
Calculated Key Figure Definition .....	5
Updating and Scheduling the Web Intelligence Report.....	5
Performance Considerations .....	5
Related Content.....	6
Disclaimer and Liability Notice.....	7

## Introduction

This article considers a scenario where reporting is handled through Web Intelligence reports based on universes connected to Business Explorer (BEx) queries as a way of accessing data in a SAP BI 7.0 data warehouse. There is a requirement to schedule reports on a daily basis and to filter the result to those transactions created during the previous day.

## Current Options Using Standard Functionality

Until BusinessObjects 4.0 is released, it is not possible to use BEx variables (which will be made available by the BICS connector) or the last load date variable. This makes it impossible to automate the scheduling of Web Intelligence queries filtered by dynamic dates or time-slices (for example, yesterday, last week) using standard functionality.

Thus, if there is a requirement to schedule a report to run daily and to filter the results to show only yesterday's data, there are the following options:

- Create another universe with a characteristic restriction which filters data to yesterday's date (ODAT - 1).

However

- Increases maintenance costs as necessitates creation of more universes (one per time-slice)
- Misleads users since data filtered even if filter made optional and left blank.
- Manually change the date in the Web Intelligence query filter parameters.

However

- Requires regular manual intervention with increased risk of human error.

Please note that this variable cannot be created in the Universe layer since there is no function available for BEx query based universes to call on to return the system date.

## Using Customer Exits and Calculated Key Figures for Automation

The following demonstrates how to create an object which can be used to filter the result set to yesterday's data. Here is an overview of development:

- Customer Exit Variable for yesterday (Z\_YSDAT)
- Formula Variables to return the Yesterday's date (Z\_YSDAT) and Transaction Created date (ZVAR\_TCREATED)
- Calculated Key Figure (ZCKF\_YEST\_TCREATED)
- Add CKF to BEx query key figure structure
- Refresh universe
- Add new measure to query filters (ZCKF\_YEST\_TCREATED)
- Schedule report

## Customer Exit Variable

The first step is to create a customer exit variable that will return yesterday's date. There's plenty of excellent documentation on this so I will just share a link to a [useful article](#) and my code:

```

WHEN 'Z_YSDAT' .
  CLEAR l_s_range.
  IF i_step = 1.
    l_s_range-low = sy-datum - 1.
    l_s_range-sign = 'I'.
    l_s_range-opt = 'EQ'.
    APPEND l_s_range TO e_t_range.

  ENDIF.
ENDCASE.

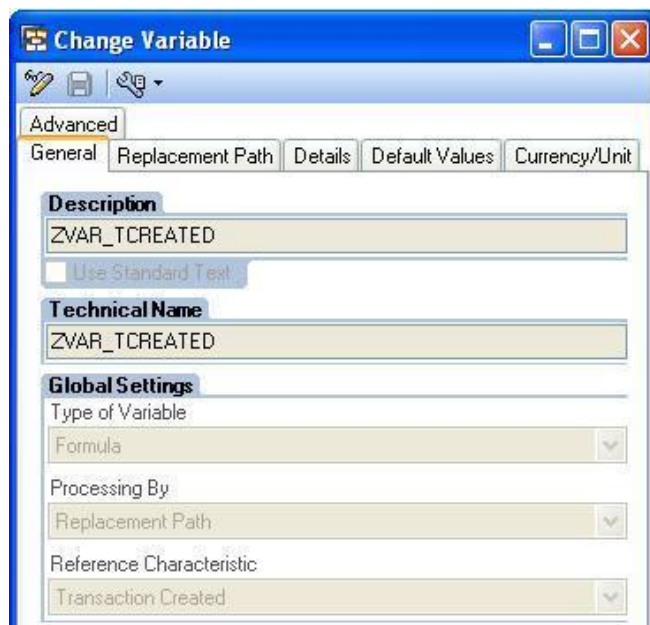
```

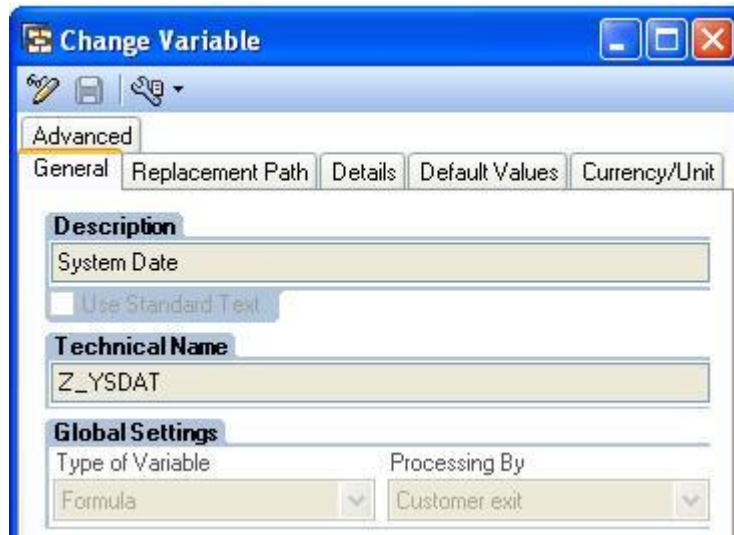
## Formula Variables

Create Formula Variables to return the Transaction Created date and to return the result of the Z\_YSDAT Customer Exit Variable.

Select the following settings:

Setting	Value
Type of Variable	Formula
Processing By	Replacement Path
Reference Characteristic	Transaction Created
Currency/Unit	Date





## Calculated Key Figure Definition

Create a calculated key figure (CKF) with the following formula.

ZCKF\_YEST\_TCREATED:

ZVAR\_TCREATED == Z\_YSDAT

Add this CKF to the key figure structure in the query. This now returns a value of 1 for each record in the query where the Transaction Created date is yesterday's date.

## Updating and Scheduling the Web Intelligence Report

At this point, the universe can be refreshed. Check that the new objects have been added and export the universe to the CMS. Edit the Web Intelligence query to include this object.

It is important to remember that this is a CKF and as such it may be necessary to filter by a range. Thus, consider using the logic `ZCKF_YEST_TCREATED >= 1` rather than `ZCKF_YEST_TCREATED = 1`.

The first logic is likely to filter the results more appropriately due to potential summation depending on characteristic drill downs in the query.

## Performance Considerations

Bear in mind to only add the new key figures if they are going to be used for filtering. Adding these objects will lead to longer query run times if they're not used for filtering.

## Related Content

[Using User Exit for Variables in BEx Reporting](#)

[Best Practices and Tips for Best Performance of SAP BusinessObjects XI 3.1 on SAP NetWeaver BW](#)

[SAP Business Objects Release 4.0](#)

For more information, visit the [Business Objects homepage](#).

## **Disclaimer and Liability Notice**

This document may discuss sample coding or other information that does not include SAP official interfaces and therefore is not supported by SAP. Changes made based on this information are not supported and can be overwritten during an upgrade.

SAP will not be held liable for any damages caused by using or misusing the information, code or methods suggested in this document, and anyone using these methods does so at his/her own risk.

SAP offers no guarantees and assumes no responsibility or liability of any type with respect to the content of this technical article or code sample, including any liability resulting from incompatibility between the content within this document and the materials and services offered by SAP. You agree that you will not hold, or seek to hold, SAP responsible or liable with respect to the content of this document.