

SAP NetWeaver Know-How Network Conference Call

Business Intelligence Web Printing with Excel

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Business Intelligence
SAP AG**

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Business Intelligence Web Printing with Excel

Printing in the Web

Web Printing with Excel

Content

User Interface

Design

Print Settings

Summary

Questions and Answers

Appendix: Demo, Implementation, Microsoft Reference

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General issues with printing in the Web

- HTML is not page-orientated
- Web Browsers have only limited Print Settings possibilities
- No Fit to Page
- No repeating rows and columns
- ...

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Why using Excel for printing?

- Excel is page-orientated with enhanced printing capacities
- Fit to Page
- Repeating rows and columns
- ...
- Requires local Excel 2000 or higher installation

How to implement Web Printing with Excel?

- Web Printing with Excel is published as How to... Paper (*)
- Coding is not shipped as part of SAP BW Support Package
- Coding needs to be implemented by consultant or customer
- No modification is required

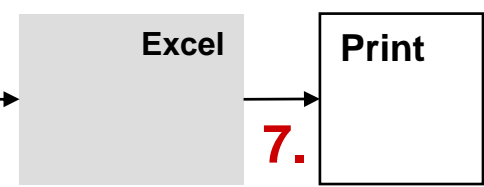
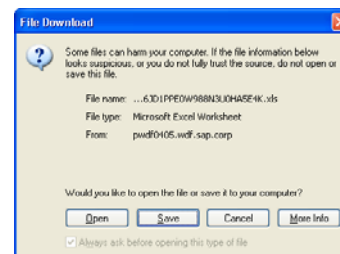
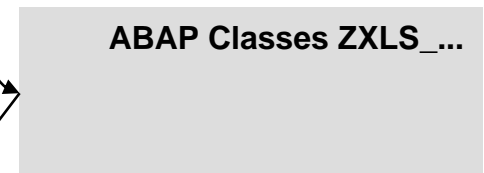
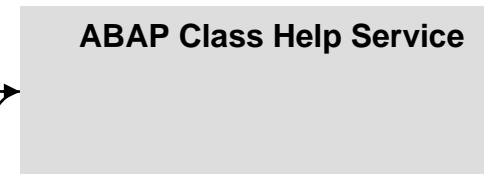
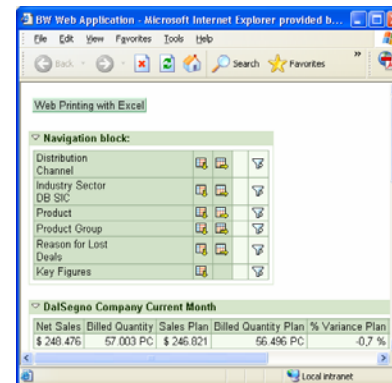
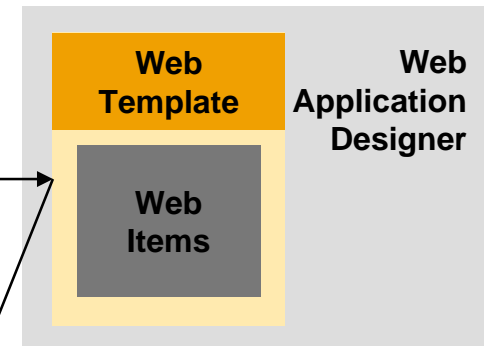
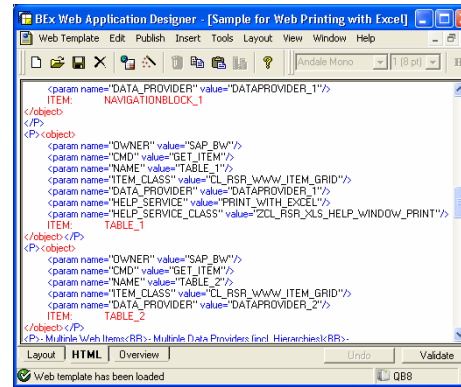
How is Web Printing with Excel working?

- Web Printing with Excel is using the BEx Web Application Framework
- Web Printing with Excel renders data in a Microsoft Office HTML/XML-specific format
- Web Printing with Excel does not replace the Export to Excel 2000 functionality

(*) Available February 2005 on SAP Service Marketplace and SDN

Web Printing with Excel

1. Create Web Template with Help Service, Button, ...
2. Execute Web Template as BEx Web Application
3. Press Print button
4. ABAP Class Help Service is called. It creates bookmark, adds parameter `device_class=zxls` and redirect URL
5. Web Application Framework is called. It renders Microsoft-specific HTML/XML output for Excel
6. Open/Save popup appears
7. Excel is started and can be used for printing



Web Printing with Excel requires to answer following question:

- 1. Which Content needs to be printed?**
- 2. How is the User Interface to print?**
- 3. How to Design a report for printing?**
- 4. How to adapt Print Settings?**

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Which Content needs to be printed?

- Support and not supported BW Web Items
- Multiple Data Providers

Supported BW Web Items

- Table
- Navigation Block
- Filter
- Label
- Text Elements
- List of Exceptions
- List of Conditions
- Alert Monitor
- ...
- Chart and Map possible (via Web Archive/MHTML, not yet implemented)

Not supported BW Web Items

- Dropdown Box
- Radio Button
- Checkbox
- Ticker
- Ad hoc Query Designer
- Role Menu
- Hierarchical Context Menu
- ABC Analysis
- What If Prediction
- ...

Content - Multiple Data Providers

Web Printing with Excel supports multiple Data Providers

Complete content of BEx Web Application is transferred to Excel and printed

BW Web Application - Microsoft Internet Explorer provided by SAP IT

Address: <http://pwwf0719.wdf.sap.corp:50015/sap/bw/BEx?sap-language=EN&bslanguage=EN&CMD=LDOC&>

DalSegno Company Current Month

Net Sales	Billed Quantity	Sales Plan	Billed Quantity Plan	% Variance Plan	Lost Deals	Number of Lost Deals
\$ 248.476	57.003 PC	\$ 246.821	56.496 PC	-0,7 %	\$ 39.344	9.9

Ind. Sector: DB SIC		
DD_DBSIC1	DD_DBSIC1	\$ 5.933.256,22
A	Agriculture, forestry and fishing	\$ 114.432,44
B	Mining	\$ 72.340,81
C	Construction	\$ 275.303,53
15	Building construction - general contractors	\$ 69.534,75
16	Heavy Construction other than building constructio	\$ 47.422,70
1611	Highway/street construction	\$ 18.113,96
1622	Bridge/tunnel construction	\$ 3.402,87
1623	Water/sewer/utility construction	\$ 12.937,16
1629	Heavy construction	\$ 12.968,71
17	Construction - special trade contractors	\$ 158.346,08
D	Manufacturing	\$ 1.577.417,63
E	Transportation, comms, electric, gas and sanitary	\$ 329.069,41
F	Wholesale	\$ 796.537,64
G	Retail	\$ 1.003.957,45
H	Finance, Insurance and real estate	\$ 390.603,63
I	Services	\$ 1.170.292,24
J	Public Administration	\$ 203.301,44

Microsoft Excel - SAP50NWKGVVC3TO3A172F0D7KK1[1]

Worksheet: Reason for Lost Deals

	A	B	C	
	Sales	Billed Quantity	Sales Plan	Billed C
14	\$ 248.476	57.003 PC	\$ 246.821	
15				
16				
17				
18	Ind. Sector: DB SIC			
19	DD_DBSIC1	DD_DBSIC1	\$ 5.933.256,22	
20	A	Agriculture, forestry and fishing	\$ 114.432,44	
21	B	Mining	\$ 72.340,81	
22	C	Construction	\$ 275.303,53	
23	15	Building construction - general contractors	\$ 69.534,75	
24	16	Heavy Construction other than building constructio	\$ 47.422,70	
25	1611	Highway/street construction	\$ 18.113,96	
26	1622	Bridge/tunnel construction	\$ 3.402,87	
27	1623	Water/sewer/utility construction	\$ 12.937,16	
28	1629	Heavy construction	\$ 12.968,71	
29	17	Construction - special trade contractors	\$ 158.346,08	
30	D	Manufacturing	\$ 1.577.417,63	
31	E	Transportation, comms, electric, gas and sanitary	\$ 329.069,41	
32	F	Wholesale	\$ 796.537,64	
33	G	Retail	\$ 1.003.957,45	
34	H	Finance, Insurance and real estate	\$ 390.603,63	
35	I	Services	\$ 1.170.292,24	
36	J	Public Administration	\$ 203.301,44	
37				

Sheet: DalSegno Company Current Month /

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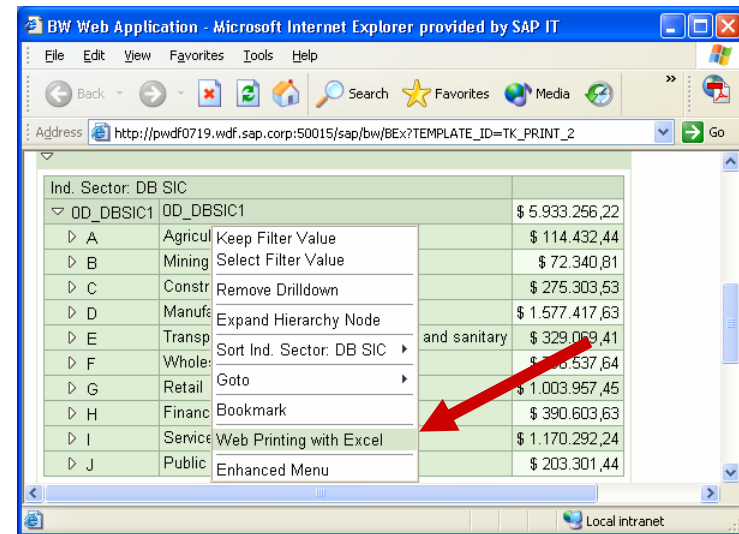
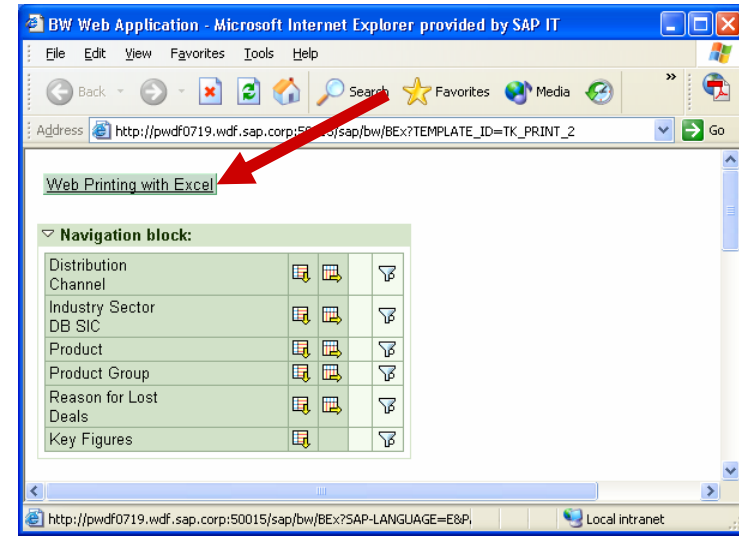
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How is the User Interface to print?

- The BEx Web Application must have a Print button or entry in the context menu
- A Help Service allows to call the Web Printing with Excel functionality
- The standard Print button of the Web Browser is not working



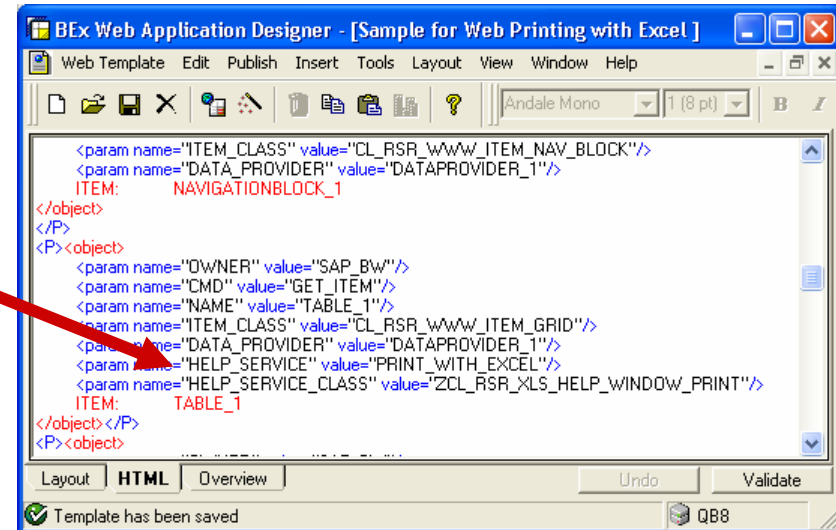
User Interface – Help Service

1. Open BEx Web Template with BEx Web Application Designer
2. Switch to HTML view
3. Add Help Service to a BW Web Item or Data Provider

```
<P><object>
  <param name="OWNER" value="SAP_BW"/>
  <param name="CMD" value="GET_ITEM"/>
  <param name="NAME" value="TABLE_1"/>
  <param name="ITEM_CLASS" value="CL_RSR_WWW_ITEM_GRID"/>
  <param name="DATA_PROVIDER" value="DATAPROVIDER_1"/>
  <param name="HELP_SERVICE" value="PRINT_WITH_EXCEL"/>
  <param name="HELP_SERVICE_CLASS" value="ZCL_RSR_XLS_HELP_WINDOW_PRINT"/>
  ITEM:      TABLE_1
</object></P>
```

Please take care when you copy coding into clipboard!

1. Copy coding from PowerPoint to Notepad
2. Correct quotation marks, etc.
3. Copy coding from Notepad to BEx Web Application Designer



User Interface - Button

1. Open BEx Web Template with BEx Web Application Designer
2. Switch to HTML view
3. Add button somewhere into BEx Web Template

```
<table><tr><td class="SAPBEXBtnStdBorder" cellspacing="0" cellpadding="0" border="0">  
  <table><tr><td class="SAPBEXBtnStd" cellspacing="0" cellpadding="0" border="0">  
    <a href="<sap_bw_url  
      cmd='PROCESS_HELP_WINDOW'  
      help_service='PRINT_WITH_EXCEL'  
      item='TABLE_1'  
      subcmd='PRINT_EXCEL'>">  
      Print with Excel</a>  
  </td></tr></table>  
</td></tr></table>
```



Please take care when you copy coding into clipboard!

1. Copy coding from PowerPoint to Notepad
2. Correct quotation marks, etc.
3. Copy coding from Notepad to BEx Web Application Designer

Web Printing with Excel

Navigation block:		
Distribution Channel	[Filter]	[Filter]
Industry Sector	[Filter]	[Filter]
DB SIC	[Filter]	[Filter]
Product	[Filter]	[Filter]
Product Group	[Filter]	[Filter]
Reason for Lost Deals	[Filter]	[Filter]
Key Figures	[Filter]	[Filter]

THE BEST-RUN BUSINESSES RUN SAP

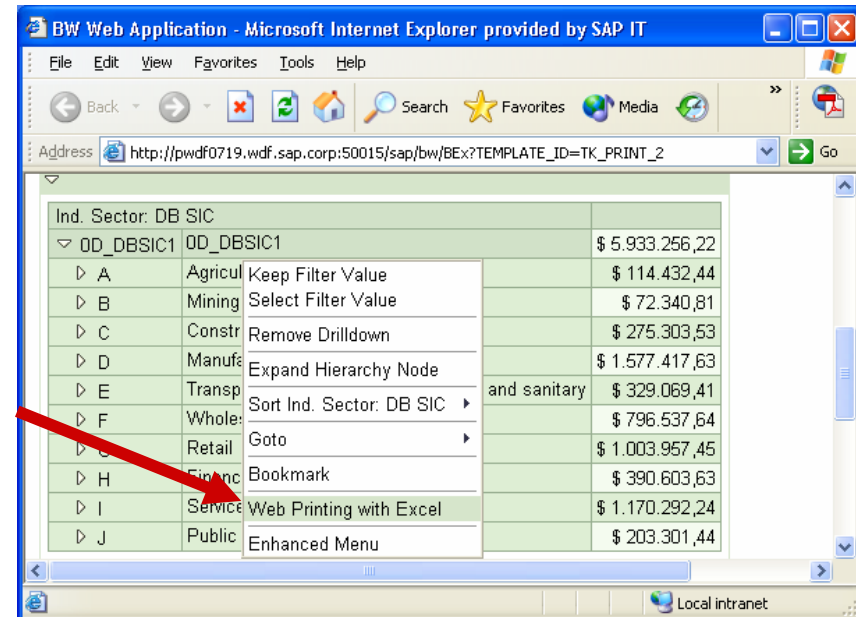
User Interface – Context Menu

1. Open BEx Web Template with BEx Web Application Designer
2. Switch to HTML view
3. Add JavaScript to head area of BEx Web Template

```
<script language="JavaScript">
SAPBWAddToMenu("Print with Excel","myMenuProcessor","1","","","X","BOTTOM","","");
// Command Processing
function myMenuProcessor(parameter,cell_type,filter,parameter1,parameter2,item,datapvider,x,y)
{
    switch (parameter) {
        case "1":
            SAPBWOpenURL(SAP_BW_URL_Get()
                + "&CMD=PROCESS_HELP_WINDOW
                &help_service=PRINT_WITH_EXCEL
                &item=TABLE_1
                &subcmd=PRINT_EXCEL");
            break;
    }
}
</script>
```

```
SAPBWOpenURL(SAP_BW_URL_Get()
    + "&CMD=PROCESS_HELP_WINDOW
    &help_service=PRINT_WITH_EXCEL
    &item=TABLE_1
    &subcmd=PRINT_EXCEL");

break;
```



Please take care when you copy coding into clipboard!

1. Copy coding from PowerPoint to Notepad
2. Correct quotation marks, etc.
3. Copy coding from Notepad to BEx Web Application Designer



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How to Design a report for printing?

The design of the printing result can be modified like a normal BEx Web Application.

- When to use Cascading Style Sheets?
- When to use BEx Web Design API for Tables?
- When to use Query View definition?
- When to use printing-specific Web Templates?

When to use Cascading Style Sheets?

If you would like to change style of all cells of a specific kind (=style class).

- How to add the printing CSS in Web Template?

```
<link href="/sap/bw/Mime/BEx/StyleSheets/BWReports_mediumfont_print.css" type="text/css" rel="stylesheet" media="print"/>
```

- How to change the CSS in Mime Repository?

- Where to add the CSS in Mime Repository?

- How to retrieve the style class for a cell? Documentation or HTML Source (Sample)

- How the change CSS styles?

- See documentation [BW Stylesheet](#), [Print Stylesheet](#) and [Storage of Stylesheets and Symbols](#) for more Details

When to use BEx Web Design API for Tables?

If you would like to change the style of a specific cell in a set of a specific kind (=style class).

- Change the style for a specific characteristic, key figure value or structure member
 - Hide rows and columns
 - Insert empty rows and columns
 - Add lines using different style classes
 - ...
-
- See documentation [Web Design API for Tables](#) for more details

When to use Query View definition?

Sometimes, it is possible to change the Query definition, if you would like to adapt the display of a specific characteristic, attribute or key figure.

- Change the presentation of values (text/key)
- Suppress result rows
- Change the scaling factor
- ...

- See documentation [Properties of Query Components](#) for more details

When to use printing-specific Web Templates?

If your implementation of a BEx Web Design for Tables ABAP class differs between the Web and Print version.

Or if your content differs between the Web and Print version.

Because only in the Web Template you can specify the **MODIFY_CLASS** parameter.

Sample

- Web Template ABC
 - Print-specific Web Template ABC_<DEVICE_CLASS>
ABC_ZXLS
-
- See documentation [Device-specific Web Template](#) for more details

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How to adapt Print Settings?

Print Settings have to be added as HTML comment to the BW Web Template and allow to configure Excel for printing.

- **Header and Footer (with text elements) (@page)**
- **Logo (Excel XP or higher) (@page and <x:Print>)**
- **Fit to Page (<x:Print>)**
- **Page Orientation (@page)**
- **Page Breaks (Breaks in rows and in columns) (<x:PageBreaks>)**
- **Grid Lines (flexible bottom line) (<x:Print>)**
- **Column Widths (<x:ColWidths>)**
- **Hide Hierarchy Icons (<x:BW>)**

Header and Footer (with text elements) are defined in the @page area

```
<!-- print settings for Web Printing with Excel
  @page
    {mso-header-
  data:"&L&G&C&\0022Arial\,fed\0022&12&[DATA_PROVIDER_1/REPTXTLG]";
  mso-footer-data:"&R&PV&N";
  margin:1.0in .75in 1.0in .75in;
  mso-header-margin:.5in;
  mso-footer-margin:.5in;
  mso-page-orientation:landscape;}
-->
```

**Text elements must be specified as
&[<DATA_PROVIDER>/<TEXT_ELEMENT>]**

See Microsoft documentation for definition of mso-header-data and mso-footer-data



- 1. Design your Header and Footer in Excel and save the Excel Workbook as Web Page (*.htm; *html) file**
- 2. Open this file in Notepad and search for @page to see the definition of the Header and Footer**

Logo is defined in the @page and <x:Print> area

```
<!-- print settings for Web Printing with Excel
```

```
@page
```

```
{mso-header-data:"&L&G&C&\0022Arial\,fed\0022&12&[REPTXTLG]";  
mso-footer-data:"&R&PV&N";  
margin:1.0in .75in 1.0in .75in;  
mso-header-margin:.5in;  
mso-footer-margin:.5in;  
mso-page-orientation:landscape;}
```

```
-->
```

&G indicates a picture where the source is specified in <x:print>



Logos in Header and Footer are only support with Excel XP or higher

Print Settings – Logo (Excel XP or higher)

```
<!-- print settings for Web Printing with Excel
<x:Print>
  <!-- ... add more print settings here ... - remove this line -->
  <x:HeaderPicture>
    <x:Location>Left</x:Location>

    <x:Source>http://www.sap.com/global/images/sap_logo.gif
    </x:Source>
    <x:Height>24.75</x:Height>
    <x:Width>86.25</x:Width>
    <x:LockAspectRatio/>
    <x:ColorType>Automatic</x:ColorType>
  </x:HeaderPicture>
</x:Print>
```



1. **Design your Header and Footer in Excel and save the Excel Workbook as Web Page (*.htm; *html) file**
2. **Open this file in Notepad and search for @page to see the definition of the Header and Footer and search for <x:print> to see the definition of the logo**

Fit to Page is defined in the <x:Print> area

```
<!-- print settings for Web Printing with Excel
```

```
<x:Print>
```

```
  <x:FitWidth>2</x:FitWidth>
```

```
  <x:FitHeight>2</x:FitHeight>
```

```
  <!-- ... add more print settings here ... - remove this line -->
```

```
</x:Print>
```

```
-->
```

Page Orientation is defined in the @page area

```
<!-- print settings for Web Printing with Excel
```

```
@page
```

```
{mso-header-data:"&L&G&C&\0022Arial\,fed\0022&12&[REPTXTLG]";  
mso-footer-data:"&R&PV&N";  
margin:1.0in .75in 1.0in .75in;  
mso-header-margin:.5in;  
mso-footer-margin:.5in;  
mso-page-orientation:landscape;}
```

```
-->
```

In case of portrait page orientation, remove mso-page-orientation.

Page Breaks (Breaks in rows and in columns) are defined in the `<x:PageBreaks>` area

```
<!-- print settings for Web Printing with Excel
<x:PageBreaks>
  <x:ColBreaks>
    <x:ColBreak>
      <x:Column>9</x:Column>
      <x:RowEnd>78</x:RowEnd>
    </x:ColBreak>
  </x:ColBreaks>
  <x:RowBreaks>
    <x:RowBreak>
      <x:Row>42</x:Row>
      <x:ColEnd>15</x:ColEnd>
    </x:RowBreak>
  </x:RowBreaks>
</x:PageBreaks>
-->
```

Grid Lines (flexible bottom line) are defined in the <x:Print> area

```
<!-- print settings for Web Printing with Excel
<x:Print>
    <x:Gridlines/>
    <!-- ... add more print settings here ... - remove this line -->
</x:Print>
-->
```

If no gridlines are required, remove <x:Gridlines/>

Column Widths are defined in the `<x:ColWidths>` area

```
<!-- print settings for Web Printing with Excel
<x:ColWidths>
    <col style='mso-width-source:auto'>
    <col width=200 style='mso-width-source:userset'>
    <col width=70 style='mso-width-source:userset'>
    <!-- ... add more columns here ... - remove this line -->
</x:ColWidths>
-->
```

`<x:ColWidths>` is not an official Microsoft Office XML statement. It is a SAP BW-specific statement.

Hide Hierarchy Icons is defined in the <x:BW> area

```
<!-- print settings for Web Printing with Excel  
<x:BW>  
    <hierarchy_icons hide=x>  
    <!-- ... add BW statements here ... - remove this line -->  
</x:BW>  
-->
```

<x:BW> is not an official Microsoft Office XML statement. It is a SAP BW-specific statement.

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- Consulting and customer solution based on a How to... Paper
- Implementation without modification

- Enhance standard Web Browser functionality for printing BEx Web Applications
- Using Excel print settings like fit to page or page orientation

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Sample 1

Multiple Web Items, Multiple Data Providers (incl. Hierarchies), Print Cascading Style Sheet, Header and Footer (visible in Excel File/Print Preview), Logo, Fit to Page, Page Orientation (Landscape), Column Width (200, 200, 70, ...)

Sample 2

Print-specific Web Template (no conditions, no exception and no navigation block in print-specific Web Template)

No modification of SAP sources required

All changes are done in customer name space

Prerequisites

- **OSS note 736568 (Customer-specific device classes)**
- **OSS note 737082 (Unique filenames for Excel) (optional)**

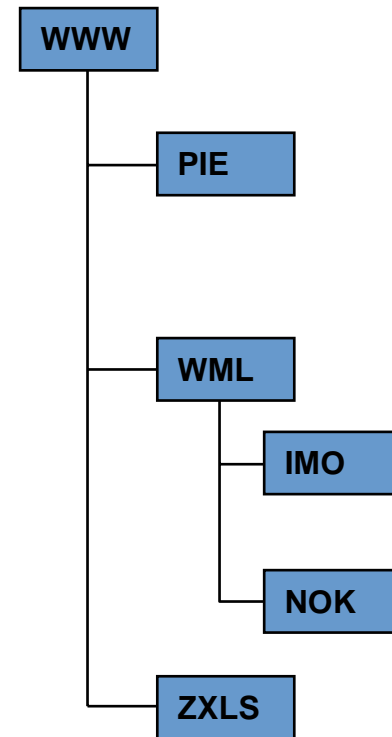
OSS note 736568

BEx Web Analysis & Reporting only allows device classes with 3 characters. For customer-specific device classes, this means that the names of the dedicated ABAP classes must read `CL_RSR_???_ITEM_...` However, these names are in the SAP name range.

This note permits device classes with a prefix, that is, the last three characters of the device class are used as the device class and the remaining characters as a prefix.

Example: A ZXLS device class tries to create ABAP classes with the name `ZCL_RSR_XLS_ITEM_...`

Hierarchy of device classes



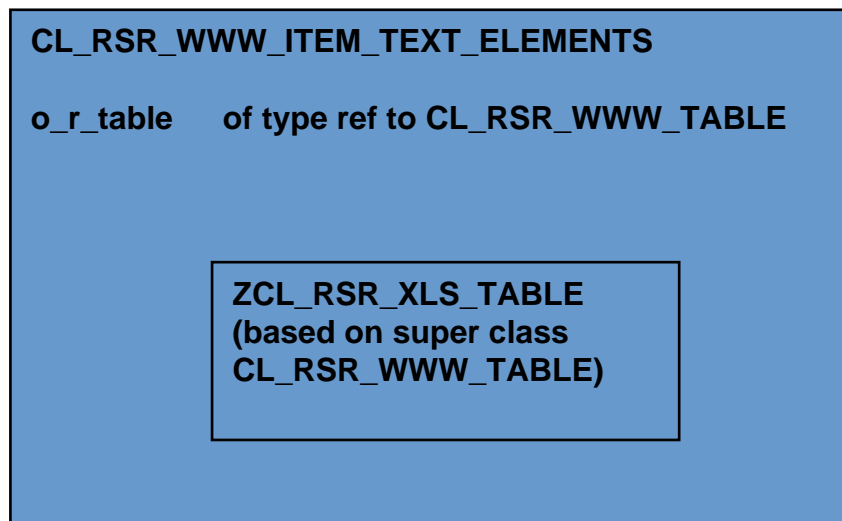
ABAP Classes

- **Help Service** **ZCL_RSR_XLS_HELP_WINDOW_PRINT**
- **Web Item Template** **ZCL_RSR_XLS_ITEM_TEMPLATE**
- **Abstract Table** **ZCL_RSR_XLS_TABLE**
- **Abstract Grid** **ZCL_RSR_XLS_GRID**
- **Web Item Table** **ZCL_RSR_XLS_ITEM_GRID**
(remove block size)
- **Web Item Text Elements** **ZCL_RSR_XLS_ITEM_TEXT_ELEMENTS**
(special handling for only_values)

- **Web Item Navigation Block** **ZCL_RSR_XLS_ITEM_NAV_BLOCK**
(optional)

Usage of Abstract Table ZCL_RSR_XLS_TABLE

- Not all ZCL_RSR_XLS_ITEM_... class are required
- Rendering is mostly done by ZCL_RSR_XLS_TABLE which is part of CL_RSR_WWW_ITEM_... class and created dynamically depending on device class (e.g. ZXLS)



Enable Open/Save dialog during export to Excel

1. **Start Windows Explorer**
2. **Choose menu „Tools/Folder Options“**
3. **Select register „Files Types“**
4. **Choose extension „.XLS“**
5. **Click button „Advanced“**
6. **Enable „Confirm open after download“**

If the button „Advanced“ is disabled, change the following registry key.

[HKEY_CLASSES_ROOT\Excel.Sheet.8]

"EditFlags"=dword:00000000 (new value)

"EditFlags"=dword:00010000 (old value)

<http://support.microsoft.com/default.aspx?scid=kb;en-us;140991>

Office HTML and XML Reference

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnoffxml/html/ofxml2k.asp>

Working with Office HTML

<http://msdn.microsoft.com/library/default.asp?url=/library/en-us/dnofftalk/html/office120999.asp>