

Developer Guide

KA.Barcode for .NET SSRS 2016

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1. Compatibility & Requirements

1.1. Development Environments

- **Visual studio 2015 or later version installed**
- **Microsoft SQL Server 2016**
- SQL Server Data Tools – Business Intelligence for Visual Studio 2015 (SSDT-BI)
- .NET Version is greater than 4.0
- VB.NET, C#.NET, or Borland Delphi

1.2. Compatible Project Types

- Report Server Project (design-time and runtime support)
- ASP.NET Web Site (design-time and runtime support)
- Console Application (runtime support)
- Class Library (runtime support)
- ASP.NET Web Services (runtime support)

1.3. Compatible Operating Systems

- Windows Server 2012 and later version
- Windows 10 and later version

1.4. Test Environment

- Microsoft Windows 10
- Microsoft Visual Studio 2015
- Visual C#.NET

2. Deployment & Pre-Configuration

Download and unzip the evaluation, and you will find "[KeepAutomation.Barcode.SSRS2016.dll](#)", "[KeepAutomation.Barcode.SSRS2016CRI.dll](#)" in the package.

2.1. Deploy Control

- Open directory "[\\Program Files \(x86\)\\Microsoft Visual Studio 14.0\\Common7\\IDE\\PrivateAssemblies\\](#)".
- Copy "[KeepAutomation.Barcode.SSRS2016CRI.dll](#)" and "[KeepAutomation.Barcode.SSRS2016.dll](#)" to the folder.
- Open directory "[\\Program Files\\Microsoft SQL Server\\MSRS13.MSSQLSERVER\\Reporting Services\\ReportServer\\bin\\](#)".
- Copy "[KeepAutomation.Barcode.SSRS2016CRI.dll](#)" to the folder.

2.2. Configure Environment

Below is a sample of SSRS2016 configuration.

- Open "[Program Files \(x86\)\Microsoft Visual Studio 14.0\Common7\IDE\PrivateAssemblies\RSReportDesigner.config](#)" with text editor (notepad).

```
<Configuration>
  <Extensions>
    ...
  <ReportItems>
    <ReportItem Name="BarCodeControl"
      Type="KeepAutomation.Barcode.SSRS2016CRI.BarCodeReportCRI,
KeepAutomation.Barcode.SSRS2016CRI" />
  </ReportItems>
  <ReportItemDesigner>
    <ReportItem Name="BarCodeControl"
      Type="KeepAutomation.Barcode.SSRS2016.BarCodeReport,
KeepAutomation.Barcode.SSRS2016" />
  </ReportItemDesigner>
</Extensions>
</Configuration>
```

- Open file "[Program Files\Microsoft SQL Server\MSRS13.MSSQLSERVER\Reporting Services\ReportServer\rsreportserver.config](#)" with text editor (notepad).

```
<Configuration>
  <Extensions>
    ...
  <ReportItems>
    <ReportItem Name="BarCodeControl"
      Type="KeepAutomation.Barcode.SSRS2016CRI.BarCodeReportCRI,
KeepAutomation.Barcode.SSRS2016CRI"/>
  </ReportItems>
</Extensions>
</Configuration>
```

- Open file "[Program Files\Microsoft SQL Server\MSRS13.MSSQLSERVER\Reporting Services\ReportServer\rssrvpolicy.config](#)" with text editor (notepad)

```
<configuration>
<mscorlib>
<security>
<policy>
  <PolicyLevel version="1">
    ...

    <!-- This is the first CodeGroup in the config file -->
    <CodeGroup
      class="FirstMatchCodeGroup"
      version="1"
      PermissionSetName="Nothing">
      <IMembershipCondition
        class="AllMembershipCondition"
        version="1" />
    </CodeGroup>

    <!-- Add Following Text just follow the first CodeGroup. -->
    <CodeGroup
      class="UnionCodeGroup"
      version="1"
      PermissionSetName="FullTrust"
      Description="This code group grants KeepAutomation.Barcode.
      SSRS2016CRI.dll Full Trust permission. ">
      <IMembershipCondition
        class="UrlMembershipCondition"
        version="1"
        Url="C:\Program Files\Microsoft SQL Server\MSRS13.MSSQLSERVER\Reporting Services\
        ReportServer\bin\KeepAutomation.Barcode.SSRS2016CRI.dll" />
    </CodeGroup>

    ...

  </CodeGroup>
</PolicyLevel>
</policy>
</security>
</mscorlib>
</configuration>
```

3. How To Insert a Barcode in Report Template

3.1. Generate Barcode on SQL Server Reporting Services (CRI)

- Start Visual Studio 2015 and create new "Business Intelligence Projects", then choose "Report Server Project Wizard" template.
- To choose data source, select "AdventureWorks2016CTP3" in "Connection string" form and then click "Next".

Report Wizard

Select the Data Source
Select a data source from which to obtain data for this report or create a new data source.

☐ Shared data source

☒ New data source

Name:
DataSource1

Type:
Microsoft SQL Server

Connection string:
Data Source=DESKTOP-1A3I6OC;Initial Catalog=AdventureWorks2016CTP3

☐ Make this a shared data source

Buttons: Edit..., Credentials..., Help, < Back, Next >, Finish >>, Cancel

- Create the Query string and input "SELECT CustomerID, TerritoryID, AccountNumber FROM Sales.Customer" to the input box of "Report Wizard" dialog.
- Choose "Tabular" as report type and then click "Next".
- Select default setting of "Design the Table", "Choose the Table Style" and "Choose the Deployment Location" then click "Next".
- Name the report "Barcode in SSRS 2016", click "Finish".
- Display the toolbox, and navigate to "KeepAutomation.Barcode.RS2016CRI.dll" and add it as item on toolbox.

- Add a column to display the barcode images and name it "Barcode", then drag and drop the "LinearBarcodeControl" to the "Barcode" column.
- Select "BarcodeData" in "Properties" window and change it to "`=Fields!AccountNumber.Value`".
- Users can preview the report with linear or matrix barcode image by clicking "Preview" tab.

4. Barcode Advanced Settings

4.1. 1D / 2D Barcode Basic Properties

Below is a table of linear and 2d barcodes basic properties supported by KA.Barcode for .NET Reporting Services.

4.1.1. Barcode Basic

Class Attribute	HTTP Attribute	Default Value
Symbology	symbology	Code128Auto
Comment: Barcode symbology type		
CodeToEncode	code-to-encode	"128"
Comment: Barcode value to encode.		
ChecksumEnabled	checksum-enabled	false
Comment: Set to true, adding barcode checksum digit.		
ImageFormat	image-format	ImageFormat.Png
Comment: Barcode encoded image format.		

4.1.2. Barcode Size

Class Attribute	HTTP Attribute	Default Value
BarcodeUnit	barcode-unit	BarcodeUnit.Pixel
Comment: Unit of measure for all size related settings. 0: pixel; 1: inch; 2: cm.		
X	x	1

Class Attribute	HTTP Attribute	Default Value
Comment: Barcode module width (narrow bar).		
Y	y	50
Comment: Linear barcode bar height / 2D barcode module height.		
LeftMargin	left-margin	0
Comment: Barcode image left margin.		
RightMargin	right-margin	0
Comment: Barcode image right margin.		
TopMargin	top-margin	0
Comment: Barcode image top margin.		
BottomMargin	bottom-margin	0
Comment: Barcode image bottom margin.		
DPI	dpi	72
Comment: Barcode image resolution in dpi.		
Orientation	orientation	Orientation.Degree0
Comment: Barcode rotation angle.		
BarCodeWidth	barcode-width	0
Comment: Whole barcode width.		
BarCodeHeight	barcode-height	0
Comment: Whole barcode height.		

4.1.3. Barcode Text Style

Class Attribute	HTTP Attribute	Default Value
DisplayText	display-text	true
Comment: Set to true, displaying barcode value text, otherwise do not display.		
DisplayChecksum	displace-checksum	true
Comment: Set to true, displaying barcode checksum digit, otherwise do not display.		
TextFont	text-font	new Font("Arial", 10f, FontStyle.Regular)
Comment: Barcode text font style.		
TextMargin	text-margin	6
Comment: Margin between barcode and text.		

4.2. 1D / Linear Barcode Special Properties

4.2.1. Codabar

Class Attribute	HTTP Attribute	Default Value
CodabarStartChar	codabar-start-char	CodabarStartStopChar.A
Comment: Barcode Codabar starting char. Options 'A', 'B', 'C', 'D'.		
CodabarStopChar	codabar-stop-char	CodabarStartStopChar.A
Comment: Barcode Codabar stopping char. Options 'A', 'B', 'C', 'D'.		

4.2.2. Code 2 of 5

Class Attribute	HTTP Attribute	Default Value
WideNarrowRatio	wide-narrow-ratio	2.0f

Class Attribute	HTTP Attribute	Default Value
Comment: Code 2 of 5 wide bar width vs narrow bar width ratio.		

4.2.3. Code 39

Class Attribute	HTTP Attribute	Default Value
DisplayStarStop	display-start-stop	true
Comment: Set to true, displaying Code 39 Start and Stop character (*).		
I	i	1.0f
Comment: Code 39 inter-characters space. It's a multiple of X.		
WideNarrowRatio	wide-narrow-ratio	2.0f
Comment: Code39 wide bar width vs narrow bar width ratio.		

4.2.4. Code 128 / EAN-128

Class Attribute	HTTP Attribute	Default Value
FNC1	fnc1	FNC1.None
Comment: Apply to encode GS1 compatible Code 128.		
TildeEnabled	tilde-enabled	false
Comment: Set to true, specifying special characters in Code 128 / EAN-128 data.		

4.2.5. EAN-8 / EAN-13 / UPC-A / UPC-E / ISBN / ISSN

Class Attribute	HTTP Attribute	Default Value
SupplementCode	supplement-code	-
Comment: EAN, UPC, ISBN, or ISSN supplement barcode value to encode.		
SupplementHeight	supplement-height	0.8f
Comment: EAN, UPC, ISBN, or ISSN supplement barcode height.		
SupplementSpace	supplement-space	15
Comment: EAN, UPC, ISBN, or ISSN supplement barcode space.		

4.2.6. ITF-14

Class Attribute	HTTP Attribute	Default Value
BearerBarLeft	bearer-bar-left	1
Comment: ITF-14 left and right bearer bars. It's a multiple of X.		
BearerBarTop	bearer-bar-top	1
Comment: ITF-14 top and bottom bearer bars. It's a multiple of X.		
WideNarrowRatio	wide-narrow-ratio	2.0f
Comment: ITF-14 wide bar width vs narrow bar width ratio.		

4.2.7. Identcode / Leitcode / Interleaved 2 of 5

Class Attribute	HTTP Attribute	Default Value
WideNarrowRatio	wide-narrow-ratio	2.0f
Comment: Identcode, Leitcode, or Interleaved 2 of 5 wide bar width vs narrow bar width ratio.		

4.2.8. PLANET / POSTNET

Class Attribute	HTTP Attribute	Default Value
ShortTallRatio	short-tall-ratio	0.4f
Comment: POSTNET and PLANET short bar height vs tall bar height ratio.		

4.3. 2D / Matrix Barcode Special Properties

Class Attribute	HTTP Attribute	Default Value
GroupEnabled	group-enabled	false
Comment: Set to enable Data Matrix, PDF417, or QR Code group function.		
GroupItemCount	group-item-count	0
Comment: Data Matrix, PDF417, or QR Code group count.		
GroupItemId	group-item-id	0
Comment: Data Matrix, PDF417, or QR Code group item id.		
GroupId	group-item-id	0
Comment: Data Matrix, PDF417, or QR Code group item.		

4.3.1. Data Matrix

Class Attribute	HTTP Attribute	Default Value
DataMatrixDataMode	data-matrix-data-mode	DataMatrixDataMode.Auto
Comment: Set Data Matrix data encoding mode.		
DataMatrixFormatMode	data-matrix-format-mode	DataMatrixFormatMode.FM_12X12
Comment: Set Data Matrix format mode, including 24 square and 6 rectangle formats.		

Class Attribute	HTTP Attribute	Default Value
FNC1	fnc1	FNC1.None
Comment: Apply to encode GS1 compatible Data Matrix.		
TildeEabled	application-indicator	false
Comment: Set to true, specifying special characters in Data Matrix data.		

4.3.2. PDF417

Class Attribute	HTTP Attribute	Default Value
PDF417DataMode	pdf417-data-mode	PDF417DataMode.Text
Comment: Set PDF417 data encoding mode.		
PDF417ECL	pdf417-ecl	PDF417ECL.ECL_2
Comment: Set PDF417 error correction level, from L0 to L8.		
PDF417RowCount	pdf417-row-count	3
Comment: Set PDF417 row count, from 3 to 90.		
PDF417ColumnCount	pdf417-column-count	5
Comment: Set PDF417 column count, from 1 to 30.		
PDF417Truncated	pdf417-truncated	false
Comment: Apply to encode TruncatedPDF417.		
PDF417TXtoYRatio	pdf417-x-y-ratio	0.33333f
Comment: PDF 417, bar width vs bar height ratio.		
TildeEabled	application-indicator	false
Comment: Set to true, specifying special characters in PDF417 data.		

4.3.3. QR Code

Class Attribute	HTTP Attribute	Default Value
FNC1	fnc1	FNC1.None
Comment: Apply to encode GS1 compatible QR Code		
QRCodeDataMode	qrcode-data-mode	QRCodeDataMode.Auto
Comment: Set QR Code data encoding mode.		
QRCodeECL	qrcode-ecl	QRCodeECL.L
Comment: Set QR Code error correction level, including L, M, Q, H.		
QRCodeVersion	qrcode-version	QRCodeVersion.V1
Comment: Set QR Code version, from V1 to V40.		
QRCodeECI	qrcode-eci	3
Comment: QR Code column Extended Channel Interpretations.		
TildeEnabled	tilde-enabled	false
Comment: Set to true, specifying special characters in QR Code data.		

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