

Developer Guide

KA.Barcode for .NET Reporting Services

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1. Compatibility & Requirements

1.1. Development Environments

- Visual studio 2005 or later version installed
- Microsoft SQL Server 2005/2008 Business Intelligence Development Studio
- .NET Version is greater than 2.0
- 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 2003 and later version
- Windows XP and later version

1.4. Test Environment

- Microsoft Windows 10
- Microsoft Visual Studio 2012
- Visual C#.NET

2. Deployment & Pre-Configuration

Download and unzip the evaluation, and you will find "KeepAutomation.Barcode.SSRS2005.dll", "KeepAutomation.Barcode.SSRS2005CRI.dll", "KeepAutomation.Barcode.SSRS2008.dll", and "KeepAutomation.Barcode.SSRS2008CRI.dll" in the package.

2.1. Deploy Control

- **For SSRS 2005 Project:** Open directory "\\Program Files\\Microsoft Visual Studio 8\\Common7\\IDE\\PrivateAssemblies\\".
For SSRS 2008 Project: Open directory "\\Program Files\\Microsoft Visual Studio 9.0\\Common7\\IDE\\PrivateAssemblies\\".
- **For SSRS 2005 Project:** Copy "KeepAutomation.Barcode.SSRS2005CRI.dll" and "KeepAutomation.Barcode.SSRS2005.dll" to the folder.
For SSRS 2008 Project: Copy "KeepAutomation.Barcode.SSRS2008CRI.dll" and "KeepAutomation.Barcode.SSRS2008.dll" to the folder.
- **For SSRS 2005 Project:** Open directory "\\Program Files\\Microsoft SQL Server\\MSSQL.3\\Reporting Services\\ReportServer\\bin\\".
For SSRS 2008 Project: Open directory "\\Program Files\\Microsoft SQL Server\\MSRS10.MSSQLSERVER\\Reporting Services\\ReportServer\\bin\\".
- **For SSRS 2005 Project:** Copy "KeepAutomation.Barcode.SSRS2005CRI.dll" to the folder.
For SSRS 2008 Project: Copy "KeepAutomation.Barcode.SSRS2008CRI.dll" to the folder.

2.2. Configure Environment

Below is a sample of SSRS2008 configuration. For SSRS2005, just change "2008" to "2005" respectively.

- For SSRS 2005 Project:** Open "[\Program Files\Microsoft Visual Studio 8\Common7\IDE\PrivateAssemblies\rsreportdesigner.config](#)" with TXT editor.
For SSRS 2008 Project: Open "[\Program Files\Microsoft Visual Studio 9.0\Common7\IDE\PrivateAssemblies\rsreportdesigner.config](#)" with TXT editor.

```
<Configuration>
<Extensions>
...
<ReportItems>
<ReportItem Name="BarCodeControl"
Type="KeepAutomation.Barcode.SSRSS2008CRI.BarCodeReportCRI,
KeepAutomation.Barcode.SSRSS2008CRI" />
</ReportItems>
<ReportItemDesigner>
<ReportItem Name="BarCodeControl"
Type="KeepAutomation.Barcode.SSRSS2008.BarCodeReport,
KeepAutomation.Barcode.SSRSS2008" />
</ReportItemDesigner>
</Extensions>
</Configuration>
```

- For SSRS 2005 Project:** Open file "[\Program Files\Microsoft SQL Server\MSSQL.3\Reporting Services\ReportServer\rsreportserver.config](#)" with TXT editor. Note that, the directory [MSSQL.3] is maybe MSSQL.1, MSSQL.2, or MSSQL.4 for different machines.
For SSRS 2008 Project: Open file "[\Program Files\Microsoft SQL Server\MSRS10.MSSQLSERVER\Reporting Services\ReportServer\rsreportserver.config](#)" with TXT editor.

<Configuration>

<Extensions>

...

```
<ReportItems>
  <ReportItem Name="BarCodeControl"
    Type="KeepAutomation.Barcode.SSRS2008CRI.BarCodeReportCRI,
    KeepAutomation.Barcode.SSRS2008CRI"/>
</ReportItems>
</Extensions>
</Configuration>
```

- **For SSRS 2005 Project:** Open file "[\Program Files\Microsoft SQL Server\MSSQL.3\Reporting Services\ReportServer\rssrvpolicy.config](#)" with TXT editor.
For SSRS 2008 Project: Open file "[\"Program Files\Microsoft SQL Server\MSRS10.MSSQLSERVER\Reporting Services\ReportServer\rssrvpolicy.config](#)" with TXT editor.

```
<configuration>
  <mscorlib>
  <security>
  <policy>
    <PolicyLevel version="1">
      ...
      <!-- This is the first CodeGroup in the config file -->
      <CodeGroup
        class="UnionCodeGroup"
        version="1"
        PermissionSetName="FullTrust"
        Description="This code group grants KeepAutomation.Barcode.
        SSRS2008CRI.dll Full Trust permission. ">
        <IMembershipCondition
          class="UrlMembershipCondition"
          version="1"
          Url="C:\Program Files\Microsoft SQL Server\MSRS10.MSSQLSERVER\Reporting
```



```
Services\ReportServer\bin\KeepAutomation.Barcode.SSRS2008CRI.dll" />  
</CodeGroup>  
...  
</CodeGroup>  
</PolicyLevel>  
</policy>  
</security>  
</mscorlib>  
</configuration>
```

3. How To Use

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

- Start Visual Studio and create new "Business Intelligence Projects", then choose "Report Server Project Wizard" template.
- To choose data source, select "AdventureWorks" in "Connection Properties" form and then click "Next".
- 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 Reporting Service", click "Finish". Display the toolbox, and navigate to "KeepAutomation.Barcode.RS2005CRI.dll" (for SSRS 2005 project) or "KeepAutomation.Barcode.RS2008CRI.dll" (for SSRS 2008 project) 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. | | |
| TildeEabled | tilde-enabled | false |
| Comment: Set to true, specifying special characters in QR Code data. | | |

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