



ZenReport Toolkit Application Notes

Application version : 2.2

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Table of contents :

1. Installation Procedure
2. LabVIEW accessibility
3. Functionality details
4. Additional software requirements
5. Configuration parameters
6. Changes from previous version

Details :

1. Installation procedure :

- > Installation software requirements :
 - > NI LabVIEW 2015 or greater versions
 - > VIPM (Virtual Instrumentation Package manager) 2017 or greater versions from JKI.
- > Step - by - Step Procedure :
 - > Double click on the icon "zenreport-2.2". VIPM will open with the toolkit preloaded.
 - > Click on the "Install" button on the left pane of the VIPM window.
- > The configuration file for the report needs to be placed within the project and filepath to be provided at the dynamic inputs for the **Create report VI**.

2. LabVIEW accessibility :

- > Once the installation is complete the toolkit appears with the following procedure :
 - > Right click on the block diagram. In the shortcut menu choose "Zentron Labs Pvt Ltd"
 - > In the sub-palette there are 3 VIs :
 - i. **Create report**
 - ii. **Generate PDF**
 - iii. **Print report**
 - > Click on any of the following and drag it to the block diagram to place it.
- > Also, there is a control available in the "Controls" palette of the front panel of LabVIEW under the Zentron Labs Pvt Ltd -> ZenReport toolkit. This contains the private data of the report module.
 - i. **Report generation control**

3. Functionality details :

Sequence :

- > The report generation modules does not maintain any data internally. There is a single cluster of data that needs to be maintained throughout the application.
- > The "Print report" module should always be in next precedence to the "Generate report" in the report generation sequence. This is because, the generate report creates a PDF that is later printed by using the printed output filepath.
- > VI details :

i. Create Report

- a) This initializes the report parameters. **This is a one time operation during the start of the parent application. This may be a bit time consuming if done multiple times.**
- b) Reads the report configuration parameters.

ii. Generate PDF

- a) Generates the PDF based upon the initialized parameters and the dynamic parameters that are provided during the runtime.
- b) This VI is supposed to be called everytime the part / batch based PDF document is to be created.
- c) The output of this VI is a PDF at the specified output location in the configuration file or the default filepath "C:\Program Files (x86)\National Instruments\LabVIEW 2015\vi.lib\Zentron Labs Pvt Ltd\ZenReport\Output files". The default path may vary based upon the bit rate of operation of the Windows OS and the LabVIEW version currently installed in the system.

iii. Print report

- a) This VI is used to print any PDF document that has been created using the ZenReport toolkit.
- b) It checks for the printer name input, if empty, it uses the printer name from the configuration, if again empty, it uses the default printer configured in the system through windows.
- c) The input "Printer name" is optional. If no input is provided, it checks for any default printers and prints using the default printer on the system.

Printer parameters :

-> The printer name should be exactly same as that in "Printers and scanners" menu of the control panel. For example, "HP LaserJet MFP M128fw" can be the name of the printer, if configured through the configuration file.

-> Please specify the complete name of the printer.

Image parameters :

Width => width of the image in terms of mm.

Height => height of the image in terms of mm.

Image Resample factor => Specifies the factor by which the number of pixels along the image width and height is multiplied. This feature is provided to reduce the resolution of the image. So, please provide the values within the range (0 - 1] {inclusive of 1 and exclusive of 0}.

This factor greatly influences the report generation time. For images greater than 5MP, the images

Use default scaling => uses the default scaling parameters :

-> Width = 195 mm

-> Height = 165 mm

Note : If "Use default scaling" has been made "false", it uses the width and height of the image that is specified dynamically.

Note : In version v2.2 of ZenReport, adjusting the width and height of the image lead to certain misalignment.

4. Additional software requirements :

-> MikTex (basic-miktex-2.9.6813-x64)

-> Acrobat Reader DC (an active internet connection is required for this)

Note : The above mentioned application softwares are provided within the package for installation in the folder named "Required software addons".

-> Use the "Installer" to install additional package required. Double click the Installer to get the dialog "Package is successfully installed". If the message is "Package uninstall is unsuccessful. Contact the concerned person", contact the person concerned with the package distribution.

Note: Please don't change the hierarchy of folders in the toolkit as some features are hierarchy dependent.

5. Configuration parameters :

SystemSpecificParameters : These parameters are related to a single system and will be used at the header and the first section of the body.

Note : The following parameters have not been considered in the v2.2 :

- > LogoFilePath
- > ImageTempFilePath

PartSpecificParameters : These parameters may be either part based or batch based. These parameters are used to identify the "ReportType". Based on this the template is chosen. The parameters that are considered to be filled in the report are :

-> ImageScalingParameters : It is preferred that width and height of the image are not varied as it might lead to misalignment.

-> Resampling factor is crucial for timing on the report generation. The time is directly proportional to the factor.

-> Unit can be given in "**mm**" or "**pt**". "mm" represents in millimeters (this can be given relative to the A4 size). "pt" represents in terms of points or pixels.

-> PartName

-> ReportType : This can be either "**Part**" or "**Batch**"

-> UseDefaultScaling

-> OutputReportNamePrefix : At first the dynamic naming is considered for prefix of the report.

If the dynamic input is not wired, the configured input is considered. Else, the part name or the batch ID is considered.

-> BatchID : To be displayed on the batch report in the first section of the body.

Note :

1. The following configuration parameters have not been considered in the v2.2 and solely depends on the dynamic parameters :

- > Table parameters
- > DefaultBookmarkValues

2. The image parameters are taken from the **index 0** alone for this version v2.2. The other indices are not considered for the PDF generation.

6. Changes from the previous version :

1. Inclusion of the configuration file.
2. Additional step for initialization.
3. New folders created separately for each unique part name and Batch ID and stored in the tree Reports -> Part Reports / Batch Reports. The root path is configurable.
4. Batch report template added.
5. Batch based PDF creation.
6. Interface of the Create report.vi, Generate PDF.vi, Print report.vi has been changed to a more modular format.
7. Two separate data maintained. Configured data and dynamic inputs during inspection.
8. The order of precedence / override is as follows :
 - a) Dynamic inputs
 - b) Configuration file
 - c) Default values
9. Automated printer discovery and printing.