Applitools PDF Tester

# Overview

A number of PDF tests require validation of specific/custom content in the document along with ensuring the consistency of output document (layout and content). Applitools PDF Tester is a utility that encapsulates the power of Visual AI in comparing a PDF (for both content and layout) but it also provides an additional capability to perform automated content validation within the PDF document at page or region (within the page).

The utility is designed to be either initiated from another program or can be run manually from the command line. No programming knowledge is required to configure a test and run from the command line.

# Installation

Java version 1.8 needs to be installed on the PC (recommended configuration: CPU 2 Core, 8 GB RAM). Pdftesting.jar and jobconfig.xml needs to be downloaded on the PC.

For integrating the Applitools pdf tester from a windows program use the class library -

# Setting a Job

Following is the format of job config.xml

**<?xml version="1.0"?>**

**<test>**

**<loglevel></loglevel>**

**<pages all = "true"/>**

**<pdf path></pdfpath>**

**<matchlevel></matchlevel>**

**<apikey></apikey>**

**<appname></appname>**

**<batchname></batchname>**

**<type></type>**

**<content>**

**<assert>**

**<expect></expect>**

**<region></region>**

**<onpages all = "true"/>**

**</assert>**

**</content>**

**</test**>

Below parameters need to be setup in the job config xml

|  |  |  |
| --- | --- | --- |
| Parameter | Optional | Description |
| <loglevel> | yes | This parameter can be used for debugging.  Valid values: off (default), info  E.g. <**loglevel**>info</**loglevel**> |
| <type> | no | This parameter is to provide the correct method to be invoked for the PDF test. Only one method can be initiated per job config (test)  Valid values:   1. Capturepdf - performs only the applitools comparison for specific or all pages of the pdf 2. Checkbypages - performs content check on specific or all pages (text can be present anywhere on pdf) in addition to applitools comparison. 3. Checkbyregion - performs content check in a given region on the specific pages or all pages in addition to applitools comparison.   E.g. <**type**>capturepdf</**type**> |
| <pages> | no | Provide the page numbers (comma separated) of the pages to be tested. In case entire pdf needs to be tested then set attribute allpages = “true”  E.g. <**pages all="false"**>1,5,8</**pages**> |
| <pdfpath> | no | Provide the full path of the pdf under test. Only one pdf can be tested in each job config.  E.g. <**pdfpath**>/Users/nikhil/Downloads/SampleE.pdf</**pdfpath**> |
| <matchlevel> | yes | Specify the algorithm to be used for applitools comparison  Valid values: strict (default), layout, content, exact  E.g.<**matchlevel**>strict</**matchlevel**> |
| <apikey> | no | Specify the applitools api key for your pdf test  E.g. <**apikey**>your\_api\_key</**apikey**> |
| <appname> | no | Specify the appname for Applitools test. This is required for maintaining the baseline of your pdf document.  E.g. <**appname**>SampleE</**appname**> |
| <batchname> | no | Specify a batch name for Applitools test. If no value is provided pdf name will be defaulted as the batch name.  E.g. <**batchname**>Test1</**batchname**> |
| <content> | yes | This section needs to be provided only if specific content needs to be checked apart from applitools comparison. Specific Asserts need to be added within the content section.  E.g. <**content**> |
| <assert> | yes | Multiple asserts can be added inside the content section. All the asserts are specific content checks that will be run based on the test type and targeted pages in the pdf document. Asserts section has two parts :  <expect> - value being tested  <region> - provide the coordinates (X,Y,Width,Height) only if the expected value is to be checked in a particular region. This parameter is optional within the assert section.  <onpages> - provide the pages (comma separated) or all=”true” (if all pages to be tested). If this is not provided then parent level pages for this test are automatically considered.  E.g.  <**content**>  <**assert**>  <**expect**>473 Martsmith Ave.</**expect**>  <**region**>40,140,150,73</**region**>  **<onpages all=”false”>**1,2,3**</onpages>**  </**assert**>  <**assert**>  <**expect**>Some value</**expect**>  <**region**>40,140,150,73</**region**>  **<onpages all=”true”></onpages>**  </**assert**>  </**content**> |
|  |  |  |

Note1 : jobconfig.xml needs to have the <test> section as root element.

Note2: jobconfig.xml can be named to any other name e.g. testconfig.xml

# Running a Job

Once the job is created by setting the right jobconfig.xml then PDF test can be run in two modes:

1. Command line: Run the test on the command line manually or as scheduled.

Java -jar Pdftesting.jar jobconfig.xml

where ,

ApplitoolsPdfTester - latest executable jar file

Jobconfig.xml - test configuration for a particular PDF.

Test results for both Applitools test result and content validation will be returned in the standard output of the command line. If any of the validations are failed or any difference found in the Applitools test then test result will be returned as **‘Failed**’. If all the content results are matched and applitools test is also passed the results is returned as **‘Passed’**

1. Integrated: Run the utility from another Java or windows program.

To run the utility from a windows application reference the **ApplitoolsPDFTester.dll** in your test program ( as shown below):

**PDFJobRunner** job = **PDFJobRunner.GetInstance();**

job.PDFTesterPath = @"C:\PDFTester\PdfTesting.jar";

job.PDFPath = @"C:\PDFTester\SampleE.pdf";

job.JobConfigPath = @"C:\PDFTester\pdfjobconfig.xml";

job.LogLevel = LogLevel.Off;

job.MatchLevel = MatchLevel.Strict;

job.APIKey = <APPLITOOLS\_API\_KEY>;

job.TestAllPages = true;

job.Pages = "1,2,3";

job.Type = TestMethod.CheckByRegion;

job.AppName = "SampleE";

job.BatchName = "Sample E";

job.AddAssertion("473 Martsmith Ave. Lake Monduran NSW 4671", "40,140,150,73", true);

job.AddAssertion("Value to be tested.", "55,217,491,162");

stdOut = job.ExecuteTest();

Console.WriteLine(stdOut);

# Test Scenarios

Irrespective of the mode chosen following scenarios can be executed using this utility

## 1 - Only Applitools test

In this example set type =”capturepdf” and pages attribute allpages = “true” in the existing jobconfig.xml

<?xml version="1.0"?>

<test>

<loglevel>off</loglevel>

<pages all = “true” />

<pdf path>/Users/Downloads/SampeA.pdf</pdfpath>

<matchlevel>strict</matchlevel>

<apikey>Your\_API\_Key</apikey>

<appname>SampleA</appname>

<batchname>Applitools test</batchname>

<type>capturepdf</type>

</test>

Run on command line as: java -jar Pdftesting.jar jobconfig.xml

Output

Feb 01, 2021 2:47:37 PM Utils.PDFUtil <init>

INFO: Total Pages in PDF: 4

Feb 01, 2021 2:47:37 PM Utils.PDFUtil captureAllPages

INFO: Capturing full pdf, no text assertions

Feb 01, 2021 2:48:02 PM Utils.PDFUtil publishResults

INFO: Publishing results

Publishing Applitools results:

Existing test [ steps: 1, test name: Page-1, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790149540356/00000251790149540231?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-2, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790149540356/00000251790149532580?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-3, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790149540356/00000251790149528249?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-4, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790149540356/00000251790149523332?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

RESULT = Passed

## 2 - Validate content on all/specific pages

In this example set type =”**checkbypages**”, pages attribute allpages = “true” (or specify the page numbers) and add a content assert in the existing jobconfig.xml. In this case all the added asserts will be tested across all the parent pages mentioned in the configuration.

<?xml version="1.0"?>

<test>

<pdf path>/Users/Downloads/SampeA.pdf</pdfpath>

<matchlevel>strict</matchlevel>

<apikey>Your\_API\_Key</apikey>

<appname>SampleA</appname>

<batchname>CheckByPages</batchname>

<type>capturepdf</type>

<content>

<assert>

<expect>473 Martsmith Ave. Lake Monduran NSW 4671</expect>

</assert>

</content>

</test>

Run on command line as: java -jar Pdftesting.jar jobconfig.xml

Output

Feb 01, 2021 3:13:02 PM PDFTester main

INFO: Applitools Pdf Tester v1.0.4

Feb 01, 2021 3:13:03 PM Utils.PDFUtil <init>

INFO: Total Pages in PDF: 4

Feb 01, 2021 3:13:03 PM Utils.PDFUtil checkContentOnAllPages

INFO: Perfroming applitools Screenshots

Feb 01, 2021 3:13:31 PM Utils.PDFUtil checkContentOnAllPages

INFO: Perfroming text assertions

Feb 01, 2021 3:13:31 PM Utils.PDFUtil publishResults

INFO: Publishing results

Publishing Applitools results:

Existing test [ steps: 1, test name: Page-1, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790148013729/00000251790148013588?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-2, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790148013729/00000251790148005912?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-3, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790148013729/00000251790148000064?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-4, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790148013729/00000251790147993666?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Publishing Content results:

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 on page 1 - Passed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 on page 2 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 on page 3 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 on page 4 - Passed

RESULT = Failed

## 3 - Validate content on all/specific pages at a region

In this example set type =”**checkbyregion**”, pages attribute allpages = “true” (or specify the page numbers) and add a content assert and a region as (X,Y,Width,Height) in the existing jobconfig.xml. In this test all the asserts are tested across on all the targeted pages

<?xml version="1.0"?>

<test>

<pdf path>/Users/Downloads/SampeA.pdf</pdfpath>

<matchlevel>strict</matchlevel>

<apikey>Your\_API\_Key</apikey>

<appname>SampleA</appname>

<batchname>CheckByRegion</batchname>

<type>capturepdf</type>

<content>

<assert>

<expect>473 Martsmith Ave. Lake Monduran NSW 4671</expect>

<region>40,140,150,73</region>

</assert>

</content>

</test>

Note: Region coordinates can be found using any PDF editor tool.

Run on command line as: java -jar Pdftesting.jar jobconfig.xml

Output

Feb 01, 2021 3:16:10 PM PDFTester main

INFO: Applitools Pdf Tester v1.0.4

Feb 01, 2021 3:16:11 PM Utils.PDFUtil <init>

INFO: Total Pages in PDF: 4

Feb 01, 2021 3:16:11 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Performing applitools screenshots for all pages

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Dr Donatello Crandell

473 Martsmith Ave.

Lake Monduran NSW 4671

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO:

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Policy wording version: 1 July 2020 (v

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Dr Donatello Crandell

473 Martsmith Ave.

Lake Monduran NSW 4671

130101112110200112211232312021111201

Feb 01, 2021 3:16:39 PM Utils.PDFUtil publishResults

INFO: Publishing results

Publishing Applitools results:

Existing test [ steps: 1, test name: Page-1, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147826082?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-2, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147819164?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-3, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147812646?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-4, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147806110?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Publishing Content results:

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 1 - Passed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 2 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 3 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 4 - Passed

RESULT = Failed

## 4 - Validate content on specific pages at page or region

In this example set type =”**checkbycontent**”, pages attribute allpages = “true” (or specify the page numbers, this parameter if not specified will default to all pages tested in the pdf) and add a content assert and a region as (X,Y,Width,Height) in the existing jobconfig.xml. **In this test all the asserts are tested only on the pages targeted for that particular assert.**

<?xml version="1.0"?>

<test>

<pdf path>/Users/Downloads/SampeA.pdf</pdfpath>

<matchlevel>strict</matchlevel>

<apikey>Your\_API\_Key</apikey>

<appname>SampleA</appname>

<batchname>CheckByContent</batchname>

<type>checkbycontent</type>

<content>

<assert>

<expect>473 Martsmith Ave. Lake Monduran NSW 4671</expect>

<region>40,140,150,73</region>

<onpages all = “true”>1,2,3,4</onpages>

</assert>

</content>

</test>

Note 1: Region coordinates can be found using any PDF editor tool.

Note 2: If region is not specified then assert will be checked at the page level

Note 3: If onpages is not specified then assertions will not be tested.

Run on command line as: java -jar Pdftesting.jar jobconfig.xml

Output

Feb 01, 2021 3:16:10 PM PDFTester main

INFO: Applitools Pdf Tester v1.0.4

Feb 01, 2021 3:16:11 PM Utils.PDFUtil <init>

INFO: Total Pages in PDF: 4

Feb 01, 2021 3:16:11 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Performing applitools screenshots for all pages

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Dr Donatello Crandell

473 Martsmith Ave.

Lake Monduran NSW 4671

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO:

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Policy wording version: 1 July 2020 (v

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkContentAtPositionOnAllPages

INFO: Key = 473 Martsmith Ave. Lake Monduran NSW 4671, Value = java.awt.geom.Rectangle2D$Double[x=40.0,y=140.0,w=150.0,h=73.0]

Feb 01, 2021 3:16:39 PM Utils.PDFUtil checkByPosition

INFO: Dr Donatello Crandell

473 Martsmith Ave.

Lake Monduran NSW 4671

130101112110200112211232312021111201

Feb 01, 2021 3:16:39 PM Utils.PDFUtil publishResults

INFO: Publishing results

Publishing Applitools results:

Existing test [ steps: 1, test name: Page-1, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147826082?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-2, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147819164?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-3, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147812646?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Existing test [ steps: 1, test name: Page-4, matches: 1, mismatches:0, missing: 0] , URL: https://eyes.applitools.com/app/batches/00000251790147826192/00000251790147806110?accountId=FBrttI4u\_k2LBHPkAN8U3Q~~

Publishing Content results:

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 1 - Passed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 2 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 3 - Failed

Assert: 473 Martsmith Ave. Lake Monduran NSW 4671 at position (java.awt.Rectangle[x=40,y=140,width=150,height=73]) on page 4 - Passed

RESULT = Failed

# Versions

|  |  |  |  |
| --- | --- | --- | --- |
| Date | Version | Description | Download link |
| 01/12/2020 | 1.0.0 | Initial |  |
| 01/01/2021 | 1.0.3 | Bug fixes and updates |  |
| 01/02/2021 | 1.0.4 | Bug fixes and enhancements |  |
| 27/04/2021 | 2.0.0 | Included page level assertions and other bug fixes |  |
|  |  |  |  |