

Building PDF output for HPE CTG

This document describes how to install the HPE CTG DITA stylesheet and how to build PDF output.

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Version history

Revision	Date	Owner	Details
1	3 March 2023	Péter Ács	Initial version
2	16 October 2024	Péter Ács	Added support for chapter landscape orientation

DITA build environment basics.

Output from DITA sources are produced using the open-source DITA Open Toolkit (DITA-OT). If you are using oXygen to build output from DITA, oXygen is also calling its embedded DITA-OT instance.

DITA-OT relies on plugins to produce various output types. Plugins can depend on each other: in our case the **com.hpe.ctgpdf** plugin developed by DTC-E relies on the stock **org.dita.pdf2** plugin.

- **org.dita.pdf2** plugin provides transformation scripts creating PDF from DITA files
- **com.hpe.ctgpdf** provides HPE-specific styling and feature extensions.

oXygen also provides DITA-OT plugins and while some of these are necessary for building HTML Webhelp, none are used for producing PDF output.

Building PDF output for HPE using the **com.hpe.ctgpdf** plugin and DITA-OT is completely platform- and tool-independent and can be called from oXygen, the Windows CLI or any CI/CD workflow.

Setting up the build environment

The recommended build environment setup involves installing a standalone DITA-OT instance instead of using the embedded instance supplied with oXygen. This approach makes plugin updates easier.

The setup involves three mandatory steps:

1. Installing DITA-OT on your workstation
2. Installing the HPE PDF stylesheet plugin
3. Setting up oXygen to use the external DITA-OT and plugin

If you insist on using the DITA-OT version embedded in oXygen, see [Alternative approach: Using the oXygen DITA-OT instance.](#)

Installing DITA-OT on your workstation

The HPE plugin is developed for DITA-OT version 3.7.4. While it may work with other versions, for compatibility reasons it is recommended to use this DITA-OT version.

1. Download DITA-OT 3.7.4 from the DITA-OT website.
<https://github.com/dita-ot/dita-ot/releases/download/3.7.4/dita-ot-3.7.4.zip>
2. Unzip the archive to **C:\DITA**

Archive contents are extracted to the **C:\DITA\dita-ot-3.7.4** folder.

Installing the HPE PDF stylesheet plugin

1. Navigate to **C:\DITA\dita-ot-3.7.4\plugins**
This folder contains the DITA-OT plugins.
2. Create the **com.hpe.ctgpdf** folder.
3. Git clone the contents <https://github.com/hpe/cms-techdocs-dita-stylesheet.git> to the folder created in the preceding step.
Note: the **master** branch contains production stylesheet. You must use this branch for building documentation deliverables. Use the **beta** branch for testing the development version.
4. Integrate the new plugin. This is easiest done using the command line.

In a Windows command line, execute **C:\DITA\dita-ot-3.7.4\bin\dita install**
You must receive the response: **Added com.hpe.ctgpdf**

The plugin is integrated and ready to use. You can validate this with the command: **C:\DITA\dita-ot-3.7.4\bin\dita transtypes** – the list must include hpectgpdf, which is the transformation type defined in the plugin.

Setting up oXygen to use the external DITA-OT and plugin

The **hpectg.scenarios** file located in the root of the cloned Git repository contains the oXygen transformation scenario calling the external DITA-OT installation with the HPE plugin and predefined transformation attributes.

The supplied scenario file calls the DITA-OT instance deployed in **C:\DITA\dita-ot-3.7.4**

Note: You must not change the default DITA-OT engine in oXygen system preferences. Doing so can break other transformation types and can have a significant negative impact on oXygen validation. Always set the custom DITA-OT engine in the transformation scenario instead.

1. Start oXygen and click the wrench icon to open the **Configure transformation scenarios** window.
2. Click the cogwheel and select **Import Scenarios**.
3. Navigate to **C:\DITA\dita-ot-3.7.4** and select the hpectg.scenarios file
4. Click **Import** to finish import the scenario.

Updating the HPE PDF plugin

Perform a git pull on the C:\DITA\dita-ot-3.7.4\plugins\com.hpe.ctgpdf folder to fetch updates.

The team will notify you when critical updates are necessary.

Note: If transformation attributes change with the stylesheet update and you are building output from oXygen, it is not sufficient to perform a git update on the plugin – you will also have to perform the import procedure again to fetch the latest configuration. The team will notify if this action is also required.

Additional information

This section describes useful information that can improve your efficiency but is not essential.

Building DITA output using the command line

If you want to perform a build quicker than calling it from oXygen or want to quickly validate the installed plugin, perform this command:

C:\DITA\dita-ot-3.7.4\bin\dita install -i <input_ditamap> -f hpectgpdf -o <output_folder>

where:

- **<input_ditamap>** is the input ditamap with its full path
- **hpectgpdf** is the transformation type as defined in the plugin. Do not change this value.

- **<output_folder>** is the folder you want the output PDF to be located. By default this folder is relative to the folder you call the command from.

Optionally, add the **-v** option to display the build log in the command line. Errors and warnings are displayed by default even without calling this option. You can also direct the log to a standalone file by using CLI pipes (for example, adding **> log.txt** to the end of your dita command will pipe the output to the log.txt file.)

Optionally, add the **--propertyfile C:\DITA\dita-ot-3.7.4\plugins\com.hpe.ctgpdf\ctgpdf.properties** option to pass all predefined build parameters to the build process. This option is mandatory if you are building production output.

You are highly encouraged to play with the command line DITA command and its options to discover its features and functionality. See the DITA-OT website for a detailed description <https://www.dita-ot.org/3.7/topics/build-using-dita-command.html>.

Alternative approach: Using the oXygen DITA-OT instance

There are less benefits than drawbacks to this approach.

Benefits:

- No need to install a standalone DITA-OT instance.
- Plugin integration in oXygen is easier.
- You use the same DITA-OT instance for building PDF and Web output.

Drawbacks:

- Installation requires administrative permission.
- Plugin updates are troublesome and require administrative permission.
- Troublesome process using DITA from the command line.
- The DITA-OT version can change with an oXygen upgrade, leading to compatibility issues.

Still, if you insist, the correct process is the following.

1. Perform Installing the HPE PDF stylesheet plugin but perform steps in the **C:\Program Files\Oxygen XML Editor 25\frameworks\dita\DITA-OT3.x\plugins** folder as an Administrator.
2. Launch oXygen as an Administrator and execute the **Run DITA-OT Integrator** transformation scenario to integrate the plugin.
3. Perform Setting up oXygen to use the external DITA-OT and plugin but change the value of the **dita.dir** parameter to **\${configured.ditaot.dir}**.

Output customization

Notes

You can use the following attributes to control notes:

- **outputclass='noimage'** hides the note image and green highlight borders. This can be useful in table cells or other space constrained locations

Forced line break in table cells

The outputclass='force-break' attribute is maintained for legacy compatibility reasons.

When outputting long strings in a constrained location (for example, a table cell) you can use this attribute to force the string to break at the table border, to avoid content overlapping the next cell.

It can be applied on the following elements:

- apiname
- codeph
- cmdname
- filepath
- varname

This feature is a workaround and must be used carefully and sparingly. Make sure the element does not include any child elements – these will be ignored if the attribute is applied.

Confidentiality statement

Use the view attribute of the permissions element set in the DITAMAP metadata to control confidentiality notices. Confidentiality notices appear in the footer of each page.

```
<bookmap>  
  <booktitle>  
    <mainbooktitle>Document Title</mainbooktitle>  
  </booktitle>  
  <bookmeta>  
    <permissions view="internal"/>  
  </bookmeta>
```

Applicable values are the following:

Target audience	View attribute value	Confidentiality notice
Document is for customers or the general public and does not have any confidential or proprietary information	all or unset	N/A
Document is for HPE employees and is not to be shared with customers or partners	internal	HPE INTERNAL USE ONLY
Document is for HPE employees and partners who have agreed to keep it confidential and is not to be shared with customers	entitled	CONFIDENTIAL AUTHORIZED HPE PARTNER USE ONLY
Document is for training HPE Employees, Outsourced, Channel Partners and Customer Education training material	classified	CONFIDENTIAL – FOR TRAINING PURPOSES ONLY

Cover page customization

The following elements in the following order are picked up and outputted to the document cover:

DITAMAP element	Contains
<booktitle>/<mainbooktitle> or <title>	Main document title. Must contain the product name and the document name
<booktitle>/<booktitlealt>	Document subtitle. To be used if the document is targeted for different systems or audiences
<bookmeta>/<prodinfo>/<vrmlist>/<vrm> @version, @release	Product release information. Put the major version in the version attribute and the minor version in the release attribute. The modification attribute is not considered for the output.
<bookmeta>/<bookid>/<edition>	Document edition. No additional boilerplate text added.
<bookmeta>/<bookid>/<bookpartno>	Document part number. Prefixed by "Part number:"
<bookmeta>/<permissions>/@view	Confidentiality statement. See the corresponding chapter.

The cover photo is currently hard-coded in the stylesheet source.

[Landscape orientation for chapters](#)

Apply `outputclass='landscape'` on the top-level topic of a chapter to display the full chapter in landscape orientation.

Note: Due to a limitation the attribute must be applied on the topic root element, not the `topicref` in the DITAMAP.