1. GENERATING PDF FILES

To generate a PDF document in a Grape application, we use Apache FOP. The generation process works as follows:

1. A database function returning XML text is defined
2. An XSL file is created (in ***app.config.xsl_directory***) that transforms the output XML of the database function into XSL-FO
3. An API handler for the specific document type is defined, for example ***/download/policy_document/:policy_id***
4. The API handler calls `app.get('pdfgenerator').generate_and_stream_xml` to generate and stream the PDF

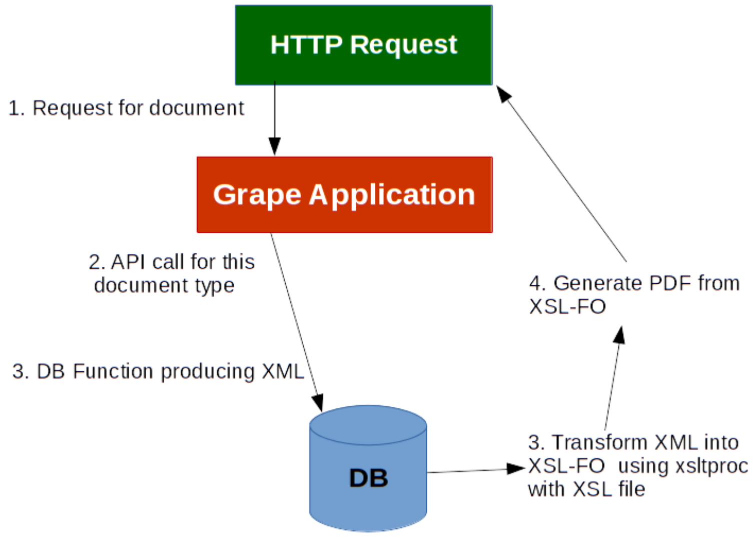
HTTP Request
1. Request for document
Grape Application
2. API call for this document type
3. DB Function producing XML
DB
3. Transform XML into XSL-FO using xsltproc with XSL file
4. Generate PDF from XSL-FO

Fig. 1: PDF Generation Process

1.1 XML-producing SQL function

A function returning TEXT containing XML.

1.2 XSL file

1.3 API handler

The API handler will usually make a call to ***app.get('pdfgenerator').generate_and_stream_xml(options);***. The options are:

```
{
    res: res, // The HTTP response object
    funcName: 'sql_function', // The SQL function name
    funcParams: [params], // Array of parameters passed to the function
    documentType: 'document_type', // An identifier for this document type. Files will be
                                //created in subdirectories with this name
    baseFileName: 'filename', // A filename without any extension, describing this
                                //document being created
    xslName: 'xsl_filename', // The XSL file to use for transformation
}
```

Notes:

- The XSL file must be located in the application's ***xsl_directory***. If a ***site_name*** is configured, an overriding file can be stored in a subdirectory with the same name (as the sitename)
- The function ***funcName*** must return an XML document
- An XSL parameter ***xsldirname*** will be defined and have the value of the directory name that the XSL file is located in. This can be used when images needs to be referenced. For example:

```
<fo:external-graphic  content-width="200mm" scaling="uniform">
 <xsl:attribute name="src"><xsl:value-of select="$xsldirname" />/image.png</xsl:attribute>
</fo:external-graphic>
```