

# XIV

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# OPER

This document discusses a (simple) interface from ConT<sub>E</sub>Xt to the underlying file system. For the moment this discription is limited to simple calls to utilities, the schema, and the modules. A directory listing is generated as follows:

```
xmltools --dir --pattern=x*.tex --output=xmdir.xml
```

You can do that before/between runs, but also from within ConT<sub>E</sub>Xt:

```
\executesystemcommand
  {xmltools --dir --pattern=x*.tex --output=xmdir.xml}
```

or when that fails:

```
\executesystemcommand
  {texmfstart xmltools --dir --pat=x*.tex --out=xmdir.xml}
```

or more efficient, only in the first run:

```
\startmode[*first]
  \executesystemcommand
    {xmltools --dir --pattern=x*.tex --output=xmdir-1.xml}
\stopmode
```

This produces a file that (on my system) looks as follows:

```
<?xml xmlns='http://www.pragma-ade.com/rlg/xmdir.rng'?>

<files>
  <directory name='.'>
    <file name='xcharts.tex'>
      <base>xcharts</base>
      <type>tex</type>
      <size>244</size>
      <date>2001-05-28 23:39</date>
    </file>
    <file name='xchemml.tex'>
      <base>xchemml</base>
      <type>tex</type>
      <size>8039</size>
      <date>2001-09-18 15:04</date>
    </file>
    <file name='xexamns.tex'>
      <base>xexamns</base>
      <type>tex</type>
      <size>223</size>
      <date>2001-05-28 22:53</date>
```

```
</file>
<file name='xfigures.tex'>
  <base>xfigures</base>
  <type>tex</type>
  <size>8740</size>
  <date>2001-07-26 21:46</date>
</file>
<file name='xgeneral.tex'>
  <base>xgeneral</base>
  <type>tex</type>
  <size>224</size>
  <date>2001-05-28 22:53</date>
</file>
<file name='xmathml.tex'>
  <base>xmathml</base>
  <type>tex</type>
  <size>1883</size>
  <date>2001-06-13 23:56</date>
</file>
<file name='xmltest.tex'>
  <base>xmltest</base>
  <type>tex</type>
  <size>830</size>
  <date>2001-01-19 10:04</date>
</file>
<file name='xphysml.tex'>
  <base>xphysml</base>
  <type>tex</type>
  <size>3989</size>
  <date>2001-09-18 11:58</date>
</file>
<file name='xsteps.tex'>
  <base>xsteps</base>
  <type>tex</type>
  <size>19171</size>
  <date>2001-06-18 18:14</date>
</file>
<file name='xstyle.tex'>
  <base>xstyle</base>
  <type>tex</type>
  <size>10376</size>
  <date>2001-10-26 17:59</date>
</file>
```

```

<file name='xtables.tex'>
  <base>xtables</base>
  <type>tex</type>
  <size>223</size>
  <date>2001-05-28 23:40</date>
</file>
<file name='xxmlmdir.tex'>
  <base>xxmlmdir</base>
  <type>tex</type>
  <size>5712</size>
  <date>2004-06-17 12:14</date>
</file>
</directory>
</files>

```

Such a file conforms to the following (relax-ng) specification:

```

<grammar xmlns="http://relaxng.org/ns/structure/1.0">
</grammar>

```

The parent element is defined as follows:

```

<start>
  <ref name="files"/>
</start>

<define name="files">
  <element name="files">
    <zeroOrMore>
      <ref name="directory"/>
    </zeroOrMore>
    <optional>
      <attribute name="url"/>
    </optional>
    <attribute name="root"/>
  </element>
</define>

```

This element has zero or more children:

```

<define name="directory">
  <element name="directory">
    <zeroOrMore>
      <ref name="file"/>
    </zeroOrMore>
    <attribute name="name"/>
  </element>
</define>

```

```

    </element>
</define>

```

A directory describes files:

```

<define name="file">
  <element name="file">
    <interleave>
      <ref name="base"/>
      <ref name="type"/>
      <ref name="date"/>
      <ref name="size"/>
    </interleave>
    <attribute name="name"/>
  </element>
</define>

```

A file element provides the following information:

```

<define name="base">
  <element name="base">
    <text/>
  </element>
</define>

```

```

<define name="type">
  <element name="type">
    <text/>
  </element>
</define>

```

```

<define name="date">
  <element name="date">
    <text/>
  </element>
</define>

```

```

<define name="size">
  <element name="size">
    <text/>
  </element>
</define>

```

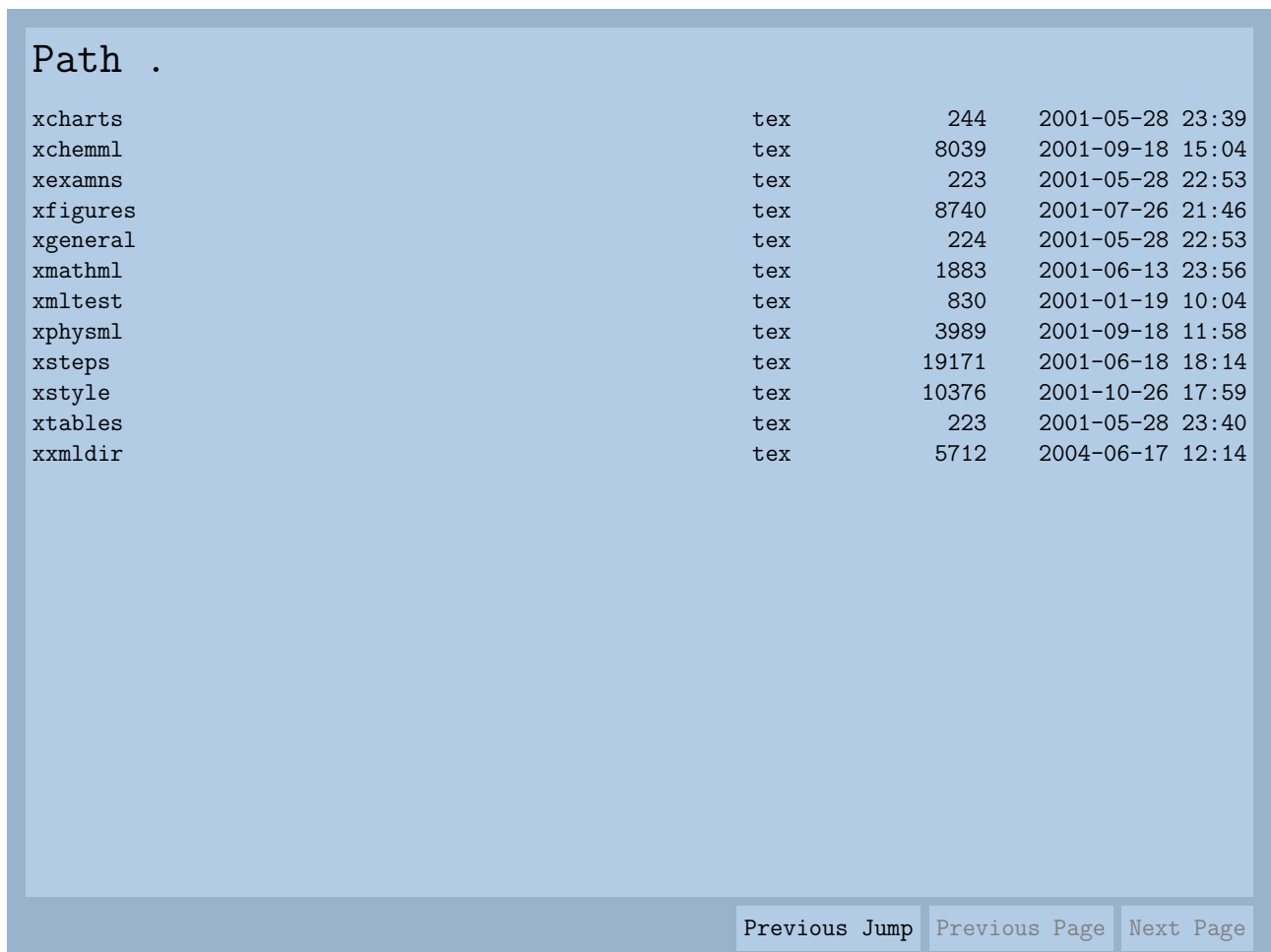
As you can see, we kept things simple. You can influence the data set with the following options to `texttools`:

```
recurse    recurse into subdirectories
pattern    the files to list
output     the output file
url        an url to add to the file
stripname  strip basename from pattern
root       the path to run on
```

Juts for fun, we will now process that file:

```
texexec --use=dir-01 --pdf xmldir-1.xml
```

This produces figure 1. As you may expect, the entries are hyperlinks to the files. This also explains the `--url` option to `xmltools` and the `url` attribute. We use this module to provide controlled access to files (graphics) on a server.



Path	.				
xcharts		tex	244	2001-05-28	23:39
xchemml		tex	8039	2001-09-18	15:04
xexamns		tex	223	2001-05-28	22:53
xfigures		tex	8740	2001-07-26	21:46
xgeneral		tex	224	2001-05-28	22:53
xmathml		tex	1883	2001-06-13	23:56
xmltest		tex	830	2001-01-19	10:04
xphysml		tex	3989	2001-09-18	11:58
xsteps		tex	19171	2001-06-18	18:14
xstyle		tex	10376	2001-10-26	17:59
xtables		tex	223	2001-05-28	23:40
xxmlDir		tex	5712	2004-06-17	12:14

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**Figure 1** The output of module `x-dir-01`.

```
texexec --use=dir-02 --pdf xmldir-2.xml
```

Path ../allkind

1

		base mchart type pdf width 597.50786pt height 845.04686pt date 2001-12-29 13:29 size 386773
		base mcheck type pdf width 597.5064pt height 845.04477pt date 2003-03-24 01:46 size 29938
		base mchinese type pdf width 597.50786pt height 845.04686pt date 2002-06-25 20:32 size 391988

2

		base mfonts type pdf width 597.50786pt height 845.04686pt date 2001-10-26 21:03 size 688979
		base minstall type pdf width 597.50786pt height 845.04686pt date 2001-10-26 21:00 size 95511
		base mlabels type pdf width 597.50786pt height 845.04686pt date 2004-01-16 22:28 size 118488

3

		base mmakempy type pdf width 597.50786pt height 845.04686pt date 2001-10-28 22:44 size 528111
		base mpdftools type pdf width 800.00002pt height 600.00002pt date 2004-05-25 09:58 size 20772
		base mptopdf type pdf width 597.50786pt height 845.04686pt date 2003-10-20 12:13 size 89251

4

		base mreadme type pdf width 597.50786pt height 845.04686pt date 2003-01-10 10:23 size 72736
		base mscite-p type pdf width 597.50786pt height 845.04686pt date 2003-10-05 19:34 size 97415
		base mscite-s type pdf width 600.00002pt height 600.00002pt date 2003-10-05 19:35 size 96962

Figure 2 The output of module x-dir-02.

If you want information about a file you can use the following module:

```
\usemodule[dir-05]

\getfilestate{xxmdir.tex}

\starttabulate[| | |]
\HL
\NC name \NC \getvariable{filestate}{name} \NC \NR
\NC base \NC \getvariable{filestate}{base} \NC \NR
\NC type \NC \getvariable{filestate}{type} \NC \NR
\NC size \NC \getvariable{filestate}{size} \NC \NR
\NC date \NC \getvariable{filestate}{date} \NC \NR
\HL
\stoptabulate
```

This will produce:

---

name	xxmdir.tex
base	xxmdir
type	tex
size	5712
date	2004-06-17 12:14

---