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Html2Wml

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NAME

Html2Wml — Program that can convert HTML pages to WML pages

SYNOPSIS

Html2Wml can be used as either a shell command:

```
$ html2wml file.html
```

or as a CGI:

```
/cgi-bin/html2wml.cgi?url=/index.html
```

In both cases, the file can be either a local file or a URL.

DESCRIPTION

Html2Wml converts HTML pages to WML decks, suitable for being viewed on a Wap device. The program can be launched from a shell to statically convert a set of pages, or as a CGI to convert a particular (potentially dynamic) HTML resource.

Althought the result is not guarantied to be valid WML, it should be the case for most pages. Good HTML pages will most probably produce valid WML decks. To check and correct your pages, you can use W3C's softwares: the *HTML Validator*, available online at http://validator.w3.org and *HTML Tidy*, written by Dave Raggett.

Html2Wml provides the following features:

- translation of the links
- limitation of the cards size by splitting the result into several cards
- inclusion of files (similar to the SSI)
- compilation of the result (using the WML Tools, see *"LINKS"*)
- a debug mode to check the result using validation functions

OPTIONS

Please note that most of these options are also available when calling Html2Wml as a CGI. In this case, boolean options are given the value "1" or "0", and other options simply receive the value they expect. For example, `–ascii` becomes `?ascii=1` or `?a=1`. See the file ***t/form.html*** for an example on how to call Html2Wml as a CGI.

Conversion Options

-a, —ascii

When this option is on, named HTML entities and non-ASCII characters are converted to US-ASCII characters using the same 7 bit approximations as Lynx. For example, `©` is translated to "(c)", and `ß` is translated to "ss". This option is off by default.

—[no]collapse

This option tells Html2Wml to collapse redundant whitespaces, tabulations, carriage returns, lines feeds and empty paragraphs. The aim is to reduce the size of the WML document as much as possible. Collapsing empty paragraphs is necessary for two reasons. First, this avoids empty screens (and on a device with only 4 lines of display, an empty screen can be quite ennoying). Second, Html2wml creates many empty paragraphs when converting, because of the way the syntax reconstructor is programmed. Deleting these empty paragraphs is necessary like cleaning the kitchen :-)

If this really bother you, you can desactivate this behaviour with the **—nocollapse** option.

—ignore-images

This option tells Html2Wml to completly ignore all image links.

—[no]img-alt-text

This option tells Html2Wml to replace the image tags with their corresponding alternative text (as with a text mode web browser). This option is on by default.

—[no]linearize

This option is on by default. This makes Html2Wml flattens the HTML tables (they are linearized), as Lynx does. I think this is better than trying to use the native WML tables. First, they have extremely limited features and possibilities compared to HTML tables. In particular, they can‘t be nested. In fact this is normal because Wap devices are not supposed to have a big CPU running at some zillions-hertz, and the calculations needed to render the tables are the most complicated and CPU-hogger part of HTML.

Second, as they can‘t be nested, and as typical HTML pages heavily use imbricated tables to create their layout, it‘s impossible to decide which one could be kept. So the best thing is to keep none of them.

[Note] Although you can desactivate this behaviour, and although there is internal support for tables, the unlinearized mode has not been heavily tested with nested tables, and it may produce unexpected results.

-n, —numeric-non-ascii

This option tells Html2wml to convert all non-ASCII characters to numeric entities, i.e., "é" becomes `é`, and "sz" becomes `ß`. By default, this option is off.

-p, —nopre

This options tells Html2Wml not to use the <pre> tag. This option was added because the compiler from WML Tools 0.0.4 doesn‘t support this tag.

Links Reconstruction Options

—hreftmpl=*TEMPLATE*

This options sets the template that will be used to reconstruct the `href`-type links. See *"LINKS RECONSTRUCTION"* for more information.

—srctmpl=*TEMPLATE*

This option sets the template that will be used to reconstruct the `src`-type links. See *"LINKS RECONSTRUCTION"* for more information.

Splitting Options

-s, —max-card-size=*SIZE*

This option allows you to limit the size (in bytes) of the generated cards. Default is 1,500 bytes, which should be small enought to be loaded on most Wap devices. See *"DECK SLICING"* for more information.

-t, —card-split-threshold=*SIZE*

This option sets the threshold of the split event, which can occur when the size of the current card is between `max-card-size - card-split-threshold` and `max-card-size`. Default value is 50. See *"DECK SLICING"* for more information.

—next-card-label=*STRING*

This options sets the label of the link that points to the next card. Default is "[>>]", which whill be rendered as "[]".

—prev-card-label=*STRING*

This options sets the label of the link that points to the previous card. Default is "[<<]", which whill be rendered as "[<<]".

HTTP Authentication

-U, —http-user=*USERNAME*

Use this option to set the username for an authenticated request.

-P, —http-passwd=*PASSWORD*

Use this option to set the password for an authenticated request.

Proxy Support

-[no]Y, —[no]proxy

Use this option to activate proxy support. By default, proxy support is activated. See *"PROXY SUPPORT"*.

Output Options

-k, —compile

Setting this option tells Html2Wml to use the compiler from WML Tools to compile the WML deck. If you want to create a real Wap site, you should seriously use this option in order to reduce the size of the WML decks. Remember that Wap devices have very little amount of memory. If this is not enought, use the splitting options.

Take a look in ***wml_compilation/*** for more information on how to use a WML compiler with Html2Wml.

-o, —output

Use this option (in shell mode) to specify an output file. By default, Html2Wml prints the result to standard output.

Debugging Options

-d, —debug[=*LEVEL*]

This option activates the debug mode. This prints the output result with line numbering and with the result of the XML check. If the WML compiler was called, the result is also printed in hexadecimal an ascii forms. When called as a CGI, all of this is printed as HTML, so that can use any web browser for that purpose.

—xmlcheck

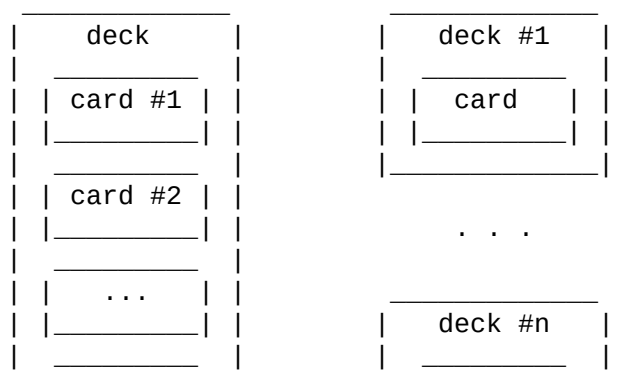
When this option is on, it send the WML output to XML::Parser to check its well-formedness.

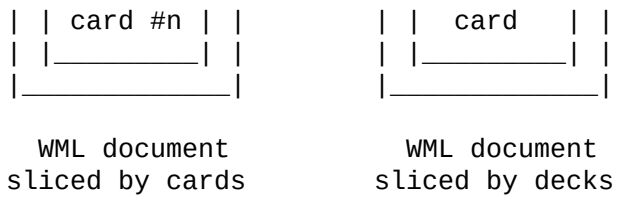
DECK SLICING

The *deck slicing* is a feature that Html2Wml provides in order to match the low memory capabilities of most Wap devices. Many can‘t handle cards larger than 2,000 bytes, therefore the cards must be sufficiently small to be viewed by all Wap devices. To achieve this, you should compile your WML deck, which reduce the size of the deck by 50%, but even then your cards may be too big. This is where Html2Wml comes with the deck slicing feature. This allows you to limit the size of the cards, currently only *before* the compilation stage.

Slice by cards or by decks

On some Wap phones, slicing the deck is not sufficient: the WML browser still tries to download the whole deck instead of just picking one card at a time. A solution is to slice the WML document by decks. See the figure below.





What this means is that Html2Wml generates several WML documents. In CGI mode, only the appropriate deck is sent, selected by the id given in parameter. If no id was given, the first deck is sent.

Note on size calculation

Currently, Html2Wml estimates the size of the card on the fly, by summing the length of the strings that compose the WML output, texts and tags. I say "estimates" and not "calculates" because computing the exact size would require many more calculations than the way it is done now. One may objects that there are only additions, which is correct, but knowing the *exact* size is not necessary. Indeed, if you compile the WML, most of the strings of the tags will be removed, but not all.

For example, take an image tag: `<img src="images/dog.jpg" alt="Photo of a dog">`. When compiled, the string `"img"` will be replaced by a one byte value. Same thing for the strings `"src"` and `"alt"`, and the spaces, double quotes and equal signs will be stripped. Only the text between double quote will be preserved... but not in every cases. Indeed, in order to go a step further, the compiler can also encode parts of the arguments as binary. For example, the string `"http://www."` can be encoded as a single byte (`8F` in this case). Or, if the attribute is `href`, the string `href="http://` can become the byte `4B`.

As you see, it doesn‘t matter to know exactly the size of the textual form of the WML, as it will always be far superior to the size of the compiled form. That‘s why I don‘t count all the characters that may be actually written.

Also, it‘s because I‘m quite lazy ;-)

Why compiling the WML deck?

If you intent to create real WML pages, you should really consider to always compile them. If you‘re not convinced, here is an illustration.

Take the following WML code snipet:

```
<a href='http://www.yahoo.com/'>Yahoo!</a>
```

It‘s the basic and classical way to code an hyperlink. It takes 42 bytes to code this, because it is presented in a human-readable form.

The WAP Forum has defined a compact binary representation of WML in its specification, which is called "compiled WML". It‘s a binary format, therefore you, a mere human, can‘t read that, but your computer can. And it‘s much faster for it to read a binary format than to read a textual format.

The previous example would be, once compiled (and printed here as hexadecimal):

```
1C 4A 8F 03 y a h o o 00 85 01 03 Y a h o o ! 00 01
```

This only takes 21 bytes. Half the size of the human-readable form. For a Wap device, this means both less to download, and easier things to read. Therefore the processing of the document can be achieved in a short time compared to the tectual version of the same document.

There is a last argument, and not the less important: many Wap devices only read binary WML.

ACTIONS

Actions are a feature similar to (but with far less functionalities!) the SSI (Server Side Includes) available on good servers like Apache. In order not to interfere with the real SSI, but to keep the syntax easy to learn, it differs in very few points.

Syntax

Basically, the syntax to execute an action is:

```
<!-- [action param1="value" param2='value'] -->
```

Note that the angle brackets are part of the syntax. Except for that point, Actions syntax is very similar to SSI syntax.

Available actions

Only few actions are currently available, but more can be implemented on request.

include

Description

Includes a file in the document at the current point. Please note that Html2Wml doesn't check nor parse the file, and if the file cannot be found, will silently die (this is the same behavior as SSI).

Parameters

`virtual=url` — The file is get by http.
`file=path` — The file is read from the local disk.

fsize

Description

Returns the size of a file at the current point of the document.

Parameters

`virtual=url` — The file is get by http.
`file=path` — The file is read from the local disk.

Notes

If you use the file parameter, an absolute path is recommend.

skip

Description

Skips everything until the first `end_skip` action.

Generic parameters

The following parameters can be used for any action.

for=*output format*

This paramater restricts the action for the given output format. Currently, the only available format is "`wml`" (when using `html2chtml` the format is "`chtml`").

Examples

If you want to share a navigation bar between several WML pages, you can `include` it this way:

```
<!-- [include virtual="nav.wml"] -->
```

Of course, you have to write this navigation bar first :-)
If you want to use your current HTML pages for creating your WML pages, but that they contains complex tables, or unecessary navigation tables, etc, you can simply `skip` the complex parts and keep the rest.

```
<body>
<!--[skip for="wml"]-->
unecessary parts for the WML pages
<!--[end_skip]-->
useful parts for the WML pages
</body>
```

LINKS RECONSTRUCTION

The links reconstruction engine is IMHO the most important part of Html2Wml, because it's this engine that allows you to reconstruct the links of the HTML document being converted. It has two modes, depending upon whether Html2Wml was launched from the shell or as a CGI.
When used as a CGI, this engine will reconstructs the links of the HTML document so that all the urls will be passed to Html2Wml in order to convert the pointed files (pages or images). This is completly

automatic and can't be customized for now (but I don't think it would be really useful).
When used from the shell, this engine reconstructs the links with the given templates. Note that absolute URLs will be left untouched. The templates can be customized using the following syntax.

Templates

HREF Template

This template controls the reconstruction of the `href` attribute of the `A` tag. Its value can be changed using the **—hreftmpl** option. Default value is
`"{FILEPATH}{FILENAME}{$FILETYPE =~ s/s?html?/wml/o; $FILETYPE}"`.

Image Source Template

This template controls the reconstruction of the `src` attribute of the `IMG` tag. Its value can be changed using the **—srctmpl** option. Default value is

```
"{FILEPATH}{FILENAME}{$FILETYPE =~ s/gif|png|jpe?g/wbmp/o;
$FILETYPE}"
```

Syntax

The template is a string that contains the new URL. More precisely, it's a Text::Template template. Parameters can be interpolated as a constant or as a variable. The template is embraced between curcly bracets, and can contain any valid Perl code.
The simplest form of a template is `{PARAM}` which just returns the value of PARAM. If you want to do something more complex, you can use the corresponding variable; for example `{"foo $PARAM bar"}`, or `{join "_", split " ", PARAM}`.
You may read *Text::Template* for more information on what is possible within a template.
If the original URL contained a query part or a fragment part, then they will be appended to the result of the template.

Available parameters

URL

This parameter contains the original URL from the `href` or `src` attribute.

FILENAME

This parameter contains the base name of the file.

FILEPATH

This parameter contains the leading path of the file.

FILETYPE

This parameter contains the suffix of the file.

This can be resumed this way:

```
  URL = http://www.server.net/path/to/my/page.html
                              ------------^^^^ ----
                                  |        |     \
                                  |        |      \
                               FILEPATH FILENAME FILETYPE
```

Note that `FILETYPE` contains all the extensions of the file, so if its name is ***index.html.fr*** for example, `FILETYPE` contains "`.html.fr`".

Examples

To add a path option:

```
{URL}$wap
```

Using Apache, you can then add a Rewrite directive so that URL ending with `$wap` will be redirected to Html2Wml:

```
RewriteRule  ^(/.*)\$wap$  /cgi-bin/html2wml.cgi?url=$1
```

To change the extension of an image:

{FILEPATH}{FILENAME}.wbmp

PROXY SUPPORT

Html2Wml uses LWP built-in proxy support. It is activated by default, and loads the proxy settings from the environment variables, using the same variables as many others programs. Each protocol (http, ftp, etc) can be mapped to use a proxy server by setting a variable of the form `PROTOCOL_proxy`. Example: use `http_proxy` to define the proxy for http access, `ftp_proxy` for ftp access. In the shell, this is only a matter of defining the variable.
For Bourne shell:

```
$ export http_proxy="http://proxy.domain.com:8080/"
```

For C-shell:

```
% setenv http_proxy "http://proxy.domain.com:8080/"
```

Under Apache, you can add this directive to your configuration file:

```
SetEnv http_proxy "http://proxy.domain.com:8080"
```

but this has the default that another CGI, or another program, can use this to access external ressources. A better way is to edit Html2Wml and fill the option `proxy-server` with the appropriate value.

CAVEATS

Html2Wml tries to make correct WML documents, but the well-formedness and the validity of the document are not guarantied.
Inverted tags (like "bold italic") may produce unexpected results. But only bad softwares do bad stuff like this.

LINKS

Download

Html2Wml

This is the web site of the Html2Wml project, hosted by SourceForge.net. All the stable releases can be downloaded from this site.
[http://www.html2wml.org/]

Nutialand

This is the web site of the author, where you can find the archives of all the releases of Html2Wml.
[http://www.maddingue.org/softwares/]

Resources

The WAP Forum

This is the official site of the WAP Forum. You can find some technical information, as the specifications of all the technologies associated with the WAP.
[http://www.wapforum.org/]

WAP.com

This site has some useful information and links. In particular, it has a quite well done FAQ.
[http://www.wap.com/]

The World Wide Web Consortium

Altough not directly related to the Wap stuff, you may find useful to read the specifications of the XML (WML is an XML application), and the specifications of the different stylesheet languages (CSS and XSL), which include support for low-resolution devices.
[http://www.w3.org/]

TuxMobil

This web site is dedicated to Mobile UniX systems. It leads you to a lot of useful hands-on information about installing and running Linux and BSD on laptops, PDAs and other mobile

computer devices.
[http://www.tuxmobil.org/]

Programmers utilities

HTML Tidy

This is a very handful utility which corrects your HTML files so that they conform to W3C standards.
[http://www.w3.org/People/Raggett/tidy]

Kannel

Kannel is an open source Wap and SMS gateway. A WML compiler is included in the distribution.
[http://www.kannel.org/]

WML Tools

This is a collection of utilities for WML programmers. This include a compiler, a decompiler, a viewer and a WBMP converter.
[http://pwot.co.uk/wml/]

WML browsers and Wap emulators

Opera

Opera is originaly a Web browser, but the version 5 has a good support for XML and WML. Opera is available for free for several systems.
[http://www.opera.com/]

wApua

wApua is an open source WML browser written in Perl/Tk. It‘s easy to intall and to use. Its support for WML is incomplete, but sufficient for testing purpose.
[http://fsinfo.cs.uni-sb.de/~abe/wApua/]

Tofoa

Tofoa is an open source Wap emulator written in Python. Its installation is quite difficult, and its incomplete WML support makes it produce strange results, even with valid WML documents.
[http://tofoa.free-system.com/]

EzWAP

EzWAP, from EZOS, is a commercial WML browser freely available for Windows 9x, NT, 2000 and CE. Compared to others Windows WML browsers, it requires very few resources, and is quite stable. Its support for the WML specs seems quite complete. A very good software.
[http://www.ezos.com/]

Deck-It

Deck-It is a commercial Wap phone emulator, available for Windows and Linux/Intel only. It‘s a very good piece of software which really show how WML pages are rendered on a Wap phone, but one of its major default is that it cannot read local files.
[http://www.pyweb.com/tools/]

Klondike WAP Browser

Klondike WAP Browser is a commercial WAP browser available for Windows and PocketPC.
[http://www.apachesoftware.com/]

WinWAP

WinWAP is a commercial Wap browser, freely available for Windows.
[http://www.winwap.org/]

WAPman

WAPman from EdgeMatrix, is a commercial WAP browser available for Windows and PalmOS.
[http://www.edgematrix.com/edge/control/MainContentBean?page=downloads]

Wireless Companion

Wireless Companion, from YourWap.com, is a WAP emulator available for Windows.
[http://www.yourwap.com/]

Mobilizer

Mobilizer is a Wap emulator available for Windows and Unix.
[http://mobilizer.sourceforge.net/]

QWmlBrowser

QWmlBrowser (formerly known as WML BRowser) is an open source WML browser, written using the Qt toolkit.
[http://www.wmlbrowser.org/]

Wapsody

Wapsody, developed by IBM, is a freely available simulation environment that implements the WAP specification. It also features a WML browser which can be run stand-alone. As Wapsody is written in Java/Swing, it should work on any system.
[http://alphaworks.ibm.com/aw.nsf/techmain/wapsody]

WAPreview

WAPreview is a Wap emulator written in Java. As it uses an HTML based UI and needs a local web proxy, it runs quite slowly.
[http://wapreview.sourceforge.net]

PicoWap

PicoWap is a small WML browser made by three French students.
[http://membres.lycos.fr/picowap/]

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