Halibut User Manual

Halibut is a free (MIT-licensed) documentation production system, able to generate multiple output formats from the same input data. This document is its user manual.

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Chapter 1: Introduction to Halibut

Halibut is a multi-format documentation processing system.

What that means is that you write your document once, in Halibut's input format, and then the Halibut program processes it into several output formats which all contain the same text. So, for example, if you want your application to have a Windows help file, and you also want the same documentation available in HTML on your web site, Halibut can do that for you.

1.1 Output formats supported by Halibut

Currently Halibut supports the following output formats:

- Plain ASCII text.
- HTML.
- Unix `man` page format.
- GNU Info format.
- PDF.
- PostScript.
- Windows HTML Help (`.CHM`).
- Old-style Windows Help (`.HLP`).

1.2 Features supported by Halibut

Here's a list of Halibut's notable features.

- Halibut automatically assigns sequential numbers to your chapters, sections and subsections, and keeps track of them for you. You supply a *keyword* for each section, and then you can generate cross-references to that section using the keyword, and Halibut will substitute the correct section number. Also, in any output format where it makes sense, the cross-references will be hyperlinks to that section of the document.
- Halibut has some support for Unicode: you can include arbitrary Unicode characters in your document, and specify fallback text in case any output format doesn't support that character.
- Halibut's indexing support is comprehensive and carefully designed. It's easy to use in the simple case, but has powerful features that should make it possible to maintain a high-quality and useful index.

Chapter 2: Running Halibut

In the simplest case, running Halibut is very easy. You provide a set of input files on its command line, and it produces a set of output files.

```
$ halibut intro.but gettingstarted.but reference.but index.but
```

This will generate a large set of output files:

- `output.txt` will be a plain text version of the input document.
- `output.chm` will be a Windows HTML Help version of the same thing. (Note that to do this Halibut does not require any external software such as a Help compiler. It *directly* generates Windows HTML Help files, and therefore it doesn't need to be run on Windows to do so: it can generate them even when run from an automated script on a Unix machine.)
- `output.hlp` and `output.cnt` will be an old-style Windows Help version of the same thing. (Most of the text is in `output.hlp`; `output.cnt` contains additional contents data used by the Windows help topic selector. If you lose the latter, the former should still be usable, but it will look less modern.)
- `output.1` will be a Unix `man` page.
- The set of files `*.html` will contain an HTML version of the document. If you have configured Halibut to generate more than one HTML file (the default), then the file `Contents.html` will be the topmost one that users should be directed to initially. If you have configured Halibut to generate a single file, it will be called `Manual.html`.
- `output.info`, and some additional files `output.info-1`, `output.info-2` etc., will be files suitable for use with GNU `info`.
- `output.pdf` will be a printable PDF manual.
- `output.ps` will be a printable PostScript manual.

2.1 Command-line options

Halibut supports command-line options in case you don't want to use all of Halibut's output formats, or you want to configure the names of your output files, or you want to supply additional configuration on the command line. The supported options are listed here.

Firstly, there are options which indicate which of the output formats you want Halibut to generate:

`--text`[=*filename*]

Specifies that you want to generate plain text output. You can optionally specify a file name

(e.g. `--text=myfile.txt`), in which case Halibut will change the name of the output file as well.

`--html`[=*filename*]

Specifies that you want to generate HTML output. You can optionally specify a file name (e.g. `--html=myfile.html`), in which case Halibut will change the name of the output file as well. Specifying a file name here will also cause the HTML to be output in *only* one file, instead of the usual behaviour of producing multiple files with links between them. If you want to produce multiple files and configure their names, you will need to use the more complete file name configuration directives given in section 4.2.1 (although you may want to do so on the command line, using the `-C` option).

`--xhtml`[=*filename*]

Synonym for `--html`.

`--chm`[=*filename*]

Specifies that you want to generate Windows HTML Help output. You can optionally specify a file name (e.g. `--chm=myfile.chm`), in which case Halibut will change the name of the output file as well.

`--winhelp`[=*filename*]

Specifies that you want to generate old-style Windows Help output. You can optionally specify a file name (e.g. `--winhelp=myfile.hlp`), in which case Halibut will change the name of the output file as well.

Your output file name should end with `.hlp`; if it doesn't, Halibut will append it. Halibut will also generate a contents file (ending in `.cnt`) alongside the file name you specify.

`--whlp`[=*filename*]

Synonym for `--winhelp`.

`--hlp`[=*filename*]

Synonym for `--winhelp`.

`--man`[=*filename*]

Specifies that you want to generate `man` page output. You can optionally specify a file name (e.g. `--man=myfile.5`), in which case Halibut will change the name of the output file as well.

`--info`[=*filename*]

Specifies that you want to generate GNU `info` output. You can optionally specify a file name (e.g. `--info=myfile.info`), in which case Halibut will change the name of the output file as well.

Unless the `info` output format is configured not to (see section 4.6), Halibut will divide the `info` output into many small files. The extra files will have numeric suffixes on their names; so, for example, `output.info` might be accompanied by additional files `output.info-1`, `output.info-2` and so on.

`--pdf`[=*filename*]

Specifies that you want to generate PDF output. You can optionally specify a file name (e.g. `--pdf=myfile.pdf`), in which case Halibut will change the name of the output file as well.

`--ps`[=*filename*]

Specifies that you want to generate PostScript output. You can optionally specify a file name (e.g. `--ps=myfile.ps`), in which case Halibut will change the name of the output file as well.

If you do not specify any of the above options, Halibut will simply produce *all* of its output formats.

Also, there is an option which allows you to specify an arbitrary `\cfg` configuration directive (see section 3.6):

`-C`*config-directive*`:`*value*[`:`*value*...]

The text following `-C` is expected to be a colon-separated list of strings. (If you need a literal colon, you can escape it with a backslash: `\:`. If you need a literal *backslash*, you can do the same: `\\`.) These strings are used as the parts of a `\cfg` directive. So, for example, the option

```
-Ctext-section-align:2:leftplus
```

will translate into the configuration directive

```
\cfg{text-section-align}{2}{leftplus}
```

(Note that your shell may also take an interest in backslashes, particularly under Unix. You may find that the backslash with which you escape a colon must be doubled in order to make the shell pass it to Halibut at all, and to pass a doubled backslash to Halibut you might have to type four backslashes on your shell command line. This is not part of Halibut's own behaviour, and it cannot do anything about it.)

Configuration directives created in this way take effect after all other input has been processed. (In most cases, this has the effect of overriding any other instances of the directive in the input.)

The options which set the output file names actually work by implicitly generating these configuration directives. When you specify `--text=myfile.txt`, for example, Halibut treats it identically to `--text -Ctext-filename:myfile.txt`. The Windows Help and man page formats work similarly. HTML is slightly different, since it also arranges for single-file output if you pass a filename to `--html`; so `--html=myfile.html` is equivalent to `--html -Chtml-single-filename:myfile.html -Chtml-leaf-level:0`. (See chapter 4 for explanations of all these configuration directives.)

In addition to these, there are also a few other options:

`--input-charset=`*charset*

Changes the default assumed character set for all input files from ASCII to something else. (`-Cinput-charset` cannot be used for this, as `-C` directives are processed after

all other input, so wouldn't affect any files.)

Any `\cfg{input-charset}` directives within input files override this option.

See section 3.6 for more information about the input character set.

`--list-charsets`

List character sets known to Halibut.

`--list-fonts`

List fonts known to Halibut, both those it intrinsically knows about and those found in its input files.

`--help`

Print a brief help message and exit immediately. (Don't confuse this with `--winhelp`!)

`--version`

Print information about Halibut's version number and exit immediately.

`--licence`

Display Halibut's licence (see also appendix A) and exit immediately.

`--license`

US English alternative spelling of `--licence`.

`--precise`

Report column numbers as well as line numbers when reporting errors in the Halibut input files.

Chapter 3: Halibut input format

This chapter describes the format in which you should write documents to be processed by Halibut.

3.1 The basics

Halibut's input files mostly look like ordinary ASCII text files; you can edit them with any text editor you like.

Writing paragraphs of ordinary text is very simple: you just write ordinary text in the ordinary way. You can wrap a paragraph across more than one line using line breaks in the text file, and Halibut will ignore this when it rewraps the paragraph for each output format. To separate paragraphs, use a blank line (i.e. two consecutive line breaks). For example, a fragment of Halibut input looking like this:

```
This is a line of text.
This is another line of text.

This line is separated from the previous one by a blank line.
```

will produce two paragraphs looking like this:

> This is a line of text. This is another line of text.
>
> This line is separated from the previous one by a blank line.

The first two lines of the input have been merged together into a single paragraph, and the line break in the input file was treated identically to the spaces between the individual words.

Halibut is designed to have very few special characters. The only printable characters in Halibut input which will not be treated exactly literally in the output are the backslash (`\`) and the braces (`{` and `}`). If you do not use these characters, *everything* else you might type in normal ASCII text is perfectly safe. If you do need to use any of those three characters in your document, you will have to precede each one with a backslash. Hence, for example, you could write

```
This \\ is a backslash, and these are \{braces\}.
```

and Halibut would generate the text

> This \ is a backslash, and these are {braces}.

If you want to write your input file in a character set other than ASCII, you can do so by using the `\cfg{input-charset}` command. See section 3.6 for details of this.

3.2 Simple inline formatting commands

Halibut formatting commands all begin with a backslash, followed by a word or character identifying the command. Some of them then use braces to surround one or more pieces of text acted on by the command. (In fact, the `\\`, `\{` and `\}` sequences you met in section 3.1 are themselves formatting commands.)

This section describes some simple formatting commands you can use in Halibut documents. The commands in this section are *inline* commands, which means you can use them in the middle of a paragraph. Section 3.3 describes some *paragraph* commands, which affect a whole paragraph at a time.

Many of these commands are followed by a pair of braces surrounding some text. In all cases, it is perfectly safe to have a line break (in the input file) within those braces; Halibut will treat that exactly the same as a space. For example, these two paragraphs will be treated identically:

```
Here is some \e{emphasised
text}.

Here is some \e{emphasised text}.
```

3.2.1 `\e` and `\s`: Emphasising text

Possibly the most obvious piece of formatting you might want to use in a document is *emphasis*. To emphasise text, you use the `\e` command, and follow it up with the text to be emphasised in braces. For example, the first sentence in this paragraph was generated using the Halibut input

```
Possibly the most obvious piece of formatting you might want
to use in a document is \e{emphasis}.
```

A second form of emphasis is supported, called **strong** text. You can use the `\s` command for this type of emphasis. Typically, in output formats, `\e` will give italics, and `\s` will give bold.

3.2.2 `\c` and `\cw`: Displaying computer code inline

Halibut was primarily designed to produce software manuals. It can be used for other types of document as well, but software manuals are its speciality.

In software manuals, you often want to format text in a way that indicates that it is something you might see displayed verbatim on a computer screen. In printed manuals, this is typically done by setting that text in a font which is obviously fixed-width. This provides a visual cue that the text being displayed is code, and it also ensures that punctuation marks are clearly separated and shown individually (so that a user can copy the text accurately and conveniently).

Halibut provides *two* commands for this, which are subtly different. The names of those commands are `\c` (‘code’) and `\cw` (‘weak code’). You use them just like `\e` and `\s`, by following them with some text in braces. For example, this...

```
This sentence contains some \c{code} and some \cw{weak code}.
```

... produces this:

This sentence contains some `code` and some `weak code`.

The distinction between code and weak code is mainly important when producing plain text output. Plain text output is typically viewed in a fixed-width font, so there is no need (and no way) to change font in order to make the order of punctuation marks clear. However, marking text as code is also *sometimes* done to provide a visual distinction between it and the text around it, so that the reader knows where the literal computer text starts and stops; and in plain text, this cannot be done by changing font, so there needs to be an alternative way.

So in the plain text output format, things marked as code (`\c`) will be surrounded by quote marks, so that it's obvious where they start and finish. Things marked as weak code (`\cw`) will not look any different from normal text.

I recommend using weak code for any application where it is *obvious* that the text is literal computer input or output. For example, if the text is capitalised, that's usually good enough. If I talk about the Pentium's `EAX` and `EDX` registers, for example, you don't need quotes to notice that those are special; so I would write that in Halibut as `‘the Pentium's \cw{EAX} and \cw{EDX} registers’`. But if I'm talking about the Unix command `man`, which is an ordinary English word in its own right, a reader might be slightly confused if it appeared in the middle of a sentence undecorated; so I would write that as `‘the Unix command \c{man}’`.

In summary:

- `\c` means ‘this text *must* be visually distinct from the text around it’. Halibut's various output formats will do this by changing the font if possible, or by using quotes if not.
- `\cw` means ‘it would be nice to display this text in a fixed-width font if possible, but it's not essential’.

In really extreme cases, you might want Halibut to use quotation marks even in output formats which can change font. In section 3.2.5, for example, I mention the special formatting command ‘`\.`’. If that appeared at the end of a sentence *without* the quotes, then the two adjacent full stops would look pretty strange even if they were obviously in different fonts.

For this, Halibut supports the `\cq` command, which is exactly equivalent to using `\q` to provide quotes and then using `\cw` inside the quotes. So in the paragraph above, for example, I wrote

```
the special formatting command \cq{\\.}.
```

and I could equivalently have written

```
the special formatting command \q{\cw{\\.}}.
```

There is a separate mechanism for displaying computer code in an entire paragraph; see section 3.3.1 for that one.

3.2.3 `\q`: Quotation marks

Halibut's various output formats don't all use the same conventions for displaying text in ordinary quotation marks (‘like these’). Some output formats have access to proper matched quote characters, whereas others are restricted to using plain ASCII. Therefore, it is not ideal to use the ordinary ASCII double quote character in your document (although you can if you like).

Halibut provides the formatting command `\q` to indicate quoted text. If you write

```
Here is some \q{text in quotes}.
```

then Halibut will print

> Here is some ‘text in quotes’.

and in every output format Halibut generates, it will choose the best quote characters available to it in that format. (The quote characters to use can be configured with the `\cfg` command.)

You can still use the ordinary quote characters of your choice if you prefer; or you could even use the `\u` command (see section 3.2.7) to generate Unicode matched quotes (single or double) in a way which will automatically fall back to the normal ASCII one if they aren't available. But I recommend using the built-in `\q` command in most cases, because it's simple and does the best it can everywhere.

If you're using the `\c` or `\cw` commands to display literal computer code, you will probably want to use literal ASCII quote characters, because it is likely to matter precisely which quote character you use. In fact, Halibut actually *disallows* the use of `\q` within either of `\c` and `\cw`, since this simplifies some of the output formats.

3.2.4 `\-` and `\_`: Non-breaking hyphens and spaces

If you use an ordinary hyphen in the middle of a word (such as ‘built-in’), Halibut's output formats will feel free to break a line after that hyphen when wrapping paragraphs. This is fine for a word like ‘built-in’, but if you were displaying some literal computer code such as the Emacs command `M-x psychoanalyze-pinhead`, you might prefer to see the whole hyphenated word treated as an unbreakable block. In some cases, you might even want to prevent the *space* in that command from becoming a line break.

For these purposes, Halibut provides the commands `\-` and `\_`, which generate a non-breaking hyphen and a non-breaking space respectively. So the above Emacs command might be written as

```
the Emacs command \c{M\-x\_psychoanalyze\-pinhead}
```

Unfortunately, some of Halibut's output formats do not support non-breaking hyphens, and others don't support *breaking* hyphens! So Halibut cannot promise to honour these commands in all situations. All it can do is make a best effort.

3.2.5 `\date`: Automatic date generation

Sometimes you might want your document to give an up-to-date indication of the date on which it was run through Halibut.

Halibut supplies the `\date` command to do this. In its simplest form, you simply say

```
This document was generated on \date.
```

and Halibut generates something like

> This document was generated on Fri Nov 27 13:44:14 2026.

You can follow the `\date` command directly with punctuation (as in this example, where it is immediately followed by a full stop), but if you try to follow it with an alphabetic or numeric

character (such as writing `\dateZ`) then Halibut will assume you are trying to invoke the name of a macro command you have defined yourself, and will complain if no such command exists. To get round this you can use the special '`\.`' do-nothing command. See section 3.7 for more about general Halibut command syntax and '`\.`'.

If you would prefer the date to be generated in a specific format, you can follow the `\date` command with a format specification in braces. The format specification will be run through the standard C function `strftime`, so any format acceptable to that function is acceptable here as well. I won't document the format here, because the details vary from computer to computer (although there is a standard core which should be supported everywhere). You should look at your local system's manual for `strftime` for details.

Here's an example which generates the date in the international standard ISO 8601 format:

```
This document was generated on \date{%Y-%m-%d %H:%M:%S}.
```

And here's some sample output from that command:

> This document was generated on 2026-11-27 13:44:14.

3.2.6 `\W`: WWW hyperlinks

Since one of Halibut's output formats is HTML, it's obviously useful to be able to provide links to arbitrary web sites in a Halibut document.

This is done using the `\W` command. `\W` expects to be followed by *two* sets of braces. In the first set of braces you put a URL; in the second set you put the text which should be a hyperlink. For example, you might write

```
Try searching on \W{http://www.google.com/}{Google}.
```

and Halibut would generate

> Try searching on Google.

Note that hyperlinks, like the non-breaking commands discussed in section 3.2.4, are *discretionary*: if an output format does not support them then they will just be left out completely. So unless you're *only* intending to use the HTML output format, you should avoid storing vital content in the URL part of a `\W` command. The Google example above is reasonable (because most users are likely to be able to find Google for themselves even without a convenient hyperlink leading straight there), but if you really need to direct users to a specific web site, you will need to give the URL in actual displayed text (probably displayed as code as well). However, there's nothing to stop you making it a hyperlink *as well* for the convenience of HTML readers.

The `\W` command supports a piece of extra syntax to make this convenient for you. You can specify `\c` or `\cw` *between* the first and second pairs of braces. For example, you might write

```
Google is at \W{http://www.google.com/}\cw{www.google.com}.
```

and Halibut would produce

> Google is at `www.google.com`.

If you want the link text to be an index term as well, you can also specify `\i` or `\ii`; this has to come before `\c` or `\cw` if both are present. (See section 3.5 for more about indexing.)

3.2.7 `\u`: Specifying arbitrary Unicode characters

Halibut has extensive support for Unicode and character set conversion. You can specify any (reasonably well known) character set for your input document, and Halibut will convert it all to Unicode as it reads it in. See section 3.6 for more details of this.

If you need to specify a Unicode character in your input document which is not supported by the input character set you have chosen, you can use the `\u` command to do this. `\u` expects to be followed by a sequence of hex digits; so that `\u0041`, for example, denotes the Unicode character `0x0041`, which is the capital letter A.

If a Unicode character specified in this way is not supported in a particular *output* format, you probably don't just want it to be omitted. So you can put a pair of braces after the `\u` command containing fallback text. For example, to specify an amount of money in euros, you might write this:

```
This is likely to cost \u20AC{EUR\_}2500 at least.
```

Halibut will render that as a Euro sign *if available*, and the text 'EUR ' if not. In the output format you're currently reading in, the above input generates this:

> This is likely to cost EUR 2500 at least.

If you read it in other formats, you may see different results.

3.2.8 `\k` and `\K`: Cross-references to other sections

Section 1.2 mentions that Halibut numbers the sections of your document automatically, and can generate cross-references to them on request. `\k` and `\K` are the commands used to generate those cross-references.

To use one of these commands, you simply follow it with a pair of braces containing the keyword for the section in question. For example, you might write something like

```
\K{input-xref} expands on \k{intro-features}.
```

and Halibut would generate something like

> Section 3.2.8 expands on section 1.2.

The keywords `input-xref` and `intro-features` are section keywords used in this manual itself. In your own document, you would have supplied a keyword for each one of your own sections, and you would provide your own keywords for the `\k` command to work on.

The difference between `\k` and `\K` is simply that `\K` starts the cross-reference text with a capital letter; so you would use `\K` at the beginning of a sentence, and `\k` everywhere else.

In output formats which permit it, cross-references act as hyperlinks, so that clicking the mouse on a cross-reference takes you straight to the referenced section.

The `\k` commands are also used for referring to entries in a bibliography (see section 3.4 for more about bibliographies), and can also be used for referring to an element of a numbered list by its number (see section 3.3.2.2 for more about numbered lists).

See section 3.3.5 for more about chapters and sections.

3.2.9 \#: Inline comments

If you want to include comments in your Halibut input, to be seen when reading it directly but not copied into the output text, then you can use \# to do this. If you follow \# with text in braces, that text will be ignored by Halibut.

For example, you might write

```
The typical behaviour of an antelope \#{do I mean
gazelle?} is...
```

and Halibut will simply leave out the aside about gazelles, and will generate nothing but

> The typical behaviour of an antelope is...

This command will respect nested braces, so you can use it to comment out sections of Halibut markup:

```
This function is \#{very, \e{very}} important.
```

In this example, the comment lasts until the final closing brace (so that the whole ‘very, *very*’ section is commented out).

The \# command can also be used to produce a whole-paragraph comment; see section 3.3.7 for details of that.

3.3 Paragraph-level commands

This section describes Halibut commands which affect an entire paragraph, or sometimes even *more* than one paragraph, at a time.

3.3.1 \c: Displaying whole paragraphs of computer code

Section 3.2.2 describes a mechanism for displaying computer code in the middle of a paragraph, a few words at a time.

However, this is often not enough. Often, in a computer manual, you really want to show several lines of code in a display paragraph.

This is also done using the \c command, in a slightly different way. Instead of using it in the middle of a paragraph followed by braces, you can use it at the start of each line of a paragraph. For example, you could write

```
\c #include <stdio.h>
\c
\c int main(int argc, char **argv) {
\c     printf("hello, world\n");
\c     return 0;
\c }
```

and Halibut would generate

```
#include <stdio.h>

int main(int argc, char **argv) {
```

```
    printf("hello, world\n");
    return 0;
}
```

Note that the above paragraph makes use of a backslash and a pair of braces, and does *not* need to escape them in the way described in section 3.1. This is because code paragraphs formatted in this way are a special case; the intention is that you can just copy and paste a lump of code out of your program, put '`\c `' at the start of every line, and simply *not have to worry* about the details - you don't have to go through the whole block looking for characters to escape.

Since a backslash inside a code paragraph generates a literal backslash, this means you cannot use any other Halibut formatting commands inside a code paragraph. In particular, if you want to emphasise or strengthen a particular word in the paragraph, you can't do that using `\e` or `\s` (section 3.2.1) in the normal way.

Therefore, Halibut provides an alternative means of emphasis in code paragraphs. Each line beginning with `\c` can optionally be followed by a single line beginning with `\e`, indicating the emphasis in that line. The emphasis line contains the letters `b` and `i` (for 'bold' and 'italic', although some output formats might render `i` as underlining instead of italics), positioned to line up under the parts of the text that you want emphasised.

For example, if you wanted to do syntax highlighting on the above C code by highlighting the preprocessor command in italic and the keywords in bold, you might do it like this:

```
\c #include <stdio.h>
\e iiiiiiiiiiiiiiii
\c
\c int main(int argc, char **argv) {
\e bbb      bbb       bbbb
\c     printf("hello, world\n");
\c     return 0;
\e     bbbbbb
\c }
```

and Halibut would generate:

```
#include <stdio.h>

int main(int argc, char **argv) {
    printf("hello, world\n");
    return 0;
}
```

Note that not every `\c` line has to be followed by a `\e` line; they're optional.

Also, note that highlighting within a code paragraph is *discretionary*. Not all of Halibut's output formats can support it (plain text, in particular, has no sensible way to do it). Unless you know you are using a restricted range of output formats, you should use highlighting in code paragraphs *only* as a visual aid, and not rely on it to convey any vital semantic content.

3.3.2 `\b`, `\n`, `\dt`, `\dd`, `\lcont`: Lists

Halibut supports bulletted lists, numbered lists and description lists.

3.3.2.1 `\b`: Bulletted lists

To create a bulletted list, you simply prefix each paragraph describing a bullet point with the command `\b`. For example, this Halibut input:

```
Here's a list:

\b One.

\b Two.

\b Three.
```

would produce this Halibut output:

Here's a list:

- One.
- Two.
- Three.

3.3.2.2 `\n`: Numbered lists

Numbered lists are just as simple: instead of `\b`, you use `\n`, and Halibut takes care of getting the numbering right for you. For example:

```
Here's a list:

\n One.

\n Two.

\n Three.
```

This produces the Halibut output:

Here's a list:

1. One.
2. Two.
3. Three.

The disadvantage of having Halibut sort out the list numbering for you is that if you need to refer to a list item by its number, you can't reliably know the number in advance (because if you later add another item at the start of the list, the numbers will all change). To get round this, Halibut allows an optional keyword in braces after the `\n` command. This keyword can then be referenced using the `\k` or `\K` command (see section 3.2.8) to provide the number of the list item. For example:

```
Here's a list:
```

```
\n One.

\n{this-one} Two.

\n Three.

\n Now go back to step \k{this-one}.
```

This produces the following output:

Here's a list:

1. One.
2. Two.
3. Three.
4. Now go back to step 2.

The keyword you supply after `\n` is allowed to contain escaped special characters (`\\`, `\{` and `\}`), but should not contain any other Halibut markup. It is intended to be a word or two of ordinary text. (This also applies to keywords used in other commands, such as `\B` and `\C`).

3.3.2.3 `\dt` and `\dd`: Description lists

To write a description list, you prefix alternate paragraphs with the `\dt` ('described thing') and `\dd` (description) commands. For example:

```
\dt Pelican

\dd This is a large bird with a big beak.

\dt Panda

\dd This isn't.
```

This produces the following output:

Pelican

: This is a large bird with a big beak.

Panda

: This isn't.

If you really want to, you are allowed to use `\dt` and `\dd` without strictly interleaving them (multiple consecutive `\dt`s or consecutive `\dd`s, or a description list starting with `\dd` or ending with `\dt`). This is probably most useful if you are listing a sequence of things with `\dt`, but only some of them actually need `\dd` descriptions. You should *not* use multiple consecutive `\dd`s to provide a multi-paragraph definition of something; that's what `\lcont` is for, as explained in section 3.3.2.4.

3.3.2.4 Continuing list items into further paragraphs

All three of the above list types assume that each list item is a single paragraph. For a short, snappy list in which each item is likely to be only one or two words, this is perfectly sufficient; but occasionally you will find you want to include several paragraphs in a single list item, or even to nest other types of paragraph (such as code paragraphs, or other lists) inside a list item.

To do this, you use the `\lcont` command. This is a command which can span *multiple* paragraphs.

After the first paragraph of a list item, include the text `\lcont{`. This indicates that the subsequent paragraph(s) are a *continuation* of the list item that has just been seen. So you can include further paragraphs, and eventually include a closing brace `}` to finish the list continuation. After that, you can either continue adding other items to the original list, or stop immediately and return to writing normal paragraphs of text.

Here's a (long) example.

```
Here's a list:

\n One. This item is followed by a code paragraph:

\lcont{

\c code
\c paragraph

}

\n Two. Now when I say \q{two}, I mean:

\lcont{

\n Two, part one.

\n Two, part two.

\n Two, part three.

}

\n Three.
```

The output produced by this fragment is:

Here's a list:

1. One. This item is followed by a code paragraph:

   ```
   code
   paragraph
   ```

2. Two. Now when I say ‘two’, I mean:

    1. Two, part one.

    2. Two, part two.

    3. Two, part three.

3. Three.

This syntax might seem a little bit inconvenient, and perhaps counter-intuitive: you might expect the enclosing braces to have to go around the *whole* list item, rather than everything except the first paragraph.

`\lcont` is a recent addition to the Halibut input language; previously, *all* lists were required to use no more than one paragraph per list item. So it's certainly true that this feature looks like an afterthought because it *is* an afterthought, and it's possible that if I'd been designing the language from scratch with multiple-paragraph list items in mind, I would have made it look different.

However, the advantage of doing it this way is that no enclosing braces are required in the *common* case: simple lists with only one paragraph per item are really, really easy to write. So I'm not too unhappy with the way it turned out; it obeys the doctrine of making simple things simple, and difficult things possible.

Note that `\lcont` can only be used on `\b`, `\n` and `\dd` paragraphs; it cannot be used on `\dt`.

3.3.3 `\rule`: Horizontal rules

The command `\rule`, appearing on its own as a paragraph, will cause a horizontal rule to be drawn, like this:

```
Some text.

\rule

Some more text.
```

This produces the following output:

Some text.

Some more text.

3.3.4 `\quote`: Indenting multiple paragraphs as a long quotation

Quoting verbatim text using a code paragraph (section 3.3.1) is not always sufficient for your quoting needs. Sometimes you need to quote some normally formatted text, possibly in multiple paragraphs. This is similar to HTML's `<BLOCKQUOTE>` command.

To do this, you can use the `\quote` command. Like `\lcont`, this is a command which expects to enclose at least one paragraph and possibly more. Simply write `\quote{` at the beginning of your quoted section, and `}` at the end, and the paragraphs in between will be formatted to indicate that they are a quotation.

(This very manual, in fact, uses this feature a lot: all of the examples of Halibut input followed by Halibut output have the output quoted using `\quote`.)

Here's some example Halibut input:

```
In \q{Through the Looking Glass}, Lewis Carroll wrote:

\quote{

\q{The question is,} said Alice, \q{whether you \e{can} make
words mean so many different things.}

\q{The question is,} said Humpty Dumpty, \q{who is to be
master - that's all.}

}

So now you know.
```

The output generated by this is:

> In ‘Through the Looking Glass’, Lewis Carroll wrote:
>
> > ‘The question is,’ said Alice, ‘whether you *can* make words mean so many different things.’
> >
> > ‘The question is,’ said Humpty Dumpty, ‘who is to be master - that's all.’
>
> So now you know.

3.3.5 `\C`, `\H`, `\S`, `\A`, `\U`: Chapter and section headings

Section 1.2 mentions that Halibut numbers the sections of your document automatically, and can generate cross-references to them on request; section 3.2.8 describes the `\k` and `\K` commands used to generate the cross-references. This section describes the commands used to set up the sections in the first place.

A paragraph beginning with the `\C` command defines a chapter heading. The `\C` command expects to be followed by a pair of braces containing a keyword for the chapter; this keyword can then be used with the `\k` and `\K` commands to generate cross-references to the chapter. After the closing brace, the rest of the paragraph is used as the displayed chapter title. So the heading for the current chapter of this manual, for example, is written as

```
\C{input} Halibut input format
```

and this allows me to use the command `\k{input}` to generate a cross-reference to that chapter somewhere else.

The keyword you supply after one of these commands is allowed to contain escaped special characters (`\\`, `\{` and `\}`), but should not contain any other Halibut markup. It is intended to be a word or two of ordinary text. (This also applies to keywords used in other commands, such as `\B` and `\n`).

The next level down from `\C` is `\H`, for ‘heading’. This is used in exactly the same way as `\C`, but section headings defined with `\H` are considered to be part of a containing chapter, and will be numbered with a pair of numbers. After `\H` comes `\S`, and if necessary you can then move on to `\S2`, `\S3` and so on.

For example, here's a sequence of heading commands. Normally these commands would be separated at least by blank lines (because each is a separate paragraph), and probably also by body text; but for the sake of brevity, both of those have been left out in this example.

```
\C{foo} Using Foo
\H{foo-intro} Introduction to Foo
\H{foo-running} Running the Foo program
\S{foo-inter} Running Foo interactively
\S{foo-batch} Running Foo in batch mode
\H{foo-trouble} Troubleshooting Foo
\C{bar} Using Bar instead of Foo
```

This would define two chapters with keywords `foo` and `bar`, which would end up being called Chapter 1 and Chapter 2 (unless there were other chapters before them). The sections `foo-intro`, `foo-running` and `foo-trouble` would be referred to as Section 1.1, Section 1.2 and Section 1.3 respectively; the subsections `foo-inter` and `foo-batch` would be Section 1.2.1 and Section 1.2.2. If there had been a `\S2` command within one of those, it would have been something like Section 1.2.1.1.

If you don't like the switch from `\H` to `\S`, you can use `\S1` as a synonym for `\S` and `\S0` as a synonym for `\H`. Chapters are still designated with `\C`, because they need to be distinguished from other types of chapter such as appendices. (Personally, I like the `\C`,`\H`,`\S` notation because it encourages me to think of my document as a hard disk :-)

You can define an appendix by using `\A` in place of `\C`. This is no different from a chapter except that it's given a letter instead of a number, and cross-references to it will say ‘Appendix A’ instead of ‘Chapter 9’. Subsections of an appendix will be numbered ‘A.1’, ‘A.2’, ‘A.2.1’ and so on.

If you want a particular section to be referred to as something other than a ‘chapter’, ‘section’ or ‘appendix’, you can include a second pair of braces after the keyword. For example, if you're writing a FAQ chapter and you want cross-references between questions to refer to ‘question 1.2.3’ instead of ‘section 1.2.3’, you can write each section heading as

```
\S{question-about-fish}{Question} What about fish?
```

(The word ‘Question’ should be given with an initial capital letter. Halibut will lower-case it when you refer to it using `\k`, and will leave it alone if you use `\K`.)

This technique allows you to change the designation of *particular* sections. To make an overall change in what *every* section is called, see section 3.6.

Finally, the `\U` command defines an *unnumbered* chapter. These sometimes occur in books, for specialist purposes such as ‘Bibliography’ or ‘Acknowledgements’. `\U` does not expect a keyword argument, because there is no sensible way to generate an automatic cross-reference to such a chapter anyway.

3.3.6 `\copyright`, `\title`, `\versionid`: Miscellaneous blurb commands

These three commands define a variety of special paragraph types. They are all used in the same way: you put the command at the start of a paragraph, and then just follow it with normal text, like this:

```
\title My First Manual
```

The three special paragraph types are:

`\title`

> This defines the overall title of the entire document. This title is treated specially in some output formats (for example, it's used in a `<TITLE>` tag in the HTML output), so it needs a special paragraph type to point it out.

`\copyright`

> This command indicates that the paragraph attached to it contains a copyright statement for the document. This text is displayed inline where it appears, exactly like a normal paragraph; but in some output formats it is given additional special treatment. For example, Windows Help files have a standard slot in which to store a copyright notice, so that other software can display it prominently.

`\versionid`

> This command indicates that the paragraph contains a version identifier, such as those produced by CVS (of the form `$Id: thingy.but,v 1.6 2004/01/01 16:47:48 simon Exp $`). This text will be tucked away somewhere unobtrusive, so that anyone wanting to (for example) report errors to the document's author can pick out the version IDs and send them as part of the report, so that the author can tell at a glance which revision of the document is being discussed.

3.3.7 \#: Whole-paragraph comments

Section 3.2.9 describes the use of the \# command to put a short comment in the middle of a paragraph.

If you need to use a *long* comment, Halibut also allows you to use \# without braces, to indicate that an entire paragraph is a comment, like this:

```
Here's a (fairly short) paragraph which will be displayed.

\# Here's a comment paragraph which will not be displayed, no
matter how long it goes on. All I needed to indicate this was
the single \# at the start of the paragraph; I don't need one
on every line or anything like that.

Here's another displayed paragraph.
```

When run through Halibut, this produces the following output:

> Here's a (fairly short) paragraph which will be displayed.
>
> Here's another displayed paragraph.

3.4 Creating a bibliography

If you need your document to refer to other documents (research papers, books, websites, whatever), you might find a bibliography feature useful.

You can define a bibliography entry using the `\B` command. This looks very like the `\C` command and friends: it expects a keyword in braces, followed by some text describing the document being referred to. For example:

```
\B{freds-book} \q{The Taming Of The Mongoose}, by Fred Bloggs.
Published by Paperjam & Notoner, 1993.
```

If this bibliography entry appears in the finished document, it will look something like this:

> [1] 'The Taming Of The Mongoose', by Fred Bloggs. Published by Paperjam & Notoner, 1993.

I say 'if' above because not all bibliography entries defined using the `\B` command will necessarily appear in the finished document. They only appear if they are referred to by a `\k` command (see section 3.2.8). This allows you to (for example) maintain a single Halibut source file with a centralised database of *all* the references you have ever needed in any of your writings, include that file in every document you feed to Halibut, and have it only produce the bibliography entries you actually need for each particular document. (In fact, you might even want this centralised source file to be created automatically by, say, a Perl script from BibTeX input, so that you can share the same bibliography with users of other formatting software.)

If you really want a bibliography entry to appear in the document even though no text explicitly refers to it, you can do that using the `\nocite` command:

```
\nocite{freds-book}
```

Normally, each bibliography entry will be referred to (in citations and in the bibliography itself) by a simple reference number, such as [1]. If you would rather use an alternative reference notation, such as [Fred1993], you can use the `\BR` ('Bibliography Rewrite') command to specify your own reference format for a particular book:

```
\BR{freds-book} [Fred1993]
```

The keyword you supply after `\B` is allowed to contain escaped special characters (`\\`, `\{` and `\}`), but should not contain any other Halibut markup. It is intended to be a word or two of ordinary text. (This also applies to keywords used in other commands, such as `\n` and `\C`).

3.5 Creating an index

Halibut contains a comprehensive indexing mechanism, which attempts to be reasonably easy to use in the common case in spite of its power.

3.5.1 Simple indexing

In normal usage, you should be able to add index terms to your document simply by using the `\i` command to wrap one or two words at a time. For example, if you write

```
The \i{hippopotamus} is a particularly large animal.
```

then the index will contain an entry under 'hippopotamus', pointing to that sentence (or as close to that sentence as the output format sensibly permits).

You can wrap more than one word in `\i` as well:

```
We recommend using a \i{torque wrench} for this job.
```

3.5.2 Special cases of indexing

If you need to index a computer-related term, you can use the special case `\i\c` (or `\i\cw` if you prefer):

```
The \i\c{grep} command is what you want here.
```

This will cause the word ‘grep’ to appear in code style, as if the `\i` were not present and the input just said `\c{grep}`; the word will also appear in code style in the actual index.

If you want to simultaneously index and emphasise a word, there's another special case `\i\e` (and similarly `\i\s`):

```
This is what we call a \i\e{paper jam}.
```

This will cause the words ‘paper jam’ to be emphasised in the document, but (unlike the behaviour of `\i\c`) they will *not* be emphasised in the index. This different behaviour is based on an expectation that most people indexing a word of computer code will still want it to look like code in the index, whereas most people indexing an emphasised word will *not* want it emphasised in the index.

(In fact, *no* emphasis in the text inside `\i` will be preserved in the index. If you really want a term in the index to appear emphasised, you must say so explicitly using `\IM`; see section 3.5.3.)

Sometimes you might want to index a term which is not explicitly mentioned, but which is highly relevant to the text and you think that somebody looking up that term in the index might find it useful to be directed here. To do this you can use the `\I` command, to create an *invisible* index tag:

```
If your printer runs out of toner, \I{replacing toner
cartridge}here is what to do:
```

This input will produce only the output ‘If your printer runs out of toner, here is what to do’; but an index entry will show up under ‘replacing toner cartridge’, so that if a user thinks the obvious place to start in the index is under R for ‘replacing’, they will find their way here with a minimum of fuss.

(It's worth noting that there is no functional difference between `\i{foo}` and `\I{foo}foo`. The simple `\i` case is only a shorthand for the latter.)

Finally, if you want to index a word at the start of a sentence, you might very well not want it to show up with a capital letter in the index. For this, Halibut provides the `\ii` command, for ‘index (case-)insensitively’. You use it like this:

```
\ii{Lions} are at the top of the food chain in this area.
```

This is equivalent to `\I{lions}Lions`; in other words, the text will say ‘Lions’, but it will show up in the index as ‘lions’. The text inside `\ii` is converted entirely into lower case before being added to the index data.

3.5.3 Fine-tuning the index

Halibut's index mechanism as described so far still has a few problems left:

- In a reasonably large index, it's often difficult to predict which of several words a user will

think of first when trying to look something up. For example, if they want to know how to replace a toner cartridge, they might look up ‘replacing’ or they might look up ‘toner cartridge’. You probably don't really want to have to try to figure out which of those is more likely; instead, what you'd like is to be able to effortlessly index the same set of document locations under *both* terms.

- Also, you may find you've indexed the same concept under multiple different index terms; for example, there might be several instances of `\i{frog}` and several of `\i{frogs}`, so that you'd end up with two separate index entries for what really ought to be the same concept.
- You might well not want the word ‘`grep`’ to appear in the index without explanation; you might prefer it to say something more verbose such as ‘`grep` command’, so that a user encountering it in the index has some idea of what it is *without* having to follow up the reference. However, you certainly don't want to have to write `\I{\cw{grep} command}\c{grep}` every time you want to add an index term for this! You wanted to write `\i\c{grep}` as shown in the previous section, and tidy it all up afterwards.

All of these problems can be cleaned up by the `\IM` (for ‘Index Modification’) command. `\IM` expects to be followed by one or more pairs of braces containing index terms as seen in the document, and then a piece of text (not in braces) describing how it should be shown in the index.

So to rewrite the `grep` example above, you might do this:

```
\IM{grep} \cw{grep} command
```

This will arrange that the set of places in the document where you asked Halibut to index ‘`grep`’ will be listed under ‘`grep` command’ rather than just under ‘`grep`’.

You can specify more than one index term in a `\IM` command; so to merge the index terms ‘frog’ and ‘frogs’ into a single term, you might do this:

```
\IM{frog}{frogs} frog
```

This will arrange that the single index entry ‘frog’ will list *all* the places in the document where you asked Halibut to index either ‘frog’ or ‘frogs’.

You can use multiple `\IM` commands to replicate the same set of document locations in more than one index entry. For example:

```
\IM{replacing toner cartridge} replacing toner cartridge
\IM{replacing toner cartridge} toner cartridge, replacing
```

This will arrange that every place in the document where you have indexed ‘replacing toner cartridge’ will be listed both there *and* under ‘toner cartridge, replacing’, so that no matter whether the user looks under R or under T they will stil find their way to the same parts of the document.

In this example, note that although the first `\IM` command *looks* as if it's a tautology, it is still necessary, because otherwise those document locations will *only* be indexed under ‘toner cartridge, replacing’. If you have *no* explicit `\IM` commands for a particular index term, then Halibut will assume a default one (typically `\IM{foo} foo`, although it might be `\IM{foo} \c{foo}` if you originally indexed using `\i\c`); but as soon as you specify

an explicit `\IM`, Halibut discards its default implicit one, and you must then specify that one explicitly as well if you wanted to keep it.

3.5.4 Indexing terms that differ only in case

The *tags* you use to define an index term (that is, the text in the braces after `\i`, `\I` and `\IM`) are treated case-insensitively by Halibut. So if, as in this manual itself, you need two index terms that differ only in case, doing this will not work:

```
The \i\c{\\c} command defines computer code.

The \i\c{\\C} command defines a chapter.
```

Halibut will treat these terms as the same, and will fold the two sets of references into one combined list (although it will warn you that it is doing this). The idea is to ensure that people who forget to use `\ii` find out about it rather than Halibut silently generating a bad index; checking an index for errors is very hard work, so Halibut tries to avoid errors in the first place as much as it can.

If you do come across this situation, you will need to define two distinguishable index terms. What I did in this manual was something like this:

```
The \i\c{\\c} command defines computer code.

The \I{\\C-upper}\c{\\C} command defines a chapter.

\IM{\\C-upper} \c{\\C}
```

The effect of this will be two separate index entries, one reading `\c` and the other reading `\C`, pointing to the right places.

3.6 Configuring Halibut

Halibut uses the `\cfg` command to allow you to configure various aspects of its functionality.

The `\cfg` command expects to be followed by at least one pair of braces, and usually more after that. The first pair of braces contains a keyword indicating what aspect of Halibut you want to configure, and the meaning of the one(s) after that depends on the first keyword.

Each output format supports a range of configuration options of its own (and some configuration is shared between similar output formats - the PDF and PostScript formats share most of their configuration, as described in section 4.7). The configuration keywords for each output format are listed in the manual section for that format; see chapter 4.

There are also a small number of configuration options which apply across all output formats:

`\cfg{chapter}{`*new chapter name*`}`

> This tells Halibut that you don't want to call a chapter a chapter any more. For example, if you give the command `\cfg{chapter}{Book}`, then any chapter defined with the `\C` command will be labelled ‘Book’ rather than ‘Chapter’, both in the section headings and in cross-references. This is probably most useful if your document is not written in English.
>
> Your replacement name should be given with a capital letter. Halibut will leave it alone if it appears at the start of a sentence (in a chapter title, or when `\K` is used), and will lower-

case it otherwise (when `\k` is used).

`\cfg{section}{`*new section name*`}`

Exactly like `chapter`, but changes the name given to subsections of a chapter.

`\cfg{appendix}{`*new appendix name*`}`

Exactly like `chapter`, but changes the name given to appendices.

`\cfg{contents}{`*new contents name*`}`

This changes the name given to the contents section (by default ‘Contents’) in back ends which generate one.

`\cfg{index}{`*new index name*`}`

This changes the name given to the index section (by default ‘Index’) in back ends which generate one.

`\cfg{input-charset}{`*character set name*`}`

This tells Halibut what character set you are writing your input file in. By default, it is assumed to be US-ASCII (meaning *only* plain ASCII, with no accented characters at all).

You can specify any well-known name for any supported character set. For example, `iso-8859-1`, `iso8859-1` and `iso_8859-1` are all recognised, `GB2312` and `EUC-CN` both work, and so on. (You can list character sets known to Halibut with by invoking it with the `--list-charsets` option; see section 2.1.)

This directive takes effect immediately after the `\cfg` command. All text after that until the end of the input file is expected to be in the new character set. You can even change character set several times within a file if you really want to.

When Halibut reads the input file, everything you type will be converted into Unicode from the character set you specify here, will be processed as Unicode by Halibut internally, and will be written to the various output formats in whatever character sets they deem appropriate.

`\cfg{quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote*`...}]`

This specifies the quote characters which should be used. You should separately specify the open and close quote marks; each quote mark can be one character (`\cfg{quotes}{`` ` ``}{'}`), or more than one (`\cfg{quotes}{<<}{>>}`).

`\cfg{quotes}` can be overridden by configuration directives for each individual backend (see chapter 4); it is a convenient way of setting quote characters for all backends at once.

All backends use these characters in response to the `\q` command (see section 3.2.3). Some (such as the text backend) use them for other purposes too.

You can specify multiple fallback options in this command (a pair of open and close quotes, each in their own braces, then another pair, then another if you like), and Halibut will choose the first pair which the output character set supports (Halibut will always use a matching pair). (This is to allow you to configure quote characters once, generate output

in several different character sets, and have Halibut constantly adapt to make the best use of the current encoding.) For example, you might write

```
\cfg{quotes}{\u201c}{\u201d}{"}{"}
```

and Halibut would use the Unicode matched double quote characters if possible, and fall back to ASCII double quotes otherwise. If the output character set were to contain U+201C but not U+201D, then Halibut would fall back to using the ASCII double quote character as *both* open and close quotes. (No known character set is that silly; I mention it only as an example.)

`\cfg{quotes}` (and the backend-specific versions) apply to the *entire* output; it's not possible to change quote characters partway through the output.

In addition to these configuration commands, there are also configuration commands provided by each individual output format. These configuration commands are discussed along with each output format, in chapter 4.

The default settings for the above options are:

```
\cfg{chapter}{Chapter}
\cfg{section}{Section}
\cfg{appendix}{Appendix}
\cfg{contents}{Contents}
\cfg{index}{Index}
\cfg{input-charset}{ASCII}
```

The default for `\cfg{input-charset}` can be changed with the `--input-charset` option; see section 2.1. The default settings for `\cfg{quotes}` are backend-specific; see chapter 4.

3.7 Defining macros

If there's a complicated piece of Halibut source which you think you're going to use a lot, you can define your own Halibut command to produce that piece of source.

In section 3.2.7, there is a sample piece of code which prints a Euro sign, or replaces it with ‘EUR’ if the Euro sign is not available:

```
This is likely to cost \u20AC{EUR\_}2500 at least.
```

If your document quotes a *lot* of prices in Euros, you might not want to spend all your time typing that out. So you could define a macro, using the `\define` command:

```
\define{eur} \u20AC{EUR\_}
```

Your macro names may include Roman alphabetic characters (`a-z`, `A-Z`) and ordinary Arabic numerals (`0-9`), but nothing else. (This is general syntax for all of Halibut's commands, except for a few special ones such as `\_` and `\-` which consist of a single punctuation character only.)

Then you can just write ...

```
This is likely to cost \eur 2500 at least.
```

... except that that's not terribly good, because you end up with a space between the Euro sign

and the number. (If you had written `\eur2500`, Halibut would have tried to interpret it as a macro command called `eur2500`, which you didn't define.) In this case, it's helpful to use the special `\.` command, which is defined to do nothing at all! But it acts as a separator between your macro and the next character:

```
This is likely to cost \eur\.2500 at least.
```

This way, you will see no space between the Euro sign and the number (although, of course, there will be space between ‘EUR’ and the number if the Euro sign is not available, because the macro definition specifically asked for it).

Chapter 4: Halibut output formats

This chapter describes each of Halibut's current output formats. It gives some general information about the format, and also describes all the configuration directives which are specific to that format.

4.1 Plain text

This output format generates the document as a single plain text file. No table of contents or index is generated.

The precise formatting of the text file can be controlled by a variety of configuration directives. They are listed in the following subsections.

4.1.1 Output file name

`\cfg{text-filename}{`*filename*`}`

Sets the output file name in which to store the text file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--text` (see section 2.1).

4.1.2 Indentation and line width

This section describes the configuration directives which control the horizontal dimensions of the output text file: how much paragraphs are indented by and how long the lines are.

`\cfg{text-width}{`*width*`}`

Sets the width of the main part of the document, in characters. This width will be used for wrapping paragraphs and for centring titles (if you have asked for titles to be centred - see section 4.1.3). This width does *not* include the left indentation set by `\cfg{text-indent}`; if you specify an indent of 8 and a width of 64, your maximum output line length will be 72.

`\cfg{text-indent}{`*indent*`}`

Sets the left indentation for the document. If you set this to zero, your document will look like an ordinary text file as someone with a text editor might have written it; if you set it above zero, the text file will have a margin down the left in the style of some printed manuals, and you can then configure the section numbers to appear in this margin (see section 4.1.3).

`\cfg{text-indent-code}{`*indent*`}`

Specifies how many extra characters of indentation (on top of the normal left indent) should be given to code paragraphs.

`\cfg{text-list-indent}{`*indent*`}`

Specifies how many extra spaces should be used to indent the bullet or number in a bulletted or numbered list. The actual body of the list item will be indented by this much *plus* the value configured by `\cfg{text-listitem-indent}`.

`\cfg{text-listitem-indent}{`*indent*`}`

Specifies how many extra spaces should be used to indent the body of a list item, over and above the number configured in `\cfg{text-list-indent}`.

`\cfg{text-indent-preamble}{`*boolean*`}`

When this is set to `true`, the document preamble (i.e. any paragraphs appearing before the first chapter heading) will be indented to the level specified by `\cfg{text-indent}`. If this setting is `false`, the document preamble will not be indented at all from the left margin.

4.1.3 Configuring heading display

The directives in this section allow you to configure the appearance of the title, chapter and section headings in your text file.

Several of the directives listed below specify the alignment of a heading. These alignment options have three possible values:

`left`

Align the heading to the very left of the text file (column zero).

`leftplus`

Align the section title to the left of the main display region (in other words, indented to the level specified by `\cfg{text-indent}`). The section *number* is placed to the left of that (so that it goes in the margin if there is room).

`centre`

Centre the heading.

Also, several of the directives below specify how a title should be underlined. The parameter to one of these directives should be either blank (`{}`) or a piece of text which will be repeated to produce the underline. So you might want to specify, for example, `\text-title-underline{=}` but `\text-chapter-underline{-}`.

You can also specify more than one underline setting, and Halibut will choose the first one that the output character set supports. So, for example, you could write `\text-chapter-underline{\u203e}{-}`, and Halibut would use the Unicode 'OVERLINE' character where possible and fall back to the ASCII minus sign otherwise.

`\cfg{text-title-align}{`*alignment*`}`

Specifies the alignment of the overall document title: `left`, `leftplus` or `centre`.

`\cfg{text-title-underline}{`*underline-text*`}`

Specifies how the overall document title should be underlined.

`\cfg{text-chapter-align}{`*alignment*`}`

Specifies the alignment of chapter and appendix headings.

`\cfg{text-chapter-underline}{`*underline-text*`}`

Specifies how chapter and appendix headings should be underlined.

`\cfg{text-chapter-numeric}{`*boolean*`}`

If this is set to `true`, then chapter headings will not contain the word 'Chapter' (or whatever other word you have defined in its place - see section 3.3.5 and section 3.6); they will just contain the chapter *number*, followed by the chapter title. If you set this to `false`, chapter headings will be prefixed by 'Chapter' or equivalent.

`\cfg{text-chapter-shownumber}{`*boolean*`}`

If this is set to `false`, then chapter headings will *only* contain the chapter title: they will not contain the word 'Chapter' (or whatever other word you have defined in its place), and neither will they contain the chapter number. If set to `false`, this overrides `\cfg{text-chapter-numeric}`.

`\cfg{text-chapter-suffix}{`*text*`}`

This specifies the suffix text to be appended to the chapter number, before displaying the chapter title. For example, if you set this to '`: `', then the chapter title might look something like 'Chapter 2: Doing Things'.

`\cfg{text-section-align}{`*level*`}{`*alignment*`}`

Specifies the alignment of section headings at a particular level. The *level* parameter specifies which level of section headings you want to affect: 0 means first-level headings (`\H`), 1 means second-level headings (`\S`), 2 means the level below that (`\S2`), and so on. The *alignment* parameter is treated just like the other alignment directives listed above.

`\cfg{text-section-underline}{`*level*`}{`*underline-text*`}`

Specifies how to underline section headings at a particular level.

`\cfg{text-section-numeric}{`*level*`}{`*boolean*`}`

Specifies whether section headings at a particular level should contain the word 'Section' or equivalent (if `false`), or should be numeric only (if `true`).

`\cfg{text-section-shownumber}{`*level*`}{`*boolean*`}`

If this is set to `false`, then section headings at the specified level will *only* contain the section title: they will not contain the word 'Section' (or whatever other word you have defined in its place), and neither will they contain the section number. If set to `false`, this overrides `\cfg{text-section-numeric}`.

`\cfg{text-section-suffix}{`*level*`}{`*text*`}`

Specifies the suffix text to be appended to section numbers at a particular level, before displaying the section title.

4.1.4 Configuring the characters used

`\cfg{text-charset}{`*character set name*`}`

This tells Halibut what character set the output should be in. Any Unicode characters representable in this set will be output verbatim; any other characters will not be output and their fallback text (if any) will be used instead.

The character set names are the same as for `\cfg{input-charset}` (see section 3.6). However, unlike `\cfg{input-charset}`, this directive affects the *entire* output; it's not possible to switch encodings halfway through.

`\cfg{text-bullet}{`*text*`}[{`*text...*`}]`

This specifies the text which should be used as the bullet in bulletted lists. It can be one character (`\cfg{text-bullet}{-}`), or more than one (`\cfg{text-bullet}{(*)}`).

Like `\cfg{quotes}` (see section 3.6), you can specify multiple possible options after this command, and Halibut will choose the first one which the output character set supports. For example, you might write `\cfg{text-bullet}{\u2022}{\u00b7}{*}`, in which case Halibut would use the Unicode 'BULLET' character where possible, fall back to the ISO-8859-1 'MIDDLE DOT' if that wasn't available, and resort to the ASCII asterisk if all else failed.

`\cfg{text-rule}{`*text*`}[{`*text...*`}]`

This specifies the text which should be used for drawing horizontal rules (generated by `\rule`; see section 3.3.3). It can be one character, or more than one. The string you specify will be repeated to reach the required width, so you can specify something like '`-=`' to get a rule that looks like `-=-=-=`.

Like `\cfg{text-bullet}`, you can specify multiple fallback options in this command.

`\cfg{text-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote...*`}]`

This specifies a set of quote characters for the text backend, overriding any defined by `\cfg{quotes}`. It has the same syntax (see section 3.6).

In this backend, these quotes will also be used to mark text enclosed in the `\c` command (see section 3.2.2).

`\cfg{text-emphasis}{`*start-emph*`}{`*end-emph*`}[{`*start-emph*`}{`*end-emph...*`}]`

This specifies the characters which should be used to surround emphasised text (written using the `\e` command; see section 3.2.1).

`\cfg{text-strong}{`*start-strong*`}{`*end-strong*`}[{`*start-strong*`}{`*end-strong...*`}]`

This specifies the characters which should be used to surround strong text (written using the `\s` command; see section 3.2.1).

You should separately specify the start-emphasis and end-emphasis text, each of which can be more than one character if you want. Also, like `\cfg{text-quotes}`, you can specify multiple pairs of fallback options in this command, and Halibut will always use a matching pair.

4.1.5 Miscellaneous configuration options

`\cfg{text-list-suffix}{`*text*`}`

This text is appended to the number on a numbered list item (see section 3.3.2.2). So if you want to label your lists as '1)', '2)' and so on, then you would write `\cfg{text-list-suffix}{)}`.

`\cfg{text-versionid}{`*boolean*`}`

If this is set to `true`, version ID paragraphs (defined using the `\versionid` command - see section 3.3.6) will be included at the bottom of the text file. If it is set to `false`, they will be omitted completely.

4.1.6 Default settings

The default settings for Halibut's plain text output format are:

```
\cfg{text-filename}{output.txt}

\cfg{text-width}{68}
\cfg{text-indent}{7}
\cfg{text-indent-code}{2}
\cfg{text-list-indent}{1}
\cfg{text-listitem-indent}{3}
\cfg{text-indent-preamble}{false}

\cfg{text-title-align}{centre}
\cfg{text-title-underline}{\u2550}{=}

\cfg{text-chapter-align}{left}
\cfg{text-chapter-underline}{\u203e}{-}
\cfg{text-chapter-numeric}{false}
\cfg{text-chapter-shownumber}{true}
\cfg{text-chapter-suffix}{: }

\cfg{text-section-align}{0}{leftplus}
\cfg{text-section-underline}{0}{}
\cfg{text-section-numeric}{0}{true}
\cfg{text-section-shownumber}{0}{true}
\cfg{text-section-suffix}{0}{ }

\cfg{text-section-align}{1}{leftplus}
\cfg{text-section-underline}{1}{}
\cfg{text-section-numeric}{1}{true}
\cfg{text-section-shownumber}{1}{true}
\cfg{text-section-suffix}{1}{ }

... and so on for all section levels below this ...

\cfg{text-charset}{ASCII}
\cfg{text-bullet}{\u2022}{-}
```

```
\cfg{text-rule}{\u2500}{-}
\cfg{text-quotes}{\u2018}{\u2019}{`}{'}
\cfg{text-emphasis}{_}{_}

\cfg{text-list-suffix}{.}
\cfg{text-versionid}{true}
```

4.2 HTML

This output format generates an HTML version of the document. By default, this will be in multiple files, starting with `Contents.html` and splitting the document into files by chapter and/or subsection. You can configure precisely how the text is split between HTML files using the configuration commands described in this section. In particular, you can configure Halibut to output one single HTML file instead of multiple ones.

Configuration directives with an `xhtml-` prefix are synonyms for those with an `html-` prefix.

4.2.1 Controlling the output file names

`\cfg{html-contents-filename}{`*filename*`}`

Sets the output file name in which to store the top-level contents page. Since this is the first page a user ought to see when beginning to read the document, a good choice in many cases might be `index.html` (although this is not the default, for historical reasons).

`\cfg{html-index-filename}{`*filename*`}`

Sets the file name in which to store the document's index.

`\cfg{html-template-filename}{`*template*`}`

Provides a template to be used when constructing the file names of each chapter or section of the document. This template should contain at least one *formatting command*, in the form of a per cent sign followed by a letter. (If you need a literal per cent sign, you can write `%%`.)

The formatting commands used in this template are:

`%N`

Expands to the visible title of the section, with white space removed. So in a chapter declared as '`\C{fish} Catching Fish`', this formatting command would expand to '`CatchingFish`'.

`%n`

Expands to the type and number of the section, without white space. So in chapter 1 this would expand to '`Chapter1`'; in section A.4.3 it would expand to '`SectionA.4.3`', and so on. If the section has no number (an unnumbered chapter created using `\U`), this directive falls back to doing the same thing as `%N`.

`%b`

Expands to the number of the section, in a format suitable for an HTML fragment name. The first character of the section type is prepended to the section number. So in

chapter 1 this would expand to '`C1`'; in section A.4.3 it would expand to '`SA.4.3`', and so on. If the section has no number (an unnumbered chapter created using `\U`), this directive falls back to doing the same thing as `%N`.

`%k`

Expands to the internal keyword specified in the section title. So in a chapter declared as '`\C{fish} Catching Fish`', this formatting command would expand to '`fish`'. If the section has no keyword (an unnumbered chapter created using `\U`), this directive falls back to doing the same thing as `%N`.

These formatting directives can also be used in the `\cfg{html-template-fragment}` configuration directive (see section 4.2.7).

`\cfg{html-single-filename}{`*filename*`}`

Sets the file name in which to store the entire document, if Halibut is configured (using `\cfg{html-leaf-level}{0}`) to produce a single self-contained file. Both this directive *and* `\cfg{html-leaf-level}{0}` are implicitly generated if you provide a file name parameter after the command-line option `--html` (see section 2.1).

4.2.2 Controlling the splitting into HTML files

By default, the HTML output from Halibut is split into multiple files. Each file typically contains a single chapter or section and everything below it, unless subsections of that chapter are themselves split off into further files.

Most files also contain a contents section, giving hyperlinks to the sections in the file and/or the sections below it.

The configuration directives listed below allow you to configure the splitting into files, and the details of the contents sections.

`\cfg{html-leaf-level}{`*depth*`}`

This setting indicates the depth of section which should be given a 'leaf' file (a file with no sub-files). So if you set it to 1, for example, then every chapter will be given its own HTML file, plus a top-level contents file. If you set this to 2, then each chapter *and* each `\H` section will have a file, and the chapter files will mostly just contain links to their sub-files.

If you set this option to zero, then the whole document will appear in a single file. If you do this, Halibut will call that file `Manual.html` instead of `Contents.html` by default.

This option is automatically set to zero if you provide a file name parameter after the command-line option `--html` (see section 2.1), because you have specified a single file name and so Halibut assumes you want the whole document to be placed in that file.

You can also specify the special name `infinity` (or `infinite` or `inf`) if you want to ensure that *every* section and subsection ends up in a separate file no matter how deep you go.

`\cfg{html-contents-depth}{`*level*`}{`*depth*`}`

This directive allows you to specify how deep any contents section in a particular level of

file should go.

The *level* parameter indicates which level of contents section you are dealing with. 0 denotes the main contents section in the topmost file `Contents.html`; 1 denotes a contents section in a chapter file; 2 is a contents section in a file containing a `\H` heading, and so on.

The *depth* parameter indicates the maximum depth of heading which will be shown in this contents section. Again, 1 denotes a chapter, 2 is a `\H` heading, 3 is a `\S` heading, and so on.

So, for example: `\cfg{html-contents-depth}{1}{3}` instructs Halibut to put contents links in chapter files for all sections down to `\S` level, but not to go into any more detail than that.

For backwards compatibility, the alternative syntax `\cfg{html-contents-depth-`*level*`}{`*depth*`}` is also supported.

`\cfg{html-leaf-contains-contents}{`*boolean*`}`

If you set this to `true`, then each leaf file will contain its own contents section which summarises the text within it.

`\cfg{html-leaf-smallest-contents}{`*number*`}`

Contents sections in leaf files are not output at all if they contain very few entries (on the assumption that it just isn't worth bothering). This directive configures the minimum number of entries required in a leaf contents section to make Halibut bother generating it at all.

4.2.3 Including pieces of your own HTML

The directives in this section allow you to supply pieces of verbatim HTML code, which will be included in various parts of the output files.

Note that none of Halibut's usual character set translation is applied to this code; it is assumed to already be in a suitable encoding for the target HTML files.

`\cfg{html-head-end}{`*HTML text*`}`

The text you provide in this directive is placed at the end of the `<HEAD>` section of each output HTML file. So this is a good place to put, for example, a link to a CSS stylesheet.

`\cfg{html-local-head}{`*HTML text*`}`

This configuration directive is local: you specify it within a document section, and it acts on that section only.

The text you provide in this directive is placed at the end of the `<HEAD>` section of whichever output HTML file contains the section in which the directive was placed. You can specify this directive multiple times in multiple sections if you like.

This directive is particularly useful for constructing MacOS on-line help, which is mostly normal HTML but which requires a special `<META NAME="AppleTitle">` tag in the topmost source file. You can arrange this by placing this configuration directive in the preamble or the introduction section, something like this:

```
\cfg{html-local-head}{<meta name="AppleTitle"
content="MyApp Help">}
```

`\cfg{html-body-tag}{`*HTML text*`}`

The text you provide in this directive is used in place of the <BODY> tag in each output file. So if you wanted to define a background colour, for example, you could write `\cfg{html-body-tag}{<body bg="#123456">}`.

`\cfg{html-body-start}{`*HTML text*`}`

The text you provide in this directive is placed at the beginning of the <BODY> section of each output HTML file. So if you intend your HTML files to be part of a web site with a standard house style, and the style needs a header at the top of every page, this is where you can add that header.

`\cfg{html-body-end}{`*HTML text*`}`

The text you provide in this directive is placed at the end of the <BODY> section of each output HTML file, before any address section. So if you intend your HTML files to be part of a web site with a standard house style, and the style needs a footer at the bottom of every page, this is where you can add that footer.

`\cfg{html-address-start}{`*HTML text*`}`

The text you provide in this directive is placed at the beginning of the <ADDRESS> section at the bottom of each output HTML file. This might be a good place to put authors' contact details, for example.

`\cfg{html-address-end}{`*HTML text*`}`

The text you provide in this directive is placed at the end of the <ADDRESS> section at the bottom of each output HTML file, after the version IDs (if present).

`\cfg{html-navigation-attributes}{`*HTML attributes*`}`

The text you provide in this directive is included inside the <P> tag containing the navigation links at the top of each page (‘Previous’ / ‘Contents’ / ‘Next’). So if you wanted the navigation links to have a particular CSS style, you could write `\cfg{html-navigation-attributes}{class="foo"}`, and the navigation-links paragraph would then begin with the tag `<p class="foo">`.

4.2.4 Configuring heading display

`\cfg{html-chapter-numeric}{`*boolean*`}`

If this is set to `true`, then chapter headings will not contain the word ‘Chapter’ (or whatever other word you have defined in its place - see section 3.3.5 and section 3.6); they will just contain the chapter *number*, followed by the chapter title. If you set this to `false`, chapter headings will be prefixed by ‘Chapter’ or equivalent.

`\cfg{html-chapter-shownumber}{`*boolean*`}`

If this is set to `false`, then chapter headings will *only* contain the chapter title: they will not contain the word ‘Chapter’ (or whatever other word you have defined in its place), and

neither will they contain the chapter number. If set to `false`, this overrides `\cfg{html-chapter-numeric}`.

`\cfg{html-chapter-suffix}{`*text*`}`

This specifies the suffix text to be appended to the chapter number, before displaying the chapter title. For example, if you set this to '`: `', then the chapter title might look something like 'Chapter 2: Doing Things'.

`\cfg{html-section-numeric}{`*level*`}{`*boolean*`}`

Specifies whether section headings at a particular level should contain the word 'Section' or equivalent (if `false`), or should be numeric only (if `true`). The *level* parameter specifies which level of section headings you want to affect: 0 means first-level headings (`\H`), 1 means second-level headings (`\S`), 2 means the level below that (`\S2`), and so on.

`\cfg{html-section-shownumber}{`*level*`}{`*boolean*`}`

If this is set to `false`, then section headings at the specified level will *only* contain the section title: they will not contain the word 'Section' (or whatever other word you have defined in its place), and neither will they contain the section number. If set to `false`, this overrides `\cfg{html-section-numeric}`.

`\cfg{html-section-suffix}{`*level*`}{`*text*`}`

Specifies the suffix text to be appended to section numbers at a particular level, before displaying the section title.

4.2.5 Configuring standard text

These directives let you fine-tune the names Halibut uses in places such as the navigation bar to refer to various parts of the document, and other standard pieces of text, for instance to change them to a different language.

`\cfg{html-preamble-text}{`*text*`}`

`\cfg{html-contents-text}{`*text*`}`

`\cfg{html-index-text}{`*text*`}`

Text used to refer to the preamble (i.e., any paragraphs before the first chapter heading), contents, and index respectively, in the navigation bar, contents, and index.

(`html-contents-text` and `html-index-text` override the cross-format configuration keywords `contents` and `index` (see section 3.6, if both appear. They are legacy keywords preserved for backwards compatibility; you should generally use `contents` and `index`.)

`\cfg{html-title-separator}{`*text*`}`

If multiple headings are used in a file's `<TITLE>` tag, this text is used to separate them.

`\cfg{html-index-main-separator}{`*text*`}`

Separator between index term and references in the index.

`\cfg{html-index-multiple-separator}{`*text*`}`

Separator between multiple references for a single index term in the index.

`\cfg{html-pre-versionid}{`*text*`}`

`\cfg{html-post-versionid}{`*text*`}`

Text surrounding each output version ID paragraph.

`\cfg{html-nav-prev-text}{`*text*`}`

`\cfg{html-nav-next-text}{`*text*`}`

`\cfg{html-nav-up-text}{`*text*`}`

The text used for the ‘previous page’, ‘next page’, and ‘up’ links on the navigation bar.

`\cfg{html-nav-separator}{`*text*`}`

Separator between links in the navigation bar.

4.2.6 Configuring the characters used

Unlike the other backends, HTML does not have a single `\cfg{html-charset}` directive, as there are several levels of character encoding to consider.

The character set names are the same as for `\cfg{input-charset}` (see section 3.6). However, unlike `\cfg{input-charset}`, these directives affect the *entire* output; it's not possible to switch encodings halfway through.

`\cfg{html-output-charset}{`*character set name*`}`

The character encoding of the HTML file to be output. Unicode characters in this encoding's repertoire are included literally rather than as HTML entities.

`\cfg{html-restrict-charset}{`*character set name*`}`

Only Unicode characters representable in this character set will be output; any others will be omitted and use their fallback text, if any. Characters not in ‘html-output-charset’ will be represented as HTML numeric entities.

`\cfg{html-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote*`...}]`

Specifies the quotation marks to use, overriding any `\cfg{quotes}` directive. You can specify multiple fallback options. Works exactly like the `\cfg{text-quotes}` directive (see section 4.1.4).

4.2.7 Miscellaneous options

`\cfg{html-version}{`*version*`}`

Identifies the precise version of HTML that is output. This affects the declaration within the HTML, and also has minor effects on the body of the HTML so that it is valid for the declared version. The available variants are:

`html3.2`

W3C HTML 3.2

`html4`

W3C HTML 4.01 Strict

`iso-html`

ISO/IEC 15445:2000

`xhtml1.0transitional`

W3C XHTML 1.0 Transitional

`xhtml1.0strict`

W3C XHTML 1.0 Strict

`\cfg{html-template-fragment}{`*template*`}[{`*template*`}{...}]`

This directive lets you specify a template, with exactly the same syntax used in `\cfg{html-template-filename}` (see section 4.2.1), to be used for the anchor names (`<A NAME="...">`) used to allow URLs to refer to specific sections within a particular HTML file. So if you set this to '`%k`', for example, then each individual section in your document will be addressable by means of a URL ending in a # followed by your internal section keyword.

If more than one template is specified, anchors are generated in all the specified formats; Halibut's own cross-references are generated with the first template.

Characters that are not permitted in anchor names are stripped. If there are no valid characters left, or a fragment is non-unique, Halibut starts inventing fragment names and suffixes as appropriate.

Note that there are potentially fragment names that are not controlled by this mechanism, such as index references.

`\cfg{html-versionid}{`*boolean*`}`

If this is set to `true`, version ID paragraphs (defined using the `\versionid` command - see section 3.3.6) will be included visibly in the `<ADDRESS>` section at the bottom of each HTML file. If it is set to `false`, they will only be included as HTML comments.

`\cfg{html-rellinks}{`*boolean*`}`

If this is set to `true`, machine-readable relational links will be emitted in each HTML file (`<LINK REL="next">` and so on within the `<HEAD>` section) providing links to related files. The same set of links are provided as in the navigation bar (with which this should not be confused).

Some browsers make use of this semantic information, for instance to allow easy navigation through related pages, and to prefetch the next page. (Search engines can also make use of it.) However, many browsers ignore this markup, so it would be unwise to rely on it for navigation.

The use and rendering of this information is entirely up to the browser; none of the other Halibut options for the navigation bar will have any effect.

`\cfg{html-suppress-navlinks}{`*boolean*`}`

If this is set to `true`, the usual navigation links within the *body* of each HTML file (near the top of the rendered page) will be suppressed.

`\cfg{html-suppress-address}{`*boolean*`}`

If this is set to `true`, the `<ADDRESS>` section at the bottom of each HTML file will be omitted completely. (This will therefore also cause version IDs not to be included visibly.)

`\cfg{html-author}{`*text*`}`

The text supplied here goes in a `<META name="author">` tag in the output HTML files, so that browsers which support this can automatically identify the author of the document.

`\cfg{html-description}{`*text*`}`

The text supplied here goes in a `<META name="description">` tag in the output HTML files, so that browsers which support this can easily pick out a brief description of the document.

4.2.8 Default settings

The default settings for Halibut's HTML output format are:

```
\cfg{html-contents-filename}{Contents.html}
\cfg{html-index-filename}{IndexPage.html}
\cfg{html-template-filename}{%n.html}
\cfg{html-single-filename}{Manual.html}

\cfg{html-leaf-level}{2}
\cfg{html-leaf-contains-contents}{false}
\cfg{html-leaf-smallest-contents}{4}
\cfg{html-contents-depth}{0}{2}
\cfg{html-contents-depth}{1}{3}
... and so on for all section levels below this ...

\cfg{html-head-end}{}
\cfg{html-body-tag}{<body>}
\cfg{html-body-start}{}
\cfg{html-body-end}{}
\cfg{html-address-start}{}
\cfg{html-address-end}{}
\cfg{html-navigation-attributes}{}

\cfg{html-chapter-numeric}{false}
\cfg{html-chapter-shownumber}{true}
\cfg{html-chapter-suffix}{: }
```

```
\cfg{html-section-numeric}{0}{true}
\cfg{html-section-shownumber}{0}{true}
\cfg{html-section-suffix}{0}{ }

\cfg{html-section-numeric}{1}{true}
\cfg{html-section-shownumber}{1}{true}
\cfg{html-section-suffix}{1}{ }

... and so on for all section levels below this ...

\cfg{html-preamble-text}{Preamble}
\cfg{html-contents-text}{Contents}
\cfg{html-index-text}{Index}
\cfg{html-title-separator}{ - }
\cfg{html-index-main-separator}{: }
\cfg{html-index-multiple-separator}{, }
\cfg{html-pre-versionid}{[}
\cfg{html-post-versionid}{]}
\cfg{html-nav-prev-text}{Previous}
\cfg{html-nav-next-text}{Next}
\cfg{html-nav-up-text}{Up}
\cfg{html-nav-separator}{ | }

\cfg{html-output-charset}{ASCII}
\cfg{html-restrict-charset}{UTF-8}
\cfg{html-quotes}{\u2018}{\u2019}{"}{"}

\cfg{html-version}{html4}
\cfg{html-template-fragment}{%b}
\cfg{html-versionid}{true}
\cfg{html-rellinks}{true}
\cfg{html-suppress-navlinks{false}
\cfg{html-suppress-address}{false}
\cfg{html-author}{}
\cfg{html-description}{}
```

4.3 Windows HTML Help

This output format generates a `.chm` file suitable for use with the Windows HTML Help system.

Older versions of Halibut could only generate HTML Help by writing out a set of source files acceptable to the MS help compiler. Nowadays Halibut can generate CHM directly, so that's no longer necessary. However, the legacy method is still available if you need it; see section 4.3.6 for details.

4.3.1 Output file name

`\cfg{chm-filename}{`*filename*`}`

> Sets the output file name in which to store the HTML Help file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--chm` (see section 2.1).

4.3.2 Configuration shared with the HTML back end

As the name suggests, an HTML Help file is mostly a compressed container for HTML files. So the CHM back end shares a great deal of its code with the HTML back end, and as a result, it supports the same range of format configuration options.

(One exception to this general rule is that the configuration options relating to generating *HTML Help compiler input* are not supported in CHM mode, because they wouldn't make any sense! The `html-mshtmlhelp-*` options described in section 4.3.6 have no analogue starting `chm-`.)

However, because HTML and CHM are used in different ways, you may need to configure the two back ends differently. So in CHM mode, Halibut supports all the same configuration directives described in section 4.2, but with their names changed so that they begin with '`chm-`' in place of '`html-`'. This lets you maintain two sets of configuration independently; for example, you could specify `\cfg{html-chapter-numeric}{true}` and `\cfg{chm-chapter-numeric}{false}` in the same source file, and then when you ran Halibut with both the `--html` and `--chm` options, it would produce purely numeric chapter titles in the HTML output but not in the CHM file.

If you do decide to apply a piece of configuration across both these back ends, you can prefix it with '`htmlall-`' instead of '`html-`' or '`chm-`'. For example, `\cfg{htmlall-chapter-numeric}{true}` will enable purely numeric chapter titles in *both* the HTML and CHM output.

4.3.3 Including extra files in the CHM

CHM files are mostly a container for HTML, and the HTML files inside them are allowed to cross-refer to all the usual other kinds of file that HTML might refer to, such as images, stylesheets and even Javascript. If you want to make use of this capability, you need to tell Halibut what extra files it needs to incorporate into the CHM container.

`\cfg{chm-extra-file}{`*filename*`}`

`\cfg{chm-extra-file}{`*filename*`}{`*name inside CHM*`}`

> Tells Halibut to read an additional input file from *filename* and incorporate it into the CHM.
>
> In the first form of the directive, the file will be given the same name within the CHM's internal namespace (i.e. for the purposes of linking to it from HTML files) as Halibut used to load it from disk. If you need to include the file with a different internal name, you can use the second form of the directive, which separately specifies the name under which Halibut should look for the input file and the name it should give it inside the CHM.
>
> You can specify this directive multiple times, to include more than one file.

4.3.4 Renaming the CHM internal support files

As well as ordinary HTML, there are also two special files inside a CHM, containing the table of contents and the index. Halibut generates these automatically, and you normally don't have to worry about them. However, it is *just* possible (though very unlikely!) that you might find they conflict with the name of some file you wanted to include in the CHM yourself, and hence, Halibut provides configuration options to change them if you need to.

`\cfg{chm-contents-name}{`*filename*`}`

Controls the name of the internal contents file in the CHM.

`\cfg{chm-index-name}{`*filename*`}`

Controls the name of the internal index file in the CHM.

4.3.5 Default settings

The default settings for Halibut's CHM output format are mostly the same as for the standard HTML output. However, a few defaults are changed to be more in line with the way CHM wants to do things.

```
\cfg{chm-filename}{output.chm}
\cfg{chm-contents-name}{contents.hhc}
\cfg{chm-index-name}{index.hhk}
\cfg{chm-leaf-level}{infinite}
\cfg{chm-suppress-navlinks{true}
\cfg{chm-suppress-address}{true}
```

4.3.6 Generating input to the MS Windows HTML Help compiler

Before Halibut gained the ability to write out CHM files directly, it used a more cumbersome system in which you could run it in HTML mode and enable some extra options that would write out supporting files needed by the official Windows HTML Help compiler, so that you could still generate a CHM file from your Halibut source in multiple build steps.

This legacy system for HTML Help generation is still supported, partly to avoid backwards-compatibility breakage for anyone already using it, and also because it permits more flexibility in the resulting CHM files: Halibut's own CHM file generation makes some fixed decisions about window layout and styling, whereas if you use the official help compiler you can start from Halibut's default project file and make whatever manual changes you like to that sort of thing.

To enable the generation of MS HTML Help auxiliary files, use the following configuration directives:

`\cfg{html-mshtmlhelp-project}{`*filename*`}`

Instructs Halibut to output an HTML Help project file with the specified name. You will almost certainly want the filename to end in the extension `.hhp` (although Halibut will not enforce this). If you use this option, you must also use the `html-mshtmlhelp-chm` option to specify the desired name of the compiled help file.

`\cfg{html-mshtmlhelp-chm}{`*filename*`}`

Specifies the desired name of the compiled HTML Help file. You will almost certainly want this to have the extension `.chm` (although Halibut will not enforce this). The name you specify here will be written into the help project file. If you specify this option, you must also use the `html-mshtmlhelp-project` option to request a help project file in the first place.

`\cfg{html-mshtmlhelp-contents}{`*filename*`}`

Instructs Halibut to output an HTML Help contents file with the specified name, and refer to it in the help project file. You will almost certainly want the filename to end in the extension `.hhc` (although Halibut will not enforce this). This option will be ignored if you have not also specified a help project file.

Creating a contents file like this causes the HTML Help viewer to display a contents tree in the pane to the left of the main text window. You can choose to generate an HTML Help project without this feature, in which case the user will still be able to navigate around the document by using the ordinary internal links in the HTML files themselves just as if it were a web page. However, using a contents file is recommended.

`\cfg{html-mshtmlhelp-index}{`*filename*`}`

Instructs Halibut to output an HTML Help index file with the specified name, and refer to it in the help project file. You will almost certainly want the filename to end in the extension `.hhk` (although Halibut will not enforce this). This option will be ignored if you have not also specified a help project file.

Specifying this option suppresses the generation of an HTML-based index file (see `\cfg{html-index-filename}` in section 4.2.1).

Creating an index file like this causes the HTML Help viewer to provide a list of index terms in a pane to the left of the main text window. You can choose to generate an HTML Help project without this feature, in which case a conventional HTML index will be generated instead (assuming you have any index terms at all defined) and the user will still be able to use that. However, using an index file is recommended.

Halibut will not output an index file at all, or link to one from the help project file, if your document contains no index entries.

If you use the above options, Halibut will output a help project file which you should be able to feed straight to the command-line MS HTML Help compiler (`HHC.EXE`), or load into the MS HTML Help Workshop (`HHW.EXE`).

You may also wish to alter other HTML configuration options to make the resulting help file look more like a help file and less like a web page. If you use Halibut's direct CHM output, this is done for you automatically (see section 4.3.5); but if you're using the HTML output mode then I recommend the following changes.

- `\cfg{html-leaf-level}{infinite}`, because HTML Help works best with lots of small files (‘topics’) rather than a few large ones. In particular, the contents and index mechanisms can only reference files, not subsections within files.
- `\cfg{html-suppress-navlinks}{true}`, because HTML Help has its own navigation facilities and it looks a bit strange to duplicate them.
- `\cfg{html-suppress-address}{true}`, because the `<ADDRESS>` section makes less sense in a help file than it does on a web page.

4.4 Legacy Windows Help

This output format generates data that can be used by the legacy Windows Help program

`WINHLP32.EXE`. There are two actual files generated, one ending in `.hlp` and the other ending in `.cnt`.

This legacy Windows Help format was discontinued in 2006 in favour of HTML Help, which Halibut can also generate. You probably want to use that instead for any new project. See section 4.3 for more information on this.

Currently, the Windows Help output is hardcoded to be in the 'Win1252' character set. (If anyone knows how character sets are encoded in Windows Help files, we'd appreciate help.)

The Windows Help output format supports the following configuration directives:

4.4.1 Output file name

`\cfg{winhelp-filename}{`*filename*`}`

Sets the output file name in which to store the help file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--winhelp` (see section 2.1).

Your output file name should end with `.hlp`; if it doesn't, Halibut will append it. Halibut will also generate a contents file (ending in `.cnt`) alongside the file name you specify.

4.4.2 Configuring the characters used

`\cfg{winhelp-bullet}{`*text*`}[{`*text*`}...]`

Specifies the text to use as the bullet in bulletted lists. You can specify multiple fallback options. Works exactly like the `\cfg{text-bullet}` directive (see section 4.1.4).

`\cfg{winhelp-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote*`...}]`

Specifies the quotation marks to use, overriding any `\cfg{quotes}` directive. You can specify multiple fallback options. Works exactly like the `\cfg{text-quotes}` directive (see section 4.1.4).

4.4.3 Miscellaneous configuration options

`\cfg{winhelp-contents-titlepage}{`*title*`}`

Sets the text used to describe the help page containing the blurb (see section 3.3.6) and table of contents.

`\cfg{winhelp-section-suffix}{`*text*`}`

Specifies the suffix text to be appended to section numbers, before displaying the section title. (Applies to all levels.)

`\cfg{winhelp-list-suffix}{`*text*`}`

This text is appended to the number on a numbered list item, in exactly the same way as `\cfg{text-list-suffix}` (see section 4.1.4).

`\cfg{winhelp-topic}{`*topic-name*`}`

This directive defines a Windows Help topic name in the current section. Topic names can

be used by the program invoking `WINHELP.EXE` to jump straight to a particular section. So you can use this for context-sensitive help.

For example, if you used this directive in a particular section:

```
\cfg{winhelp-topic}{savingfiles}
```

then a Windows application could invoke Windows Help to jump to that particular section in the help file like this:

```
WinHelp(hwnd, "mydoc.hlp", HELP_COMMAND,
        (DWORD)"JI(`',`savingfiles')");
```

You can use this configuration directive many times, in many different subsections of your document, in order to define a lot of different help contexts which you can use in this way.

4.4.4 Default settings

The default settings for the Windows Help output format are:

```
\cfg{winhelp-filename}{output.hlp}

\cfg{winhelp-bullet}{\u2022}{-}
\cfg{winhelp-quotes}{\u2018}{\u2019}{"}{"}

\cfg{winhelp-contents-titlepage}{Title page}
\cfg{winhelp-section-suffix}{: }
\cfg{winhelp-list-suffix}{.}
```

and no `\cfg{winhelp-topic}` directives anywhere.

4.5 Unix `man` pages

This output format generates a Unix `man` page. That is to say, it generates `nroff` input designed to work with the `-mandoc` macro package.

The available configuration options for this format are as follows:

4.5.1 Output file name

`\cfg{man-filename}{`*filename*`}`

Sets the output file name in which to store the man page. This directive is implicitly generated if you provide a file name parameter after the command-line option `--man` (see section 2.1).

4.5.2 Configuring headers and footers

`\cfg{man-identity}{`*text*`}{`*text...*`}`

This directive is used to generate the initial `.TH` directive that appears at the top of a `man` page. It expects to be followed by some number of brace pairs containing text, which will be used in the headers and footers of the formatted output.

A traditional order for the arguments appears to be:

1. The name of the program.
2. The (numeric) manual section.
3. The date that the `man` page was written.
4. The name of any containing suite of which the program is a part.
5. The name of the author of the `man` page.

For example, a typical `man` page might contain

```
\cfg{man-identity}{make-foo}{1}{June 2003}{foo-utils}{Fred
Bloggs}
```

4.5.3 Configuring heading display

`\cfg{man-headnumbers}{`*boolean*`}`

If this is set to `true`, then section headings in the `man` page will have their section numbers displayed as usual. If set to `false`, the section numbers will be omitted. (`man` pages traditionally have section names such as 'SYNOPSIS', 'OPTIONS' and 'BUGS', and do not typically number them, so `false` is the setting which conforms most closely to normal `man` style.)

`\cfg{man-mindepth}{`*depth*`}`

If this is set to a number greater than 0, then section headings *higher* than the given depth will not be displayed. If it is set to zero, all section headings will be displayed as normal.

The point of this is so that you can use the same Halibut input file to generate a quick-reference `man` page for a program, *and* to include that `man` page as an appendix in your program's full manual. If you are to include the `man` page as an appendix, then the internal headings within the page will probably need to be at `\H` or `\S` level; therefore, when you format that input file on its own to create the `man` page itself, you will need to have defined a `\C` and possibly a `\H` heading beforehand, which you don't want to see displayed.

Here's an example. You might have a file `appendix.but`, which simply says

```
\A{manpages} \cw{man} pages for the Foo tool suite

\cfg{man-mindepth}{2}
```

Then you have a file `make-foo.but`, and probably others like it as well, each of which looks something like this:

```
\cfg{man-identity}{make-foo}{1}{June 2003}{foo-utils}{Fred
Bloggs}

\H{man-foo} \cw{man} page for \c{make-foo}

\S{man-foo-name} NAME

\c{make-foo} - create Foo files for the Foo tool suite
```

```
\S{man-foo-synopsis} SYNOPSIS

... and so on ...
```

So when you're generating your main manual, you can include `appendix.but` followed by `make-foo.but` and any other `man` pages you have, and your `man` pages will be formatted neatly as part of an appendix. Then, in a separate run of Halibut, you can just do

```
halibut appendix.but make-foo.but
```

and this will generate a `man` page `output.1`, in which the headings '`man` pages for the Foo tool suite' and '`man` page for `make-foo`' will not be displayed because of the `man-mindepth` directive. So the first visible heading in the output `man` page will be 'NAME', exactly as a user would expect.

4.5.4 Configuring the characters used

`\cfg{man-charset}{`*character set*`}`

Specifies what character set the output should be in, similarly to `\cfg{text-charset}` (see section 4.1.4).

`\cfg{man-bullet}{`*text*`}[{`*text*`}...]`

Specifies the text to use as the bullet in bulletted lists. You can specify multiple fallback options. Works exactly like the `\cfg{text-bullet}` directive (see section 4.1.4).

`\cfg{man-rule}{`*text*`}[{`*text...*`}]`

This specifies the text which should be used for drawing horizontal rules (generated by `\rule`; see section 3.3.3) when the manual page is rendered into text. It should only be one character long, but otherwise it works like the `\cfg{text-rule}` directive (see section 4.1.4).

`\cfg{man-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote...*`}]`

Specifies the quotation marks to use, overriding any `\cfg{quotes}` directive. You can specify multiple fallback options. Works exactly like the `\cfg{text-quotes}` directive (see section 4.1.4).

4.5.5 Default settings

The default settings for the `man` page output format are:

```
\cfg{man-filename}{output.1}

\cfg{man-identity}{}

\cfg{man-headnumbers}{false}
\cfg{man-mindepth}{0}

\cfg{man-charset}{ASCII}
\cfg{man-bullet}{\u2022}{o}
\cfg{man-rule}{\u2500}{-}
\cfg{man-quotes}{\u2018}{\u2019}{"}{"}
```

4.6 GNU Info

This output format generates files which can be used with the GNU Info program.

There are typically multiple output files: a primary file whose name usually ends in `.info`, and one or more subsidiary files whose names have numbers on the end, so that they end in `.info-1`, `.info-2` and so on. Alternatively, this output format can be configured to output a single large file containing the whole document.

The Info output format supports the following configuration directives:

4.6.1 Controlling the output filenames

`\cfg{info-filename}{`*filename*`}`

Sets the output file name in which to store the Info file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--info` (see section 2.1).

The suffixes `-1`, `-2`, `-3` and so on will be appended to your output file name to produce any subsidiary files required.

Note that Info files refer to their own names internally, so these files cannot be renamed after creation and remain useful.

`\cfg{info-max-file-size}{`*bytes*`}`

Sets the preferred maximum file size for each subsidiary file. As a special case, if you set this to zero, there will be no subsidiary files and the whole document will be placed in a single self-contained output file. (However, note that this file can still not be renamed usefully.)

The preferred maximum file size is only a guideline. Halibut may be forced to exceed it if a single section of the document is larger than the maximum size (since individual Info nodes may not be split between files).

4.6.2 Indentation and line width

`\cfg{info-width}{`*width*`}`

Sets the width of the main part of the document, in characters. Works exactly like the `\cfg{text-width}` directive (see section 4.1.2).

`\cfg{info-indent-code}{`*indent*`}`

Specifies the extra indentation for code paragraphs. Works exactly like the `\cfg{text-indent-code}` directive (see section 4.1.2).

`\cfg{info-index-width}{`*width*`}`

Specifies how much horizontal space to leave in the index node for the text of index terms, before displaying the sections the terms occur in.

`\cfg{info-list-indent}{`*indent*`}`

Specifies the extra indentation before the bullet or number in a list item. Works exactly like

the `\cfg{text-list-indent}` directive (see section 4.1.2).

`\cfg{info-listitem-indent}{`*indent*`}`

Specifies the additional indentation before the body of a list item. Works exactly like the `\cfg{text-listitem-indent}` directive (see section 4.1.2).

4.6.3 Configuring heading display

`\cfg{info-section-suffix}{`*text*`}`

Specifies the suffix text to be appended to each section number before displaying the section title. For example, if you set this to '`: `', then a typical section title might look something like 'Section 3.1: Something Like This'.

`\cfg{info-title-underline}{`*text*`}[{`*text*`}...]`

Specifies the text to be used to underline the overall document title. Works very much like the `\cfg{text-title-underline}` directive (see section 4.1.3). You can specify more than one option, and Halibut will choose the first one supported by the character set.

`\cfg{info-chapter-underline}{`*text*`}[{`*text*`}...]`

Specifies how chapter and appendix headings should be underlined.

`\cfg{info-section-underline}{`*level*`}{`*text*`}[{`*text*`}...]`

Specifies how to underline section headings at a particular level. The *level* parameter specifies which level of section headings you want to affect: 0 means first-level headings (`\H`), 1 means second-level headings (`\S`), 2 means the level below that (`\S2`), and so on.

4.6.4 Controlling the characters used

`\cfg{info-charset}{`*character set*`}`

Specifies what character set the output should be in, similarly to `\cfg{text-charset}` (see section 4.1.4).

`\cfg{info-bullet}{`*text*`}[{`*text*`}...]`

Specifies the text to use as the bullet in bulletted lists. You can specify multiple fallback options. Works exactly like the `\cfg{text-bullet}` directive (see section 4.1.4).

`\cfg{info-rule}{`*text*`}[{`*text*`}...]`

Specifies the text used to draw horizontal rules. You can specify multiple fallback options. Works exactly like the `\cfg{text-rule}` directive (see section 4.1.4).

`\cfg{info-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote*`...}]`

Specifies the quotation marks to use, overriding any `\cfg{quotes}` directive. You can specify multiple fallback options. Works exactly like the `\cfg{text-quotes}` directive (see section 4.1.4).

`\cfg{info-emphasis}{`*start-emph*`}{`*end-emph*`}[{`*start-emph*`}{`*end-emph*`...}]`

Specifies how to display emphasised text. You can specify multiple fallback options. Works

exactly like the `\cfg{text-emphasis}` directive (see section 4.1.4).

`\cfg{info-strong}{`*start-strong*`}{`*end-strong*`}[{`*start-strong*`}{`*end-strong...*`}]`

Specifies how to display strong text. You can specify multiple fallback options. Works exactly like the `\cfg{text-emphasis}` directive (see section 4.1.4).

4.6.5 Miscellaneous configuration options

`\cfg{info-list-suffix}{`*text*`}`

Specifies the text to append to the item numbers in a numbered list. Works exactly like the `\cfg{text-list-suffix}` directive (see section 4.1.5).

`\cfg{info-dir-entry}{`*section*`}{`*short name*`}{`*long name*`}[{`*keyword*`}]`

Constructs an `INFO-DIR-ENTRY` section and places it in the header of the Info file. This mechanism is used to automatically generate the `dir` file at the root of a Unix system's Info collection.

The parameters to this directive are:

section

Specifies the section of the `dir` file in which you want your document referenced. For example, 'Development', or 'Games', or 'Miscellaneous'.

short name

Specifies a short name for the directory entry, which will appear at the start of the menu line.

long name

Specifies a long name for the directory entry, which will appear at the end of the menu line.

keyword

This parameter is optional. If it is present, then the directory entry will cause a jump to a particular subsection of your document, rather than starting at the top. The subsection will be the one referred to by the given keyword (see section 3.3.5 for details about assigning keywords to document sections).

For example, in a document describing many game programs, the configuration directive

```
\cfg{info-dir-entry}{Games}{Chess}{Electronic chess
game}{chess}
```

might produce text in the `dir` file looking something like this:

```
Games
* Chess: (mygames)Chapter 3.   Electronic chess game
```

if the output file were called `mygames.info` and the keyword `chess` had been used to define Chapter 3 of the document.

4.6.6 Default settings

The default settings for the Info output format are:

```
\cfg{info-filename}{output.info}
\cfg{info-max-file-size}{65536}

\cfg{info-width}{70}
\cfg{info-indent-code}{2}
\cfg{info-index-width}{40}
\cfg{info-list-indent}{1}
\cfg{info-listitem-indent}{3}

\cfg{info-section-suffix}{: }
\cfg{info-title-underline}{*}
\cfg{info-chapter-underline}{=}
\cfg{info-section-underline}{0}{-}
\cfg{info-section-underline}{1}{.}
\cfg{info-section-underline}{2}{.}
... and so on for all section levels below this ...

\cfg{info-charset}{ASCII}
\cfg{info-bullet}{\u2022}{-}
\cfg{info-rule}{\u2500}{-}
\cfg{info-quotes}{\u2018}{\u2019}{`}{'}
\cfg{info-emphasis}{_}{_}
\cfg{info-strong}{*}{*}

\cfg{info-list-suffix}{.}
```

and no `\cfg{info-dir-entry}` directives.

4.7 Paper formats

These output formats (currently PDF and PostScript) generate printable manuals. As such, they share a number of configuration directives.

4.7.1 PDF

This output format generates a printable manual in PDF format. In addition, it uses some PDF interactive features to provide an outline of all the document's sections and clickable cross-references between sections.

There is one configuration option specific to PDF:

`\cfg{pdf-filename}{`*filename*`}`

> Sets the output file name in which to store the PDF file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--pdf` (see section 2.1).

The default settings for the PDF output format are:

```
\cfg{pdf-filename}{output.pdf}
```

4.7.2 PostScript

This output format generates a printable manual in PostScript format. This should look exactly identical to the PDF output (see section 4.7.2), and uses `pdfmark` to arrange that if converted to PDF it will contain the same interactive features.

There is one configuration option specific to PostScript:

`\cfg{ps-filename}{`*filename*`}`

> Sets the output file name in which to store the PostScript file. This directive is implicitly generated if you provide a file name parameter after the command-line option `--ps` (see section 2.1).

The default settings for the PostScript output format are:

```
\cfg{ps-filename}{output.ps}
```

4.7.3 Configuring layout and measurements

All measurements are in PostScript points (72 points to the inch).

4.7.3.1 Page properties

`\cfg{paper-page-width}{`*points*`}`

`\cfg{paper-page-height}{`*points*`}`

> Specify the absolute limits of the paper.

`\cfg{paper-left-margin}{`*points*`}`

`\cfg{paper-top-margin}{`*points*`}`

`\cfg{paper-right-margin}{`*points*`}`

`\cfg{paper-bottom-margin}{`*points*`}`

> Specify the margins. Most text appears within these margins, except:
>
> - Section numbers, which appear in the left margin.
> - The footer (containing page numbers), which appears in the bottom margin.

4.7.3.2 Vertical spacing

`\cfg{paper-base-leading}{`*points*`}`

> Specifies the amount of space between lines of text within a paragraph. (So, if the font size is 12pt and there is 2pt of leading, there will be 14pt between successive baselines.)

`\cfg{paper-base-para-spacing}{`*points*`}`

> Specifies the amount of vertical space between paragraphs. (The vertical space between paragraphs does *not* include `paper-base-leading`.)

4.7.3.3 Indentation

`\cfg{paper-list-indent}{`*points*`}`

Specifies the indentation of the bullet or number in a bulletted or numbered list, similarly to `\cfg{text-list-indent}` (see section 4.1.2).

`\cfg{paper-listitem-indent}{`*points*`}`

Specifies the *extra* indentation for the body of a list item, over and above the amount configured in `\cfg{paper-list-indent}`.

`\cfg{paper-quote-indent}{`*points*`}`

Specifies the amount of indentation for a level of quoting. Used for `\quote` (see section 3.3.4) and code quotes with `\c` (see section 3.2.2).

4.7.3.4 Headings

`\cfg{paper-chapter-top-space}{`*points*`}`

Specifies the space between the top margin and the top of the chapter heading. (Each chapter begins on a new page.)

`\cfg{paper-chapter-underline-thickness}{`*points*`}`

Specifies the vertical thickness of the black rule under chapter headings.

`\cfg{paper-chapter-underline-depth}{`*points*`}`

Specifies the distance between the base of the chapter heading and the *base* of the underlying rule.

`\cfg{paper-sect-num-left-space}{`*points*`}`

Specifies the distance between the left margin and the *right* of section numbers (which are in the left margin).

4.7.3.5 Contents and index

`\cfg{paper-contents-indent-step}{`*points*`}`

Specifies by how much to indent each entry in the table of contents per level of subdivision in the document. (In other words, chapter titles appear at the left of the table of contents, headings within the chapter are indented by the amount configured here, subheadings by twice that, and so on.)

`\cfg{paper-contents-margin}{`*points*`}`

Specifies the amount of space on the right of the table of contents which should be reserved for page numbers only. Headings in the table of contents which extend into this space will be wrapped.

`\cfg{paper-leader-separation}{`*points*`}`

Specifies the horizontal spacing between dots in *leaders* (the dotted lines that appear between section headings and page numbers in the table of contents).

`\cfg{paper-footer-distance}{`*points*`}`

Specifies the distance between the bottom margin and the *base* of the footer (which contains page numbers).

`\cfg{paper-index-columns}{`*columns*`}`

Specifies the number of columns the index should be divided into.

`\cfg{paper-index-gutter}{`*points*`}`

Specifies the amount of horizontal space between index columns.

`\cfg{paper-index-minsep}{`*points*`}`

Specifies the minimum allowable horizontal space between an index entry and its page number. If the gap is smaller, the page number is moved to the next line.

4.7.3.6 Fonts

The directives in this section control which fonts Halibut uses for various kinds of text. Directives for setting the font normally take three font names, the first of which is used for normal text, the second for emphasised text, and the third for code. Any fonts which aren't specified are left unchanged.

Halibut intrinsically knows about some fonts, and these fonts are also built into all PDF and most PostScript implementations. These fonts can be used without further formality. Halibut can also use other fonts, and can embed them it its PDF and PostScript output. These other fonts are supplied to Halibut by simply adding them to the list of input files on its command line.

To use a Type 1 font Halibut needs both the font file itself, in either hexadecimal (PFA) or IBM PC (PFB) format, and an Adobe Font Metrics (AFM) file. The AFM file must be specified first on the command line. If Halibut gets an AFM file without a corresponding Type 1 font file, the PostScript and PDF output files will still use that font, but they won't contain it.

Using a TrueType font is rather simpler, and simply requires you to pass the font file to Halibut. Halibut does place a few restrictions on TrueType fonts, notably that they must include a Unicode mapping table and a PostScript name.

Fonts are specified using their PostScript names. Running Halibut with the `--list-fonts` option causes it to display the PostScript names of all the fonts it intrinsically knows about, along with any fonts the were supplied as input files.

Font sizes are specified in PostScript points (72 to the inch).

`\cfg{paper-title-fonts}{`*normal-font*`}[{`*emph-font*`}[{`*code-font*`}]]`

Specifies the fonts to use for text in the document title.

`\cfg{paper-title-font-size}{`*points*`}`

Specifies the font size of the document title.

`\cfg{paper-chapter-fonts}{`*normal-font*`}[{`*emph-font*`}[{`*code-font*`}]]`

Specifies the fonts to use for text in chapter titles.

`\cfg{paper-chapter-font-size}{`*points*`}`

Specifies the font size of chapter titles.

`\cfg{paper-section-fonts}{`*level*`}{`*normal-font*`}[{`*emph-font*`}[{`*code-font*`}]]`

Specifies the fonts to use for text in section headings at the *level* specified.

`\cfg{paper-section-font-size}{`*level*`}{`*points*`}`

Specifies the font size of section headings at the *level* specified.

`\cfg{paper-base-fonts}{`*normal-font*`}[{`*emph-font*`}[{`*code-font*`}]]`

Specifies the fonts to use for text in the body text.

`\cfg{paper-base-font-size}{`*points*`}`

Specifies the font size of body text.

`\cfg{paper-code-fonts}{`*bold-font*`}[{`*italic-font*`}[{`*normal-font*`}]]`

Specifies the fonts to use for text in code paragraphs. The *bold-font* is used for bold text, the *italic-font* for emphasised text, and the *normal-font* for normal code.

`\cfg{paper-code-font-size}{`*points*`}`

Specifies the font size of text in code paragraphs.

`\cfg{paper-pagenum-font-size}{`*points*`}`

Specifies the font size to use for page numbers.

4.7.3.7 Miscellaneous

`\cfg{paper-rule-thickness}{`*points*`}`

Specifies the vertical thickness of the rule produced by the `\rule` command (see section 3.3.3). (Note that no extra space is reserved for thicker rules.)

4.7.4 Configuring the characters used

`\cfg{paper-bullet}{`*text*`}[{`*text*`}...]`

Specifies the text to use as the bullet in bulletted lists. You can specify multiple fallback options. Works exactly like the `\cfg{text-bullet}` directive (see section 4.1.4).

`\cfg{paper-quotes}{`*open-quote*`}{`*close-quote*`}[{`*open-quote*`}{`*close-quote*`...}]`

Specifies the quotation marks to use, overriding any `\cfg{quotes}` directive. You can specify multiple fallback options. Works exactly like the `\cfg{text-quotes}` directive (see section 4.1.4).

4.7.5 Default settings for paper formats

The default page size corresponds to 210 × 297 mm, i.e., A4 paper.

`\cfg{paper-page-width}{595}`

```
\cfg{paper-page-height}{842}

\cfg{paper-left-margin}{72}
\cfg{paper-top-margin}{72}
\cfg{paper-right-margin}{72}
\cfg{paper-bottom-margin}{108}

\cfg{paper-base-leading}{1}
\cfg{paper-base-para-spacing}{10}

\cfg{paper-list-indent}{6}
\cfg{paper-listitem-indent}{18}
\cfg{paper-quote-indent}{18}

\cfg{paper-chapter-top-space}{72}
\cfg{paper-chapter-underline-thickness}{3}
\cfg{paper-chapter-underline-depth}{14}
\cfg{paper-sect-num-left-space}{12}

\cfg{paper-contents-indent-step}{24}
\cfg{paper-contents-margin}{84}
\cfg{paper-leader-separation}{12}
\cfg{paper-footer-distance}{32}
\cfg{paper-index-columns}{2}
\cfg{paper-index-gutter}{36}
\cfg{paper-index-minsep}{18}

\cfg{paper-base-fonts}{Times-Roman}{Times-Italic}{Courier}
\cfg{paper-base-font-size}{12}
\cfg{paper-code-fonts}{Courier-Bold}{Courier-Oblique}{Courier}
\cfg{paper-code-font-size}{12}
\cfg{paper-title-fonts}{Helvetica-Bold}
    {Helvetica-BoldOblique}{Courier-Bold}
\cfg{paper-title-font-size}{24}
\cfg{paper-chapter-fonts}{Helvetica-Bold}
    {Helvetica-BoldOblique}{Courier-Bold}
\cfg{paper-chapter-font-size}{20}
\cfg{paper-section-fonts}{0}{Helvetica-Bold}
    {Helvetica-BoldOblique}{Courier-Bold}
\cfg{paper-section-font-size}{0}{16}
\cfg{paper-section-fonts}{1}{Helvetica-Bold}
    {Helvetica-BoldOblique}{Courier-Bold}
\cfg{paper-section-font-size}{1}{14}
\cfg{paper-section-fonts}{2}{Helvetica-Bold}
    {Helvetica-BoldOblique}{Courier-Bold}
\cfg{paper-section-font-size}{2}{13}
... and so on for all section levels below this ...

\cfg{paper-pagenum-font-size}{12}

\cfg{paper-rule-thickness}{1}
```

```
\cfg{paper-bullet}{\u2022}{-}
\cfg{paper-quotes}{\u2018}{\u2019}{'}{'}
```

Appendix A: Halibut Licence

Halibut is copyright (c) 1999-2017 Simon Tatham.

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Halibut contains font metrics derived from the *Font Metrics for PDF Core 14 Fonts*, which carry the following copyright notice and licence:

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>
> This file and the 14 PostScript(R) AFM files it accompanies may be used, copied, and distributed for any purpose and without charge, with or without modification, provided that all copyright notices are retained; that the AFM files are not distributed without this file; that all modifications to this file or any of the AFM files are prominently noted in the modified file(s); and that this paragraph is not modified. Adobe Systems has no responsibility or obligation to support the use of the AFM files.

Appendix B: Halibut `man` page

B.1 NAME

`halibut` – multi-format documentation formatting tool

B.2 SYNOPSIS

`halibut` [*`options`*] *`file1.but`* [*`file2.but ...`*]

B.3 DESCRIPTION

`halibut` reads the given set of input files, assembles them into a document, and outputs that document in one or more formats.

The available command-line options can configure what formats Halibut should output in, and can also configure other things about the way Halibut works.

B.4 OPTIONS

The command-line options supported by `halibut` are:

`--text`[=*filename*]

Makes Halibut generate an output file in plain text format. If the optional *filename* parameter is supplied, the output text file will be given that name. Otherwise, the name of the output text file will be as specified in the input files, or `output.txt` if none is specified at all.

`--html`[=*filename*]

Makes Halibut generate one or more output files in HTML format. If the optional *filename* parameter is supplied, there will be precisely one HTML output file with that name, containing the whole document. Otherwise, there may be one or more than one HTML file produced as output; this, and the file names, will be as specified in the input files, or given a set of default names starting with `Contents.html` if none is specified at all.

`--chm`[=*filename*]

Makes Halibut generate an output file in Windows HTML Help format. If the optional *filename* parameter is supplied, the output help file will be given that name. Otherwise, the name of the output help file will be as specified in the input files, or `output.chm` if none is specified at all.

`--winhelp`[=*filename*]

Makes Halibut generate an output file in old-style Windows Help format. If the optional

filename parameter is supplied, the output help file will be given that name. Otherwise, the name of the output help file will be as specified in the input files, or `output.hlp` if none is specified at all.

The output help file must have a name ending in `.hlp`; if it does not, `.hlp` will be added. A secondary contents file will be created alongside the main help file, with the same name except that it will end in `.cnt` (for example `output.cnt`, if the main file is `output.hlp`).

`--man`[=*filename*]

Makes Halibut generate an output file in Unix `man` page format. If the optional *filename* parameter is supplied, the output `man` page will be given that name. Otherwise, the name of the output `man` page will be as specified in the input files, or `output.1` if none is specified at all.

`--info`[=*filename*]

Makes Halibut generate an `info` file. If the optional *filename* parameter is supplied, the output `info` file will be given that name. Otherwise, the name of the output `info` file will be as specified in the input files, or `output.info` if none is specified at all.

By default, unless configured otherwise using the `\cfg{info-max-file-size}{0}` directive, the `info` output will be split into multiple files. The main file will have the name you specify; the subsidiary files will have suffixes `-1`, `-2` etc.

`--pdf`[=*filename*]

Makes Halibut generate an output file in PDF format. If the optional *filename* parameter is supplied, the PDF output file will be given that name. Otherwise, the name of the output PDF file will be as specified in the input files, or `output.pdf` if none is specified at all.

`--ps`[=*filename*]

Makes Halibut generate an output file in PostScript format. If the optional *filename* parameter is supplied, the PostScript output file will be given that name. Otherwise, the name of the output PostScript file will be as specified in the input files, or `output.ps` if none is specified at all.

`-C`*word*`:`*word*[`:`*word*...]

Adds a configuration directive to the input processed by Halibut. Using this directive is exactly equivalent to appending an extra input file to the command line which contains the directive `\cfg{`*word*`}{`*word*`}{`*word*...`}`.

`--input-charset=`*charset*

Changes the assumed character set for input files from the default of ASCII.

`--list-charsets`

Makes Halibut list character sets known to it.

`--list-fonts`

Makes Halibut list fonts known to it, either intrinsically or by being passed as input files.

`--precise`

Makes Halibut report the column number as well as the line number when it encounters an error in an input file.

`--help`

Makes Halibut display a brief summary of its command-line options.

`--version`

Makes Halibut report its version number.

`--licence`

Makes Halibut display its licence (MIT).

B.5 MORE INFORMATION

For more information on Halibut, including full details of the input file format, look in the full manual. If this is not installed locally on your system, you can also find it at the Halibut web site:

`https://www.chiark.greenend.org.uk/~sgtatham/halibut/`

B.6 BUGS

This man page isn't terribly complete.

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