

CHAPTER 1

THE UTP MACROS

□ Introduction □

This paper is a quick introduction to a set of macros used for typesetting *Unix Text Processing* (UTP). These macros are based on those described in Chapter 17 and Appendix F of UTP.

Although the macros are general enough to be used in other settings, this paper will focus on their use in UTP. The idea is to give some examples of their use, so that others working on the transcription of UTP will have a framework for preparing their chapters.

Not all of the macros described in Chapter 17 and Appendix F are implemented, but I did implement those that I believe are necessary for typesetting UTP. If you need additional macros, please let me know via the Groff mailing list or by email at <jsnader@ix.netcom.com>. Table 1.1 is a list of the macros along with a short description of what they do.

Table 1.1 The UTP Macros

utp	Set defaults for UTP
Nh	Set header numbering conventions
Hl	Draw a horizontal line
SS	Start a screen box
SE	End a screen box
H	Switch to Helvetica font
HB	Switch to Helvetica Bold font
HI	Switch to Helvetica Italic font
X1	Start left virtual screen
X2	End left virtual screen
X3	Start right virtual screen
X4	End right virtual screen
Rn	Reviewer note
Pn	Personal note
page	UTP page number in margin
do-page	Enable the page macro
Ah	Start an A-head
Bh	Start a B-head
Ch	Start a C-head
Dh	Start a D-head
Se	Start a chapter or appendix
Ts	Start a table
Te	End a table
Fs	Start a figure
Fe	End a figure
Ls	Start a list
Li	List item
Le	End a list
Ps	Start a listing
Pe	End a listing

The best way to use this paper is to read both the source and typeset copy so that you can see the effect of the individual macros.

□ Starting Off □

The first thing to do when using these macros is to include them in your source. This is easily done as

```
.so utp.mac
.utp
```

The `utp` macro invokes defaults for the UTP book. I expect that these will change as we converge towards agreement on what the final book should look like.

After invoking the `utp` macro, you can start your chapter. As explained below, this is done with the `Se` macro. For convenience, the `chapter` macro is an alias for `Se`.

The various header macros can be used to set headings. For example, this section, labeled “Starting Off,” was set using the `Ah` macro. Other subsidiary headers can be set using the `Bh`, `Ch`, and `Dh` macros.

Except for the macros that label figures and tables, and those that generate lists, almost everything else you use will be from the standard `-ms` macro set.

□ Macro Descriptions □

This section is a detailed description of the individual macros in the same order as Table 1.1.

Miscellaneous Macros

<code>utp</code>	This macros selects certain defaults that are used for typesetting UTP. It takes no arguments.
<code>Nh</code>	This macros defines the numbering of sections. It takes two arguments. The first argument defines whether or not the sections (as defined by the <code>Ah</code> , <code>Bh</code> , <code>Ch</code> , and <code>Dh</code> macros) will be numbered (in the <code>NH</code> sense) or not. Possible values are: <ul style="list-style-type: none"> 0 Do not number any sections 1 Number all sections 2 Number A-heads only The second controls whether or not the first digit in the number will be the chapter number or appendix letter. Possible values are: <ul style="list-style-type: none"> 0 Do not prefix with chapter or appendix number 1 Prefix the section number with the chapter number or appendix letter
<code>H1</code>	This macros draws a horizontal line the width of the page. It is used, for example, to draw the line under the chapter heading.
<code>SS</code>	This macro is used to start a “screen box.” This is similar to the <code>B1</code> macro except that the final box has rounded corners. The <code>SS</code> macro takes two optional arguments, which specify the width and height of the box respectively. If these are not specified, the box will be scaled to the size of its contents.
<code>SE</code>	This macro ends a screen box begun with <code>SS</code> .

H

HB

HI These macros work just like the CW macro except that they use the *Helvetica*, **Helvetica Bold**, and *Helvetica Italic* fonts respectively. Without any arguments, they switch to the appropriate Helvetica style until another font change is requested. If a single argument is given, then that argument (alone) will be set in the appropriate Helvetica style. Argument 2, if present, is set in the previous font *after* the portion set in Helvetica. Argument 3, if present, is set in the previous font *before* the portion set in Helvetica. For example, (Helvetica) was set as

```
.H Helvetica ) (
```

X1

X2

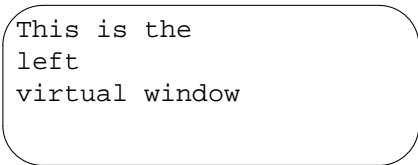
X3

X4 These macros are used to set side by side “virtual” screens. They are meant to be used together. X1 and X2 bracket the text in the left virtual window. Any text after X2 but before X3 is centered between the windows. The X3 and X4 macros bracket the text in the right virtual window. For example figure 1.1 below was set as

```
.X1
This is the
left
virtual window

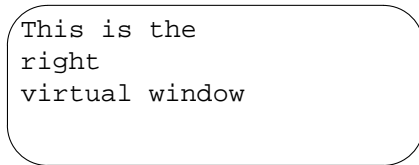
.X2
This is some text
in between the
windows
.X3
This is the
right
virtual window

.X4
```



This is the
left
virtual window

This is some text
in between the
windows



This is the
right
virtual window

Figure 1.1 The X[1-4] Macros

Rn This macro inserts a note to the reviewers in-line and also collects them on a separate page at the end of the document. The Rn macro takes a single argument that is the note.

Pn This macro is like Rn, except that the notes are not inserted in-line. Its single argument is the note to be output at the end of the document.

page

do-page The page macro inserts its argument, assumed to be a page number, into the left-hand margin. This is intended to capture the original UTP page numbers. This page number is also added to the output of the Rn and Pn macros. The page macro acts as a no-op unless the do-page macro is called first.

Section Macros

Ah

Bh

Ch

Dh These macros generate the section titles. They each take a single argument, which is the section title. For example, this section, titled “Section Macros,” was set as a B-head with

```
.Bh "Section Macros"
```

Se

chapter These macros, which are synonyms of each other, start a new chapter or appendix. They take four arguments. The first is the Chapter or Appendix “number.” This can be either a digit or an upper-case letter (for appendices, for example). The second argument is the title of the chapter or appendix. The third argument is the type of chapter. You can use anything here, but normally you would want either Chapter or Appendix. If argument 3 is not specified, it defaults to “Chapter.” For example, this “chapter” was begun with

```
.chapter 1 "The UTP Macros"
```

Normally the Chapter title is converted to uppercase. If the fourth argument is non-null this feature is disabled.

Table and Figure Macros

These macros are used to label tables and figures.

Table Macros

Ts This macro is used to start a table. It takes a single argument that is the title for the table. The tables are automatically numbered as chapter.# where # is an automatically incremented count of the tables in a chapter.

Te This macro is used to signal the end of a table. For example, Table 1.1, above, was set as:

```
.Ts "The UTP Macros"
.TS
center, tab(:), box;
l|l.
utp:Set defaults for UTP
Nh:Set header numbering conventions
Hl:Draw a horizontal line
...
.TE
.Te
```

Figure Macros

The figure macros are similar except that it is the end macro that takes the title.

Fs This macro is used to start a figure. It takes two optional arguments. The first is the amount of space to reserve for the figure. If it is omitted or specified as 0, the figure itself will determine the space. The space argument should be used when a blank space is required for a literal “paste up.” If the second argument is ‘F,’ the figure will be floated to the next page if it doesn’t fit on the current page.

Fe This macro is used to end a figure. It takes a single argument that is the title for the figure. As with tables, the figures are automatically numbered with the chapter and figure number. As an example, Figure 1.2, below, was typeset as:

```
.Fs
.PS
box wid 1 ht 1 "A Figure"
.PE
.Fe "A Simple Figure"
```

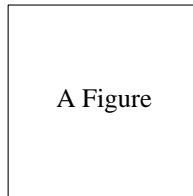


Figure 1.2 A Simple Figure

The List Macros

There are three macros for generating “numbered lists.” The “number” can be a digit, an upper or lower case Roman numeral, an upper or lower case letter, or a user-selectable bullet character. Lists can be nested and will automatically indent to indicate the nesting level.

Ls This macro starts a list or sublist. It takes three arguments. The first argument indicates what sort of numbering will be used in the list (numeric, Roman numeral, etc.). Table 1.2 lists the values. The second argument specifies an indent for the list. If no indent is specified, it defaults to 5n. The third argument is the “bullet” character that is used when the first argument is ‘B.’ It defaults to the normal bullet (•) character.

Table 1.2 List Numbering Types

A	Upper case alphabetic
a	Lower case alphabetic
B	Bullet (argument 3 optionally specifies type)
N	Numeric
R	Upper case Roman numeral
r	Lower case Roman numeral

Li This macro is used once for each list item. If the optional argument is non-null, no blank space is output before the item.

Le This macro is used to end a list or sublist. If the optional argument is non-null, the normal space following the list is suppressed.

List Examples

A simple list such as

1. One
2. Two
3. Three

is typeset as

```
.Ls
.Li
One
.Li
Two
.Li
Three
.Le
```

Note that the default numbering for the first level of nesting is numeric. Subsequent levels of nesting default to 'a,' 'i,' 'B' (•), 'B' (-), 'B' (•). All levels after the fifth use 'B' (•).

He is a more complicated list with three levels.

1. One
 - A. First level 2
 - B. Second level 2
 - i. First level 3
 - ii. Second level 3
2. Two

This set of lists was typeset as

```
.Ls N
.Li
One
.Ls A
.Li
First level 2
.Li
Second level 2
.Ls r
.Li
First level 3
.Li
Second level 3
.Le
.Le
.Li
Two
.Le
```

Listing Macros

These macros begin and end a “listing.” The font is set to Courier, the text is indented, and no-fill mode is set.

Ps This macro starts a listing. The optional argument specifies an amount to indent. If there is no argument, the indent defaults to 5n.

Pe This macro ends a listing. If the optional argument is non-null, the normal paragraph space after the listing is suppressed.