Chapter 11

dpas Assembler User's Guide

11.1 dpas Command Line Syntax

The **dpas** assembler accepts command lines from the terminal using this syntax:

dpas [*switches...*] [*source–file*] [*switches...*]

where *source–file* is a UNIX file name and is required unless the **–E** or **–F** switches are used. The conventional file type for DPEAC source files is "**.dp**".

The output is, by default, a UNIX object file with the name **a.out**. This output can be renamed using the **–o** switch, and it is the result of DPEAC translation into a standard assembly source file that has been assembled by **as**.

If the **–E** switch is given, the output is the DPEAC source code that is the result of processing lexical directives (**#operation**) only. This is written to **stdout** unless redirected to a file using the **–o** switch. The output from running with **–E** is still suitable as input to **dpas**. When the **–E** switch is used, *source–file* may be omitted in the command line, in which case input is taken from **stdin**.

The **–F** switch is like **–E**, but additionally performs the DPEAC translation. The resulting output is a source file suitable for assembly by **as**. You can use this as a "filter" option, to see whether a given line of DPEAC code is syntactically correct, and if so to what SPARC code it is translated. (If you do this, you may also want to supply the **–w** switch, which causes **dpas** to display a pointer indicating where in the source line it found a syntax error (if any).

If the **–S** switch is given, the output is additionally passed to **as**, which causes it to output assembled output as well to **stdout**.

When neither **–E** nor **–F** is used, **dpas** performs the lexical and DPEAC translations, then immediately runs the result through **as**. A temporary file is used to hold the input to **as**. This is created in the **/tmp** directory and is deleted following assembly.

By using the **–t** switch, you can request that **dpas** use the file "*name*.**s**" in your current working directory instead, and not delete it after assembly, where *name* is the name of the output file specified by the **–o** switch. If no output file is given, the file will be named "**a.s**". This feature is helpful when you want to perform the full assembly, but keep the **.s** file for debugging or for help in finding syntactic errors. If the source has a "**.s**" extension, the temporary file is named "*name*.**temp.s**".

The **–P** switch selects the use of **cpp** for lexical processing as opposed to the internal preprocessor. If this option is selected, all **–D**, **–U**, and **–I** switches are passed to **cpp**.

Note: Even with the **–P** option selected, the internal preprocessor will still process lexical lines that begin with a backslash, as in:

```
\#macro foo a,b,c
```

11.2 dpas Command Line Switches

The recognized command line switches of **dpas** are listed below. These switches are designed to be compatible with those of SUN-4 **as**, so that the two commands can be used interchangeably.

11.2.1 SUN-4 as-compatible Switches

Switch	Effect
–P	Preprocess using **cpp** instead of internal preprocessor (**–D**, **–U**, and **–I** switches are passed to **cpp**)
–L	Save labels beginning with **L**
–R	Make the data segment part of text segment (read–only)
–S[**C**]	Produce disassembly to stdout, if no **–o** (**C** removes comments)
–O[*n*]	Enable peephole optimization level *n* (defaults to 1)

11.2.2 Switches For Output Control

Switch	Effect
-h	Display this help text and exit
-E	Lexical preprocess only (**-o** gives output file else **stdout**)
-F	Suppress assembly phase (**-o** gives output else **stdout**)
-o *file*	Rename object (or **-E** or **-F** output) file
-X	Do not produce output
-t	Preserve temporary (**.s** file) as *name*.s where *name* is **-o** name
-v	Trace commands to **as**
-w	Print error line position pointers on terminal

11.2.3 Lexical Processing Control Switches

Switch	Effect
-D*sym*[**=***text*]	Pre-define symbol
-I*path*	Add path to include file search list
-U*sym*	Undefine predefined symbol
-p *file*	Write **#print** output to file (**-p***file* and **-p=***file* also allowed)

11.2.4 Special DPEAC Switches

Switch	Effect
-a	Assume that all single-precision memory addresses are doubleword–aligned
-n*k*	Set number of physical VUs per PN to k (default is 4)
-V1	Assume accelerator chip version 1 (default)
-A*name*	Use *name* as the assembler for the final phase of **dpas** processing. (The default is **as**.) Example: **-A/usr/local/bin/gas**