

TABLE 2-continued

Document File						
Section	FC Range	Contents	Description/Comments			
data structure (text)	200-209	The_quick_	each character is one byte			
	20A-20E	brown				
	20F-21A	_fox_jumped				
	21B-21E	over				
	21F-22D	_the_lazy dogs.				
format structure	22E-3FF	<unused>	formatting each FC is a long FC (4 bytes)			
	400-407	200		600		
	408-40F	20A		604		
	410-417	20F		600		
	418-41F	21B		60A		
	420-427	21F		600		
	428-42B	22E			(no formatting FC here)	
	property modifier structure	42C-4FF		<unused>		
		600-603		03	count of bytes in 1st grppr1 sprmCSize (word-size) arg for sprmCSize	count of bytes in 2nd grppr1 sprmCSize (word-size) arg: size = 10 sprmCBold (byte-size) arg: bold = on
				01		
000A						
604-609		05	count of bytes in 3rd grppr1 sprmCSize (word-size) arg: size = 10 sprmCInc (byte-size) arg: size + = 2 sprmCIalic (byte-size) arg: italic = on			
		01				
		000A				
		03				
		01				
60A-611		07	count of bytes in 3rd grppr1 sprmCSize (word-size) arg: size = 10 sprmCInc (byte-size) arg: size + = 2 sprmCIalic (byte-size) arg: italic = on			
		01				
		000A				
		02				
		04				
		01				
612-6FF	<unused>					

TABLE 3

Default Format Table				
sprm	sgc	spra	fSpec	b
sprmCSize(1)	sgcChp (2)	spraWord (2)	FALSE (0)	0
sprmCInc (2)	sgcChp (2)	sprByte (1)	TRUE (1)	0
sprmCBold (3)	sgcChp (2)	spraBit (0)	FALSE (0)	2
sprmCIalic(4)	sgcChp (2)	sprBit (0)	FALSE (0)	3

Referring first to Table 1, the example text string is "The quick brown fox jumped over the lazy dogs." For this example text string, all text is font size 10, the term "brown" is bold, and the term "over" is italic and is two sizes larger than the remaining portion of the text. Consequently, the formatting attributes for this text string include a 10 point font size, bold, italic, and increased font size (by 2 sizes). These format attributes for the text string of Table 1 are defined in the structures of the document file of Table 2 and supported by the format information maintained in the property information array of Table 3.

Referring now to Table 2, a document file for the prior word processing program contains multiple structures including a header, a data structure, a format structure, and a property modifier structure. The header contains general

information regarding the document file and defines the text range and the format information range for the data structure and the format structure. A File Character (FC) position represents an offset from the beginning of the document file.

Consequently, the header section of the document file is defined by the FC range of 0-1FF. The text range for text maintained in the data structure is 200-22D. The linking information for linking the data of the data structure to the property modifiers of the property modifier structure is maintained within the format structure at 400-42B. For example, for the FC range of 400-407, the text beginning at FC range 200, "The quick ", is associated with the group of property modifiers within the property modifier structure beginning at the FC range of 600.

In the file shown in Table 2, the formatting is specified using single property modifiers (sprms), also called property modifiers. For this "WORD 95" program example, the relevant property modifiers are directed to the formatting actions of defining a base font size, increasing this font's size, bold, and italic. These property modifiers and their values are listed below:

- sprmCSize: character formatting to set font size; Value=1
- sprmCInc: character formatting to increase font size; Value=2
- sprmCBold: character formatting to make text bold; Value=3
- sprmCIalic: character formatting to make text italic; Value=4

Each sprm takes an argument, and multiple sprms and their arguments can define formatting for a piece of text.

Groups of property modifiers in a list, also called a grppr1, are stored in the property modifier structure within the file at FC ranges 600-603, 604-609 and 60A-611. A set of grppr1s represents the formatting information for the sample text stream "The quick brown fox jumped over the lazy dogs." For the text "The_quick_", a grppr1 at FC range 600-603 contains just one sprm and argument: sprmCSize, with its argument of 10 (because the text is size 10). For "brown", a grppr1 at FC range 604-609 contains two sprm/argument pairs: sprmCSize, followed by its argument of 10; and sprmCBold, followed by its argument, TRUE. For "over", a grppr1 at FC range 60A-611 contains three sprm/argument pairs: sprmCSize, 10; sprmCInc, 2 (increase size by 2); sprmCIalic, TRUE. Given a sprm of Table 2, the associated values for sgc, sprm, fSpec, and b, which are stored in the executable of the application program, can be determined by accessing the default table shown in Table 3.

In prior versions of the Microsoft "WORD" program, sprm's were originally restricted to being byte-size. Because of the desire to keep these sprm values small, the sprms did not directly encode information about what property type was modified (for example, character, paragraph, table, etc.) or the size of the argument following the property modifier. Rather, each property modifier was merely an index into the default tables stored in association with the executable file of the application program that themselves encoded the formatting information.

Referring now to Table 3, a default format table maintained within the executable of the prior word processing program can be accessed by using a sprm value as an index to the table. This format table contains the fields for sgc, sprm, fSpec, and b values, which are referenced by a corresponding sprm value. For example, the first entry in the default format table is accessed by the sprmCSize(1). This entry contains the following format-related information: sgc=sgcChp(2); sprmWord(2); fSpec=FALSE(0); and b=0.