Arena ABK format

The file is made up of three sections: the header, a large filler and then the moves. Note that "Use transpositions" and "Moves with priority 0 are never played" are not stored in the file.

All 4 byte numbers are stored as little endian.

Header (254 bytes)

Bytes	From	To	Notes	
4	1	4	Header	Fixed: [03] [41] [42] [??]
4	5	8	Bytes in Header/Filler	Fixed at 25200 = [70] [62] [00] [00]
4	9	12	Bytes per move	Fixed at 28 = [1C] [00] [00] [00]
1	13	13	Number of Comment characters	Max 120 = [78]
120	14	133	Comment	
1	134	134	Number of Author characters	Max 80 = [50]
80	135	214	Author	
4	215	218	Book depth in half moves	
4	219	222	Total number moves	
4	223	226	Minimum number of games	Max 99999 = [9F] [86] [01] [00]
4	227	230	Minimum number of wins	Max 99999 = [9F] [86] [01] [00]
4	231	234	Win % white	Max 100 = [64] [00] [00] [00]
4	235	238	Win % black	Max 100 = [64] [00] [00] [00]
4	239	242	Probability: Priority	Max 15 = [0F] [00] [00] [00]
4	243	246	Probability: No. of games	Max 15 = [0F] [00] [00] [00]
4	247	250	Probability: Win %	Max 15 = [0F] [00] [00] [00]
4	251	254	Use book to half move	Max 9999 = [0F] [27] [00] [00]

Filler (24946 bytes)

A large block with all bytes of value [79]. This covers bytes 255 to 25200 with the moves data starting at byte 25201.

Moves (28 bytes per move)

Bytes	From	To	Notes	
1	1	1	Square from	A1=0 H1=7 H8=63
1	2	2	Square to	A1=0 H1=7 H8=63
1	3	3	Promotion piece	0=none 1=R 2=N 3=B 4=Q
1	4	4	Priority	??=0 ?=1 _=5 !=7 !!=8
4	5	8	Number of games	
4	9	12	Number of wins	
4	13	16	Number of losses	
4	17	20	Ply count	
4	21	24	Next Move pointer	Move pointer or [FF] [FF] [FF] [FF]
4	25	28	Next Sibling pointer	Move pointer or [FF] [FF] [FF] [FF]

The move pointer gives the effective move number within the file. Since each move is 28 bytes and the header plus filler is 25200 bytes that means the first actual move pointer is move 900 (i.e. [84] [03]). After that each pointer is increased by 28 bytes per move. Next Move is the following move in the variation; Next Sibling means the next alternative move at this level.

For example: [85] [03] [00] [00] is decimal 901. Times 28 plus 1 gives byte address 25229 (i.e. the second move in the Moves data section).

Although the priority is one byte and so can allow values up to 255, inspecting various ABK files suggests this should be a value between 0 and 9.