

BioWare Aurora Engine

Sound Set File (SSF) Format

1. Introduction

The Sound Set File (SSF) format is used to store Neverwinter Nights **soundset** information.

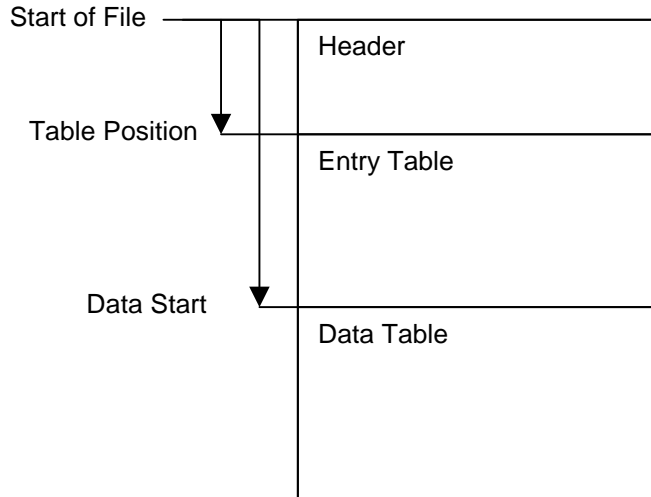
A soundset is a set of sound files to play and associated strings to display when a creature or player character (PC) performs certain actions or when the creature or PC reacts to certain conditions. For example, when a PC attacks a creature, the PC may shout a battle cry, with the text of the battle cry appearing over the PC's head and in the game's message pane. The soundset tells the game what string to display and what sound file to play.

2. Overall File Format

A SSF contains 3 logical sections: a header, an Entry Table, and a Data Table.

The figure below shows the overall layout of a SSF.

Figure 2: SSF File Structure



3. Header Format

The header contains file version information and details on how to locate the soundset information in the file. In the current SSF format, the header is 40 bytes long, but a portion of it is padding, to allow for the addition of new header information in later revisions of the SSF format.

Table 3: Header Format

Value	Size/Type	Description
FileType	4 char	4-char file type string. "SSF "
FileVersion	4 char	4-char SSF version. "V1.0"
EntryCount	32-bit unsigned	Number of entries in Entry Table
TableOffset	32-bit unsigned	Byte offset of Entry Table from start of file
Padding	24 bytes	NULL padding

4. Entry Table

The Entry Table is an array of 32-bit unsigned integers. Each integer entry is a byte offset from the beginning of the file to an item of data in the Data Table.

In the current form of the SSF format, the Entry Table is not strictly necessary, since the objects in the Data Table are of fixed size. However, storing the offsets to each one allows for expansion of the SSF format later to a format in which the data objects may be of variable length.

The figure below shows what the Entry Table looks like. The file header specifies the number of entries present.

Figure 4: Entry Table

Entry 0
Entry 1
Entry 2
...
Entry N - 1

N = EntryCount from the header

5. Data Table

The Data Table stores soundset string and sound file information. It is a sequence of SSF data objects packed end-to-end, with the starting offset of each one specified in the Entry Table. There is one data object per entry in the Entry Table.

The figure below shows the layout of the Data Table.

Figure 5: Data Table

Data 0
Data 1
Data 2
...
Data N - 1

N = EntryCount from the header

Each data object in the Data Table has the structure given in the table below.

Table 5: Data Format

Value	Size/Type	Description
ResRef	16 char	Name of sound file to play
StringRef	32-bit unsigned	Index to string in dialog.tlk

The ResRef is the name of a .wav sound file to play. This file must be located somewhere in the game resources (BIF files, Override folder, Hak Paks) and can have up to 16 characters in its name, not including the .wav file extension. The wave files should be in mono format, since soundset sounds are played as 3D sound sources in the game engine, and stereo waves do not make sense in that context.

The StringRef identifies a string in the user's dialog.tlk file that should be displayed when the current sound entry plays in the game. If the StringRef is -1 (ie., 0xFFFFFFFF), then no text appears.

6. Entry Special Meanings

Soundset entries at specific indices have special meanings that remain constant across all soundset files. For example, the game always interprets the first entry in the Entry Table/Data Table as the "attack" cry.

The table below describes each soundset entry. Note that the table row Entry numbers start from 1, but the actual indices start from 0. That is, the Entry index is 1 less than the Entry number.

Also included in the table are the QuickChat keys for sounds that have QuickChat key bindings. To play a QuickChat in the game, press 'V' followed by the Type key, then the key for the individual sound. For example, "Attack" is VWE.

Some of the QuickChat entries have an asterisk (*) next to their names. The game will cause these entries to issue orders to any associates (henchmen, summoned creatures, etc) belonging to the player character.

Table 6: Sound Set Entries

Entry	Type	Name	QChat	Comments
1	Combat Shouts (QChat W)	Attack*	E	Command group to attack
2		Battlecry 1	R	
3		Battlecry 2	R	
4		Battlecry 3	R	
5		Heal me*	D	Heal speaker
6		Help	W	
7		Enemies sighted	A	
8		Flee	S	
9		Taunt	T	When using Taunt skill
10		Guard me*	F	Guard speaker
11		Hold*	X	Hold this spot; stop moving
12	Combat Events	Attack Grunt 1		Short grunt
13		Attack Grunt 2		Moderate effort
14		Attack Grunt 3		Grunt of effort
15		Pain Grunt 1		Short
16		Pain Grunt 2		Pained
17		Pain Grunt 3		Pained
18		Near death		
19		Death		
20		Poisoned		
21		Spell failed		
22		Weapon ineffective		
23	Exploration (QChat E)	Follow me*	E	Follow speaker
24		Look here	W	
25		Group party	D	
26		Move over	S	
27	Tasks (QChat D)	Pick lock	W	
28		Search	E	
29		Go stealthy	G	
30		Can do	C	
31		Cannot do	X	
32		Task complete	A	
33		Encumbered		
34		Selected		
35	Social (QChat S)	Hello	S	
36		Yes	D	
37		No	W	
38		Stop	E	
39		Rest	C	
40		Bored	X	
41		Goodbye	A	
42	Feelings (QChat X)	Thank you	X	
43		Laugh	W	
44		Cuss	C	
45		Cheer	D	
46		Something to say	S	
47		Good idea	A	
48		Bad idea	Z	
49		Threaten	E	

7. SoundSet 2da files

Soundset references in the game and toolset are controlled by two 2da files.

Soundset . 2da is a centralized source of information about the SoundSet Files that exist in the game resources. It contains important information about the soundsets that is not stored within the SoundSet Files themselves. The table below describes the columns in soundset . 2da.

Table 7.1: soundset.2da columns

Column	Type	Description
LABEL	String	Text label for convenience of person reading the 2da
RESREF	String	ResRef (16-char filename) of SSF file
STRREF	Integer	Index to string in dialog.tlk
GENDER	Integer	0 = male, 1 = female
TYPE	Integer	Index into soundsettype.2da

To reduce network traffic, the soundset used by a creature is not stored as a SoundSet File's ResRef. Instead, a creature's soundset is stored and transmitted as a single integer index into soundset.2da. From this index, the game client can consult its own copy of soundset.2da to fetch the ResRef.

The StrRef, Gender, and Type columns in soundset.2da are used by the game and toolset for display purposes and for filtering which soundsets appear during player character creation and in the toolset's Soundset Selection dialog. The toolset will not display any soundsets that have a StrRef of 0 or less. The Type is an index into soundsettype.2da, which is summarized in the table below.

Table 7.2: soundsettype.2da columns

Column	Type	Description
LABEL	String	Text label for convenience of person reading the 2da
STRREF	Integer	Index to string in dialog.tlk

The soundset Type is used for filtering the list of selectable soundsets in the toolset. The name displayed for each type is specified by its StrRef.

As a special case, the game understands Type 0 to refer to player soundsets, and these are the ones that are displayed during player character creation.