# Insert Manually a Song Available on the Forum

In this tutorial we'll be importing in FF3us a song that is already in FF6 music format. There is no need for musical knowledge to be able to complete the following steps. The only things that will help is being familiar with the hexadecimal system as well as some basic ROM hacking knowledge like what is an offset, the difference between an absolute and hirom offset and how to use an hex editor.

## 1. Getting the file and tool

We'll be using the FFIV song "The Prologue" from our Song Database. The other thing you will need is a hex editor. There are many you can choose from but I'd suggest one that has a copy selection, paste-write and paste-insert functionalities. One good all purpose hex editor is HxD and this is what has been used to take the screenshots below.

### 2. Files we will be importing

Extract the files from **FF4\_prologue.7z** and you will see the following files:

Name	Date modified	Туре	Size
Ø prologue.spc	2015-01-31 12:01	Chipamp SNES Ch	65 KB
prologue_DATA.bin	2015-01-30 12:39	BIN File	2 KB
prologue_INST.bin	2015-01-29 7:34 PM	BIN File	1 KB

prologue.spc is the song in SNES format. Those can be played with a SPC player or with winamp and a plug-in. For more info on SPC file and how to play them, use Google or check the great extracted music tutorial at FantasyAnime.com. prologue DATA.bin and prologue INST.bin are two binary files, the first has the music data in FF6 format and the other the instruments used in the song. The DATA and INST files do not contain instrument samples, those are in the game.

All songs in our song database have the three same files. Some songs, mostly done by tsushiy and having a samll "p" next to their title need the instrument patch, available in the same thread. This patch install new BRR samples in the game, giving access to a wider range of instruments to use in songs. Some songs instrument file use those added instruments. This is not the case of our prologue song.

# 3. Choosing the right spot

The first thing that you have to ask yourself is \*"do I want to replace an existing song or expand the number of existing songs?"\* If you only want to replace a existing song you can skip to section 4. To expand the number of songs there are few thing to do. First you have to move the \$C53E96-\$C53F94 song pointers block because there is no room to add an extra one. To find a spot in non-expanded ROM, you can look here. The offsets in this list take in account the ROM header though while my whole tutorial assume you have a headerless ROM, so substract 0x200 from the offset you choose. You can also expand your ROM and put the pointers in the \$FX banks.

I decided for the example to take the \$EEAF01 spot, which has 767 free bytes, which is more than enough. As shown in the image below, I select with the mouse the pointer block, I do **Ctrl+c**, **Ctrl+g** to enter my destination (you can scroll a long time for the same result) and then **Right-Click→Paste write**. Now let's say I would put my song at \$F30540 in expanded ROM, I would type **40 05 F3** at \$EEB0000 (see right picture). As you have guessed pointers are always inverted whether they are two or three bytes long. As for the old pointer data copied, you can blank with 00 or FF all the data since you moved it, giving you room for other things if needed.

Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	OF
00053E80	FF	E0	FF	EO	FF	ΕO	FF	E0	FF	E0	FF	E0	FF	E0	FF	EO
00053E90	FF	E0	FF	EC	FF	ΕO	7A	5C	C8	A0	5C	C8	DB	83	C9	9D
00053EA0	В4	C8	82	C8	C8	1E	64	C8	33	67	С8	69	6D	C8	C5	70
00053EB0	C8	BF	74	C8	F8	78	C8	AF	7C	C8	28	80	C8	38	84	C8
00053EC0	9A	88	C8	ED	8B	C8	56	8F	C8	6F	95	C8	29	98	C8	62
00053ED0	9B	C8	D4	A5	C8	36	$^{\rm AD}$	C8	в8	В7	C8	E8	BF	C8	4C	C2
00053EE0	C8	C1	CE	C8	30	DЗ	C8	56	DA	C8	BF	DD	C8	6B	E1	C8
00053EF0	57	EЗ	C8	E2	EЗ	C8	48	EA	C8	A6	EF	C8	72	F4	C8	15
00053F00	FA	C8	43	FE	C8	4B	05	C9	E 9	05	C9	66	0A	C9	В6	90
00053F10	C9	A2	93	C9	9C	14	C9	14	8E	C9	5F	97	C9	4C	1A	C9
00053F20	DD	1E	C9	8F	26	C9	97	29	C9	0B	2E	C9	58	32	C9	FF
00053F30	37	C9	AE	ЗF	C9	65	44	C9	В3	4A	C9	6F	4D	C9	16	53
00053F40	C9	DB	53	C9	C5	54	C9	57	55	C9	C9	62	C9	CD	63	C9
00053F50	03	69	C9	6E	6A	C9	19	6B	C9	C2	6B	C9	DA	70	C9	C9
00053F60	71	C9	06	7A	C9	EB	7C	C9	7C	7F	C9	42	88	C9	99	8C
00053F70	C9	E8	8C	C9	85	8D	C9	DF	97	C9	BF	9D	C9	4 F	A2	C9
00053F80	D8	AЗ	C9	51	AC	C9	9F	AE	C9	7A	5C	C8	В9	В9	C9	F9
00053F90	BА	C9	ЗF	DF	C9	00	00	00	00	00	00	00	00	00	00	00
00053FA0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	OD	0E	OF
Offset(h) 002EAEF0	00 A9	01 D0	02 50	03 8F	04 5C	05 B8	06 7E	07 A9	08 90	09 E0	0A 8F	0B 5E	0C B8	0D 7E	0E E2	0F 20
002EAEF0	A9	DO	50	8F	5C	B8	7E	A9	90	EO	8F	5E	B8	7E	E2	20
002EAEF0 002EAF00	A9 60	D0 7A	50 5C	8F C8	5C A0	B8 5C	7E C8	A9 DB	90 83	E0 C9	8F 9D	5E B4	B8 C8	7E 82	E2 C8	20 C8
002EAEF0 002EAF00 002EAF10	A9 60 1E	D0 7A 64	50 5C C8	8F C8 33	5C A0 67	B8 5C C8	7E C8 69	A9 DB 6D	90 83 C8	E0 C9 C5	8F 9D 70	5E B4 C8	B8 C8 BF	7E 82 74	E2 C8 C8	20 C8 F8
002EAEF0 002EAF00 002EAF10 002EAF10	A9 60 1E 78	D0 7A 64 C8	50 5C C8 AF	8F C8 33 7C	5C A0 67 C8	B8 5C C8 28	7E C8 69 80	A9 DB 6D C8	90 83 C8 38	E0 C9 C5 84	8F 9D 70 C8	5E B4 C8 9A	B8 C8 BF 88	7E 82 74 C8	E2 C8 C8 ED	20 C8 F8 8B
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30	A9 60 1E 78 C8	D0 7A 64 C8 56	50 5C C8 AF 8F	8F C8 33 7C C8	5C A0 67 C8 6F	B8 5C C8 28 95	7E C8 69 80 C8	A9 DB 6D C8 29	90 83 C8 38 98	E0 C9 C5 84 C8	8F 9D 70 C8 62	5E B4 C8 9A 9B	B8 C8 BF 88 C8	7E 82 74 C8 D4	E2 C8 C8 ED A5	20 C8 F8 8B C8
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF30	A9 60 1E 78 C8 36	D0 7A 64 C8 56 AD	50 5C C8 AF 8F C8	8F C8 33 7C C8 B8	5C A0 67 C8 6F B7	B8 5C C8 28 95 C8	7E C8 69 80 C8 E8	A9 DB 6D C8 29 BF	90 83 C8 38 98 C8	E0 C9 C5 84 C8 4C	8F 9D 70 C8 62 C2	5E B4 C8 9A 9B C8	B8 C8 BF 88 C8 C1	7E 82 74 C8 D4 CE	E2 C8 C8 ED A5 C8	20 C8 F8 8B C8 30
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50	A9 60 1E 78 C8 36 D3	D0 7A 64 C8 56 AD C8	50 5C C8 AF 8F C8 56	8F C8 33 7C C8 B8 DA	5C A0 67 C8 6F B7 C8	88 5C C8 28 95 C8 BF	7E C8 69 80 C8 E8 DD	A9 DB 6D C8 29 BF C8	90 83 C8 38 98 C8 6B	E0 C9 C5 84 C8 4C E1	8F 9D 70 C8 62 C2 C8	5E B4 C8 9A 9B C8 57	88 C8 BF 88 C8 C1 E3	7E 82 74 C8 D4 CE C8	E2 C8 C8 ED A5 C8 E2	20 C8 F8 8B C8 30 E3
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60	A9 60 1E 78 C8 36 D3 C8	D0 7A 64 C8 56 AD C8 48	50 5C C8 AF 8F C8 56 EA	8F C8 33 7C C8 B8 DA C8	5C A0 67 C8 6F B7 C8 A6	B8 5C C8 28 95 C8 BF EF	7E C8 69 80 C8 E8 DD C8	A9 DB 6D C8 29 BF C8 72 0A C9	90 83 C8 38 98 C8 6B F4	E0 C9 C5 84 C8 4C E1 C8	8F 9D 70 C8 62 C2 C8 15	5E B4 9A 9B C8 57 FA	B8 C8 BF 88 C8 C1 E3 C8	7E 82 74 C8 D4 CE C8 43	E2 C8 C8 ED A5 C8 E2 FE	20 C8 F8 8B C8 30 E3 C8
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70	A9 60 1E 78 C8 36 D3 C8 4B	D0 7A 64 C8 56 AD C8 48 05	50 5C C8 AF 8F C8 56 EA C9	8F C8 33 7C C8 B8 DA C8 E9	5C A0 67 C8 6F B7 C8 A6 05	B8 5C C8 28 95 C8 BF EF C9	7E C8 69 80 C8 E8 DD C8 66	A9 DB 6D C8 29 BF C8 72 0A	90 83 C8 38 98 C8 6B F4 C9	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9	8F 9D 70 C8 62 C2 C2 C8 15 90	5E B4 C8 9A 9B C8 57 FA C9	B8 C8 BF 88 C8 C1 E3 C8 A2	7E 82 74 C8 D4 CE C8 43 93	E2 C8 C8 ED A5 C8 E2 FE C9	20 C8 F8 8B C8 30 E3 C8 9C
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80	A9 60 1E 78 C8 36 D3 C8 4B 14	D0 7A 64 C8 56 AD C8 48 05 C9	50 5C C8 AF 8F C8 56 EA C9 14	8F C8 33 7C C8 B8 DA C8 E9 8E	5C A0 67 C8 6F B7 C8 A6 05 C9	B8 5C 28 95 C8 BF EF C9 5F	7E C8 69 80 C8 E8 DD C8 66 97	A9 DB 6D C8 29 BF C8 72 0A C9	90 83 C8 38 98 C8 6B F4 C9 4C	E0 C9 C5 84 C8 4C E1 C8 B6 1A	8F 9D 70 C8 62 C2 C8 15 90 C9	5E B4 9A 9B C8 57 FA C9 DD	B8 C8 BF 88 C8 C1 E3 C8 A2 1E	7E 82 74 C8 D4 CE C8 43 93 C9	E2 C8 ED A5 C8 E2 FE C9 8F	20 C8 F8 8B C8 30 E3 C8 9C 26
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80 002EAF90 002EAF90 002EAF80	A9 60 1E 78 C8 36 D3 C8 4B 14 C9 65 54	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9	50 5C C8 AF C8 56 EA C9 14 29 C9 57	8F C8 33 7C C8 B8 DA C8 E9 8E C9 B3 55	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9	88 5C C8 28 95 C8 BF EF C9 5F 2E C9 C9	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9	90 83 C8 38 98 C8 6B F4 C9 4C 32 C9 CD	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63	8F 9D 70 C8 62 C2 C2 C8 15 90 C9 FF 53 C9	5E B4 C8 9A 9B C8 57 FA C9 DD 37 C9 03	B8 C8 BF 88 C8 C1 E3 C8 A2 1E C9 DB 69	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9	E2 C8 C8 ED A5 C8 E2 FE C9 8F 3F C9 6E	20 C8 F8 8B C8 30 E3 C8 9C 26 C9 C5 6A
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80 002EAF80 002EAF80 002EAF80 002EAF80 002EAF80	A9 60 1E 78 8 8 60 1E 78 8 63 03 03 03 03 03 03 03 03 04 03 04 05 54 05 54 09	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9 19	50 5C C8 AF 8F C8 56 EA C9 14 29 C9 57 6B	8F C8 33 7C C8 B8 DA C8 E9 8E C9 B3 55 C9	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9 C2	B8 5C 28 95 C8 BF EF C9 5F 2E C9 6B	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62 C9	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9 DA	90 83 C8 38 98 C8 6B F4 C9 4C 32 C9 CD 70	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63 C9	8F 9D 70 C8 62 C2 C8 15 90 C9 FF 53 C9 C9	5E B4 9A 9B C8 57 FA C9 DD 37 C9 03 71	B8 C8 BF 88 C1 E3 C8 A2 1E C9 DB 69 C9	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9 06	E2 C8 ED A5 C8 E2 FE C9 8F 3F C9 6E 7A	20 C8 F8 8B C8 30 E3 C8 9C C8 9C C9 C5 6A C9
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80 002EAF90 002EAF80 002EAF80 002EAF80 002EAF00	A9 60 1E 78 C8 36 D3 C8 4B 14 C9 65 54 C9 EB	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9 19 7C	50 5C C8 AF 8F C8 56 EA C9 14 29 C9 57 6B C9	8F C8 33 7C C8 B8 DA C8 B8 C9 8E C9 B3 55 C9 7C	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9 C2 7F	B8 5C C8 95 C8 BF EF C9 5F C9 5F C9 C9 6B C9	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62 C9 42	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9 DA 88	90 83 C8 38 98 C8 6B F4 C9 4C 29 CD 70 C9	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63 C9 99	8F 9D 70 C8 62 C2 C8 15 90 C9 FF 53 C9 C9 8C	5E B4 9A 9B C8 57 FA C9 DD 37 C9 03 71 C9	B8 C8 BF 88 C8 C1 E3 C8 A2 1E C9 DB 69 C9 E8	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9 06 8C	E2 C8 ED A5 C8 E2 FE C9 8F C9 6E 7A C9	20 C8 F8 8B C8 30 E3 C8 9C C8 9C C9 C5 6A C9 85
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80 002EAF90 002EAF80 002EAFB0 002EAFD0 002EAFD0 002EAFD0	A9 60 1E 78 8 60 12 78 8 60 12 63 63 63 64 65 54 65 54 65 80 80	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9 19 7C C9	50 5C C8 AF 8F C8 56 EA C9 14 29 C9 57 6B C9 DF	8F C8 33 7C C8 B8 DA C8 E9 8E C9 82 C9 55 55 C9 7C 97	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9 C2 7F C9	88 5C 28 95 C8 8F 28 5F 28 5F 29 5F 29 68 C9 8F	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62 C9 42 9D	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9 DA 88 C9	90 83 C8 38 98 C8 6B F4 C9 4C 32 C9 CD 70 C9 4F	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63 C9 99 A2	8F 9D 70 C8 62 C2 C8 15 90 C9 FF 53 C9 C9 8C C9	5E B4 C8 9B C8 57 FA C9 DD 37 C9 03 71 C9 D8	B8 C8 BF 88 C8 C1 E3 C8 A2 E3 C8 A2 E3 C9 DB 69 C9 E8 A3	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9 06 8C C9	E2 C8 C8 ED A5 C8 E2 FE C9 8F C9 6E 7A C9 51	20 C8 F8 8B C8 30 E3 C8 9C C9 C5 6A C9 85 AC
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF30 002EAF50 002EAF60 002EAF60 002EAF80 002EAF90 002EAF80 002EAFB0 002EAFD0 002EAFD0 002EAFE0 002EAFF0	A9 60 1E 78 86 D3 C8 4B 14 C9 65 54 C9 EB 8D C9	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9 19 7C C9 9F	50 5C C8 AF 8F C8 56 EA C9 14 29 C9 57 6B C9 DF AE	8F C8 33 7C C8 B8 DA C8 E9 B3 55 C9 7C 97 C9	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9 C2 7F C9 7A	B8 5C 28 95 C8 BF 28 5F 28 C9 5F 22 C9 68 C9 BF 5C	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62 C9 42 9D C8	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9 DA 88 C9 B9	90 83 C8 38 98 C8 6B F4 C9 4C 32 C9 CD 70 C9 4F B9	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63 C9 99 A2 C9	8F 9D 70 C8 62 C2 C8 15 90 C9 FF 53 C9 C9 8C C9 F9	5E B4 C8 9A C8 57 FA C9 DD 37 C9 03 71 C9 D8 BA	B8 C8 BF 88 C8 C1 E3 C8 A2 1E C9 DB 69 C9 E8 A3 C9	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9 06 8C C9 3F	E2 C8 C8 ED A5 C8 E2 FE C9 8F 3F C9 6E 7A C9 51 DF	20 C8 F8 8B C8 30 E3 C8 9C C9 C5 6A C9 85 AC C9
002EAEF0 002EAF00 002EAF10 002EAF20 002EAF30 002EAF40 002EAF50 002EAF60 002EAF70 002EAF80 002EAF80 002EAF80 002EAF80 002EAF00 002EAFD0 002EAFD0	A9 60 1E 78 86 D3 C8 4B 14 C9 65 54 C9 EB 8D C9	D0 7A 64 C8 56 AD C8 48 05 C9 97 44 C9 19 7C C9 9F	50 5C C8 AF 8F C8 56 EA C9 14 29 C9 57 6B C9 DF AE	8F C8 33 7C C8 B8 DA C8 E9 8E C9 82 C9 55 55 C9 7C 97	5C A0 67 C8 6F B7 C8 A6 05 C9 0B 4A C9 C2 7F C9 7A	B8 5C 28 95 C8 BF 28 5F 28 C9 5F 22 C9 68 C9 BF 5C	7E C8 69 80 C8 E8 DD C8 66 97 C9 6F 62 C9 42 9D C8	A9 DB 6D C8 29 BF C8 72 0A C9 58 4D C9 DA 88 C9 B9	90 83 C8 38 98 C8 6B F4 C9 4C 32 C9 CD 70 C9 4F B9	E0 C9 C5 84 C8 4C E1 C8 B6 1A C9 16 63 C9 99 A2 C9	8F 9D 70 C8 62 C2 C8 15 90 C9 FF 53 C9 C9 8C C9 F9	5E B4 C8 9A C8 57 FA C9 DD 37 C9 03 71 C9 D8 BA	B8 C8 BF 88 C8 C1 E3 C8 A2 1E C9 DB 69 C9 E8 A3 C9	7E 82 74 C8 D4 CE C8 43 93 C9 AE 53 C9 06 8C C9 3F	E2 C8 C8 ED A5 C8 E2 FE C9 8F 3F C9 6E 7A C9 51 DF	20 C8 F8 8B C8 30 E3 C8 9C C9 C5 6A C9 85 AC C9

The next thing to do is to change the following code. It's the only place pointers are read and you have to enter each byte of the pointer base offset so new base offset, new base offset + 1, new base offset + 2. This is not an ASM course so I'm not explaining further except only mentioning you have a total of 9 bytes to change.

#### Original code 🗵

#### Modified code 🗵

Last thing to do is changing the total number of songs. The offset is \$C53C5E. It's a single byte that should be \$55. Increase it of one each time you add a new song (replacing an existing one does not count). So congratulation you have not expanded pointer and can add as much songs as you want up to a limit of 255!

#### **Result in-game**

sd-result.mp4

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