Introduction

This tutorial will focus on giving you the knowledge that you will need in order to create your own in-game cutscenes (called “events”). Events can do a multitude of things, including animating characters on screen, giving the player items, changing a character's sprite/palette, and more! Any time a dialogue box displays, or an NPC moves along a fixed path, there are events at work. This tutorial will focus only on events that occur outside of battle.

You don't need to be a programmer to understand how to make your own events. More or less, you'll just be giving the game a sequence of commands, which the game will follow when the event happens. Once you understand the process, all you'll need to do is string together the correct event commands to get the desired effect. By the end of this tutorial, you will have learned:

1. What tools are available to help you
2. How to make events “happen”
3. How to modify events in the game ROM
4. How to understand the event commands

Tools

Event Editors

While there are comprehensive editors for other parts of the game, such as sprites and monster stats, there is no silver bullet for event editing. One event editor that exists is called “ZoneDoctor”, which is a modified version of FF6LE (the map editor for FF6). However, ZoneDoctor is considered to be fairly unstable, so it is risky to use. It is also somewhat limiting compared to editing events manually. If you are aware of ZoneDoctor's quirks and don't need the extra power, it might be worth using, as it can help to visualize the events that you are creating. Otherwise, it is probably better to avoid it. If you do want to download it, it is available here.

There is another editor that can be used to create events, packaged with Everything's FF6Tools. This editor is only compatible with macOS, so you will only be able to use it if you have a Mac computer or install a virtual machine. For the moment, this guide will focus on editing events manually. More information about FF6Tools may be added at a later date. That being said, some concepts learned here should be useful regardless of whether the events are created manually or through FF6Tools.

Manual Editing

In order to do some manual event editing, several tools will be of use to you:

- FF3usME: You've probably seen this one around the wiki a few times already, and with good reason! This editor can do a lot. Of particular note is its ability to edit dialogue, but it can also provide useful data for various IDs. For example, you may look up a monster formation ID if you want to force an enemy encounter upon the party, or you may need the ID of an Esper to give the party a specific Magicite.
- FF6LE Rogue CE: The main purpose of this tool is to allow you to edit maps. That's out of the scope of event editing, but this tool is helpful for other reasons. Like FF3usME, the LE is a great

source of information on various IDs. It also allows you to place NPCs and set entrance events (to be discussed below).
- Event Commands Document: This document is a list of all the event commands and how to use them. Examples of how to use the commands are provided, which should hopefully make it easy to use unfamiliar commands once you have learned the basics.
- Event Bits Document: A list of event bits. Once you know how to read/use it, it will be fairly straightforward.
- Event Script Dump: The holy grail of event hacking. This document provides a way to peruse through any event in the game in a human readable format. Don't leave home without it!
- HxD: This is a hex editor. It will allow you to modify the game directly. HxD is recommended over WindHex because it offers a sane way to copy-paste chunks of game data.

Headers

Before we begin anything else, let's talk about the number one thing that trips up the unaware. A header is a chunk of $200 bytes that appears at the beginning of some SNES ROMs. The keyword here is *some*; if you download a random FF6 ROM (whether it's version 1.0 or 1.1), it may or may not have a header. You need to determine if the ROM is headered or not before you begin. Open the ROM in HxD. The ROM should look similar to one of

these images

.

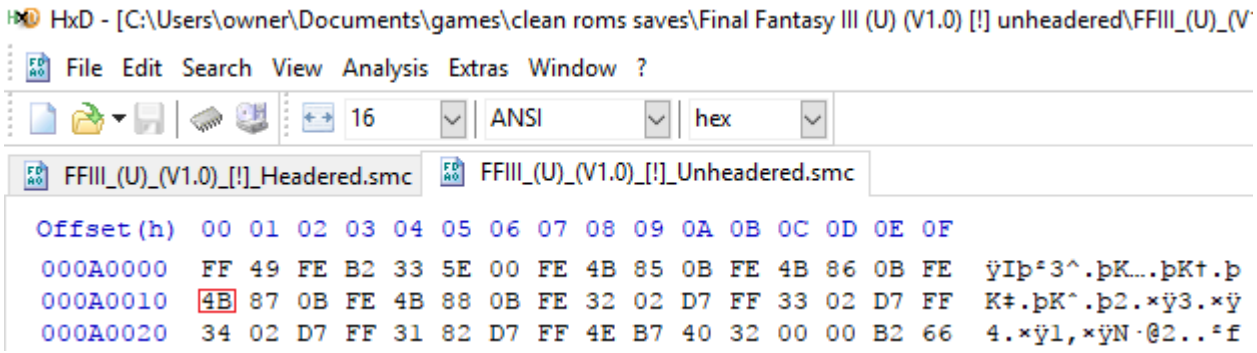
As you can see, the first $200 bytes of the ROM on the right are all zeros; this unnecessary data is the header. Functionally, the two ROMs are identical. The only reason why the header matters (for our purposes) is that it pushes all the data forward by $200 bytes. This means that the game's data won't be where you expect it to be. This problem could technically be remedied with some simple math, but it's easier to just use a ROM without a header. You should either continue searching for ROMs until you find one without a header or remove the header by <doing X, I forget the best way to do this>. As an aside, I also recommend using version 1.0 for hacking.

Addresses

If you open up the Event Script, you'll probably notice some values at the left side, such as CA/0000. These are addresses. Addresses are a way to uniquely identify any particular byte in the ROM. Every byte in the ROM has its own address. If we have looked in the event dump and found an event that we want to edit, we can use the address to find that event in the ROM data as well. Take a look at CA/0010. We see that the byte at CA/0010 is 4B. 4B happens to be the command that displays some dialogue. The event dump also tells us that the dialogue that would be displayed is “Found <N> GP!”. So this event is called by the game whenever you receive GP from a chest! To be specific, this part of the event only controls the dialogue box, so it doesn't actually give the player any GP.

Let's say that we want to modify this event. That would be strange, but we'll pretend that's our goal for the sake of the example. The first step would be to find the event in the game data. Unfortunately, CA/0010 is not the address we need to search for in HxD. <I don't know much about Hi-ROM offsets, so it's hard to give an explanation here> Therefore, we need to search for the address A0010 instead. You can go to an address in HxD by clicking on Search > Goto, or using the Ctrl-G keyboard shortcut.

Once we have reached A0010, we can see that the byte here is indeed 4B, so we are in the right place:



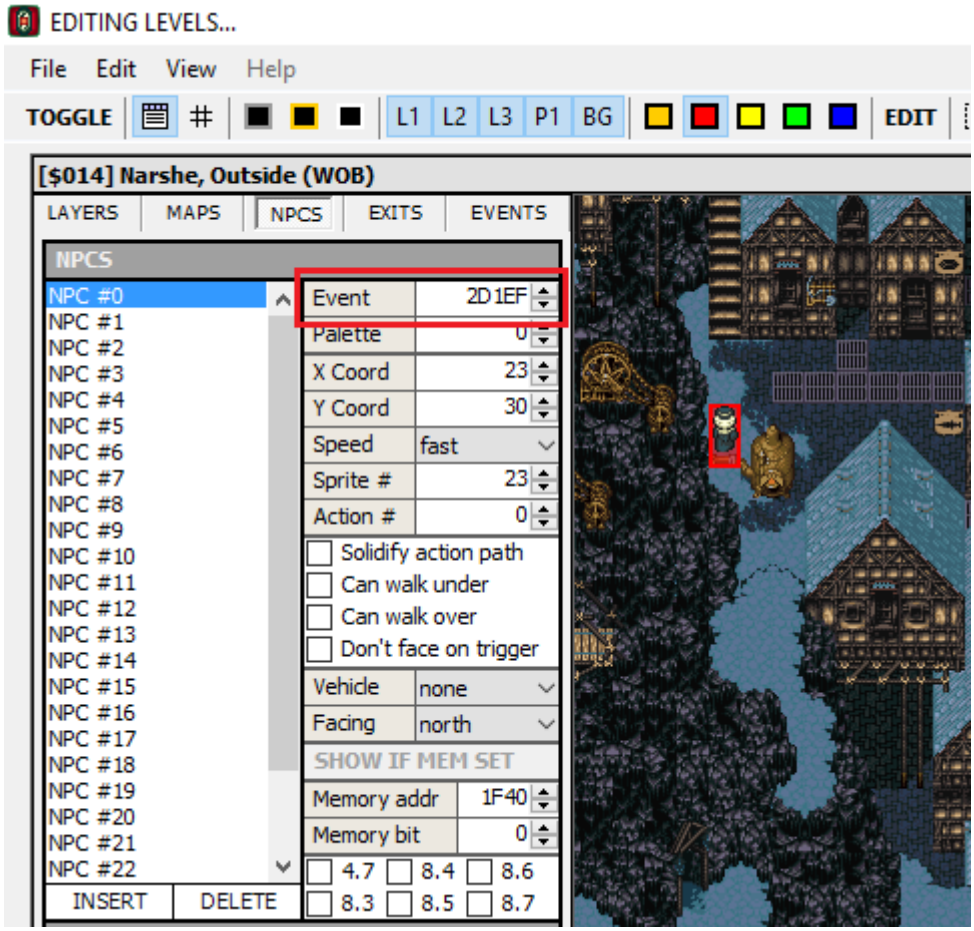
Therefore, if we wanted to modify the game so that something other than a dialogue box occurs when the party receives GP, this is the part of the ROM that we would have to modify.

Starting an event

So how do events begin? There are several different ways that an event can begin:

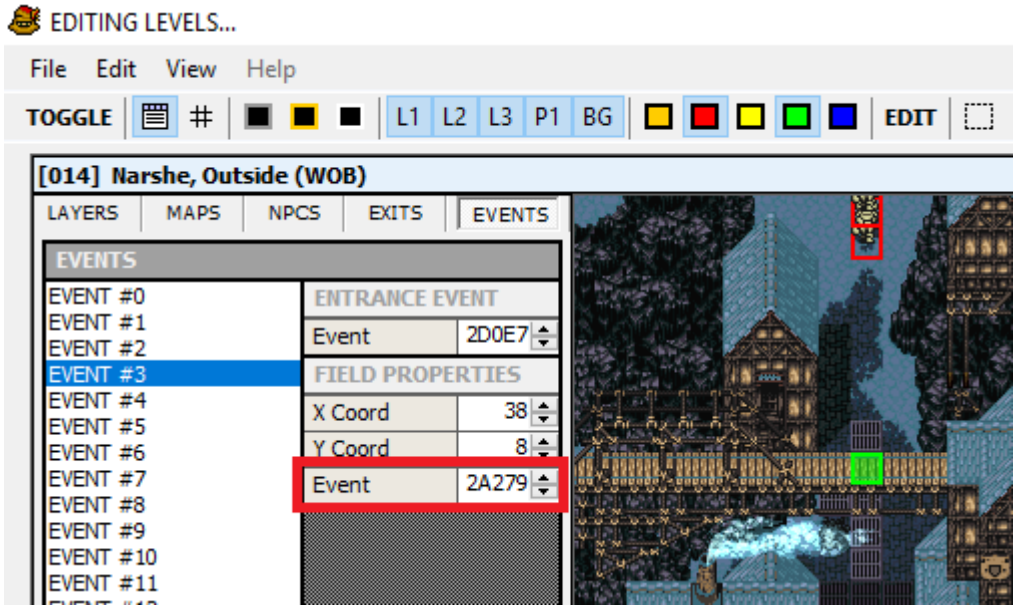
At the start of the game, the opening cutscene of the game will occur. This cutscene seems to start at CA/0003, but it immediately jumps to CA/5E33.

An event will begin when you talk to an NPC. You can find out which event will occur when you talk to an NPC by looking it up in FF6LE. Open up the LE and select a map with some NPCs on it (for example, “Narshe, Outside (WOB)”). You will also need to click the red square at the top of the screen to make NPCs visible. Now you can select an NPC and learn some info about it. In particular, we can see the address of the event that the NPC calls. Clicking on NPC 0 (the old man to the left of the weapon shop), we can see that the event he calls is at address 2D1EF.

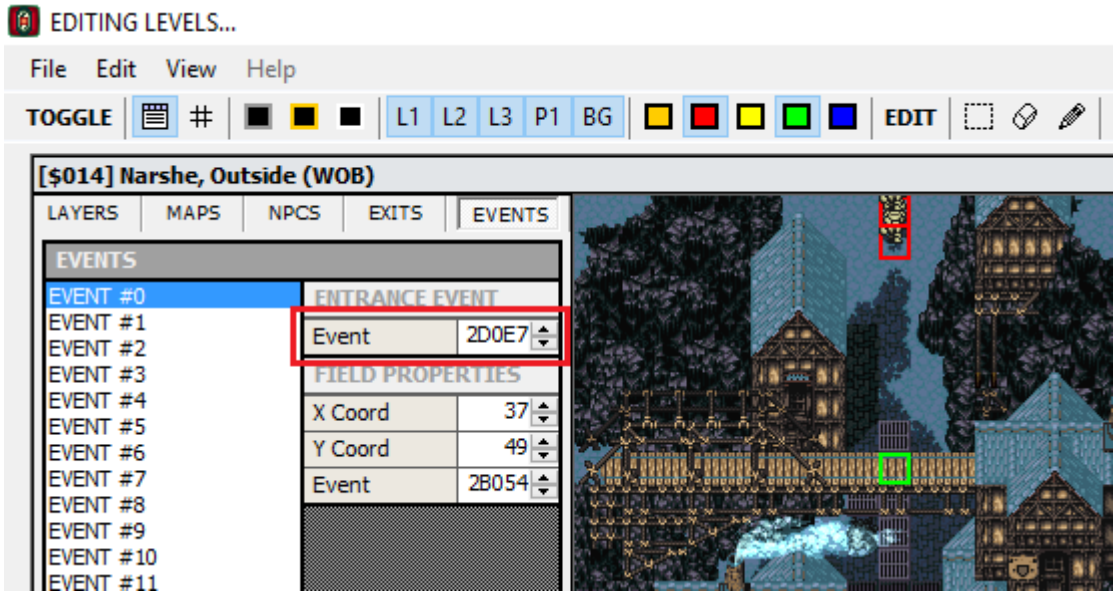


Unfortunately, this address is not in the format that we want it to be in. We need to add $CA0000 to convert the address from the way it appears in the LE to the way it appears in the Event Script. If you're wondering about the $ sign, it indicates that a number is in hexadecimal (base-16). You may find the Windows Calculator app (or your favorite alternative) to be handy for calculations like this if you set it to “Programmer” mode. 2D1EF + CA0000 = CCD1EF, so we can find the old man's event at CC/D1EF in the Event Script. As you may have guessed, it just displays another dialogue box.

Another way to begin an event is by using an event tile. In the LE, click the green square at the top to show event tiles. When the party steps on one of these invisible tiles, an event will begin. For example, when Terra steps on the green tile that you see on the bridge, it will trigger the cutscene where four guards look at her and shout “She's up there!” If we click on the event tile, we can see that it calls the event at 2A279 (or CC/A279 in the Event Script).



Finally, there's the entrance event. Whenever you enter a map, an event is called to initialize the map. This is necessary to initialize NPCs that walk on a fixed path, among other things. Narshe's entrance event is shown to be 2D0E7, or CC/D0E7. If you're clever, you might notice that this entrance event affects 9 NPCs and opens the secret cave if the party has discovered it.



Event Commands

Each event command causes “something” to happen in the event. That “something” can be rather diverse. You've already seen the event command that causes a dialogue box to be displayed, but event commands can also make the screen flash or give a character status effects, etc. Every command consists of a single byte followed by some parameters. The first byte indicates what the command does, and the parameters give the game extra information that the command needs to function. For example, take our command to display a dialogue box. Earlier, we saw in the Event Script that this command is $4B. We can use this information to look up the command in the Event Commands Document and learn more about it.

In the Event Command Document, we see that command $4B has two parameters. Each parameter is

also one byte in size. The document tells us to refer to command $48 to find out what the parameters do. Command $48 also displays a text box, but it does not force the player to confirm the text box before continuing the event. Both commands need two parameters in order to tell the game *which* text box to display and *where* to display it. The document shows a couple examples of how this works.

If you wanted to display text box $0123, you would flip the two bytes around, as shown in the example. Therefore, our two parameter bytes are 23 and 01. If you see 4B 23 01 in the hex editor, it might mean “Display text box $0123 at the top of the screen inside a text box, and wait for the player to press A before continuing the event”. The second example is meant to demonstrate how to move the text box elsewhere on the screen. The document shows a list of values that we can add to the last byte depending on where we want the textbox to be. For example, we need to add $C0 to the last byte to display text at the bottom of the screen without the blue background. Therefore, 4B 23 C1 might mean “Display text box $0123 at the bottom of the screen outside a text box, and wait for the player to press A before continuing the event”.

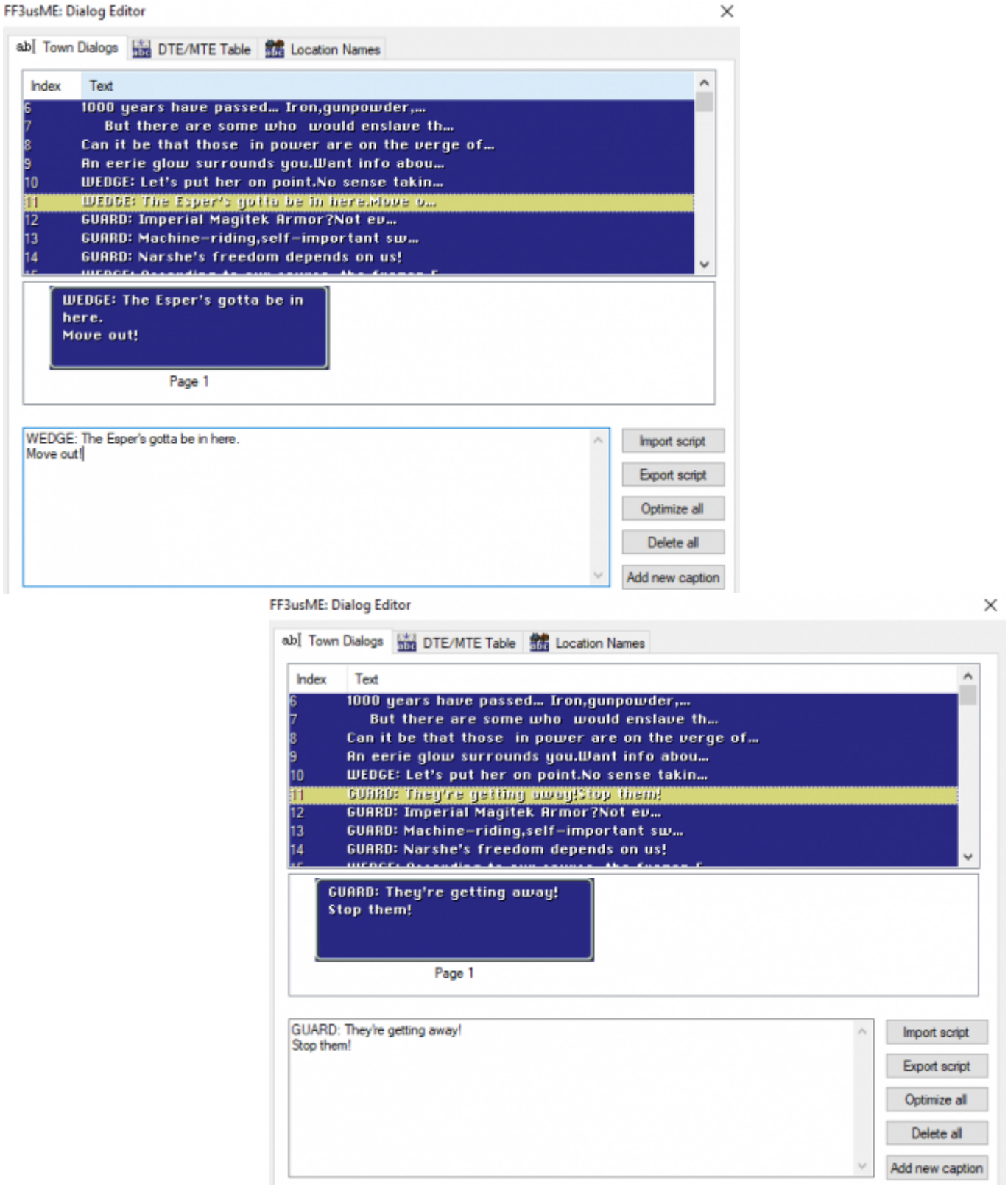
That's a lot of info to process, and if you're unfamiliar with this process, you may need to reread the above example several times to digest it. The good news is that a large number of event commands are structured in a similar fashion. If you can understand each piece of information above, you can reuse that knowledge when figuring out the other event commands.

In general, the Event Command Document is built around the examples. Often the first example is the most straightforward, and the later ones introduce complications or make a specific point. Each parameter's purpose is explained alongside the example. If you understand what the first example is doing, you should be able to build off of it afterwards. It's fairly common for bytes to be reversed from what you'd initially expect, as in the example above. We were trying to display text box $0123, and we had to reverse it to 23 01 when we were figuring out the parameters. Keep this in mind when interpreting the examples.

First Event

Alright, let's actually dive into this now. To practice eventing, we probably want to modify an event from the beginning of the game (for the sake of convenience). Let's try modifying the event that occurs if you try to leave Narshe at the beginning of the game. Normally, Wedge would yell “The Esper's gotta be in here. Move out!”, and you'd turn around to walk back into Narshe. Let's try modifying this event so that Narshe Guards attack you if you try to leave. To find the event in the event script, follow the process from before: select the event tile in the LE, note that the event is at 29B1D, and convert it to CC/9B1D. Then find the event in the ROM by searching for C9B1D.

Now we can start modifying this event. We should probably notify the player of what's happening, which can be be accomplished by showing them a text box. We can change text boxes in FF3usME, as you may have seen already. But which text box should we modify? Since we're removing the original cutscene that played here, we know that “The Esper's gotta be in here. Move out!” can be changed to our new text. Open the dialogue editor in FF3usME and modify the text to something fitting. Press Apply and OK to save the text, then press Save in the main window to write the new text to the ROM. Now we have a text box to display.



The next step is to figure out which parameters will display this particular text box. In FF3usME, you can see that the text box we modified is at index 11, which is highlighted in the images above. Remember that 11 is in decimal, but our parameters are in hexadecimal. Looking at the Event Command Document, we can see that we will need to convert *12* to hexadecimal if we want to display the text box at index 11. In hexadecimal, this is $C, or $000C. Now we flip this around as we did previously to get 0C 00 as our parameters. I see no reason to either move the text box to the bottom of the screen or remove the background, but you can play around with that if you want. Therefore, the full command to display this text box is 4B 0C 00. We can type this into HxD at the address we found previously, which gives us the following result:

```
000C9B00  FE F4 D1 55 80 94 D2 B5 D2 33 D2 BF 4B 0A 00 B6  þôÑU€"ÒµÒ3Ò¿K..¶
000C9B10  18 9B 02 B3 5E 00 3A FE 4B D4 06 3A FE 4B 0C 00  .›.³^.:þKÔ.:þK..
000C9B20  0F 00 82 D7 FF 3C 00 FF FF FF 41 00 45 3D 0E 3D  ..‚×ÿ<.ÿÿÿA.E=.=
```

Perhaps you want to take a look at the event as it is now. If nothing else, you might want to check that the event functions properly. Every event ends with the FE command, which tells the game to return from the current event. So finish the current event with the FE command, and save it in HxD. Now you can open it up in your favorite emulator and see the text box in action.

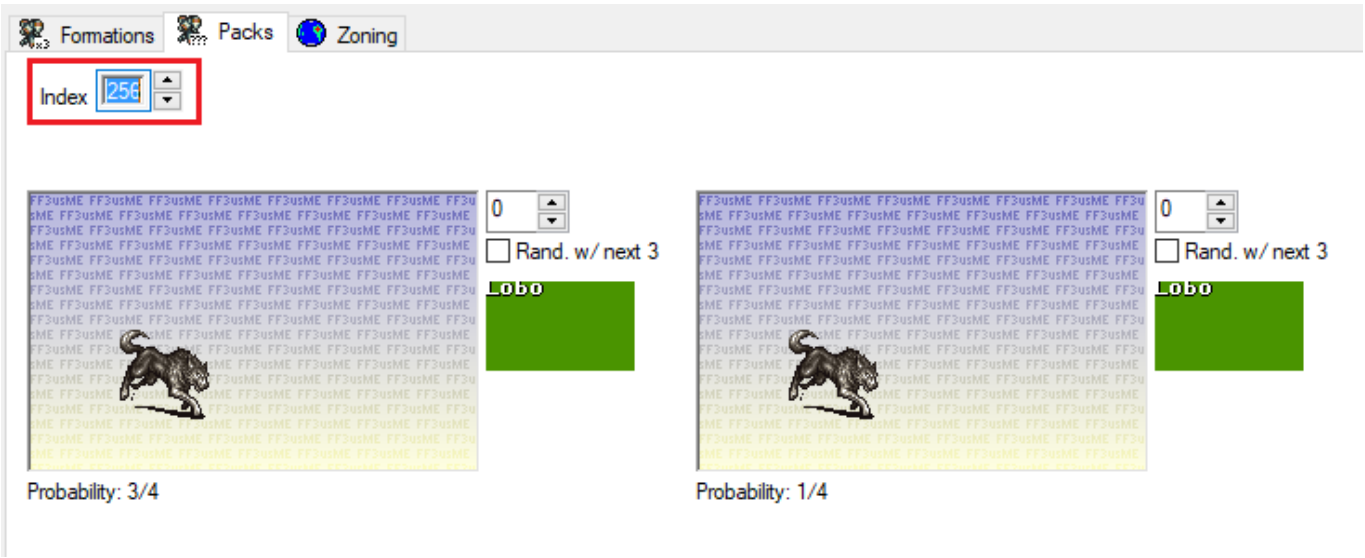
```
000C9B00  FE F4 D1 55 80 94 D2 B5 D2 33 D2 BF 4B 0A 00 B6  þôÑU€"ÒµÒ3Ò¿K..¶
000C9B10  18 9B 02 B3 5E 00 3A FE 4B D4 06 3A FE 4B 0C 00  .›.³^.:þKÔ.:þK..
000C9B20  FE 00 82 D7 FF 3C 00 FF FF FF 41 00 45 3D 0E 3D  þ.‚×ÿ<.ÿÿÿA.E=.=
```

You may notice that the text box is displayed over and over again. This is because Terra is still standing on the event tile when the event ends, so the event is triggered again after it is done. We don't have the tools to fix that yet, so we will ignore the issue for now.

How about we add in a red flash, to show that something dangerous is coming? If we search for the word “flash” in the Event Command Document, we quickly come across command $55. The document tells us that there is only one parameter, which controls the color of the screen. To get a red color, the parameter should be 20. So our full command to flash the screen is 55 20.

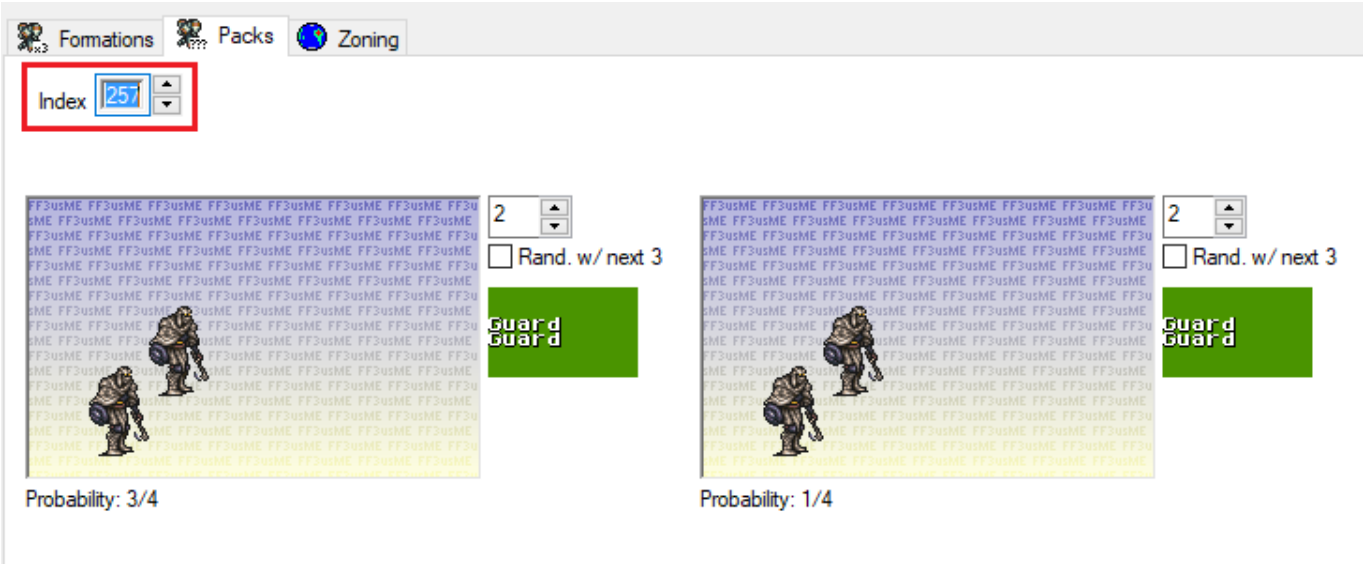
Finally, we want to end the event by forcing the player to battle some guards. Searching for the word “battle” in the Event Commands Document, you may come across command $4C. This command is obviously quite involved, and there are some extra notes explaining information that might be useful. In particular, NOTE1 tells us that we should be using command $4D to call a battle here, although we still need to look at this section for information about the parameters. Ignore NOTE2-NOTE5 for now; we don't have enough knowledge to decipher them yet. Read over the other two notes for yourself.

This command has two parameters, like command $4B. Looking at EX1 and EX2, it looks like the first parameter controls which formation is encountered. The Event Command Document is directing us to look in FF3usME again. This time, we want to look under the “Packs” tab of the Formation Editor. If the first parameter is $00, it corresponds to formation 256 in this editor. This means that the player would encounter a single Lobo if we set the parameter to $00.



From the second example, we can see how to specify the encounter that we really want. The parameter is being added to 256, and the result is the formation that will be fought by the party. If

the parameter is $01, the party will fight formation 257. If it is $02, the party will fight 258. If it is $19, the party will fight 256 + $19 (which would be 256 + 25 = 281 in decimal). Now we just need to figure out which formation contains two guards. Thankfully, we don't need to look very far, as this is formation 257. Therefore, the first parameter should be $01.



The second parameter controls the background of the encounter. EX1 shows us that each background corresponds to a specific ID that we could look up in FF3usME. However, EX2 gives us a better alternative in this case. The parameter $3F is special, as it instructs the game to use the background for the area that the party is currently in. Since we're in Narshe, it will use the Narshe background. So let's set the second parameter to $3F.

According to NOTE7, we could add another value to avoid the usual mosaic effects and sounds that occur when a battle is entered. I see no reason to change this, but you can play around with it if you want to.

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