Scripting Modifiers

StepMania's PlayerOptions are used for many of the settings found on the pre-song options menus, including note display speeds, NoteSkins, direction, and other effects. They are usually selected manually by the player, but they can also be scripted and choreographed to provide an additional challenge for players.

This has been achieved through several means.

- **.CRS files** are used to define courses for the Nonstop/Marathon modes. Using markup in the file, a course writer can configure certain mods to be activated at specific times or beats in a song when played during the course. This method was used for the Marathon/Progressive courses *In the Groove* and *Pump it Up Pro* franchises.
- **#ATTACKS** provides a means for embedding .CRS-style modifier attacks within a song's .ssc file. The user can enable or disable these attacks in the options menu.
- The majority of current "mod files" (including works by TaroNuke, WinDEU, and others) typically use **Lua templates** that are loaded via FGChanges (a foreground layer that is part of the BGChanges system for visuals and music videos during songs).
  - These templates typically use a series of tables to store modifier combinations (often in a somewhat similar syntax to .crs files), although they are accompanied by functions and scripting that allow for finer control, and for manipulating and tweening the notefields themselves as an actor for more complex effects. Due to the nature of some of these effects, these files often require Versus/2-player mode to render correctly.
  - Mod files may sometimes use other advanced StepMania graphics features for visual effects, such as ActorFrameTexture. Templates may include a message system for triggering commands on other actors.