

Introduction

rt is a program which allows the user to play arbitrary parts of many soundfiles in arbitrary order, and at the same time, i.e. **mix** them. Up to 256 different soundfiles can be accessed and up to 8 can be played simultaneously. Note, however, that due to disk and processor limitations that the maximum aggregate throughput is about 400k bytes a second, which means that the user is limited to 8 22k mono files, or 4 22k stereo files, or 2 44k stereo files, etc., or any combination of these which lie within the throughput limits (e.g. 2 22k stereo files and one 44k stereo file simultaneously). Undoubtedly these conditions will improve in the future. (Under certain conditions disk caching may make it possible to exceed these limitations, but it is not good to count on this.)

The interface uses the **SubProcess** object in the NeXTDeveloper example. The **rt.driver** program, operating as a subprocess, runs under control of the interface and must be included in the **rt.app** directory.

The data is organized in terms of **sounds** and **tracks**. A **track** can only play one **sound** at a time (in two channels). A **sound** is an arbitrary part of any soundfile in any format except mu-law. (22khz and 44khz, mono and stereo). A segment of a sound played on a given track at a given time will be referred to as a **note**.

With this program you can

- 1) Mix soundfiles of different sampling rates and of different formats (mono and stereo)
- 2) Put envelopes on sound segments.
- 3) Control gains of left and right channels independently.
- 4) Control gains of tracks independently, and alter gains over periods of time.
- 5) Shift the pitch of a note up or down, continuously or instantaneously.
- 6) Selectively listen to given tracks.

- 7) Save and restore the state of a given mix in an ascii data file
- 8) Write a mix to disk, or to the DACs, or to the DSP and external devices.

With this program you cannot (yet):

- 1) Change the attributes of a mix while it is playing.
- 2) Have a gain factor greater than 4.
- 3) Play sounds backwards.
- 4) Edit soundfiles.