MOREDOS

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1. Overview

moredos is a simplified Unix-like operating system and command library I made to run peaple.io. A moredos instance consists of some commands and processes and I/O queues. Processes read from I/O queues and write to them, like Unix pipes, facilitating shell-like scripting of command pipelines and sequences. The shmore shell used in peaple.io is implemented as a command itself, the built-in moredos "sh" command.

In Unix, pipes carry bytes, but in moredos entire *lines* are passed atomically and by reference. A line is a vector of *words*, and a word is a counted reference to a byte string which may reside in either GPU or main memory. This hidden device identifier is accessed through the moredos API which also allows a process to relocate words between devices. Thus it is possible to pipe data between processes without it ever leaving the GPU.

Unix commands like "cut", "sort", "join", "paste", "xargs" specify a delimiter string and then interpret the input byte stream as a table. All of these commands and more have equivalents in the built-in library (without the need for the delimiter). Passing of entire lines and words by reference can have benefits over the Unix way way of buffering the underlying bytes, for example the moredos "cat" command copies the line reference only, doing the same work no matter how many words the line contains; the moredos "cut" command creates a new output line containing references to the specified input words, doing the same work no matter the size of those words and preserving their device locations.

The moredos API wraps some of the host OS API, like file and socket operations that operate on byte strings. Lines that are imported or exported in this way are encoded to bytes using the moretp packet format, facilitating programmatic interaction as well as direct human interaction over telnet.

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