Propeller-Load Internals

The Propeller loader (propeller-load) can load LMM, XMM, or XMMC programs from .elf files generated by propeller-elf-ld over a serial connection to a Propeller board. It uses the standard Parallax serial protocol to load LMM programs by converting the .elf file to a standard Spin binary file on-the-fly.

It uses a two-stage process to load XMM programs. First, a helper program (serial\_helper.spin) is loaded into the Propeller. This program communicates with propeller-load using a simple packet protocol and provides a way to load external memory as well as hub memory. In order to load external memory, it uses an external memory JCACHE driver as specified for the selected board type in its configuration (.cfg) file.

# SD Loader

The SD loader (sd\_loader.c) is a program that can either be loaded directly into hub memory or written to EEPROM to execute on Propeller reset. It mounts an SD card and loads the file ‘autorun.pex’ from the root directory of the card into external memory. It must be an XMM or XMMC program. Its purpose is to provide a way for a program that uses external memory to automatically start on reset.

The SD loader does not have the ability to load an LMM program since those programs can be written directly to EEPROM .

The SD loader uses a SPI SD card driver (sd\_driver.spin) to handle SD card sector reads.

# SD Cache Loader

The SD cache loader (sd\_cache\_loader.c) is a program that can either be loaded directly into hub memory or written to EEPROM to execute on Propeller reset. It mounts an SD card and loads the XMM kernel in the file ‘autorun.pex’ from the root directory of the card. It also builds a cluster map of the entire ‘autorun.pex’ file and uses the SD cache driver (sd\_cache.spin) to run the XMM program directly from the SD card.

The SD cache loader does not have the ability to load an LMM program since those programs can be written directly to EEPROM .

On the C3, the SD cache loader uses the C3 cache driver (c3\_cache.spin) to handle SD card reads. On boards other than the C3, it uses a SPI SD card driver (sd\_driver.spin) to handle SD card sector reads.