

Creating an RCE SD Card

Download and install the latest RCE SDK.

Create (mkdir) SD partition mount points on host as sudo

```
/mnt/sdX1
```

```
/mnt/sdX2
```

```
/mnt/sdX3
```

```
/mnt/sdX5
```

```
/mnt/sdX6
```

```
/mnt/sdX7
```

Where X is the device letter, such as /dev/sdd or /dev/sdj

This will depend on where your host mounts the SD.

Populate SD card with SDK contents as sudo (assuming a SLAC host)

Execute the [mkrcesd command](#).

```
sudo mkrcesd sdX d[p|t]m --sdkroot <path_to_installed_sdk>
```

For example DPM:

```
sudo mkrcesd sdd dpm --sdkroot /u1/reg/dune/rce-sdk/V1.5.0
```

Now you should have a bootable SD card.

You can mount /dev/sdX3 to access the ArchLinux partition and add any application specific content there.

You can mount /dev/sdX1 and overwrite fpga.bit with application specific firmware bitfile.

If auto-loading your own bitfile, you have to create a custom uboot.env and copy to /mnt/sdX1

```
mkubootenv <full_path_to_output_dir>/uboot.env 00:00:00:00:00:00 0x1 sdboot_linux loadbit=1
```

(Yes, the mac address should be all zeros if using the latest eFUSE enabled rces)

```
cp uboot.env /dev/sdX1
```

A few notes of warning for SD card readers.

The devices do not always show up when an SD card is inserted.

Before you try to make a card, be sure the device is present by executing lsblk

If you don't see it, try to reinsert the SD card.

If that still doesn't work, you have to reset the USB bus for that reader.

First, find the device on the usb bus

```
> lsusb
```

```
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

```
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
```

```
Bus 003 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
```

```
Bus 004 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
```

```
Bus 001 Device 053: ID 413c:a001 Dell Computer Corp. Hub
```

```
Bus 001 Device 003: ID 1a40:0201 Terminus Technology Inc. FE 2.1 7-port Hub
```

```
Bus 001 Device 005: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 006: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 007: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 008: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 009: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 010: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 011: ID 1a40:0101 Terminus Technology Inc. Hub
```

```
Bus 001 Device 012: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 013: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 014: ID 058f:6465 Alcor Micro Corp.
```

```
Bus 001 Device 015: ID 058f:6465 Alcor Micro Corp.
```

Then reset the device using usbreset

Usage: usbreset device-filename

```
i.e.: usbreset /dev/bus/usb/001/004
```