

2. Flash Translation Layer (FTL)

map logical pages to physical blocks and pages

direct mapped - write logical 0(a),10(b),20(c) --> physical 0,10,20

```
FTL    0:0, 10:10, 20:20
Block  0          1          2
Page   0000000000 111111111 222222222
       0123456789 0123456789 0123456789
State  vEEEEEEEE vEEEEEEEE vEEEEEEEE
Data   a          b          c
Live   +          +          +
```

To rewrite logical page 20: erase block 2, write page 20

log-structured - write logical 0(a),10(b),20(c) --> physical 0,1,2

```
FTL    0:0, 10:1, 20:2
Block  0          1          2
Page   0000000000 111111111 222222222
       0123456789 0123456789 0123456789
State  vvEEEEEEE iiiiiiiiii iiiiiiiiii
Data   abc
Live   +++
```

To rewrite logical page 20(d): remap to free page:

```
FTL    0:0, 10:1, 20:3
Block  0          1          2
Page   0000000000 111111111 222222222
       0123456789 0123456789 0123456789
State  vvvEEEEEE iiiiiiiiii iiiiiiiiii
Data   abcd
Live   ++ +
```