

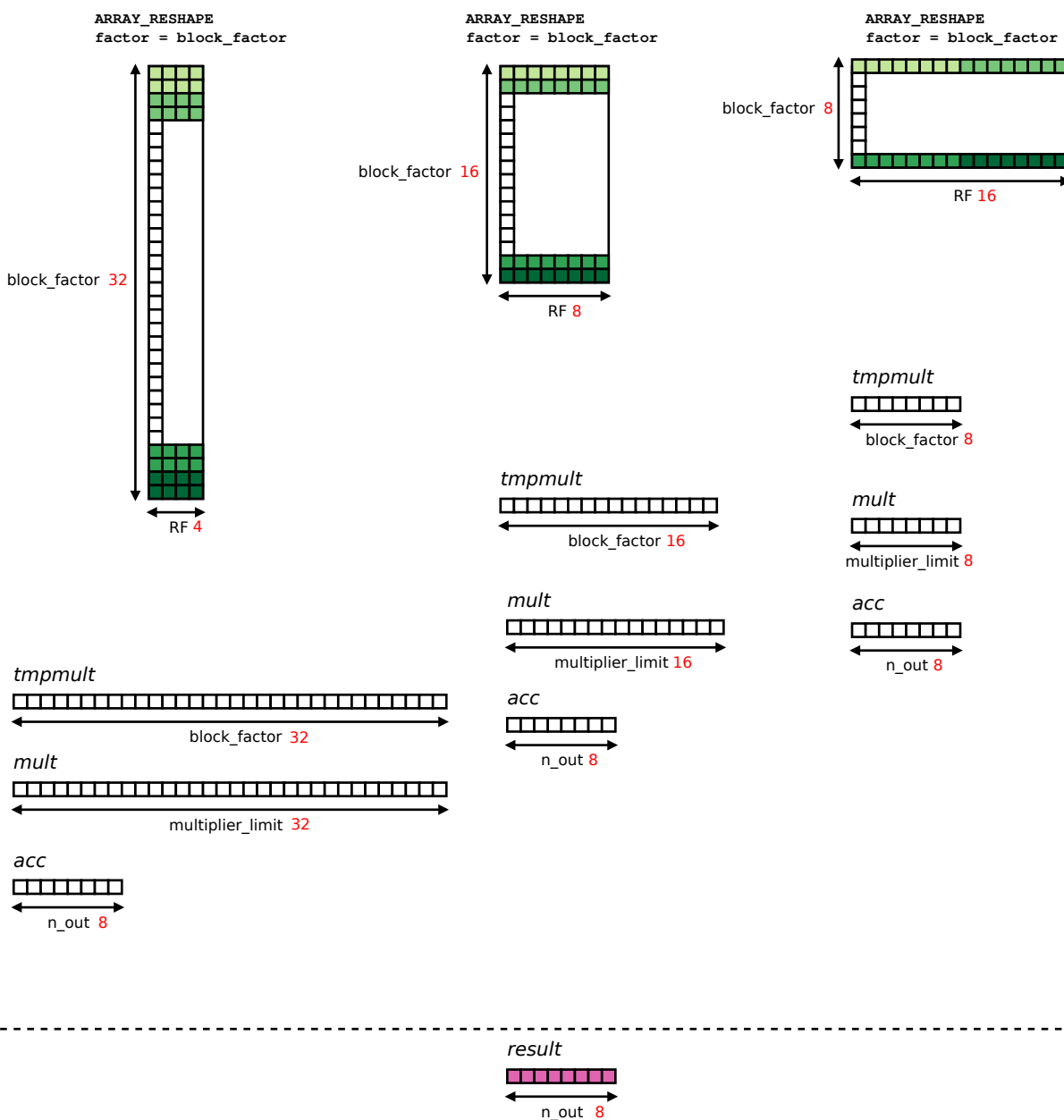
$$block_factor = \left\lceil \frac{n_{in} * n_{out}}{RF} \right\rceil$$

$$multiplier_limit = \left\lceil \frac{n_{in} * n_{out}}{\min(n_{in}, RF)} \right\rceil$$

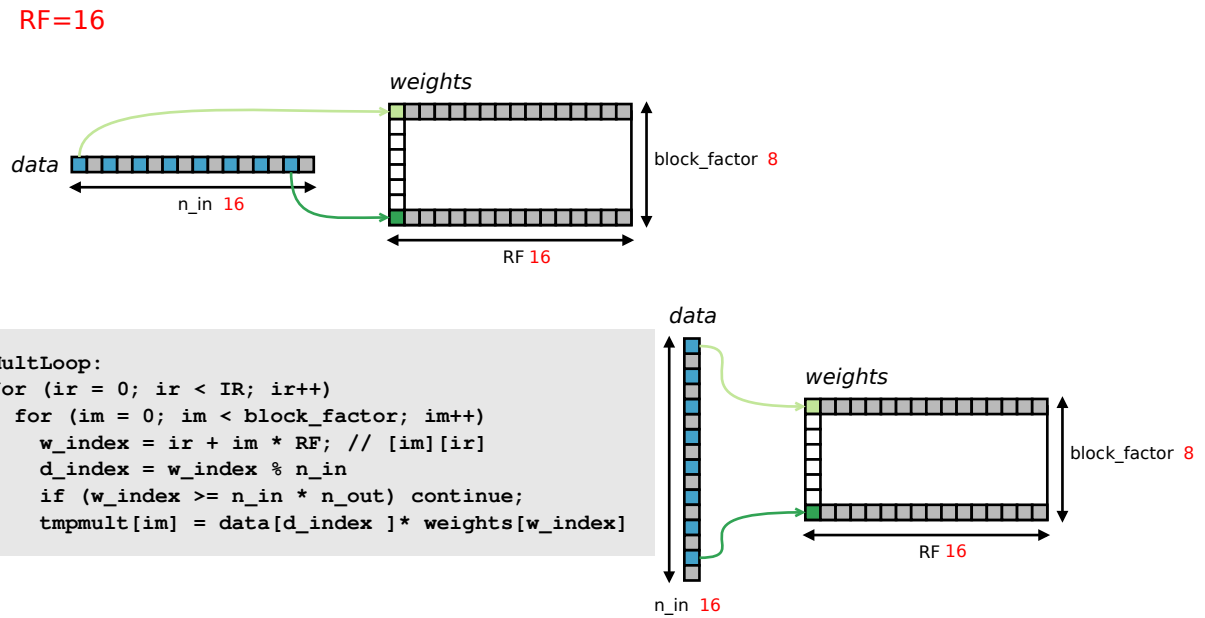
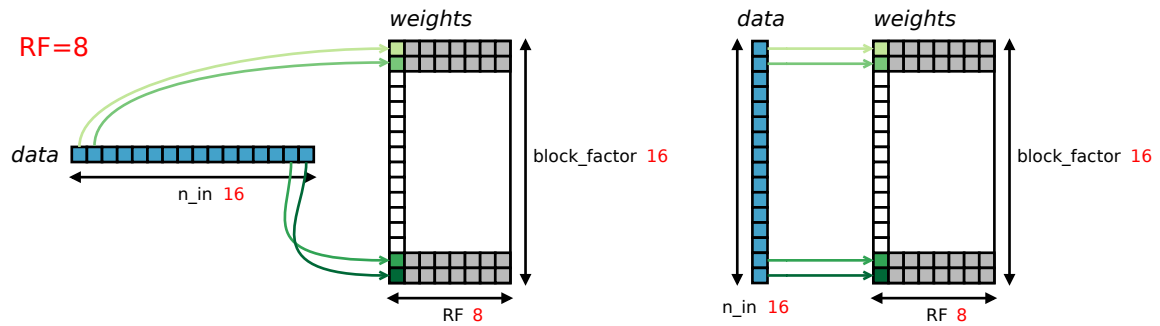
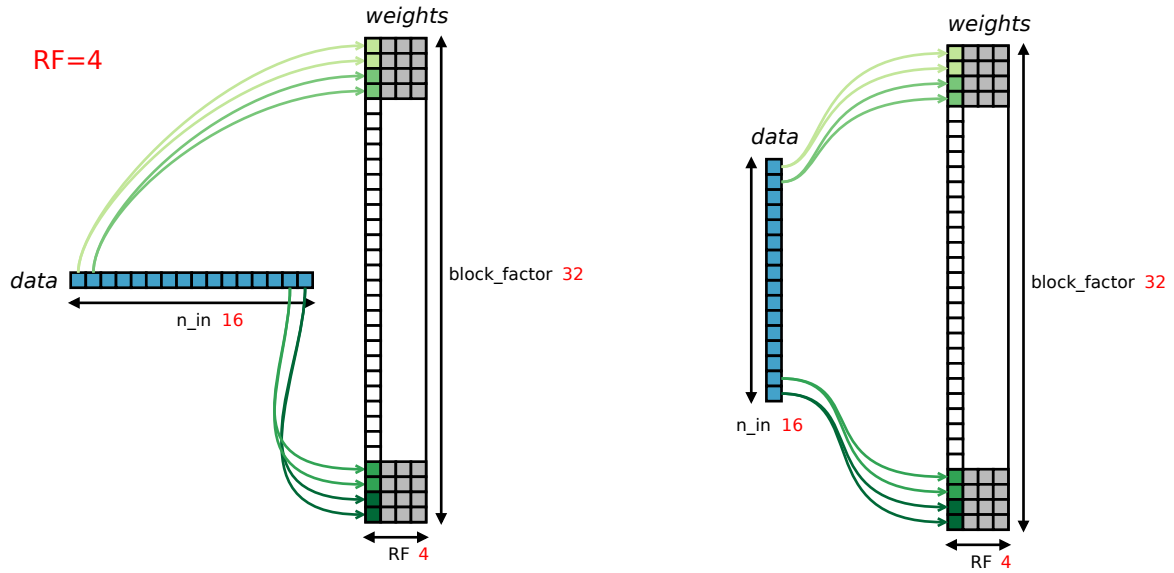
RF=4

RF=8

RF=16



Two different visualizations of MultLoop

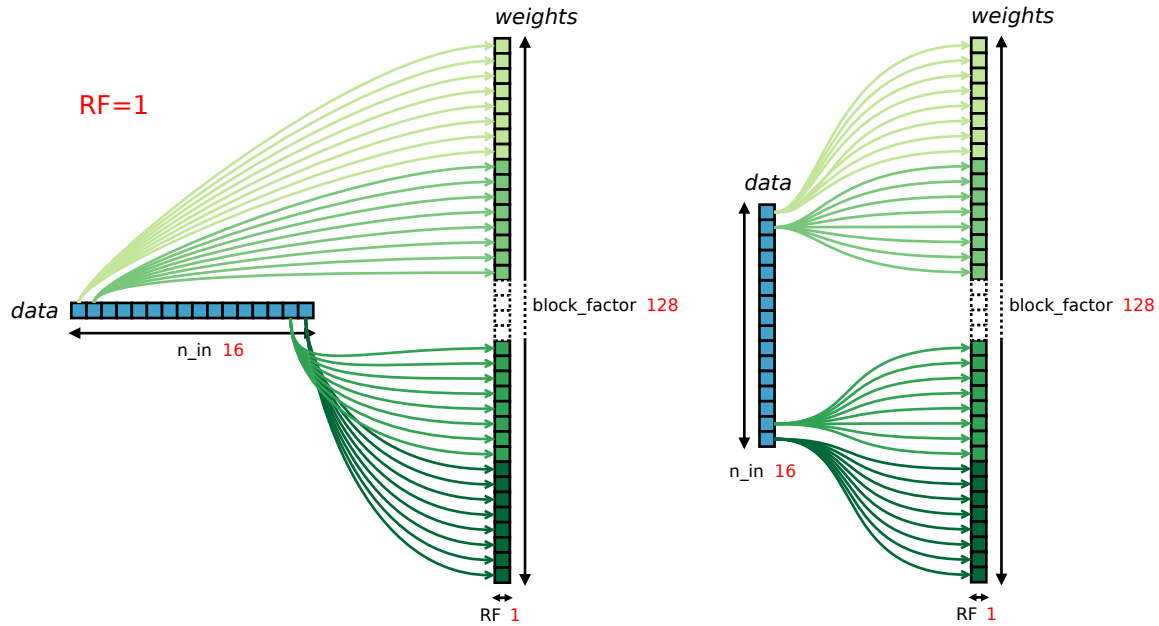


```

MultLoop:
for (ir = 0; ir < IR; ir++)
  for (im = 0; im < block_factor; im++)
    w_index = ir + im * RF; // [im][ir]
    d_index = w_index % n_in
    if (w_index >= n_in * n_out) continue;
    tmpmult[im] = data[d_index] * weights[w_index]

```

Two extreme situations: (RF = 1, block_factor = 128) and (RF = 128, block_factor = 1)



```

MultLoop:
for (ir = 0; ir < IR; ir++)
  for (im = 0; im < block_factor; im++)
    w_index = ir + im * RF; // [im][ir]
    d_index = w_index % n_in
    if (w_index >= n_in * n_out) continue;
    tmpmult[im] = data[d_index] * weights[w_index]
  
```

RF=128

