

$$y[0] = b[0] \cdot x[0]$$

$$y[1] = b[0] \cdot x[1] + b[1] \cdot x[0]$$

$$y[2] = b[0] \cdot x[2] + b[1] \cdot x[1] + b[2] \cdot x[0]$$

⋮

$$y[63] = b[0] \cdot x[63] + b[1] \cdot x[62] + b[2] \cdot x[61] + \dots + b[62] \cdot x[1] + b[63] \cdot x[0]$$

2^{64} is horrendously large, need multiple LUTs. A good balance is to partition 64 inputs into 8 adder trees of 8 inputs.

