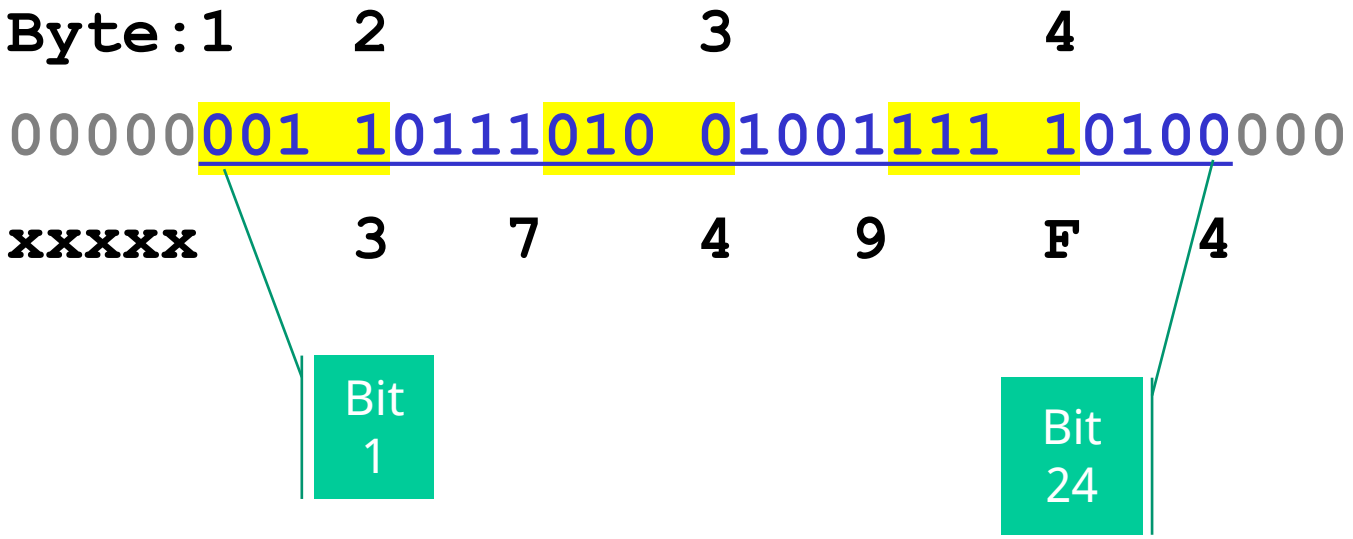
dfdl:lengthKind and dfdl:lengthUnits

- Used frequently
  - delimited
  - implicit
    - complex - length is sum of length of all children
    - simple - length depends on type (for binary data)
  - explicit - a constant or expression gives length
    - needs dfdl:lengthUnits
- Used in special cases
  - prefixed
    - needs dfdl:lengthUnits
  - pattern - uses regular expressions (use as last resort only)
  - endOfParent - not implemented (2025-12) by Daffodil
    - See https://daffodil.apache.org/unsupported/

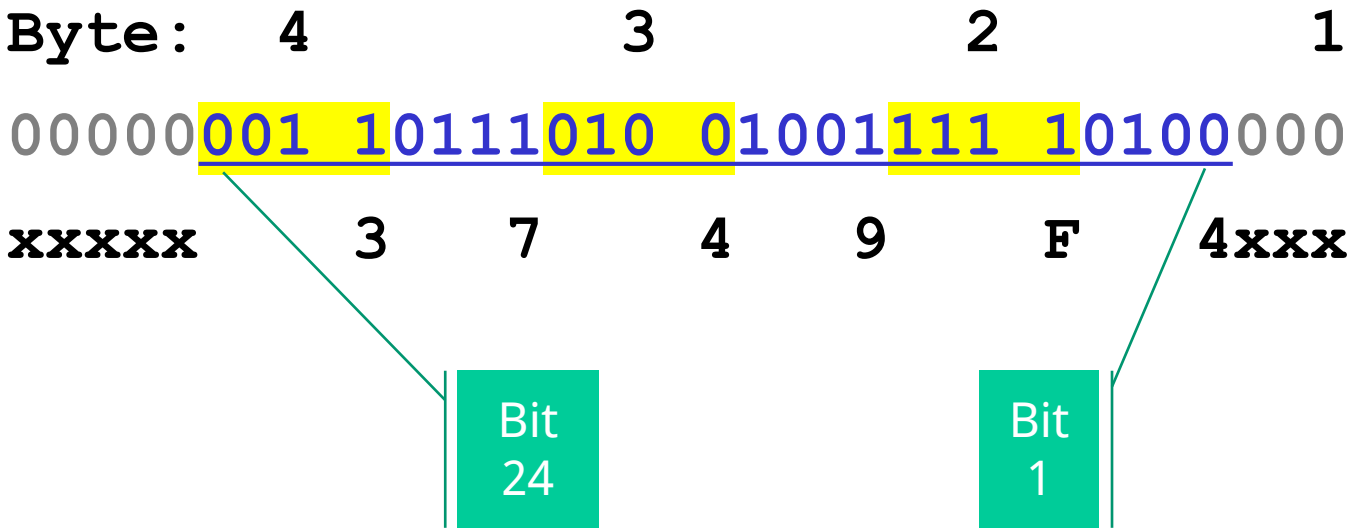
Bit Order + Byte Order

- Most Significant Bit First + Big Endian
- Use Left-to-Right numbering to best visualize
- Ex: Integer of 24 bits not byte aligned
- Starts at bit 6 of byte 1



Bit Order + Byte Order

- Least Significant Bit First + Little Endian
- Use *Right-to-Left* numbering to best visualize
- Ex: Integer of 24 bits not byte aligned
- Starts at bit 4 of byte 1



More on Bit Order

- Not about actual storage order
- Rather: the way one chooses to number the bits
- See: https://daffodil.apache.org/tutorials/bitorder.tutorial.tdml.xml

TDML Data via Bits and Bytes

- You can create binary data directly in TDML files
- Often needed to construct detailed tests

```
<document>
  <documentPart type="byte">01BA 4FA0</documentPart>
  <documentPart type="bits">
    00000001 10111010 01001111 10100000
  </documentPart>
</document>
```

- R-to-L order and LSBF are supported also