

## Example: `cmplwi cr6, r5, 0xff`

Assembler expands this to

```
cmpli 6, 0, 5, 0xff
```

Now look at the **box layout** for `cmpli` (the one labeled `10` at the left):

Bits	Field	Value
0–5	Opcode	10 (binary 001010) → 0x2A base opcode (different assemblers sometimes show as 0x2B after shifting)
6–8	BF	6
9	unused	
10	L	0 (word)
11–15	RA	5
16–31	UI	0x00FF

When assembled, these fields are packed into one 32-bit word like this:

```
001010 110 0 00101 0000000011111111
```

Binary → Hex ≈ 0x2B05\_00FF (simplified view).

### Bottom line:

Those boxes literally show which bits go where inside the 32-bit instruction.

The left number ( 10 or 11 ) becomes the first hex byte (0x2A or 0x2B) when the CPU sees it.

