include/linux/log2.h

Integer base 2 logarithm calculation

> roundup_pow_of_two(n)

roundup_pow_of_two - round the given value up to nearest power of two

for example:

roundup_pow_of_two(56) ==> 6 (2^6 = 64)

> rounddown_pow_of_two(n)

rounddown_pow_of_two - round the given value down to nearest power of two

for example:

rounddown_pow_of_two(56) ==> 5 (2^5 = 32)

```
/*
 *  Determine whether some value is a power of two, where zero is
 * *not* considered a power of two.
 */

static inline __attribute__((const))
bool is_power_of_2(unsigned long n)
{
    return (n != 0 && ((n & (n - 1)) == 0));
}
```

is_power_of_2(32) ==> true
is_power_of_2(31) ==> false

> ilog2(n)

ilog2 - log of base 2 of 32-bit or a 64-bit unsigned value

for example:

ilog2(56) = 5, 2 ^ 5 = 32 < 56,rounddown_pow_of_two(56) = 5