What a free server costs to run

Homelab power cost sheet: watts in, dollars a year out.

con1ainer.com

THE ONE-LINE FORMULA

watts x 8.76 x your price per kWh = dollars a year

8.76 is 8,760 hours in a year divided by 1,000. It assumes the machine runs all day, every day, at that wattage.

WHAT IDLE WATTAGE COSTS

at 18.4 cents per kWh (US average used in the con1ainer homelab guide)

Idle watts	kWh a year	Per month	Per year	Over 5 years
6 W mini PC	**52.6**	**$0.81**	**$9.67**	**$48.36**
20 W	175.2	$2.69	**$32.24**	$161.18
60 W	525.6	$8.06	**$96.71**	$483.55
100 W rack server	**876.0**	**$13.43**	**$161.18**	**$805.92**
150 W	1,314.0	$20.15	**$241.78**	$1,208.88
250 W	2,190.0	$33.58	**$402.96**	$2,014.80

Both examples assume idle, all day, every day. A machine that is working draws more than it does idle.

YOUR NUMBERS

My idle watts _____ x 8.76 = _____ kWh a year

x my price per kWh _____ = $ _____ a year

Your price per kWh is on your power bill. Divide the yearly figure by 12 for a monthly number.

BEFORE YOU SAY YES TO FREE HARDWARE

- [ ] Ask for the idle watts, not the power supply rating. The rating is the maximum, not what it draws sitting idle.
- [ ] Measure it with a plug-in watt meter before you commit.
- [ ] Count what the meter doesn't show: noise, heat, space, and a UPS to ride out power cuts.
- [ ] Compare it with a small machine that does the same job. The gap adds up every year.

Full guide and the cost table: **https://con1ainer.com/homelab/** Video: The rack server was free.

Figures use the stated electricity price and 8,760 hours a year. Your price and your hardware will differ.