



An Extended Guide · No. 1435

# What a Power Station Won't Run

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An honest list, so you  
love it for what it does

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**✓ The best news first — this one is safe indoors**

Here is the best news about a portable power station, and the reason it earns a place in your home: it is a big rechargeable battery in a case, not an engine. It burns no fuel, so it gives off no exhaust and no carbon monoxide — the invisible, deadly gas that makes a gas generator a strictly outdoors-only machine. That means a power station is safe to use right inside your home, in any room, with the windows closed — beside your chair, on the nightstand, next to a medical device. A few simple habits keep it that way: charge it with the cord it came with, give it a little air while it works (don't bury it under a blanket or shut it in a tight cabinet), keep it away from water and from baking heat, and never use one that is cracked, soaked, or swollen. A power station's great gift is that it's safe indoors for the everyday essentials — and knowing the handful of things it won't run is exactly what lets you love it for the many things it does.

## What a power station won't run — said plainly

I'd rather you know the limits before you buy than be disappointed during a storm. A power station is a battery, and a battery has honest limits. Knowing them turns a good purchase into a happy one.

I'm Bill, and I help folks all over Portage County pick backup power that actually fits their needs. This guide is the honest counterweight to all the cheerful marketing: the short list of things a portable power station simply isn't built to run, and why.

None of this is meant to talk you out of one. Quite the opposite — when you know what it won't do, you can size it right for what it will do, and you'll be delighted rather than let down.

**★ Not sure if it'll run what you need?**

Tell me the things you'd want to power and I'll tell you honestly which ones fit a power station and which need a generator instead — free, and with nothing to sell you. Call or text (330) 200-8042.

## The honest short list

If you remember only these things, you'll never be surprised by what a power station won't do.

- ❑ Two questions decide everything: CAN it run at once (that's watts), and for HOW LONG (that's watt-hours).
- ❑ High-heat appliances — space heaters, hair dryers, kettles, toasters, coffee makers, microwaves — draw huge power. A big unit runs them briefly; a small one not at all.
- ❑ 240-volt appliances — electric range, dryer, water heater, central air — are out of reach; most portable stations are 120-volt only.
- ❑ A well pump is 240-volt with a big surge. That's a generator's job.
- ❑ Whole-house backup isn't a portable battery's job — that's a standby generator.
- ❑ Heat is the enemy of runtime. Anything that heats, drains fast.

### ✓ The one rule to carry with you

Watts decide whether it can run at all; watt-hours decide how long. And anything that makes heat is hungry. Hold those two ideas and you can judge almost any device on the spot.

## The two questions behind every limit

Every 'no' in this guide comes down to one of two simple questions. Learn them and you won't need to memorize a list.

### Question one: can it run at all?

A power station can only put out so much power at any one moment — its output, measured in watts. If a device demands more watts than the station can supply, it simply won't run it, or the station will protect itself and shut off. Big, hungry appliances lose on this question before we even get to the next one.

### Question two: for how long?

Even for the things it can run, the battery only holds so much energy — its capacity, measured in watt-hours. A thirsty device empties that store quickly. So a device can pass the first question and still be impractical because it drains the battery in minutes. Our numbers guide digs into both.

#### ✓ Heat fails both questions

Anything that makes heat tends to demand a lot of watts AND burn through watt-hours fast. That's why heaters, dryers, and kettles are the classic 'won't really run it' devices, even on a sizable unit.

## The heat-makers: the biggest 'no'

If there's one family of appliances that disappoints power-station owners, it's the ones that make heat. Here's the honest picture.

Space heaters, hair dryers, electric kettles, toasters, toaster ovens, coffee makers, and microwaves all work by turning electricity into heat, and that takes an enormous amount of power. A large power station might run one of them for a short while, but it'll drain fast — and a small or mid-sized unit often can't run them at all.

This surprises people because these are small, everyday gadgets. But size on the counter has nothing to do with hunger for power. A little space heater can demand more than a whole roomful of lights, a laptop, and a phone charger combined.

### **! Don't buy a station to run a space heater**

If your goal is heat in an outage, a power station is the wrong tool — it'll be empty in no time. For warmth, think blankets and layers, a non-electric heat source used safely, or a generator. Save the station for electronics, lights, and keeping food cold.

## The 240-volt appliances

There's a whole class of heavy appliances a portable station generally can't touch, and it's worth knowing them by sight.

Your home has two kinds of outlets: ordinary 120-volt ones for lamps and chargers, and larger 240-volt circuits for the heavy hitters. Most portable power stations supply only 120-volt power, so the 240-volt appliances are simply out of reach.

That group includes the electric range and oven, the electric clothes dryer, the electric water heater, central air conditioning, and most well pumps. These are both 240-volt and very hungry — a double disqualification. For any of these, you're in generator territory, not power-station territory.

### ✓ How to spot a 240-volt appliance

The big, hardwired or specially-plugged appliances — the ones on their own heavy circuit, like the range, dryer, and water heater — are your 240-volt loads. If it took an electrician to wire it, a portable station won't run it.

## The well pump, specifically

Because so many of our neighbors are on wells, this one deserves its own honest page.

Most home well pumps are 240-volt submersible pumps that need a hefty surge to start — and that combination puts them beyond a portable power station. If you're on a well and the power goes out, a power station won't run your pump, which means no water from the tap for drinking, cooking, flushing, or the animals until the power's back or a generator steps in.

That's not a knock on power stations; it's just honesty about a heavy 240-volt motor. The realistic plan for a well home is a generator with the proper hookup for the pump, plus stored drinking water — with a power station handling the quiet indoor essentials. Our rural and well-water guide covers this in full.

### **! On a well? Store water and plan for the pump**

If you're on a well, don't count on any portable battery for water. Keep drinking water stored for an outage, and plan a generator for the pump. The power station is for your phones, medical devices, router, and lights — not the well.

## Backing up the whole house

Some folks hope a power station can quietly run the entire home in an outage. That's a different tool's job, and here's why.

Running a whole house means powering everything at once — heating and cooling, the kitchen, the laundry, the well, and all the rest — for as long as the outage lasts. That's far beyond what a portable battery holds or can put out. A permanent standby generator, wired into your panel, is the tool built for whole-house backup.

A power station is a targeted tool: it keeps your most important things going, safely and indoors, not the entire house. Matching your expectation to that reality is the difference between loving it and feeling shortchanged.

### ✓ Targeted, not total

Think of a power station as a way to keep the essentials of life going — communication, a little light, medical needs, cold food — rather than a way to pretend the power never went out. That's its honest, valuable role.

## What about air conditioning?

Cooling is a common summer question, and the answer splits neatly in two.

Central air conditioning is a large 240-volt load — firmly out of reach for a portable station. A small window air conditioner is a different story: a larger power station may run one for a while, though it's a meaningful draw that will work through the battery faster than gentler loads.

For staying comfortable in an outage, a station is better suited to running fans, which sip far less power and can make a real difference, than to running a compressor-driven air conditioner. If beating the heat is your goal, plan around fans first.

### ✓ Fans, not compressors

A couple of fans on a power station can keep air moving for many hours. An air conditioner's compressor is a much hungrier beast — run one only on a sizable unit, and expect the battery to go down quickly.

## When 'it can run it' still means 'not for long'

Sometimes the answer isn't a flat no, but a 'yes, briefly' — and that distinction matters.

A big power station may well start and run a microwave or a hair dryer. But because those loads are so hungry, it might do so only for a short spell before the battery is noticeably down. 'It can run it' and 'it can run it all evening' are two very different claims, and the marketing sometimes blurs them.

So when you check whether a station will run something, ask both questions: can it, and for how long? For a quick reheat in the microwave, brief is fine. For heat all night, brief is useless. Match the honest answer to what you actually need.

### ✓ Ask 'for how long' every time

Any time you hear that a station runs some hungry appliance, mentally add 'for how long?' The honest answer — often 'not very' — tells you whether it's genuinely useful for your purpose.

## Two kinds of homes, two sets of needs

The limits are the same everywhere, but they bite a little differently depending on whether you're in town or out in the country.

### If you live in town or the suburbs

In town or the suburbs, your water keeps flowing from the city main, so the big 240-volt gap — the well pump — doesn't affect you. Your must-run list is usually electronics, lights, the internet, and the fridge, all of which a station handles well.

- No well pump to worry about, so the biggest 240-volt limit doesn't apply to you.
- Skip the heaters and the range on battery; lean on the station for electronics, lights, and the fridge in cycles.
- In an apartment, this targeted role is exactly what you want — and a generator isn't even an option.
- For heat or cooking in a long outage, plan a non-electric backup.

### If you are out in the country on a well

Out in the country, you meet more of the limits at once — a 240-volt well pump, and often a longer outage that makes the battery's capacity feel smaller. So plan around the station's honest role.

- The well pump is the big one: 240-volt and surging, it's a generator's job, not the station's.
- Store drinking water, since the pump will be down in an outage.
- Use the station for the essentials and a generator for the heavy 240-volt loads.
- Solar recharging helps the station's capacity go further over a long rural outage.

#### ★ Let's sort your list into 'station' and 'generator'

Tell me your must-run list and your home, and I'll help you see which items a station covers and which need a generator — so you buy the right tools for the right jobs. Call (330) 200-8042.

## Now the happy flip side

Every limit above has a bright mirror image: the many things a power station runs wonderfully. Don't lose sight of these.

- **Phones, tablets, and laptops** — for a long time, even on a modest unit.
- **Your internet** — the router and modem sip power and keep you connected for ages.
- **Medical devices** like a CPAP — a quiet, clean, indoor-safe fit.
- **Lights and fans** — hours of light and moving air, far safer than candles.
- **The refrigerator, in cycles** — a larger unit keeps food safe through a typical outage.

### ✓ Judge it by its real job

A power station isn't a whole-house generator, and it was never meant to be. Judged as what it is — a safe, silent, indoor way to keep the essentials of life going — it's genuinely wonderful.

## A quick reference to keep

Here's the whole idea in one simple table — the kinds of things that fit a power station, and the kinds that don't.

|           | Runs it well     | Won't run it            |
|-----------|------------------|-------------------------|
| Everyday  | Phones, router   | Space heater            |
| Comfort   | Lights, a fan    | Hair dryer              |
| Kitchen   | A charger        | Microwave, kettle       |
| Medical   | A CPAP           | See our oxygen guide    |
| Big loads | Fridge in cycles | Range, dryer, AC        |
| 240-volt  | Nothing here     | Well pump, water heater |

✓ **When in doubt, check the label**

If you're unsure about a device, find its watts and whether it's 120-volt or 240-volt on its label. That, next to your station's ratings, settles it — and I'm glad to help you read them.

## Why heat is the enemy of a battery

It's worth understanding why heat-making appliances are such a problem, because then you'll never be caught out by one.

Making heat — whether it's warming a room, drying hair, or boiling water — takes a great deal of energy in a hurry. There's no clever shortcut; heat is simply expensive in power terms. So a heating appliance demands a big gulp of watts and keeps gulping, which is exactly what a battery can least afford.

Compare that to a phone charger or an LED lamp, which sip a trickle. You could run those trickle-loads for a very long time on the same battery that a space heater would empty in a short while. Once you feel that contrast, you'll spot the hungry devices instantly.

### ✓ A simple gut check

Ask yourself: does this device make heat or cold, or does it have a big motor? If yes, it's hungry — expect a short run or none at all. If it's just electronics or a light, it's thrifty and will run happily.

## Ways around the limits

If you truly need to power something on the 'won't run' list, you have honest options — they just aren't a small power station alone.

- **Pair with a generator.** Let a generator handle the 240-volt and heat loads outdoors, and the station handle the quiet essentials indoors. Our vs-generator guide covers this teamwork.
- **Choose a larger unit** if you need to run a bigger 120-volt load, within reason — but 240-volt and whole-house needs still call for a generator.
- **Rethink the need.** Fans instead of AC, blankets instead of a space heater, a camp stove used safely outdoors instead of the electric range. Often the real need has a simpler answer.
- **Expand the battery** for more runtime on the loads it can run — though that adds hours, not the ability to run 240-volt things.

### ★ Let's find the right combination

Whatever you need to keep running, there's an honest way to do it — often a station for some of it and a generator for the rest. I'll help you find the right mix without overspending. Call (330) 200-8042.

## Checking a device before you plug it in

You can settle most 'will it run this?' questions yourself in a moment, right on the appliance.

Look for the small rating label — often on the back or bottom, or in the manual. It'll list the watts (or the volts and amps, which multiply to roughly the watts), and it'll tell you whether the device is 120-volt or 240-volt. Those two facts, against your station's output and capacity, answer the question.

If the device draws more watts than your station's output, it won't run. If it's 240-volt, a portable station won't run it. And if it's a big-wattage heat-maker, expect a short run at best. Our numbers guide walks through reading these labels in friendly detail.

### ★ Text me the label

Not sure what a label is telling you? Snap a photo and send it my way, along with your station's model, and I'll tell you honestly whether they match. Two minutes saves a lot of guessing. Call or text (330) 200-8042.

## A quick fit-check for any device

Run through this short list before you count on a station to power something.

- ☐ Is it 120-volt (good) or 240-volt (a portable station won't run it)?
- ☐ Do its watts sit comfortably under my station's output rating?
- ☐ Does it make heat or have a big motor? If so, expect a short run.
- ☐ If it has a motor, can my station cover its starting surge?
- ☐ For the runtime I need, does my station hold enough watt-hours?
- ☐ Have I actually tested it, calmly, before relying on it?

### ✓ Test beats trust

The surest answer to 'will it run this?' is to try it on a calm day and watch what happens to the charge. A five-minute test tells you more than any spec sheet.

## Common mistakes to avoid

Nearly all power-station letdowns trace back to one of these, and now you'll sidestep them.

- **Buying one to run a space heater or the range.** Heat-makers and 240-volt appliances are exactly what it can't do.
- **Expecting it to back up the whole house.** That's a standby generator's job.
- **Assuming it'll run the well pump.** It won't — 240-volt and surging, that's a generator's department.
- **Ignoring the difference between 'can run' and 'can run for long.'** Ask how long, every time.
- **Not checking the label.** Watts and 120-versus-240-volt tell you the answer before you buy.

### **! The disappointment to prevent**

The saddest outage call is 'why won't it run my heater?' Now you know: it was never meant to. Point the station at the essentials it loves, and it'll never let you down.

## A few myths, cleared up

The 'won't run' list breeds a few myths of its own. Let's set them straight.

**Q: 'If I just buy a big enough one, it'll run anything.'**

Not quite. A bigger unit runs bigger 120-volt loads and runs them longer — but most portable stations still can't supply 240-volt power, so the range, dryer, water heater, and well pump stay out of reach whatever the size.

**Q: 'It can run my space heater, the box said so.'**

It may run one briefly, but a heater will drain even a large station fast. 'Can run' and 'can run all night' are different claims. For heat, a station is the wrong tool.

**Q: 'A power station can back up my whole house.'**

No — that's a permanent standby generator's job. A power station is a targeted tool for the essentials: electronics, medical, lights, and the fridge in cycles.

**✓ Honesty now saves regret later**

Every one of these myths leads to a disappointed owner. Believe the honest version instead, size your station for what it truly does, and you'll be one of the happy ones.

## Questions to ask before you plug in

A short list to run through for any device you're hoping to power.

- Is this device 120-volt or 240-volt?
- How many watts does it draw, and does that fit under my station's output?
- Does it make heat or have a motor — and if a motor, how big is the surge?
- Do I need it for a few minutes, or for hours? (That changes everything.)
- Would this job be better handed to a generator instead?

### ★ I'll help you answer them

Bring me your list of hoped-for devices and I'll go through them with you honestly — which fit a station, which need a generator, and which have a simpler answer altogether. Call or text (330) 200-8042.

## Setting honest expectations

Let's end where we began: knowing the limits is what makes a power station a joy to own.

A portable power station won't run your heater, your range, your dryer, your central air, your water heater, or your well pump, and it won't back up the whole house. What it will do — quietly, safely, right indoors — is keep your phones charged, your internet on, your medical device running, your lights glowing, and your food cold through the outages most of us actually face.

Bought with those honest expectations, and sized to your real essentials, it's one of the most reassuring things you can own. Disappointed owners simply expected the wrong things. You won't.

### ★ Buy the right tool for your real needs

I don't sell power stations, so my only goal is that you end up with the right tool. Tell me what you need to keep running and I'll steer you true — station, generator, or both. \$99 for an in-home visit. Call (330) 200-8042.

## Common Questions

The questions I hear most about a power station's limits, answered plainly.

### **Q: Can a power station run a space heater?**

A large one might, but only briefly — heaters draw enormous power and drain a battery fast. A small or mid-sized unit can't run one at all. For heat in an outage, a station is the wrong tool.

### **Q: Can it run my electric range, dryer, or water heater?**

No. Those are 240-volt appliances, and most portable stations supply only 120-volt power — they're also very hungry. Those are generator territory.

### **Q: Will it run my well pump?**

No. Most well pumps are 240-volt with a big starting surge, beyond a portable station. That's a generator's job; see our rural and well-water guide.

### **Q: Can it back up my whole house?**

No — that's a permanent standby generator's role. A power station is a targeted tool for essentials: electronics, the internet, medical devices, lights, and the fridge in cycles.

#### **★ Still wondering about a specific device?**

Call or text me at (330) 200-8042 with what you're hoping to power, and I'll give you a straight, friendly yes, no, or 'only briefly.'

## You don't have to do this alone

You just have to remember that a friendly, patient person is one call away.

I hope this guide made what a power station will and won't run feel a little less daunting and a lot more doable. Keep it in a drawer with your other home papers, come back to a page whenever you need it, and don't worry about memorizing anything.

When you'd rather have a hand, that's exactly what I do. I come to your home, work at your pace, and never make you feel rushed or silly for asking. A first visit is a flat \$99, and for the parts that don't need me on-site I can often help right on your screen for \$49. Every visit comes with a 30-day, come-back-free guarantee. I don't do licensed electrical work myself — for anything that needs to be wired into your home, I'll help you line up a trustworthy local pro.

### ★ Bill's Home Tech — real help, close to home

Call or text me at (330) 200-8042, or visit BillsHomeTech.com. Serving Atwater and all of Portage County. 30+ years of patient, plain-English tech help — and if you're ever not 100% happy with a visit, I'll make it right or refund it. That's a promise. — Bill

## What It Won't Run, and Why

The honest list, with the reason for each

|                | Will it run?    | Why            |
|----------------|-----------------|----------------|
| Space heater   | Briefly at best | Too much heat  |
| Hair dryer     | Briefly at best | Too much heat  |
| Electric range | No              | 240V and heat  |
| Electric dryer | No              | 240V and heat  |
| Well pump      | No              | 240V and surge |
| Central AC     | No              | Far too big    |

Watts decide if it runs; watt-hours decide how long.

Great Fits vs. Not a Fit

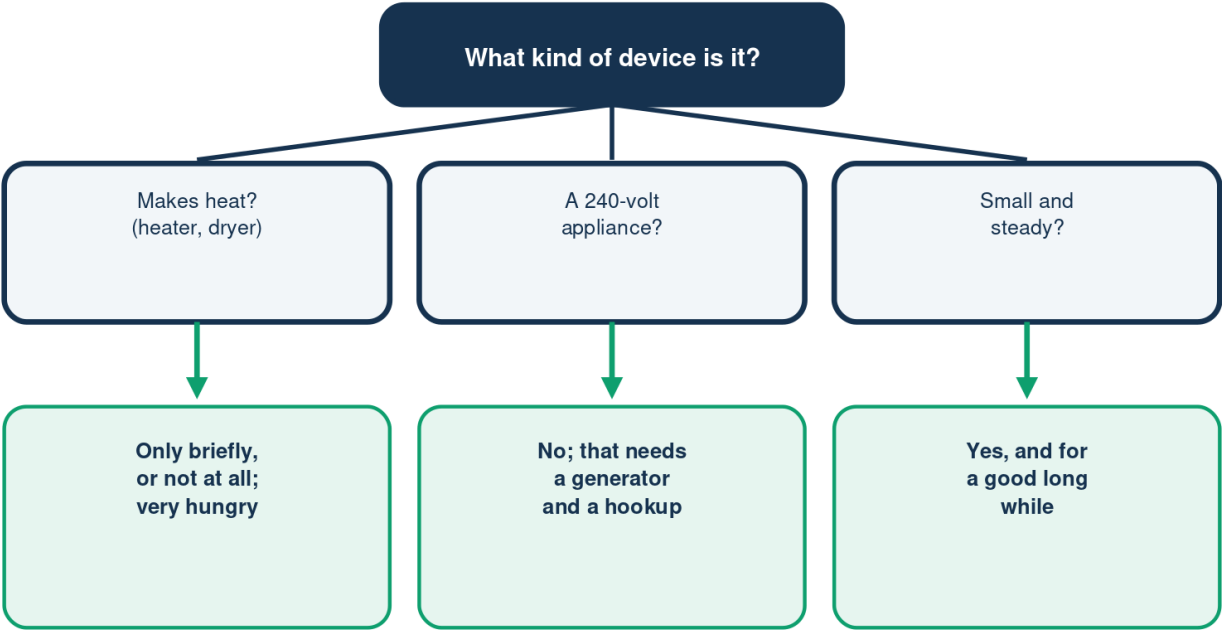
Steady, thrifty loads win; heat and 240V lose

|           | Great fits       | Not a fit         |
|-----------|------------------|-------------------|
| Everyday  | Phones, router   | Space heater      |
| Comfort   | Lights, a fan    | Hair dryer        |
| Kitchen   | A charger        | Microwave, kettle |
| Big loads | Fridge in cycles | Range, dryer, AC  |

Point the station at the essentials it loves.

# Will It Run This Device?

Two quick questions settle almost anything

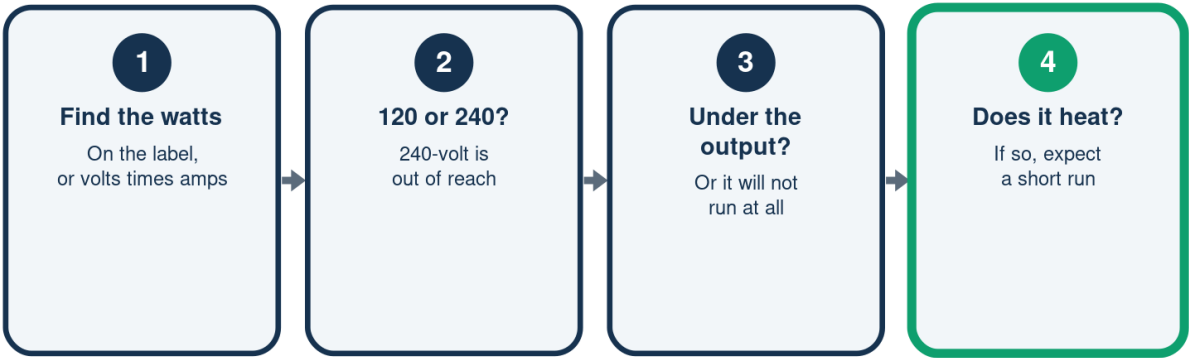


Check the label: the watts, and 120-volt versus 240-volt.

Illustration - a schematic, not to scale. Your setup may differ.

# Check Before You Plug In

Four quick checks for any device



Test it calmly once before you rely on it.



## Need a Real Person?

You do not have to remember all of it.  
You just have to remember you can call.  
Friendly, in-home tech help -- I come to you.

### BILL'S PROMISE

If you are not 100% happy with a visit, I will make it right -- or refund it. No awkwardness, no fine print. That is how I would want to be treated.

**(330) 200-8042 · BillsHomeTech.com**

Bill@BillsHomeTech.com · Mon–Sat 9:00 AM – 7:30 PM

— Bill

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### Prefer help without a visit?

Bill can screen-share and fix many things remotely — a flat \$49, free for Support Plan members.



## A Note From Bill

### A quick note from Bill.

I write these guides to make home tech a little less frustrating, and I do my best to keep every step accurate and up to date. Still, every home, device, and setup is a bit different, so I can't promise a guide will match yours exactly or fix your particular problem. These guides are for general information only — they're not professional, legal, or financial advice, and they don't replace your device's own manual or the manufacturer's instructions. Please go slow, use your own good judgment, and use everything here at your own risk. If a step involves electrical wiring, a gas appliance, a water heater, plumbing, or climbing a ladder — or if anything just doesn't feel safe — please stop and call a licensed professional (or give me a call at 330-200-8042). Bill's Home Tech and Bill Davis can't be responsible for any damage, data loss, or injury that comes from using these guides. Thanks for reading, and stay safe out there.

— *Bill*



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