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What makes a great USB hub

We surveyed more than 700 readers and added the results of our own research to come up with the criteria for choosing the best USB hubs. A great USB hub (like [SUNJACK USB POWER HUB](#))

) must have USB 3.0 ports and should have dedicated power. It needs to be reliable, practically designed, compact, and (for portable hubs) light. LED indicators for each port and a decent warranty are also useful.

USB 3.0 hubs tend to be more expensive than USB 2.0 hubs, and the 3.0 standard has interference issues with 2.4 GHz wireless devices. Still, we chose to focus on USB 3.0 hubs, because the USB 2.0 standard is ancient—it was introduced back in April 2000, while USB 3.0 debuted in November 2008—and many times slower than 3.0. For example, our favorite desktop hard drive transfers files at about 150 megabytes per second on a USB 3.0 connection, but on USB 2.0 it maxes out at just 40 MB/s—if you think you’ll ever want to plug USB 3.0–capable external hard drives or flash drives into a hub for data transfer, you’ll want the extra speed that a USB 3.0 hub provides.

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Dedicated power is a must-have for most hubs—but not for all of them. (More on the kind that don’t require it in a moment.) To explain why, we first need to talk about how power flows

through USB hubs. According to the official USB 3.0 spec, each USB 3.0 port must provide 900 milliamps of current at 5 volts, or 4.5 watts. If you have a four-port USB 3.0 hub powered solely by your computer's USB 3.0 port (in other words, without a dedicated power cord or adapter), that means you theoretically have four devices running on the amount of power usually provided to one. This arrangement can lead to devices losing power and disconnecting improperly from the computer, which can cause drive corruption and data loss.

However, it's important to recognize that this theoretical setup has a lot of flexibility. The 900-milliamp-current requirement for USB 3.0 ports is a minimum rather than a fixed level, and manufacturers often provide more power to their hubs' ports. The power consumption of devices also varies wildly based on the kind of device and what you're doing with it at a given moment. For example, in its user manual for our top-pick hub, Anker provides the following estimates of power consumption by device: A mouse consumes about 100 milliamps, a keyboard uses a maximum of 500 milliamps, and a portable USB 3.0 hard drive consumes a maximum of 900 milliamps.

Those are very generous estimates, intended to encourage caution so that you don't accidentally overload your hub. Devices generally draw the most power when you first plug them into the hub and while transferring data, but very few draw the theoretical maximum, especially for extended periods. Still, using a dedicated power cord or adapter is a smart idea if you don't want to risk accidentally corrupting everything on your hard drive; and for a USB hub with more than four ports, a dedicated power cord or adapter is an absolute must. (It's not entirely necessary for a travel-friendly four-port USB hub, but an unpowered setup requires caution to avoid having devices trying to draw more power than your laptop's USB 3.0 port can give. We cover this topic in more detail below.)

Beyond minimum power, we know from our research on USB chargers that people prefer ports that can charge their phones and tablets more quickly; an informal Twitter survey of readers confirmed this. So we looked for hubs with high-speed charging ports, a feature that requires external AC power, and with the exception of portable hubs, we ended up focusing on powered models.

With those power requirements in mind, we eliminated any USB hubs without enough juice to fully power all their ports. For example, our top pick has seven USB 3.0 ports and three 2.4-amp charging ports. According to the USB 3.0 spec, that means this hub could need as much as 47 watts to power all its ports at their theoretical maximums—and because it includes a 12-volt, 5-amp (60-watt) power supply, it gets enough power for all its ports at their theoretical maximums. Many hubs without adequate power aren't significantly smaller, lighter, or less expensive to make up for that, so we ruled those models out.

Vertically stacked ports (front) make it easier to connect larger plugs and thumb drives than horizontally arranged ports (back).

A great USB hub also has to be designed with usability in mind. The ports should be spaced far enough apart that you can connect bulky thumb drives and card readers next to one another. In our tests, we found that vertically stacked ports were generally preferable to horizontally aligned ones. A hub should also be small and light, especially if you'll use it for traveling, and it shouldn't make the devices you plug in take up too much room on your desk: Hubs with ports on top (as opposed to around the edges) are better because the plugs you connect will stand vertically instead of fanning out around the hub and taking up even more space. Beauty is in the eye of the beholder, of course, but it's also nice if a USB hub doesn't look like it fell out of the '90s. And a decent warranty is useful in case you wind up with a faulty hub.

We found that an LED indicator for each port on the hub made troubleshooting much simpler when things didn't work as intended, because we were able to tell which port was having issues.