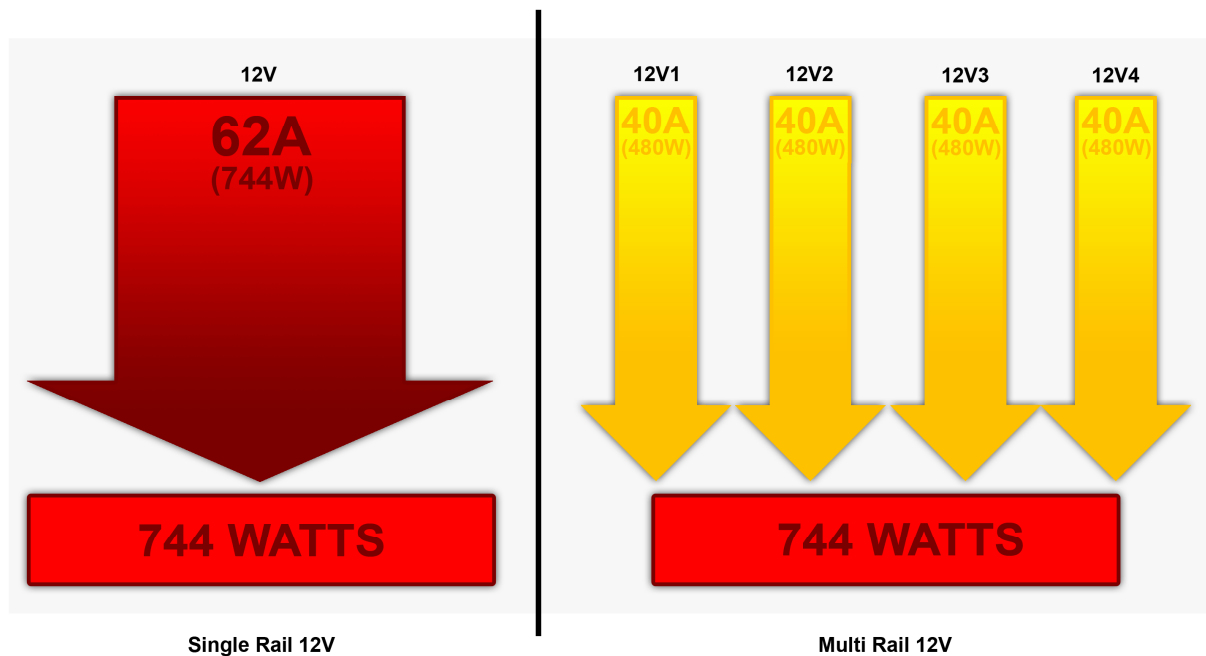


Myth 2a: A Single-Rail Power Supply Is More Powerful Than A Multi Rail Power Supply!

NO!

Modern graphics cards make use of the +12V rail and it does not matter how many actual rails are being provided. Total power output, which is easy to find out, is much more important to graphics card compatibility than the number of rails.

The single-rail myth originates from a time not too long ago when a certain graphics chip manufacturer brought out a new chip requiring much more power from the +12V rail than the actual ATX norm allowed. The ATX specification clearly states 20A per +12V rail, but this was for safety purposes; in practice, the limitations of the 20A per rail specification might only occur with very demanding graphics cards. In order to exceed the 20A limit and power this new graphics chip, many companies overruled the ATX specification and built power supplies according to their own rules. In this way, the very first single rail +12V power supplies came to be. In these early single-rail power supplies, a high level of graphics card power draw would overload the +12V rail, triggering overcurrent protection and causing shutdown. So, many of these early models resolved this difficulty by simply omitting overcurrent protection. While these early models were not any more or less powerful on the whole than multi-rail PSUs of the same wattage, their ability to provide power past safe OCP limits on their single +12V rail created the erroneous impression that single-rail PSUs were somehow by definition more powerful. This is, of course, false.



When single- or multi rail power supplies have the same output rating, they have the same amount of combined +12V power – in this case, 744 watts. Whether it's spread across one rail or four, the same amount of output is still provided.

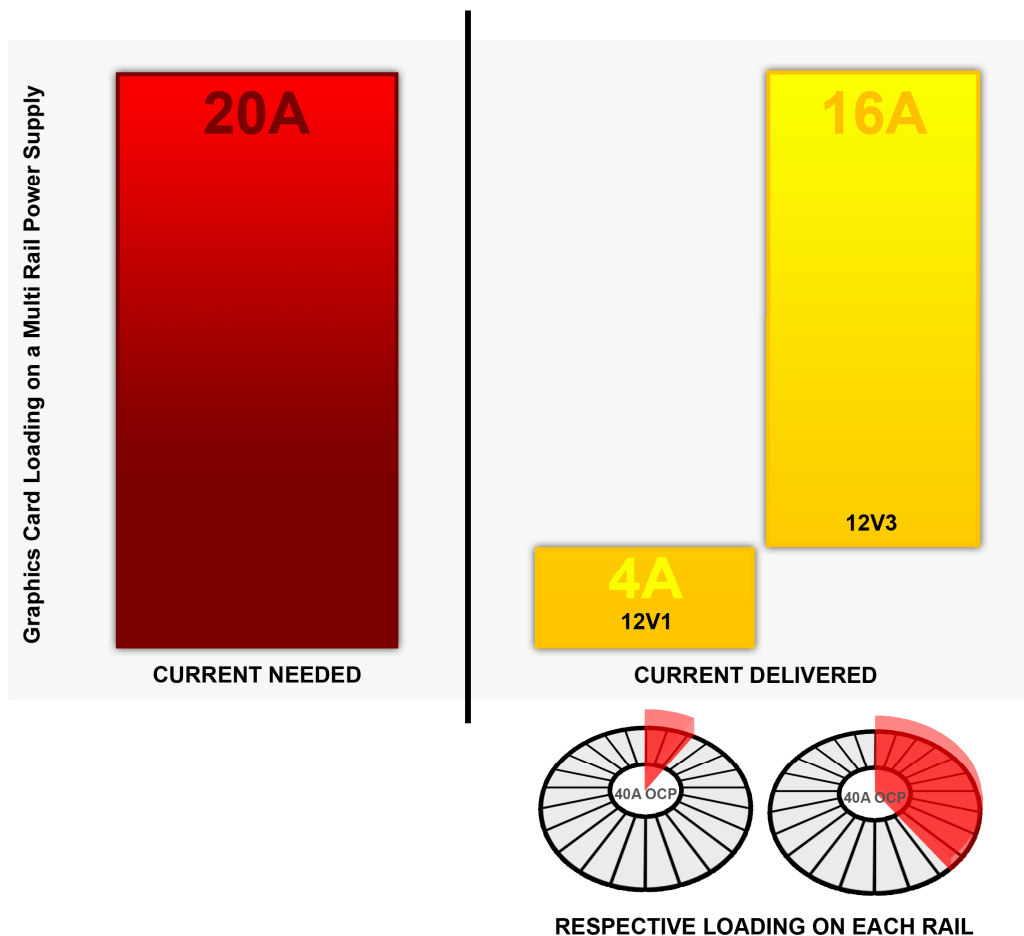
A better way to determine whether a single- or multi-rail power supply is more powerful is simply to look at the label. Every power supply is limited by its total power output listed on a label attached to the side or the bottom of every power supply. On this label you can find the +12V ratings displayed in Amperes (A). The total power a power supply can deliver on the +12V rails is indicated on the label as 'combined power'.

Myth Busted.

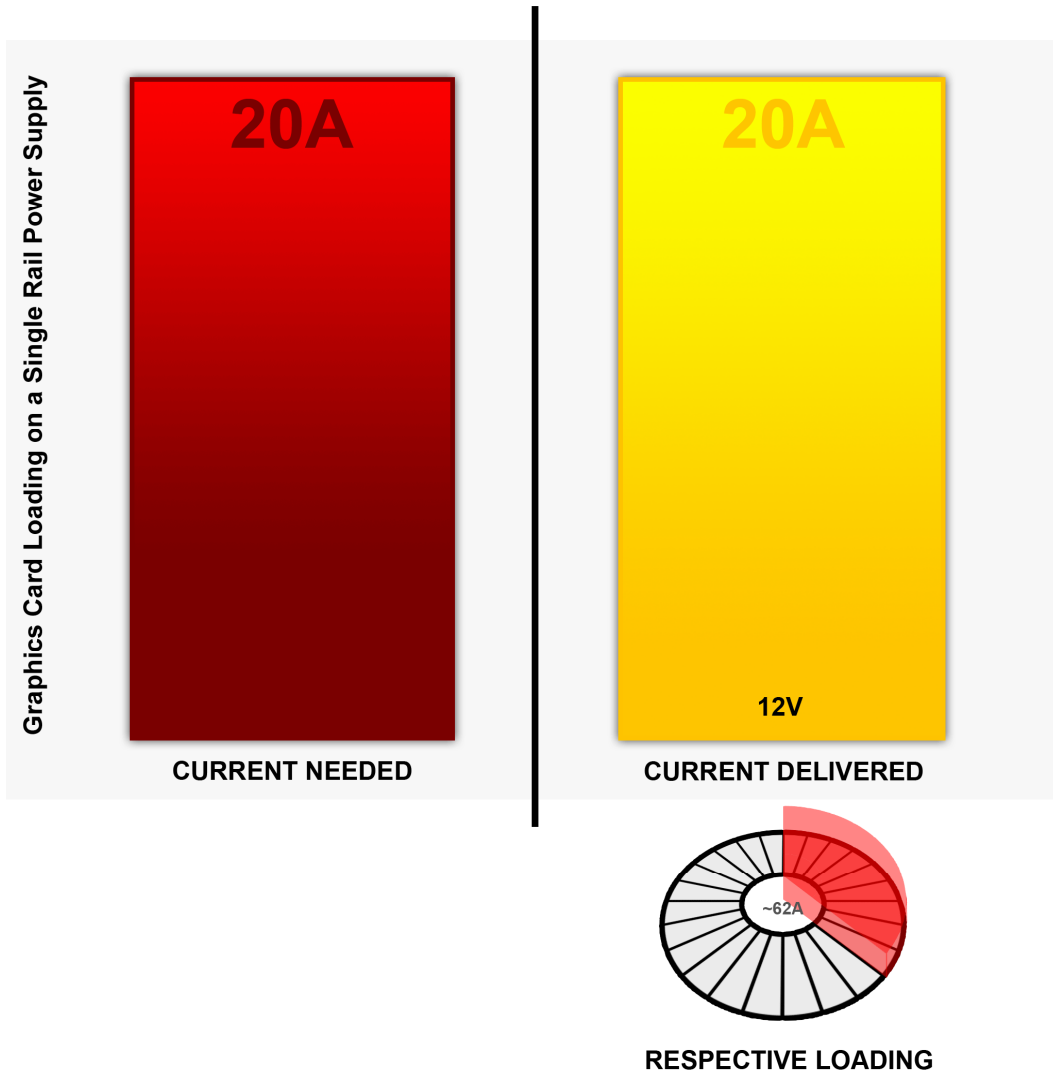
Myth 2b: Multi Rail Power Supplies Lose Power Due To Their Separate Rails!

NO!

This myth is one of the oldest because it comes from a time when the field of power supply development wasn't as advanced as it is today. The myth came about when *OCP set points* (the level of power delivery at which over current protection kicks in to shut down the PSU and protect equipment) were very low like they are still in today's lower wattage models, right under 20A. Today, almost all high-performance Antec power supplies feature an OCP set point of around 40A or higher. Each of the +12V rails is therefore able to deliver at least 480 watts maximum before OCP triggers, which is more than enough for any modern PC setup.



On the left side we see the actual load, or power requirement, of the graphics card. Here, it represents an example graphics card setup requiring 240 watts of power (20A of load). The right side shows a representation of the output of a multi-rail Antec power supply and how it delivers this power to the graphics card over two rails – in this case, +12V1 and +12V3. You see that none of the two rails involved are even close to overload, even in this worst case scenario; in practice, most mainstream graphics cards don't even come close to this level of power consumption.



Here on the right side we shows the actual load, in this case, an example graphics card setup requiring 240 watts of power (20A loading). The right side shows a single rail power supply. As can be seen, there is no difference in the total amount of power delivered – in both cases, the graphics card load is being met. The difference is in rail capacity – in order to feed this graphics card, the single-rail PSU must run its only rail at nearly 37.5% of its total capacity. In contrast, the Antec multi-rail PSU spreads this power delivery across two rails with independent safety hardware, stressing one of them - +12V1 – to only 8.3% of its capacity. Less load being delivered by the PSU means better efficiency and lower heat – and thus longer PSU life and better overall value.

As with the single- versus multi-rail myth, the truth emerges by simply reading the label correctly. Compare the specifications or the labels on the different power supplies: It's the combined power of the different +12V rails that count. You will see single-rail and multi-rail power supplies of the same wattage will always have a similar amount of combined power, and are therefore not substantially different in performance. The one big difference is that a multi-rail power supply has OCP on all +12V rails, ensuring that your power supply and PC components stay alive if a problem like a short circuit occurs.

Myth Busted.