

SFP 10G SR vs 10G SFP+ DAC

When upgrading the data center network to 10G, you need to consider whether to choose optical fiber or copper cable in generic cabling. So, whether to choose 10G SFP + DAC high-speed cable or SFP 10G SR optical module?

The 10G SFP+ DAC is a common optical device for overhead cabling in data center, which is used to connect small access switches and servers. While the SFP 10G SR is an optical transceiver in a hot-pluggable SFP+ form factor, and the "SR" stands for Short Range, which means it can be used with multimode fiber(MMF) for data transmission distance up to 300m.

Transmission distance

The [SFP 10G SR](#) is an optical module of SFP+ form-factor and duplex LC interface. It is usually used together with the optical fiber jumper of LC interface. It is mainly used for optical fiber wiring, connected with 10G Ethernet, and the transmission wavelength is 850nm. The 10G SFP+ DAC is a copper cable designed with SFP+ connectors at both ends.

Compared with SFP 10G SR, the 10G SFP+ DAC has lower cost, higher wiring flexibility, and lower operation difficulty in the actual construction process. Besides, the 10G SFP+ DAC wiring saves connecting equipment and does not need to use distribution frame. Servers and network equipment can be directly connected to TOR switch, which indirectly saves the input cost. In practical application, when the distance is greater than 15m, 10 Gigabit LC optical fiber jumper is usually used to connect with SFP 10G SR optical module; If the vertical distance between the two does not exceed the cabinet, 10G SFP + DAC can be used for connection. Therefore, 10G SFP + optical module is more widely used in long-distance transmission.

Costs

In the trend of data centers, SFP+ technology is the technology that ensures the lowest latency and best performance in the data center. As cable deployments in the data center increase from 1000 to 10,000, the 10G SFP+ to SFP+ DAC solution is based on SFP+ MSA (Multi Source Agreement) using copper spool cable with SFP+ connectors on both ends to provide a 10 Gigabit Ethernet connection between two network devices to provide 10 Gigabit Ethernet connectivity between them. Compared to the SFP 10G SR module, the 10G SFP+ DAC is a low loss, energy efficient and cost effective interconnect solution that integrates SFP+ connectors with copper spool cable. 10G SFP+ DAC high-speed cable is available in various lengths up to 15m, making it the best cable choice for 10G Ethernet connectivity today.

To sum up, the primary choice for 10G data center transmission over short distances is the 10G SFP+ DAC, followed by the SFP 10G SR optical module. For long-distance transmission, SFP 10G SR optical modules are superior