

## **President's Corner: Demystifying USB-C**

**By Eric Moore**

**December 9, 2017**

USB-C is a new standard for USB connectors. It simplifies and extends the capabilities of USB technology for a new array of devices. Whereas various connector types (Type-A, Type-B, Mini-A, Mini-B, and others) are legion and not interchangeable, the USB-C standard specifies a single connector type for all devices. The USB-C connector is oval-shaped with no up or down, so it is easier to plug into the device. Both ends of a USB-C cable have the same connector, so there is no need to remember which end plugs into which device. The connector is also much smaller—about the size of a Micro-USB connector—so it fits with small mobile devices and ultraslim laptops.

Protocols that are supported by USB-C are USB 3.1 (10 Gbps data transfer speed), USB PD, Thunderbolt 3 (40 Gbps data transfer speed), HDMI, VGA, DisplayPort, and MHL. (The specifications may be extended in the future to also support audio and video streaming for multimedia devices.) USB-C cables and devices are also backwards compatible with USB 2 and 3.0, so older USB devices will work with them. Note however, that not all USB-C devices and cables necessarily support USB 3.1. Some may only support USB 3.0 with a maximum data transfer speed of 5 Gbps. When shopping for USB-C devices and cables, be sure the technical specifications list support for USB 3.1.

In addition to the benefit of faster data transfer speeds, USB-C supports USB PD (power delivery) for delivering 100W of power and video signal streams. Devices and cables that support USB PD will allow for charging mobile devices and laptops as well as powering peripheral devices such as monitors upwards of 60Hz 4K. The bi-directionality of USB-C allows for different configurations, such as a laptop serving as the source for charging a smartphone, or in turn allowing the laptop to be charged from another source such as an external battery pack or a monitor. Note that not all devices and cables will support USB PD or running a monitor off a USB-C port, so be sure to read the technical specifications.

USB 2 and 3.0 devices that have incompatible ports and connectors may still be used with USB-C with the appropriate adapters, such as USB-C to HDMI and USB-C to RS232. If a computer has few or only one USB-C port, the limitation may be addressed with a dock that provides ports for plugging in more devices.

So, if you are shopping for a new computer this Christmas, you may wish to consider buying one that supports USB-C with USB 3.1 and USB PD. Even if you currently use devices that only support older USB protocols, you will future-proof yourself for devices that do take full advantage of the features of USB-C and allow you to clean out your drawer of tangled, incompatible USB cables for who-knows-what-devices.

### **Suggested Reading:**

- How-To Geek: [USB Type-C Explained](#)
- PC Magazine: [What Is USB-C?](#)
- Wikipedia: [USB](#)