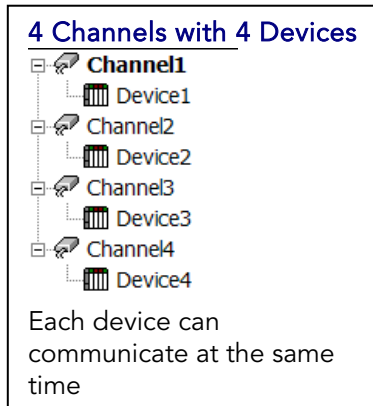## Configuring What's Best for Your Project

The Toolbox OPC Power Server can be optimized for performance by configuring of multiple channels. If your project is connecting to one serial device, you simply configure one channel and one device, but if you're connecting to more than one device there are options you must consider.
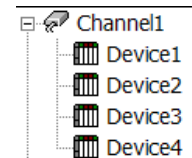
If you configure all your devices under one channel then when your Client program asks for information from the devices the TOP Server will have to read or write the data requested one device at a time. This is a good thing for some modem or radio networks, but may not take full advantage of your hardware's capabilities.

One Channel with 4 Devices

Channel1
 — Device1
 — Device2
 — Device3
 — Device4

Only one device can communicate at a time.

4 Channels with 4 Devices

Channel1
 — Device1
Channel2
 — Device2
Channel3
 — Device3
Channel4
 — Device4

Each device can communicate at the same time

If you configure each device under its own channel, the TOP Server can request the information from all the devices at the same time and you can get data from all your devices when you need it.

With an Ethernet connection this is easy, but if you doing serial connections you will need a communications port available for each channel. Some Ethernet devices also allow more than one connection a at a time, so you can actually create more then one channel with a copy of the same device under each Channel to get more communications throughput to the same device.

The key is that with the TOP Server you can control the number of connections with most drivers, so you're in control of how best to optimize your project. This is important to know because many competing products do not provide you with this level of control.

How Many Channels and Devices Can Be Configured?

Most drivers for use in the TOP Server can be configured for up to 100 Channels. A serial driver can support about 100 devices under a specific Channel and an Ethernet connection can support 1000 per channel. Some drivers can be made to support more channels, so contact us if you have more than 100 devices to connect to on one server.

Other Advantages

Each channel configured in the TOP Server uses its own thread for communication to a specific device. These means the communications from a device on one channel is independent of the communications to a device on a different channel. If the device on the first channel is turned off or can't communicate you can still communicate to the device on the other channel. If both devices were on the same channel they you would have to wait for the communications to timeout on the device that stopped before you could hear back from the other device.

For situations where you must put all your devices under one channel but you want to minimize the impact of offline devices on throughput, there are features in the TOP Server and in our optional OPC Server Manager plug-in that can help to further optimize your application. Contact us for more details.