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Category	■FAQ □SOP	Related OS	N/A
Abstract	Difference Between ADAM-6510(Hub) and ADAM-6520(Switch)		
Keyword	ADAM, ADAM-6510, Hub, ADAM-6520, Switch		
Related Product	ADAM-6510 & ADAM-6520		

■ **Problem Description:**

This document illustrates the difference between Advantech ADAM-6510(Hub) and ADAM-6520(Switch) in transmitting and receiving data packet in a local LAN network.
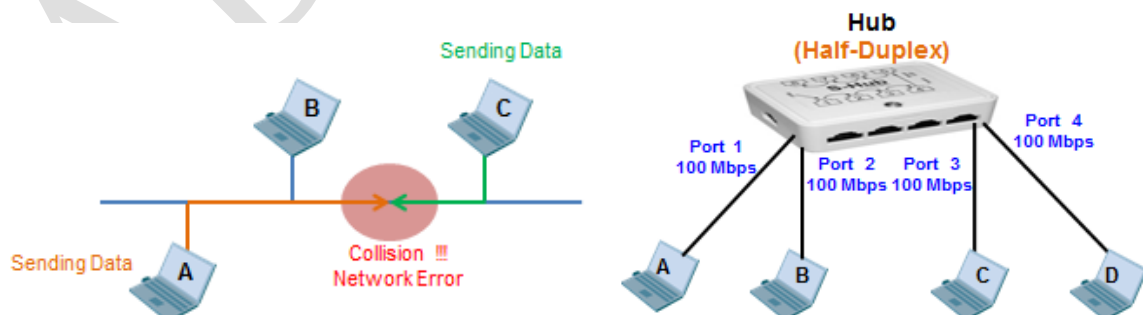
■ **Brief Solution - Step by Step:**

Both Ethernet Hubs and Switches are commonly used to create a central connection point to increase the network availability.

The difference is that half-duplex Ethernet support by Hub ONLY allows one station to transmit data at any one time.
That means, if there are multiple systems sending out data to others at the same time; in that case, it is likely to cause a network error called the collision and degrade the overall network performance.

As the figure illustrated below, even though each station has its own cable segment that connects into the hub in 100Mbps, they actually share the same fixed amount of bandwidth. In this example, 100 Mbps bandwidth are sharing by all 4 hosts, for which means each host is ONLY getting 100Mbps/4 = 25 Mbps

In contrast, full duplex mode support by Ethernet Switch allows multiple devices to send & receive data at the same time.

Therefore, with Ethernet Switch, each station has a dedicated 100 Mbps bandwidth with

much better network performance.

Full duplex in now days are commonly support on both switch and router to improve network performance without the expense of installing new media.