

## Cisco MDIX – a feature that can bring down ports without warning.

It's a known CCNA fact that you need straight through cables to connect unlike devices and a crossover cable to connect like ones, so undoubtedly for a switch to switch connection a crossover cable is used. But, I have met a lot of network engineers who believe that nowadays this does not really matter, because switch has a auto detection capabilities that can switch the TX and the RX pins on its end port to correct itself, should it detect a straight through cable being plugged instead of a crossover. Well that's true, until you find out that MDIX (Media Dependent Interface Crossover) works only if the speed and duplex settings on the trunk port are in auto mode/state. The moment you hard-code the speed or duplex to a particular value, MDIX feature is switched off and the port state changes to 'down'. Refer to the figure mentioned below that illustrates this in action (Note that I have connected two switches by creating a dot1q trunk port).

```
Switch(config)#int fa 0/8
Switch(config-if)#speed auto
Switch(config-if)#duplex auto
Switch(config-if)#speed 100
Switch(config-if)#
00:40:28: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down
00:40:29: %LINK-3-UPDOWN: Interface FastEthernet0/8, changed state to down
Switch(config-if)#speed auto
Switch(config-if)#
00:40:40: %LINK-3-UPDOWN: Interface FastEthernet0/8, changed state to up
00:40:41: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up
Switch(config-if)#duplex full
Switch(config-if)#
00:40:54: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to down
00:40:55: %LINK-3-UPDOWN: Interface FastEthernet0/8, changed state to down
Switch(config-if)#duplex auto
Switch(config-if)#
00:41:03: %LINK-3-UPDOWN: Interface FastEthernet0/8, changed state to up
00:41:04: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/8, changed state to up
Switch(config-if)#
```

Worst yet, switch does not even throw a error warning you that its the auto MDIX feature thats stopped operating and thats taking the port down, and if you are like me, you would probably start with checking the encapsulation on trunk ports and dot1q native vlan configurations, before arriving at this one, making this auto feature a 'good to know'. Thanks for reading on. Please stay tuned for more articles.

Source: <http://ciscoworks.wordpress.com/2010/06/18/cisco-mdix-a-feature-that-can-bring-down-ports-without-warning/>