Make a Straight Through Cable

Introduction

Congratulations, you've been hired at Nerdify Enterprises as an entry-level network technician! You have received a help desk ticket that a user's computer can no longer connect to the network or the internet. Upon further inspection, you notice that the Ethernet cable has been chewed through in the middle. After calling facilities to report a mouse problem, you need to replace the damaged cable. Making a straight through cable is an essential networking skill. Some cables will need to be nonstandard lengths or you may need to add connectors to a cable that's already been run in tight or hard to reach spaces.

Objectives

In this lab the student will make a straight through cable.

Supplies Needed

- Two RJ-45 Connectors
- Crimping Tool
- Cable strippers/Cutters (Optional)
- Length of Ethernet Cable
- Cable Tester
- Video "Making a Straight Through Cable"

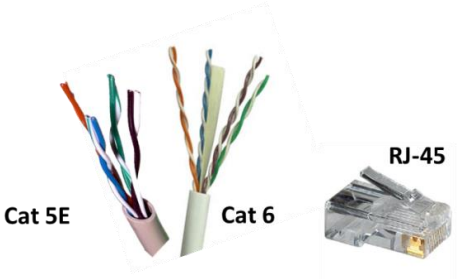
Safety

- Exercise caution when working with sharp tools, such as scissors and cable strippers.

Assignment

- Submit a link to a video of yourself making the cable and that your cable successfully passes standards using the cable tester. (60 points)
- Submit answers to the reflection questions. (40 points)

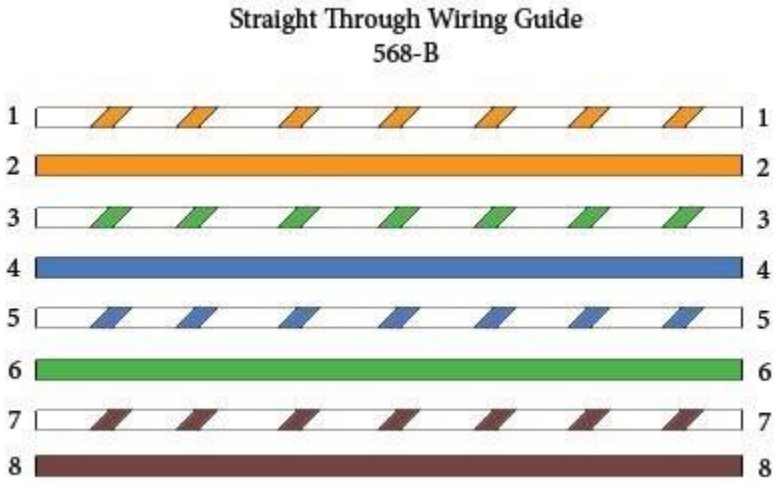
Procedure



1. Use the cable stripper/cutter tool to remove about 1 1/2 inch of the jacket around the outside of the cable.

2. Separate out the cable pairs so that each colored strand of wire is separated from the others.

3. Arrange individual wires to the 568B color order, keeping them as straight as possible. Starting from left to right, the color arrangement should be orange/white, orange, green/white, blue, blue/white, green, brown/white, and brown.



4. Place the RJ-45 connector beside the cut wires. When you crimp the jacket using the crimping tool, it should connect with the jacket of the cable. Determine how much excess wire you need to trim to accomplish this. Make sure your cuts are straight and even to allow the RJ-45 connector to touch all ends of the cable and ensure continuity.

5. Check your color arrangement one more time, then slide the RJ-45 connector onto the wire. The boot or clip that keeps the connector plugged in should be facing the bottom. The orange/white pair should be on the left side.

6. Ensure that when you slid the RJ-45 connector on the wires the color arrangement did not change. Ensure that all of the wires hit the back end of the RJ-45 jack to ensure continuity before you go to the next step.

7. Place the RJ-45 connector in the crimping tool, make sure the wires are slid into the RJ-45 connector as far as possible. Squeeze the handles of the crimper firmly.

8. Remove the cable with a connector from the crimper and ensure it has been crimped tightly.

9. Complete the same steps on the other side of the cable.

10. When both sides are complete, test the cable by plugging it into a cable tester and turning it on. A properly functioning straight through cable should light up LEDS for pin one and both sides, then pin two on both sides, etc. all the way down.

    If an LED does not light up, it means the tester did not have continuity on that side. Double check your RJ-45 connectors to determine if a wire did not reach its connector, a cable was cut, or other issues were found. It's common to practice making cables early in your career as it can be a tedious task.

Reflection

1. Which pair of wires is used to transmit? ***Wires 1 and 2***
2. Which pair of wires is used to receive? ***Wires 3 and 6***
3. Which pair of wires is used for Power over Ethernet? ***All four twisted paires***
4. Are 568B or 568A color configurations used in networks today? ***Yes they are used today the most common one used is 568b***
5. What is a straight through cable used for? ***Straight through cables provide a connection that allows only one end to communicate at a time***

Rubric

Standards for This Competency	EXEMPLARY	ACCOMPLISHED	DEVELOPING
Cable follows 568B standards on both sides and tests with full continuity. RJ45 jack is secured on the cable jacket.	*Yes, (50 pt)*	*No,* (0 pt)	*No,* (0 pt)
Reflection Question #1	Answer is correct and fully developed. (10 pt)	Answer is correct but partially developed. (5 pt)	Answer is incorrect. (0 pt)
Reflection Question #2	Answer is correct and fully developed. (10 pt)	Answer is correct but partially developed. (5 pt)	Answer is incorrect. (0 pt)
Reflection Question #3	Answer is correct and fully developed. (10 pt)	Answer is correct but partially developed. (5 pt)	Answer is incorrect. (0 pt)
Reflection Question #4	Answer is correct and fully developed. (10 pt)	Answer is correct but partially developed. (5 pt)	Answer is incorrect. (0 pt)
Reflection Question #5	Answer is correct and fully developed. (10 pt)	Answer is correct but partially developed. (5 pt)	Answer is incorrect. (0 pt)