

INFO 2601 – Crimping

Student Handout

Duration: 2 hours

Objectives:

At the end of this lab students will be able to:

- a) Crimp straight and cross over cables
- b) Configure a router

Summary:

For Part I-

At the end of this session you will be able to crimp cables for straight and crossover connections.

In today's lab we crimp cables and will build an intranet (private network) using CAT 5E cables, 2 switches and 2 routers. Today we will be creating two types of Cables; a straight cable and a crossover cable. There are different standards (A & B) used for crimping cables. More information is presented in the procedure.

Straight-Through Cabled (Straight Cable)

Straight-Through refers to cables that have the pin assignments on each end of the cable. In other words Pin 1 connector A goes to Pin 1 on connector B, Pin 2 to Pin 2 etc. Straight-Through wired cables are most commonly used to connect a host to client. **The common standard to use for a straight cable is standard B (refer to Table 1 in the Appendix) on both ends.** See Figure 1 in the Appendix.

Crossover Cable

Crossover wired cables (commonly called crossover cables) are very much like Straight-Through cables with the exception that TX and RX lines are crossed (they are at opposite positions on either end of the cable). Examples would be connecting a computer directly to another computer, connecting a switch directly to another switch, or connecting a router to a router. Note: While in the past when connecting two host devices directly a crossover cable was required. Now days most devices have auto sensing technology that detects the cable and device and crosses pairs when needed. **To construct a crossover cable one end has to be a Standard A (refer to Table 1 in the Appendix) and the other is Standard B.** Figure 2 in the Appendix shows color codes for cross over cable.

The color of standard A and B cables are shown in Table 1 in Appendix

For Part 2-

At the end of this session you will be able to configure a router and configure a static IP for your lab computer.

The first you will do is connect a router to your lab computer, then you will set a password and look at various options on the router. After doing this, you will configure your lab computer to obtain a static IP, meaning that you will set your lab computer to always have a specific IP address.

Procedure: Crimping

Steps for Crimping Straight cable:

1. Strip off insulation and untangle the wires. We can now see why it is called “twisted pair” cables.
2. Place wires in the appropriate order for the straight cable as shown in Figure 1.
3. Trim wires to an appropriate length (1.5 cm). If the wires are too long the plug will not crimp onto the insulation to make it durable.
4. Slide wires all the way into the tip of the network end ensuring that the color scheme remains unchanged.
5. Place the end into the crimper and squeeze down once thoroughly.
6. Repeat steps 1 to 5 for the second end.
7. Test the cables by placing both ends into the tester and press the “test button”, if all lights are green then the cable was crimped properly, else you have to try again.

Steps for Crimping Crossover cable:

1. Strip off insulation and untangle the wires. We can now see why it is called “twisted pair” cables.
2. Place wires in the appropriate order for the straight cable as shown in Figure 2.
3. Trim wires to an appropriate length (1.5 cm). If the wires are too long the plug will not crimp onto the insulation to make it durable.
4. Slide wires all the way into the tip of the network end ensuring that the color scheme remains unchanged.
5. Place the end into the crimper and squeeze down once thoroughly.
6. Repeat steps 1 to 5 for the second end.
7. Test the cables by placing both ends into the tester and press the “test button”, if all lights are green then the cable was crimped properly, else you have to try again.