

Experiment - 1

Student Name: cusz

Branch: CSE

Semester: 4

Name: Computer Networks Lab

UID:

Section/Group:

Date of Performance: Subject

Subject Code: 20CSP-257

1. Aim/Overview of the practical:

Study of different types of Network cables and practically implement the cross-wired cable and straight through cable using clamping tool.

2. Which logistics used:

RJ-45 connector, wire and clamping tool

3. Different types of Transmission medias:

Transmission Media is broadly classified into the following types:

1. Guided Media:

It is also referred to as Wired or Bounded transmission media. Signals being transmitted are directed and confined in a narrow pathway by using physical links.

There are 3 major types of Guided Media:

(i) Twisted Pair Cable –

It consists of 2 separately insulated conductor wires wound about each other. Generally, several such pairs are bundled together in a protective sheath. They are the most widely used Transmission Media.

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Twisted Pair is of two types:

- **Unshielded Twisted Pair (UTP):**
UTP consists of two insulated copper wires twisted around one another. It is used for telephonic applications.
- **Shielded Twisted Pair (STP):**
This type of cable consists of a special jacket (a copper braid covering or a foil shield) to block external interference. It is used in fast-data-rate Ethernet and in voice and data channels of telephone lines.

(ii) **Coaxial Cable –**

It has an outer plastic covering containing an insulation layer made of PVC or Teflon and 2 parallel conductors each having a separate insulated protection cover.

Cable TVs and analog television networks widely use Coaxial cables.

(iii) **Optical Fibre Cable –**

It uses the concept of reflection of light through a core made up of glass or plastic. The core is surrounded by a less dense glass or plastic covering called the cladding. It is used for the transmission of large volumes of data.

2. Unguided Media:

It is also referred to as Wireless or Unbounded transmission media. No physical medium is required for the transmission of electromagnetic signals.

It is mainly of three types:

- (i) **Radio Waves:** These are easy to generate and can penetrate through buildings.
- (ii) **Micro Waves:** It is a line-of-sight transmission i.e., the sending and receiving antennas need to be properly aligned with each other.
- (iii) **Infrared Waves:** Infrared waves are used for very short distance communication. They cannot penetrate through obstacles.

4. Steps to create the connector to make an ethernet connection possible:

Step 1: Strip the cable jacket about 1.5 inch down from the end.

Step 2: Spread the four pairs of twisted wire apart. For Cat 5e, you can use the pull string to strip the jacket farther

down if you need to, then cut the pull string. Cat 6 cables have a spine that will also need to be cut.

Step 3: Untwist the wire pairs and neatly align them in the T568B orientation. Be sure not to untwist them any farther down the cable than where the jacket begins; we want to leave as much of the cable twisted as possible.

Step 4: Cut the wires as straight as possible, about 0.5 inch above the end of the jacket.

Step 5: Carefully insert the wires all the way into the modular connector, making sure that each wire passes through the appropriate guides inside the connector.

Step 6: Push the connector inside the crimping tool and squeeze the crimper all the way down.

Step 7: Repeat steps 1-6 for the other end of the cable.

Step 8: To make sure you've successfully terminated each end of the cable, use a cable tester to test each pin. When you're all done, the connectors should look like this:



5. Result:

Cross and Straight Cable Prepared

Learning outcomes (What I have learnt):

1. Learnt about different types of transmission media

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2. Learnt about ethernet cables
 3. Learnt how to make an ethernet connection possible

Evaluation Grid (To be created as per the SOP and Assessment guidelines by the faculty):

Sr. No.	Parameters	Marks Obtained	Maximum Marks
1.			
2.			
3.			