ETHERNET PHYSICAL ENVIRONMENT LIST

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Abstract

The first Ethernet technology network was built on a 0.5-inch diameter. Later, a physical footprint for the Ethernet stand, which can be used in other different data transmission environments, was also discovered. The definition of the optional physical environment of the CSMA/CD memory method and the existing VAQT longitudinal Ethernet 10 Mbit/s technology remains the same.

Keywords: Ethernet, physical medium, twisted pair, coaxial cable, fiber optic cable, network architecture, data transmission speed, connectors (RJ-45), maximum distance, LAN, cable types, network interface, transmission media, network topology.

Introduction

The physical specification of Ethernet technology includes the following data transmission environments:

- 10Base-5 – a 0.5-inch coaxial cable with a diameter of 0.5 inches, which is also known as a "yugon" coaxial. Undulating snow of 50 ohms. The maximum length of the segment is 500 meters (without a scavenger);

- 10Base-2 – a 0.25-inch coaxial cable with a diameter of 0.25 inches, which he called a "thin" coaxial. Undulating snow of 50 ohms. The maximum length of the segment is 185 meters (without a trajectory);

- 10Base-T – Ekranlashmagagan Wooded Pair Kabel (UTP). The concentrators represent the topology of the stars. The interval between the concentrator and the last link shall not be more than 100 meters;

- 10Base-F – optical fiber cable. The topology of the 10Base-T standart kabi is the same. A few of these projects are mavjud, bular - FOIRL (macofa 1000 meters), 10Base-FL (masofa 2000 meters), 10Base-FB (masofa 2000 meters).

The above model 10 is the data transfer speed – 10 Mbit/s, the word "base" is 10 MGs. The last sign on the physical step stand was the type of cable.

Let's take a closer look at one of the above stands.

Booth 10Base-5 is considered a classic stand for Ethernet technology. The various components of the tube, built on the thick coaxial cable, are in three parts, and are connected to the accruing yordâmid, which is shown in fig. 5.9.
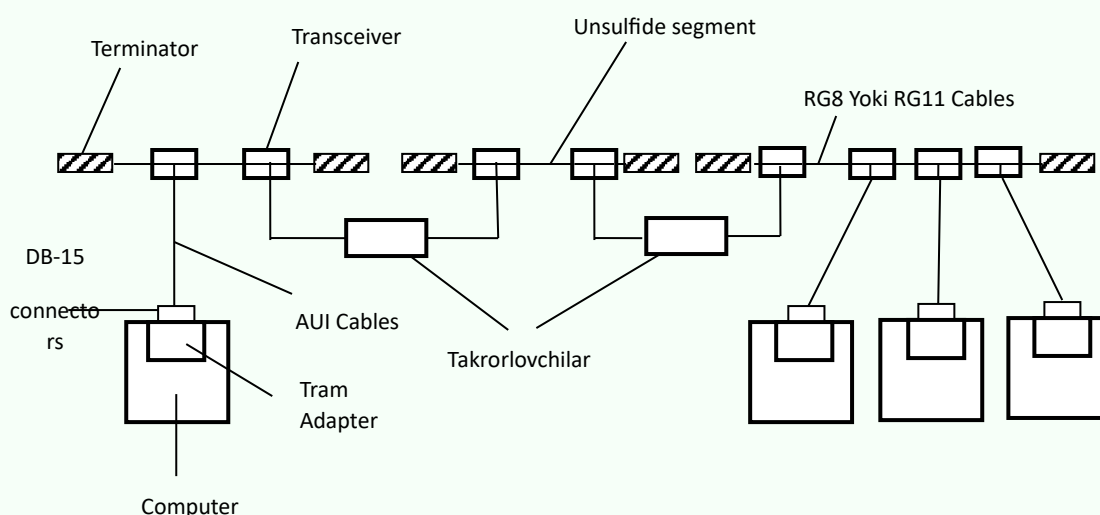
1-расм. 10 Base-5 стандартидаги тармоқ физик поғонасининг уч сегментли компоненти

Kabel foydalanaladidi monokanal sifatida for barcha stansiyalarar. At the end of a cable segment of 500 meters of maximum length, there should be terminators ("covers") with a density of 50 Ohm to prevent the extinction and depletion of the cable. A transverse (which is part of the anterior aperture of the cable) must be attached to the anterior. A transiver cable can be connected in a contaminated and non-contiguous way.

A 4 ta forest paired interface cable with a length of 50 meters of the Transiver tarmoq adpteri is connected to the AUI (Attachment Unit Interface). Between the transver and other parts of the transiver and the other parts of the transiver, the magnitude of the stand-up interface is calculated to be the maximum for the transition from one type of cable to another type of cable. To do this, it is considered sufficient to activate the transducer and the other part of the trajectory is not altered because it works according to the protocol at the MAS stage. Faqat bunda yangi transiver (e.g., transiver for a forest pair cable) must be compatible with the AUI standart interface.

A total of 100 tagacha transiver ulanishga alanishga, provided that the trunk of the trunk of the trunk should not be smaller than 2.5 meters. Cable's har 2.5 meters had markers indicating a trancer connection defect.

Station 10Base-5 makes it possible to use the platform for the tarmoqd. A cable segment can be used to increase the overall length of the cable. The interpreter accepts the signal of the cable segment and intensifies the impulse pipeline of the shaklini hamda, which transforms the impulse to another segment synchronously. Two (or more) takrör tashkil connected to the kabel segment found a transiverdan tashkil, which became a takt generator of the takt generator of the bundan tashqari uzi.

This standart tarmoqda 4 tagacha takrorıcı va mos ravishda 5 tagacha kabel segmentidan foydalanishga alasata. The 500 m. maximum length of the Kabel segment gave the 10Bâse-5 tárm 2,500 m. maximal length. At this time, the maximum diametry of the Ethernet network is clearly consistent with the constraints of the stands.

Figure 5.9 provides an example of an Ethernet network with two segments of three segments. The outer segments have a lot of loads, and the middle segments have a lot of loads. The correct interpretation of the Ethernet 10 Base-5 transmitters is called the 5-4-3 rule, which consists of 5 ta segment, 4 ta loader, 3 ta loader.

10Base-2 standarti. 10Base-2 station extends medium sifatida thin Ethernet koaksial kabeldan foydalaniladi. A 50 Ohm terminator was placed at the end of the segment, making the maximum length of the segment 185 meters. Ingichka koaksial kabel shovqindan yaxshi himoyalanmagan, mexanik jihatdan mustahkam emas va bir muncha tor o'tkazuvchan yo'lakka ega.

The station cable is connected to a T-connector cord with a high frequency of three tarmagan (i.e. one tarmog, tarmoq adapteri, bilan kalgan, two tarmog, esa kabellarga), T-connector yardamid. The number of maximum segments connected to a single segment is 30 ta. The maximum length of the station is 1 m. and a maxsus mark is placed on the har 1 metric of the cable.

10 Base-2 can be used as a 5-4-3 line. Bunda tarmoq 5x185 = 925 m. makilə This limitation was considered to be stronger than the 2500 m. limitation of the Ethernet stand. Since the Ethernet network cannot have more than 1024 nodes along its length, the 10Base-2 station limits the number of connected stations to

30 nodes and the number of loaded segments to 3 nodes. Therefore, the number of bonds in the ham 10Base-2 tarmogid exceeds 29x3 = 87 tadan.

10Base-2 standarti 10Base-5 standartiga juda yaqin calanadi, faqat unda transiverlar tarmoq adapteri bilan birlashtirilgan. On the other hand, the thin koaxial cable goes to the exit raz'yomigacha of the computer chassisiga ulangan tarmoq adapteri. In this case, the tarmak was "hanging" in the aad, which made it difficult for the computer to change the location of the physical device. The custom of the 10Base-2F standart tarmog is shown in figure 5.10.

At the same time, it was considered a simple solution for tadbi tandart to connect a computer, a T-connector and a 50 Ohm qarshilikdan phrase terminator kerak. A particular type of binding, the propensity for avariation and distortion was strong. Noise absorption was considered to be higher than that of thin cables. There were many mechanical couplings in the monocân, in which one T-connector gave three mechanical couplings, two of which were important for the târmak háyot. Applications of the foydalalatlar raz'yomlar can be entered in a meaningful way. This violates the integrity of the essay.
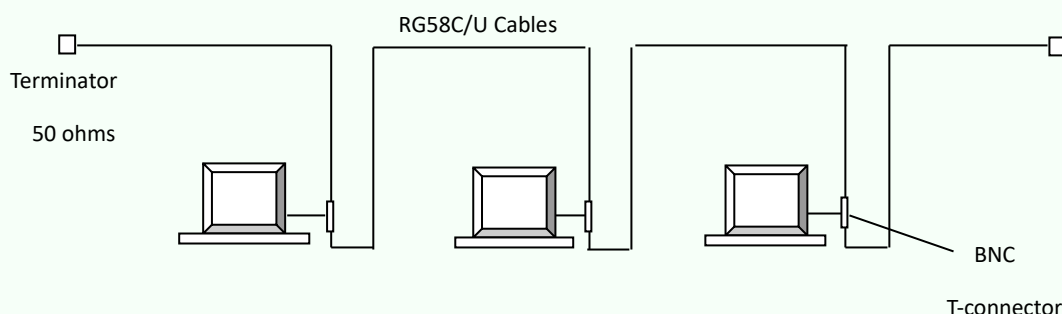
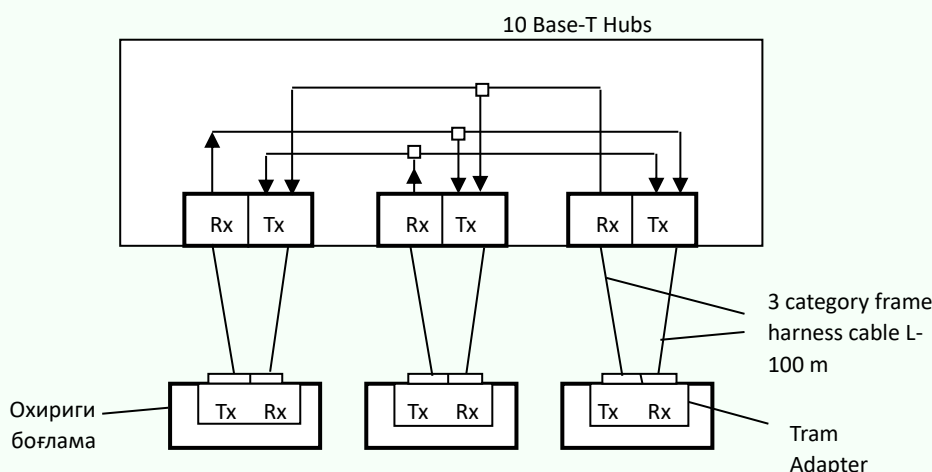2-расм. 10 Base-2 стандартидаги тармоқни ташкил этиш

The total fraction of the 10Base-5 and 10Base-2 stands is in the mavjud emasligi of the monocan in the current operative axborot. Bunday tarmoqlarda kabel shikastlangani darhol aniqlanadi (tarmoq ishlamay kaladi), but the maxsus construction to find the shikastlangan kabel became kerak.

10Base-T standarti. 10Base-T tarmoqlarida environment sifatida ikta ekranlanlashlagan forest pairs. Multi-pair cabellars have long been used to connect telephone apparels indoors. This type of cables proved to be extremely useful for locomotives, as many buildings were replaced by a cauldron cable system. It is necessary to create a method of connecting the network to the communication devices in a pair of kabelı, bunda tarmoq adapterы,

communication devices and tatarmoq operasion system dasturiy ta'minotida koaksial kabel asosidagi Ethernet tarmog should be judé.
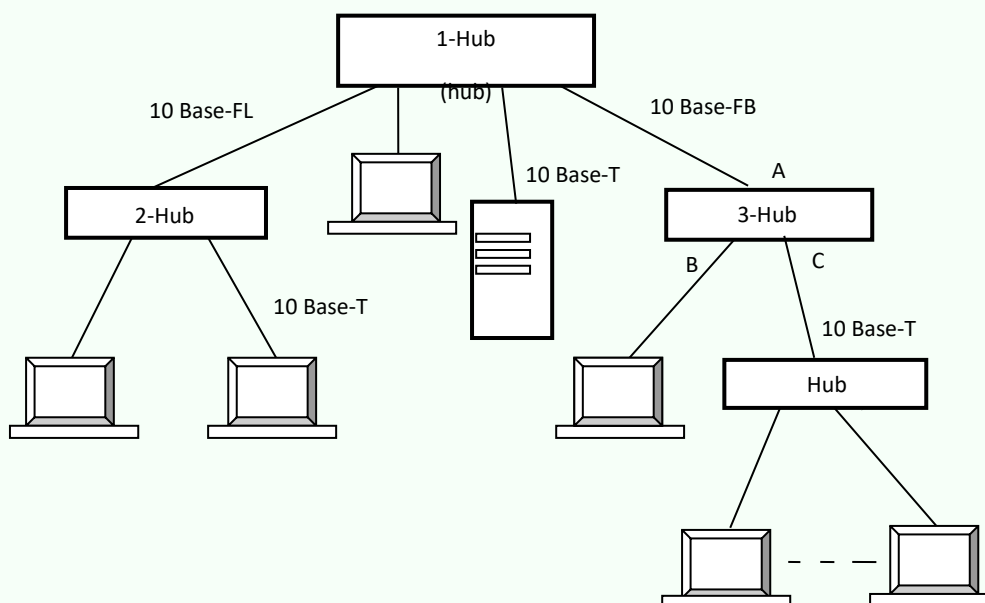
The final linkage is connected to a multi-port tarch yard, a double-masted structure along a two-flawed topology. One of the pairs of woods was needed to extend the data from the last link to the takrör (the Tx output of the tarmak adapteri), and the other was needed to extend the data from the esa takrör to the station (the Rx input of the tarmak adapteri). Figure 5.11 provides an example of a three-port cutter. A translator accepts a sign from a final link and a synchronous tarzda extends it to the barcha portlarg. This work has been carried out continuously.

Bundai called the multi-port carrier concentrate r (hub). The concentrator sign increases the overall environment – the logical monokanal (logical common tire) of the pântangán barchá barchá forestâmâ pair of kabellargâ takrorlash tazâzîfâ. A concentrator colleague announces a vaqtdâl signal orqali from a few of his Rx-inputs and sends a jâm sequence to his barchâ Tx-output. In this station, there is no 3rd level of data transmission rate of 10 Mbit/s and the distance between two bonds (stations and concentrators) is not more than 100 meters. A pair of woodpeckers will reveal the path of this mâsofâ to the past. A 100-meter-long manchester code would allow data to be extended at a speed of 10 Mbit/s.

3-расм. 10 Base-T стандартидаги тармоқни ташкил этиш

The 10Base-T concentrators can be used to connect each other in a series of explosions designed to bind each other to the final bindings. A port of the receiver and receiver must be connected to the appropriate port. 10 The number of concentrators in the middle of the optional two stations at the Base-T station was 4 TA (rule 4). The basis of this rule is the 5-4-3 rule, which is applied to the coaxial system and provides reliable synchronization of stations and reliable synchronization of stations while maximizing CSMA/CD access.

In the construction of the 10Base-T trench of a large number of stations, the concentrators were connected in a hierarchical manner to form a structure that looked like a single daraxt (Fig. 5.12).

The total number of stations in the 10Bâse-T tármog exceeded 1,024 tán, which is enough for this type of paddle and physics to increase the number of stances for this type of paddle. For this purpose, it was calculated that it was sufficient to break the two-stage hierarchy, and the total number of explosions on the stage was increased to 1024 t.

Taking into account the maximum length of the cable 100 meters in the optional two-link space by 4 thad, the total diametry of the 10Báse-T târmog is 5x100 = 500 meters. This limitation was considered serious relative to the 2,500 m. limitation of the Ethernet stand.

The 10Base-T station is a qancha afzalliklarga ega compared to the Ethernet network built in the 10Base-T stand. This is due to the fact that the general physical cable is divided into several parts of the cable that are connected to the main communication structure. At the same time, these parts would shake the ajratilgán environment, allow the physical aþrâ of the ulâr, the disconnection of the ulâr's holâtâ âzârâ âðîâðîâîâ âðîðîâðîâî□ This made it easier to use the Ethernet network, because the concentrator in the air automatically switched on the face of the auromatic tarzd.

4-rasm. Ethernet Hub Hierarchy

Optics tolali Ethernet tarmog'i.

Ethernet network is a 10-megabit data transmission medium made of optical fiber. The main cable-type optical fiber station supports multimode optical fibers with a transmission rate of 500-800 MGs per 1 kilometer. A few Gegägers can be used to apply a modal optical fibre that is a cross-cutting fibre and a muncha fibre, but it has become necessary to apply a transducer of the same type.

Functional optical fiber Ethernet network 10Base-T standandarti odatdagi tatdagi tatdagi tarmoq adapterana, multi-port switches and adapter bilan takaran kabi elementlardan kabələr In the forest there are two optical fibers connected to the Tx output of the adapter and one to the Tx output of the adeapter and the other to the Rx input of the adepter, and the other to the Rx input of the adepter.

Let's take a look at the social standings of this technology.

The FOIRL booth (Fiber Optic Inter-Repeater Link – Fiber Optic Inter-Repeater Link) is the first stand for optical fiber transmission on Ethernet networks. It was about 1 kilometer long in the middle of the tunnel. The average number of tyers in the middle of the optional tie is 4. The maximum diametry of the 10Base-5 station kabi tarmak is 2500 m., barcha 4 ta takratörlar, bundan tashqari takrar takrar and last linkage oraside kabel length kabəsələrələr

1-jadval

Temperature	10Base-5	10Base-2	10Base-T	10Base-F
Kabel deaf	RG-8 yoki RG-11 yug'on koaksial kabel	RG-58 ingichka koaksial kabel	3,4,5-DaaJa-LaRDAGI Acron-LaSteril-MaGa O'RaMa Jaft	I'm going to pray to the optician
Maximum length of segment, m	500	185	100	2000
A maksimal oralyk (m)	2500	925	500	2500 (10Base-FB uchun 2740)
Number of max stations in a segment	100	30	1024	1024
Number of volunteer transport stations	4	4	4	4 (10 Vase-FB uchun 5)

The 10Base-FL stand was considered a somewhat enhanced view of the FOIRL stand. At the same time, the capacity of the extension has been increased, so the maximum temperature of the reservoir and the concentration of the concentrators has increased by 2000 meters. The number of concentrators in the Baglamalar Orasid remains 4, the maximum length of the channel is 2500 meters.

The 10Base-FB station is designed to connect faqat takörörlarlar. It is not possible to use this stand to bind the last bond with a concentrator port. The maximum length of the single segment is 2000 m and the length of the trough is 2740 m, and in the middle of the ligaments it is possible to replace 5 10Base-FB tankers.

Another standard of Ethernet technology is the use of optical fiber stands, and concentrators in a hierarchical structure. Concentration centers were not allowed to operate voluntarily.

Barcha Ethernet standartlari uchun cheklovlar:

- Normal transition rate – 10 Mbit/s;
- Number of maksimal stansiyalar – 1024;
- maximum length of the middle of the tarmak bogs – 2500m;
- Number of maximum coaxial segments – 5.

Figure 1 shows the associative parameters of the physical stage for the Ethernet stand.

REFERENCES

1. Musaev M.M., Kaxharov A.A., Karimov M.M. Sborka uzlov kompyuternых setey. Uchebnoye posobiye.- T, ITPD im. Chulpana, 2007.-152p.

2. Musaev M.M., Qahhorov A.A., Karimov M.M. Collecting computer equipment. Academic Lyceums and Colleges. T.:"ILM ZIYO", 2006.-160 p.

3. Maksimov N.V., Partыka T.L., Popov I.I. Arxitektura EVM i vыchislitelnых sistem. Uchebnik. –M.:FORUM, 2008.-512p.

4. G'aniyev S.K., Karimov M.M., Tashev K.A. Information security. Security of information and communication systems. Instructional manual. T. "Aloqachi", 2008, 382 pp.