THE NETWORK IP ADDRESS OF THE HOST – find out yourself based on question

THE BROADCAST ADDRESS OF THE HOST – find out yourself based on question

APPROPRIATE CONDITIONS FOR THE IMPLEMENTATION OF THE TCP TRANSMISSION PROTOCOL

- Reliability requirement
- Connection-oriented communication
- Medium to high latency
- Data integrity and order
- Bandwidth sharing
- Overhead tolerance
- Application Layer Protocol Support

TYPES OF DATA COMMUNICATION TECHNOLOGY

Bi=

•Ethernet -typical LAN technology. Standard Ethernet-based local area networks transmit data at speed up to 10 Mbps. Fast Ethernet represent high-speed LAN technology that provide data transfer at rates 100 Mbps.

•Token Ring - This token passing is a channel access method providing fair access for all stations, and eliminating the collisions of contention-based access methods.

•NetBEUI -the primary protocol for LAN Manager and Windows for Workgroups. It is a fast and efficient protocol with low overhead that supports both connection-oriented communication and connectionless communication

•Fibre- is technology involves transmitting modulated light down a small plastic or glass fibre. The fibre is made from two different materials.

Bm=

• Ethernet - Teknologi LAN yang umum. Jaringan area lokal berbasis Ethernet standar mentransmisikan data pada kecepatan hingga 10 Mbps. Fast Ethernet merupakan teknologi LAN berkecepatan tinggi yang menyediakan transfer data pada kecepatan 100 Mbps.

• Token Ring - Metode akses token ini memberikan akses yang adil untuk semua stasiun dan menghilangkan benturan dari metode akses berbasis persaingan (contention-based access methods).

• NetBEUI - Protokol utama untuk LAN Manager dan Windows for Workgroups. Ini adalah protokol yang cepat dan efisien dengan overhead yang rendah yang mendukung komunikasi berorientasikan koneksi (connection-oriented) dan komunikasi tanpa koneksi (connectionless).

• Fiber (Serat Optik) - Teknologi ini melibatkan pengiriman cahaya termodulasi melalui serat plastik atau kaca yang kecil. Serat tersebut terbuat dari dua material yang berbeda.

NETWORK TOPOLOGY

Bi=

Arrangement of various elements of a computer or a biological network

Bm=

- Tata letak berbagai elemen dari sebuah komputer atau jaringan biologis.
- Physical topology
  Bi=

  Placement of network's components – shows layout of cabling, location of nodes, interconnections between nodes and cabling

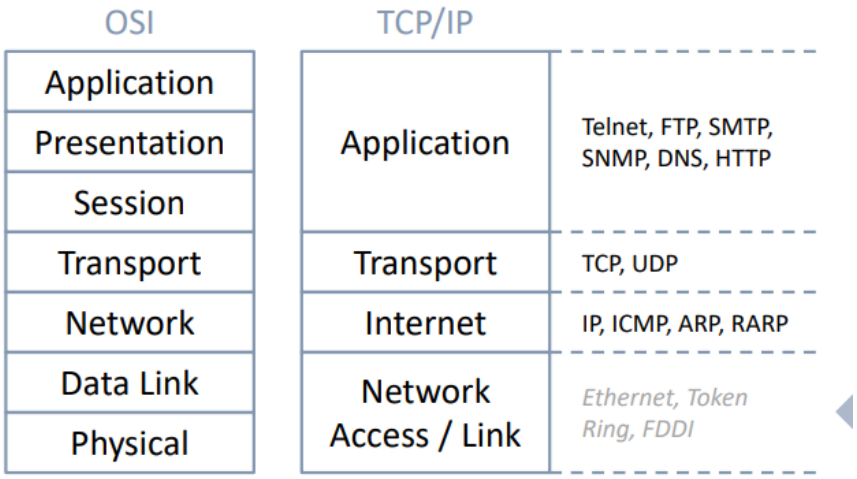
  Bm=
  - Penempatan komponen jaringan - menunjukkan tata letak kabel, lokasi node, hubungan antara node, dan pengaturan kabel.
- Logical topology
  - Cara data melewati jaringan dari satu perangkat ke perangkat berikutnya, tanpa memperhatikan koneksi fisik perangkat, umumnya ditentukan oleh protokol jaringan

- Logical topology tidak selalu sama dengan topologi fisik (physical topology)
  Bm=

  Logical topology is closely associated with Media Access Control methods/protocols, dynamically reconfigured by routers and switches

  Bi=
  - Topologi logis erat terkait dengan metode/protokol Media Access Control, dan dapat diubah secara dinamis oleh router dan switch.
- Types of topologies
  - Point to point
  - Bus
  - Hybrid
  - Mesh
  - Star
  - Daisy chain
  - Ring
  - Tree

THE SIMILARITY LAYERS BERWEEN TCP/IP AND OSI LAYERED REFERENCE MODELS



COMPONENTS OF DATA COMMUNICATION SYSTEM

Bi=

- Message – refers to data that is to be communicated

– Sender – plays role of source in data communication system, ends the data message

- Transmission medium – Bridge between sender and receiver

- Receiver – Device that receives the message

- Protocol – Set of rules that govern data communication between 2 or more interconnected devices

Bm=

- Pesan (Message) - merujuk pada data yang akan dikomunikasikan.
- Pengirim (Sender) - berperan sebagai sumber dalam sistem komunikasi data, mengakhiri pesan data.
- Media transmisi (Transmission medium) - jembatan antara pengirim dan penerima.
- Penerima (Receiver) - Perangkat yang menerima pesan.
- Protokol (Protocol) - Sekumpulan aturan yang mengatur komunikasi data antara 2 atau lebih perangkat yang saling terhubung.

ADVANTAGES OF WIRELESS OVER WIRED CONNECTION

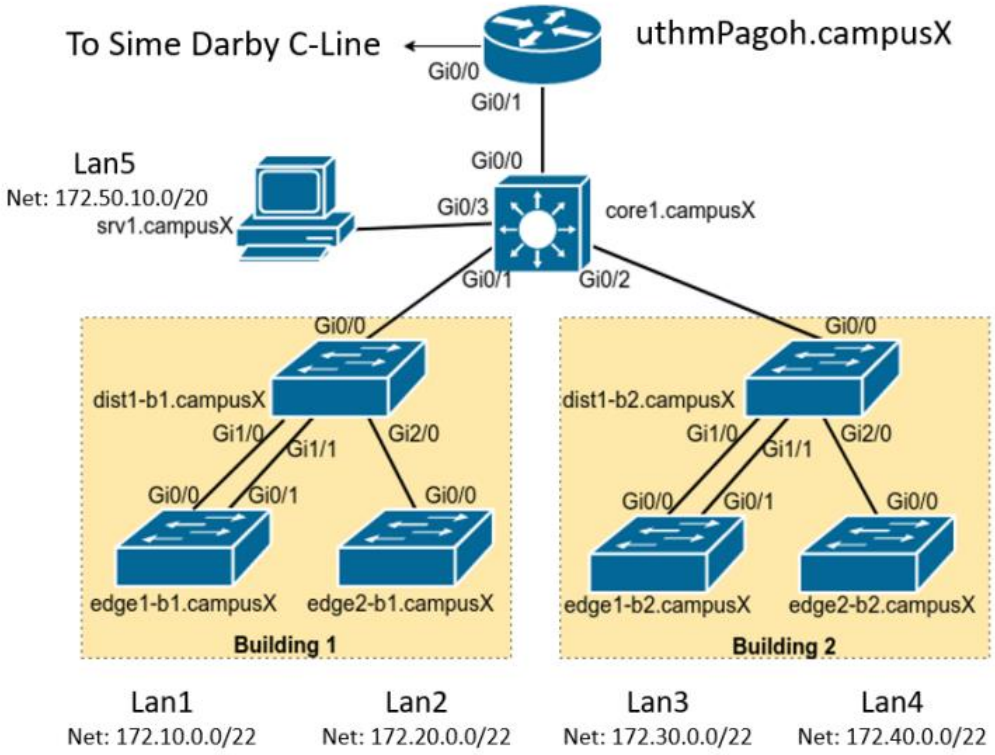
- Convenience and mobility
- Easy setup and scalability
- Flexibility and accessibility
- Connectivity in remote areas
- Reduced physical constraints
- Quick deployment and temporary connectivity

FUNCTION OF THE OSI NETWORK LAYER ARCHITECTURE

- Defines the process used to route data across the network using logical addressing (Menentukan proses yang digunakan untuk mengarahkan data melintasi jaringan dengan menggunakan alamat logis.)

SUBNET MASK FOR NETWORKS – find out yourself based on question

NETWORK ADDRESS FOR NETWORKS – find out yourself based on question



VLAN CREATION CONFIGURATION COMMANDS FOR SWITCHES

Switch(config)#vlan 1

Switch(config-vlan)#name VLAN1

Switch(config-vlan#exit

….. (Repeat the top 3 lines until all the vlans required are made, based on question)

THE IP ADDRESS RANGE ASSIGNMENT TO HOSTS

Vlan creation configuration commands for switches

- Host IP address on Lan 1 >> 172.10.0.1 - 172.10.252.254
- Host IP address on Lan 2 >> 172.20.0.1 - 172.20.252.254
- ...
- ...

THE IP ROUTING CONFIGURATION ON A SWITCH SO ALL VLAN CAN ACCESS DIFFERENT LAN

Switch> enable

Switch #config terminal

Switch(config)# ip routing

Dot1Q ROUTING PROTOCOL CONFIGURATION COMMANDS FOR A ROUTER

Router(config-if)# int g0/0.1

Router(config-subif)#encap dot1Q 1

Router(config-subif)# ip address 172.10.15.254 255.255.240.0