

Virtual Circuit Diagram and Datagram Circuit Diagram

Presented By:

Debodipto Samadder

ID: 21201079

Roll: 79

Department of CSE,
University of Asia Pacific.



Introduction to Networking Concepts:

1 Data Transmission

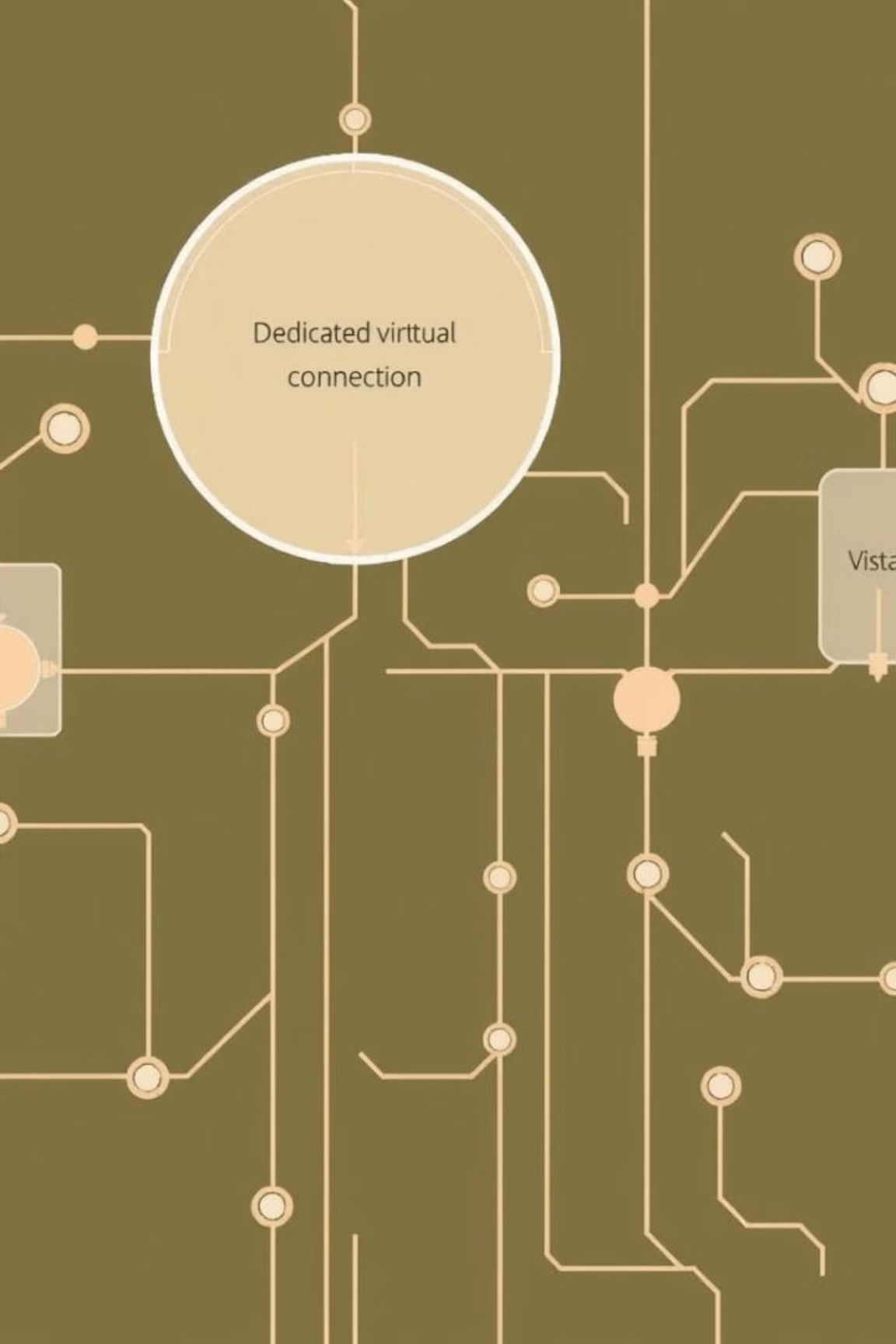
Understanding how data is transferred between devices on a network is crucial for effective communication.

2 Network Protocols

Standardized protocols govern the rules and procedures for data exchange in a network.

3 Network Topology

The physical and logical arrangement of network components determines the flow of information.



Virtual Circuit Diagram: Definition and Characteristics:

1

Established Connection

A virtual circuit diagram represents a dedicated, end-to-end connection between two network nodes.

2

Connection-Oriented

The circuit is established before data transmission, ensuring reliable and ordered delivery.

3

Signaling Overhead

Setting up and maintaining the virtual circuit requires additional signaling and control overhead.

Advantages of Virtual Circuit Diagram:

Reliability:

Virtual circuits provide guaranteed delivery and minimize data loss, ensuring reliable communication.

Quality of Service:

The dedicated connection allows for better control over bandwidth, latency, and other QoS parameters.

Flow Control:

Virtual circuits enable effective flow control mechanisms to prevent network congestion and optimize performance.

Datagram Circuit Diagram: Definition and Characteristics

1

Independent Packets

A datagram circuit diagram represents the independent transmission of data packets through a network.

2

Connection-Less

Packets are routed independently without the need for a pre-established connection.

3

Flexible Routing

Packets can take different paths through the network, providing flexibility and adaptability.

Advantages of Datagram Circuit Diagram:

Scalability:

Datagram circuits can easily accommodate fluctuations in network traffic and number of devices.

Resource Utilization:

Independent packets can be routed through available resources, optimizing network efficiency.

Adaptability:

Datagram circuits can dynamically adapt to network changes, such as node or link failures.

Differences Between Virtual Circuit and Datagram Circuit Diagrams

Connection

Virtual circuits establish a dedicated end-to-end connection, while datagrams are connectionless.

Routing

Virtual circuits follow a predetermined path, while datagrams can take different routes.

Reliability

Virtual circuits provide reliable, in-order delivery, while datagrams may experience packet loss.

Signaling Overhead

Virtual circuits require additional signaling and control overhead, while datagrams do not.

Virtual circuit of

Wanderiot



Datadengrarr



Connection
establishment



Establishment



Reliability
routing



Reliability
pairs

Conclusion and Key Takeaways



Connection Type

Virtual circuits establish a dedicated connection, while datagrams are connectionless.



Routing

Virtual circuits follow a predetermined path, while datagrams can take dynamic routes.



Reliability

Virtual circuits provide reliable, in-order delivery, while datagrams may experience packet loss.



Overhead

Virtual circuits require additional signaling and control overhead, while datagrams do not.

Thank You