computer

Network

Assingment-5

Name : S. Dharshansrinath

Reg No : 192521216

subject : computer network

subcode : CSA0735

ASSIGNMENT - 5

Scenario:

A media firm uses overlay networks for a efficient video delivery.

Questions:

i) Define overlay networks with real-time examples.

Flexibility:

They allow for dynamic network configurations and traffic management without modifying infrastructure.

Scalability:

They can be easily scaled up or down to accommodate changing networks needs.

Security:

They can enhances security through encryptions and other security protocols. Then infrastructure and resources.

ii) Estimate total hop delay in a 5-node overlay w
10ms per hop.

* Identify number of hops:

In a 5-node overlay path from first node to th
them (e.g node.1 to node 2. node 5).

* Calculate total delay:

Total delay = Number of hops x Delay per hop

Total delay = 4 hops x 10ms/hop

Total delay = 40ms.

The estimated total hop delay in a 5-node with 10ms per hop is 40ms.

4 Compare overlay routing vs traditional IP routing:

Traditional routing:

i) * Physical layer:

Operates directly on the physical network to infrastructure.

* Direct control:

Has direct control over how packets are routed within the network. directly physical path.

* Tight coupling:

Services are tightly couples with the underlying physical network and configurations.

overlay routing:

Built as a virtual, logical network on top of an existing underlay (traditional IP) network using virtualizations.

Decoupled services:

Can be deployed incrementalled end-user sites can on hosts without requiring cooperation from

4) Suggest applications that benefits from overlay structures.

* Memory management in operating system:

overlays in memory management allow program to ulitize memory more efficients by loading to memory overflow issues.

* Network overlays in Distributed system:

They enhance scalability, fault tolerance and a resource utilization in distributed system by to allowing dynamic topology.

* Infrastructure protections:

overlays system can be applied to physical address pavements and extend their listen and protect to extend from deterioration, often implement repairs.