

Routing algorithm

the main function of network layer:

Routing-

Routing process usually directs forwarding on the basis of routing table.

routing tables maintain a record of the routes to various network destinations tables may be specified by an administrator of the network or routing protocols.

Main goal of routing algorithm

1.correctness:

The Routing should be done properly and correctly show that the packet may reach their proper destination .

2.simplicity:

The routing should be done in a simple manner so that the overhead is as low as possible with increasing complexity of the routing algorithm the overhead has also increases.

3.Robustness

Once a network become operative it may be expected to run continuously for years without any failures the algorithm design for things should be robust enough to handle hardware and software failures and should be able to cope with change in the topology and traffic without requiring all jobs in all hosts to be aborted and the network rebooted every time some router goes down.

4.Stability:

The routing algorithms should be stable under all possible circumstances.

5.Fairness:

Every node connected to the network should get a fair chance of transmitting their packet.this is generally done on a first come first serve basis.

6.Optimality:

The routing algorithms should be optimal in terms of throughput and minimizing mean packet delay.

Routers:

Is a working of three layer-

1.physical layer

2.data layer

3. Network layer

Router is MAC address check and IP address to checked

Flooding :

1.1 Flooding is the classic approach for dissemination without the need for any routing algorithms and topology maintenance

1.2. source nodes sends data to all neighbours

1.3. receiving node stores and sends data to all its neighbors

1.4. disseminate data quickly.

2. Forwarding

3. collision

4. routing

5 filtering

Routing & Forwarding

Direct and indirect forwarding and hosts and routers

Routing Table

routing forwarding with netmasks

Forwarding

Refers to the effective transfer of a packet frame etc. downwards (normally implemented through a forwarding table)

Routers forwarding/routing

Destination based: drive by the destination address

Next hop routing: for each destination in the routing table only the next relaying node is reported.

Routing tables:

If the crosscheck is negative for all the interface indirect forwarding is performed.

The routes must therefore refer to its routing table.