Challenges of Computer Network

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In the age of Internet where everyone loves to work with their computers and smart phones it is impossible to think any work without networking. With advancement of technology use of computer networking is increasing rapidly. In general if we will see, we can feel also how important networking is that may be our day to day social networking or that may be this technical computer networking everything are in a process to make human life better by giving another way of living life by networking.

In today's business world, **computer networks** have become norm. Today's networks are supporting more traffic than ever. Its not only from this computers only but smart phones are added with them and now a days Internet of Things (IoT) is also becoming a big part of it. However, they bring unique set of challenges with them, both when designing and maintaining them.

In small networks, it is easy to overlook minor problems, but in a large network it becomes difficult to identify and face those challenges since it may bring entire network infrastructure down with it. Minor and common computer network problems can be easily identified and dealt with, but there are certain problems that can be tricky to handle, Let's discuss about those computer network challenges. But before going into networking challenges, Let's first give a look at this computer network and after that we can analyze challenges involved in computer networks that we face commonly in our day to day life.

Computer Network is basis of communication in Information Technology (IT). It refers to group of computers linked to each other that enables one

computer to communicate with another computer to share information and resources. These devices connected to network use a set of network protocols over digital interconnections for purpose of sharing resources located on or provided by network nodes. The interconnections between nodes are formed based on a variety of network topologies.

Common Challenges of Computer Network :

1. **Performance Degradation –**
   Many time we have faced loss in data integrity and speed of a network which is generally down to poor transmissions and is also known as performance degradation. Every networks that may be large or small performance issue is everywhere but in large networks this

performance degradation issue is high as communication has to be established with in a larger area and also by help of many network devices.

2. **Security Issues –**

When it comes to computer network there this security issue arises. It is one of top issue of computer network and a big challenge to network security engineers which generally involve protecting network from different cyber attacks, preventing unauthorized users to enter and access system, and maintaining network integrity. All these security issues increases with increase in network size when network size is large there chance of security issues are more.

3. **Host Identification –**

Small networks can be easily configured with help of manual addressing, but this becomes a serious problem in large networks when it comes to host identification. Because without any proper address of networking it becomes difficult to establish communication in network. So proper host identification is necessary for a network communication.

4. **Configuration Conflicts –**

Mainly large networks have to deal with configuration conflicts and busy networks, since a lot more traffic is going through it. But in small networks a couple of thousand IP addresses with unique host names are available so there is less chance of conflict in between devices. But now a days this problem is less as network structures are designed in such a way that deals with configuration conflicts.

5. **Capacity Concern –**

Now a days volume of data is so high which is produced from various sources. So network capacity also needs to grow with respect it. Today we are dealing with trends like Internet of Things (IoT), Big

[Data](), [Data science]() etc and next year something new will be also added so networks also need to improve capacity needs as well as facing cyber threats.

6. **Slow Connectivity –**
   Slow connectivity over a network is more frustrating where a simple task takes a long time to be performed over network. It's often caused by large file transfers over a large area through network. It becomes an unwanted challenge for users when they work over computer network.

7. **Monitoring and maintenance –**
   Monitoring and maintenance of global network is one of big challenge of current time. It becomes very difficult to monitor volume of a traffic in a large network.

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