Model And Analysis Of Message Transfer In Delay Networks

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Abstract

Opportunistic or Delay Tolerant Networks were initially envisioned to support communication in challenging circumstances, where framework is limited or absent. To support intuition, studies from fields related to technological and social networks have demonstrated the existence of heterogeneous traffic patterns. The highly successful architecture and conventions of today's internet may operate poorly in circumstances characterized by very long delay paths and frequent network partitions. Mobility patterns and their impact in such networks have been extensively studied. In contrast, this has not been the case with articulation traffic patterns, where homogeneous traffic between all nodes is usually assumed. This expectation is generally not true; as node mobility and social characteristics can significantly affect the end-to-end traffic demand between them currently networks used especially the number of internet users, increase rapidly. Also high quality of service is required users, increase rapidly. Also high quality of service is required and this requirement results, a sudden traffic increment. In this project we propose to reduce the traffic and find the delay analytics.

Keywords: *Communication Traffic, Direct Communication, Opportunistic Network, Delay Tolerant Networks*

1 Introduction

A computer network consists of an accumulation of computers, printers and other appliances that is connected together so that they can articulate with each other. Broadly speaking, there are two types of network structure, peer-to-peer networks and client/server networks.**Peer-to-peer** networks are more commonly materialized where less than ten computers are convoluted and where strict security is not elementary. All computers have the same status, hence the term 'peer' and they articulate with each other on an equal footing. Files, such as word processing or spreadsheet documents, can be mutual across the network and all the computers on the network can contribute devices, such as printers or scanners, which are coupled to any one computer.

Client/server networks are more applicable for larger networks. A pivotal computer, or 'server', acts as the storage position for files and applications mutual on the network. Usually the server is a higher than average File and Print Server CD or Multimedia Servers Other users, computers Users computers Cache, Proxy, Filtering, Firewall Server Access to: Internet content & learning resources, Scilicet etc Email communication Modem or Router School 'Local Area Network' Peer to Peer Network performance computer. The server also checks the network contact of the other computers which are designated to as the 'client' computers. Typically, teachers and students in a school will use the client computers for their work and only the network administrator (usually a designated staff member) will have contact license to the server. Mobility patterns and their impact in such networks have been extensively studied. In contrast, this has not been the case with communication traffic patterns, where homogeneous traffic between all nodes is usually assumed. We cannot interact with direct communication. If we use the direct communication the network traffic will occurred by using delay tolerant network. In this application we explore the joint effect of traffic patterns and node access point on the performance of popular forwarding mechanisms both analytically and through simulations. We approach Delay-tolerant networking (DTN) is an computer network architecture that seeks to address the technical issues in heterogeneous network that may lack consecutive network connectivity

1.1 Communication Traffic

The end-to-end traffic demand (per time unit) between a pair of nodes is a random variable. Hence, traffic demand between node pairs can differ and is on average correlated with the nodes contact rate. Intuition suggests that every pair of node will not exchange the same amount of traffic. To support

intuition, studies from fields related to technological and social networks.
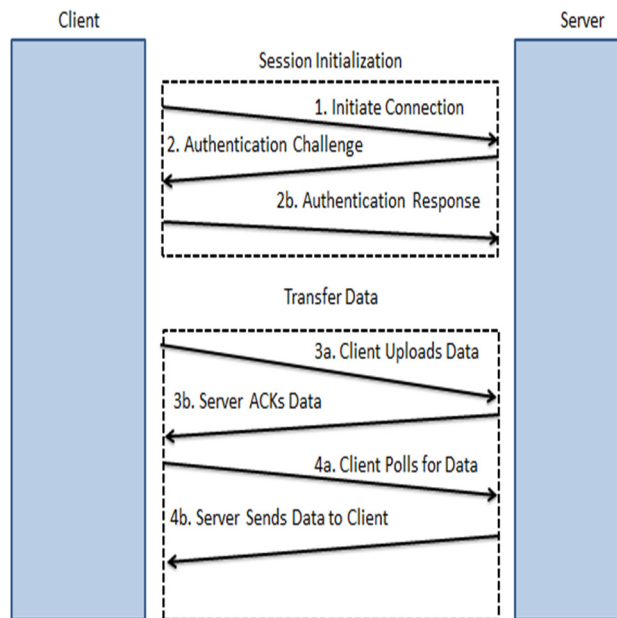
1.1 Communication Traffic

1.2 Direct Transmission

The approach with the minimum overhead and complexity is Direct Transmission (DT): nodes wishing to exchange data or information with each other may do so, only when they are in direct contact, without involving any relays. For instance, DT is often assumed in content centric applications, where a node interested in some content will query directly encountered nodes for content of interest, and retrieve it only if it is available there.
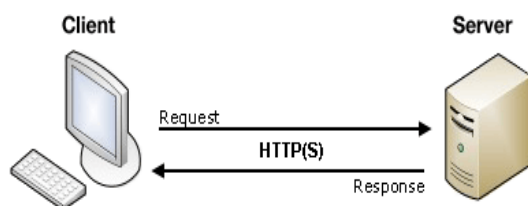
1.2 Direct Transmission

1.3 Opportunistic Networks

A network has nodes that are interdependent to each other, these nodes are usually static.

Communication path usually pre-determined (as in the Network Layer of the OSI Model).However, in an Opportunistic Network, Nodes are mobile/fixed communication accessible even if no connecting divergence exists between nodes. Routes are built dynamically i.e., communication path not predetermined.

1.4 Delay Tolerant Networks

Delay-tolerant networking (DTN) is an approach to computer network architecture that seeks to address the technical issues in multifarious network that may lack continuous network connectivity. Examples of such networks are those manipulating in mobile or extreme terrestrial environments, or planned networks in space. Delay-tolerant networking involves some of the same mechanizations as are used in a disruption-tolerant network but there are important distinctions.

2 Existing System

Opportunistic (or) Delay tolerant network where initially envisioned to support communication in challenging circumstances, where infrastructure is limited or absent. Lately, it has been suggested that they could also support or complement existing networking infrastructure. This assumption is generally not true, as node mobility and social complexion can significantly affect the end-to-end traffic demand between them. Mobility patterns and their impact in such networks have been extensively studied. In contrast, this has not been the case with communication traffic patterns, where homogeneous traffic between all nodes is usually assumed. We cannot interact with direct communication. If we use the direct communication the network traffic will occurred by using delay tolerant network. We examine what characteristics of traffic heterogeneity can have an effect on performance, and show that only when (end-to-end) traffic demand is correlated with pair wise contact rates performance is affected. To support intuition, studies from fields related to technological and social networks have demonstrated the existence of heterogeneous traffic patterns.

3 Proposed System

In this application we explore the joint effect of traffic patterns and node access point on the performance of popular forwarding mechanisms both analytically and through simulations. We approach Delay-tolerant networking (DTN) is an

computer network architecture that seeks to address the technical issues in heterogeneous network that may lack consecutive network connectivity.In this application we investigate if, when and how traffic patterns affect the articulation performance in opportunistic networks. Now we are using routing method to reduce the communication traffic level.It provides direct articulation between nodes to node that allows peer to peer connection. Furthermore, we confirm the intention that an increasing amount of heterogeneity closes the performance gap between different forwarding policies.We propose an analytically tractable model that can describe a large range of non-uniform traffic patterns.It provides direct communication between nodes to node that allows peer to peer connection. We propose to reduce the traffic and find the delay analytics.
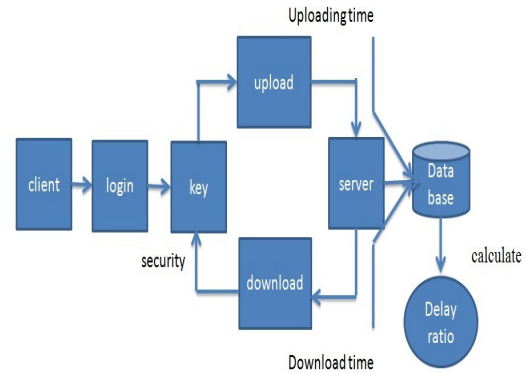
3.1 Advantages

- Reduce the traffic level.
- Display the accurate delay ratio.
- We can share the message to multi client.
- Data availability is high.
- Allows direct communication to peer-to-peer connection.

4 Architecture Diagram

This architecture diagram describes about the interaction between the client and server in order to find the delay ratio in between uploading and downloading.

First server is set in on state then client establishes connection with server. There are two cases (i.e)
1. New user-Registers into the server.
2.Existing user-logging in.

Every user will have security key for safety purpose. Then user can interact with server by uploading and downloading the file. Based on the uploading and downloading of different file types delay ratio is minimized or maintained.

5 Module Descriptions for Proposed System

After careful analysis, the system has been identified to have the following modules:
- Connecting client and server
- Communication between server and client
- Calculating the delay ratio

5.1 Connecting client and server

The registration of user is mandatory to create an account. Only after the registration, the user can able to access this software. On this registration page having these fields like
- Name
- Address
- Mobile number
- Username
- Password
- IP address
- Download Key

Then, the registration is only for users, not for admin. All the personal details are stored in the database. The registered user detail will be viewed by the admin. So the admin can view the registered user details easily. In the registration part we are including the multiple reject for security. The user must be entering his/her IP address for the further benefits. If the user wants to download any file, the server will ask his/her download key which is very useful for secure the file. If the username and password are correct, will go to the file download page. In File

download page having several categories we can search the file and download the file easily using the Download Key. If the username and password incorrectly or unregistered can't able to access this system. Users select the files and download easily. In the file download page registered user name will be displayed in the user login page.

5.2 Communication between server and client

In this application admin module is a very securable part. Admin only can access this part. Multiple facilities are on the same page. Admin can view the current status for every minute, what's happening on the client side. Admin can access to view the history of users to access the file. In history of the file have the overall user login details. Here we can use the multiple systems in the same time. If above 5 systems connected means, the second server will be connected Every 5 systems connected to a separate server so the downloading traffic will reduce by these processes.

5.3 Calculating the delay ratio

In this module admin directly view the graph having the User IP address for Registered Users. The delay graph model shows the exact details for downloaded files. More than one graph is used in this process it is very useful to know about the downloading speed and time also. This shows the delay graphs and display the time in milliseconds. This is used to show the delay time for multiple users. Delay graph is very useful to Know about the downloading details for the admin.

6 Algorithm

6.1 Knowledge Joint Effects Model (JEM) Algorithm

Joint Effect Model (JEM) is a Window based software Program. It is the only authorized DOD computer-based tactical. It may be used in two variants: as a standalone system, or as an inhabitant application on host command, control, communications, computers, and intelligence systems. It is capable of modeling hazards in various scenarios, including counterforce, passive defense, accidents, incidents, high-altitude releases, urban circumstances, building innards, and human performance degradation.

Advantages

- This system will reduce the communication traffic over the network.
- This application will show the delay graph time.
- At a time it will connect multiple clients with the high power efficiency

7 Conclusion

In this paper we are going to find delay ratio. Delay Ratio, the ratio of the expected delivery delay of Relay-Assisted routing, over the expected delivery delay of Direct Transmission routing. Then next we find Delay-tolerant networking (DTN) is an approach to computer network architecture that seeks to address the technical issues in independent network that may lack continuous network connectivity. Lately, it has been suggested that they could also support or indulge existing networking infrastructure, by offloading traffic from cellular networks, sanctioning novel social and location-based applications, or introducing peer-to-peer collaborative computing. It is mainly concentrate in delay indulgent of opportunistic network. It reduces the traffic level. It provides direct communication between nodes to node that allows peer to peer connection.

Acknowledgement

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