Short Communication

Virtual circuits that may be "permanent" to make m-banking application as a success bandwidth management is an important issue for analysing variable sized packets and frames

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Abstract

ATM provides functionality that is similar to both circuit switching and packet switching networks: ATM uses asynchronous time-division multiplexing, and encodes data into small, fixed-sized packets (ISO-OSI frames) called cells. This differs from approaches such as the Internet Protocol or Ethernet that use variable sized packets and frames. ATM uses a connection-oriented model in which a virtual circuit must be established between two endpoints before the actual data exchange begins. These virtual circuits may be "permanent" To make m-banking application a success bandwidth management is an important issue. The increased flexibility and mobility feature of wireless ATM and its bandwidth on demand function is motivating a large number of carriers towards deployment of the WATM networks. But there are certain issues which are required to be addressed in WATM. The issues are cost effective planning of network, location management and handover management.

Keywords: Demand function, planning networks.

1. Introduction

The design of ATM aimed for a low-jitter network interface. However, "cells" were introduced into the design to provide short queuing delays while continuing to support datagram traffic. ATM broke up all packets, data, and voice streams into 48-byte chunks, adding a 5-byte routing header to each one so that they could be reassembled later. The choice of 48 bytes was political rather than technical. When the CCITT (now ITU-T) was standardizing ATM, parties from the United States wanted a 64-byte payload because this was felt to be a good compromise in larger payloads optimized for data transmission and shorter payloads optimized for real-time applications like voice; parties from Europe wanted 32-byte payloads because the small size (and therefore short transmission times) simplify voice applications with respect to echo cancellation.

Most of the European parties eventually came around to the arguments made by the Americans, but France and a few others held out for a shorter cell length. With 32 bytes, Mobile banking is an extension to application such as phone banking and online banking. It can be defined as a channel whereby customers interact with a bank through a mobile device e.g. cell phone or PDA.

Today, much of the banking industry's business depends on customer service and building relationships with a broad client base. New and better ways of providing customer service are essential to growth. As people are constantly on the move wireless technology holds huge potential for developing new business such as m-banking where customers can use time spent away from the office to carry out banking transactions.

As a result mobile banking or m-banking application is becoming popular worldwide. M-banking can be used for variety of banking related activities like performing balance checks, account transactions, payments etc using mobile devices. M-banking is also performed via SMS or the mobile To maintain network performance, networks may apply traffic policing to virtual circuits to limit them to their traffic contracts at the entry points to the network, i.e. the user (UNIs) and network-to-network interfaces (NNIs): Usage/Network Parameter Control (UPC and NPC). The reference model given by the ITU-T and ATM Forum for UPC and NPC is the generic cell rate algorithm (GCRA); ATM has

made the broadband integrated service of digital network a reality. It is a technology that allows total flexibility and efficiency required for high speed multi-service and multi-media networks by providing bandwidth on demand. Another advantage of ATM networks is its extension to wireless scenario namely, wireless ATM. WATM can be viewed as a solution for next-generation personal communication networks, or a wireless extension of the B-ISDN networks, which will support integrated data transmission - data, voice, and video, with guaranteed Quality of Service (QoS). WATM was first proposed in 1992 and now it is being actively considered as a potential framework for next-generation wireless communication networks capable of supporting integrated, quality-of-service (QoS) based multimedia services. The various application scenarios for WATM can be cellular wireless ATM, wireless ATM LAN, and radio local loop system.

2. ATM SWITCHES MES

ATM became popular with telephone companies and many computer makers in the 1990s. However, even by the end of the decade, the better price/performance of Internet-based products was competing with ATM technology for integrating real-time and bursty network traffic. Companies such as Systems focused on ATM products, while other large vendors such as Cisco Systems provided ATM as an option after the burst of the dot-com bubble, some still predicted that "ATM is going to dominate". The wired network is the ATM network and the edge switches of this wired network are mobility enhanced ATM switches MES. The wireless network is the cellular structure network wherein each cell is connected to a base station and the base station in return is connected to the wired ATM network through the MES. Each base station is connected to one MES (Figure 1).
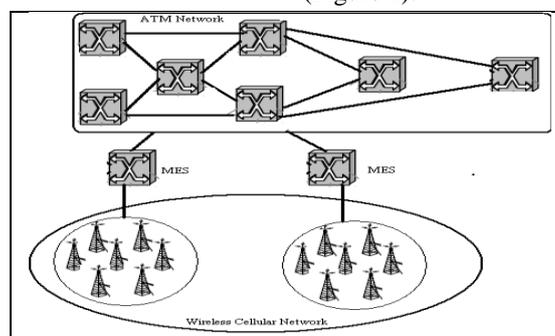
Figure 1: Wireless ATM architecture

The second phase is initiated by the new MES immediately after the first phase. In this phase we are optimizing the route of the ATM network. The purpose is to find an optimal route from new MES to the destination MES. The ATM network model that we have considered in the paper is taken as a graph. N represents switching nodes and L represents physical link, connecting each node. Lij is the link between node i and j. The second order graph GL (N, P) where P represents the logical path connection. In this paper we have experimented second phase on a sample network with seven switching nodes and ten physical links. A pair of node is connected by one logical link by sharing the capacities of physical links connecting the nodes. Therefore average cell delay has been considered to be optimized in the objective function.

Minimize $T = 1/\lambda \ \Sigma \ f_m/ (c_m - f_m)$

m=1

Subject to, $f_m <= c_m$ for all VPm in N

Where, M = total number of VPs

λ = total external load on the network

f_m = total flow going through VPs in bps

c_m = Transmission capacity of VPm in bps

N = total number of nodes in the network

3. Conclusions

As third-generation style networks move toward permanent connections to public wireless networks, there is increased need of providing a solution for handed off connections. They will also need to be capable of processing data that has been streamed in a small, compressed format in order to reduce bandwidth congestion. Wireless banking must offer customers a way to perform banking transactions without interruption and at any time and place.

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