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A Study on Video Traffic Distortion-Resistant Routing Protocol in Wireless Multihop Networks

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ABSTRACT: Typical routing algorithms designed for wireless network area unit application agnostic, therefore to beat this we have a tendency to think about a wireless network wherever the applying flows consists of video traffic. Reducing this distortion is important for the user. victimization link quality based mostly routing metrics cannot minimize video distortion. So, we have a tendency to construct associate degree analytical framework to grasp 1st and so to assess the impact of wireless network on video distortion. victimization this we are able to formulate a routing policy for minimizing distortion. we discover via experiments that our protocol is economical in reducing video distortion.

INTRODUCTION:

Video traffic has become a tangle today as a result of the rise within the use of wireless networks. Maintaining an honest quality of video is incredibly vital. The video quality is affected by: 1) the distortion as a result of compression at the supply and 2) distortion as a result of each wireless channel elicited errors and interference. teams like I, P and Btype frames give totally different levels of cryptography. In I frame data is encoded severally, in P and B frames data is encoded relative to data encoded among alternative frame. Video quality will be improved by accounting for application needs. The schemes wont to code a video clip will accommodate an exact range of packet losses per frame. If the quantity of lost packets exceeds a threshold worth then the frame can not be decoded properly. Thus, ensuing a distortion. the worth of distortion depends on position of unrecoverablevideo

frames within the GOP (Group of Pictures). So, we tend to construct associate degree analytical model to look at the behaviour of the method that describes the evolution of frame losses within the GOP. victimisation this we tend to capture however the selection of path for associate degree end-to-end flow have an effect on the performance of a flow in terms of video distortion. Our model is made supported a multilayer on approach as shown in fig1.The packet-loss chance on a link is mapped to the chance of a frame loss within the GOP and therefore the frame loss chance is then directly related to the video distortion. Metric Using the above mapping from the network specific property to the application-specific quality metric, we indicate the problem of routing as an

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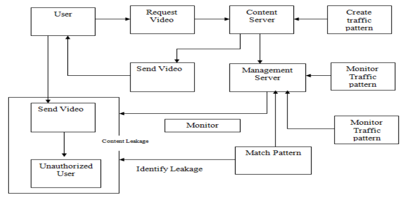
optimization problem where we can find the path from the source to the destination that can minimizes the end-to-end distortion. The solution for this problem is based on a dynamic programming approach that effectively captures the evolution of the frame –loss. After this we design a practical routing protocol, based on the above solution, to minimize routing distortion.

EXISTING SYSTEM:

The encoding and transmission of video indicates the significance of video communication. Different approaches exist in handling such an encoding and transmission. Multiple description coding is a coding technique that fragments a single media stream into n sub streamsreferred to a description. The packets of each description are routed over multiple (partially), disjoint paths. In order to decode the media stream any description can be used. The idea of MDC is to provide error resilience to media stream. Layered coding (LC) mechanism generates a base layer and n enhancement layers. The base layer is necessary for the media stream to be decoded, enhancement layers are applied to improve stream quality.The first enhancement layer depends on the base layer and each enhancement layer n+1 depends on its sub-ordinates layer n. We use standards like the MPEG-4 and the H.264/AVC which provide guidelines for a transmission over a communication system based on layer coding.The initial video clip is separated into a sequence of frames of different importance with respect to quality and hence different levels of encoding. The frames are called I-,P-,B-frames constitute a structure named the GOP. In another existing model, an analytical framework is developed to model the effects of wireless channel fading on video distortion. In other existing model, the authors examine the effect of packet-loss patterns and specifically the length of error bursts on the distortion of compressed video.

PROPOSED MODEL:



Initially the analytical model joins the functionality of the physical layer and MAC layer with the application layer to send the video from source to the destination. The position of the first unrecoverable frame in the GOP gives the value of the distortion. A. Physical and MAC layer Modeling Considering an IEEE 802.11 network where the set of nodes is denoted by N .Since this model is application agnostic this provides the packet loss probability due to traffic and interference in the network. Using the Network loss model we derive the 3 equations. the first is to scheduling model, that computes the serving rate Pi, p of a path at each node, as a function of the scheduler coefficient Ki, p and the service time.

CONCLUSION:

In this paper, we have a tendency to argue that a routing policy that's application- aware is probably going to supply advantages in terms of user-perceived performance. Specifically, we have a tendency to think about a network that primarily carries video flows. we have a tendency to ask for to know the impact of

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routing on the end-to-end distortion of video flows. Toward this, we have a tendency to construct associate analytical model that ties video distortion to the underlying packet-loss possibilities. victimization this model, we find the best route (in terms of distortion) between a source and a destination node employing a dynamic programming approach. not like ancient metrics like ETX, our approach takes into consideration correlation across packet losses that influence video distortion.

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