Reference [36] Ge Yang et.al have put forward server caching algorithm based on the proxy in paragraph popularity, that is, copy the data on the proxy server, select the appropriate section of the replacement algorithm according to popularity. The cache replacement algorithm called PCRAM2S. The main idea is:

(1) Calculated the popularity of last paragraph for each media, select the smallest object in the section which not requested by the client, and then replace the popularity second-less of media, until there is enough cache space.

(2) When accessing the media object which has been visited, if the first not being accessed section of the object's popularity is greater than current cache which has the minimum of popularity, it will replace the latter, until there is sufficient buffer space or give up caching.

Reference [36] defines a media object in popularity functions:

$$popularity = \frac{\frac{T_{sum}}{T_{last} - T_{first}} \times \min\left\{1, \frac{(T_{last} - T_{first})/N}{T_C - T_{last}}\right\}}{H} \quad (6)$$

Function of the media section popularity[36]:

$$U = popularity \times \frac{1}{D(s)} \quad (7)$$

Of which:

T_{first}: media object first time accessed;

T_{last}: media object last accessed time;

T_{sum}: total length of time the media object access to;

T_C: current time;

N: number of media object is accessed;

H: amount of data that current proxy caching a media object;

D (S): distance function of the last section S of media object in the cache;

$$\min\left\{1, \frac{(T_{last} - T_{first})/N}{T_C - T_{last}}\right\}$$ possibility of the media object after the visit in the future.

In reference [36] the replacement algorithm require the replacement of the media object has been accessed at least 2 times, when a cached media had to be replaced, the proxy server will save the first section of the media, so that its popularity is still valid, the search efficiency and the utilization of buffer space have been improved. However, the application of 3G networks, as customers have different requirements for quality of streaming media, caching proxy server requirements are not the same, it need to distinguish between different media objects, which is worth considering in future research.

D. Incentive Mechanism

For P2P network nodes, each node makes different degree contribution for the whole network. P2P streaming system need more excellent node to satisfy flow media transmission QoS' requirements and spectators' watching needs. According to the node dynamic-force for such activities good nodes incentive to make it have longer online, the better for un-ling other nodes service is a key problem, so we need set some incentive mechanism and punishment mechanism for good and bad behavior respectively ,which is the corresponding measures to manage.

According to reference [37], Gnutella research points that 70% of the user in the system do not share any file, almost half request is handled by 1% of user. This action that the user just want to enjoy services, and not willing to make contributions for the network is called free riding (hitchhiking), this phenomenon exists generally in the network, and make big effect to the whole network and service quality .

There are some sharing system of technology based on peer-to-peer file mentioned in the reference[38] , such as Gnutella, nullification (e - Donkey)[39], BT download (BitTorrent)[40] etc, and the number of the global online user reaches to tens of millions . Since the birth of Peer-to-peer network technology, it has always held the service spirit that share the information with everyone, in line with everybody for me while I for everybody. However , each node of the peer-to-peer network is not really implemented the information sharing ideas about the equivalence providing services and enjoy our service.

The most common incentive mechanism can be roughly divided into the following categories:

Reference [40] presented Bit Torrent adopted sustains the incentive mechanism to inhibit the hitchhiking behavior, which is a method that each node with the larger priority choice to provide greater download bandwidth node provides uploading data service. The systems encourage node as seed node, providing the uploader more nodes, can enjoying the greater download service priority is greater. This kind of game theory method is called TFT (Tit-for-Tat)[41], its core ideas are is: the quantity of service node providing will equal to the one node enjoying many service will enjoy node how many service .This TFT is a fair mechanism of way , which has a defect that the node with lower servicing ability difference node will not get the timely corresponding service timely, which may not be able to survive, so it's not suitable for the scale of VoD using.

Reference [41] mentioned another kind of incentive mode asymmetrical FTF, that means no matter what the service ability difference of nodes,even if it does not provide any services but also have basic social welfare, nodes of ability need to provide greater contribution to help service ability difference node. This way of give attention to two or more things arrive ability difference of nodes, making full use of nodes in the system, but the pursuit of service way of average ability strong node is unfair, and easy to cause the user antipathetic.

In reference [42、43] ,it put forward virtual currency mechanisms, main idea is:if a node provides services it will adding virtual currency, and reduce virtual currency when a node obtain the service.This mechanism is open, it can use real currency exchange, such as service ability difference node as long as enough of virtual currency can also obtain the good service. This kind of mechanism seems to be fair, but they require higher safety requirements and hit the enthusiasm of ability nodes.

Incentive mechanisms related to how to encourage the ability node, and how to make nodes provide more contributions to system performance. Incentive mechanism has two goals: (1) stimulate nodes to do more contribution for system (2) encourage nodes extension the online time, the second goal is difficult to achieve, it is worth further research.

IV. FURTHER RESEARCH

How to resolve the current QoS problems in P2P credibility streaming media, future work still has a long way to go. Looking at the existing research results, the future can be in the following areas for further research:

A. Model of Reputation

Establishment and Construction of a good reputation model has great significance to the current P2P streaming service quality research. Through calculation of the local reputation and global reputation, it can get the reasonable weighting factors between them. In order to solve the problems for the current model, the reputation value of node dynamic updates and the calculation of the credibility nodes, the punishment of malicious node, there is still a lot of work needs to do.

B. Select the node to minimize jitter

The network jitter makes there is no guarantee about the quality of service. How to quickly implement the replacement with standby when find the node failure without affecting the sending node to other nodes, and reduce the impact of jitter to a minimum on the network? For the online nodes of good behavior, should make full use of these nodes to solve the jitter caused by increased network traffic and routing information errors and other issues.

C. Cache policy based on popularity

To realize the continuity of the streaming media in process, you need to advance proactive and cache part of the data block, which will response the network jitter block. These proactive blocks have been received before playback, so you can guarantee the media quality of service to a certain extent when the network node has changed. After playing in a block, the node can immediately discard it or keep it in the cache for some time. When requesting a block, the node will first attempt to have some cache from other nodes of the block to get it; if it fails, the node will request the block from the server. The most important is to improve the hit rate of data blocks when the server's capacity is limited.

In streaming media, how to reasonablely copy these pop blocks, and the location of the place where it copies. Correspondingly, some data blocks with lower popularity, they will be eliminated by high prevalence of other data blocks replaced.

D. Incentives for high-reputation nodes

In the study of incentives, how to encourage the poor service node to increase its online time as much as possible. To some extent, free-riding behavior is the promotion of network activity, and such phenomenon is inevitable. How to make free-riding nodes contribute to the system, there needs to establish a reasonable incentives mechanism to balance the various nodes.

On the other hand, how to encourage more nodes to provide services to less popular programs and improve the quality of service. Meanwhile, the node uploaded its neighbor nodes' local reputation periodically value to the management server. Server of the reputation management calculates and updates the global reputation value. Besides, inspirit high degree of credibility nodes, and encourage the nodes which have a longer online time but have low credibility to provide services to other nodes.

V. CONCLUSION

Quality of service in P2P streaming media is the focus to improve the level of streaming business. This paper introduces the system of streaming media service strategy and service system, analysis the service quality of streaming media on the current status, focus on several mechanisms that affect the QoS. Through analysis and comparison the results of previous research, we can clearly understand the impact of mechanisms to improve quality of service and the work have done. Finally, predicted the QoS of P2P streaming media for further research.

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