iJRASET
International Journal For Research in Applied Science and Engineering Technology

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 5 **Issue:** VI **Month of publication:** June 2017

DOI:

www.ijraset.com

Call: 08813907089 | E-mail ID: ijraset@gmail.com

Volume 5 Issue VI, June 2017
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

Adaptive Cloud Downloading Service Using AMS Algorithm

Keerthana Priyadharshini[1], T Sivakumar [2]
[1,2] Computer Science and Engineering, Anna University, Chennai

Abstract: ***Video content downloading using the P2P approach is scalable, but does not always give good performance. Recently, subscription-based premium services have emerged, referred to as cloud downloading. In this service, the cloud storage and server caches user interested content, and updates the cache based on user downloading requests. If a requested video is not in the cache, the request is held in a waiting state until the cache is updated. We call this design server mode. An alternative design is to let the cloud server serve all downloading requests as soon as they arrive, behaving as a helper peer. We call this design helper mode. Our model and analysis show that both these designs are useful for certain operating regimes. The helper mode is good at handling high request rate, while the server mode is good at scaling with video population size. We design an adaptive algorithm (AMS) to select the service mode automatically.***

Keywords— **AMS Algorithm, Server Mode, Helper Mode, Peer to peer.**

I. INTRODUCTION

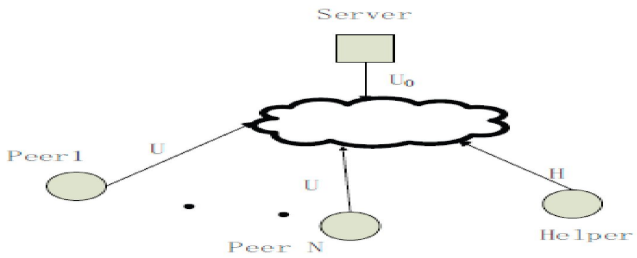
The limitation with the existing system of P2P download is that they fail to address both concurrent requests and cacheing. Every new requests is kept on hold for the server to cache the file which results in increased waiting period as well as load for the server. This paper aims at addressing both the concerns and overcoming its limitations. We make use of a helper peer to server new requests to the server and this helper peer also takes care of file sharing and contributes to other peers. The future scope is to implement the AMES algorithm to broaden the topic further to streaming devices for mobile applications.

A. System Details

1) Existing System: CDN is a traditional solution based on deploying servers at the edge of the network, near video access points. Scalability is a limitation of CDN because the server capacity becomes a bottleneck when there are a large number of concurrent peer requests.

2) *Proposed System:* Proposed system: There are two generic service modes for cloud servers. In the first mode, the cloud server is primarily focused on serving the content already cached at the cloud storage system. Requests for content not in the cache is blocked until such content becomes cached. The cloud storage system updates its cache periodically to replace content without requests by content with requests awaiting. We call this the server mode. An alternative mode is the helper mode, in which the cloud server does not block any requests. For videos that are not cached, the cloud servers simply relay chunks from some peers to other peers, acting as a helper peer. One contribution of our study is to compare these two modes analytically. The results are interesting, in the sense that both modes can be advantageous for some operating regimes - the server mode when video population is large compared to cache size, and the helper mode when peer request rate is high compared to server bandwidth. We integrate these two modes into a single adaptive cloud downloading service.

II. SYSTEM ARCHITECTURE

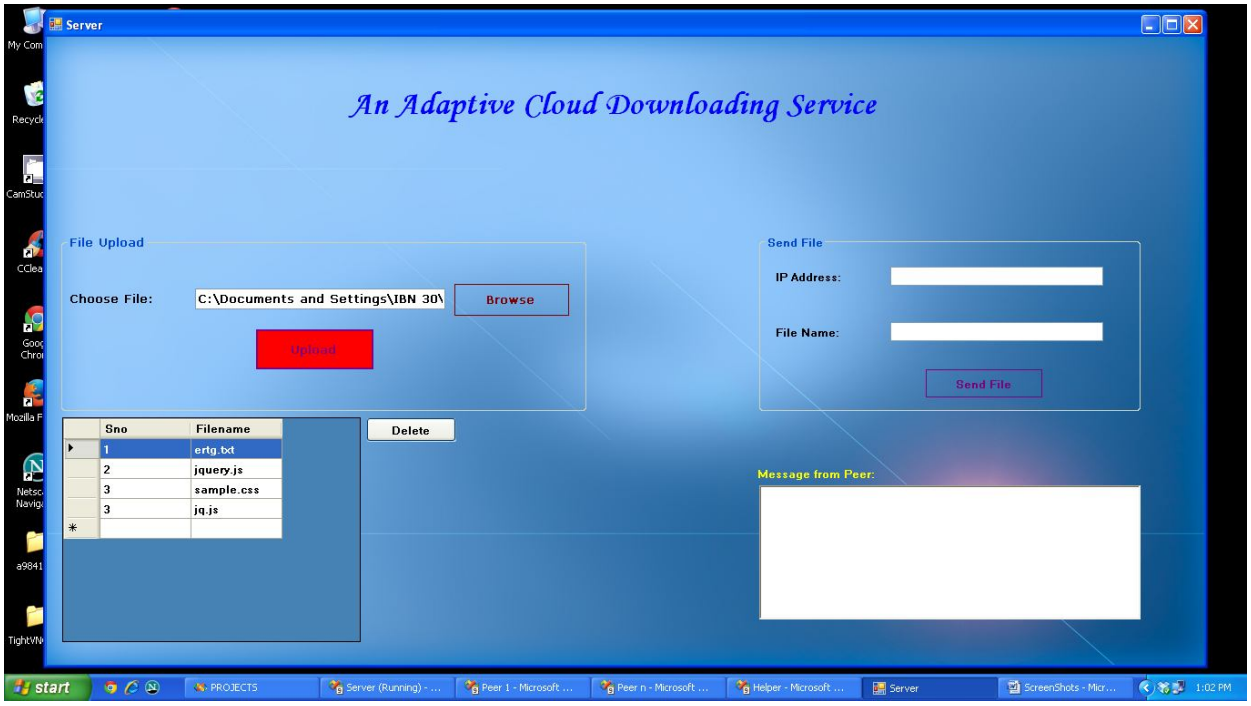


Module Implemented

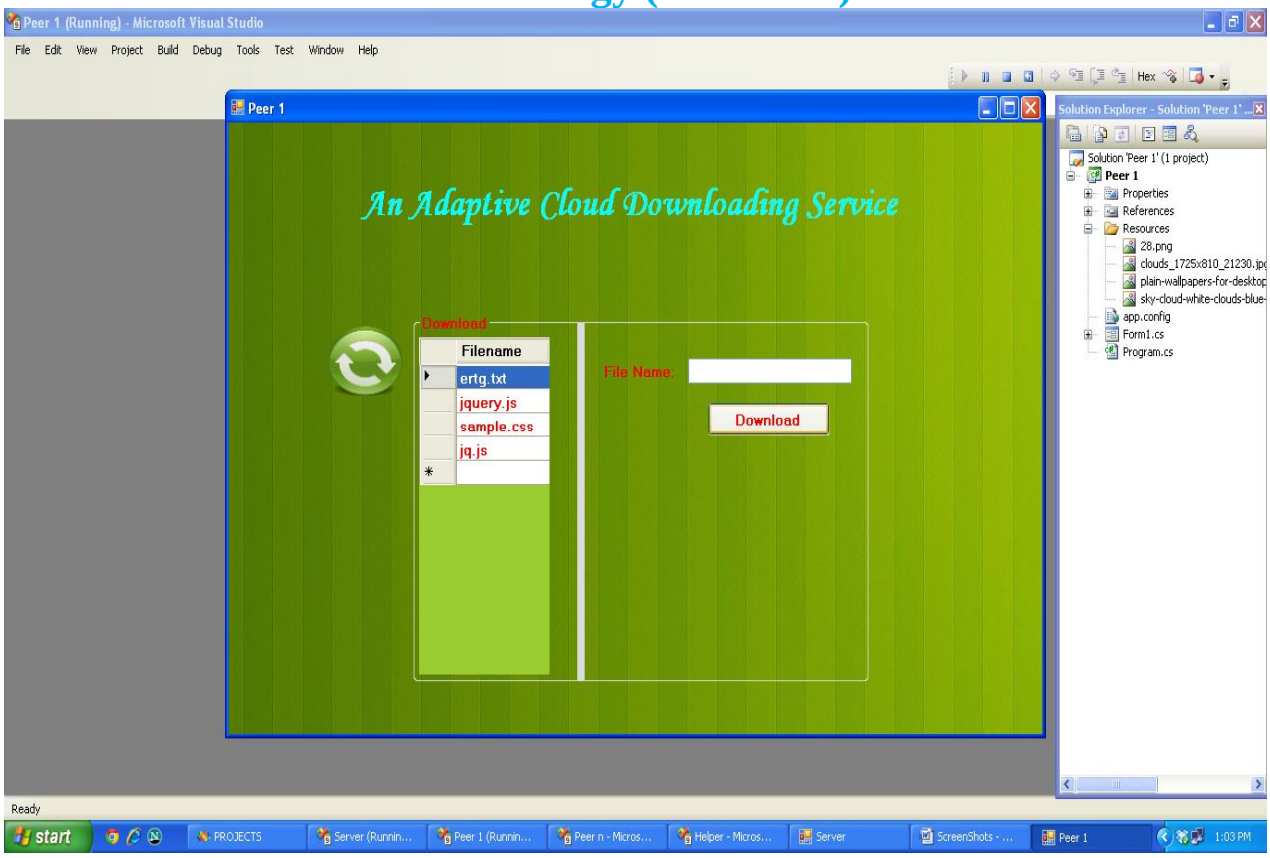
Volume 5 Issue VI, June 2017
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)

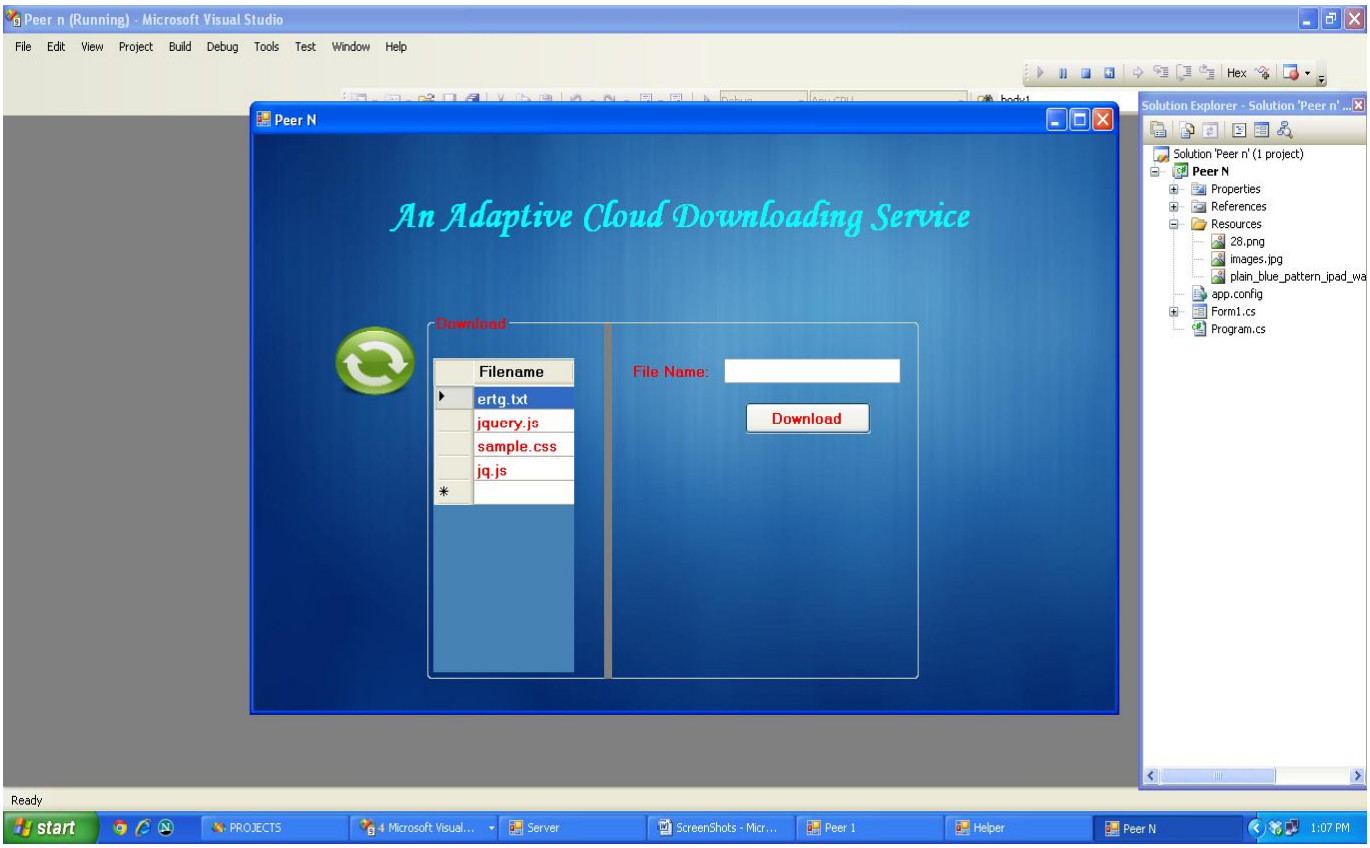
A. Server mode
B. Helper mode
C. Dynamic model
D. Mode selection

III.RESULTS

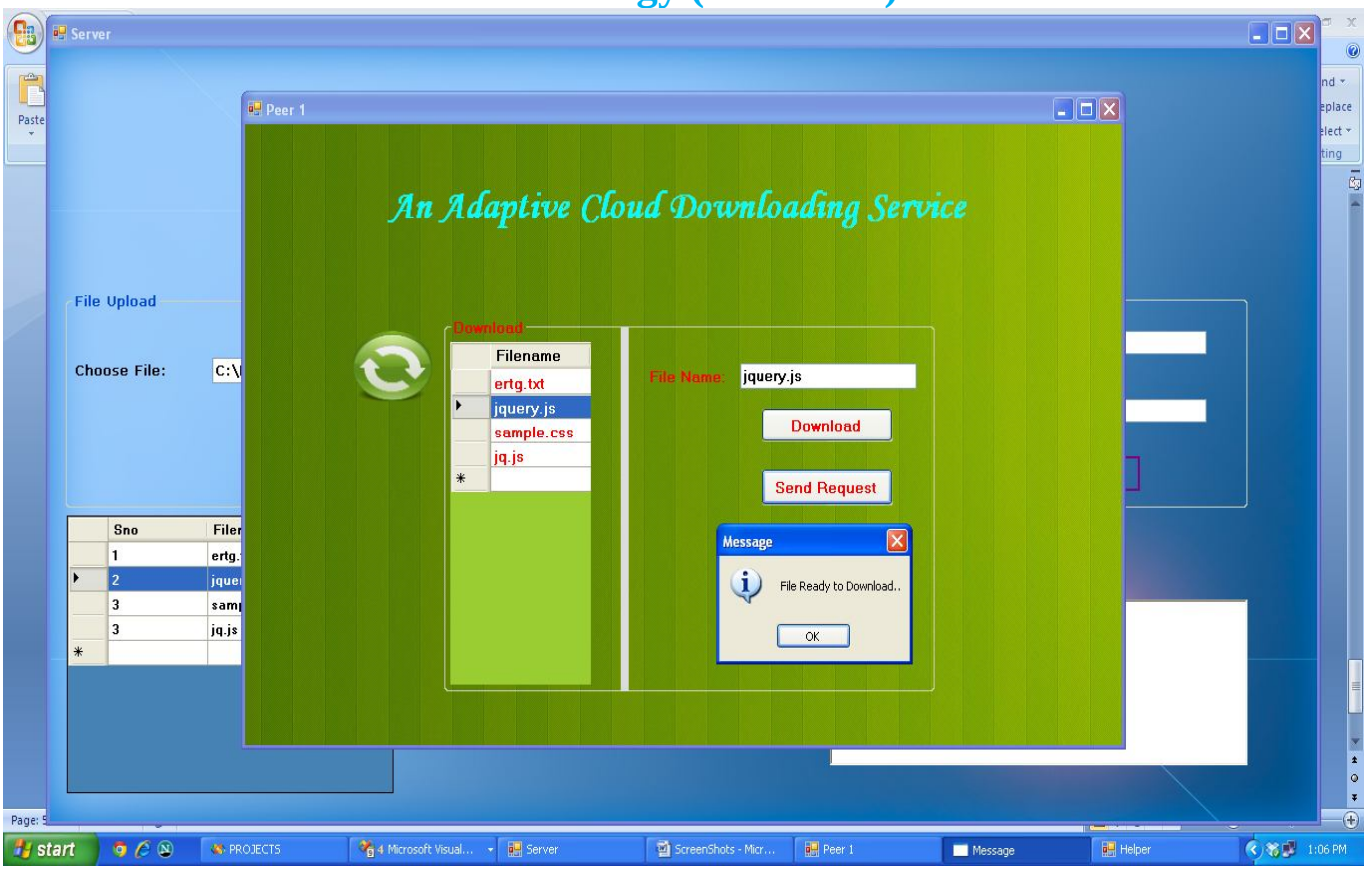


Volume 5 Issue VI, June 2017
ISSN: 2321-9653





Volume 5 Issue VI, June 2017
ISSN: 2321-9653
International Journal for Research in Applied Science & Engineering Technology (IJRASET)



IV. FUTURE WORK

The AMS along with the AMES algorithm will address various issues with the current systems such as scalability, availability, bandwidth, caching and server uptime. It is indeed a feat to collaborate both these algorithms and make the system understand scenarios based on how each peer and each request should be handled. Upon implementation in a large scale, users will be able to enjoy improved services in terms of accessing files from the cloud while enjoying contents via a streaming service. A concurrent connection terminated by the user can be revived by a helper peer to prevent buffering from the scratch.

A. Benefits of the prototype

1) News Feed: Here user of this social site can view status from his friends like messages or videos.

2) Search Friends: Here they can search for a friends and send a request to them also can view their details.

3) Share Video: They can share videos with his friends by adding new videos also they share their status by sending messages to friends.

V. CONCLUSION

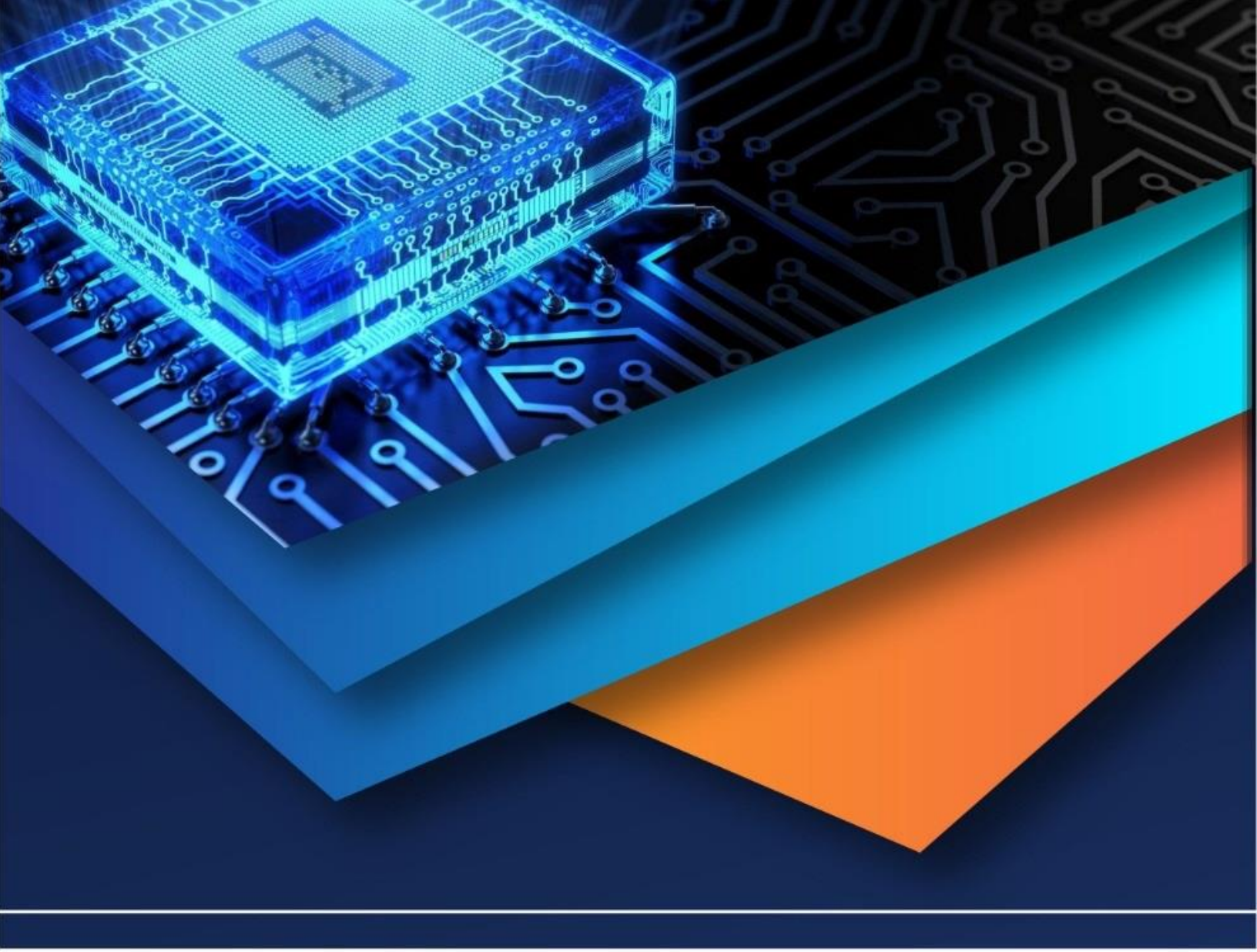
In this work, we build a theoretical model to analyze different strategies for a cloud downloading system. In particular, helper mode and server mode are used as abstraction of two different design philosophies - using the cloud as peer or as server. Our analysis reveals that each strategy can be advantages, for certain operating scenarios. Helper mode wastes some server bandwidth, but is best at leveraging P2P capacity when request load is high. On the other hand, server mode is most efficient for dealing with large video population relative to the cache size. We design an automatic mode selection (AMS) algorithm to choose the suitable service mode for different scenarios. Our analysis helps a cloud downloading system to optimize its design. We also discuss the potential benefit to apply our result for the mobile P2P case.

REFERENCES

[1] Y. Huang, Z. Li, G. Liu, and Y. Dai, “Cloud download: Using cloud utilities to achieve high-quality content distribution for unpopular videos,” in ACM Multimedia, 2011.

Volume 5 Issue VI, June 2017
ISSN: 2321-9653

[2] A. web site, http://www.akamai.com.
[3] PPLive, http://www.pptv.com/.
[4] PPStream, http://www.ppstream.com/.
[5] Thunder, http://dl.xunlei.com/xl7.html.
[6] QQ, http://xf.qq.com/.
[7] H.-C. Hsiao and C.-T. King, "Bristle: a mobile structured peer-to-peer architecture," in Proc. of Parallel and Distributed Processing Symposium, 2003.
[8] J. Cheng, Y. Li, L. Jiao, and J. Ma, "A new mobile peer-to-peer architecture," in Proc. of the 5th WSEAS International Conference on Applied Computer Science,, 2006.
[9] F.-U. Andersen, H. d Meer, I. Dedinski, C. Kappler, A. Mader, J. Oberender, and K. Tutschku, "An architecture concept for mobile p2p file sharing services," in In Workshop at Informatik 2004 - Algorithms and Protocols for Efficient Peer-to-Peer Applications, 2004
[10] D. Qiu and R. Srikant, "Modeling and performance analysis of bit torrent like peer to peer networks," in Proc. of ACM Sigcomm, 2004.
[11] J. Mundinger, R. Weber, and G. Weiss, "Optimal scheduling of peer-topeer file dissemination," in Preprint version in arXiv, 2006.
[12] D. Chiu, R. Yeung, J. Huang, and B. Fan, "Can network coding help in p2p networks," in Invited paper in Second Workshop of Network Coding, 2006.
[13] B. Fan, J. C. Lui, and D. M. Chiu, "The delicate tradeoffs in bittorrent-like file sharing protocol design," in Proc. of ICNP, 2006.
[14] J. Li, P. A. Chou, and C. Zhang, "Mutualcast: an efficient mechanism for content distribution in a p2p network," in Proc. AcmSigcomm Asia Workshop, 2005.
[15] M. Lin, B. Fan, J. C. Lui, and D.-M. Chiu, "Stochastic analysis of file swarming systems," in Performance Evaluation vol. 64(9-12):856-875, 2007.
[16] L. Massoulie and M. Vojnovic, "Coupon replication systems," in Proc. of ACM Sigmetrics, 2005.
[17] N. Venkatasubramanian and S. Ramanathan, "Load management in distributed video servers," in Proc. of IEEE ICDCS, 1997
[18] L. Massoulie, A. Twigg, C. Gkantsidis, and P. Rodriguez, "Randomized decentralized broadcasting algorithms," in Proc. of IEEE Infocom, 2007.



10.22214/IJRASET

45.98

IMPACT FACTOR: 7.129

IMPACT FACTOR: 7.429

INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY