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## Role of Diameter Based Protocol in enhancing of new and Upcoming Technologies

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### Abstract

The Diameter protocol as an AAA protocols designed as an improved Version as well as substitute of RADIUS Protocol. Diameter Protocol adds up more capability for the advancement of Security architecture for Distributed Network System in order to track which services and resources used. Authorization and Accounting in cloud based environment as well as its applications have significant role because of support of huge seamless enterprise coverage with globalized communities of subscribers. In this paper, the authors have taken an overview on how recent and advanced features are evolving with the application of Diameter based protocol in New and Upcoming Technologies.

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### 1. Introduction

Diameter Protocol is an extended version of the RADIUS protocol for Authentication, Authorization and

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Accounting Protocols(AAA) developed for first time by Internet Engineering Task Force (IETF) in order to introduce network access and IP mobility based network access. AAA protocols e.g.TACACS and RADIUSfirst time came into existence to provide terminal based access server as well as dial-up PPP. AAA based protocols forward authentication, authorization and configuration detailsamong NAS and a shared Authentication Server. If Subscribers hankering to latch on to theoutside link, then first of all they should acknowledge their NAS, and the NAS further acknowledge the server for permission of Network<sup>8,9</sup>. The centralized server has a common database fully well managed and secured with appropriate authentication and configuration information whenever obligatory for permission of particular network<sup>1</sup> The architecture for AAA is illustrated in Fig. 1.

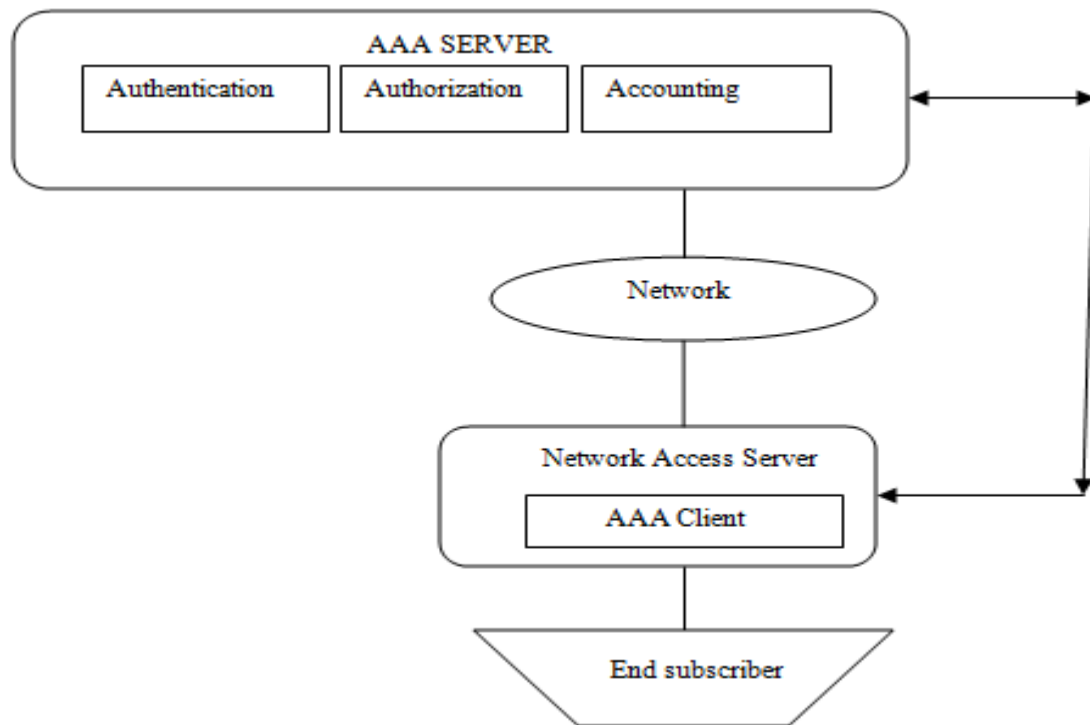


Fig.1. AAA Architecture

In the previous days, subscribers utilize the internet access by log-in into their User ID and password after dialing through MODEM in order to connect their Internet Service providers (ISPs), which then authenticated the subscriber granting Internet access. Also, if subscribers only have one phone line then they won't be able to access the internet at the same time while talking on the phone. On the other hand, a subscriber's registration details are obtainable precisely in an additional staple pathway to bear privacy to subscribers e.g. LDAP (Lightweight Directory Access Protocol) based server which are beyond a boundary firewall instead of maintaining central database. This creates distributed system more complex and unable to acknowledge simultaneously. Since, a standardized protocol is obligatory for commute of authentication, authorization, and accounting co-referent details among the access server and the subscriber's depository, basic but coherent mechanism called Radius protocol was accomplished to provide such AAA capability services and features<sup>4</sup>. In order to advance and add up recent specialization to RADIUS protocol, there were several subsidiary protocols accomplished. One of a greater standard and flexible protocol was evolved known as Diameter based protocol. This protocol implicates standard Distributed Network framework for ultimate AAA function. Internet unlimited demand and apparent of recent and upcoming technologies in wire line technologies e.g. ADSL, Ethernet based, etc. and wireless technologies e.g. Mobile based

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