# A Survey on Software as a Service ( SaaS )

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**Abstract:**

Cloud computing (CC) may be a quite distributed computing over internet that's it can run a program or application on over one or more computers at the identical time. It's particularly divided into 3 categories such as: 1. (IaaS) Infrastructure as a service, 2. (PaaS) Platform as a service, 3. (SaaS) Software as a service. SaaS may be a reasonably service which is provides many benefits to the service consumers. In this paper we are visiting identify the features of software as a service. The standard quality model doesn't consider features of SaaS like security and quality of the service. So, during this paper, we are propose a replacement quality model for security, quality of the service, and software quality for the SaaS. Moreover results are used as identification for the software as a service quality management

**Keywords:**

Cloud computing (CC), SaaS (Software as a service), software metrics.

## 1. Introduction

Cloud computing (CC) includes sharing of resources like software, hardware and network. It involves the hosted services accessed through internet. It's three main services as: SaaS (Software as a service), PaaS (Platform as a service), and IaaS (Infrastructure as a service). The services are sold on demand on basis of a second or hour and also the customer can access services as thir wish in an exceedingly particular given time. Services are mainly managed by the service provider orthe companies like Amazon, Google, and IBM etc.

Cloud may be public, private also as hybrid. A public cloud sells everything over internet. a personal cloud may be a data center/ proprietary network which provides services to few of the people. Hybrid cloud may be a cloud computing environment where organization gives and it manages few resources as internally et al externally.

SaaS is style of cloud services which provides software services on internet. SaaS is usually used and it gives many- advantage to the service customers. to understand these benefits, it's vital to get quality of SaaS and manage the upper level of its quality which totally depends on generated result. So, the demand is high for producing a top quality model that generates SaaS services. SaaS, occasionally indicated to as "on demand software", could be a software model during which software and therefore the related data are placed on the cloud in centrally.

Software as a services is often gain access by the users consuming a skinny client through application program. SaaS has turns into public

distribution for several business applications, containing accounting, CM (content management), HRM, CRM.

Advantages of SaaS model:

- Administration is less difficult
- Accessibility is worldwide
- Collaboration is less difficult
- Compatibility

Conventional frameworks for the measuring quality such as ISO 9126 would be the limited in evaluating quality of SaaS, mainly due to gap between conventional computing paradigms and CC paradigm. I.e. conventional quality measurement frameworks do not effectively evaluate the CC specific quality aspects. However, widely accepted quality model for the evaluating SaaS and supported instructions are yet to be come.

So, the demand is very high for generate a new quality model to evaluate the SaaS service which have characteristics such as the supporting commonality, internet-based invocation, virtualization and data management on the server side. In this paper, we are propose a comprehensive quality of model, it can be evaluated by the service providers. Moreover, results are used as an identifier for SaaS quality of management.

In section 2 we have described related works that have been done for the quality on SaaS service and the key features of the SaaS. In section 3 we have discussed about the SaaS architecture. In section 4 we have explained about quality model of the SaaS service which includes security, quality of the service and software quality metrics. Finally conclusion and future work is included in section 5.

**SECTION 2**

**1. Related work:**

ISO 9126 is an international standard for evaluation of product quality. This standard provides three aspects for the evaluating software products; internal quality, external quality, and the quality in use. And, there are sixteen qualities for three types of quality. However, this standard focuses on evaluating the quality of conventional products. Hence, it is requires that standard is customized and extended to the evaluate quality of SaaS.

However, this work is considered service oriented applications such as a target of quality model and identifies issue related to them at the conceptual level. Most of the current works are not for the SaaS but for certain targets such as conventual software or SOA based of system. Due to this situation, its hard to evaluate quality of SaaS and judge which SaaS good. Therefore, our work provides a quality for model to evaluate the software as services.

**2. Key features of the SaaS:**

In order to define quality model for evaluating the SaaS, it is required to identify the key features of SaaS.

- Reusability
- Data managed by the provider
- Service customizability
- Quality of service
- Availability
- Scalability
- Multi tenant
- Data security
- Configurability
- Pay per use

## SECTION 3

### 1: Architecture of SaaS;

Many of the SaaS solutions are referred to the multi tenant platform. By the help of this model, a one version of program or application, with one configuration is the utilized for nearly every consumer or the tenant. In order to support scalability, program or application is executed after the installing on many computers. For few cases, another version of program or application is made to the provide some consumer which will have access to before released the version of program or applications for testing. This has been compared with on-going software's, where more than one copies of software each have potential of other versions, with another configuration, and customized are executed after the installation over so many consumer sites. However an exception is there, some of the software as service solutions never use multi tenancy, and other methods like virtualization to the cost effectively provides more number of consumers instead of the multi tenancy. Whether multi tenancy is needed for SaaS is a topic which is more controversial.

## SECTION 4

### 1: Quality model of SaaS service

The quality of model that we have proposed includes of 3 factors, that is, security, quality of service and software quality. As SaaS service is involved three roles, so each quality factor is categorized into 3 parts which are as follows.

- **Security metrics**

  For every consumers, security is main issue, it needs all the three roles namely customer, platform and application developers that to work together to ensure. The model that are we have proposed, security metrics involves customer security, security of the applications and network security.

### 2: Quality of service (QOS) metrics

In SaaS, quality of service is very important problem to consumers to calculate SaaS service. In our model, QoS metrics focused on the quality of platform and quality of applications.

**SECTION 5**

**Acknowledgement**

We would like to thanks to the department of the computer science as well as Information technology to support us in our research work.

**Conclusion and Future work**

SaaS is one of the type of cloud service is emerged as an effective reuse paradigm. It provides benefits to the service consumers; no initial cost to the purchase of software, free of maintenance or updates, accessibility through internet, availability is high, and pay-per-use pricing. Hence, evaluating the quality of the SaaS becomes more important activity to successful SaaS management. In this paper, we saw key features of the SaaS and then general architecture of SaaS service. Then we presented the quality of model which measures security, Qos and software quality of SaaS service, from perspective of the platform, provider and customer separately. Moreover, service consumers can be refer quality of the evaluation results to discover and utilize SaaS. Customer can use this model to evaluate the maturity level of the service. In the future we are intend to complete the evaluation criteria for the quality metrics in quality model, and develop software tools to measure and evaluate software as a service.

**References**

International journal of engineering and computer science ISSN: 2319-7242
Volume 3 issue 1
www.ijecs.in

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