CLOUD REMOTE MONITORING SYSTEM

[1]G. Akash Reddy, [2]Shankar Swamy, [3]B. Hruday, [4]G. Santosh, [5]Dr. D.B.K.Kamesh

[1,2,3,4]Students of B.Tech, [5]Head of Department
Department of CSE,
St. Martin's College, Hyderabad, 500100

***Abstract*: Monitoring and Management is the act of collecting and analysing data to determine the performance, health, and availability of your business application and the resources it depends on. An effective monitoring strategy will help you understand the detailed operation of the different components of your application and to increase your uptime by proactively notifying you of critical issues so that you can resolve them before they become problems. Cloud monitoring is primarily part of cloud security and management processes, and it is generally implemented through automated monitoring software that provides central access and control over cloud infrastructure. Cloud administrators can review the operational status and health of any cloud-based device or component. In addition to monitoring and ensuring cloud infrastructure/solution/service availability, cloud monitoring data also helps in evaluating the performance of the entire infrastructure on a modular level. Properties such as server uptime and response rate report can help in evaluating customer/user experience.**

Index Terms: Cloud Monitoring and Measurements, SLA Monitoring, Cloud Resource Monitoring, Cloud Monitoring Metrics.

I. Introduction

Precise and fine-grained observing exercises are required to proficiently work Cloud Computing stages and to deal with their expanding many-sided quality and security prerequisites. In writing, there is a substantial number of works proposing studies and scientific categorizations of Cloud Computing when all is said in done of Virtualization advancements and of Cloud Security. To the best of our insight, be that as it may, there are no particular investigation on definitions, issues and future headings for Cloud checking. In this paper, we give an investigation of Cloud observing, with particular spotlight on: (I) significant inspirations at the base of Cloud checking (ii) essential ideas, definitions, properties and related issues, and stages for Cloud observing. We additionally talk about open issues, principle difficulties and future research headings for Cloud observing. We close the paper with conclusion comments.

II. Literature Survey

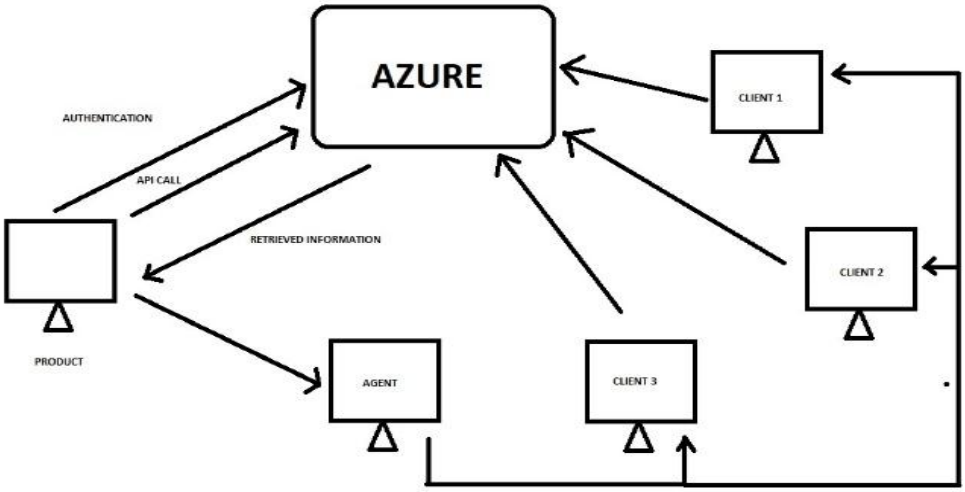
To the best of our knowledge, none of existing IaaS platforms is able to provide continuous monitoring, and management of the usage of system resources. Furthermore, none of them is able to do intelligent, automated monitoring for a large number of VMs. Additionally, business interruption takes place when the VM's and other resources are not monitored and managed in an efficient manner. Hence it is advantageous to use a SaaS based platform.

III. Overview of the system

Model–view–controller (MVC) is an architectural pattern commonly used for developing user interfaces that divides an application into three interconnected parts. This is done to separate internal representations of information from the ways information is presented to and accepted from the user. The MVC design pattern decouples these major components allowing for efficient code reuse and parallel development.

Modules

Authentication: It is a process where the credentials of the client are authenticated using API's on an Azure server.
Discovery: On the success of authentication, we discover the overall usage data of the client.
Management: By analyzing the discovered data, we can manage the clients account.
Access Token Generation: In order to get the Monitoring, billing/cost details, the generation of access tokens is necessary. Access tokens are unique keys valid for a short duration.
Monitoring: Using certain metrics viz. average, maximum, minimum etc. we monitor the usage of client's account using API's.
Billing/Costing: To get the accurate costs of usage, we use Rate account API and Cost API to get the quantity used and the cost per quantity respectively.
Architecture



IV. Methodology

J2EE: J2EE is a platform-independent, Java-centric environment from Sun for developing, building and deploying Web-based enterprise applications online. The J2EE platform consists of a set of services, APIs, and protocols that provide the functionality for developing multi-tiered, Web-based applications.

Frameworks: Spring and Hibernate

Front End: JavaScript/JQuery, Bootstrap, HTML/CSS

V. Result and Discussion

Cloud monitoring is the process of evaluating, monitoring, and managing cloud-based services, applications, and infrastructure. Companies utilize various application monitoring tools to monitor cloud-based applications. Here's a look at how it works and best practices for success.

Types of Cloud Services to Monitor

There are multiple types of cloud services to monitor. Cloud monitoring is not just about monitoring servers hosted on AWS or Azure. For enterprises, they also put a lot of importance into monitoring cloud-based services that they consume. Including things like Office 365 and others.

SaaS – Services like Office 365, Salesforce and others

PaaS – Developer friendly services like SQL databases, caching, storage and more

IaaS – Servers hosted by cloud providers like Azure, AWS, Digital Ocean, and others

FaaS – New server less applications like AWS Lambda and Azure Functions

Application Hosting – Services like Azure App Services, Heroku, etc.

Many of these can be monitored usually traditional application performance monitoring tools. However, cloud monitoring has some unique requirements over basic server monitoring tools. There are also companies like Exoprise who focus on monitoring Office 365, Salesforce and other services.

How It Works

The term cloud refers to a set of web-hosted applications that store and allow access to data over the Internet instead of on a computer's hard drive.

For consumers, simply using the internet to view web pages, access email accounts on services such as Gmail, and store files in Dropbox are examples of cloud computing for consumers.

Businesses use it in many of the same ways. They also may use Software as a Service (SaaS) options to subscribe to business applications or rent server space to host proprietary applications to provide services to consumers.

Cloud monitoring tools look for problems that can prevent or restrict businesses from delivering service to their customers. Generally, these tools offer data on performance, security, and customer behaviour:

By testing at regular intervals, organizations can detect errors quickly and rectify them in order to mitigate any damage to performance and functionality, which improves the customer experience and, as a result, can boost sales and enhance customer retention.

Speed — like functionality and user experience — is a primary driver of customer satisfaction. Speed metrics can be monitored and generate data that helps organizations optimize websites and applications.

VI. Conclusion

In this paper we have discussed the important aspects of clound environment that have strong needs of cloud monitoring. After in-depth research, we have covered all the aspects of cloud monitoring like ad advantages, disadvantages, and the reason for its importance. The idea from this paper can be efficiently utilised by clients and manage their cloud. In future, cost of different

cloiud providers can be compared and the best service can be provided to the client. Moreover, dynamically scaling of cloud resources and instances can be done on the clients demand.

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