CLOUD AND BLOCKCHAIN INTEGRATION – AUGMENTATION IN CLOUD SECURITY

**ABSTRACT:**

Cloud Computing, one of the successfully thriving technology enables organizations all across the world to store their essential data remotely in the enormous data space known as cloud. It is a distributed computing paradigm that tends to reduce the hardware for the extensive storing of big data for companies, providing them cost-effectiveness at a great extent. When we talk about the Cloud security, it is one of the biggest challenges in Cloud Computing. However, through latest technology it has been assured to provision enhancement in the cloud security as much as possible. The role of an emerging technology of Block-chain has become vital these days as it is itself extremely secure. For Cloud Security Augmentation, Cloud and Block-chain integration can only be a possible combination that could help out. In this content, we shall get to know some basics of Block-chain technology in addition to its trials and challenges. Later on, we shall also put an eye on the Cloud and Block-chain Integration and how it analytically solves the security issue to increase Cloud robustness.

**INTRODUCTION:**

Block-chain, one of the enhanced and spectacular technology provides a concept of chain. It is a distributed data storage and ledger technology that permits to pool data in multiple servers globally. The key difference between an ordinary database and a block-chain is the data structure. A Block-chain collects information together in groups, also known as blocks, which hold sets of information. Each of the Block has a particular storage capacity. As soon as a block fills completely, it becomes chained with the previous block, thus leading to the formation of a chain of data. The Block-chain database behaves like an open-source database platform which allows public privilege to see and track data transactions occurring on the servers in real-time. This deducts a chance of hacking the transactions as the synchronization among different blocks or servers is really very fast. One of the best thing about Block-chain is that all the transactions are immutable (i.e. once occurred, not possible to reverse them). This fortunately increases the security as all of the occurred proceedings are recorded and can be viewed by anyone.

These were some key concepts of Block-chain. Further, we shall discuss some of its challenges and trials that are essential to keep in mind while taking a look on Cloud and Block-chain Integration.

**BLOCKCHAIN TRIALS:**

Organizations across the world are rapidly adopting the newly technology. At the same time, they had to focus on the ups and downs as well as the challenges that they might have to face while endorsing that new technology. Taking a look on Blockchain, as we discussed previously that it is a latest technology, so apparently, it shall own unique challenges and trials. These trials must be captured at the right time before the complete adoption of Blockchain. Here are some of the vital challenges that one has to tackle while applying the Blockchain Technology:

**Scalability –** One of the biggest challenges of the Blockchain Technology is Scalability. As there is a restriction of the block size in Blockchain which only allows 7 transactions per second. This increases the scalability challenge as many of the small transactions may become unsuccessful due to deficiency in the block’s actual capacity.

**Laws And Rules –** Blockchain has brought many changes in the society soon after its emergence. It has triggered many legal issues by lagging legal supervision in the early stages of development. Getting a proper know-how about the Blockchain characteristics can only strengthen the laws and regulations for the technology. However, many countries across the world have started to implement Blockchain by enhancing their regulatory measures.

**Privacy Leakage** – In the Blockchain technology, users’ transactions are considered safe as they consist of addresses besides real identities. The event of data leakage may lead to the production of multiple addresses. In addition to that, Blockchain also cannot guarantee transactional privacy due to the public visibility of transactions. What becomes a trial is to make the payment anonymous, making it risk-free.

**Standardization Issue** – Despite of the presence of many different networks in Blockchain, there is a lock of universal standard. This raises many issues such as interoperability, cost increment, ambiguous mechanisms and protocols. Ultimately, these issues block the way towards the large-scale implementation of Blockchain Technology.

**CLOUD COMPUTING HALLMARKS:**

Every technology has its hallmarks and features due to which it gains attention. Similarly, Cloud Computing has its own beauty and features. Without wasting the next second, let us discuss some of the salient hallmarks that Cloud Computing Technology possesses.

**On-Demand Service –** This feature in Cloud Computing refers to the reliability and controllability of Cloud Technology. It enables users to control over all the available services of cloud including the network storage. User can get the increment in cloud service as he demands. The best part here is that he doesn’t even have to interact with the service provider.

**Resource Pooling –** The Cloud Computing Technology works on multi-tenant model. This refers to the provision of the storage area of a single cloud to the multiple users. What the capability of Cloud Computing to focus here is that the resources, data or any sort of information of one user becomes tightly abstracted and the other user cannot access or even see that particular data.This extremely increases Cloud’s efficiency.

**Rapid Elasticity –** It is obvious that a user can have a need to multiply the cloud storage space or even adopt some new features as he goes on. Cloud Computing comes up with a solution for this as there is a maximum flexibility to gain as much services from cloud as required.

**Measured Services –** All the history of advancements and purchase on the cloud that a user performs are scalable and the cloud service provider has the privilege to track the resource usage of any of its users. The charge-per-utilization policy of Cloud Computing is due to the measured services as the user has to pay only for what he utilizes. Hence, it helps organizations to save costs at a greater extent.

**Broad Network Access –** The best thing about Cloud Computing Technology is none other than the access. A cloud user just needs an internet connection and he can access his privilege mode on the cloud from anywhere regardless of the type of device he uses.This increases the access control for the user that can be really beneficial.