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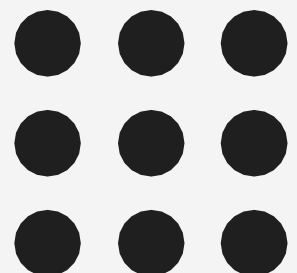**Accredited by NAAC-UGC with 'A' Grade**

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Department of Information Technology

Course Name – Internet of Things

III Year / V Semester

Unit 3- INTERNET OF THINGS CHALLENGES

Cloud Data Management

Cloud data management

- Cloud data management is the practice of storing a company's data at an offsite data center that is typically owned and overseen by a vendor who specializes in public cloud infrastructure, such as AWS or Microsoft Azure.
- Managing data in the cloud provides an automated backup strategy, professional support, and ease of access from any location.

Benefits of cloud data management

1.Security: Modern cloud data management often delivers better data protection than on-premises solutions. In fact, 94% of cloud adopters report security improvements. Why? First of all, cloud data management reduces the risk of data loss due to device damage or hardware failure. Second, companies specializing in cloud hosting and data management employ more advanced security measures and practices to protect sensitive data than companies that invest in their on-premises data.

2.Scalability and savings: Cloud data management lets users scale services up or down as needed. More storage or compute power can be added when needed to accommodate changing workloads. Companies can then scale back after the completion of a big project to avoid paying for services they don't need.

3.Governed access: With improved security comes greater peace of mind regarding governed data access. Cloud storage means team members can access the data they need from wherever they are. This access also supports a collaborative work culture, as employees can work together on a dataset, easily share insights, and more.
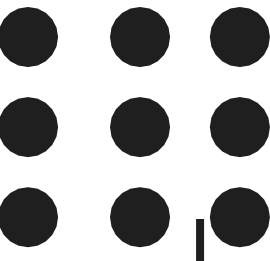
4.Automated backups and disaster recovery: The cloud storage vendor can manage and automate data backups so that the company can focus its attention on other things, and can rest assured that its data is safe. Having an up-to-date backup at all times also speeds up the process of disaster recovery after emergencies, and can help mitigate the effects of ransomware attacks.

5.Improved data quality: An integrated, well-governed cloud data management solution helps companies tear down data silos and create a single source of truth for every data point. Data remains clean, consistent, up-to-date, and accessible for every use case, from real-time data analytics to advanced machine learning applications to external sharing via APIs.

6.Automated updates: Cloud data management providers are committed to providing the best services and capabilities. When applications need updating, cloud providers run these updates automatically. That means your team doesn't need to pause work while they wait for IT to update everyone's system.

7.Sustainability: For companies and brands committed to decreasing their environmental impact, cloud data management is a key step in the process. It allows organizations to reduce the carbon footprint created by their own facilities and to extend telecommuting options to their teams.

Best practices for a cloud data management strategy

1.**Start with a plan**. Dumping data into the cloud is not "cloud data management." Will you move all data to the cloud, or create a hybrid environment? Who needs access to what data? Where should different processing tasks take place? ETL vs. ELT is a good conversation to have now.

2.**Maintain healthy data**. This is incredibly important, as other data management practices depend upon it. Keeping data healthy means ensuring that it's valid, complete, and of sufficient quality to produce analytics that decision-makers can feel comfortable relying on for business decisions.

3.**Back up the data (often)**. Most cloud software-as-a-services (SaaS) providers will automatically run regular backups. If a company is hosting its own cloud, however, make sure the IT department is running regular backups.

4.**Don't forget about data governance**. An existing data governance policy for on-premises data can be updated for a hybrid or cloud data management architecture. Moving data to the cloud, however, often means extra compliance issues need to be considered, so make sure those don't slip through the cracks.