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BIG DATA
MANAGEMENT

What, Why and How

Why the need for Big Data Management ?

With enterprises growing in size continually, the amount of data has grown exponentially. Now managing this data, big data, is becoming increasingly challenging. The problems thrown up with this massive growth of data are:

- Inability to access desired data in real time
- Loss of tracking of outdating of data
- Increase in the number of servers, backup, and storage infrastructure quadrupling the costs to the company
- Inability to drive in-depth insights and inferences from data worth decision making for the company
- Inability to manage the security of data sources

Big data refers to large and diverse sets of data that have high volume, high velocity and originate from a variety of sources, and are present in different data formats This increasing volume can extend to petabytes of data and can't be handled by traditional databases of the organisation

These are only a few problems associated with big data.

With coupling of IoT of devices, and various upcoming hardware and software infrastructure, the challenge is even more pertinent The end result is the loss of trust of customers and users in data systems of the organization, a decrease in productivity, and slowed down workflows and processes. It has also been found to demean the brand value over a period of time leading to an unmanageable elephant often increasing risks of non-compliance with regulatory policies and lack of transparency.

As enterprise data stores have continued to grow exponentially, managing that big data has become increasingly challenging. Organizations often fid that the data they have is outdated, that it conflicts with other data in their systems, or that it is just plain inaccurate.

The trust factor dwindling with exponential growth of data was aptly highlighted in the 2017 Global Data Management Benchmark Report by Experian data quality In the report, they stated, "While most organizations around the globe say that data supports their business objectives, less than half of organizations globally (44%) trust their data to make important business decisions . The report also added, "Nearly one in two organizations globally (52%) say that a lack of confidence in data contributes to an increased threat of non-compliance and regulatory penalties, and consequently, a downturn in customer loyalty (51%)."

So, the need for the management of big data acquired the utmost urgency It started the research for a set of data policies, technologies, and tools that could help organizations manage big data with ease.

Big Data Management Challenges

For managing big data, the major challenges to the handling of big data were to be mapped out After researching out various problems, organizations were going through in handling of big data, the major challenges converged out to be:

SILOED DATA

Organizations use multiple applications in their work processes. Th information and the data are generally stored in different databases. Th same information sometimes may be stored in different databases and even the same piece of information can be stored in different locations conveniently eating up the storage space of the company. Now, if there is even a little bit of inconsistency of data stored in different databases, it may lead to multiple problems like conflicting data, loss of customer trust, inaccurate analytics leading to erroneous decision making, and multiple others.

MASSIVE INCREASE IN DATA INFRASTRUCTURE

When a company has millions of customers to cater to leading to petabytes of data, the company has to invest massively on data storage, access, retrieval and analysis, may be involving creation of multiple new data centres or data comms, more servers etc. Th TCO increases massively often reducing the profit margins of the organizations radically.

COMPLEX DATA ARCHITECTURE

With petabytes of structure and unstructured data percolating from different data sources and present in different data formats like videos, gif, text, codes, sound files, image, presentations, cataloguing of this data becomes a nightmare. Your data management personnel may be having nightmares and sweating day in and day out simplifying the complexity of data arising every day.

POOR DATA QUALITY

The more the sources of data, the more the applications, the more the siloed databases, synchronization between them becomes a hellish task. The chances of human errors are quadrupled and at the end inconsistent, poor data quality leads to faulty decision making occurs.

How to Manage Big Data?

To manage big data, it is important to define what big data management actually refers to. Big data management is the process of organizing, governing, and administrating the massive amount of data percolating from different processes, workflows, channels, platforms, IoT devices, and others.

These terabytes of structured and unstructured data, logs, ETL, originating from different sources and present in different formats are synchronized, categorized, stored, updated, different access routes identified, refeed to weed out redundant data to make data of high quality that can be readily used for business intelligence purposes for Agencies, corporations, and other organizations.

IDENTIFY THE BIG DATA MANAGEMENT GOALS

Organizations can have various goals for implementing big data management projects. This can be:

- Managing the torrential amount of data being produced in a better manner
- Faster processing of data
- Have better synchronisation between IT processes, users
- Better communications with management
- More effctive and accurate business decision making
- Lowering the cost of IT infrastructure and processes handling data of the company and many more .

PRIORITIZE USE CASES AND FORMULATE BIG DATA ROADMAP

A transparent filtering process helps in rejecting unwanted traffic. This is done by installing effective rules on network devices to eliminate DDoS traffic.

FRAME THE ARCHITECTURE FOR BIG DATA

Framing big data architecture includes designing the IT processes, managing the IT infrastructure, creating a process framework, etc for handling the intake, processing, and analytics of big data workloads.

Components of Big Data Architecture

The components which are universally present in any big data architecture involves:

- Data Sources including application stores, static fies, data from IoT devices, etc
- Data Storage like distributed files storage having huge volumes of files in different formats, often called a data lake.
- Data Processing: Big data sets batch filtering, classifying, aggregating, and preparing data for analytics purposes.
- Real Time Data and Message Ingestion Options: The big data architecture includes options for capturing, storing, and stream processing of real time messages. For this, there are various options like Azure Event hubs, Kafka, etc.
- Analytical Data Stores: This includes creating big data solutions for processing data and presenting them in a structured manner so that it can be queried by analytics tools.

Improve the Communication, Integration & Automation of data flow across your Organization

Calculate your DataOps ROI

Proceed

About | ISmile Technologies

ISmile Technologies is a proud automation-enabled intelligent cloud solution and managed IT services provider, and it is your multi-cloud technology advisor & key implementation partner.

We operate globally and leverage disruptive technologies alongside deep expertise to deliver business-specific cloud solutions. We maximize impact at an unparalleled value and securely accelerate business agility while infusing competitive excellence.

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