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What is Cloud Analytics and Why It Matters for Your Business

What is cloud analytics? Learn how cloud based analytics works and explore the top tools and services to find the right cloud analytics platform for you.

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OVERVIEW

Most modern organizations conduct significant data collection operations, whether it's tracking user activity, monitoring the performance of a marketing campaign or collecting payment information to complete a purchase from a customer. The automation of this data collection has shown that even small organizations can generate huge amounts of data, volumes so large that it requires dedicated storage and tools just to analyze it.

The advent of cloud computing allowed organizations to move from on-premises storage to virtual devices, where they can collect and store data without expending enormous resources on proprietary data storage and management tools. Cloud analytics is a crucial component of this evolution, as it gives organizations the ability to generate powerful insights from data that is stored in the cloud.

In this article, we'll discuss the key components of cloud analytics and how it can help you create an efficient and scalable data analytics solution.

WHAT IS CLOUD ANALYTICS?

Cloud analytics, which is sometimes referred to as "analytics as a service," is a workflow that allows you to store, process and analyze data on an external storage solution. Because very few organizations have the resources to build and maintain their own data storage, cloud analytics has become an essential component of modern business processes.

Cloud analytics platforms can help you manage data ingestion and processing and analyze the data your organization generates. They also have functions for generating reports, visualizing trends and displaying these insights in a dedicated analytics interface. Many analytics platforms can scale up and down as your data collection and analysis needs change. These tools can also handle a wide variety of data sources and types, allowing you to control internal access to sensitive data, meet governance standards and gain observability into the processing and storage of sensitive data.

HOW CLOUD ANALYTICS WORKS

The structure of your cloud analytics operation will depend on your exact needs and data collection methods, but most organizations will use the same general process. Here's how it works:

1. Data ingestion

The first step is the collection and routing of data from its source to the cloud, also known as ingestion. This step controls everything from how often data is collected to what format it is in when it reaches the cloud server, all of which helps determine how useful the data is. Having a consistent source of accurate data in a relevant format improves the quality of insight it can provide, making a well-designed ingestion process a critical component of cloud analytics.

2. Data storage and processing

Depending on the cloud storage process and infrastructure you are using, you might store and process your data in different types of cloud repositories. Data lakes, for example, store large amounts of raw, unstructured data, while processed and structured data is commonly stored in data warehouses. Data is typically processed for specific use cases: for example, a structured list of users located in a particular area who might be subject to specific regional data storage rules. Processed data is also used for machine learning, training AI and other powerful tools.

3. Data analysis

Broadly speaking, analysis involves using the data stored in the cloud to answer specific questions. These answers could be used for generating real-time insights, such as asking what caused a sudden increase in spam email. A well-provisioned and performant cloud analytics platform can give you actionable information to identify and fix problems like this or assist in other areas, such as product development and customer marketing. AI tools can make this kind of data analysis even more accessible, allowing you to request information and conduct tests using plain language queries, for example, asking "How many new users have signed up in the last 24 hours, and what kind of demographics do they have in common?"

4. Visualization and reporting

Cloud analytics platforms often include tools to help present data in a useful form, such as a chart or summary. These tools have a multitude of uses, including creating dashboards to measure sales marketing performance, generating predictive analytics to help your team make the best possible decision and visualizing the flow of sensitive data to help you ensure your system is in compliance with relevant rules.

TYPES OF CLOUD ANALYTICS

The volume and diversity of data sources can provide a wide range of possible uses for organizational data. You can break down these use cases into several categories, depending on the goals of the analyst or user. These include:

Descriptive analytics

The most straightforward type of analytics, this includes data like campaign performance metrics and product usage trends. Your marketing team may want to generate a report to analyze which campaign performed best with a particular cohort of customers, allowing them to create more effective marketing campaigns. You can also use descriptive analytics for more complex tasks, for example, measuring your current support team's performance against historical performance and determining where any gaps might lie.

Diagnostic analytics

Diagnostic analytics help you uncover why something happened and identify any correlations which might provide context. For example, if there was a sudden increase in spam on your messaging platform, you might ask whether this correlates with an uptick in new user signups, or with the launch of a new marketing campaign. The goal of these analytics would be to help identify trends you can use to prevent the issue from recurring in the future. Diagnostic analytics are generally more complex analytical operations that require extensive testing to determine the validity of a hypothesized cause before you attempt any remediation.

Predictive analytics

This approach uses advanced machine learning, statistical analysis and/or AI to uncover patterns in historical data to make predictions about possible future outcomes. Predictive analytics can help your organization allocate resources effectively, for example, mining data for historical trends in computational demand so you can scale your resources up and down accordingly. It could also be useful in supply chain management, helping you build a model that predicts supply chain delays and efficiencies based on weather data, fuel prices, traffic congestion and other factors.

Prescriptive analytics

Another operation that depends on advanced tools, this form of analysis evaluates and recommends different courses of action based on both your organization's goals and probable outcomes for the future. You might use these tools to choose the best way to mitigate a supply chain inefficiency or bottleneck, helping you identify an alternative strategy that allows you to weather this problem without losing customers or revenue.

WHAT ARE THE BENEFITS OF USING A CLOUD ANALYTICS PLATFORM?

Research has revealed that 96% of organizations use the public cloud, an indication of its ubiquity as a tool for data storage, security and insight. Here are some of the benefits that have driven this nearly universal level of adoption:

Scalability and elasticity

One of the primary benefits of cloud storage is its ability to move beyond the size limitations of on-prem infrastructure through flexible scaling. This is also applicable to cloud analytics, as the analytics platform you choose should include pre-built data management, processing and visualization tools. As you scale up or wind down operations, these solutions can do the same, giving you as much or as little computational power and functionality as you need.

Cost-effectiveness

Just as building dedicated private cloud storage solutions on premises is expensive, so too is building, updating and maintaining a proprietary cloud analytics platform. Even large and well-resourced organizations often choose to use pre-built cloud analytics which allow them to devote more operational resources to building and improving their products and services.

Increased accessibility and collaboration

You can use cloud analytics platforms to make organizational data accessible to every team, breaking down silos as non-technical staff members become empowered to run queries and generate reports. You can also use cloud analytics to configure access and maintain security standards, allowing teams across the organization to benefit from data insights without exposing sensitive data to additional risk.

Faster time to insight

In the past, organizations typically depended on dedicated data scientists and engineers to conduct basic and advanced analytics operations. This created a bottleneck which required data experts to focus mostly on mission-critical data analysis at the expense of other tasks. Cloud analytics platforms allow everyone to dig into organizational data, test their hypotheses and uncover insights. This not only increases the speed of data-driven decision-making, but also frees up data scientists to work on more robust and complex projects.

FIVE KEY CONSIDERATIONS FOR SELECTING A CLOUD ANALYTICS SOLUTION

The market for cloud analytics tools is large and growing, which can make choosing a solution difficult. Here are some of the most important criteria you should look at when selecting a cloud analytics platform:

1. Performance and scalability

As you look at different analytics platforms, assess their speed and efficiency, not just in terms of single operations but also in their ability to handle multiple complex, simultaneous queries. You should also examine their ability to scale up and down, as inefficient scaling can drastically limit your growth and waste resources, while a well-provisioned platform will be able to adapt to your needs as they change.

2. Support for diverse data

Performant cloud analytics solutions are able to efficiently ingest and process lots of different data types, allowing you to collect relevant data from whatever source and at whichever rate is necessary to make it useful to you. This means selecting a platform that can handle real-time data collection and batch processing and which gives you access to your data with minimal latency.

3. Security and governance

Even if you collect very little sensitive or personally identifiable information, selecting a platform that can help you monitor and control sensitive data is critical. You should assess their security features, including data encryption, redaction, anonymization and access management tools. You should also determine what security certifications you need the platform to have, as standards like SOC 2 have become mandatory in many different industries and workflows.

4. Ease of use and integration

To truly harness the benefits of cloud analytics, you should seek out platforms that everyone in your organization can easily understand and use, not just technical teams. Consolidating your data on the cloud can be a major project that requires continual maintenance, so it’s important that you select a platform suited to your organization's unique needs and data.

5. Pricing structure and flexibility

Organizations sometimes rush into purchasing a platform that meets their immediate needs but does not provide a pricing structure that makes sense long-term. Certain providers might limit your flexibility, for example, by not supporting hybrid or multicloud models or charging you unsustainable support costs as your usage grows. Because switching to another platform can be very time-consuming and expensive, it’s important you choose a platform with a pricing model and flexibility that makes sense now and in the future.

Regardless of the solution you choose, once your organization has assessed its needs and made a selection, a strong cloud analytics tool can help you create an efficient and scalable data analytics practice.

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