

# What is a Cloud Data Warehouse?

Modern companies run on data, much of it. Those companies that can refine their data and harvest actionable insights quickly and effectively will be able to make faster, more confident business decisions that will enable them to be more agile in the marketplace.

Those that can't will struggle to compete. A company's data warehouse is a core part of its data management strategy and an area where you can't afford to be stuck in the past. Cloud-based data warehouses provide a cost-effective solution to give companies the scale and performance they need to drive reporting, analytics, machine learning and AI – the complete suite of capabilities of a modern business intelligence solution.

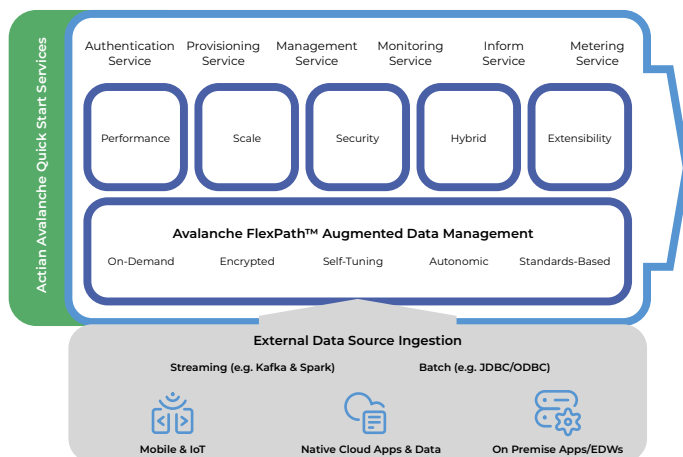
## How is a cloud-based data warehouse different from an on-premise data warehouse?

Data is your asset – and arguably one of the most important assets your company will possess during the next few years. Applications will come and go from your IT environment and your business processes will experience many transformations as you pursue the quest of business agility. Through all the changes, the one stable asset that will persist is your company's data. Historical records, operational data and streaming data from external sources are each important to help you understand the environment where your company is operating and anticipate future events.

The data warehouse system is a set of tools that enables you to harvest value from your data assets. It is an environment where you can gather data from different sources, integrating, transforming and refining it to provide actionable insights that help you answer your most pressing business questions. Your transactional systems aren't designed for complex and robust reporting and analytics – they are tuned for transactional processing to support your day-to-day business processes. A data warehouse's main purpose is to be an analytics powerhouse – crunching the big data, summarizing it and transforming it into reports that make sense to operations staff and decision makers.

## Action Avalanche Cloud Data Warehouse

Industry first 3rd generation cloud data warehouse



Data warehouses are not new inventions, they have existed for decades and most companies are already familiar with what they are and for what they are used. The important new development in data warehousing is their capability to manage data in the cloud, leveraging all the scale and computing performance that cloud services afford.

The more robust a company's analytics algorithms are and the bigger the data set that is being analyzed, the more compute resources the data warehouse system will require. Data center infrastructure is expensive to acquire, costly to maintain and has a short, useful life (before it becomes obsolete). Cloud data warehouses provide a scalable and cost-effective alternative.

The core components of a cloud-based data warehouse are similar to their on-premise cousins, they are just delivered as a service over the Internet or a private network.

- **Integrations with source systems** – These are the data feeds that enable a company to pull (or push) data into the warehouse.
- **Warehouse database(s)** – The place where the data is stored. Most companies use multiple databases to store data at various levels of refinement.
- **Administration services** – A set of tools that enables a company to manage both the technical configuration of the warehouse system and the data inside it.
- **Analytics capabilities** – This includes both traditional business intelligence and reporting solutions as well as modern technology, such as AI and Machine Learning.

What makes cloud-based data warehouses different is time-to-value, lower management costs and performance. Having a data warehouse that is not just hosted in the cloud, but is optimized to run in the cloud (and take advantage of the myriad of cloud computing capabilities) will give you improvements in:

- 1 **Cost** – A cost model that aligns with the needs of modern businesses. Avoid up-front hardware costs, underutilized capacity and maintenance overhead. Pay for the services and capacity you need, when you need to use them.
- 2 **Performance** – Leverage modern infrastructure platforms that are continuously upgraded to provide enhanced performance. Distribute workloads across locations and clusters to accelerate processing performance of complex queries.
- 3 **Scalability** – Expand your storage footprint as you acquire more data. Cloud services offer a seemingly infinite capacity. Add more compute resources to process complex analytics and enable faster decision making.
- 4 **Elasticity** – Your data consumption needs aren't constant. Scale your warehouse processing engine up when you need it (for example, month-end financial close) and scale it down during slow periods (most business activities are seasonal).
- 5 **Time-to-value** – Your data warehouse can be provisioned in minutes and in production as soon as your data is loaded.

For companies chasing business agility and sustainable competitive advantage in a rapidly evolving marketplace, having the right set of tools to do the job is essential. Cloud data warehouses give you what you need, with subscription pricing, more flexibility and fast time-to-value.

# When does a cloud-based data warehouse make the most sense?

If your company has a data warehouse that you've been using for many years, that is working well and you're happy with it, then you may want to look at on-premise options (such as Actian Vector) to increase its speed without having to implement something new. If, conversely, you are looking to implement a new data warehouse or make a shift in your data warehouse strategy, then a cloud-based data warehouse solution can help you accelerate time-to-value and achieve higher ROI. Here are examples of some scenarios when implementing a cloud-based data warehouse makes the most sense.



## 1 Enterprise-grade capabilities for SMB

Legacy data warehouses are expensive to implement, and many small and medium businesses simply don't have the financial resources or technical expertise to undertake the project. Cloud-based data warehouse solutions can provide SMBs with enterprise-grade capabilities at a scale and cost that work for companies with limited resources. Because the service provider pre-configures and manages the cloud services, a company can focus its resources on using the data warehouse to drive business decisions instead of maintaining the platform.

## 2 Cloud/data center migration strategy

A common IT trend for many enterprises is to shift IT systems from on-premise data centers to the cloud as the legacy infrastructure reaches the end of its useful life. Data warehouses consume much storage and compute resources, so moving them to the cloud can be an effective way of reducing a company's on-premise IT footprint and the associated infrastructure operating costs. Another benefit of implementing a cloud data warehouse is transactional data from SaaS solutions and other cloud services can be directly moved to the data warehouse without consuming capacity on a company's network infrastructure. This enables both faster data updates and more network capacity for other IT systems (such as IoT devices and mobile apps) that run on the corporate network.

## 3 Modern digital companies (cloud first)

Start-ups and many newer companies have adopted a "cloud-first" mantra for their IT systems – building their entire IT ecosystem around cloud services. For these companies, a cloud-based data warehouse is a natural fit. Cloud-based IT operating models enable flexibility to add and remove systems frequently – adding a data warehouse into the mix means a company can retain data from cloud services even if the business process moves to a new technology option.

## 4 Companies with global reach

On-premise data warehouses (or on-premise systems of any type) are by definition tethered to a specific geographic location (the company data center where they run). Most companies that operate on-premise data centers located them to provide optimal performance at a headquarters location or a specific company location. As more companies expand into global markets; have outsourced business functions in low-cost areas, such as India, China, Eastern Europe and Latin America; and engage with customers and suppliers around the globe, the IT systems that were optimized for HQ staff, can often run slowly in other regions. Digital business processes depend on data to be effective and a cloud-based data warehouse can enable significant performance improvements for a global staff.

## 5 Shifting from CAPEX to OPEX financial models

During the industrial age, capital-expense planning was the primary method for allocating resources to a company's highest priority investment areas. Unfortunately, these capital expenses were often difficult to match to the operations that would ultimately benefit from them – particularly in the IT space where multiple business functions use systems and resources. Most companies have begun a strong push to shift from capital investments towards IT expenses that can be directly attributed to business consumption. Cloud-based data warehouses are still shared services, but a company doesn't have to purchase the infrastructure in advance – it pays for what it uses.

# Benefits of having your data warehouse in the cloud

Data warehouses are a technical component and although it is an essential part of your company's IT and digital transformation strategy, the decisions about what data warehouse solution to implement and whether it should be on-premise or in the cloud is typically based on technical features more than strategic alignment. There are 4 key areas where cloud data warehouses clearly outshine their on-premise alternatives: performance, scalability, cost and resiliency. These are the benefits that IT leaders will be weighing, for example, against switching costs, the sunk cost of previously purchased infrastructure and the opportunity costs of other IT projects.

## Performance

- Elastic demand – Increased capacity for peak business periods without having excess during slower periods
- Resource intensive queries – Process faster in the cloud with compute resources scaled for your unique needs.
- Distributed compute – Separate big workloads into smaller chunks for faster processing.
- Flexibility to place compute where your data resides – Moving the compute closer to your data reduces latency and enables you to process data faster.

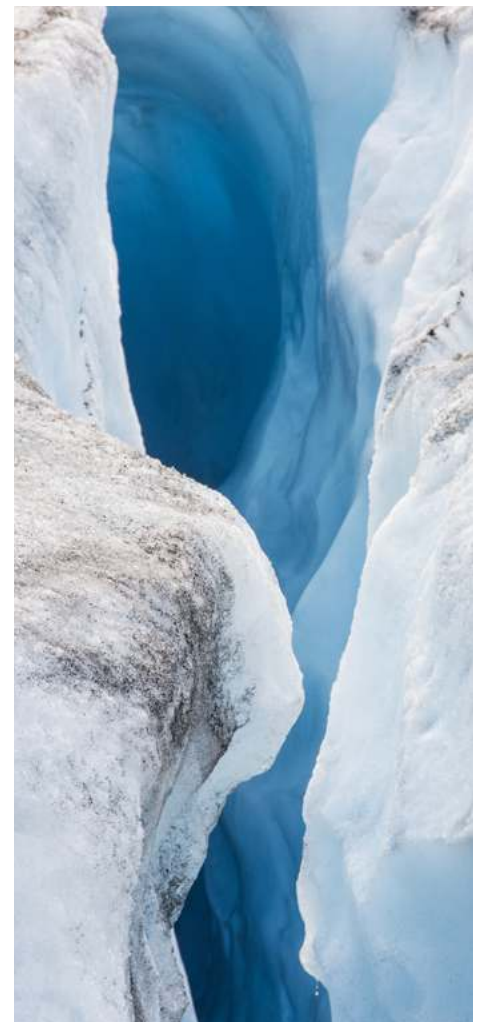


## Scalability

- Managing data growth – Your cloud data warehouse is not constrained by the hardware in your company data center. Let your data assets grow.
- Managing user growth – The value of your data is how you use it, not how much you have. Digital business processes should not be constrained by the number of people who can access and analyze your data. Cloud data warehouses can scale to support a large number of concurrent users, meaning more people in your company can put your data to work.
- Data localization needs – Performance and global regulations (such as GDPR) create needs to locate data in certain places around the globe. Cloud data warehouses can support data localization without the need for fixed infrastructure investments.

## Cost

- Cloud service provider economies of scale – The major cloud providers buy infrastructure hardware in bulk and then sell it to customers in smaller increments. Since cloud data warehouses require much storage and compute resources, leveraging economies of scale can give you the resources you need at less cost than your company could acquire them directly.
- Avoid costly datacenter hardware that depreciates – As soon as you install a piece of hardware, it is obsolete and upgraded hardware is available. Leveraging cloud services means the service provider assumes the cost of depreciation and your company has access to the latest high-performance technology.
- Pay for what you use only when you need it – Underutilized capacity is one of the biggest sources of waste within IT. Cloud-based data warehouses give you higher levels of capacity utilization and more efficient returns on your IT investments.



## Resiliency

- Redundant architectures – Cloud services and distributed computing provide inherent redundancy. If one cluster fails, then the services fail to another without disruption to business activities.
- Maintenance and security patching – Cloud service vendors ensure that maintenance and security patching remains current, so your system is secure without the overhead costs of continuously monitoring for, applying and testing updates.
- Off-site data storage – Mitigate the risk of data loss by using a cloud data warehouse to host a copy of your company data off-site.
- Lower IT admin costs – Cloud data warehouses shift most of the administration and support overhead costs to the service provider, meaning your IT staff can be re-allocated to higher-value activities.

## Data analytics is where the value is, not data storage

Simply possessing data doesn't create value, you must put it to work in your operations – improving performance, making better decisions and driving sustainable, competitive advantage. IT departments have limited budgets and staffing. Cloud data warehouses enable you to shift low-level activities of managing infrastructure and storage to service providers, enabling your IT staff to focus, for example, on data integration and analytics – transforming your data into actionable business insights. Harvesting data insights, making them available to business users and using them to make sound business decisions are how you transform your data assets into a tool that creates value for your company.



## Data Warehouse-as-a-Service

Cloud data warehouses provide the capabilities that modern companies need to be competitive and profitable. Actian Avalanche packages the modern cloud data warehouse capabilities that your company needs into a managed service offering that is easy to deploy, doesn't require much overhead staff to manage and fits within your IT department's OPEX cost model.

- 1 **Low/no capital outlay**
- 2 **Rapid deployment** – Faster time to value and increased business agility
- 3 **Pay for what you use** (avoid underutilized capacity)
- 4 Stretch when you need it, shrink when you don't – Utility computing
- 5 No need for your growth projections to be right in advance – **Learn as you go**
- 6 **Start small and start growing** – The system will grow with you
- 7 More employee time spent on differentiating an organization, making it more competitive and accelerating growth. More cycles to try new initiatives, not keeping the lights illuminated.

Cloud data warehouse systems are a modern solution to address the problems of modern companies. The volume of data that companies have available to them is increasing faster than ever and digital transformation is making business operations increasingly dependent on accurate, complete and real-time data for efficient functionality. Actian Avalanche offers you a full-featured Data Warehouse-as-a-Service, so you can focus on translating your data assets into actionable insights that lead to measurable business value. To learn more, visit [www.actian.com/avalanche](http://www.actian.com/avalanche).



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