

eBook

# Decoding Snowflake Usage with Power BI



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# Introduction

Monitoring the performance of your Snowflake environment is an important task. Whether you're an administrator or a cloud user, this is important to ensure that your data warehouse system is working as expected and is meeting the demands of the business.

When it comes to cloud computing or technology, businesses have aced the art of storing and sharing information. This also makes it essential for you to pay closer attention and be aware of key metrics so that you don't fall prey to the ever-increasing threats and other vulnerabilities.

Yes, it privileges elasticity, scalability, and utility – as it is mobile and available on demand. However, this additional feature is also its weakness.



Snowflake Warehouse is an emerging leader delivering on-demand cloud data warehousing. Snowflake offers a delivery model of supplying on-demand “run-time” resources. This has been compelling for many teams since they only pay for the time Snowflake is running, saving idle time costs.

**Monitoring the cloud environment has become a critical component of cloud computing to ensure the most optimal utilization of storage, cost, to achieve highest performance, and mitigate any anticipated risk**

A common software development architecture includes Dev, UAT and Production environment. Monitoring and maintaining this account individually can become overwhelming to an organization over a period.

Jade Global has leveraged Microsoft Power BI to build a state-of-the-art dashboard that provides 360-degree view on the health of all Snowflake accounts owned by an organization. This will enable an organization to go beyond usage and cost statistics via out-of-the-box Snowflake standard interface. Power BI Report and data visualization products will provide bird eye view from Org to C level management.

This approach provides answers to complex questions like what happens in the event of an outage? And how is the growth opportunity doing across the different accounts? With this kind of information, an organization has much more clarity and control on their critical snowflake account when implementing their Performance Management initiatives.

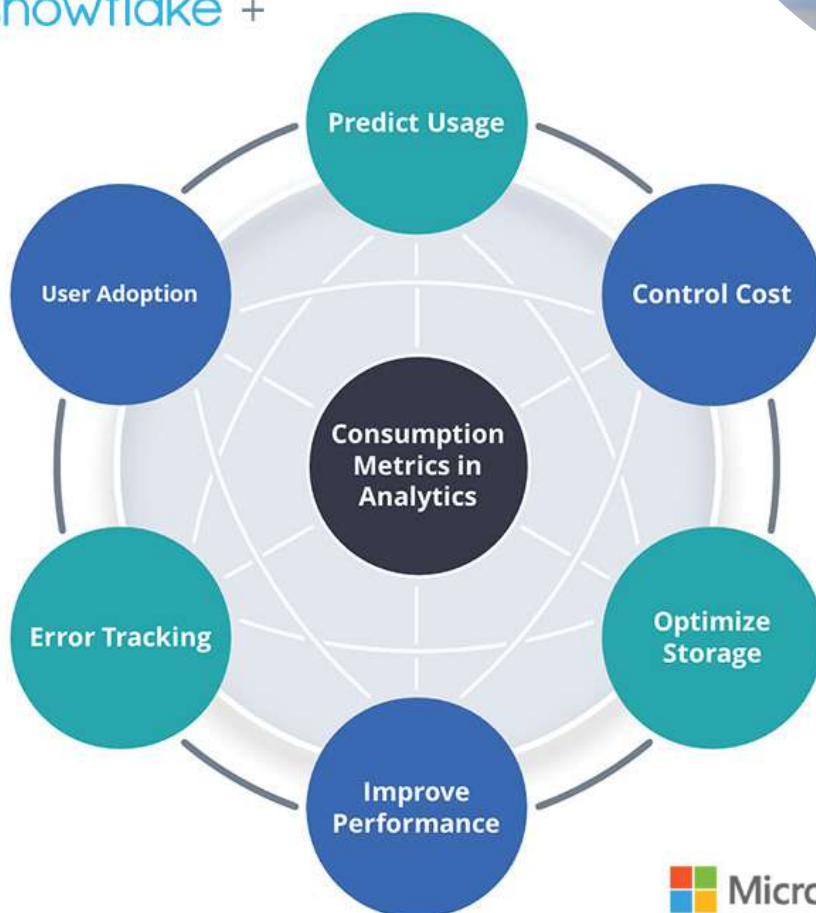
**“ A data warehouse in the cloud is excellent, but without clear visibility into your usage and costs, it can be difficult to avert overruns or discover opportunities to boost storage and usage, control costs and improve performance.**

**Chetan Gangwal**, Senior Solution Architect, Jade Global

# Checking, Controlling and Planning Snowflake Use

With the help of Snowflake Data Warehouse, organizations can now easily analyze massive amounts of data and make better business-driven decisions.

While Snowflake provides a great solution for your data warehousing and analytics on the cloud, some organizations may want to track key metrics even more accurately or leverage their own information from the Snowflake interface.



One of the most common questions clients ask today is, “How can I estimate my monthly Snowflake costs?” Our Power BI Dashboard helps businesses better understand their Snowflake monitoring key metrics.

**Vinit Verma**, Global Practice Head – Digital Platforms & Solutions | Boomi | Snowflake



## Questions Snowflake users often ask:



How can we monitor usage and tailor it to your needs?



What kind of resources will it consume?



How much storage will it require?



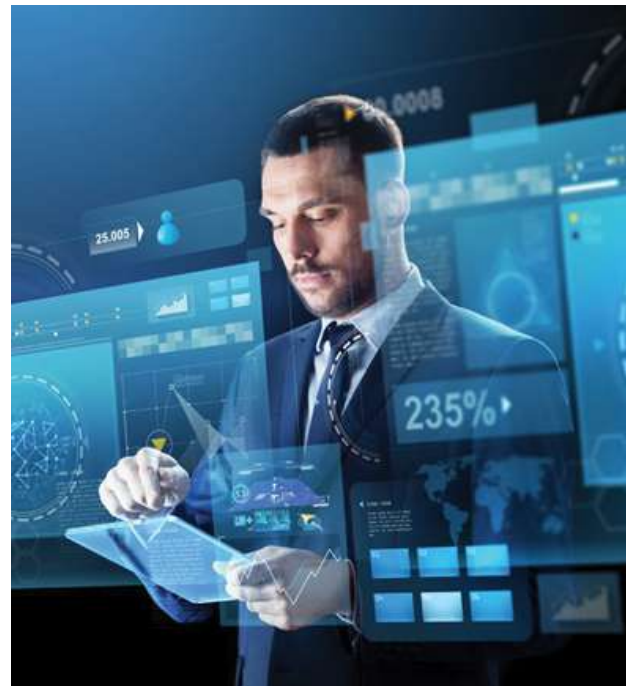
What's the impact on our billings?

Businesses should be aware of the dependable infrastructure that might shift or change due to cloud migration. It is critical for smooth functioning to check dependability.

Cloud-computing vendors build many automated tools into their systems to manage and maintain security and reliability. But most of the time, tools are dependent on human management for their functioning. So, companies need to carefully inspect the conditions of the infrastructure before migrating to the Cloud. They need to determine whether the infrastructure can support perfect migration process requirements.

### A data analytics tool allows you to:

- View daily cost and usage information for all your Snowflake data warehouses
- Monitor progress toward your cost targets using easy-to-read charts
- Compare usage across different time periods, regions, or accounts
- Set up alerts to receive notifications if costs exceed your defined thresholds
- Mitigate the risk of unexpected charges with detailed cost and usage reports



# Translating Metrics into Business Outcomes with Power BI

Our Power BI dashboards make it easy for businesses to access their data and visualize it in compelling ways.

You can easily monitor your Snowflake performance by building interactive dashboards. With a few clicks, you can create detailed reports on usage trends, cost models and more.

You can also find out how your usage patterns change over time; this is especially useful for optimizing your data warehouse use. These insights will allow you to make better decisions about storage, compute, and backup infrastructure to maximize the value of your Snowflake investment.



## What Jade Global's Power BI Dashboards help you do:

- Monitor your Snowflake performance with ease
- Keep track of your costs and usage trends
- See how your usage patterns change over time



# More Mileage out of your Snowflake Investment with Jade Global's Power BI Dashboards



Monitoring, data analytics and visualization with Microsoft Power BI can provide you with near real-time views of your consumption and utilization by data source, operating system disk type, workload, and other dimensions. These out-of-the-box reports can be extended to monitor more metrics and custom reports can be created to gather pre-defined metrics that are not available in the standard reports. Monitoring in Power BI can also provide you with insights on the most expensive queries, which source data is the slowest and underutilized disks which can be used for query caching.

You can screen and identify possible cost saving opportunities. For example, you can optimize your table usage based on the queries that run over the tables most frequently to minimize your overall costs. Many other cost analysis strategies can be readily implemented to generate further savings.

**“** The most obvious benefit of using Power BI with Snowflake for your business is that, along with the ability to easily monitor additional cost incurred, you use and enable certain functionality within your Snowflake Cloud infrastructure. You can then allocate additional resources to free up additional cash flow while minimizing impact on overall Cloud provisioning timelines

**Komal Parekh**, Senior Technical Analyst, Enterprise Cloud Apps –Snowflake, Jade Global

Watch this insightful webinar to know how Jade Global can help your organization maximize the power of Snowflake Cloud by monitoring key metric in Power BI



These Power BI dashboards with Snowflake designed by Jade Global make things easier for users. Users are presented with list views of data that can be filtered by category or dimension. Users can then drill down into individual elements of the data set entering specific parameters.



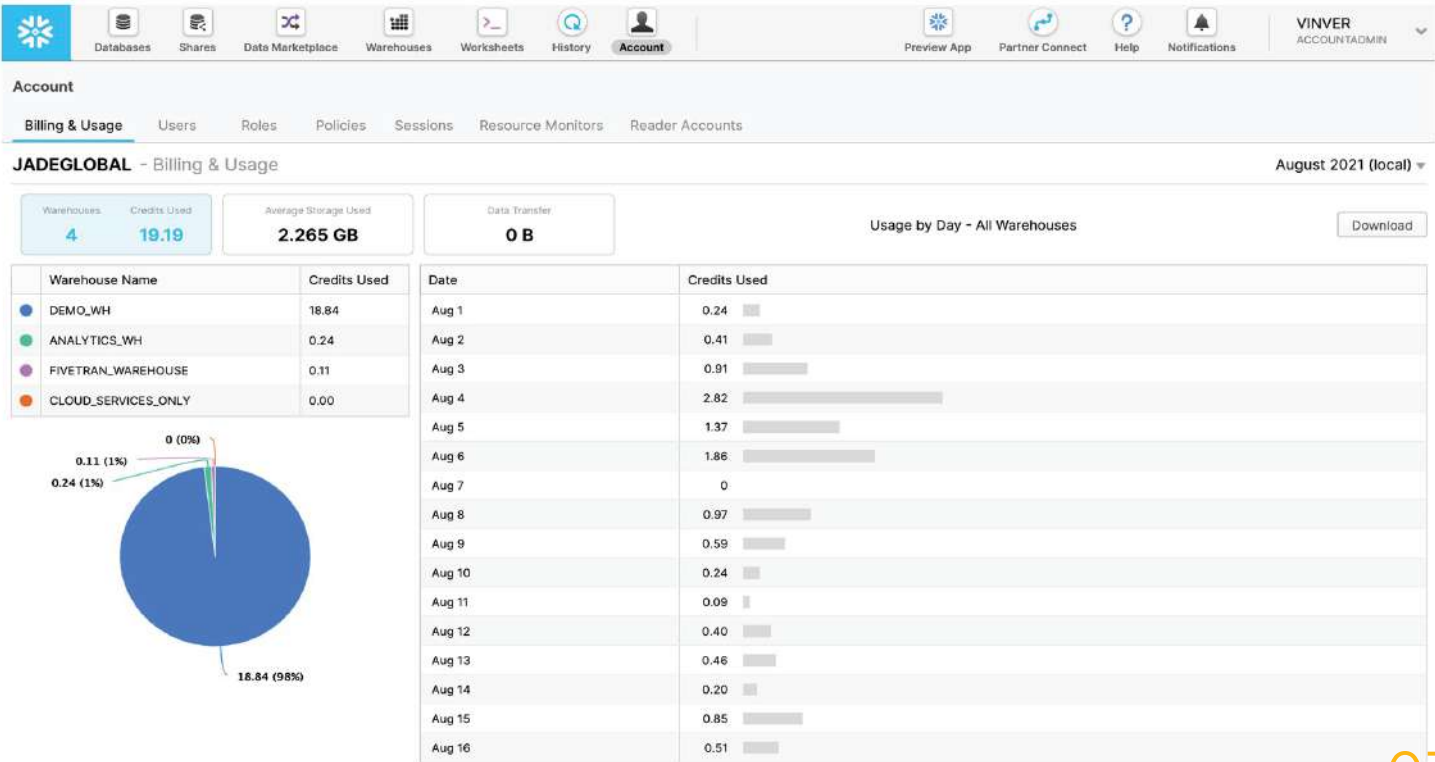
The Power BI dashboards can be easily deployed so that businesses can quickly and easily monitor Snowflake Usage and Cost consumption metrics like:

- Compute Cost Overview
- Credit Forecasting
- Error Tracking
- Slow Running Queries
- Query Utilization
- User Adoption
- Storage Cost

Metrics/Dashboard Details

Category	Description
Compute Cost Overview	This Dashboard will provide 360-degree view of usage of all Snowflake account in an organization. It will provide credit burn, plan budget allocation, and identify peak outliers metrics and reports to reduce unnecessary spend
Compute Credit Forecasting	This dashboard will help forecast credit usage for remaining contract length
Error Tracking	This dashboard will help understand no of errors that have occurred ,common error codes and error messages
Performance Monitoring	This dashboard will help to dig into the data to see if SLAs are being met. Help identify any workloads outside of those SLAs that could be optimized with a different warehouse, and act accordingly
Slowest Running Query	This dashboard will help understand which queries are running slow along with query details and same can be used to optimize the same.
Snowflake Query Utilization	This dashboard will help understand see queries by warehouse , schema , databases
Storage Cost	This dashboard will help understand average monthly spend for storage , failsafe and stage
User Adoption	This dashboard will help track adoption of new cloud platform and see where time is being allocate
Roles, Usage and Object privileges	Dashboard to show grants to objects, usage and type of privileges to roles and users

Snowflake OOTB Usage Metrics





# Making your Solution Implementation Journey Smooth

Jade Global has been helping its partners' cloud transformation by leveraging the offerings from cloud providers and utilizing them to best support their business. Our Managed and Customized Services are designed to help our clients to understand their requirements quickly, select the best-of-breed application for their business, build and deploy the solution on cloud platforms.



## Business Consulting and Assessment:

Clearly understanding Snowflake account setup and type of credit usage that needs to be monitored. To understand current business process and identify simple and low risk opportunities based on best practice.



## High Level Data Flow Design:

Breakdown of the existing application in place to determine the best possible solution to bring data from all Snowflake account into one single view to which Power BI can be connected.



## Data Ingestion Process:

Rapid implementation to data pipelines to collaborate Snowflake account usage metadata from every account into one system.



## Deployment Process:

Deploy and orchestrate the data pipelines to run at a decided frequency.



## Report Development:

Rapid implementation of reports closely aligned with emerging requirement to assure team adoption.



## Training:

Training to make implementation service a success.



# Approaches to Building the Snowflake Consumption Metrics

They are primarily 2 approaches to building the consumption metric:

Diagram 1

We connect to individual Snowflake account; dev test and prod using python and write to target database.

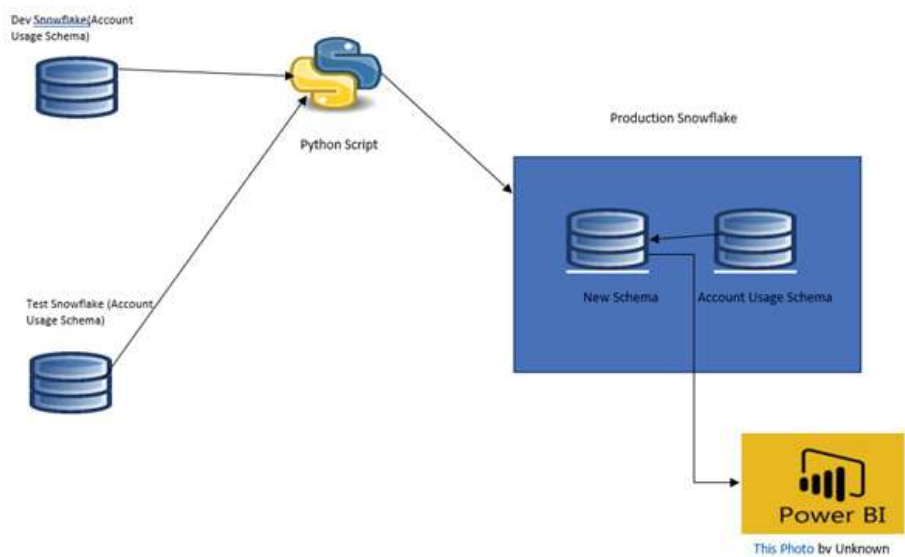
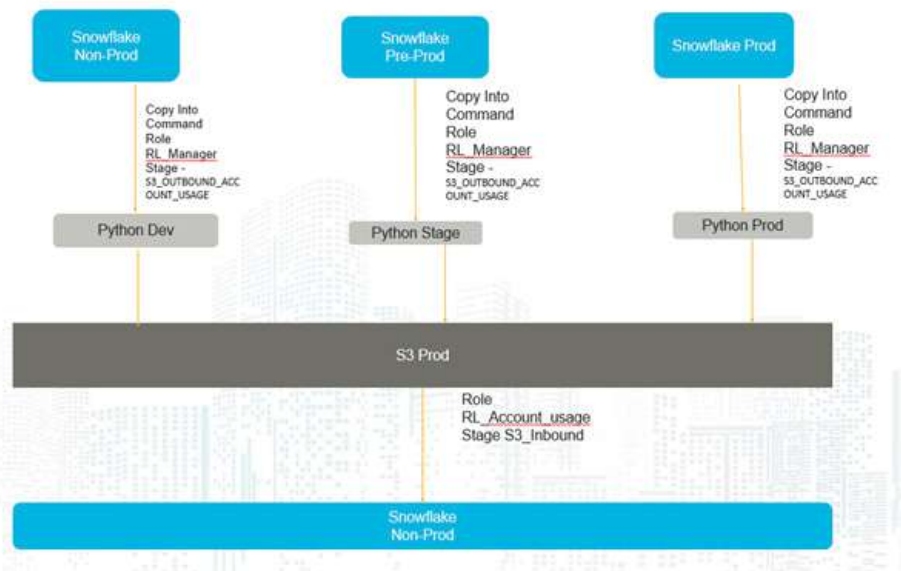


Diagram 2



In this approach we connect to each Snowflake account (dev, test, prod) and write to AWS S3 bucket. Later read from AWS S3 and write to target.

## Case Study

# A Solution to monitor Snowflake Cloud usage brings improvements in the way a Hi-tech giant uses its data warehouse



### About the Client:

The client is an American company, headquartered in Santa Clara, California, which develops and produces semiconductors and related technology. The company had more than 6,000 employees, and 10,000 patents worldwide.

### The Client's Snowflake Environment:

The semiconductor leader was using Tableau to study and analyse multiple Snowflake accounts' usage. Tableau's prebuilt application with ready to use dashboards to monitor Snowflake, however created one bottleneck. It was able to provide individual usage tracking of all three Snowflake accounts. This means now the business was working with three different dashboards.

### The Challenges this Segmented View Presented:

- It made it impossible for the company to undertake comparative analysis of all the three accounts usage, creating environmental siloes.
- Absence of a unified view meant zero visibility and insight into which environment was incurring more cost or which was more optimised, and where the credit is being consumed

### Jade Global's Solution: Using Power BI to Check Credit Consumption:

Jade Global's team of Snowflake's solution architects and Power BI experts gathered informational data from these three different environments, read this data from all the Snowflake accounts and brought it in a single setting- with clear categorizations.

### Benefits: All the Important Consumption Metrics at a Glance

The client can track and graph usage of Snowflake credits, throughput, and storage in real time from Power BI dashboards with the following benefits:

- It provides a bird's eye view of their data pipeline, along with insights into if an action on the data needs to be made
- The company can now see the whole data from all the Snowflake accounts from one single view.
- After implementing the consumption metrics solution, the client was able to reduce the overall consumption of Snowflake credits by 30-40%
- Allow the client to react promptly in order to reduce expenses and increase the efficiency of their data warehouse

**The semiconductor leader was able to reduce its overall consumption of Snowflake credits by 30-40%**

[Read the complete Case Study →](#)



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# Join in

## Partner with Jade

Let us guide your path amidst the clouds and help you build the future enterprise.

## Be an expert

Become a master in the interplay of domains and industries. Drive higher benchmarks of success.

## A leader

Knowledge powerhouse we all hold together-clients, partners and Jade experts.

Contact us to know more about  
Our Industry Solution



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