

Cloud Application Development

Data Warehousing with IBM Cloud Db2 Warehouse

Phase4

To Do:

Building the data warehouse by implementing ETL processes and enabling data exploration. Implement ETL processes to extract, transform, and load data into the data warehouse. Enable data architects to explore and analyze data within Db2 Warehouse using SQL queries and analysis techniques.

Implementation:

The screenshot shows the IBM Cloud Db2 Warehouse 'Create' page. The main section is titled 'Platform' and asks to 'Choose which network and compute environment to run your database on'. Two options are visible: 'IBM Cloud' (selected) and 'Amazon Web Services'. A sidebar on the left lists categories like 'Storage', 'Databases', and 'Developer tools'. A summary panel on the right provides pricing details.

Summary	
Db2 Warehouse	\$897.90/month
Location: London Plan: Flex One Service name: Db2 Warehouse-9u Resource group: Default	
Instance	\$897.90
Instance includes 6 vCPUs and 40 GB storage	
Per month	\$897.90
Total per year	\$10,774.80
Apply a code	
<input type="text"/> <input type="button" value="Apply"/>	
Total estimated cost	\$897.90/month

Project Goals

Building the Data Warehouse:

The primary goal was to create a data warehouse infrastructure using IBM Db2 Warehouse.

Implementing ETL Processes:

We aimed to establish efficient ETL processes to extract, transform, and load data into the data warehouse.

Eg :

Extract data from a source (e.g., CSV file)

```
INSERT INTO TargetTable (Column1, Column2, Column3)
```

```
SELECT SourceColumn1, SourceColumn2, SourceColumn3
```

```
FROM SourceCSV;
```

Enabling Data Exploration:

The project aimed to provide data architects with the tools and capabilities to explore and analyze data within Db2 Warehouse using SQL queries and analysis techniques.

Basic SQL Query:

Retrieve data from a table

```
SELECT Column1, Column2
```

```
FROM WarehouseTable
```

```
WHERE Condition = 'Value';
```

Joining Tables:

Join multiple tables for more complex queries

```
SELECT W.ColumnA, T.ColumnX
```

```
FROM WarehouseTable W
```

```
INNER JOIN AnotherTable T ON W.ID = T.ID;
```

Aggregation and Analysis:

Perform aggregate functions for analysis

```
SELECT Year, SUM(Sales) AS TotalSales
```

```
FROM SalesData
```

```
GROUP BY Year;
```

Project Milestones and Achievements

1. Data Warehouse Implementation

Successfully deployed IBM Db2 Warehouse, providing a scalable platform for data storage and management.

2. ETL Process Implementation

Designed and implemented ETL processes that automate data extraction from various sources, perform necessary transformations, and load data into the warehouse.

Achieved data integration across different systems, ensuring a unified and consistent data source.

3. Enabling Data Exploration

Provided data architects with access to Db2 Warehouse, including necessary permissions and credentials.

Facilitated the use of SQL queries and data analysis techniques, empowering data architects to explore the data effectively.

Conclusion

This project successfully accomplished the goals of building a data warehouse, implementing ETL processes, and enabling data exploration using IBM Db2 Warehouse. The result is a robust infrastructure that supports data-driven decision-making and analysis.