

Activity: Azure Servicess

Research 4 of the following Azure Services and write a comprehensive description of their main points. Remember to research your answers well, and write your answers in paragraphs if possible.

- API Management
- Application Insights
- Azure Active Directory
- Azure Rights Management
- Batch
- BizTalk Services
- Data Factory
- HDInsight
- StorSimple
- Operational Insights

#### Service 1 -

**Application Insights:** Azure Monitor Application Insights is a feature of Azure Monitor that excels in Application Performance Management (APM) for live web applications. Application Insights provides many experiences to enhance the performance, reliability, and quality of the applications.

Additionally, it has a visual overview of application architecture and components' interactions and Proactively monitor and test the availability and responsiveness of application endpoints. Equally important, Azure Monitor Application Insights provide an excellent real-time analytics dashboard for insight into application activity and performance while reviewing application performance metrics and potential bottlenecks. It has also the logic model diagram that visualizes components of Application Insights and how they interact. It is worth mentioning that it can trace and diagnose transactions to identify issues and optimize performance.

#### Service 2 -

##### **AZURE Data Factory**

It is a fully managed serverless data integration service. It serves to easily construct ETL and ELT processes code-free within the intuitive visual environment, or write one's own code, and visually integrate data sources using more than 90+ natively built and maintenance-free connectors at no added cost. The user just focus on data—the serverless integration service does the rest. For instance, A data-analytics solution is able to easily connect to many data sources from raw data stored in a range of disparate systems, both on-premises and cloud-

based.

In summary, Data Factory powers Azure synapse analytics and then integrate and transform data in the familiar Data Factory experience within Azure Synapse Pipelines, transform and analyze data code-free with data flows within the Azure Synapse studio, get data integration with more than 90 built-in connectors.

### Service 3 -

#### **Azure HDInsight**

Azure HDInsight is a service offered by Microsoft that enables to use open source frameworks for big data analytics. Azure HDInsight allows the use of frameworks like Hadoop, Apache Spark, Apache Hive, LLAP, Apache Kafka, Apache Storm, R, etc., for processing large volumes of data. These tools can be used on data to perform extract, transform, and load (ETL,) data warehousing, machine learning, and IoT.

HDInsight uses Azure SQL as its Hive metastore database. The Apache Hive Metastore is an important aspect of the Apache Hadoop architecture since it serves as a central schema repository for other big data access resources including Apache Spark, Interactive Query (LLAP), Presto, and Apache Pig.

HDInsight can be used for data warehousing by performing queries at very large scales on structured or unstructured data and can help in processing large volumes of data coming from numerous devices. It additionally helps in making applications that can extract vital information from analyzing large volumes of data as well as in extending a company's on-premises infrastructure to the cloud for better analytics and processing in a hybrid situation.

In summary, Azure HDInsight provides a unified solution for using open source frameworks, such as Hadoop, Spark, etc., for big data analytics. This enables Azure HDInsight to be used in multiple scenarios; it also renders itself as a powerful data analytics tool for both cloud and on-premises.

### Service 4 -

### Azure Operational Insights

Azure Operational Insights is an analysis service designed to provide IT administrators with deep insight into on-premises and cloud environments. It helps user interact with real-time and historical computer data for rapid development of custom insights, while providing Microsoft- and community-developed patterns for data analysis.

By using operational Insights, operations teams can be empowered to effortlessly collect, store, and analyze log data from virtually any Windows Server or Linux source—regardless of volume, format, or location. It gives access to real-time operational intelligence with improved troubleshooting, operational visibility, and fast search, which enable to explore, investigate, and fix incidents quickly.

**Challenge: Explain any other Azure Cloud services might benefit you or your line of work when you've secured employment. Aim for at least two put you can write about as many as you feel are relevant.**

### Challenge

#### Microsoft genomics

Microsoft genomics make genomics data actionable by analyzing and interpreting data generated by modern genomics technologies using open-source software, big data analytics, and machine learning services on Azure.

This turnkey Azure service enables secondary analysis of genomics data using Burrows-Wheeler Aligner (BWA) and the Genome Analysis Toolkit (GATK). Microsoft Genomics service provides on-demand scalability and easy-to-use API integration. Other tools designed to analyse genomic data include but are not limited to Parabricks (a software suite for performing secondary analysis of next-generation sequencing (NGS) DNA and RNA data) and The Genomics Data Science Virtual Machine (DSVM), which is a customized DSVM image on the Azure platform, built specifically for data science.

#### Azure Cosmos DB

Cosmos DB is a NoSQL (meaning "Not only SQL", rather than "zero SQL") and vector database. It is a distributed, multi-model database service designed to provide high availability, scalability, and low-latency access to data for modern applications and can handle unstructured, semi-structured, structured, and vector data types.