Transitioning Legacy Applications to Sap Hana on Azure for Improved Performance and Analytics

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Abstract

This research paper has exemplified the transmission of legacy applications to SAP HANA on Azure that has been used to elevate performance and analytics. It has thrived organisations to cater for the benefits of result time insights, scalability, integration and cost efficiency which has maintained equilibrium by optimising the operational efficiency. The strategies used for improving the performance and analytics such as providing continuous training and gathering valuable feedback have exemplified to nurture the businesses in considering SAP HANA on Azurev for developing its performance and analytics in the future endeavours.

Keywords: SAP HANA, Azure, Legacy Applications, Data Analytics, Performance Improvement

I. INTRODUCTION

The following research paper will shed light on transitioning legacy applications to SAP HANA on Azure to improve performance and analytics. It will be beneficial to help with performance and possible changes by getting certified to work with SAP HANA. At the same time, there will alo be demand for M-Series Virtual Machines which will scale up to 12 TB of memory and will be termed to be the largest certified SAP HANA. However, this research paper will highlight the benefits of SAP HANA on Azure that will involve identifying the challenges in the initial stages. Furthermore, the research paper will propose with stringent strategy which will be effective in minimising the challenges and improving performance and analytics.

Figure 1: Depicting SAP HANA

II. STATING THE OVERVIEW OF SAP HANA ON AZURE

The following section describes the overview of SAP HANA on Azure. It acts as a relational database management system also abbreviated as "RDBMS" and thus can be used for real-time analytics along with business intelligence and centralisation of certifications. Additionally, it acts as a that allows it to build on the shared host or server for benign metal hardware which is assigned for the users[1]. This server hardware gets embedded in a larger stamp to compute or server along with networking and storage structure. The overall infrastructure of SAP HANA on Azure deploys multiple layers that get isolated from each other. However, the SAP layer and workload act as the middleware to provide optimum functioning in virtual machines. Observing this Azure specialises in having SAP HANA database that is running on Azure VMs[2]. Similarly, in terms of networking the Network Security Groups can be used to direct traffic to the SAP HANA. As a result, this entailed the establishment of private connectivity to private service endpoints. Moreover, this seeks to foster advanced functionalities that can help to transform the businesses and operate in a streamlined manner thereby protecting the data.

III. HIGHLIGHTING THE BENEFITS OF SAP HANA ON AZURE

This section describes the benefits of SAP HANA on Azure which are used for processing the data with regards to traditional databases. It allows the data to get accessed and then it is processed at a sophisticated pace to enable quicker decision making. These benefits are explained below.

Real-Time Insights: It is observed that SAP HANA has the probability to nurture real-time and predictive insights which can be used to advantage the organisations in improving their decision-making capabilities. This is done by utilising machine learning algorithms to explore the hidden trends that were previously possible to detect with legacy systems[3].

Scalability: In terms of scalability, SAP HANA comprises large distances that can be scaled up to 60 TB in SAP Business Warehouse configurations. This means that the resources are easily adjusted based on the operational moments and supports expanding the computing power and storage capacity.

Integration: It is evident that the successful integration of Azure with SAP HANA allows for critical workloads that are replicated among the on-premises and cloud[4].
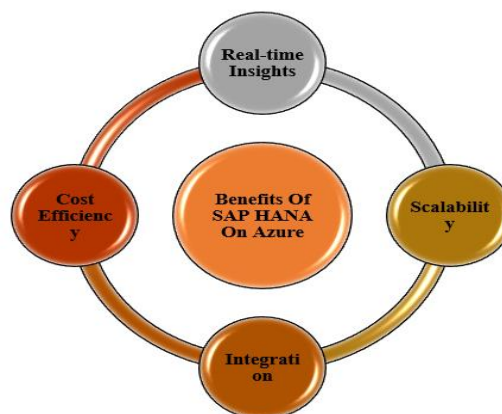

Figure 2: Highlighting Benefits of SAP HANA ON Azure

Cost Efficiency: Fostering to be cost efficient makes SAP HANA minimise the overall IT costs on Azure. This is done by leveraging a cloud model which is used to lower the probability of association of on-premises landscapes and only pay for the resources that are used by the users and the developers.

IV. UNDERSTANDING THE CHALLENGES THAT ARE FACED IN TRANSITIONING LEGACY APPLICATIONS

It is viewed that as SAP HANA on Azure comes with enormous benefits still it faces certain challenges that cannot be ignored. These challenges need to be mitigated at the initial phases so that they cannot tamper with the data thereby maintaining the sensibility and confidentiality of the data. These challenges are mentioned below.

Data Security: In the segment of data security, it is the responsibility of organisations to maintain streamlined data security and get aligned with the regulations that are termed to be of immense relevance. This enhances the chances of getting familiarised with the protocols in order to make sure that their architecture meets the necessary standards[5].

Regulatory Compliance: It is important for assessing the present systems it is necessary to adhere to the industry standards and regulations.

Technical Complexities: In the context of technical complexities, this gets involved in transmitting legacy applications to cloud-based elements which is identified as a significant challenge[6].

Cultural Resistance: It is evident that cultural resistance is observed as a significant challenge that can have a negative impact in blundering the transmission of the processes. This type of challenge can be minimised by the application management strategies which furnishes the process in a smooth fashion.
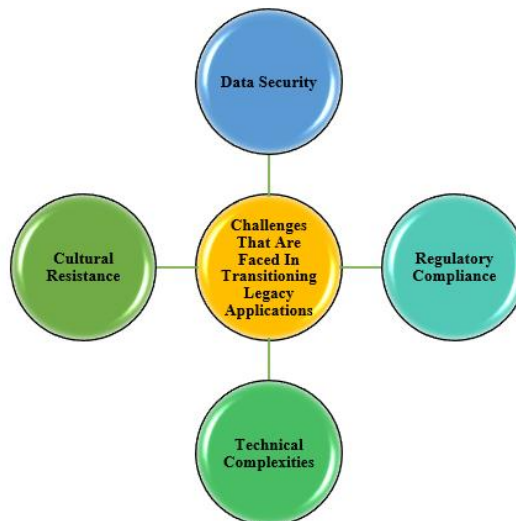

Figure 3: Demonstrating Challenges Faced in Transitioning Legacy Applications

V. STRATEGIES USED TO MITIGATE CHALLENGES FOR IMPROVED PERFORMANCE AND ANALYTICS

The following section proposes robust strategies that are used to mitigate the challenges therefore improving the performance and analytics. The first strategy refers to allowance for continuous training for SAP HANA on Azure for cultivating the employees to capitalise on the full potential aligning with the cloud-based infrastructure[7]. The second strategy that is used is collecting valuable feedback from the users for developing the weaker sections. Moreover, the organisation needs to work according to the feedback based on the user experience to facilitate the satisfaction of the customers.

VI. CONCLUSION

The research paper has concluded that the robust application of SAP HANA on Azure has transitioned legacy applications and improved the overall performance and analytics. This has been achieved by the embracement of modern technologies such as the development of operational efficiencies that are used to drive strategic growth and innovation. Furthermore, mitigating the challenges such as data security, regulatory compliance, technical complexity and cultural resistance by implementing strategies such as collecting valuable feedback and providing training to the employees to combat these challenges systematically. This has determined to harness the organisations to remain proactive.

Abbreviations and Acronyms
- SAP- Systems, Applications and Products in Data Processing.
- HANA- High Performance Analytic Appliance
- ML- Machine Learning
- VMs- Virtual Machines
- RDBMS- Relational Database Management Systems
- NSGs- Network Security Groups

Units
- Time is measured in seconds
- Mass in kilograms
- Power in Watt
- Energy is measured in Joule

Equations
- Cost Savings (CS) = [C_{legacy} - C_{hana}], where CS is cost savings, C_{legacy} is the total cost of maintaining legacy systems and C_{hana} is the total cost of using SAP HANA on Azure
- Performance Ratio (PR) = [T_{legacy} / T_{hana}], where T_{legacy} is the time taken by legacy systems and T_{hana} is the time taken by SAP HANA.

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