

# Dell APEX Cloud Platform for Microsoft Azure

Deploy mission-critical database and virtual desktop workloads in a Microsoft hybrid cloud environment

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## Essentials

### Solution

This solution brief discusses a number of key enterprise use cases for the Dell APEX Cloud Platform for Microsoft Azure. Dell APEX Cloud Platform for Microsoft Azure provides composable, software-defined infrastructure that meets the on-premises needs of Microsoft Azure customers in business-critical use cases such as virtual desktop and database-as-a-service.

### Use Cases

The virtual desktop and database-as-a-service use cases discussed here are particularly relevant for customers across multiple private and public sector domains who wish to leverage the flexibility of a cloud consumption model while also benefitting from the performance, data locality, and data sovereignty advantages available from an on-premises environment.

## Background

The Dell APEX Cloud Platform for Microsoft Azure being announced at Dell Technologies World 2023 is a new infrastructure platform purpose-built collaboratively with Microsoft to optimize Microsoft Azure hybrid cloud deployments. It provides deep integrations and intelligent automation between layers of the Dell and Microsoft technology stack, accelerating time-to-value while eliminating complexity and boosting IT agility and productivity.

Dell APEX Cloud Platform for Microsoft Azure is built on many years of innovation across a range of technologies by both Dell Technologies and Microsoft. This collaboration has culminated in the Dell Integrated System for Microsoft Azure Stack HCI, which incorporates the Microsoft Azure Stack HCI OS. Dell Cloud Platform Foundation Software and Microsoft Azure Stack HCI OS are the key software pillars that enable Dell APEX Cloud Platform for Microsoft Azure to empower customers to unlock the benefits of key enterprise use cases in their hybrid cloud environments.

## Benefits of Dell APEX Cloud Platform for Microsoft Azure

The unique set of capabilities provided by Dell APEX Cloud Platform for Microsoft Azure makes it an ideal choice for many enterprise use cases – from infrastructure modernization to AI and from virtual desktops to databases. The following table shows some of the capabilities and benefits that make Dell APEX Cloud Platform for Microsoft Azure the ideal solution for these use cases (and many others):

Capability	Benefit
Fully integrated and collaboratively built turnkey solution with Microsoft	Reduces deployment complexity and accelerates time to value
Integrations for manageability through Windows Admin Center (WAC)	Reduces management interfaces and simplifies management with familiar tools
Open REST APIs	Simplifies I&O, DevOps, and application workflows with an open framework for integrating the platform with IT processes and tools
Broad choice of rackmount devices providing multiple configuration options including GPU capabilities	Enables optimal execution of a broad range of storage, compute, GPU, and throughput-intensive workloads without infrastructure overprovisioning

Two particularly attractive use cases for Dell APEX Cloud Platform for Microsoft Azure-based environments are for virtual desktop and database environments.

## Work from Anywhere Use Case with Azure Virtual Desktop

Modern organizations are striving to deal with an increasingly complex environment – employees and students must be able to work and learn from anywhere. There is an ever-increasing organizational imperative to do more with less, all of which is happening in a technological environment where cybersecurity vulnerabilities are being exposed at a rapidly increasing pace, resulting in significant financial and reputational risk to businesses. In this environment, desktop and application virtualization is attracting a lot of interest. It is highly secure (because it keeps user data in the data center) and is a true “do anything from anywhere” powerhouse, allowing users to connect to their desktops and applications using endpoint devices with multiple form factors and running many operating systems.

Azure Virtual Desktop (AVD) is a desktop and application virtualization solution that runs in Azure public cloud and, in public preview, on Azure Stack HCI OS-based private cloud environments. It provides IT with strong, granular controls and a straightforward management experience, while also providing a rich experience to Windows and Microsoft 365 users. As an Azure Stack HCI OS-based platform, Dell APEX Cloud Platform for Microsoft Azure is an ideal platform for AVD-based virtual desktop environments. It allows organizations to benefit from the improved performance and compliance with data sovereignty requirements that are delivered by an on-premises environment while also providing a streamlined, cloud-consistent experience through the same rich comprehensive management plane in Azure.

Organizations that want to maximize the value of their hybrid AVD deployments need to choose an on-premises environment that complements and enhances AVD. Dell APEX Cloud Platform for Microsoft Azure has many capabilities and benefits that are of significant benefit to AVD deployments:

- Ability to move Azure workloads between public and private clouds as needed, allowing virtual desktop users to be deployed on Dell APEX Cloud Platform for Microsoft Azure or on an Azure hybrid cloud depending on organization-specific requirements
- Intrinsic security throughout the entire integrated hardware and software stack, reinforcing the inherent virtual desktop security provided by AVD

- Full stack life cycle management across the entire stack, ensuring that organizations can quickly and seamlessly ensure that the on-premises platform hosting their AVD environment has the latest security, functionality, and performance enhancements
- Broad choice of 1U and 2U rackmount servers with various CPU, memory, storage, and GPU configurations, providing true linear scalability, ensuring that organizations can granularly scale their Dell APEX Cloud Platform for Microsoft Azure environment to deliver the appropriate number of desktops with the precise level of performance

Virtual desktop solutions such as AVD can deliver transformational benefits for organizations. However, these benefits can only be fully captured when the virtual desktops run on a platform that can enable the full potential of these virtual desktop technologies. The unique combination of capabilities and benefits delivered by Dell APEX Cloud Platform for Microsoft Azure positions it perfectly as that virtual desktop platform of choice.

## Hybrid Database-as-a-Service Use Case

Well into the 21<sup>st</sup> century, data continues to be the most valuable asset that companies possess. As data has been growing exponentially during the last decades, storing and processing data to obtain the most business value is still of utmost relevance for most IT departments.

In this scenario, databases constitute one of the most valuable applications, and we find them in every customer environment, in different shapes and forms. Today, when most customers implement a hybrid approach to their cloud operating model, they must also consider a similar hybrid approach for their database deployments. Data can reside on-premises or in the cloud depending on specific dataset needs. This rich feature usually represents an important obstacle for IT administrators, now obliged to operate and maintain a complex and advanced architecture that can surpass their capabilities.

The challenges found in these hybrid environments are of a varied nature. They include keeping a consistent control version on database engines and their associated security updates or operating a diverse database toolkit between on-premises and cloud instances. If we add infrastructure inflexibility and variable infrastructure configuration needs to cope with database performance requirements, a heavy burden for many IT admins is the result.

In this already complex scenario, business demands can make it even harder. IT might be required to deploy the latest version of a database engine to get the most from its new features and performance, but simultaneously keep running legacy databases as they are key in the company's strategy.

A smart way to respond to these challenges might be to adapt a Database-as-a-Service (DBaaS) platform. A DBaaS platform enables creating modern, cloud-native applications, minimizing the operational burden described previously, and optimizing cross-functional productivity for DBAs, IT admins, and software developers. Microsoft and Dell Technologies have created a modular, integrated solution that:

- Simplifies overall life cycle management
- Automates common administrative tasks
- Increases platform resiliency
- Ensures performance to meet defined SLAs

Dell APEX Cloud Platform for Microsoft Azure provides a consistent platform to implement a DBaaS architecture. By providing the same Azure experience to data centers and edge locations, simplifying operations, and alleviating the cost of application development, Dell APEX Cloud Platform for Microsoft Azure enables operations automation, life cycle management for the full system stack, as well as flexible consumption models with enterprise-level support and services.

Hybrid DBaaS with Dell APEX Cloud Platform for Microsoft Azure helps IT and database admins, and software developers by providing:

- Self-service database provisioning
- Elastic resource scalability
- Reduction in operational and management costs
- Flexible consumption models
- Automation of common administrative tasks
- Platform resiliency and performance to meet defined SLAs

The following figure provides an overview of the building blocks of the Dell APEX Cloud Platform for Microsoft Azure:

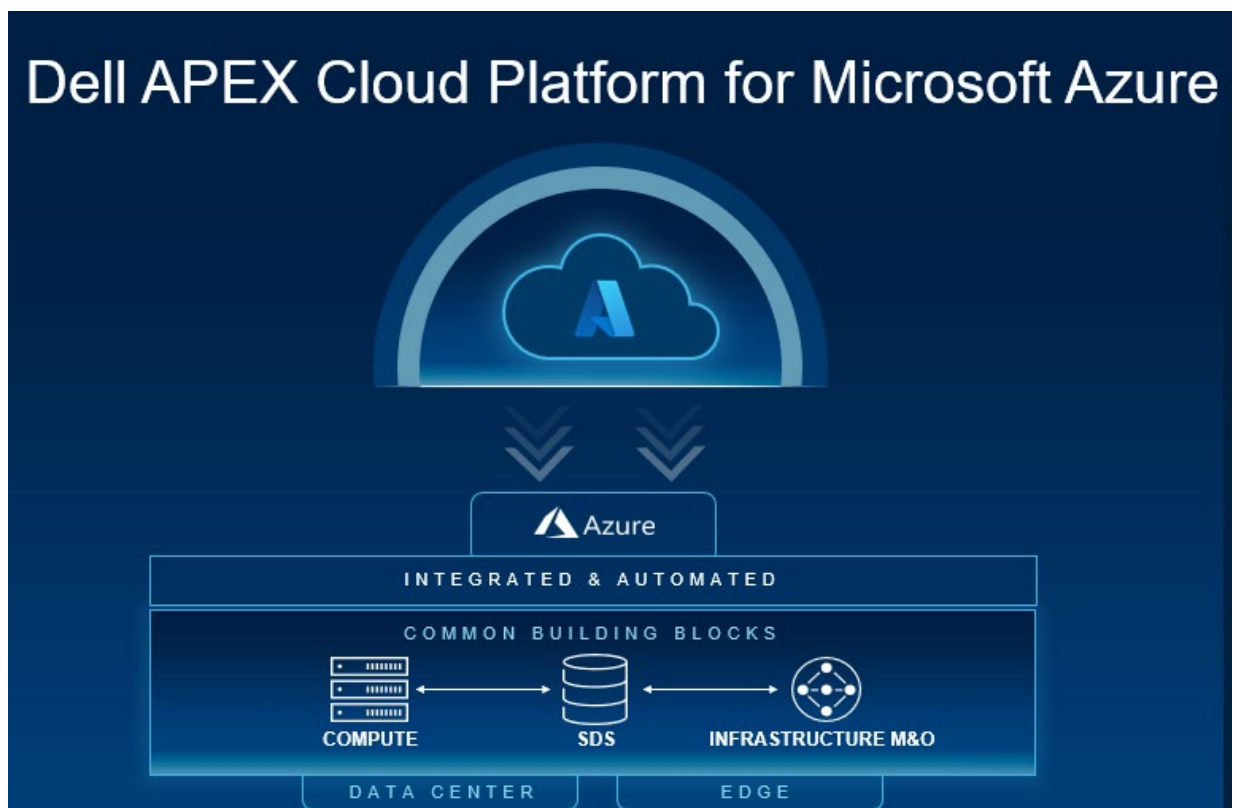


Figure 1 Dell APEX Cloud Platform for Microsoft Azure

Dell APEX Cloud Platform for Microsoft Azure is the only cloud platform built collaboratively with Microsoft to optimize the Azure hybrid cloud experience. It is built to address database workload requirements, particularly Microsoft SQL Server.

The backend infrastructure supporting Dell APEX Cloud Platform for Microsoft Azure is designed to provide node-based linear scalability, and the transactional and throughput performance required by DBaaS deployments.

## Summary

Dell APEX Cloud Platform for Microsoft Azure provides a fully integrated system for Microsoft Azure that enables multicloud operations by extending customers' cloud operating models to on-premises and edge environments. Designed to host a wide range of workloads, its rich set of multicloud capabilities

means that Dell APEX Cloud Platform for Microsoft Azure is ideally suited for virtual and DBaaS use cases.

## References

The following documentation provides additional information about Dell APEX Cloud Platform for Azure Platform:

- [Dell APEX Cloud Platform for Microsoft Azure Solution Brief](#)

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