

Create hybrid cloud consistency

12/27/2018 • 6 minutes to read • Contributors

In this article

[Integrate hybrid cloud consistency](#)

[Azure Stack in a hybrid cloud environment](#)

[Azure Stack One Cloud Ecosystem](#)

This article guides you through the high-level approaches for creating hybrid cloud consistency.

Hybrid deployment models during migration can reduce risk and contribute to a smooth infrastructure transition. Cloud platforms offer the greatest level of flexibility when it comes to business processes. Many organizations are hesitant to make the move to the cloud, preferring instead to keep full control over the most sensitive data. Unfortunately, on-premises servers don't allow for the same rate of innovation as the cloud. A hybrid cloud solution allows you the best of both worlds: the speed of cloud innovation and the comfort of on-premises management.

Integrate hybrid cloud consistency

Using a hybrid cloud solution allows organizations to scale computing resources. It also eliminates the need to make massive capital expenditures to handle short-term spikes in demand. When changes to your business drive the need to free up local resources for more sensitive data or applications, it is easier, faster, and less expensive to deprovision cloud resources. You pay only for those resources your organization temporarily uses, instead of having to purchase and maintain additional resources. This reduces the amount of equipment that might remain idle over long periods of time. Hybrid cloud computing is a "best of all possible worlds" platform, delivering all the benefits of cloud computing flexibility, scalability, and cost efficiencies; all with the lowest possible risk of data exposure.

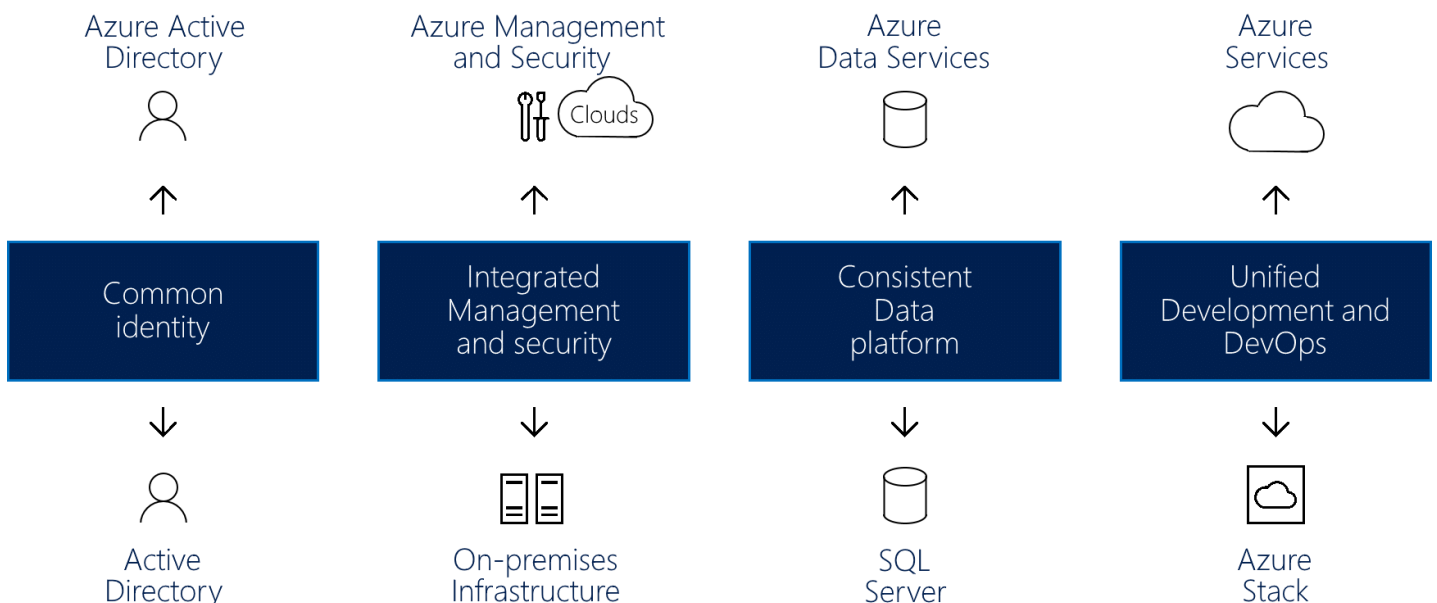


Figure 1. Creating hybrid cloud consistency across identity, management, security, data, development, and DevOps

A true hybrid cloud solution must provide four components, each of which brings significant benefits, including:

- **Common identity for on-premises and cloud applications:** This improves user productivity by giving users single sign-on (SSO) to all their applications. It also ensures consistency as applications and users cross network/cloud boundaries.
- **Integrated management and security across your hybrid cloud:** This provides you with a cohesive way to monitor, manage, and secure the environment, enabling increased visibility and control.

- A consistent data platform for the datacenter and the cloud: This creates data portability, combined with seamless access to on-premises and cloud data services for deep insight into all data sources.
- Unified development and DevOps across the cloud and on-premises datacenters: This allows you to move applications between the two environments as needed, improving developer productivity, as both places now have the same development environment.

Examples of these components from an Azure perspective include:

- Azure Active Directory (Azure AD), which works with on-premises Azure AD to provide common identity for all users. SSO across on-premises and via the cloud makes it simple for users to safely access the applications and assets they need. Admins can manage security and governance controls so that users can access what they need, with flexibility to adjust those permissions without affecting the user experience.
- Azure provides integrated management and security services for both cloud and on-premises infrastructure that include an integrated set of tools for monitoring, configuring, and protecting hybrid clouds. This end-to-end approach to management specifically addresses real-world challenges facing organizations considering a hybrid cloud solution.
- Azure hybrid cloud provides common tools that ensure secure access to all data, seamlessly and efficiently. Azure data services combine with Microsoft SQL Server to create a consistent data platform. A consistent hybrid cloud model allows users to work with both operational and analytical data, providing the same services on-premises and in the cloud for data warehousing, data analysis, and data visualization.
- Microsoft Azure cloud services, combined with Microsoft Azure Stack on-premises, provide unified development and DevOps. Consistency across the cloud and on-premises means that your DevOps team can build applications that run in either environment, and can easily deploy to the right location. You can reuse templates across the hybrid solution as well, which can further simplify DevOps processes.

Azure Stack in a hybrid cloud environment

Microsoft Azure Stack is a hybrid cloud solution that allows organizations to run Azure-consistent services in their datacenter, providing a simplified development, management, and security experience that is consistent with Azure public cloud services. Azure Stack is an extension of Azure, enabling you to run Azure services from your on-premises environments and then move to the Azure cloud if and when required.

Azure Stack allows you to deploy and operate both IaaS and PaaS using the same tools and offering the same experience as the Azure public cloud. Management of Azure Stack, whether through the web UI portal or through PowerShell, has a consistent look and feel for IT administrators and end users with Azure.

Azure and Azure Stack unlock new hybrid use cases for both customer-facing and internal line-of-business applications, including:

- **Edge and disconnected solutions.** Customers can address latency and connectivity requirements by processing data locally in Azure Stack and then aggregating in Azure for further analytics, with common application logic across both. Many customers are interested in this edge scenario across different contexts, including factory floors, cruise ships, and mine shafts.
- **Cloud applications that meet various regulations.** Customers can develop and deploy applications in Azure, with full flexibility to deploy on-premises on Azure Stack to meet regulatory or policy requirements, with no code changes needed. Illustrative application examples include global audit, financial reporting, foreign exchange trading, online gaming, and expense reporting. Customers are sometimes looking to deploy different instances of the same application to Azure or Azure Stack, based on business and technical requirements. While Azure meets most requirements, Azure Stack complements the deployment approach where needed.
- **Cloud application model on-premises.** Customers can use Azure web services, containers, serverless, and microservice architectures to update and extend existing applications or build new ones. You can use consistent DevOps processes across Azure in the cloud and Azure Stack on-premises. There is a growing interest in application modernization, including for core mission-critical applications.

Azure Stack is offered via two deployment options:

- **Azure Stack integrated systems:** Azure Stack integrated systems are offered through a partnership of Microsoft and hardware partners, creating a solution that provides cloud-paced innovation balanced with simplicity in management. Because Azure Stack is offered as an integrated system of hardware and software, you get the right amount of flexibility and control, while still adopting innovation from the cloud. Azure Stack integrated systems range in size from 4–12 nodes and are jointly supported by the hardware partner and Microsoft. Use Azure Stack integrated systems to enable new scenarios for your production workloads.
- **Azure Stack Development Kit:** The Microsoft Azure Stack Development Kit is a single-node deployment of Azure Stack, which you can use to evaluate and learn about Azure Stack. You can also use the kit as a developer environment, where you can develop using APIs and tooling that are consistent with Azure. Azure Stack Development Kit is not intended to be used as a production environment.

Azure Stack One Cloud Ecosystem

You can speed up Azure Stack initiatives by using the complete Azure ecosystem:

- Azure ensures that most applications and services certified for Azure will work on Azure Stack. Several ISVs including Bitnami, Docker, Kemp Technologies, Pivotal Cloud Foundry, Red Hat Enterprise Linux, and SUSE Linux are extending their solutions to Azure Stack.
- You can opt to have Azure Stack delivered and operated as a fully managed service. Several partners including Tieto, Yourhosting, Revera, Pulsant, and NTT will have managed service offerings across Azure and Azure Stack shortly. These partners have been delivering managed services for Azure via the Cloud Solution Provider (Cloud Providers) program and are now extending their offerings to include hybrid solutions.
- As an example of a complete, fully managed hybrid cloud solution, Avanade is delivering an all-in-one offer that includes cloud transformation services, software, infrastructure, setup and configuration, and ongoing managed services so customers can consume Azure Stack just as they do with Azure today.
- Systems Integrators (SI) can help accelerate application modernization initiatives by building end-to-end Azure solutions for customers. They bring deep Azure skillsets, domain and industry knowledge, and process expertise (such as DevOps). Every Azure Stack cloud is an opportunity for an SI to design the solution, lead and influence system deployment, customize the included capabilities, and deliver operational activities. This includes SIs like Avanade, DXC, Dell EMC Services, InFront Consulting Group, HPE Pointnext, and Pricewaterhouse Coopers (PwC).