MS Hybrid Technology: Identity, Security, SQL hybrid and Azure Stack

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As one of the first Cloud Solution Architects for Microsoft, Paul Singh helps shape and deliver on a strategy to customer success utilizing Azure services (e.g., Infrastructure, Compliance, Containers, Big Data) directly with Education customers by providing deep technical expertise and guidance on cloud solutions. He also works closely with the Microsoft ecosystem of system integrators and solution providers and partners.

Prior to joining Microsoft, Paul was the Datacenter Manager at the University of California, Davis. Paul has been involved in Education for over a decade.

Paul was instrumental in developing and creating the Microsoft Azure Exam, 70-534: Architecting Microsoft Azure Solutions and more recently worked with large, global accounts within Microsoft as well as EDU organizations in the West.

Paul resides near the San Francisco, CA Bay Area.
Microsoft Azure: THE Consistent Hybrid Cloud

Azure Active Directory

Common Identity

Integrated Management and Security

On-premises infrastructure

Clouds

Consistent Data Platform

SQL Server

Azure data services

Unified Development and DevOps

Azure services

Active Directory

Azure Stack
Common Identity: Azure Active Directory
Identity as the Control Plane

Windows Server
Active Directory

Azure Active Directory

On-premises

Commercial IdPs

Consumer IdPs

Customers

Partners

Azure

Public cloud

Commercial IdPs

Salesforce

Office 365

DocuSign

Google

Box

Azure AD Connect

BYO
Azure Active Directory in the Marketplace

— Every Office 365 and Microsoft Azure customer uses Azure Active Directory —

14.2M organizations
1.01B identities
334K 3rd party apps in Azure AD
64K paid Azure AD / EMS customers
90% of Fortune 500 companies use Azure AD

+30% YoY
+35% YoY
+150% YoY
+65% YoY

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Every Office 365 and Microsoft Azure customer uses Azure Active Directory.
Azure Active Directory

— Identity and access management for employees, partners, and customers —

- B2B collaboration:
  - Provisioning-Deprovisioning
  - Addition of custom cloud apps
  - Access Panel/MyApps
  - Dynamic Groups
  - Identity Protection

- Self-Service capabilities:
  - Connect Health
  - Remote Access to on-premises apps
  - Azure AD B2C
  - Group-Based Licensing
  - Privileged Identity Management

- Azure AD Connect:
  - Conditional Access
  - Microsoft Authenticator - Password-less Access
  - Azure AD Join
  - MDM-auto enrollment / Enterprise State Roaming
  - Security Reporting

- SSO to SaaS:
  - Multi-Factor Authentication
  - Azure AD DS
  - Office 365 App Launcher
  - HR App Integration
  - Access Reviews
Integrated Management and Security: Azure Security Center
Hybrid cloud requires a new approach for security

- **Distributed infrastructure**
  Need better visibility and control

- **Rapidly changing cloud resources**
  Require solutions that keep pace with speed and agility of cloud

- **Increasingly sophisticated threats**
  Leverage analytics and threat intelligence to detect threats quickly
Understand security state across hybrid workloads

**Built-in Azure, no setup required**
- Automatically discover and monitor security of Azure resources

**Gain insights for hybrid resources**
- Easily onboard resources running in other clouds and on-premises
Central policy management

- Define a security policy for each subscription in Security Center
- Apply across multiple subscriptions using Azure Management Groups

Ensure compliance with policy management
Consistent Data Platform
SQL - Azure
Data platform continuum

- **Physical**
  - SQL Server
  - Physical Machine (raw iron)

- **Virtual**
  - SQL Server Private Cloud
  - Virtualized Machine + Appliance

- **IaaS**
  - SQL Server in Azure VM
  - Virtualized Machines

- **PaaS & SaaS**
  - Azure SQL Database
  - Virtualized Database

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**Shared lower cost**

**Dedicated higher cost**

**Higher administration**

**Lower administration**
A hybrid Journey to the Cloud

Seamless hybrid deployment with integrated data synchronization
Reliable migration at scale
Lift and shift to the cloud with no code changes
Up to 55% cost savings
Azure Hybrid Use Benefits (HUB)

Save up to 55% in Azure for Windows Server and SQL Server workloads

Azure Hybrid Benefit for Windows Server
Convert, or re-use Windows licensing with active software assurance in Azure for IaaS
Significantly reduce costs, paying the ‘base rate’ in Azure

Azure Hybrid Benefit for SQL Server
Convert SQL licensing with active software assurance to save up in Azure for IaaS and PaaS
Use licenses on premise and under the Hybrid Benefit simultaneously for 180 days

'Savings may be higher when that Azure Hybrid Benefit for Windows Server and SQL Server are used together or ‘stacked’ in IaaS
Unified Development and DevOps: Azure Stack
Azure Stack is an extension of Azure
Only consistent hybrid cloud platform
Use Azure Stack for:
- Real-time latency requirements
- Connectivity issues
- Local data processing

Use Azure for aggregate analytics and big data modelling

Common application logic across both, connected, or disconnected

Edge and disconnected solutions
Azure Site Recovery (ASR)
Replicate and failover on-premises apps to Azure

**Key features include:**

- Use Azure as your replication site
- Automated VM protection and replication
- Remote health monitoring
- Customizable recovery plans
- No-impact recovery plan testing
- Orchestrated recovery of tiered applications
- Support for heterogeneous environments
Centralized File Sharing: Azure Files/Azure File Sync
Azure File Sync

Cloud Tiering

Multi-site sync

Rapid file server DR

Direct cloud access

Integrated cloud backup
MS Hybrid Technology

Session resources

- **Azure Active Directory**

- **Azure File Sync**

- **Azure Site Recovery documentation**
  - https://aka.ms/siterecovery_documentation

- **Azure Security Center**

- **Azure Active Directory Fundamentals**
  - https://docs.microsoft.com/en-us/azure/active-directory/fundamentals

- **Azure SQL**
  - https://aka.ms/asrforum

- **Azure Hybrid Benefit (SQL/Windows)**
Q&A

Thank You