UTILIZING MICROSOFT AZURE TO LEVERAGE THE POWER OF THE CLOUD

Enabling Azure’s extensive backup and site recovery capabilities

April 27, 2017
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Today’s presenter

Drew Wilson
- Microsoft Presales Engineer
- Based in the Dallas, TX office
- Experience evaluating, recommending and designing a vast array of enterprise applications

Scott Harbaugh
- Director, Technology & Management Consulting
- Based in Denver, CO office
- Experience as an executive technical consultant focused on cloud adoption & infrastructure
Technology and Management Consulting

**Advising**
- Management consulting
  - Plan, implement, optimize
  - Rapid Assessment strategy and improvement
  - Finance and accounting
  - Technology and digital
  - Operations and supply chain
  - Mergers, acquisitions, and due diligence
  - Software selection and optimization
  - Project, program, and change management
  - Performance management and analytics

- Business applications
  - Design, build, implement
  - ERP – Enterprise resource planning
  - CRM – Customer relationship management
  - BI – Business intelligence
  - Application development and system integration

- Technology and infrastructure
  - Design, build, implement
  - Network/data center
  - LAN/WAN/wireless
  - Server virtualization
  - Storage and recovery
  - Desktop and application delivery
  - Enterprise content management
  - Telecommunications
  - Unified communications
  - Mobile computing

- Managed services and support
  - Outsourcing, co-sourcing
  - Managed services
    - Infrastructure
    - Applications
    - Help desk
  - Finance and accounting outsourcing
  - IT outsourcing
  - CIO outsourcing
  - Hosting

**Delivering**

**Managing**

- Digital strategy and solutions
  - Design, migrate, and manage
  - Public, private, or hybrid cloud, data, mobile, and social

- Security, privacy, and enterprise risk management

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Agenda

• Business Continuity Planning and Disaster Recovery
• StorSimple
• Business continuity
• Azure backup
• Additional considerations
• Wrap up
• Q&A
BUSINESS CONTINUITY PLAN AND DISASTER RECOVERY
How does Azure tie into Business Continuity Planning (BCP), Disaster Recovery (DR) and backup?

• Key functions of existing infrastructure
  – BCP, DR and backup

• Azure enables expansion of existing capabilities in one or more of these areas
  – Utilize new technology to improve response and recovery time, while cutting costs

• Traditionally, functions were in on-premises environment
  – Leverage the cloud and save on total cost of ownership (TCO)
## Business continuity challenges

**Data growth's impact on business continuity**

<table>
<thead>
<tr>
<th>Roadblock</th>
<th>Challenge</th>
</tr>
</thead>
<tbody>
<tr>
<td>![Building]</td>
<td>Protecting data and applications is complex</td>
</tr>
<tr>
<td>![Data]</td>
<td>Too much data—often with insufficient protection</td>
</tr>
<tr>
<td>![File]</td>
<td>Long data retention requirements</td>
</tr>
<tr>
<td>![Media]</td>
<td>Time-intensive media management</td>
</tr>
<tr>
<td>![People]</td>
<td>Untested DR and decreasing recovery confidence</td>
</tr>
<tr>
<td>![Cost]</td>
<td>Costs scale with data size and number of VMs</td>
</tr>
</tbody>
</table>

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### Business continuity challenges
Bypassing the obstacles

<table>
<thead>
<tr>
<th>Roadblock</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business continuity</td>
<td>Automate, automate, automate</td>
</tr>
<tr>
<td></td>
<td>Integrate solutions which scale with data and VMs</td>
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<tr>
<td></td>
<td>Increase breadth and depth of protection</td>
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<tr>
<td></td>
<td>Eliminate media management</td>
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<td></td>
<td>Implement testable solutions</td>
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<tr>
<td></td>
<td>Achieve cost and operations stability</td>
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Considerations

• **Business continuity**: Phrased as the required components, processes, technology, etc. Essential for business functions to continue

• **Disaster recovery**: Encompasses a wider variety of systems that are critical and deemed “important to the business”

• **High availability**: Prevents a single server/system fault; does not always specify geo-redundant availability
Recovery Time vs. Recovery Point Objective

- **Recovery Time Objective (RTO):** Amount of time that is acceptable from the business for the system or data in question to be restored

- **Recovery Point Objective (RPO):** Point in time or frequency for acceptable data loss
  - For example – SQL backups every 15 minutes ensure that your RPO would be 15 minutes, but your RTO might be 8 hours
Utilizing StorSimple with backup targets

• On-premises storage area network appliance
  – Created by Microsoft
  – Connects directly to Azure

• Devices have local storage
  – Depending on model and size

• Provides a disk-cloud backup strategy

• Utilizes Azure Blob storage
  – By moving data that’s placed from the local device to Azure when not accessed in a given time

• Can be configured as a backup target with DPM, Veeam and Veritas
Using StorSimple

- **Challenge**: Faced with selection of a new back up provider for off-site backup and secure storage

- **Solution**: Utilize DPM, Veeam or Veritas with StorSimple+Azure Blob storage

What it looks like:
DPM?
O'Brien, Katie, 4/18/2017
Typical use cases for StorSimple

• Large on-premises environment
  – Looking for backup solutions that utilize cloud technology natively

• Require local storage
  – But want storage replicated to cloud

• Have hybrid environment utilizing Azure today
  – Looking for a singular backup solution across both Azure and on-premises environment
Business Continuity Planning (BCP)

- Takes several forms
- Can be costly challenge
- On-premises or cloud based solutions
- If utilizing Azure for complete computing needs:
  - Adding pieces of BCP/DR
    - Effective option to mitigate risk
    - i.e. Utilizing geo-redundant databases or cloud services scaled between regions
- If utilizing a hybrid environment:
  - BCP/DR, daunting task
    - Additional compute, storage, and operational costs
Azure Site Recovery (ASR)

- Utilize in on-premises environments
- If you’re using VMWare, AWS, Hyper-V or an existing Azure deployment
  - Can move data back and forth providing BCP/DR and hybridity within existing environment

ASR will allow you to replicate the VM between your on-premises private cloud and Azure.
Azure Site Recovery (ASR)

One solution for multiple infrastructures

1. Hyper-V to Hyper-V (on-premises)
2. Hyper-V to Hyper-V (on-premises)
3. Hyper-V to Microsoft Azure
4. VMware/Physical to VMware (on-premises)
5. VMware/Physical to Microsoft Azure

Protect important applications by coordinating the replication and recovery of private clouds across sites. Protect your applications to your own second site, a HSP’s site, or even use Microsoft Azure as your disaster recovery site.
Compute services

• Platform services = Cost saving mechanism

• Benefits of leveraging compute in Azure:
  – License mobility if you have existing SQL licensing
  – No additional storage, network, or other traditional infrastructure components are required
  – Scale up or down based upon your requirements
    • Scale down unless disaster
    • Scale up in a disaster
Leveraging platform services

**Challenge:** You’re limited with your BCP due to on-premises restrictions. You're looking for an alternative solution that can be replicated to different geographic regions.

**Solution:** Expand or migrate your SQL environment to Microsoft Azure DB or use Microsoft SQL Enterprise Servers in Azure

**What it looks like:**

<table>
<thead>
<tr>
<th>Server A</th>
<th>Server B</th>
</tr>
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<tbody>
<tr>
<td>DB-PRD</td>
<td>DB-PRD</td>
</tr>
<tr>
<td>DB-STG</td>
<td>DB-STG</td>
</tr>
<tr>
<td>DB-TST</td>
<td>DB-TST</td>
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**Premium**—designed for IO-intensive production workloads with high-availability and zero downtime. Premium is fault-tolerant and automatically handles read and write availability with a 99.99% availability SLA.

**Active geo-replication** creates up to 4 online (readable) secondary's in any Azure region. Secondary active geo-replication databases are priced at 1x of primary database prices. The cost of geo-replication traffic between the primary and the online secondary is included in the cost of the online secondary. Active geo-replication is available for all database tiers.
Azure backup server

• On-premise extensions allow you to extend backup services to local devices

• Provides multiple options for backup including:
  – Encryption
  – Unlimited scaling
  – Geo or local redundant storage
  – No limit on data retention
ADDITIONAL CONSIDERATIONS
Additional considerations

- Storage costs and options when utilizing Blob storage
- Additional costs incurred with using ASR
- Azure SQL Stretch with SQL Server 2016
  - Allows you to scale on-premises SQL Servers for cold-standby in Azure
WRAP UP
Contact information for today’s presenters

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THANK YOU FOR YOUR TIME AND ATTENTION