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Azure Platform Best Practices in Application Development and Deployment
Presentation Topics

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- Background of Cloud computing
- Why the Cloud is attractive to new and existing projects
- Cloud providers – top 10
- Azure infrastructure
- Azure typical application architecture
  - VM’s
  - Managed services
- Issues with utilizing gateways
- Microsoft Azure best practices
- Q&A??
Background of Cloud computing

• Cloud computing can trace its roots to the 50s and 60s
  • Large expensive mainframes were used for computer processing
  • Companies engaged in Time Sharing agreements instead of purchasing large, complex, and expensive mainframe computers

• Cloud computing types and models
  • Private Cloud – A private network owned by a single company or entity that may be located in the companies datacenter or managed by a third party through a contract with the owning companies IT department
  • Public Cloud – A Cloud provider company that owns the servers, network, storage, and infrastructure that provides computing capabilities for a fee to any company or organization willing to pay for the service
  • Hybrid Cloud – A combination of public and private Cloud solutions that provide computing to the user community
Background of Cloud computing

- **Infrastructure as a Service (IaaS)**
  - Servers, storage, network bandwidth as a service where the customer pays for what they use
- **Platform as a Service (PaaS)**
  - An on demand way of provisioning computing services that are automatically provided to the customer during development, testing, and deployment of applications
- **Serverless computing**
  - Similar to PaaS serverless computing enables customers to focus on building applications and the setup, management, and capacity planning are provided by the Cloud provider
- **Software as a Service (SaaS)**
  - The software application is hosted by a Cloud provider and they provide the management for the customer, such as security or application updates
Cloud Computing Providers

- Amazon AWS
- Microsoft Azure
- Google Cloud Platform
- Alibaba
- IBM Cloud
- Oracle Cloud
- Pivotal Cloud Foundry
- Verizon
- DigitalOcean
- Kamatera
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Microsoft Azure DataCenter Locations

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• Asia

East Asia
Southeast Asia
Australia Central
Australia Central 2
Australia East
Australia Southeast
China East
China North
China East 2
China North 2
Central India
South India
West India
Japan East
Japan West
Korea Central
Korea South

• Hong Kong
• Singapore
• Canberra
• New South Wales
• Victoria
• Shanghai
• Beijing
• Shanghai
• Beijing
• Pune
• Chennai
• Mumbai
• Tokyo, Saitama
• Osaka
• Seoul
• Busan
Microsoft Azure DataCenter Locations

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• Europe

  North Europe
  Ireland

  West Europe
  Netherlands
  Paris

  France Central
  Marseille

  France South
  London
  Cardiff

  UK South
  Frankfurt

  UK West
  Magdeburg

  Germany Central

  Germany Northeast
Microsoft Azure Typical Application Architecture

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• Microsoft Azure has two implementation approaches:
  • Managed Services
    – Managed automatically by the backend
    – Has fewer tools and abilities to monitor the environment
  • VM server farm
    – Application architecture and environment is built out on Microsoft Azure VMs
  • Farm of VMs in the Cloud used to build an application environment
Microsoft Azure Typical Application Architecture
Gateway Issues

My experience with gateways is they cause issues

- These gateways are used to retrieve data from legacy systems in company DataCenters from cloud based applications
- The primary issue are performance impacts
- Additional impacts are when a project doesn’t own or manage different components of the architecture, like gateways, it is difficult to prevent outages and monitor an environment
Microsoft Azure Best Practices

- Utilize Azure Advisor for environment optimization
  - Pulls recommendations from the following:
    - Azure Security Center
    - Azure Cost Management
    - Azure SQL DB Advisor
    - Azure App Services
- Utilize MOB services for things like role based authorization
- Leverage the toolset provided by Microsoft, for example:
  - TFS
  - Blob storage
  - Azure notifications
  - Azure Active Directory (IAM product)
Q&A

• Questions??
• Comments??