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Azure Platform Best Practices in Application
Development and Deployment

GLOBAL PRODUCT DATA
INTEROPERABILITY
S U M M I T
2019



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

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- **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

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- **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

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

Microsoft Azure DataCenter Locations

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• Americas

Central US	Iowa
East US 2	Virginia
East US	Virginia
North Central US	Illinois
South Central US	Texas
West US 2	Washington
West Central US	Wyoming
West US	California
Canada Central	Toronto
Canada East	Quebec City
Brazil South	Sao Paulo State

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

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

West Europe

France Central

France South

UK South

UK West

Germany Central

Germany Northeast

Ireland

Netherlands

Paris

Marseille

London

Cardiff

Frankfurt

Magdeburg

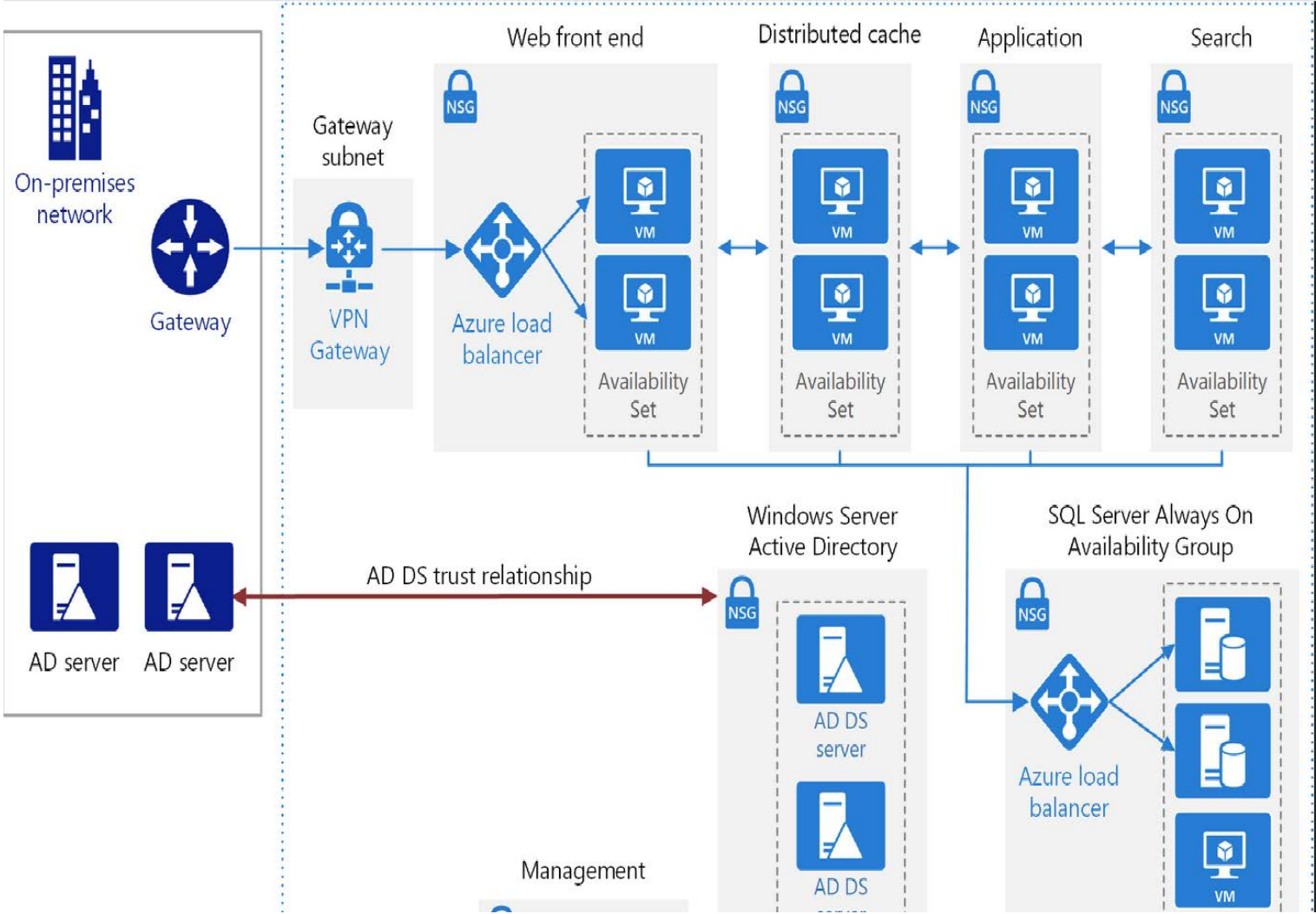
Microsoft Azure Typical Application Architecture

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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

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- **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

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- **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

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- **Questions??**
- **Comments??**