Windows Azure Virtual Machines

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ADITI CUMULUX
CLOUD SOLUTIONS

Microsoft Partner Network | 2011 PARTNER OF THE YEAR Windows Azure Platform SI Finalist

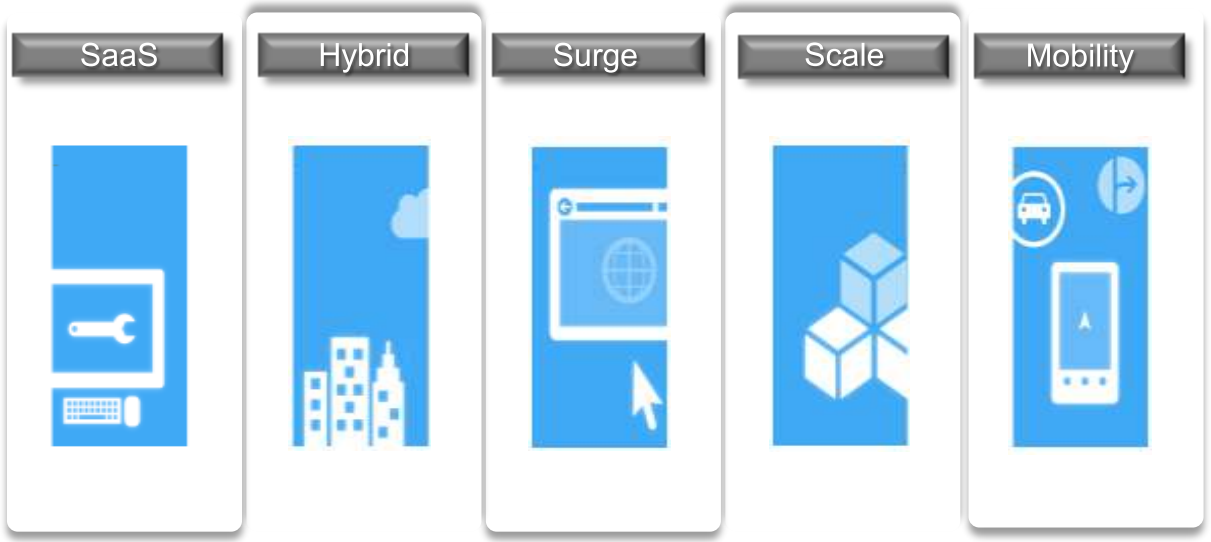
2010 MICROSOFT. PARTNER OF THE YEAR Winner
Microsoft Partner Network

ABOUT

- ✓ Immersed in Azure since 2008
- ✓ Experts in Azure architecture, Dev & Operations
- ✓ Deep expertise in Product and Solution Engineering
- ✓ Cloud Lifecycle Services: Build | Operate | Manage

SERVICES

- ✓ IP Frameworks: Cloud Design Patterns, Capacity Planning
- ✓ Enabling Enterprise & ISVs to modernize and transform with Azure



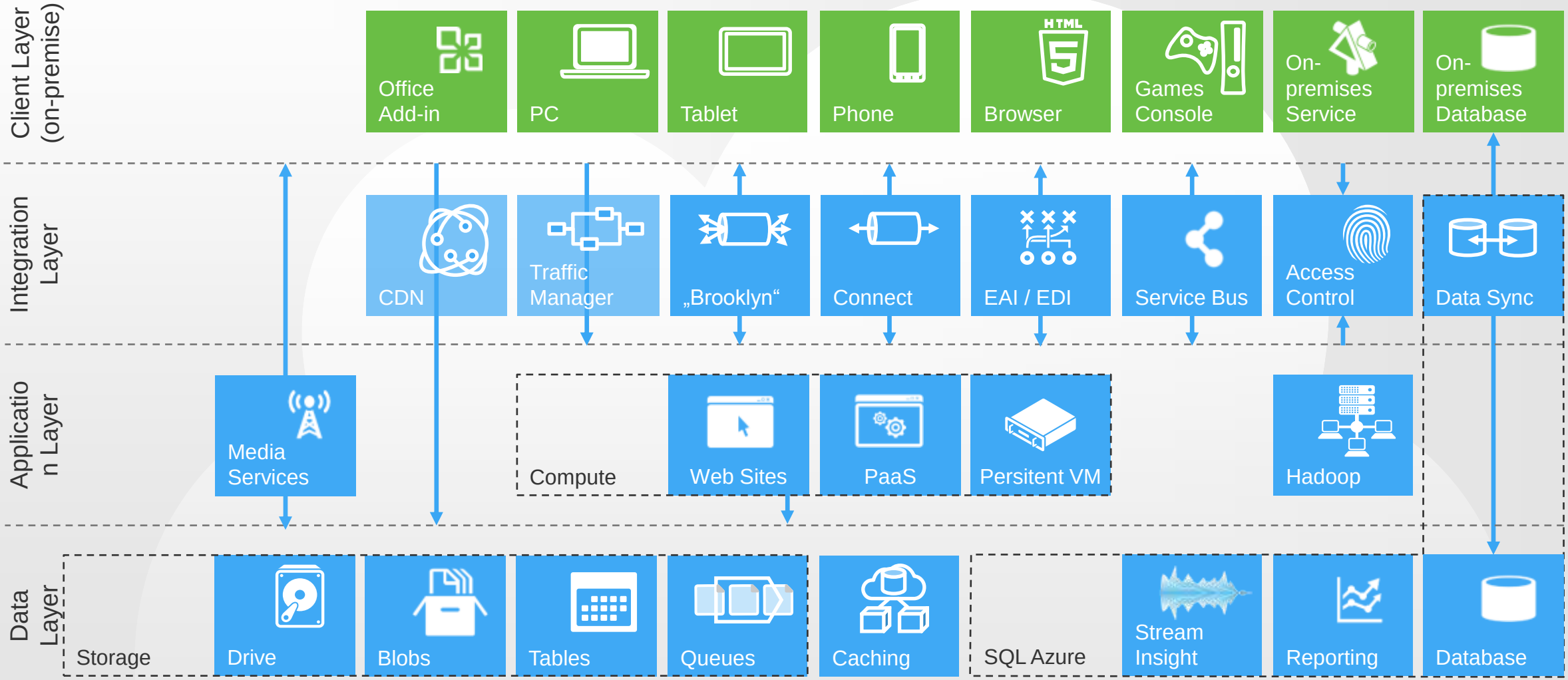
RESULTS

Proven track record in the Central Region and across Microsoft DPE/ISV and Corporate Programs

Migrated 150+ apps, 75+ customers

NOKIA
NATIONAL INSTRUMENTS
Ford
metratech
RESTAURANT.COM
invensys
intuit
GE
AIRCRAFT DATA FUSION
bing
API HEALTHCARE

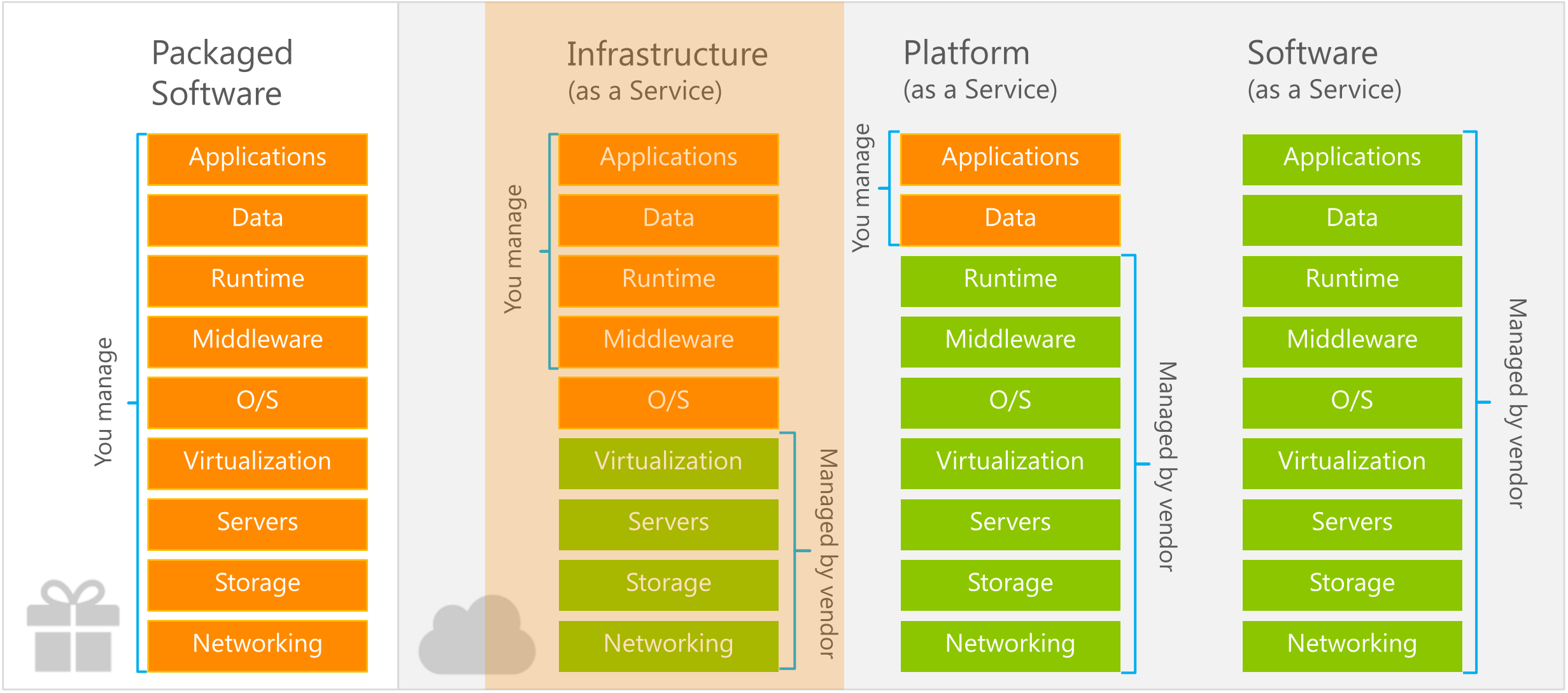
Windows Azure Platform Reference



Hello Dallas VM

Demo

Cloud Services



IaaS Workloads in the Cloud

Line of Business Applications

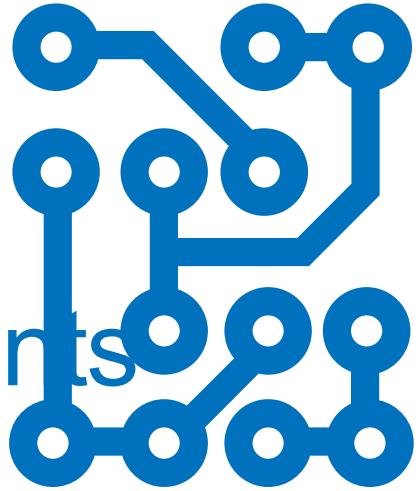
Custom Applications, CRM, CMS, ERP, Business Intelligence

Application Infrastructure

File Servers, Databases, Identity, Source Control

Developer, Test and Staging Environments

Quickly Provision and Un-provision Entire Environments



Hybrid Applications

Applications that span your data center and the cloud

LOBs in the Cloud

Demo

Getting Started with VMs

Cloud First Provisioning

Getting Started

Management Portal

Scripting
(Windows, Linux and Mac)

REST API

Select Image and VM Size

Windows Server

Linux

Extra Small

Small

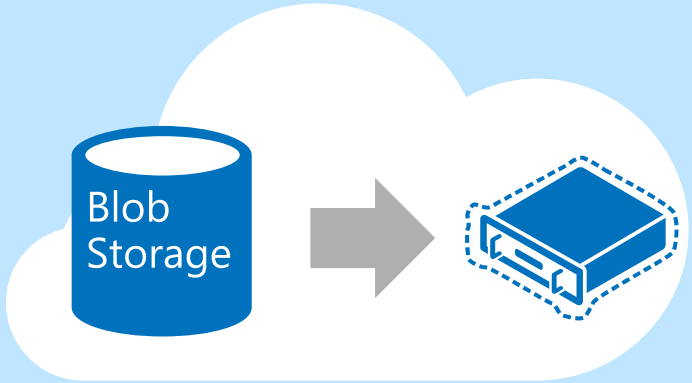
Medium

Large

X-Large

New Disk Persisted in Storage

Boot VM from New Disk



Cloud

Images Available at Preview

SQL Server 2012 Evaluation in Windows Server 2008 R2

Windows Server 2008 R2 SP1

Windows Server 2012 Release Candidate

OpenLogic CentOS 6.2

SUSE Linux Enterprise Server

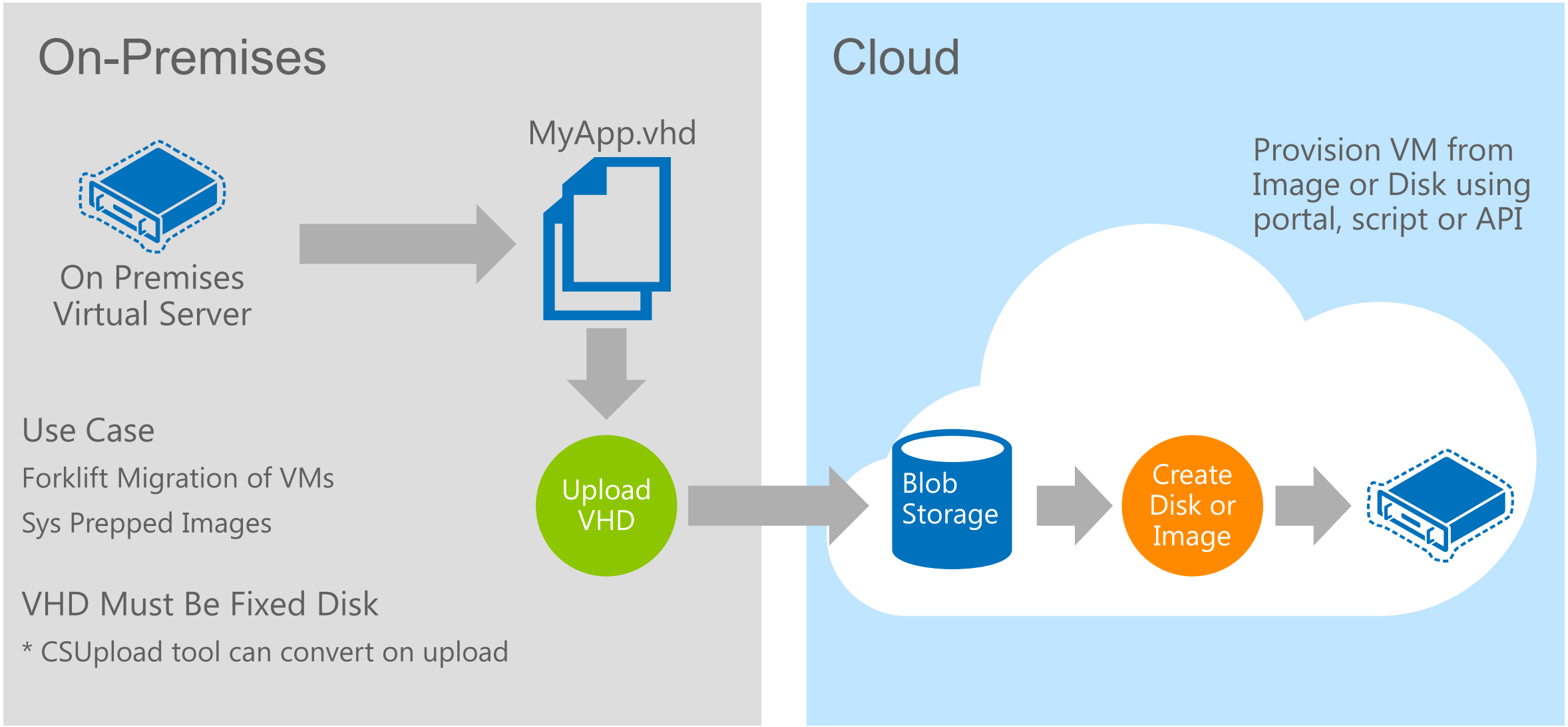
Ubuntu Server 12.04 LTS

openSUSE 12.1

Check the Oven!

Demo

Bring Your Own Server/VHD



Imaging VMs in the Cloud

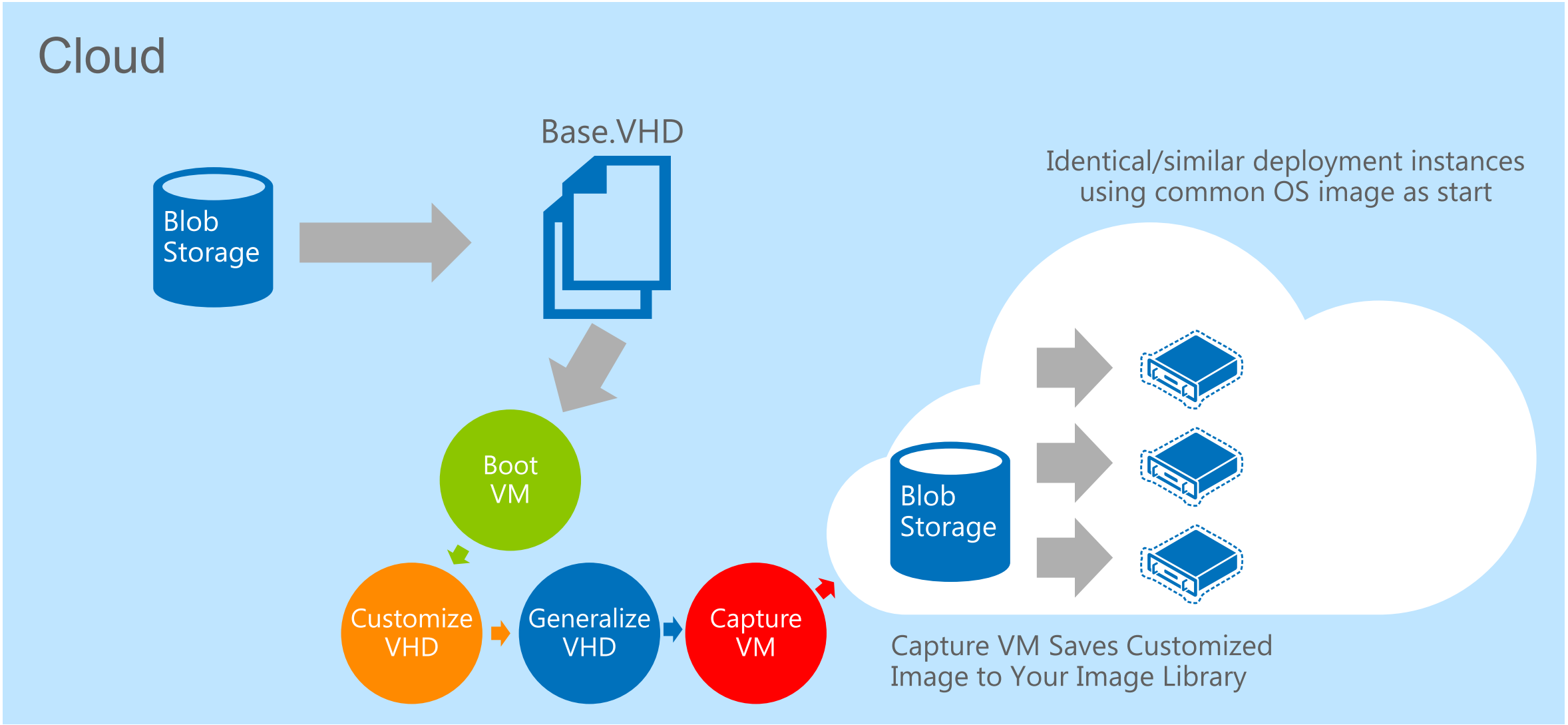
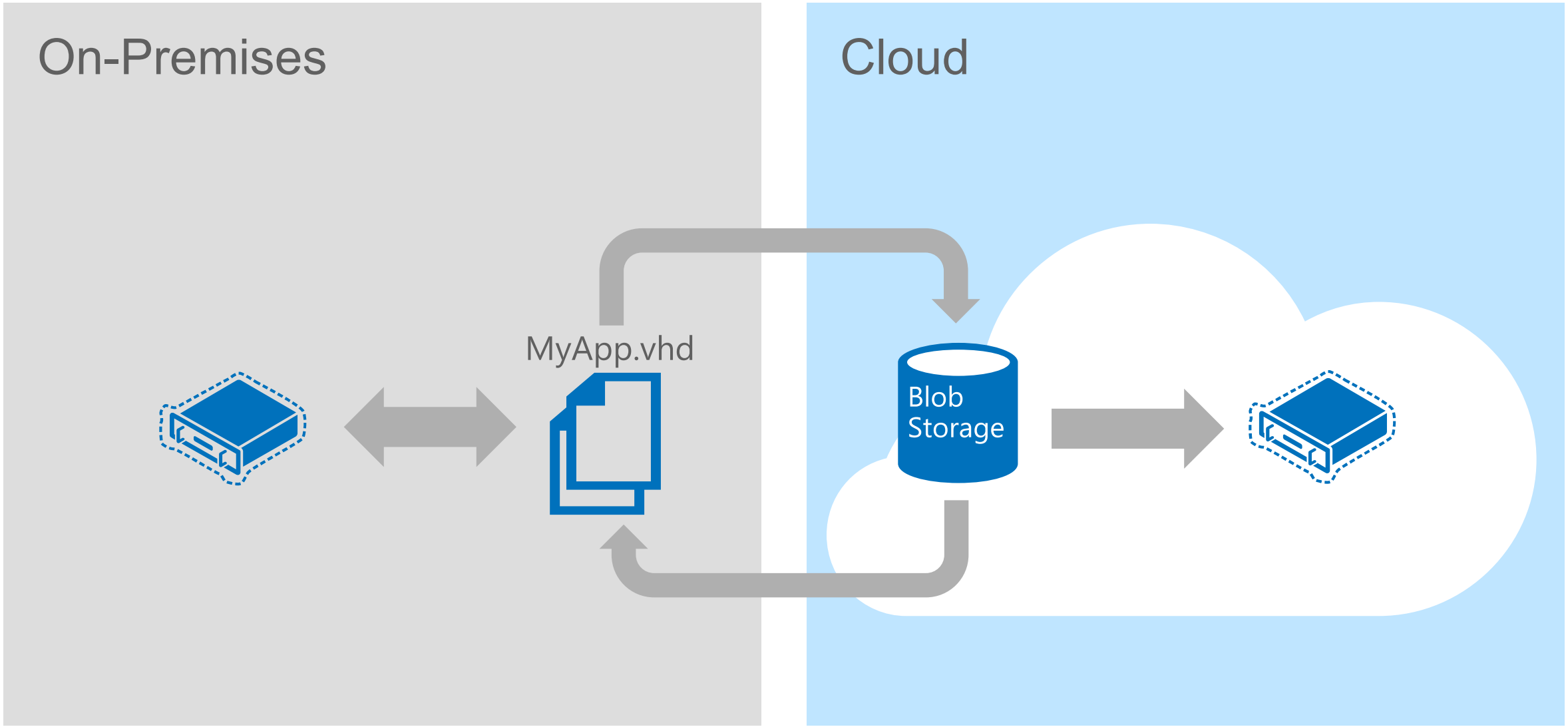


Image Mobility



Virtual Machine Sizes and Storage

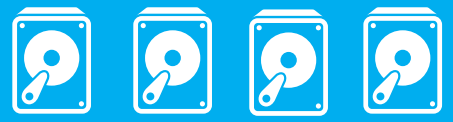
VM Size	CPU Cores	Memory	Bandwidth	# Data Disks
Extra Small	Shared	768 MB	5 (Mbps)	1
Small	1	1.75 GB	100 (Mbps)	2
Medium	2	3.5 GB	200 (Mbps)	4
Large	4	7 GB	400 (Mbps)	8
Extra Large	8	14 GB	800 (Mbps)	16

Each Persistent Data Disk Can be up to 1 TB

Images and Disks

OS Images

Microsoft
Partner
User



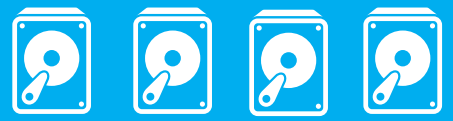
Base OS image for new Virtual Machines

Sys-Prepped/Generalized/Read Only

Created by uploading or by capture

Disks

OS Disks
Data Disks



Writable Disks for Virtual Machines

Created during VM creation or during upload of existing VHDs.

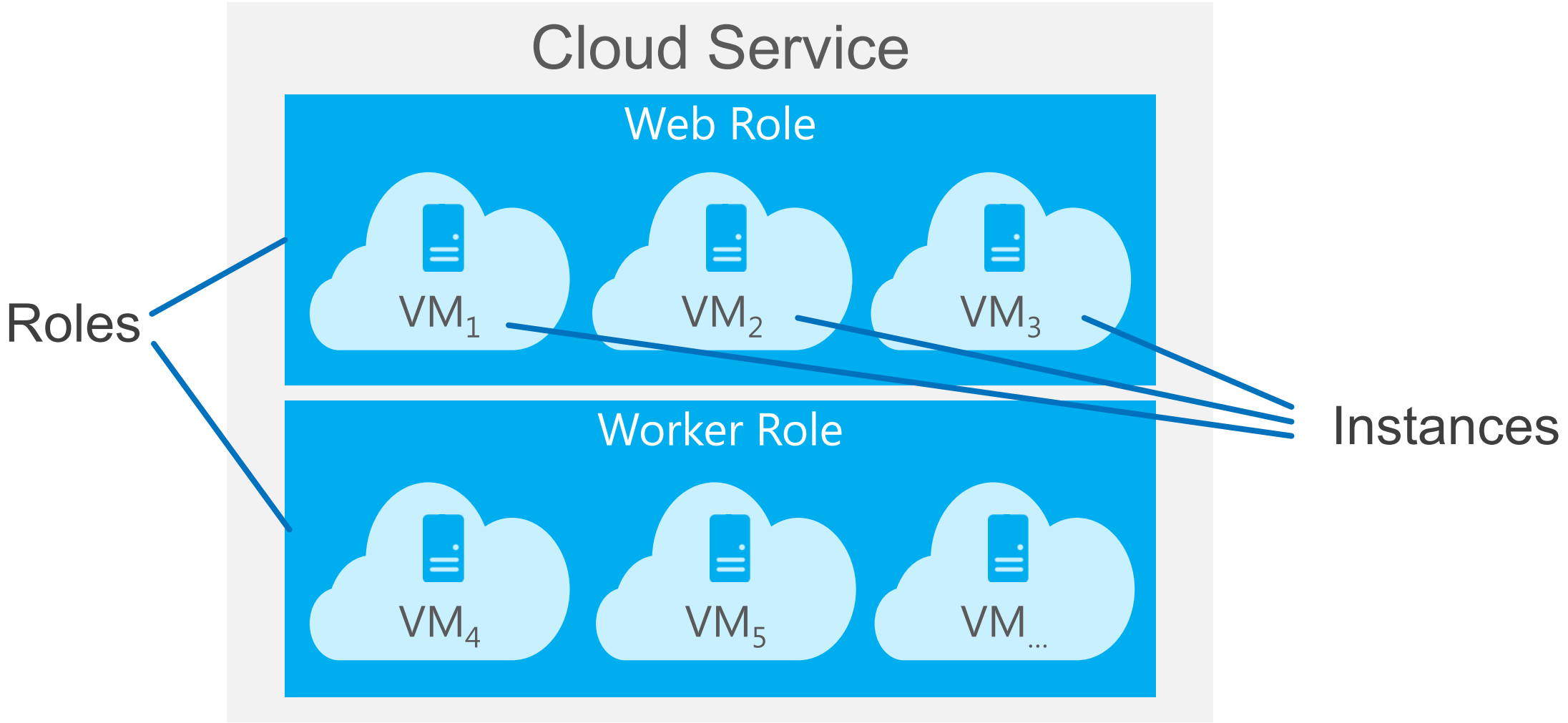
Working With New VMs

Demo

Virtual Machine and Cloud Services

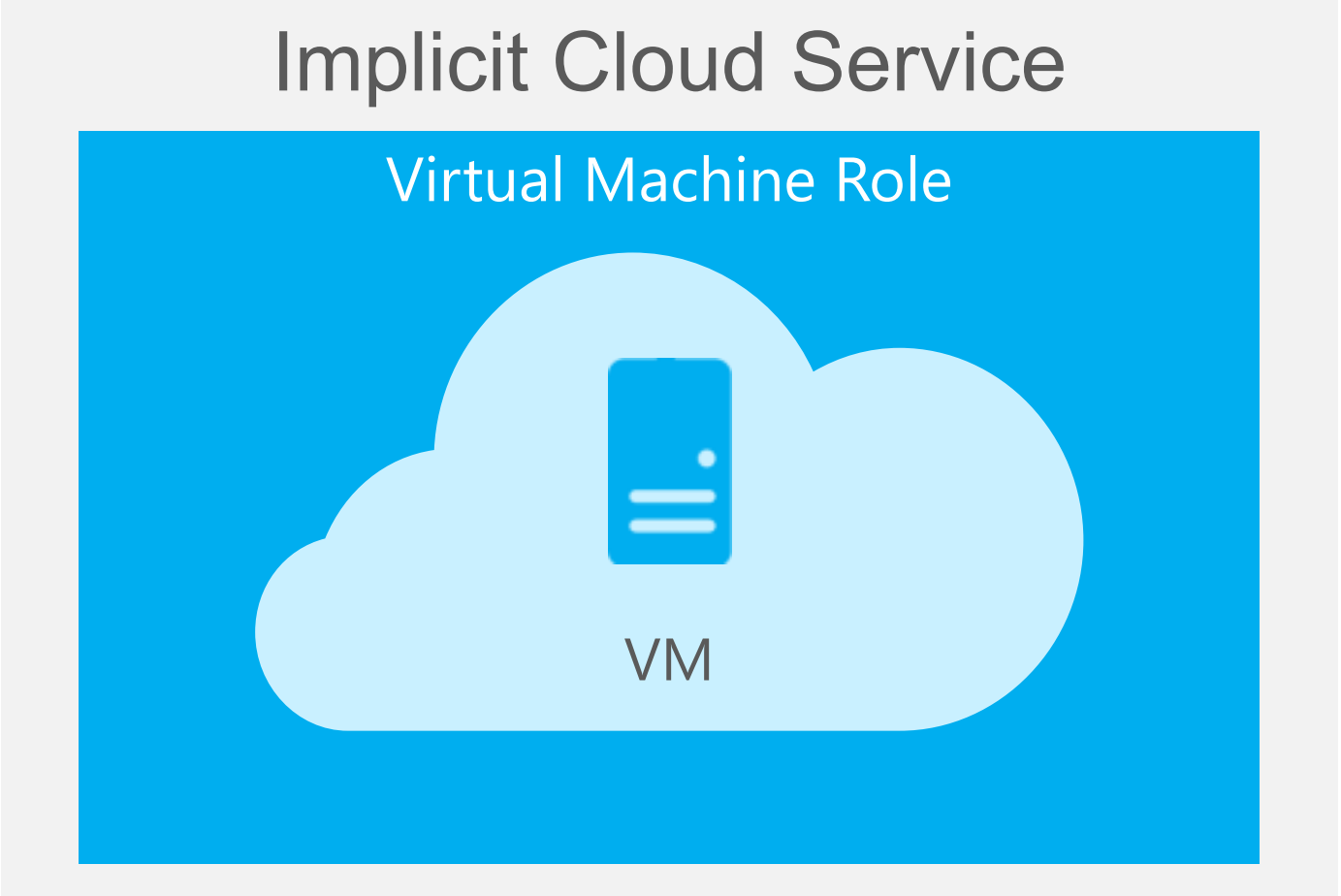
Cloud Services, Roles and Instances

Cloud Service is a service model boundary (management, configuration, security, and networking)



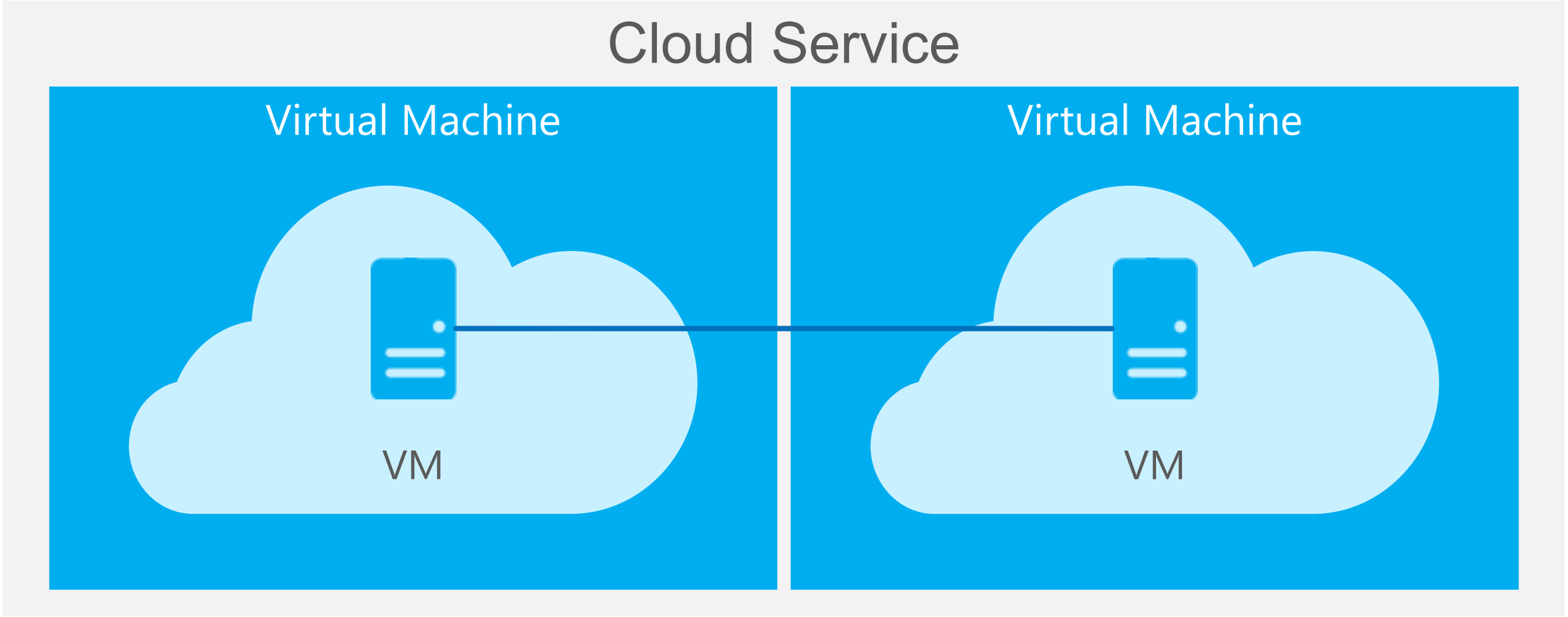
Virtual Machines

Virtual Machines are roles with exactly one instance



Multiple Virtual Machines Supported

Up to 25 Virtual Machines can be hosted within the same cloud service



Virtual Machine Networking

Virtual Machine Names and DNS

Full Control Over Machine Names

Windows Azure provided DNS

Resolves VMs by name within the same cloud service

Machine names are modeled explicitly and registered in the DNS service

Bring Your Own DNS Server

Use your on-premises DNS servers

Deploy a DNS server in Windows Azure

Use public DNS services

Port Forwarding

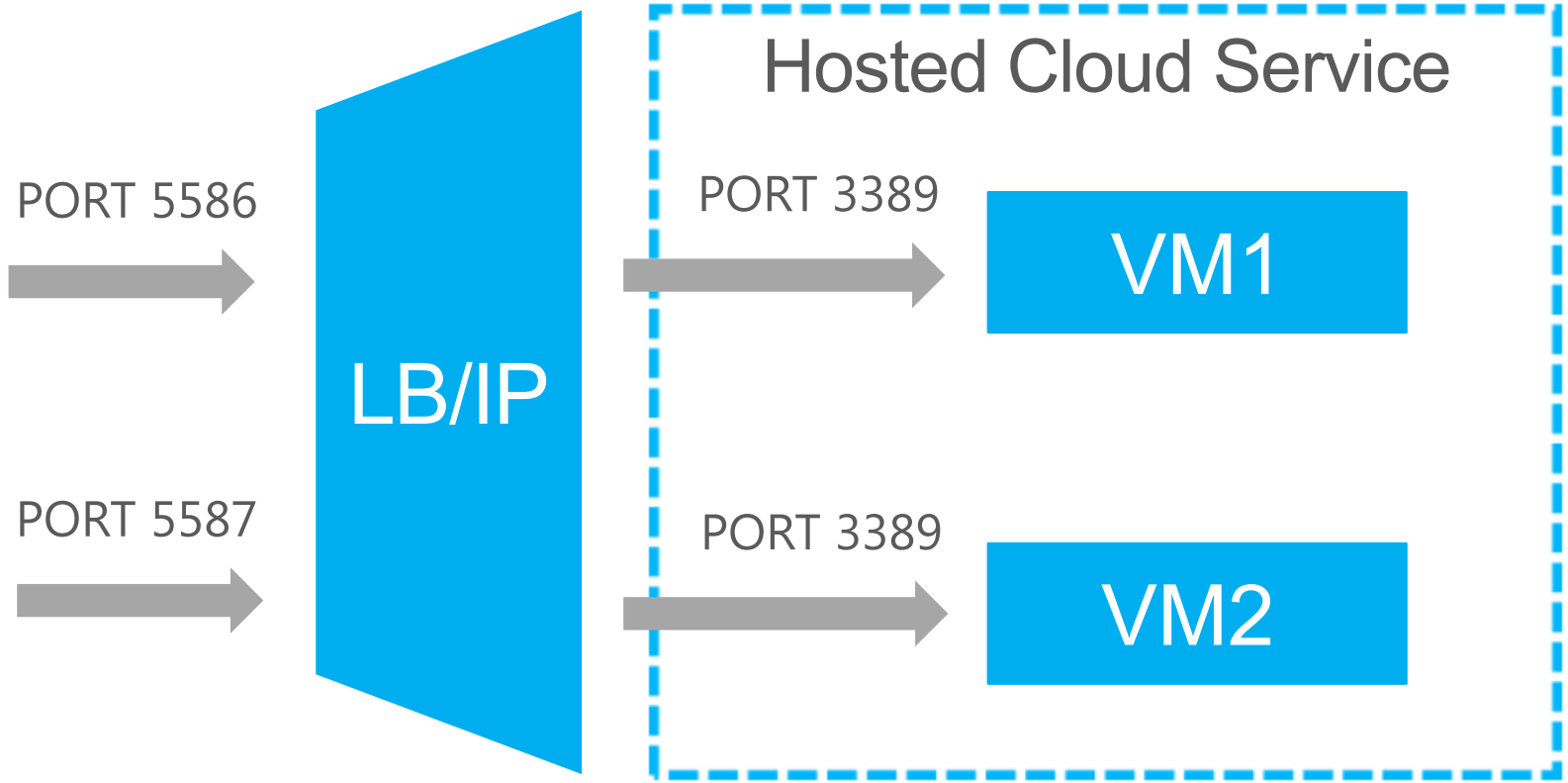
Demo

Inbound Port Forwarding

Single Public VIP Address Per Cloud Service

Port Forwarded Endpoints

Allow direct communication to Different VMs inside the same cloud service



Endpoints and Protocols

Endpoint

- Name
- Public Port
- Local Port
- Protocol (TCP/UDP)

UDP Traffic Supported

Load-balanced incoming traffic and allows outbound traffic

Support for All IP-Based Protocols (VM to VM)

Instance-to-instance communication

TCP, UDP and ICMP, dynamic ports

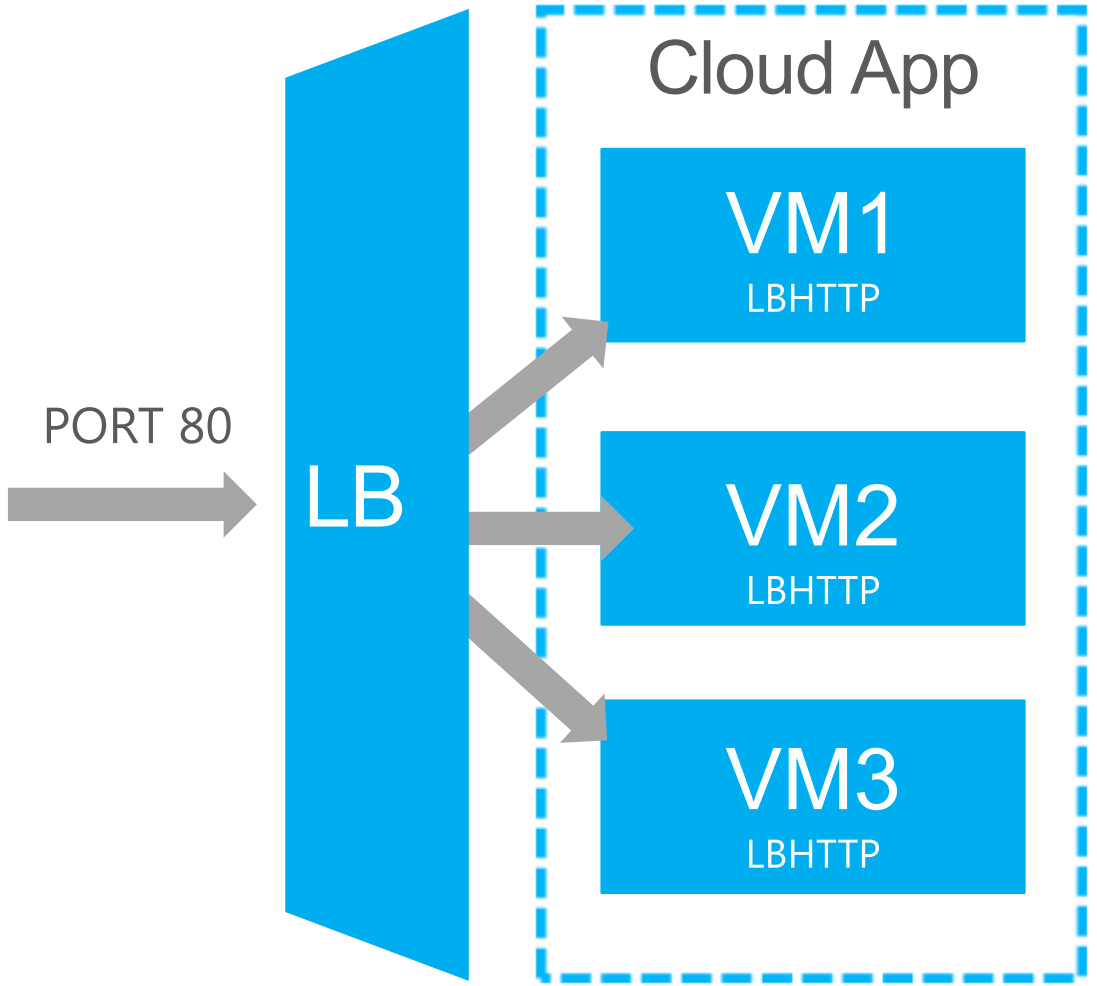
Load Balancing

Demo

Load Balanced Sets

Endpoint

- Name
- Public Port
- Local Port
- Protocol (TCP/UDP)

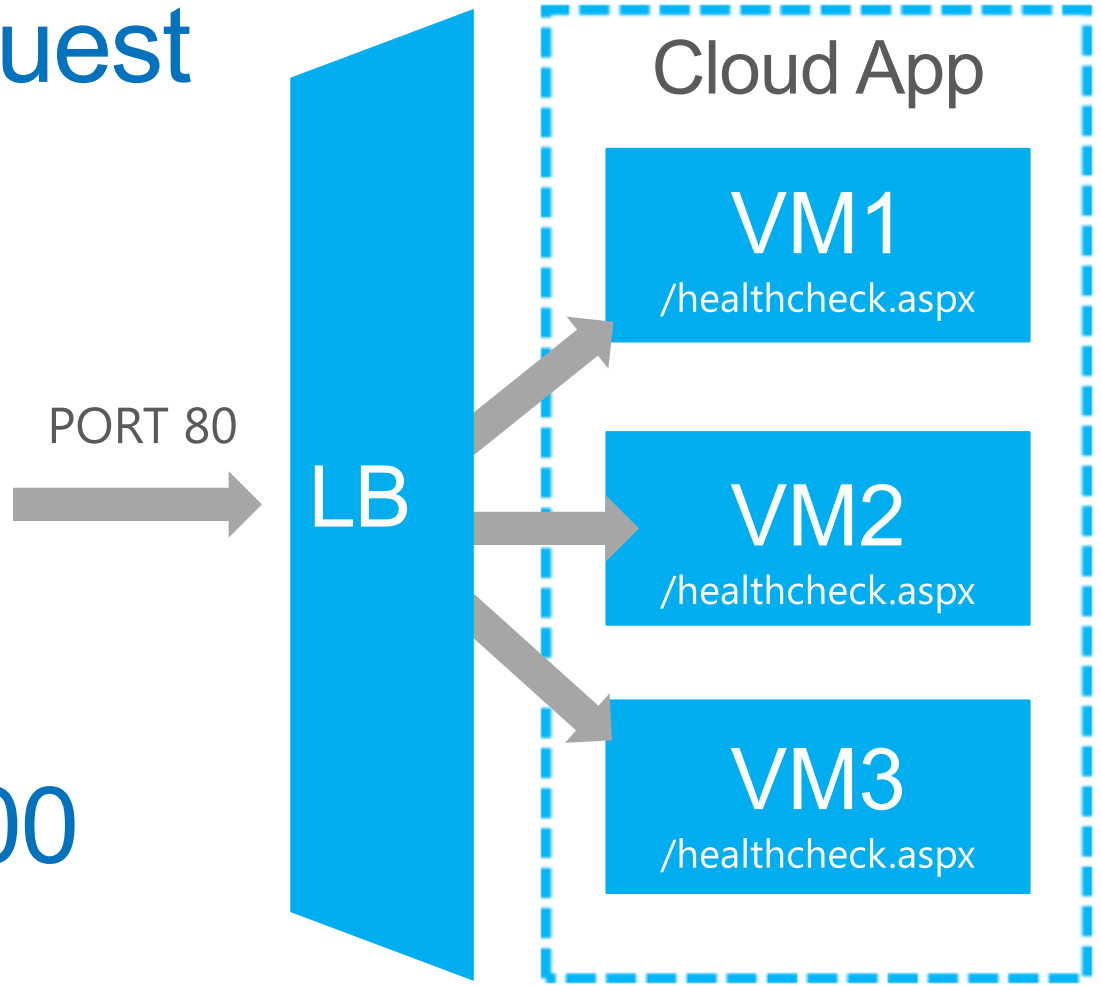


Load Balancer Custom Probes

HTTP PROBE request

Set Name
Protocol (TCP)
Probe Port
Probe Path
(/healthcheck.aspx)

Looks for HTTP 200

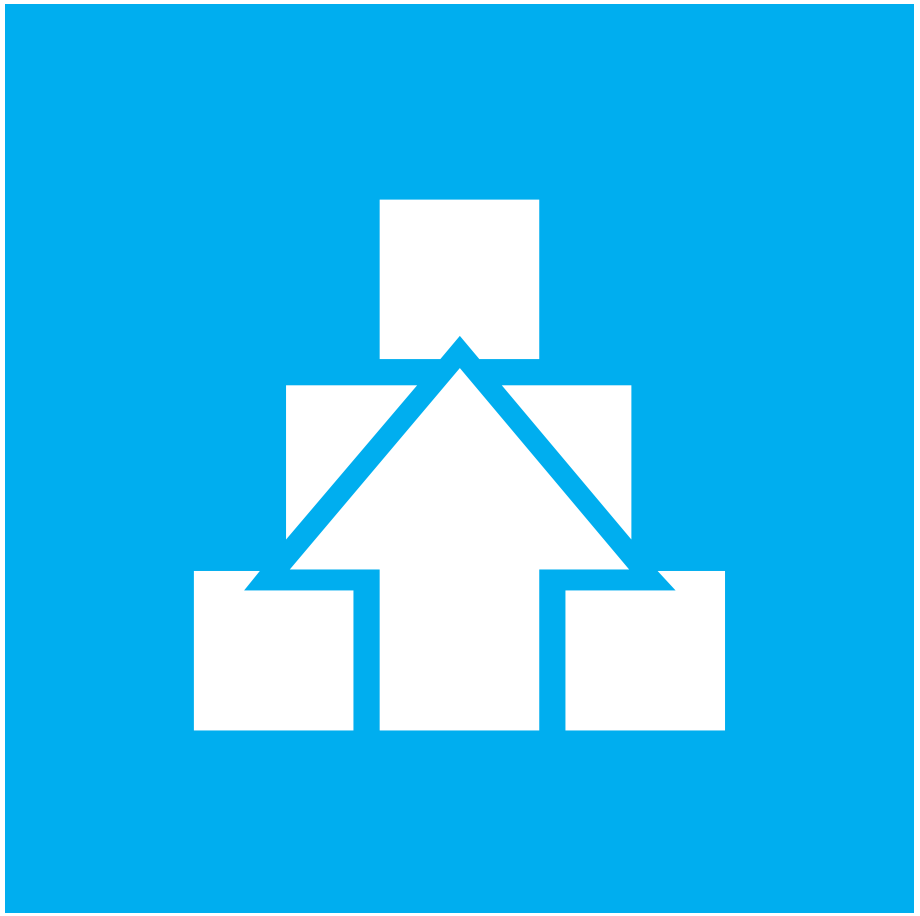


Check the Oven!

Demo

Virtual Machine Availability

Fault and Update Domains



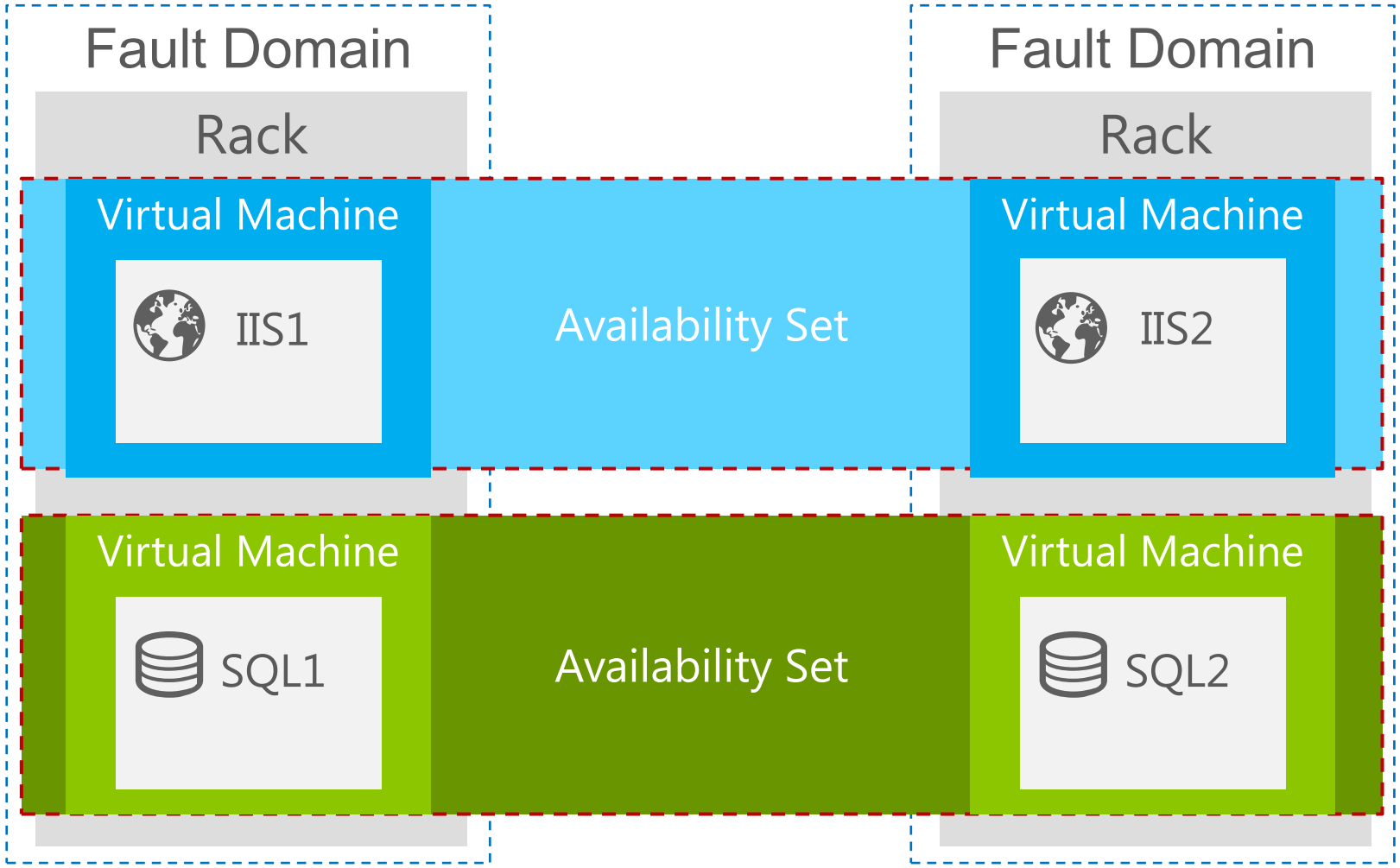
Fault Domains

Represent groups of resources anticipated to fail together
i.e. Same rack, same server

Instances spread across Fault Domains

Fabric spreads instances across fault at least 2 fault domains

Virtual Machine Availability Sets

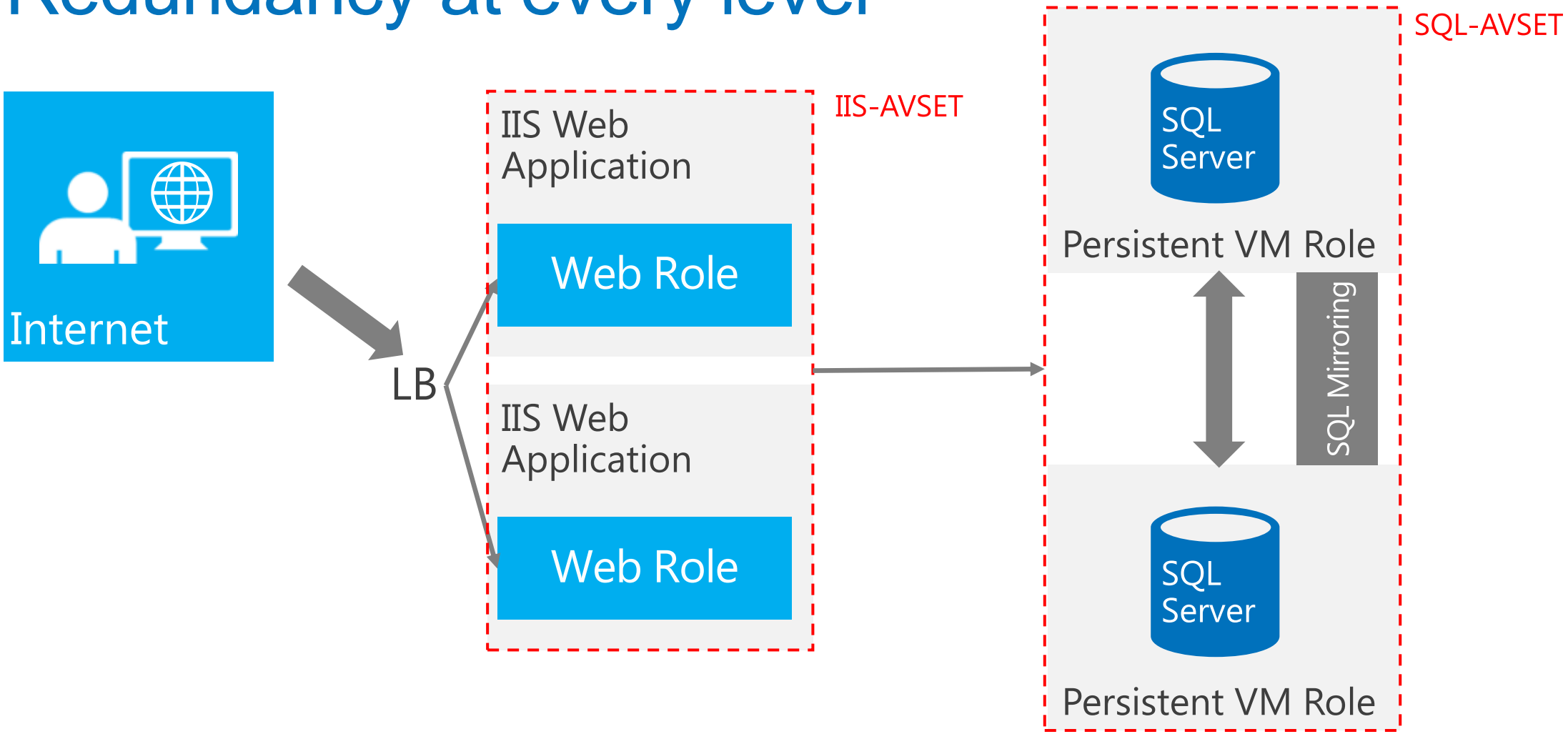


Availability Sets

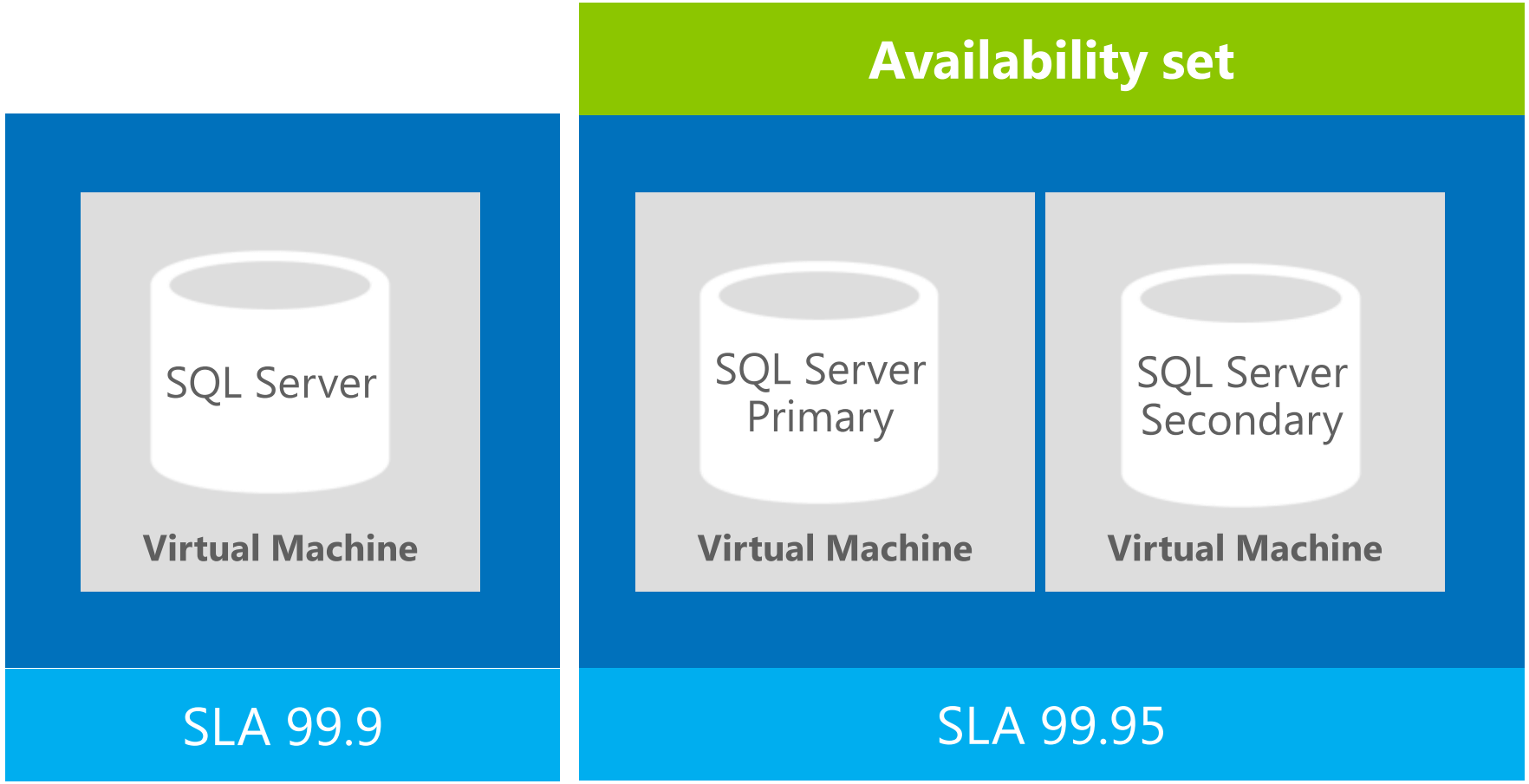
Demo

How to Build a Highly Available Solution

Redundancy at every level

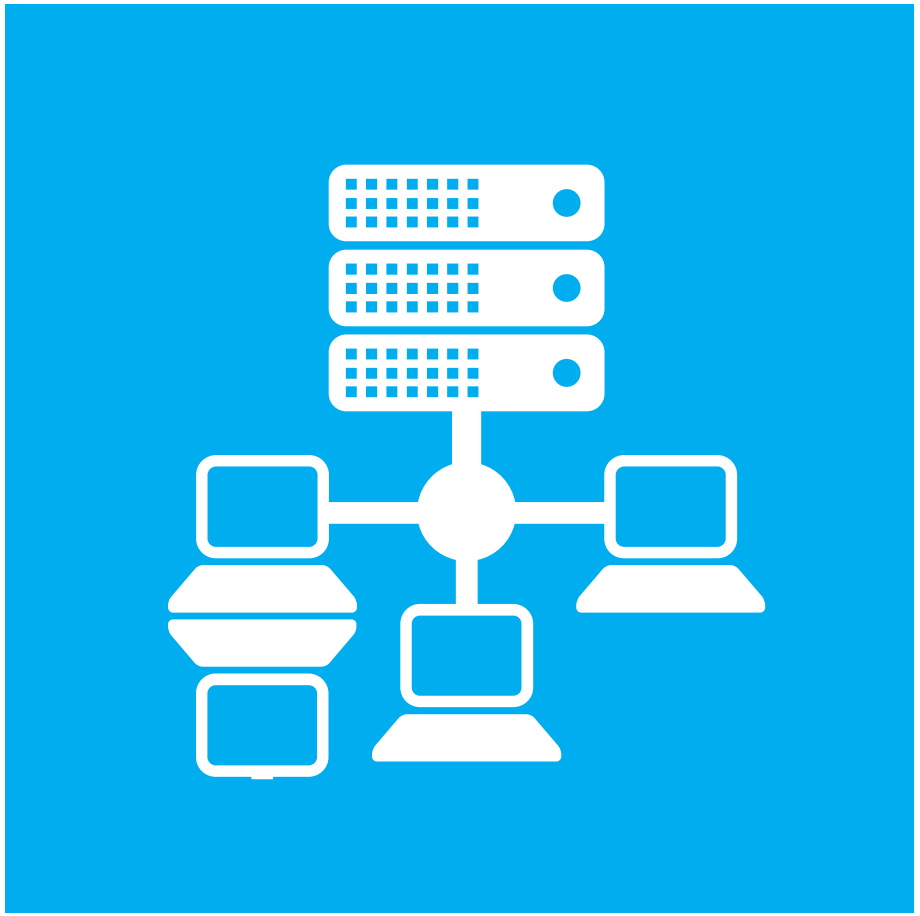


How Does this Relate to SLA?



To achieve 99.95 you must use availability sets!

Service Level Agreements



99.95% for multiple role instances

4.38 hours of downtime per year

99.9% for single role instances

8.75 hours of downtime per year

What's included

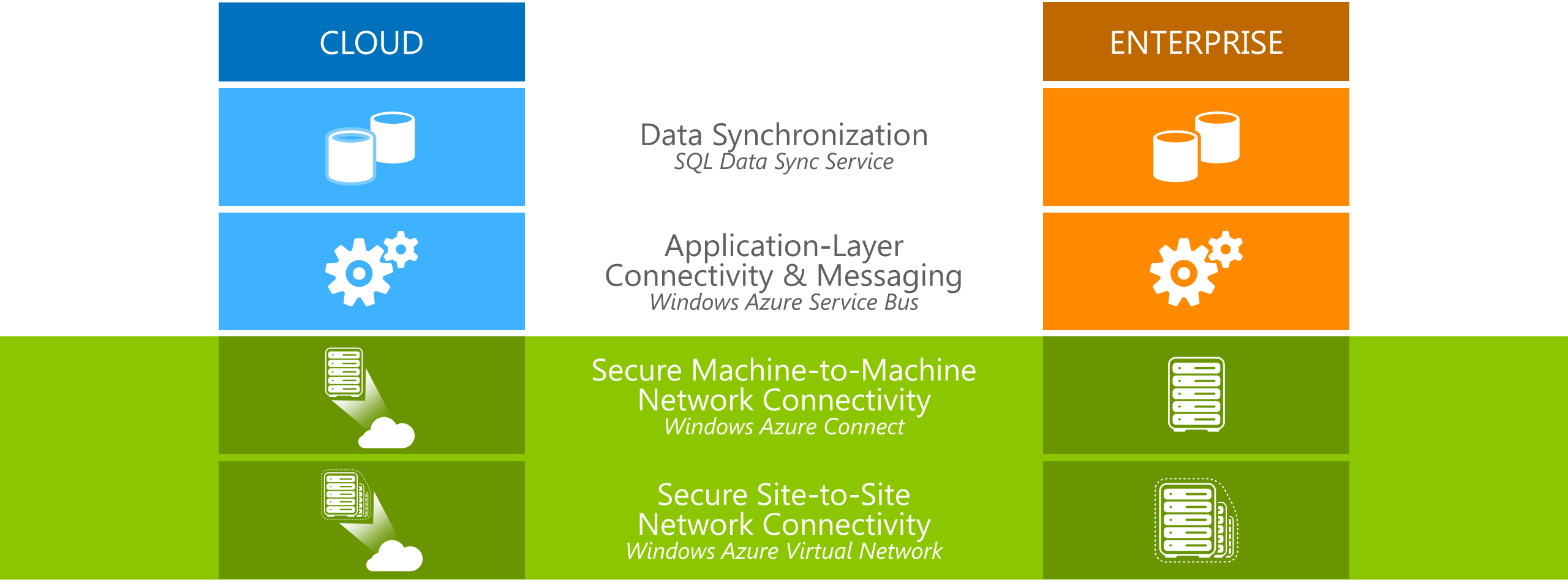
Compute Hardware failure (disk, cpu, memory)
Datacenter failures - network failure, power failure
Hardware upgrades, Software maintenance – Host OS Updates
Planned downtime – 6 day notice, 6 hour window, 25 minute downtime

What is not included

VM crashes caused by 3rd party software, Guest OS modifications

Windows Azure Virtual Networks

Cross-premise Connectivity



Windows Azure Virtual Network

A protected private virtual network in the cloud

Enables customers to setup secure private IPv4 networks fully contained within Windows Azure

IP address persistence

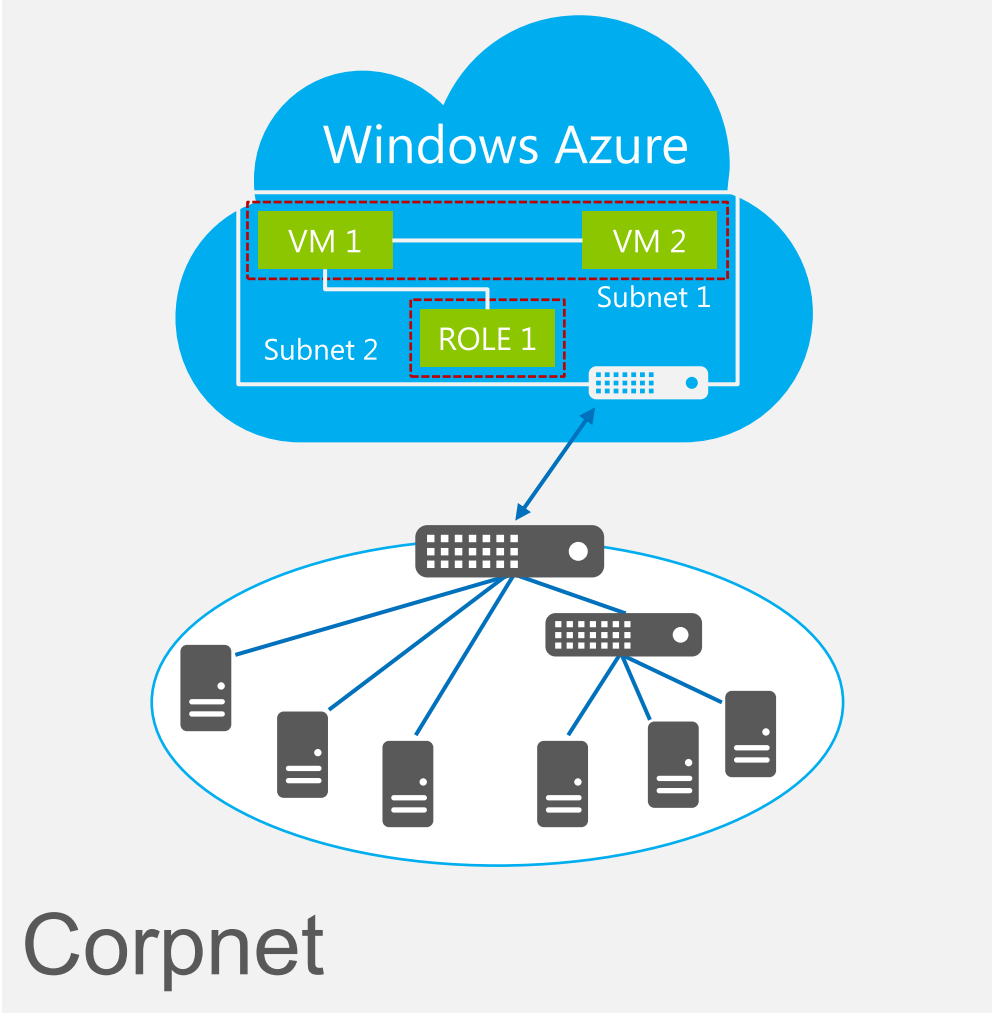
Direct inter-service communication

Your “virtual” branch office / datacenter in the cloud

Enables customers to extend their Enterprise Networks into Windows Azure

Networking on-ramp for migrating existing apps and services to Windows Azure

Enables “hybrid” apps that span cloud and their premises



Does Your App Need a Virtual Network?

Hybrid On-Premises Cloud Apps

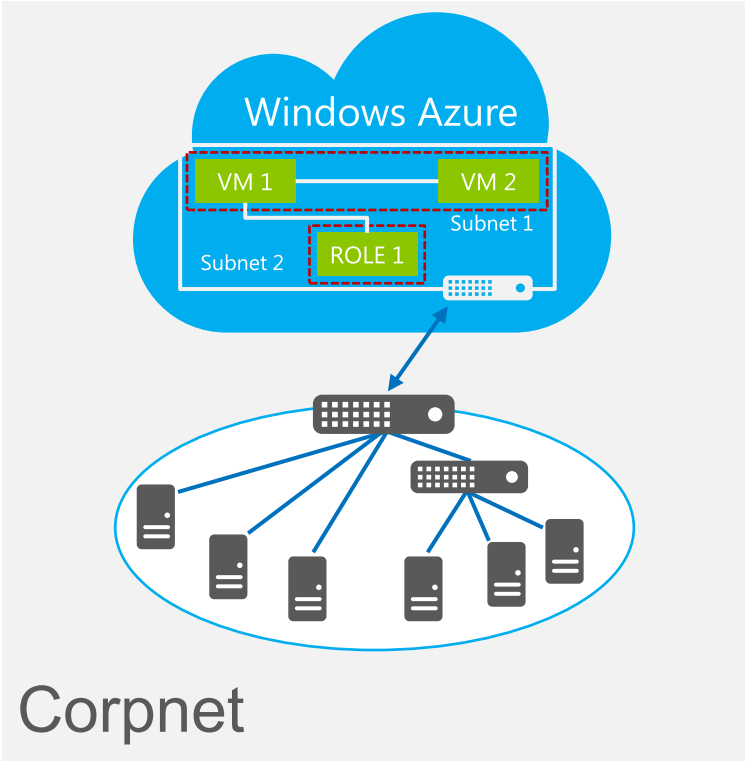
Requirement for connectivity between your data center and the public cloud.

Persistent IP Address Requirements

Virtual Machines deployed into a virtual network have an infinite DHCP lease.

Connectivity between cloud services.

Deploying Active Directory in the Cloud or connecting a PaaS to IaaS Service.



Windows Azure Virtual Machines


Support for your key server applications


Easy storage manageability


High availability features


Advanced networking


Integration with PaaS and other Azure service offerings

Sign Up for Windows Azure

3 Month Free Trial

INCLUDES THESE SERVICES:

Compute	Databases
Storage	Caching
Transactions	Access Control
Bandwidth	Service Bus

http://clint.ms/TryAzureFree

MSDN Subscription Benefits

BENEFITS INCLUDE:

Free Windows Azure access for Professional, Premium, and Ultimate subscribers

Designed to accelerate development

Requires credit card at sign-up for any overages beyond free allocation

http://clint.ms/AzureBenefits

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