Microsoft Azure

Azure webinar series

Get started migrating ASP.NET and WCF apps to Azure App Service

Welcome

How do I ask a question?

If you have a technical or content-related question, please use the Q&A window

We will address the questions as they come in

Can I view this presentation after the webinar?

Yes, this presentation is being recorded

A link to the recorded presentation will be sent to the email address you used to register

Meet our speakers

Paul Yuknewicz

@PaulYuki99

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Agenda

- Migration goals
- Strategies and targets
- Demos and best practices
- ..Migrating to App Service
- ..Migrating to containers

Value to Optimize and Modernize

Agility

Continuous delivery

Containers

Time to market

Scalability and HA

Insights and Analytics

Total cost of ownership

Infrastructure Cost

Ongoing Maintenance

IT simplification

Standardization

Simplification

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I don’t have the luxury of creating a new app from scratch. What can I do?

Can I reuse my existing codebase? I would love to build from there.

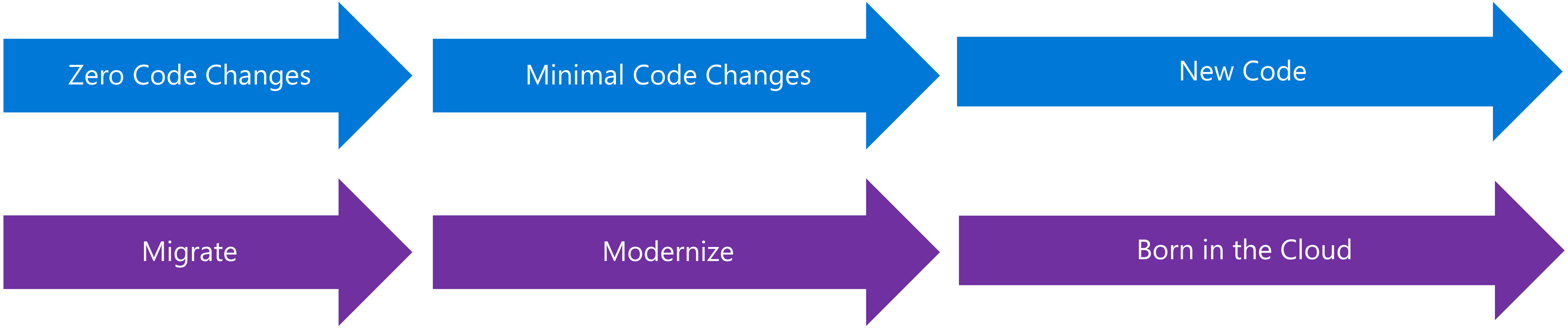
Do I really need to learn new languages and new tooling to use the cloud?

Cloud maturity spectrum

Lift and Shift

Modernize DevOps

Modernize for Cloud



Zero Code Changes

Minimal Code Changes

New Code

Migrate

Modernize

Born in the Cloud

Cloud maturity spectrum

Lift and Shift

- Azure VMs (IaaS)
- Azure SQL Database Managed Instance

Zero Code Changes

Modernize DevOps

(Containers, DevOps)

- Docker Containers
- AKS
- Azure SQL Database Managed Instance
- CI/CD

Minimal Code Changes

Modernize for Cloud

(PaaS, Serverless, Microservices)

- App Service
- SQL Database
- Functions
- CI/CD

New Code

Cloud Maturity Spectrum

	Lift and Shift	Modernize DevOps (use containers, DevOps)	Modernize for Cloud (use PaaS, serverless, microservices, DevOps)	Enhance (use cloud native for new work)
Existing ASP.NET website with SQL Server database	VM SQL			
	• Azure VMs (IaaS) • Azure SQL Database Managed Instance	• Visual Studio • Windows/Linux Containers + Docker, • Azure SQL Database Managed Instance	• App Service • SQL / Managed Instance • Functions	• Microservices • CosmosDb • CI/CD

Zero Code Changes → **Minimal Code Changes** → **New Code**

Migrate → **Modernize** → **Born in the cloud apps**

Modernize App – App service

Benefits

- Web Apps, API Apps
- Fully managed: OS patching, High Availability, Scaling
- Diagnostics & monitoring integration
- Deployment slots
- First class Visual Studio integration
- Hybrid networking options
- Built-in Azure monitoring

Eligibility checklist

- Stateless Web app or API
- Single service apps
- No system or admin components

Rework needed

- Filesystem to Azure storage
- Registry to environment vars
- Sign in, auth, AD
- IIS configurations
- Multiple IIS services

Compatibility checklist – Can my .NET app move?

Checklist

- ✓ Ensure port bindings 80 (Http) or 443 (Https)
- ✓ Anonymous & forms authentication supported. Windows auth with Azure Active Directory or ADFS & VPN
- ✓ No GAC (Global Assembly Cache) usage
- ✓ Single Application Pool per site
- ✓ IIS7+ Schema Compliance
- ✓ No COM/COM+ components
- ✓ No reference to physical directories. Use blob storage to mimic file access.
- ✓ Verify access to on-premises resources as they may need to be migrated/changed
- ✓ SQL Server, Oracle, MySQL databases
- ✓ ISAPI Filters DLL(s) need to be deployed locally and registered via web.config

Follow this checklist to determine if the app needs some refactoring

Modernize App – Azure SQL

Benefits

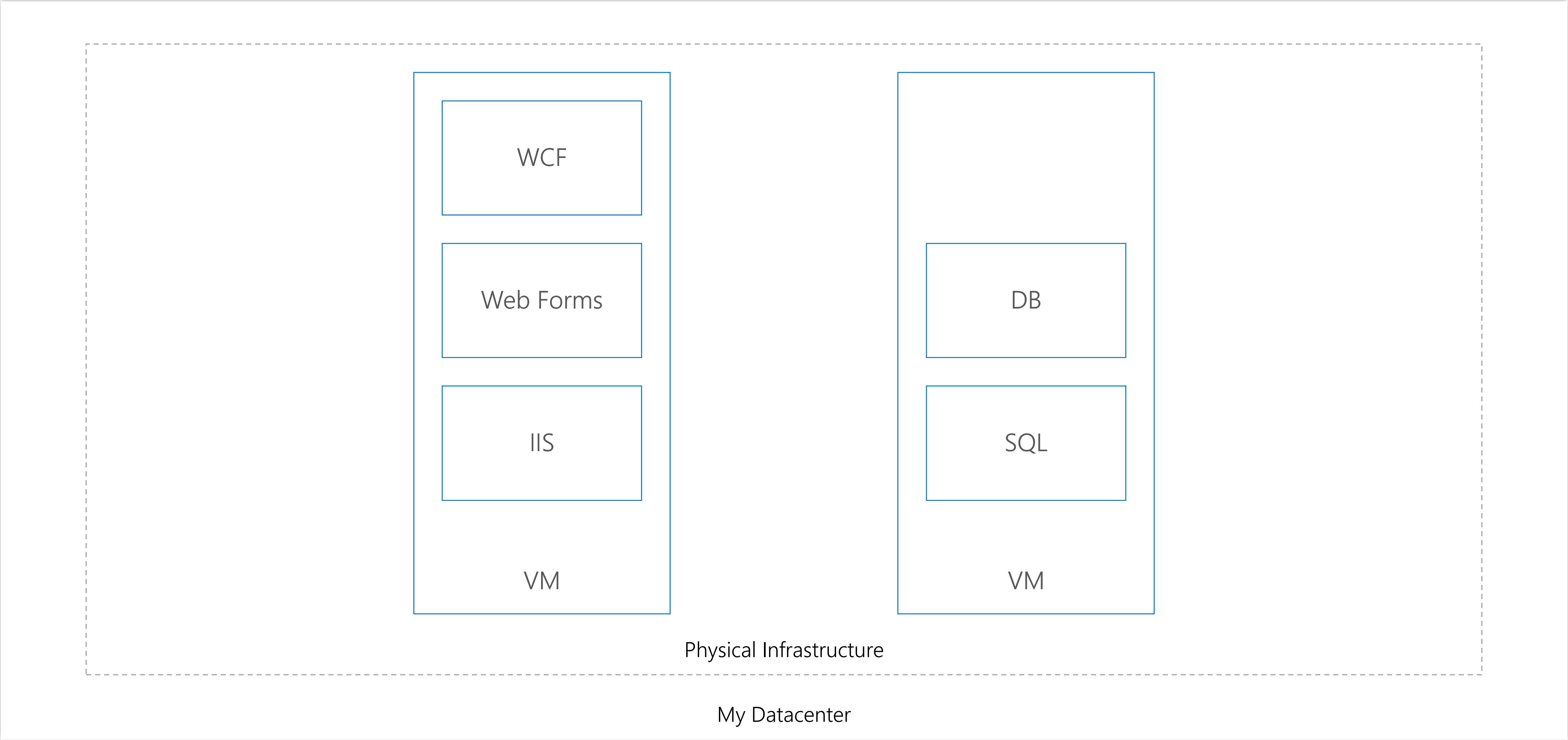
- Fully managed: OS patching, High Availability, Scaling
- Geo replication
- First class tooling
- Compatibility with SQL Server
- SQL Migration service
- Built-in Azure monitoring

Eligibility checklist

- No SQL CLR
- *No changes to model or master database

- * Use SQL Managed instance in these cases

SmartHotel360 application – Before



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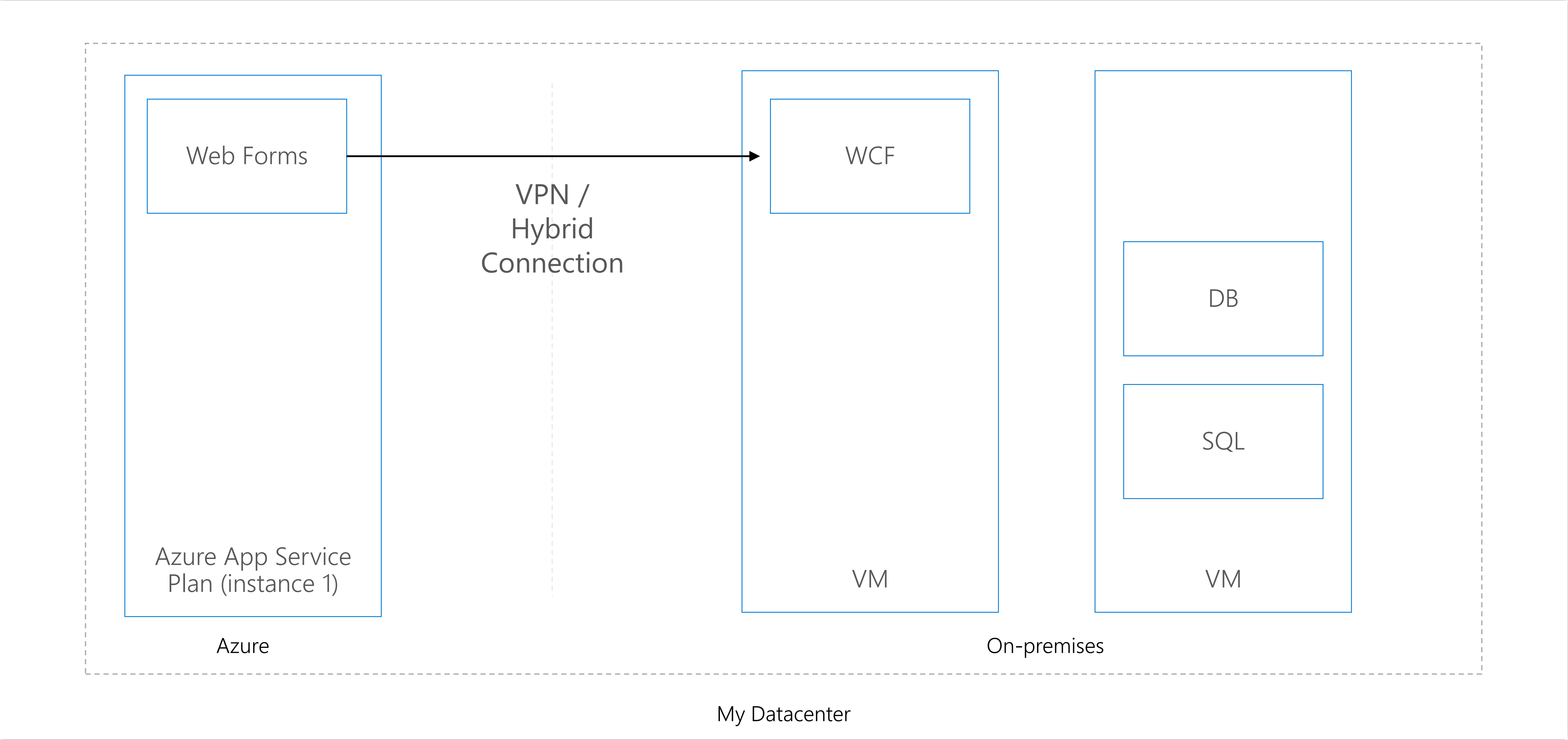
SmartHotel360 application – Incremental (Hybrid)



Demo

Prepare migrate front-end

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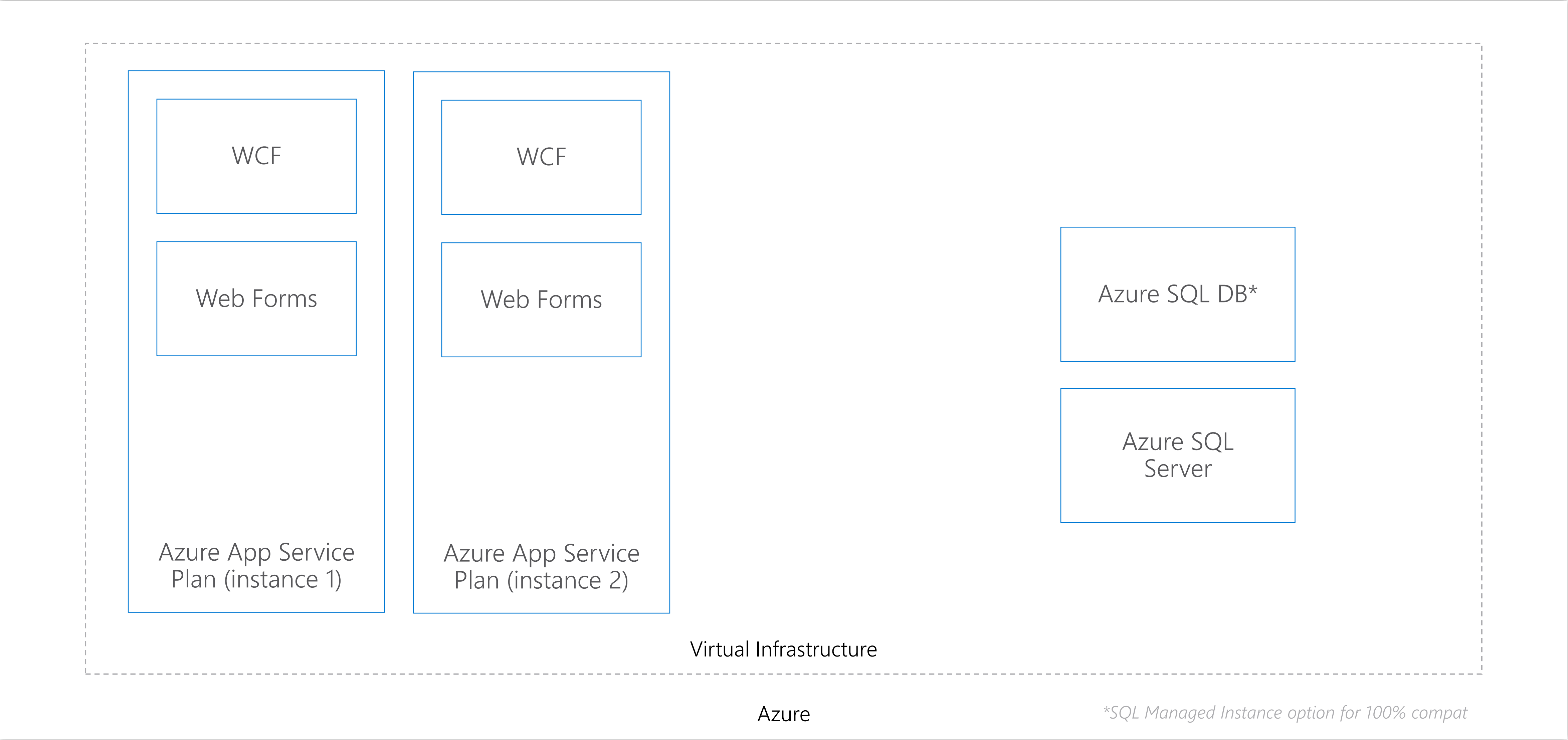
SmartHotel360 application – Ideal


WCF
Web Forms
Azure App Service Plan (instance 1)
WCF
Web Forms
Azure App Service Plan (instance 2)
Azure SQL DB*
Azure SQL Server
Virtual Infrastructure
Azure
*SQL Managed Instance option for 100% compat

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Demo

Migrate back-end | Add monitoring

Modernize DevOps – Docker containers

Benefits

- Agility: rapid deployment and updates
- Multi service/layer distributed apps
- Independent scaling
- Vendor managed/patched images
- Bring your own dependencies
- First class tooling
- Flexible networking options

Eligibility checklist

- Stateless workloads (move now)
- Visual Studio 2017 tools chain

Rework needed

- AD, MSMQ, MSDTC
- Filesystem migration to volume mounts

Windows Containers hosting in Azure

Fully supported

- Service Fabric Cluster

Preview services

- Service Fabric Mesh
- App Service Containers for Windows

Demo

Containerize | Orchestrate

Lift and Shift App – Azure VMs

Benefits

- Easiest migration, no rework needed
- Elastic scale of infrastructure
- Monitoring is easy to enable
- Azure networking, security, and VNETs

Eligibility Checklist

- All workloads

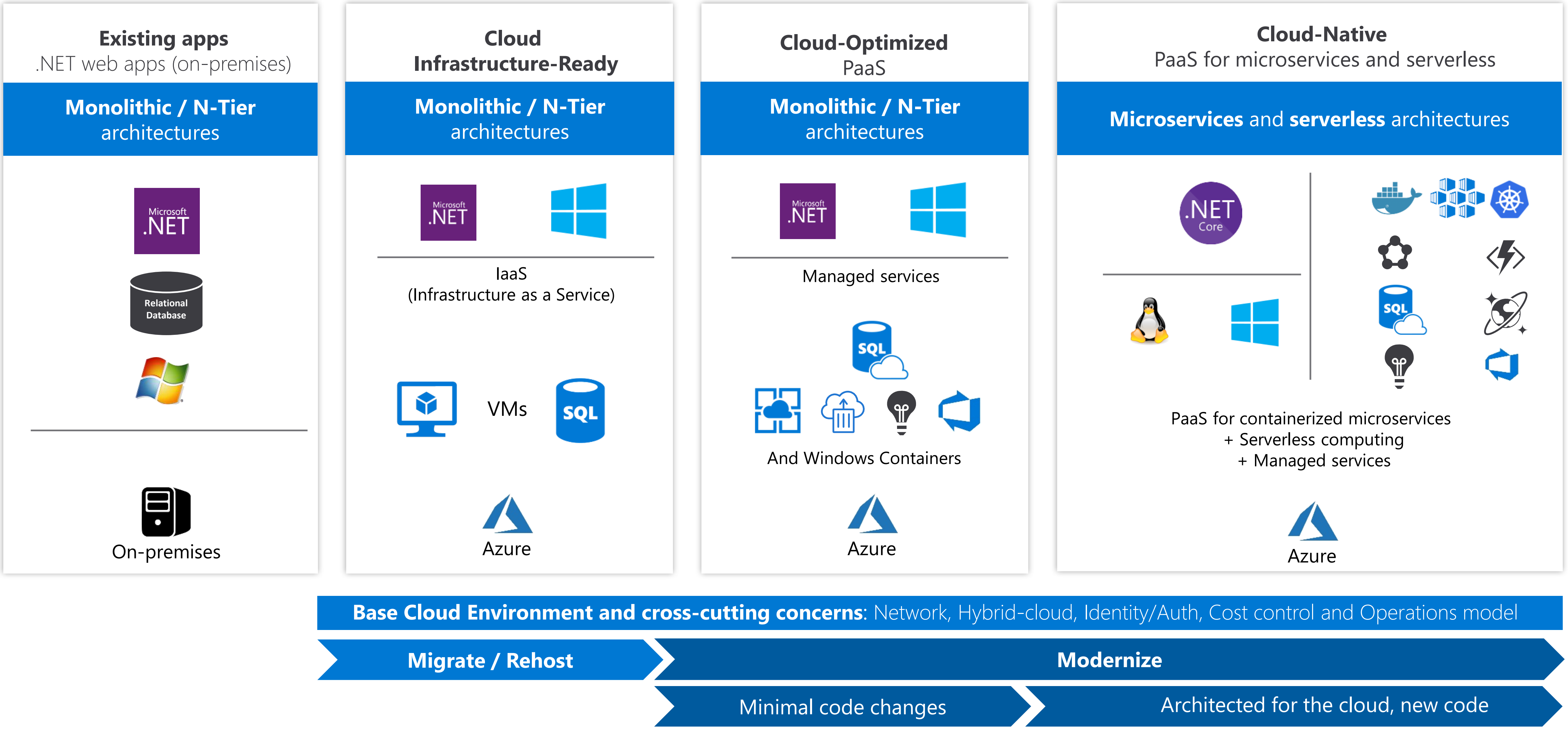
Down-sides

- Patching is still manual
- Operations is still manual

Rework needed

- Network configuration

Maturity model for .NET application modernization



Existing apps
.NET web apps (on-premises)

Monolithic / N-Tier
architectures

On-premises

Cloud Infrastructure-Ready

Monolithic / N-Tier
architectures

IaaS
(Infrastructure as a Service)

VMs

Azure

Cloud-Optimized
PaaS

Monolithic / N-Tier
architectures

Managed services

And Windows Containers

Azure

Cloud-Native
PaaS for microservices and serverless

Microservices and **serverless** architectures

PaaS for containerized microservices
+ Serverless computing
+ Managed services

Azure

Base Cloud Environment and cross-cutting concerns: Network, Hybrid-cloud, Identity/Auth, Cost control and Operations model

Migrate / Rehost

Modernize

Minimal code changes

Architected for the cloud, new code

Azure Services Recommendations for .NET Apps

Azure Services

Application Architecture

	Azure Virtual Machines (VMs)	Azure App Service	Azure Kubernetes Service (AKS)	Azure Functions	Azure Batch	Azure Container Instances (ACI)
Web apps (Monolithic architecture)	✓	✓ Recommended	✓			
N-Tier apps (Coarse-grain services)	✓	✓ Recommended	✓ Recommended			
Cloud-Native (Microservices architecture)			✓ Recommended	✓ Azure event-driven Recommended		
Batch / Jobs (Background tasks)	✓	✓	✓	✓ **Application's background tasks** Recommended	✓ **Large** Batch **scale** Recommended	✓

✓ Recommended ✓ Possible

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Summary

1. App Service and SQL most valuable for eligible apps
2. Containerize to improve agility and dependencies
3. Modernize your monitoring and CI/CD pipeline

Additional resources

https://aka.ms/migratetothecloud

https://github.com/paulyuk/modernizewithappservice

https://github.com/MikkelHegn/SmartHotel360-internal-booking-apps

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Thank you for joining us.