What you will learn

- Industry trends around enterprise application development
- Red Hat's approach to application modernization
- How to discuss migration and modernization with your customers or managers
- Migrating an existing legacy Java™ EE app to [Red Hat JBoss Enterprise Application Platform](#) on [OpenShift](#).
- Using modern frameworks like [Spring Boot](#), [Thorntail](#), [Eclipse Vert.x](#), and [Node.js](#) to implement cloud native microservices and replace monolithic functionality.
- Developing and deploying using [Azure Red Hat OpenShift](#), [Red Hat Runtimes](#), and DevOps processes.
- The benefits and challenges with microservices, including use cases for reactive microservices.
- Preventing and detecting issues in a distributed system.
- Pros and cons with different packaging techniques for microservices

Monoliths to microservices: App Transformation Hands-on Lab

Agenda

9:00AM–9:30AM

WELCOME & INTRO

9:30AM–10:30AM

MOVING EXISTING APPS TO THE CLOUD

10:30AM–11:15AM

DEVELOPER INTRO TO OPENSHIFT

11:15AM–11:30AM

BREAK

11:30AM–12:30PM

MONOLITHS TO MICROSERVICES PART 1

12:30PM–1:00PM

LUNCH

1:00PM–2:00PM

MONOLITHS TO MICROSERVICES PART 2

2:00PM–3:00PM

REACTIVE MICROSERVICES WITH ECLIPSE VERT.X

3:00PM–3:15PM

WRAP-UP AND CLOSING REMARKS

Monoliths to microservices: App Transformation Hands-on Lab

Red Hat

The cloud is where open enterprise innovation happens

In a cloud world—where organizations are looking at open source to drive agility and deliver apps more quickly—security and management remain top of mind

Through this partnership, Microsoft adds value to your Red Hat investments in Azure, wherever you are in your cloud journey

Monoliths to microservices: App Transformation Hands-on Lab

Azure

+
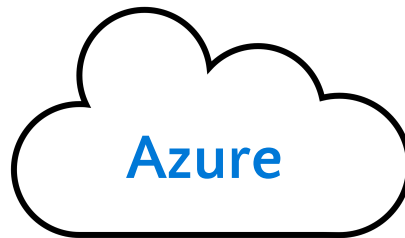
Red Hat

Red Hat
OpenShift
Container Platform

Red Hat
Middleware

=

Agility

| Secure | Manageable | Supported |

Azure Red Hat OpenShift

Engineered Better Together

Jointly engineered, operated, and supported by Microsoft and Red Hat with an integrated support experience

Empower developers to innovate
Support for traditional, cloud native & serverless tools
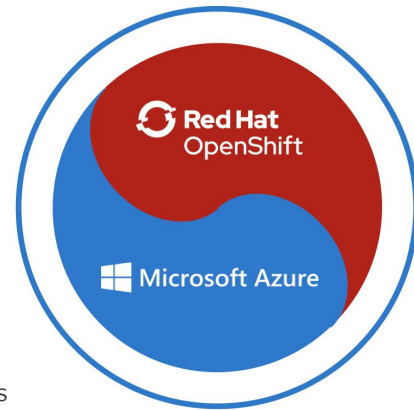Easily connect to hundreds of Azure services

Scale on-demand. Pay as you go
Scale as your application demand changes
Leverage your Azure monetary commits

Enterprise-grade operations, security, and compliance
SLA: 99.9%, 24*7 premium support
SOC, ISO, PCI DSS and HIPAA regulatory compliance (coming soon)
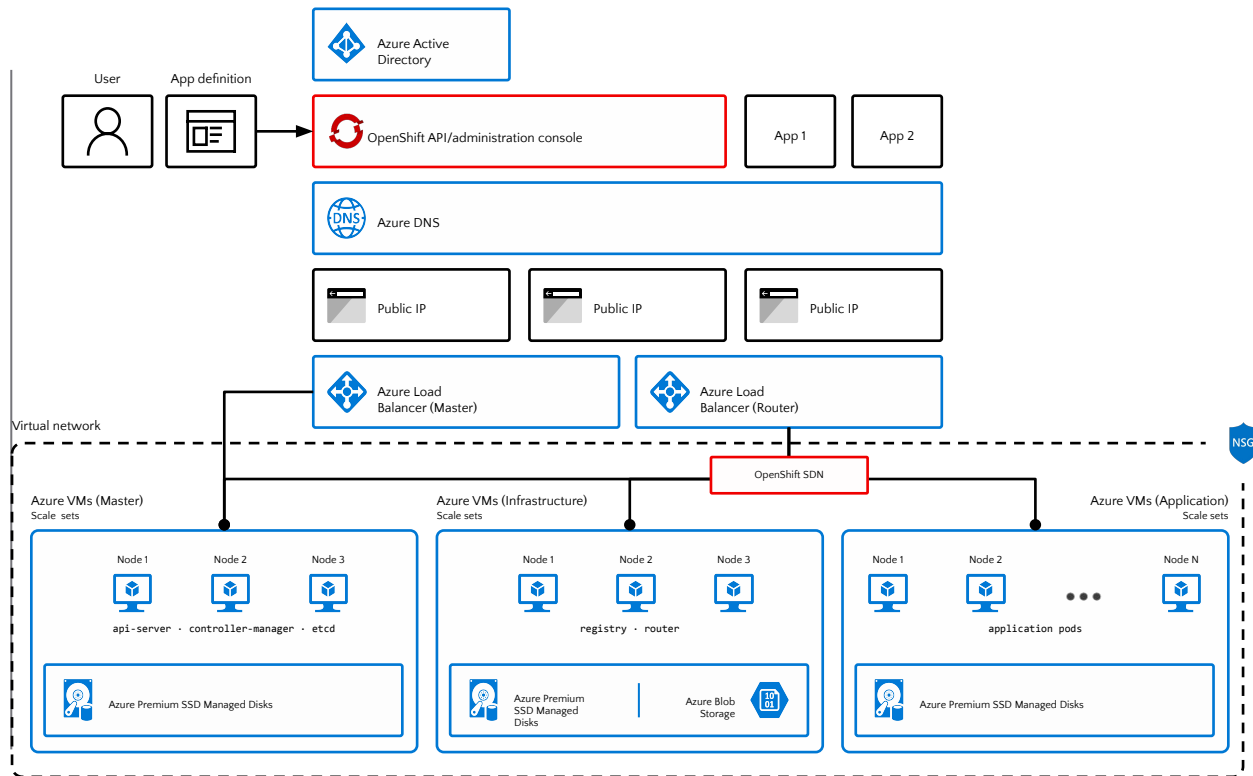
Monoliths to microservices: App Transformation Hands-on Lab

Running your own Red Hat OpenShift cluster

Responsibilities	
User management	
Project and quota management	
Application lifecycle	
Cluster creation	
Cluster management	
Monitoring and logging	
Network configuration	
Software and security updates	
Platform support	

Customer ▢   Microsoft and Red Hat ◨

User   App definition

Azure Active Directory

OpenShift API/administration console   App 1   App 2

Azure DNS

Public IP   Public IP   Public IP

Azure Load Balancer (Master)   Azure Load Balancer (Router)

Virtual network

NSG

OpenShift SDN

Azure VMs (Master)
Scale sets

Node 1   Node 2   Node 3

api-server · controller-manager · etcd

Azure Premium SSD Managed Disks

Azure VMs (Infrastructure)
Scale sets

Node 1   Node 2   Node 3

registry · router

Azure Premium SSD Managed Disks   Azure Blob Storage

Azure VMs (Application)
Scale sets

Node 1   Node 2   Node N

application pods

Azure Premium SSD Managed Disks

Monoliths to microservices: App Transformation Hands-on Lab

Red Hat

Simplify cluster operations with Azure Red Hat OpenShift

Responsibilities	
User management	Customer
Project and quota management	Customer
Application lifecycle	Customer
Cluster creation	Microsoft and Red Hat
Cluster management	Microsoft and Red Hat
Monitoring and logging	Microsoft and Red Hat
Network configuration	Microsoft and Red Hat
Software and security updates	Microsoft and Red Hat
Platform support	Microsoft and Red Hat

Customer   Microsoft and Red Hat

User   App definition

Azure Active Directory

OpenShift API/administration console

App 1   App 2
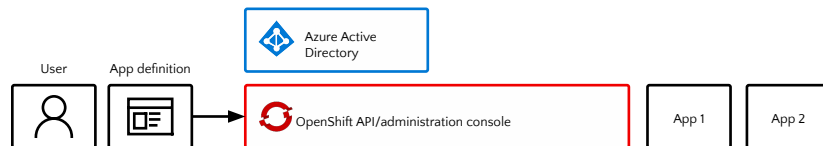
Let Microsoft and Red Hat...

Manage all your clusters

Secure your nodes

Monitor and operate your VMs

Manage environment patches

Monoliths to microservices: App Transformation Hands-on Lab

Red Hat

Azure Red Hat OpenShift features

Flexible, self-service deployment
Create fully managed OpenShift clusters
in minutes

Cluster node scaling
Easily add or remove compute nodes to match resource
demand

Azure Active Directory integration
Use Azure Active Directory to control access to your
cluster with an integrated sign-on experience

Fully managed clusters
Master, infrastructure, and application nodes are
managed by Microsoft and Red Hat; plus, no VMs
to operate and no patching required

Virtual Network integration
Deploy your cluster into a new VNet, then use
VNet peering to connect to your existing VNet
and on-premises networks

High availability
Multiple masters and infrastructure nodes help ensure
your cluster has no single point of failure

First party Azure service
Clusters are deployed into your Azure subscription and
included on your Azure bill

Persistent storage volumes
Azure Disk is pre-configured as the default storage class,
providing dynamically provisioned Premium SSD's
on-demand

Unified support
Jointly engineered, operated, and supported by Microsoft
and Red Hat with an integrated support experience

Regulatory compliance
Azure Red Hat OpenShift is compliant with SOC, ISO, PCI
DSS, HIPAA, and more (Coming soon)

Monoliths to microservices: App Transformation Hands-on Lab

Red Hat

Red Hat on Azure customers

More customer stories @ customers.microsoft.com - redhat.com/success-stories

Monoliths to microservices: App Transformation Hands-on Lab

Key takeaways

1 Microsoft + Red Hat are the trusted & leading partners in your Digital Transformation Journey

2 Microsoft + Red Hat have deep collaboration from joint engineering, global reach and integrated co-located support.

3 Continuing to evolve based on your needs

Microsoft

+

Red Hat

=

Agility

Secure	Manageable	Supported

Monoliths to microservices: App Transformation Hands-on Lab

Prerequisites

- Laptop with recent browser:

    - Chrome, Firefox, Internet Explorer/Edge 10+, or Safari 9+ installed

- Are a Java developer, architect, or developer team lead interested in learning more about the latest technologies for modern application development

- Working knowledge of Java programming

- Familiarity with Linux container technology and concepts

Monoliths to microservices: App Transformation Hands-on Lab

Red Hat

LAB: MOVING EXISTING APPS TO THE CLOUD

WEB: bit.ly/RH-MS-ARO-lab-guides
SLIDES (PDF): bit.ly/RH-MS-ARO-lab-slides

SCENARIO 0   GETTING STARTED WITH THIS COURSE

Thank you

Red Hat

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Azure | Channel 9: channel9.msdn.com/Blogs/Azure