



# OpenShift on Azure

Giulio Santoli – Cloud Solution Architect



#RedHatOSD

# Agenda

**01.** Red Hat + Microsoft – “Stronger together”

**02.** OpenShift on Azure – A Dynamic Deployment

# 01. Red Hat + Microsoft

Stronger together

# 01. Red Hat + Microsoft

Stronger together



# 01. Red Hat + Microsoft

Stronger together



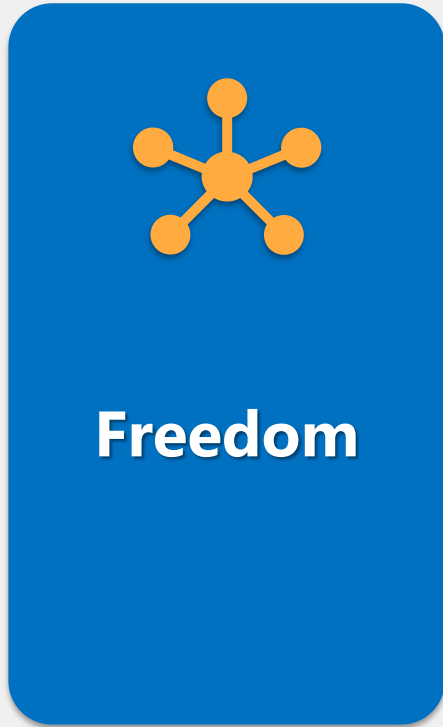
## Freedom

54 regions worldwide 140 available in 140 countries



# 01. Red Hat + Microsoft

Stronger together



54 regions worldwide 140 available in 140 countries

Marketplace

Everything

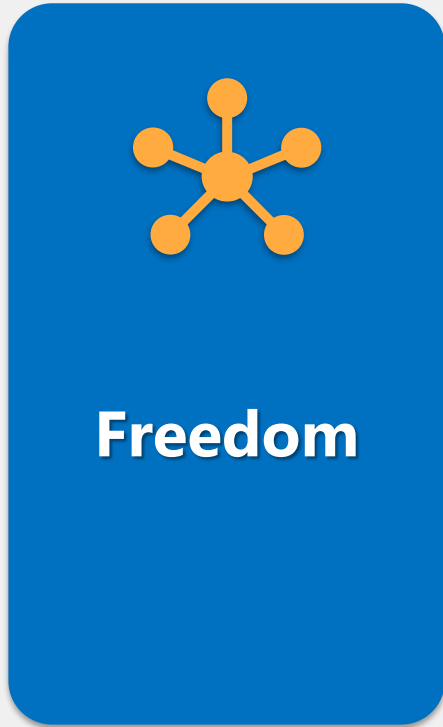
Filter

redhat

Red Hat Enterprise Linux 7.3	Red Hat	Compute
Red Hat Enterprise Linux 6.9	Red Hat	Compute
Red Hat Enterprise Linux 7.4	Red Hat	Compute
Red Hat Enterprise Linux 7.2 for SAP HANA	Red Hat	Compute
Red Hat Enterprise Linux 7.2	Red Hat	Compute
Red Hat Enterprise Linux 6.7 for SAP HANA	Red Hat	Compute
Red Hat Enterprise Linux 6.8	Red Hat	Compute
Red Hat Enterprise Linux 7.3 for SAP Business Apps	Red Hat	Compute
Red Hat Enterprise Linux 6.8 for SAP Business Apps	Red Hat	Compute
Red Hat Enterprise Linux 6.7	Red Hat	Compute
SQL Server 2017 Enterprise on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute
SQL Server 2017 Standard on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute
Free SQL Server License: SQL Server 2017 Developer on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute

# 01. Red Hat + Microsoft

Stronger together



54 regions worldwide 140 available in 140 countries

Marketplace Everything

Filter

redhat

NAME	PUBLISHER	CATEGORY
Red Hat Enterprise Linux 7.3	Red Hat	Compute
Red Hat Enterprise Linux 6.9	Red Hat	Compute

Marketplace Everything

Filter

ansible

NAME	PUBLISHER	CATEGORY
Ansible Tower	Red Hat	Compute

Marketplace Everything

Filter

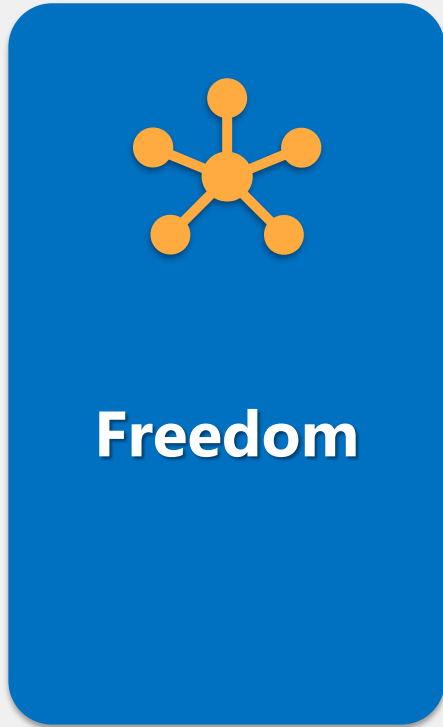
SQL Server 2017 Standard on Red Hat Enterprise Linux 7.4 (RHEL)

Free SQL Server License: SQL Server 2017 Developer on Red Hat Enterprise Linux 7.4 (RHEL)

NAME	PUBLISHER	CATEGORY
SQL Server 2017 Standard on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute
Free SQL Server License: SQL Server 2017 Developer on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute

# 01. Red Hat + Microsoft

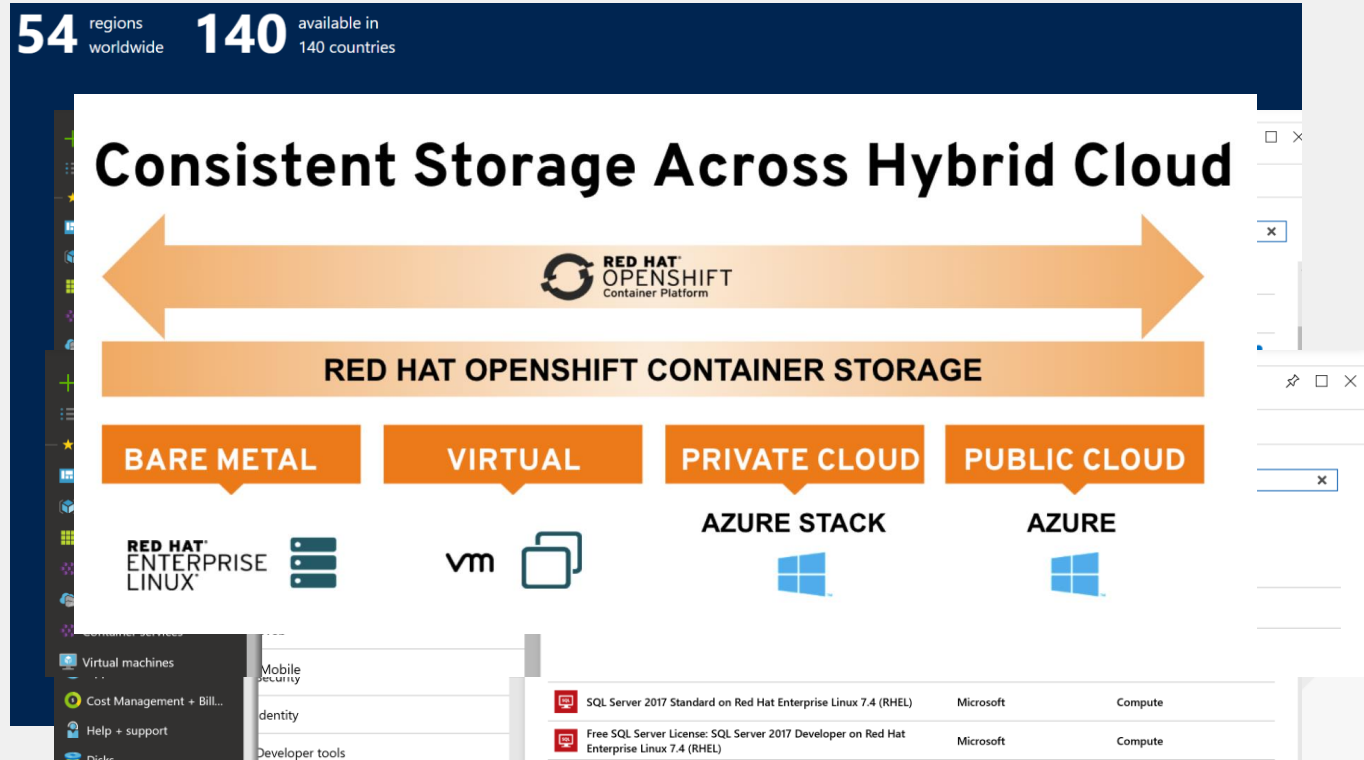
Stronger together



**Freedom**

54 regions worldwide    140 available in 140 countries

## Consistent Storage Across Hybrid Cloud



RED HAT OPENSIFT Container Platform

RED HAT OPENSIFT CONTAINER STORAGE

BARE METAL    VIRTUAL    PRIVATE CLOUD    PUBLIC CLOUD

RED HAT ENTERPRISE LINUX    vm    AZURE STACK    AZURE

SQL Server 2017 Standard on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute
Free SQL Server License: SQL Server 2017 Developer on Red Hat Enterprise Linux 7.4 (RHEL)	Microsoft	Compute



# 01. Red Hat + Microsoft

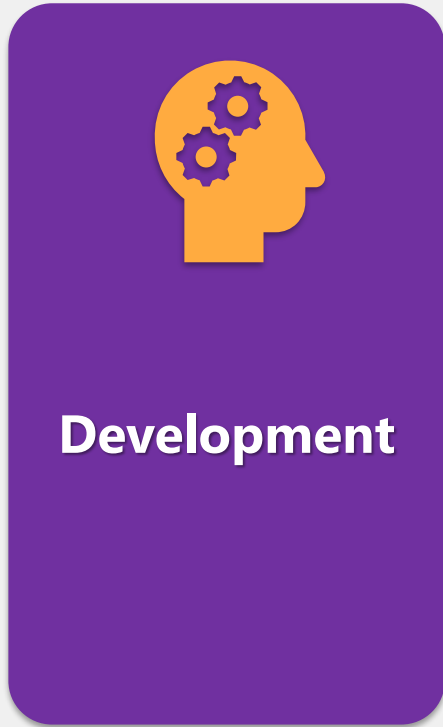
Stronger together



```
1 ---
2 - name: Create Azure VM
3   hosts: localhost
4   connection: local
5
6   vars:
7     resource_group: demo-451
8     vm_name: testvm
9     location: eastus
10
11  tasks:
12    - name: Create a resource group
13      azure_rm_resourcegroup:
14        name: "{{ resource_group }}"
15        location: "{{ location }}"
16
17    - name: create virtual network
18      azure_rm_virtualnetwork:
19        resource_group: "{{ resource_group }}"
20        name: "{{ vm_name }}"
21        address_prefixes: "10.0.0/16"
22
23    - name: add subnet
24      azure_rm_subnet:
25        resource_group: "{{ resource_group }}"
26        name: "{{ vm_name }}"
27        address_prefix: "10.0.1.0/24"
28
29    - name: create public IP address
30      azure_rm_publicipaddress:
31        resource_group: "{{ resource_group }}"
32        name: "{{ vm_name }}"
33        allocation_method: Static
34
35    - name: Create Network Security Group that allows SSH
36      azure_rm_securitygroup:
37        resource_group: "{{ resource_group }}"
38        name: "{{ vm_name }}"
39        rules:
```

# 01. Red Hat + Microsoft

Stronger together



vm.yml - ansible-testapp - Visual Studio Code

File Edit Selection View Go Debug Tasks Help

EXPLORER

! vm.yml

redhat CUSTOMER PORTAL

Products & Services Tools Security

Red Hat Container Catalog Search The Catalog

Explore Get Started FAQ

mssql/rhel/server

SQL Server Red Hat Container Tech Preview ☆

by Microsoft Corp. | in Product SQL Server

- Delete
- Run Ansible Playbook in Docker
- Run Ansible Playbook in Local Ansible
- Run Ansible Playbook in Cloud Shell

```
ss_prefix: "10.0.1.0/24"
al_network: "{{ vm_name }}"
create_public IP address
m_publicipaddress:
nce_group: "{{ resource_group }}"
sation_method: Static
name: "{{ vm_name }}"
- name: Create Network Security Group that allows SSH
  azure_rm_securitygroup:
    resource_group: "{{ resource_group }}"
    name: "{{ vm_name }}"
  rules:
```

Ln 18, Col 38 Spaces: 2 UTF-8 CRLF YAML

# 01. Red Hat + Microsoft

Stronger together



Development

vm.yml - ansible-testapp - Visual Studio Code

File Edit Selection View Go Debug Tasks Help

EXPLORER

! vm.yml x

redhat CUSTOMER PORTAL Products & Services Tools Security

Red Hat and Microsoft co-develop the first Red Hat OpenShift jointly managed service on a public cloud

May 8, 2018 | Microsoft News Center

by Mic

f t in

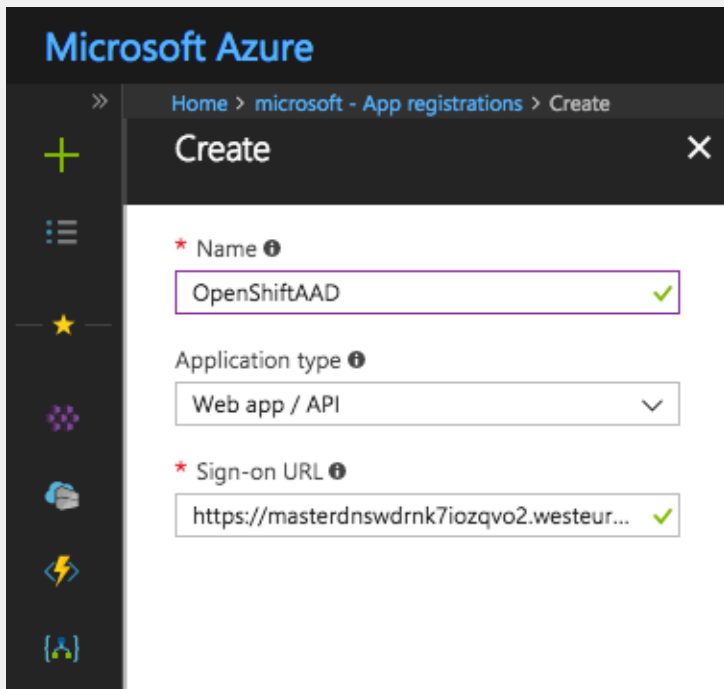
Microsoft and Red Hat expand partnership around hybrid cloud, container management and developer productivity

```
32 resource_group: "{{ resource_group }}"
33 name: "{{ vm_name }}"
34 rules:
```

master 11:01 0 0 Azure: yungez@microsoft.com Ln 18, Col 38 Spaces: 2 UTF-8 CRLF YAML

# 01. Red Hat + Microsoft

Stronger together

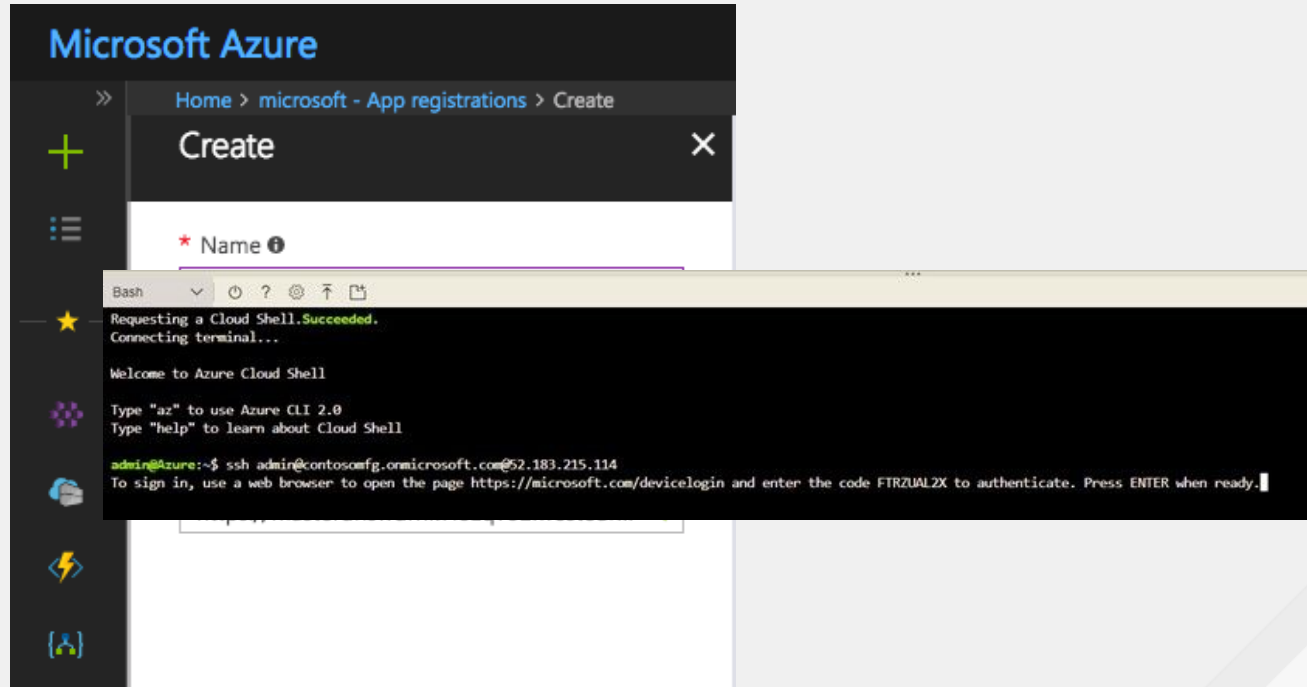


# 01. Red Hat + Microsoft

Stronger together

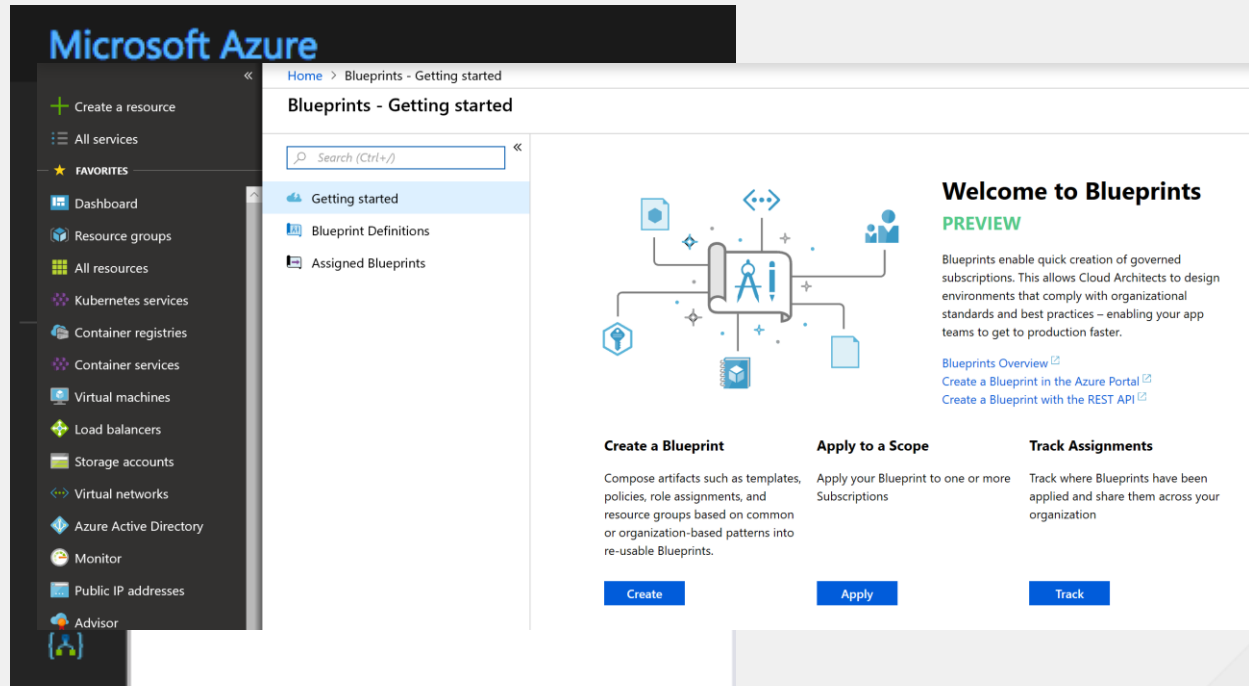


Management



# 01. Red Hat + Microsoft

Stronger together



**Microsoft Azure**

Home > Blueprints - Getting started

## Blueprints - Getting started

Search (Ctrl+V)

- Getting started
- Blueprint Definitions
- Assigned Blueprints

### Welcome to Blueprints

**PREVIEW**

Blueprints enable quick creation of governed subscriptions. This allows Cloud Architects to design environments that comply with organizational standards and best practices – enabling your app teams to get to production faster.

[Blueprints Overview](#)

[Create a Blueprint in the Azure Portal](#)

[Create a Blueprint with the REST API](#)

Create a Blueprint	Apply to a Scope	Track Assignments
Compose artifacts such as templates, policies, role assignments, and resource groups based on common or organization-based patterns into re-usable Blueprints.	Apply your Blueprint to one or more Subscriptions	Track where Blueprints have been applied and share them across your organization
<a href="#">Create</a>	<a href="#">Apply</a>	<a href="#">Track</a>

# 01. Red Hat + Microsoft

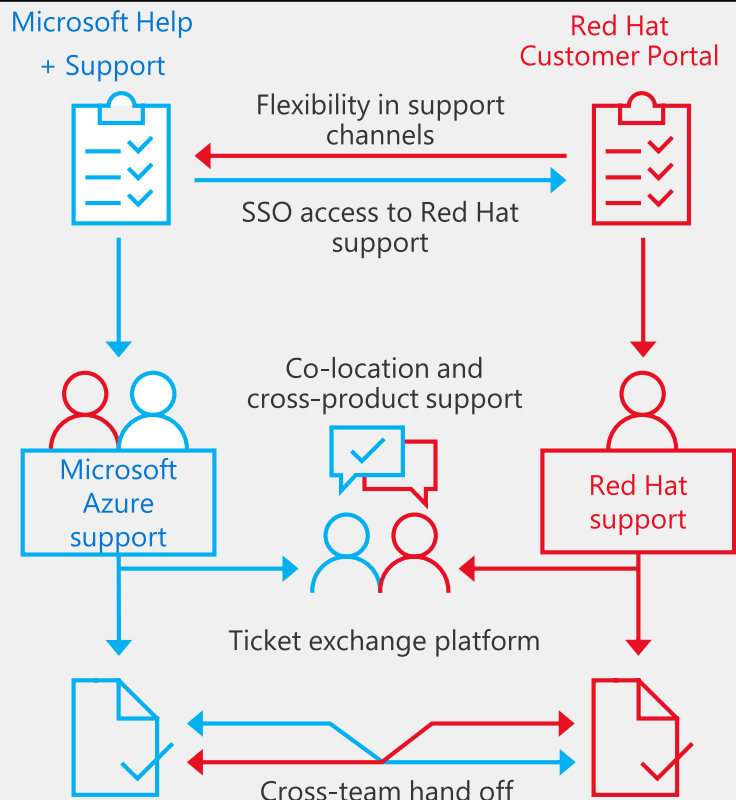
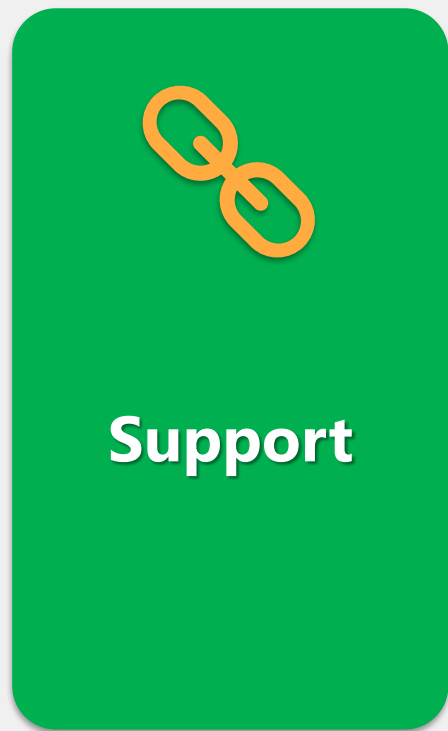
Stronger together



The screenshot shows the Microsoft Azure Policy console interface. At the top, there is a navigation bar with a search bar containing "policy" and a user profile for "jovalen@microsoft.com". The main content area is titled "Policy" and shows a search bar with "Search (Ctrl+J)". The left sidebar contains a navigation menu with categories: Overview (selected), Getting started, Compliance, Remediation, Authoring (Assignments, Definitions), Blueprints (Blueprints (preview)), Resources (Resource Graph (preview)), and Privacy (User privacy). The main content area displays a summary of compliance status for "Microsoft Azure ...". It shows "Overall resource compliance" at 100%, "Non-compliant initiatives" at 0 out of 0, "Non-compliant policies" at 0 out of 0, and "Non-compliant resources" at 0 out of 0. There is a "LEARN MORE" link for "Learn about Policy" and "Onboarding tutorial". Below the summary, there is a table header with columns: NAME, SCOPE, COMPLIANCE STATE, COMPLIA..., NON-COMPLIANT R..., and NON-COMPLIANT P... The table content shows "No assignments to display within the given scope" and a "View all" link. At the bottom, there is a section for "ASSIGNMENTS BY COMPLIANCE (LAST 7 DAYS)".

# 01. Red Hat + Microsoft

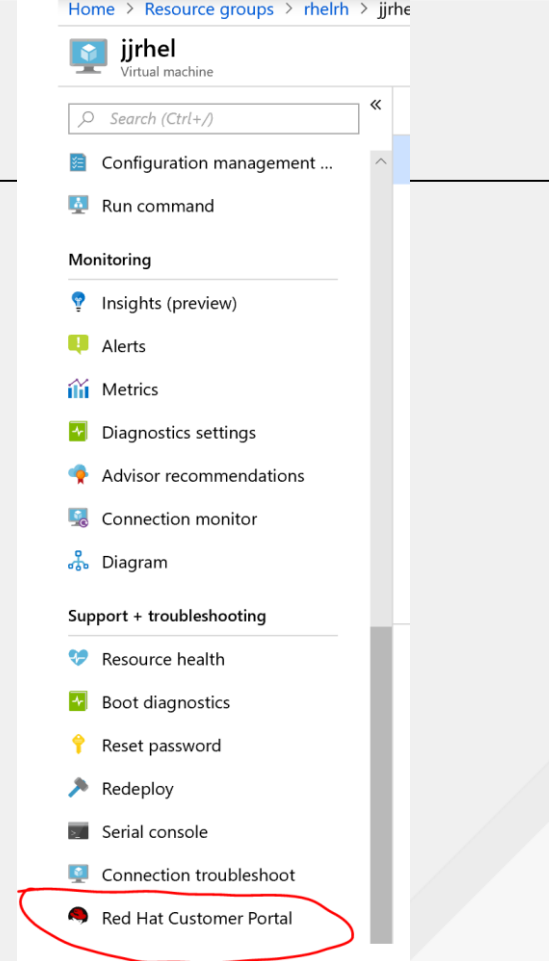
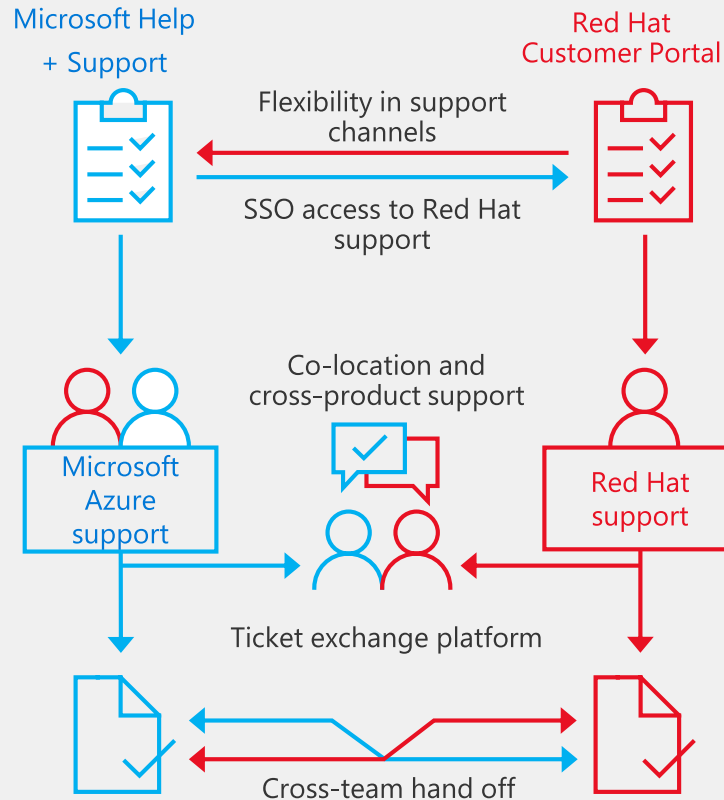
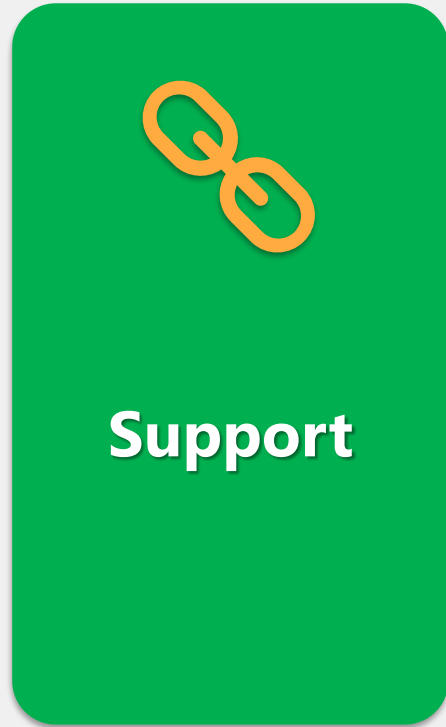
Stronger together





# 01. Red Hat + Microsoft

Stronger together



# 01. Red Hat + Microsoft

Stronger together



# 01. Red Hat + Microsoft

Stronger together

More customer stories @ [customers.microsoft.com](https://customers.microsoft.com)



l2labs

software defined mainframe\*



TATA

TATA CONSULTANCY SERVICES



Polycom

**HITACHI**  
Inspire the Next

**EARTU**

اتحاد الادارة والتليفزيون المصرى

**SCSK**



Savoir-faire  
**LINUX**



# 01. Red Hat + Microsoft

Stronger together

"Azure and OpenShift automate a significant amount of work, which allows development teams to achieve consistent results every time"

**Yuji Hirose**

Head of Service Supervisory Unit,  
Service Solutions Control Unit, and  
ICT Business Supervisory Control Unit  
Hitachi



# 02. OpenShift on Azure

## Dynamic Deployment

# Visibility

# 02. OpenShift on Azure

## Dynamic Deployment

**i** Potentially insecure URL access detected (preview)

**When:** 4/20 2:00 AM - 4/21 1:59 AM

**What:** 29 URLs were accessed by both HTTP and HTTPS protocols

**Note:** 4536 users accessed multiple URLs using HTTP instead of HTTPS

**i** Degradation in Server response time for "GET Home/Index"

**When:** 4/20 2:00 AM - 4/21 1:59 AM

**What:** 6.09 sec Server response time vs 0.654 sec in the previous 7 days

**Note:** 242 users and 44.0% of all requests were affected

**i** Degradation in Server response time for "GET /Scripts/jquery-1.5.1.min.js" New

**When:** 4/18 2:00 AM - 4/19 1:59 AM

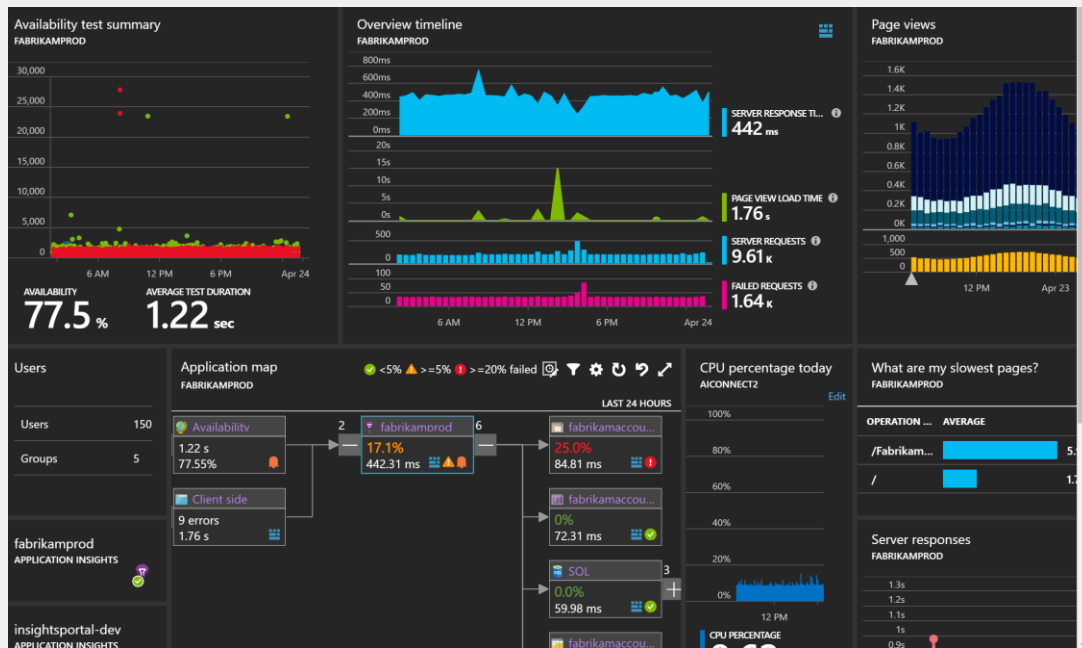
**What:** 8.72 sec Server response time vs 18.2 ms in the previous 7 days

**Note:** 30 users and 3.1% of all requests were affected

**i** Degradation in Server response time for "GET /Scripts/knockout.mapping-latest.js" New

**When:** 4/18 2:00 AM - 4/19 1:59 AM

**What:** 8.21 sec Server response time vs 17.9 ms in the previous 7 days



# Agility



# 02. OpenShift on Azure

## Dynamic Deployment

Home > Resource groups > rhelrh > jirhel > Choose a size

### Choose a size

Browse the available sizes and their features

Search  Compute type: Current generation Disk type: All disk types vCPUs: 1

RECOMMEN...	SKU	TYPE	COMPUTE ...	VCPUS	GB RAM	DATA DISKS	MAX IOPS	LOCAL SSD	PREMIUM ...	ADDITION...	EUR
	M128-64ms	Standard	Memory optimi	64	3892	64	80000	4096 GiB	Yes		€23
	M128-32ms	Standard	Memory optimi	32	3892	64	80000	4096 GiB	Yes		€23
blems	NC6s_v3	Standard	GPU	6	112	12	20000		Yes	1 V100 (PCIe)	€2,4
	NC12s_v3	Standard	GPU	12	224	24	40000		Yes	2 V100 (PCIe)	€4,5
	NC24s_v3	Standard	GPU	24	448	32	80000		Yes	4 V100 (PCIe)	€9,5
	NC24rs_v3	Standard	GPU	24	448	32	80000		Yes	4 V100 (PCIe)	Una
	ND6s	Standard	GPU	6	112	12	20000		Yes	1 P40	€1,6
	ND12s	Standard	GPU	12	224	24	40000		Yes	2 P40	€3,2
view)	ND24s	Standard	GPU	24	448	32	80000		Yes	4 P40	€6,7
	ND24rs	Standard	GPU	24	448	32	80000		Yes	4 P40	€7,4
	NC6s_v2	Standard	GPU	6	112	12	20000		Yes	1 P100 (PCIe)	€1,6
	NC12s_v2	Standard	GPU	12	224	24	40000		Yes	2 P100 (PCIe)	€3,2

Prices presented are estimates in your local currency that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software the virtual machine is currently running, changing its size will cause it to be restarted.

Select

# 02. OpenShift on Azure

## Dynamic Deployment

The screenshot displays the OpenShift Container Platform interface, specifically the 'Search Catalog' page. The header shows 'OPENSHIFT CONTAINER PLATFORM' and a search bar with the text 'Search Catalog'. The main content area is a grid of service cards, each with an icon and a title. The sidebar on the right is titled 'My Projects' and contains a list of projects and a 'Recently Viewed' section.

.NET Core + PostgreSQL (Persistent)	.NET Core Example	.NET Core Runtime Example	Apache HTTP Server	Apache HTTP Server (httpd)
Azure Container Instances	Azure Cosmos DB	Azure Cosmos DB (Graph API)	Azure Cosmos DB (MongoDB)	Azure Cosmos DB (MongoDB)
Azure Database for MySQL	Azure Database for MySQL - Database Only	Azure Database for MySQL - DBMS Only	Azure Database for PostgreSQL	Azure Database for PostgreSQL - Database Only
Azure Database for PostgreSQL - DBMS Only	Azure Event Hubs	Azure Key Vault	Azure Redis Cache	Azure Search
Azure Service Bus	Azure SQL Database	Azure SQL Server (Database Only)	Azure SQL Server (DBMS Only)	Azure Storage

**My Projects** [+ Create Project](#)

5 of 13 Projects [View All](#)

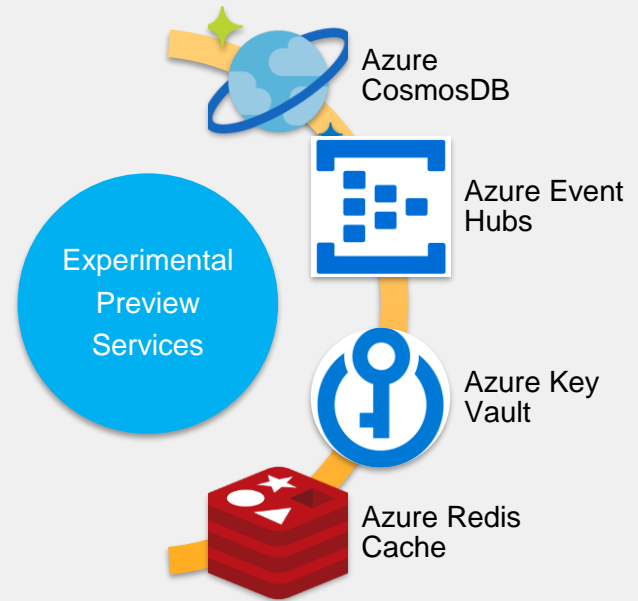
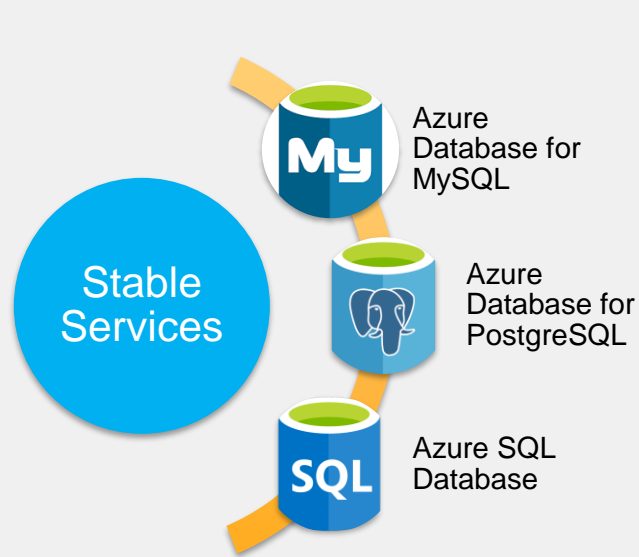
- [jzcosmosdb-test](#)  
jzcosmosdb - created by demo 5 days ago
- [osba](#)  
created by demo 13 days ago
- [default](#)  
created 13 days ago
- [kube-service-catalog](#)  
created 13 days ago
- [jzpostgres](#)  
created by demo 13 days ago

**Recently Viewed**

- Azure Database for MySQL
- Azure Cosmos DB (MongoDB)
- Azure Key Vault

# 02. OpenShift on Azure

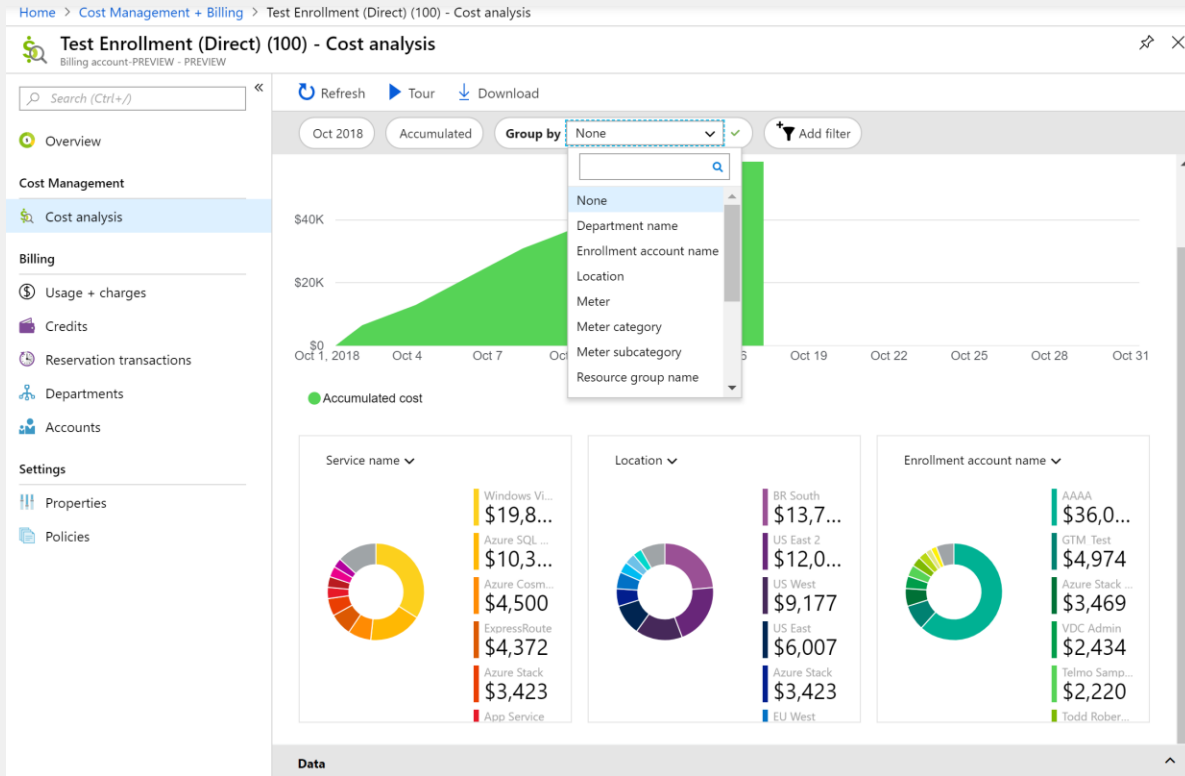
## Dynamic Deployment



# Control

# 02. OpenShift on Azure

## Dynamic Deployment



# CI/CD Integration

# 02. OpenShift on Azure

## Dynamic Deployment

The screenshot displays the Azure DevOps interface for a pipeline named "devopsproj - CD". The left sidebar shows the navigation menu with "Pipelines" selected. The main area shows the pipeline configuration with two stages: "Artifacts" and "Stages".

- Artifacts:** Contains a "Drop" task and a "Schedule not set" option.
- Stages:** Contains a "Deploy to Openshift" task with "1 job, 2 tasks".

The pipeline is connected to a repository named "devopsproj" (jj81 / devopsproj / Pipelines). The interface includes tabs for "Pipeline", "Tasks", "Variables", "Retention", "Options", and "History".

# 02. OpenShift on Azure

## Dynamic Deployment

The screenshot displays the Azure DevOps web interface. On the left is a navigation sidebar with the following items: Overview, Boards, Repos, Pipelines (selected), Builds, Releases, Library, Task groups, Deployment groups, Test Plans, and Artifacts. The main content area shows the pipeline configuration for 'devopsproj' under 'Pipelines'. The selected pipeline is 'devopsproj - CD'. The 'Tasks' tab is active, showing a 'Deploy to Openshift' stage (Deployment process). Below this stage is an 'Agent phase' (Run on agent) containing two tasks: 'oc tag on' (Openshift tag) and 'oc build on sdsdsdsd' (Openshift build starter). On the right side of the interface, there is a 'Stage name' input field containing the text 'Deploy to Openshift'. At the top right of the pipeline configuration area, there are buttons for 'Save', '+ Release', and a menu icon.



# 02. OpenShift on Azure

## Dynamic Deployment

### Microsoft + Open Source

- Microsoft Open Source Page - <https://open.microsoft.com/>
- Microsoft on GitHub - /azure and /microsoft
- Microsoft and Red Hat - <https://azure.microsoft.com/en-us/campaigns/redhat/>

### Azure & Ansible:

- Ansible for Azure – <https://docs.microsoft.com/en-us/azure/virtual-machines/linux/ansible-install-configure#file-credentials>
- Provision using Ansible onto Azure - <https://docs.microsoft.com/en-us/azure/virtual-machines/linux/ansible-create-vm>
- mssql-server role from <https://github.com/Microsoft/sql-server-samples/tree/master/samples/features/high%20availability/Linux/Ansible%20Playbook>

### Helm & Openshift:

- Helm - <https://helm.sh/>
- Helm on OpenShift - <https://blog.openshift.com/getting-started-helm-openshift/>

### Open Service Broker for Azure:

- Open Service Broker for Azure - <https://osba.sh/>



# GRAZIE PER L'ATTENZIONE

Giulio Santoli – Cloud Solution Architect



#RedHatOSD