Tech Data

Managed Containers on Azure

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1.0 Things to know prior to using this Guide

- You would need to familiarize yourself with this document prior to diving in.
- All the Screen Shots in this Guide are for reference only.
- This Guide will assist you with the deployment of the Managed Containers on Azure Bundle in an Azure CSP subscription that was purchased through the StreamOne Portal.
  - In depth training on Azure is outside of this guide.

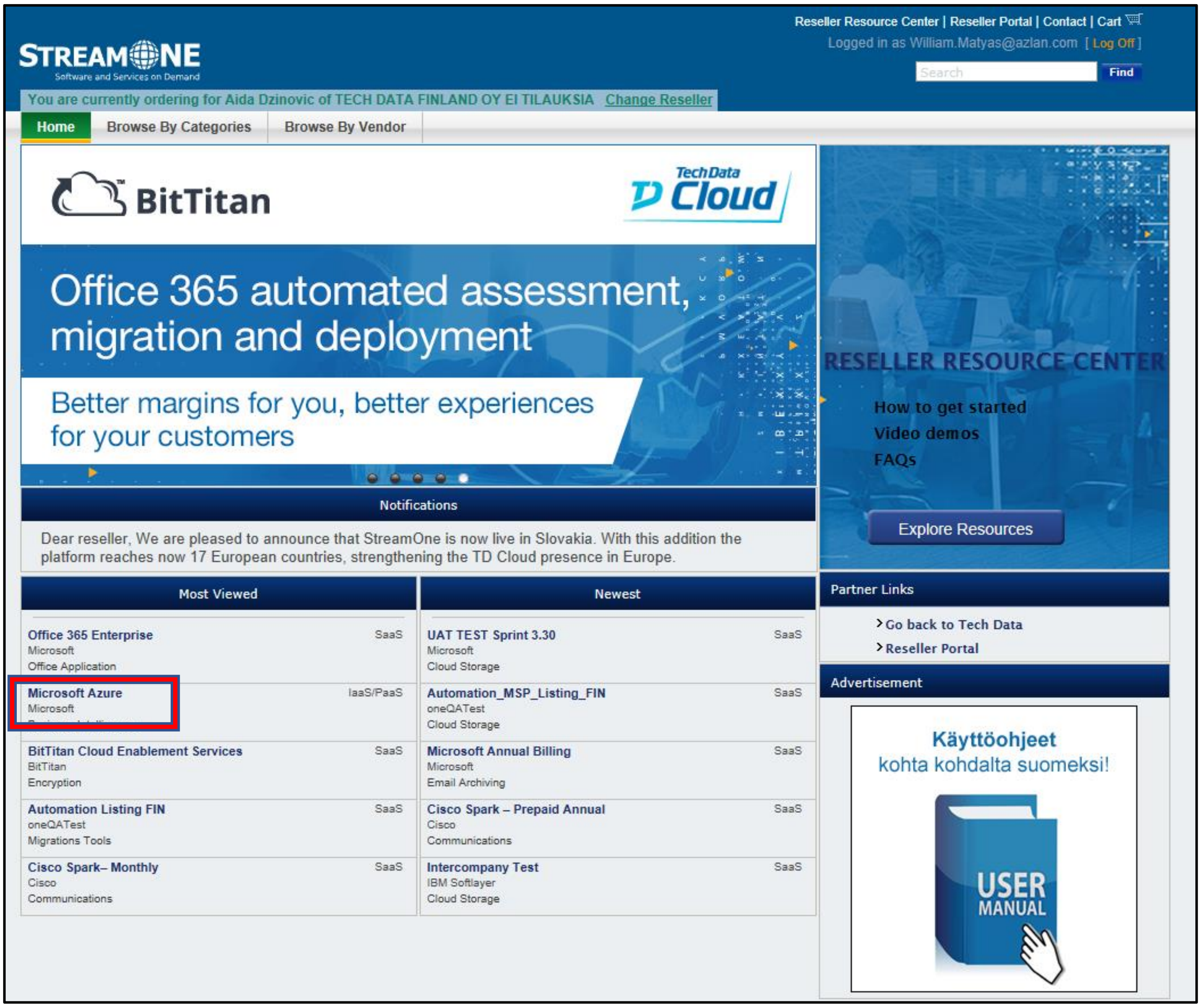
- **Accessing the Managed Containers on Azure Bundle**
  - You would need to login to the Azure portal to get the IP address
    - https://portal.azure.com
    - You would need to login using the same user name and password as the one created in StreamOne and what was emailed to you.
- For example: john.doe@contoso.onmicrosoft.com
- It will give you a one-time password and you will need to change it.
    - To access the Managed Containers Platform, you must ensure you have the **Login** and **Password** that were created during the StreamOne ordering process.
    - If you were not the person who accessed the StreamOne ordering portal to do the purchasing, please get with that person and obtain the user login and password that were initially created.
    - If you need to access the underlying VMs, you will need the SSH key created during the ordering process.

SSH Private Key:
You will be given your Private SSH Key during the order of you OpenShift Container Platform bundle. Please make sure you secure this key and store it in a safe place as you will need it for SSH access to any of your instances. Your key will be displayed only once and there is no way to recover it later on. For security reasons, Tech Data does not keep a copy.

- Prior knowledge is required with working with Containers and Microsoft Azure.

1.1 Managed Container on Azure deployment.

Connect to StreamOne Cloud Marketplace:



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Logged in as William.Matyas@azlan.com [Log Off]

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Dear reseller, We are pleased to announce that StreamOne is now live in Slovakia. With this addition the platform reaches now 17 European countries, strengthening the TD Cloud presence in Europe.

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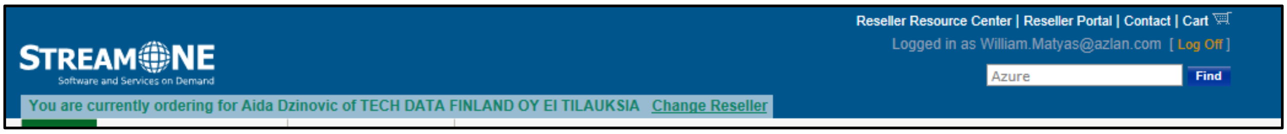
USER MANUAL

You can search for the Microsoft Azure SKU in Most Viewed, browsing by Categories or Vendor, or directly searching for it in the search field:



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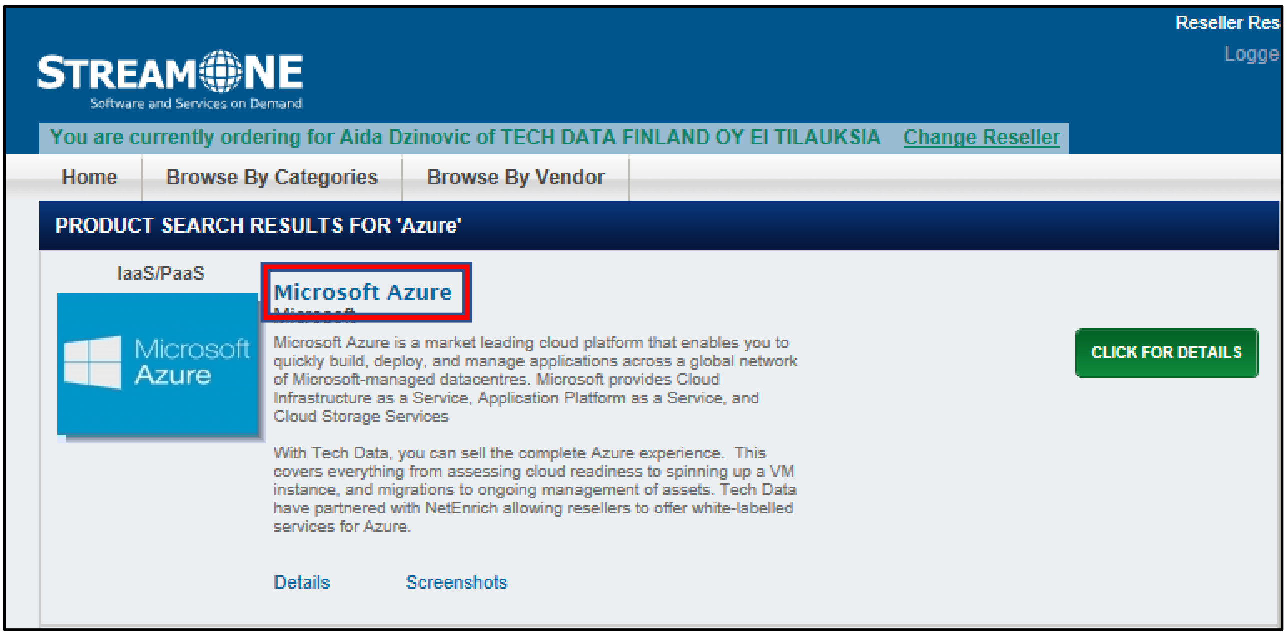
You are currently ordering for Aida Dzinovic of TECH DATA FINLAND OY EI TILAUKSIA Change Reseller

Click on Microsoft Azure:



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Software and Services on Demand

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PRODUCT SEARCH RESULTS FOR 'Azure'

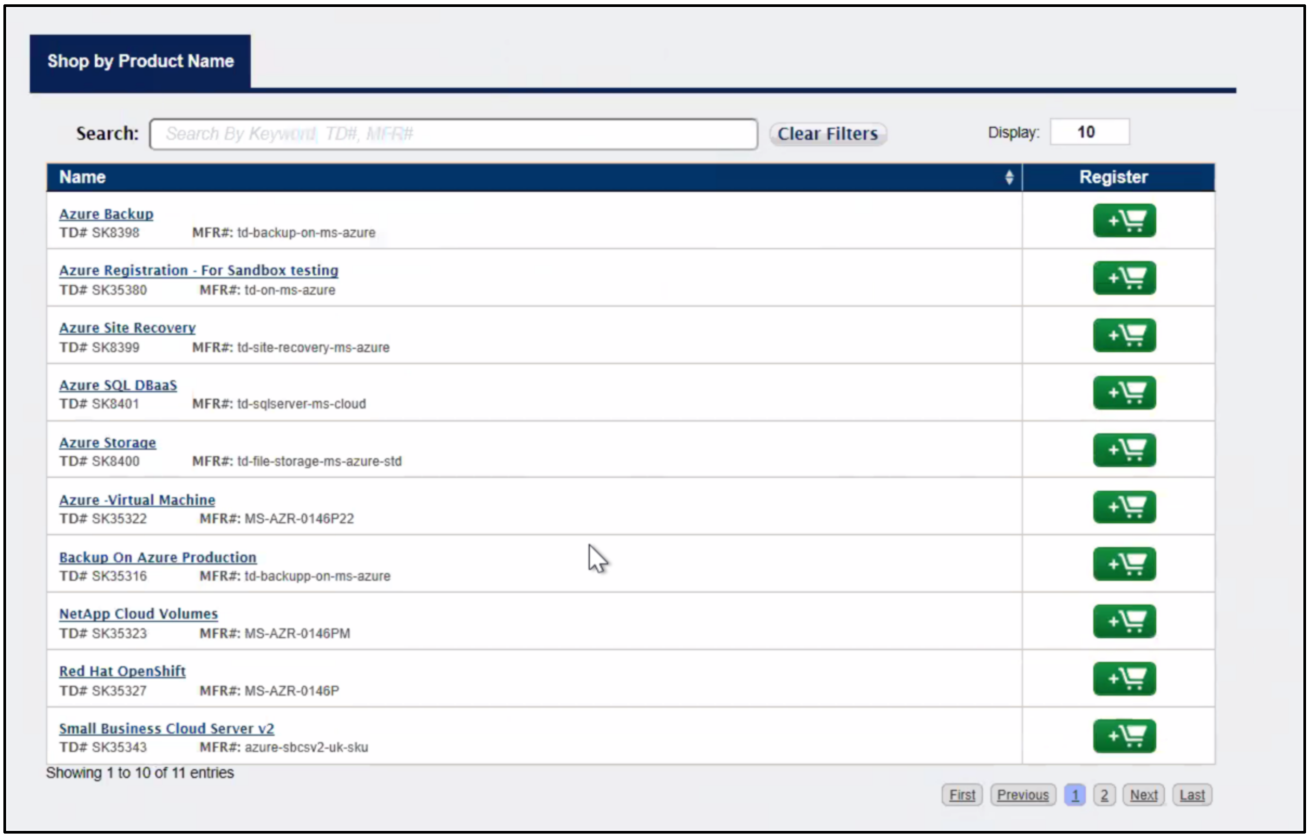
IaaS/PaaS

Microsoft Azure
Microsoft

Microsoft Azure is a market leading cloud platform that enables you to quickly build, deploy, and manage applications across a global network of Microsoft-managed datacentres. Microsoft provides Cloud Infrastructure as a Service, Application Platform as a Service, and Cloud Storage Services

With Tech Data, you can sell the complete Azure experience. This covers everything from assessing cloud readiness to spinning up a VM instance, and migrations to ongoing management of assets. Tech Data have partnered with NetEnrich allowing resellers to offer white-labelled services for Azure.

You will then be able to browse the different skus, click on "ADD TO CART" button of registration SKU:



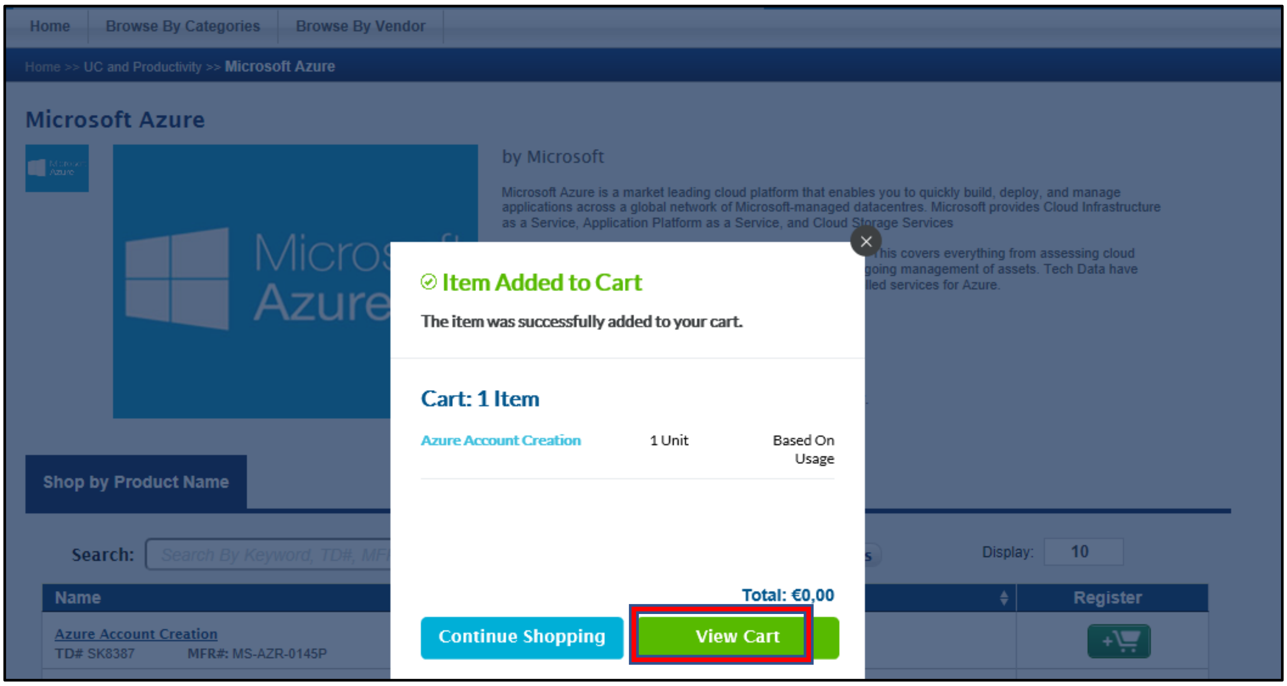
Shop by Product Name

Search: Search By Keyword, TD#, MFR# Clear Filters Display: 10

Name	Register
Azure Backup TD# SK8398 MFR#: td-backup-on-ms-azure	+🛒
Azure Registration - For Sandbox testing TD# SK35380 MFR#: td-on-ms-azure	+🛒
Azure Site Recovery TD# SK8399 MFR#: td-site-recovery-ms-azure	+🛒
Azure SQL DBaaS TD# SK8401 MFR#: td-sqlserver-ms-cloud	+🛒
Azure Storage TD# SK8400 MFR#: td-file-storage-ms-azure-std	+🛒
Azure -Virtual Machine TD# SK35322 MFR#: MS-AZR-0146P22	+🛒
Backup On Azure Production TD# SK35316 MFR#: td-backupp-on-ms-azure	+🛒
NetApp Cloud Volumes TD# SK35323 MFR#: MS-AZR-0146PM	+🛒
Red Hat OpenShift TD# SK35327 MFR#: MS-AZR-0146P	+🛒
Small Business Cloud Server v2 TD# SK35343 MFR#: azure-sbcsv2-uk-sku	+🛒

Showing 1 to 10 of 11 entries

Click on "View Cart" button:



Microsoft Azure

by Microsoft

Microsoft Azure is a market leading cloud platform that enables you to quickly build, deploy, and manage applications across a global network of Microsoft-managed datacentres. Microsoft provides Cloud Infrastructure as a Service, Application Platform as a Service, and Cloud Storage Services

his covers everything from assessing cloud going management of assets. Tech Data have lled services for Azure.

✓ Item Added to Cart

The item was successfully added to your cart.

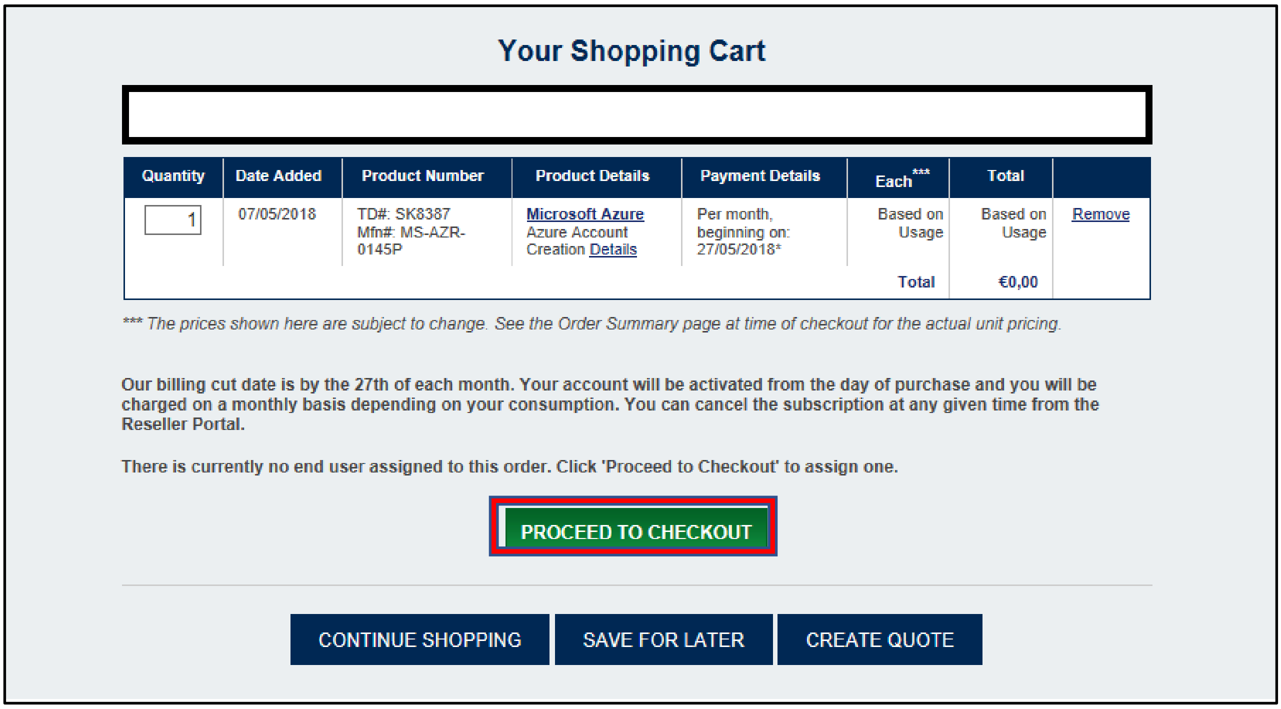
Cart: 1 Item

Azure Account Creation	1 Unit	Based On Usage

Total: €0,00

Name	Register
Azure Account Creation TD# SK8387 MFR#: MS-AZR-0145P	+

Click on 'Proceeed to Checkout' button:



Your Shopping Cart

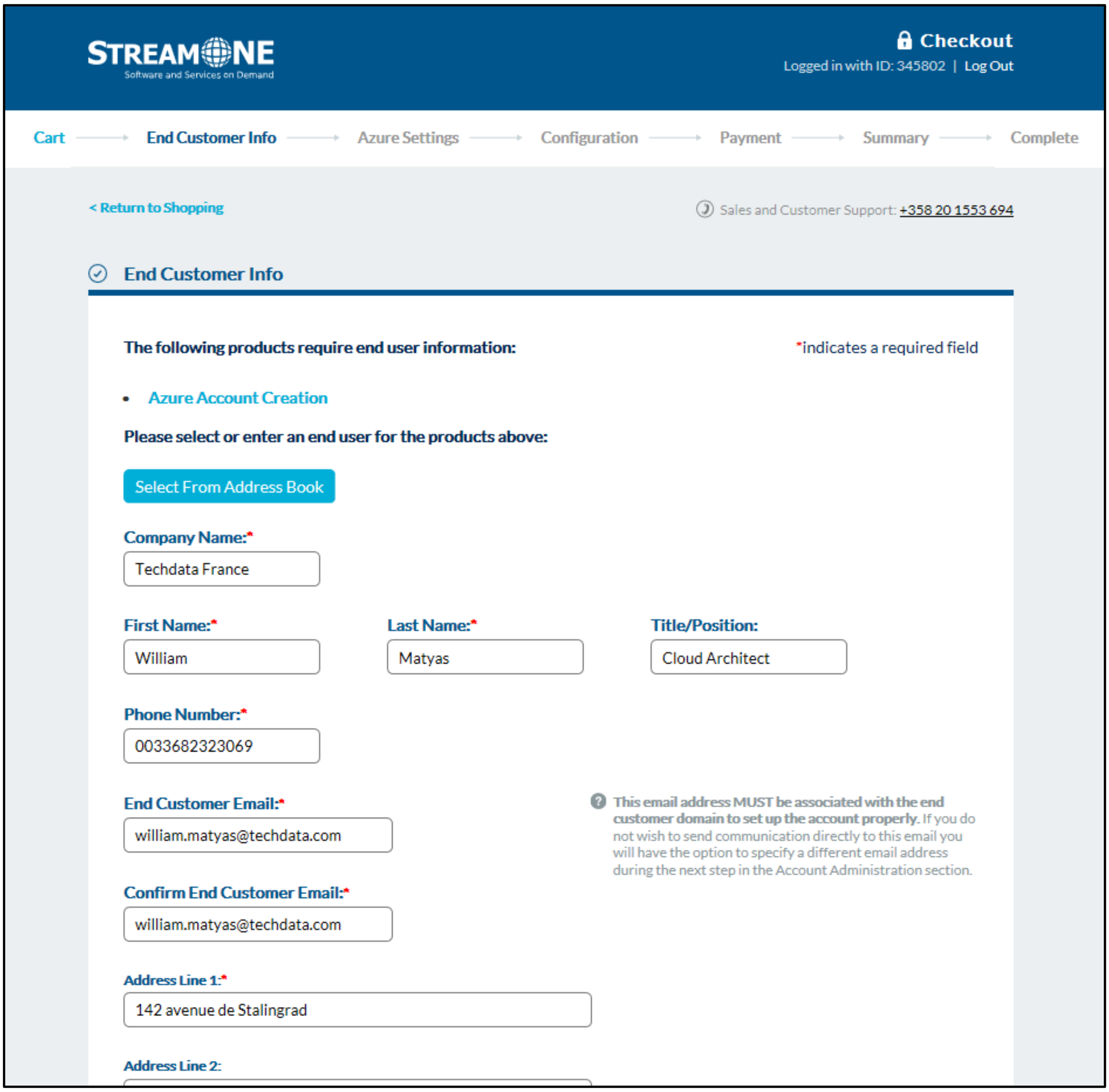
Quantity	Date Added	Product Number	Product Details	Payment Details	Each***	Total	
1	07/05/2018	TD#: SK8387 Mfn#: MS-AZR-0145P	Microsoft Azure Azure Account Creation Details	Per month, beginning on: 27/05/2018*	Based on Usage	Based on Usage	Remove
					Total	€0,00	

*** The prices shown here are subject to change. See the Order Summary page at time of checkout for the actual unit pricing.

Our billing cut date is by the 27th of each month. Your account will be activated from the day of purchase and you will be charged on a monthly basis depending on your consumption. You can cancel the subscription at any given time from the Reseller Portal.

There is currently no end user assigned to this order. Click 'Proceed to Checkout' to assign one.

Fill End User information or select any end user using your email and click on "Continue to Configuration" button.


STREAMONE
Software and Services on Demand
Checkout
Logged in with ID: 345802 | Log Out
Cart → End Customer Info → Azure Settings → Configuration → Payment → Summary → Complete
< Return to Shopping
Sales and Customer Support: +358 20 1553 694

End Customer Info

The following products require end user information:

*indicates a required field

- Azure Account Creation

Please select or enter an end user for the products above:

Select From Address Book

Company Name:* Techdata France

First Name:* William	Last Name:* Matyas	Title/Position: Cloud Architect

Phone Number:* 0033682323069

End Customer Email:* william.matyas@techdata.com

This email address MUST be associated with the end customer domain to set up the account properly. If you do not wish to send communication directly to this email you will have the option to specify a different email address during the next step in the Account Administration section.

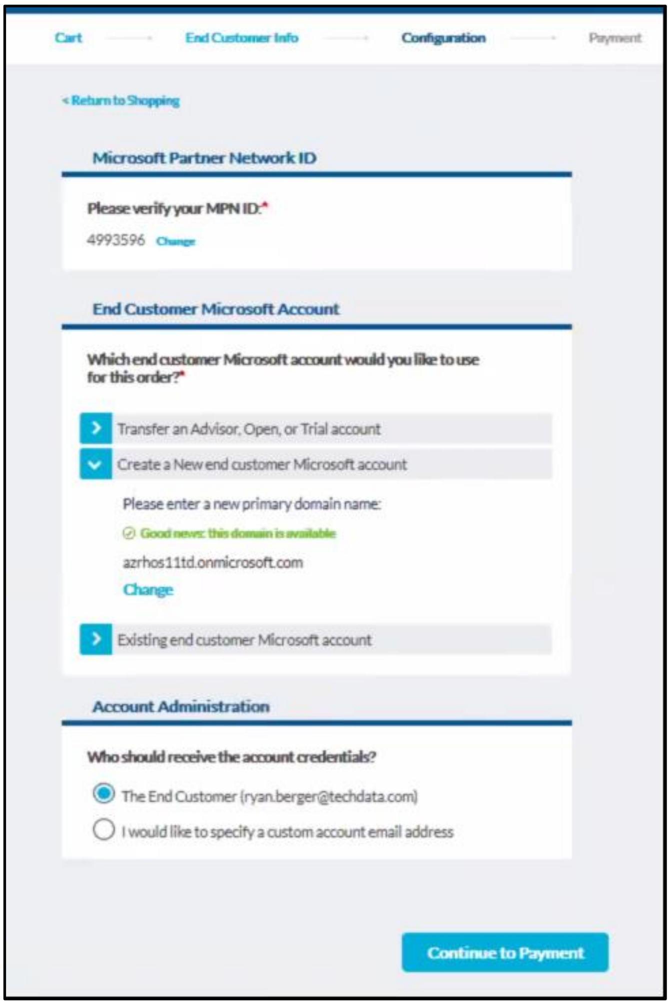
Confirm End Customer Email:* william.matyas@techdata.com

Address Line 1:* 142 avenue de Stalingrad

Address Line 2:

Configuration page should be displayed.

Fill in your Microsoft Partner Network ID.
Click on Create a New end customer Microsoft account button.
Enter any unique domain name and click on Check Availability button.



Microsoft Partner Network ID

Please verify your MPN ID:*

4993596 Change

End Customer Microsoft Account

Which end customer Microsoft account would you like to use for this order?*

- Transfer an Advisor, Open, or Trial account
- Create a New end customer Microsoft account

  Please enter a new primary domain name:

  ✓ Good news: this domain is available

  azrhos11td.onmicrosoft.com

  Change
- Existing end customer Microsoft account

Account Administration

Who should receive the account credentials?

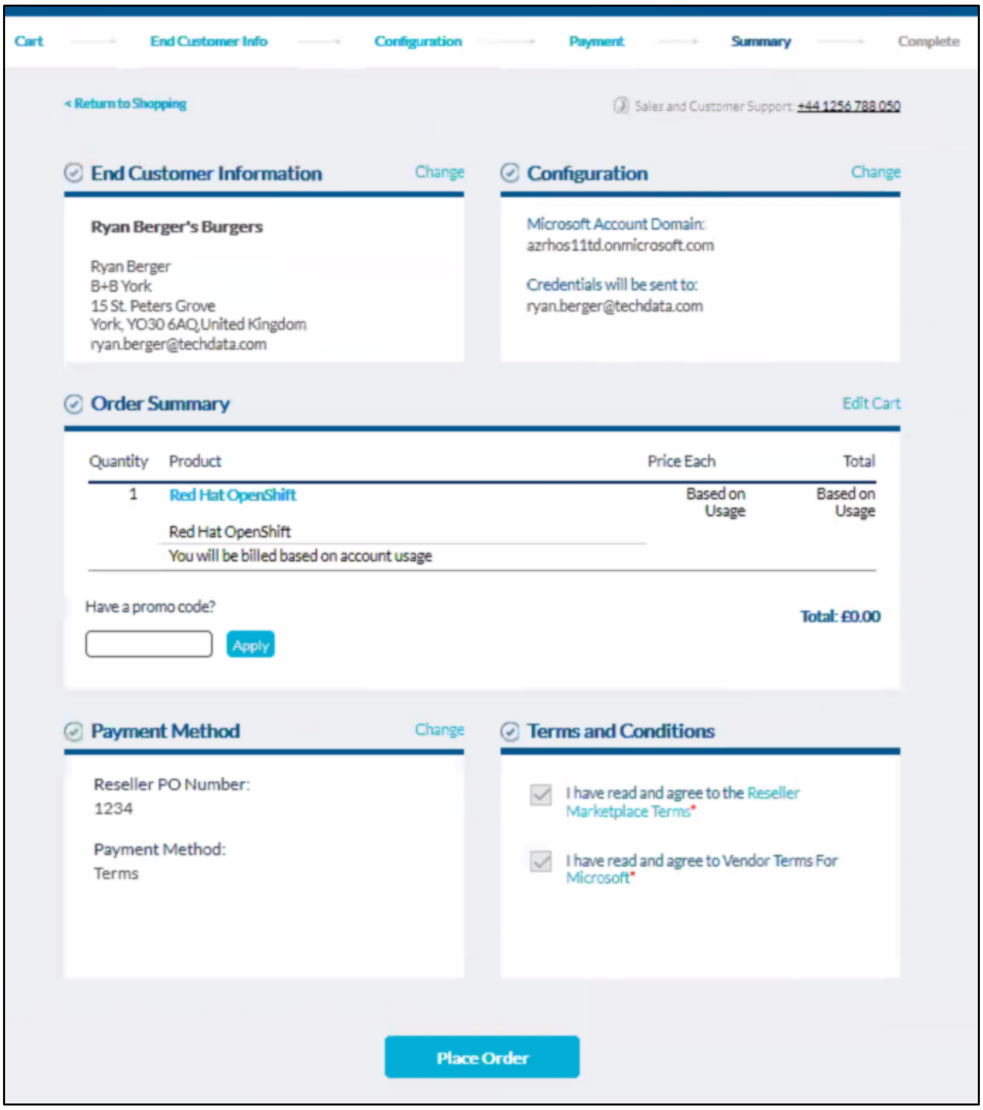
● The End Customer (ryan.berger@techdata.com)

○ I would like to specify a custom account email address

Select "The End Customer email" radio button from the "Account Administration" module.
Or select "I will administer the account" radio button from the account administration module and enter the Delegate admin email ID.

Click on "Continue to Payment" button.

Click on "Continue to Summary" button.
Verify the information shown and click on "Place Order" button.



Sales and Customer Support: +44 1256 788 050

End Customer Information

Ryan Berger's Burgers

Ryan Berger
B+B York
15 St. Peters Grove
York, YO30 6AQ,United Kingdom
ryan.berger@techdata.com

Configuration

Microsoft Account Domain:
azrhos11td.onmicrosoft.com

Credentials will be sent to:
ryan.berger@techdata.com

Order Summary

Quantity	Product	Price Each	Total
1	Red Hat OpenShift Red Hat OpenShift You will be billed based on account usage	Based on Usage	Based on Usage

Have a promo code?

Total: £0.00

Payment Method

Reseller PO Number:
1234

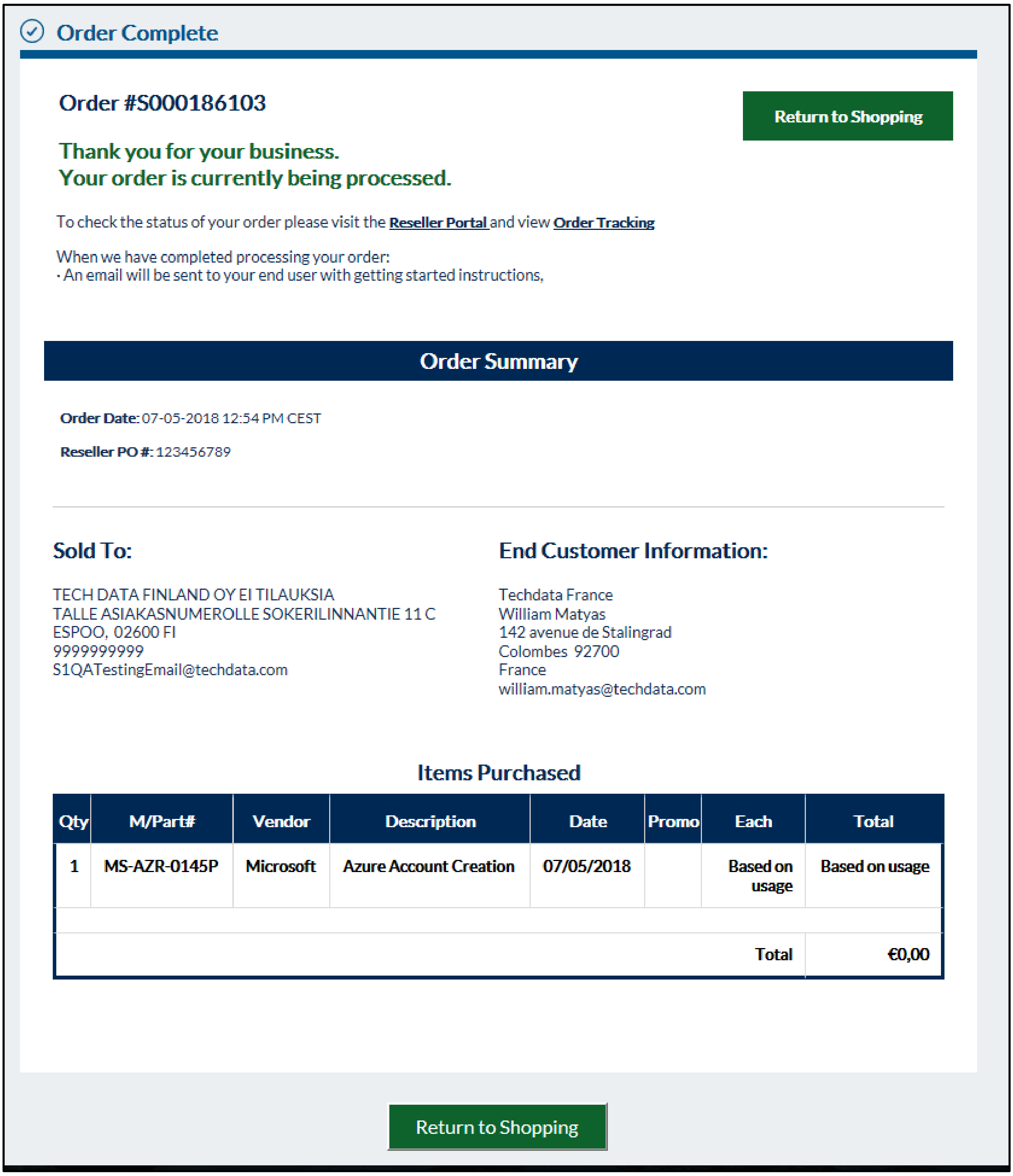
Payment Method:
Terms

Terms and Conditions

☑ I have read and agree to the Reseller Marketplace Terms*

☑ I have read and agree to Vendor Terms For Microsoft*

Your order should be complete.



Order Complete

Order #S000186103

Thank you for your business.
Your order is currently being processed.

To check the status of your order please visit the **Reseller Portal** and view **Order Tracking**

When we have completed processing your order:
· An email will be sent to your end user with getting started instructions,

Order Summary

Order Date: 07-05-2018 12:54 PM CEST

Reseller PO #: 123456789

Sold To:

TECH DATA FINLAND OY EI TILAUKSIA
TALLE ASIAKASNUMEROLLE SOKERILINNANTIE 11 C
ESPOO, 02600 FI
9999999999
S1QATestingEmail@techdata.com

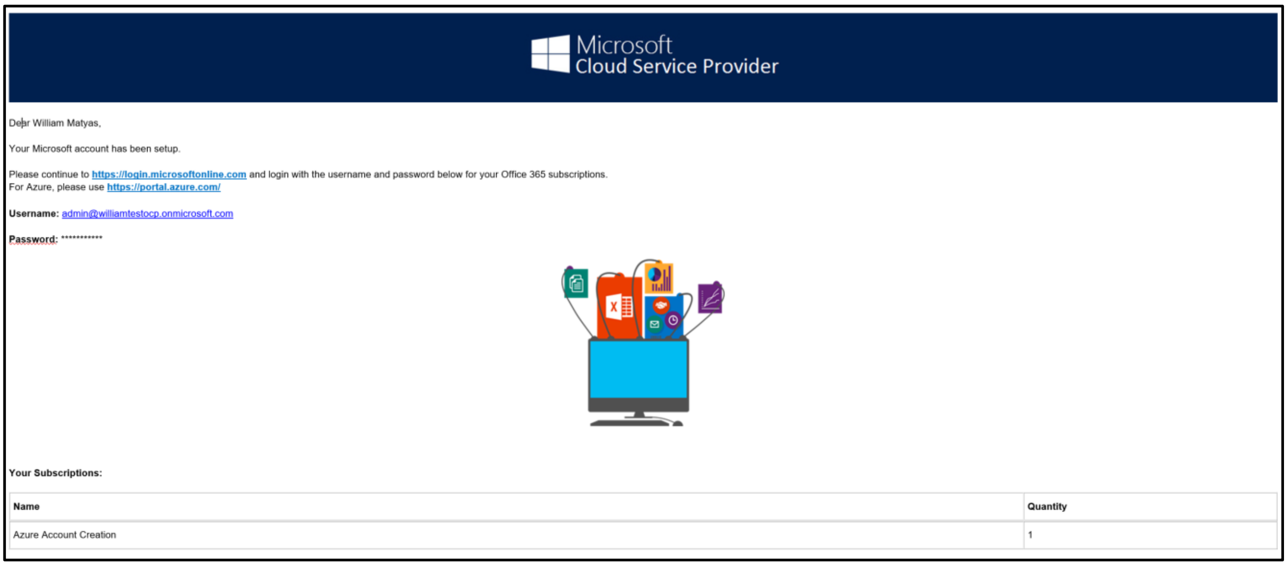
End Customer Information:

Techdata France
William Matyas
142 avenue de Stalingrad
Colombes 92700
France
william.matyas@techdata.com

Items Purchased

Qty	M/Part#	Vendor	Description	Date	Promo	Each	Total
1	MS-AZR-0145P	Microsoft	Azure Account Creation	07/05/2018		Based on usage	Based on usage
						Total	€0,00

You should receive an email with your Microsoft Subscription Information:



Microsoft
Cloud Service Provider

Dear William Matyas,

Your Microsoft account has been setup.

Please continue to https://login.microsoftonline.com and login with the username and password below for your Office 365 subscriptions.
For Azure, please use https://portal.azure.com/

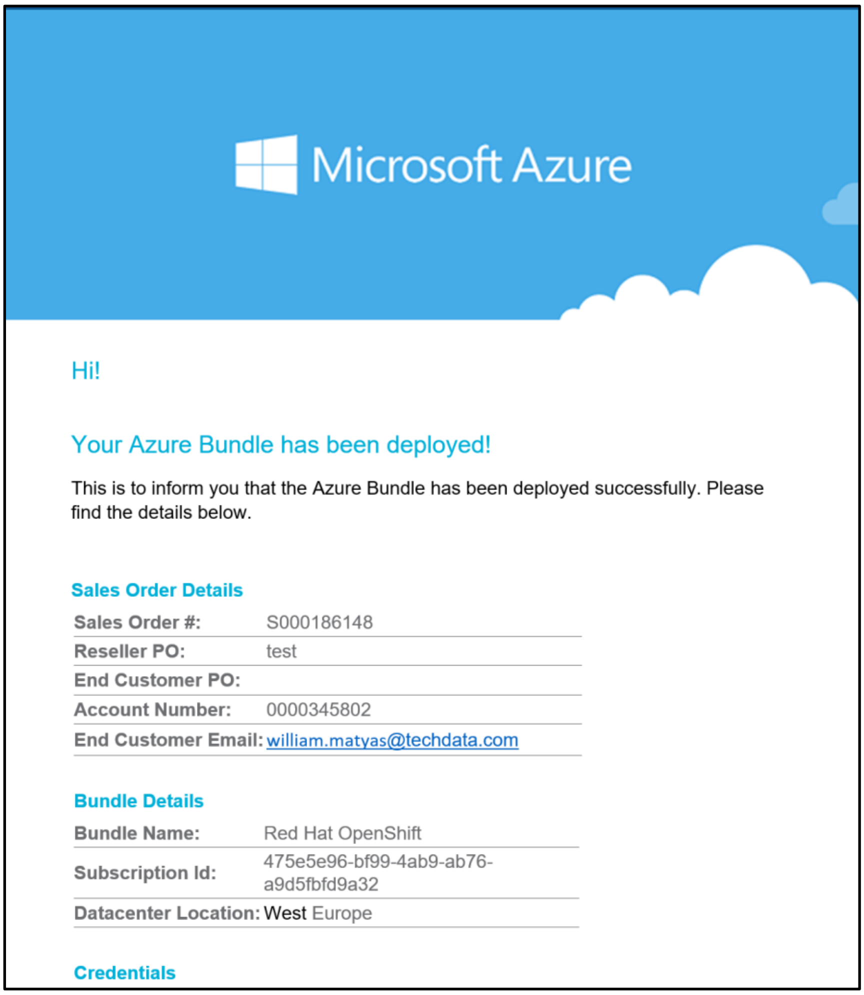
Username: admin@williamtestocp.onmicrosoft.com

Password: ************

Your Subscriptions:

Name	Quantity
Azure Account Creation	1

And another email regarding the deployment of your Azure Bundle:



Microsoft Azure

Hi!

Your Azure Bundle has been deployed!

This is to inform you that the Azure Bundle has been deployed successfully. Please find the details below.

Sales Order Details

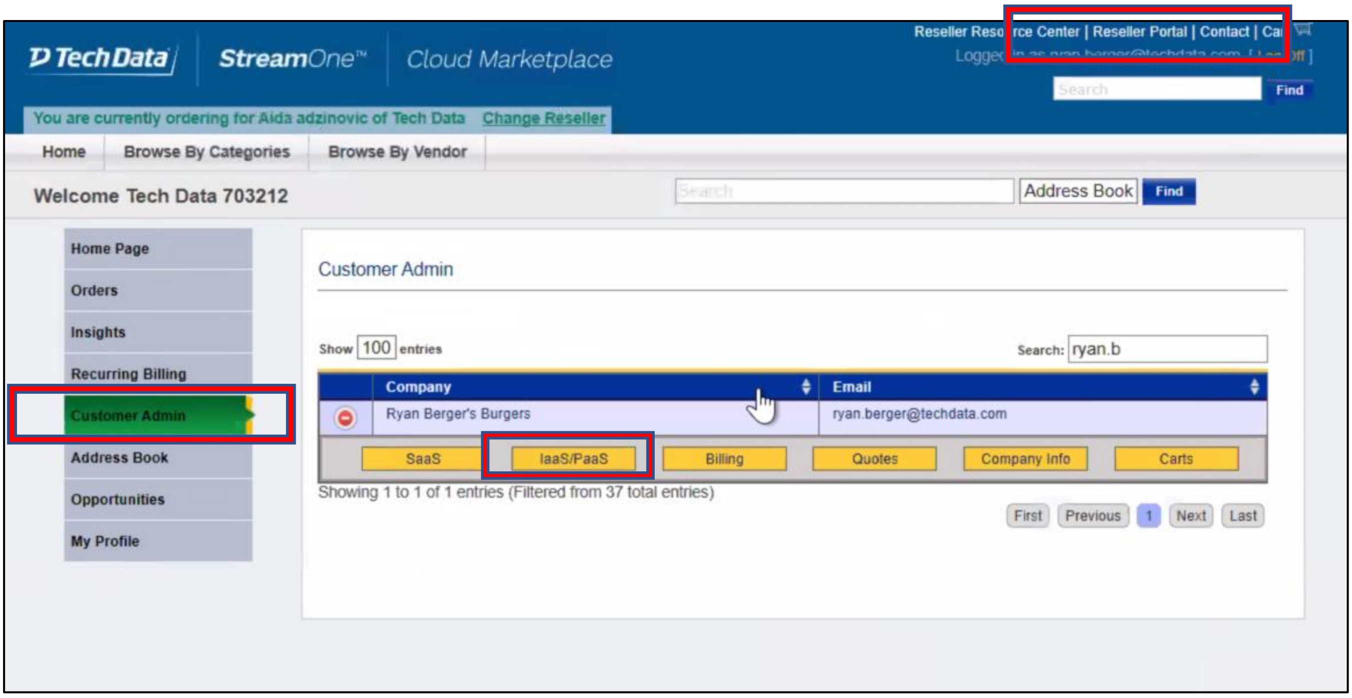
Sales Order #:	S000186148
Reseller PO:	test
End Customer PO:	
Account Number:	0000345802
End Customer Email:	william.matyas@techdata.com

Bundle Details

Bundle Name:	Red Hat OpenShift
Subscription Id:	475e5e96-bf99-4ab9-ab76-a9d5fbfd9a32
Datacenter Location:	West Europe

Credentials

Now click on Reseller Portal, then Customer Admin. Look for your Customer and click on IaaS/PaaS.



You are currently ordering for Aida adzinovic of Tech Data Change Reseller

Welcome Tech Data 703212

Customer Admin

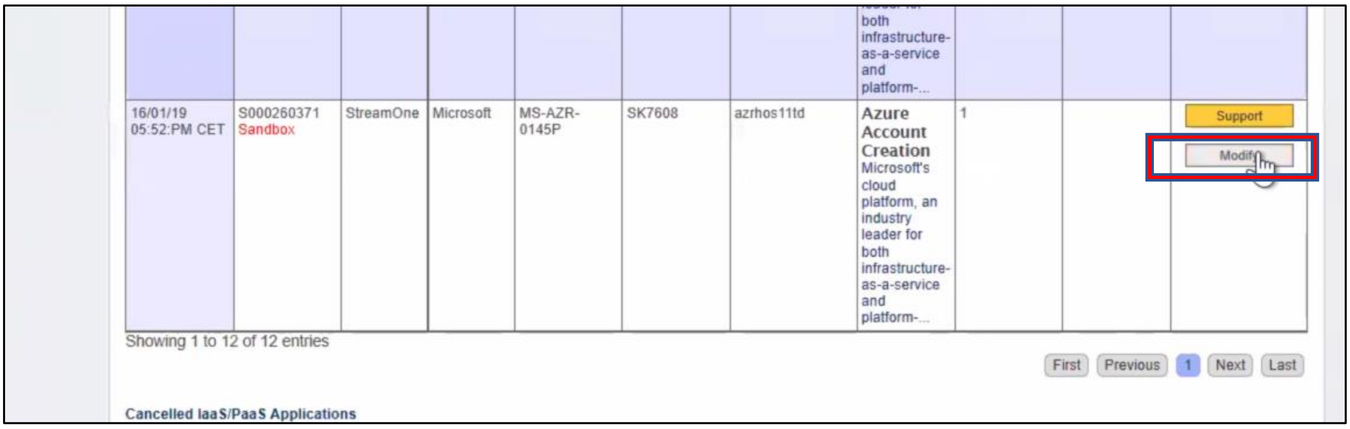
Show 100 entries

Search: ryan.b

Company	Email
Ryan Berger's Burgers	ryan.berger@techdata.com

Showing 1 to 1 of 1 entries (Filtered from 37 total entries)

Then Click on Modify:

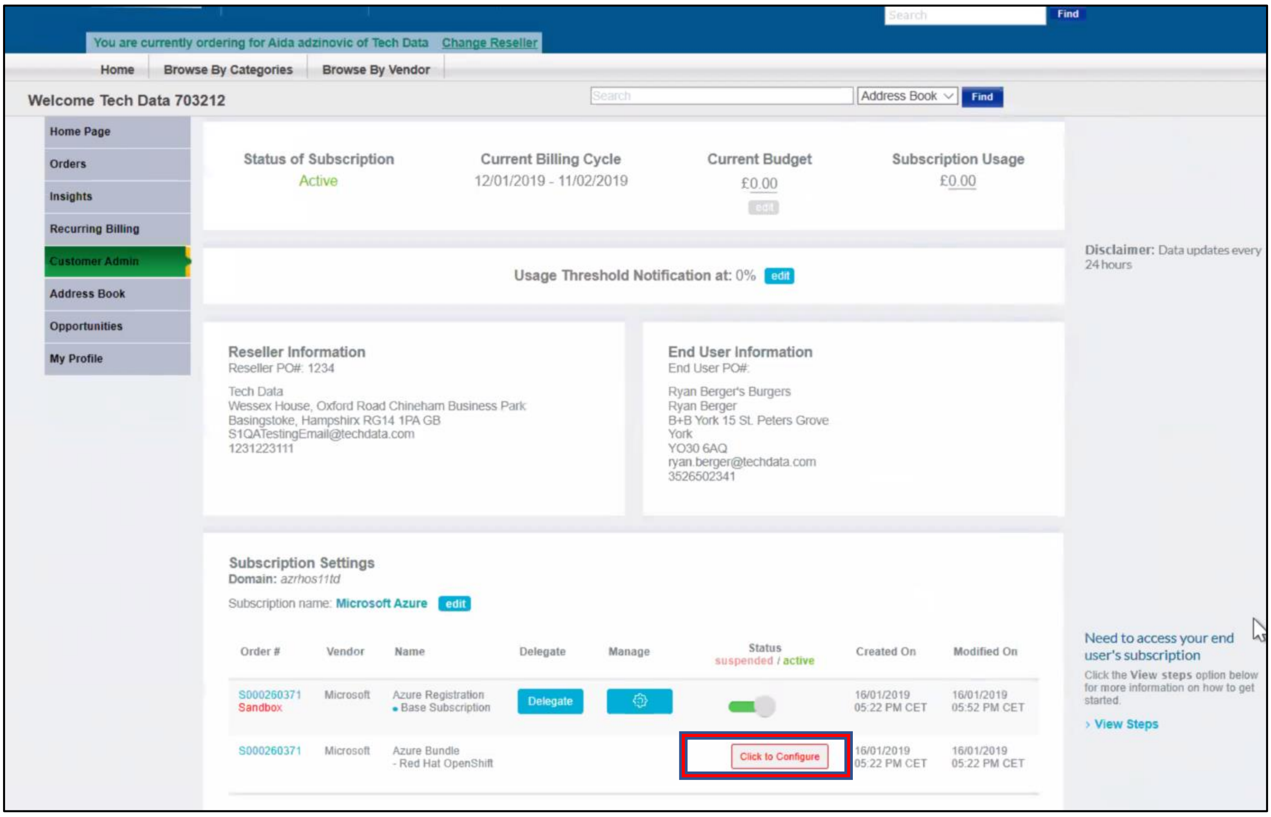


							both infrastructure-as-a-service and platform-...			
16/01/19 05:52:PM CET	S000260371 Sandbox	StreamOne	Microsoft	MS-AZR-0145P	SK7608	azrhos11td	Azure Account Creation Microsoft's cloud platform, an industry leader for both infrastructure-as-a-service and platform-...	1		Support Modify

Showing 1 to 12 of 12 entries

Cancelled IaaS/PaaS Applications

Then click on “Click to Configure”:



You are currently ordering for Aida adzinovic of Tech Data Change Reseller

Welcome Tech Data 703212

Status of Subscription	Current Billing Cycle	Current Budget	Subscription Usage
Active	12/01/2019 - 11/02/2019	£0.00	£0.00

Usage Threshold Notification at: 0%

Disclaimer: Data updates every 24 hours

Reseller Information
Reseller PO#: 1234
Tech Data
Wessex House, Oxford Road Chineham Business Park
Basingstoke, Hampshirx RG14 1PA GB
S1QATestingEmail@techdata.com
1231223111

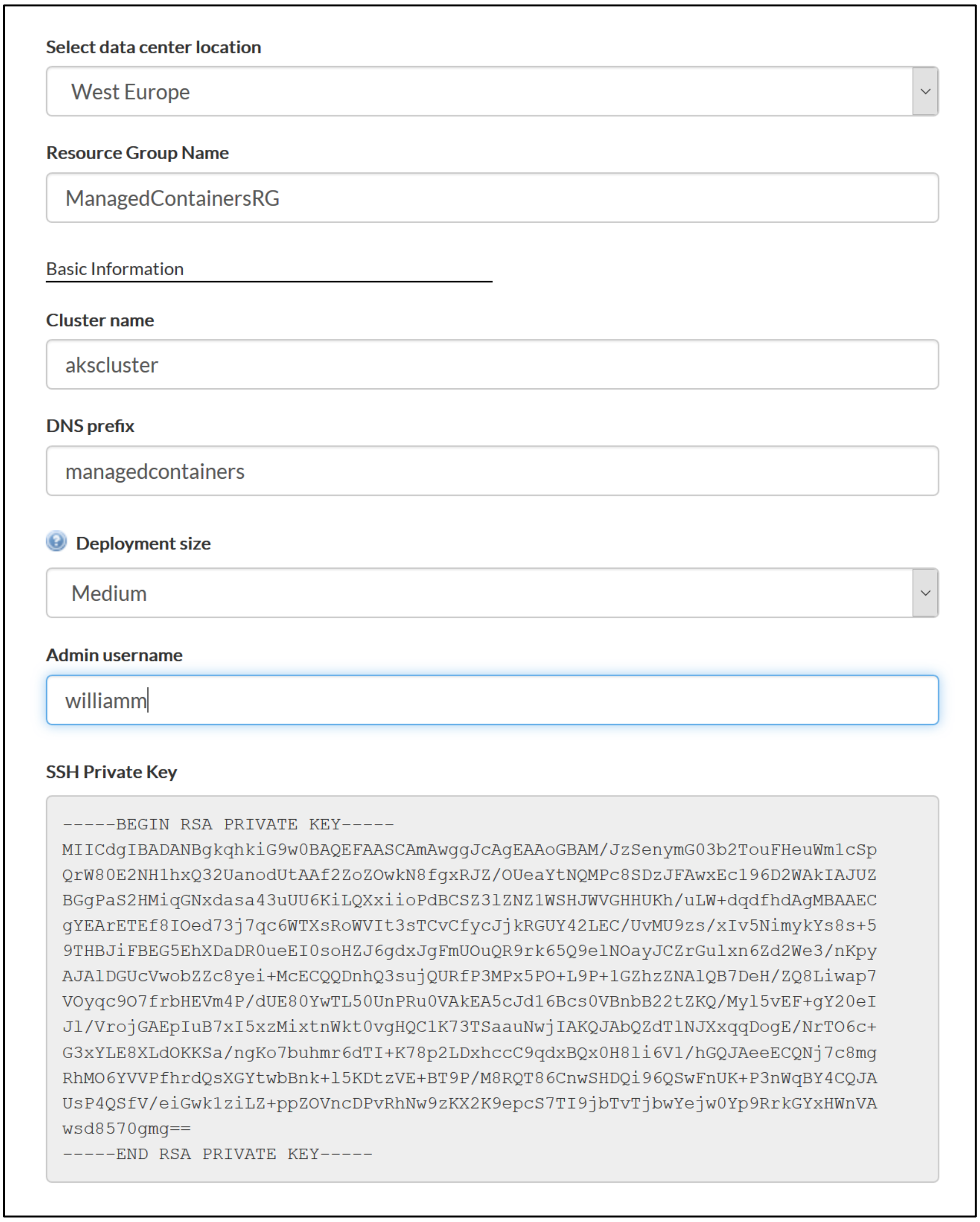
End User Information
End User PO#:
Ryan Berger's Burgers
Ryan Berger
B+B York 15 St. Peters Grove
York
YO30 6AQ
ryan.berger@techdata.com
3526502341

Subscription Settings
Domain: *azrhos11td*
Subscription name: **Microsoft Azure**

Order #	Vendor	Name	Delegate	Manage	Status suspended / active	Created On	Modified On
S000260371 Sandbox	Microsoft	Azure Registration • Base Subscription	Delegate	⚙	●	16/01/2019 05:22 PM CET	16/01/2019 05:52 PM CET
S000260371	Microsoft	Azure Bundle - Red Hat OpenShift			Click to Configure	16/01/2019 05:22 PM CET	16/01/2019 05:22 PM CET

Need to access your end user's subscription
Click the **View steps** option below for more information on how to get started.

Information related to selected bundle should be displayed.



Select data center location

West Europe

Resource Group Name

ManagedContainersRG

Basic Information

Cluster name

akscluster

DNS prefix

managedcontainers

Deployment size

Medium

Admin username

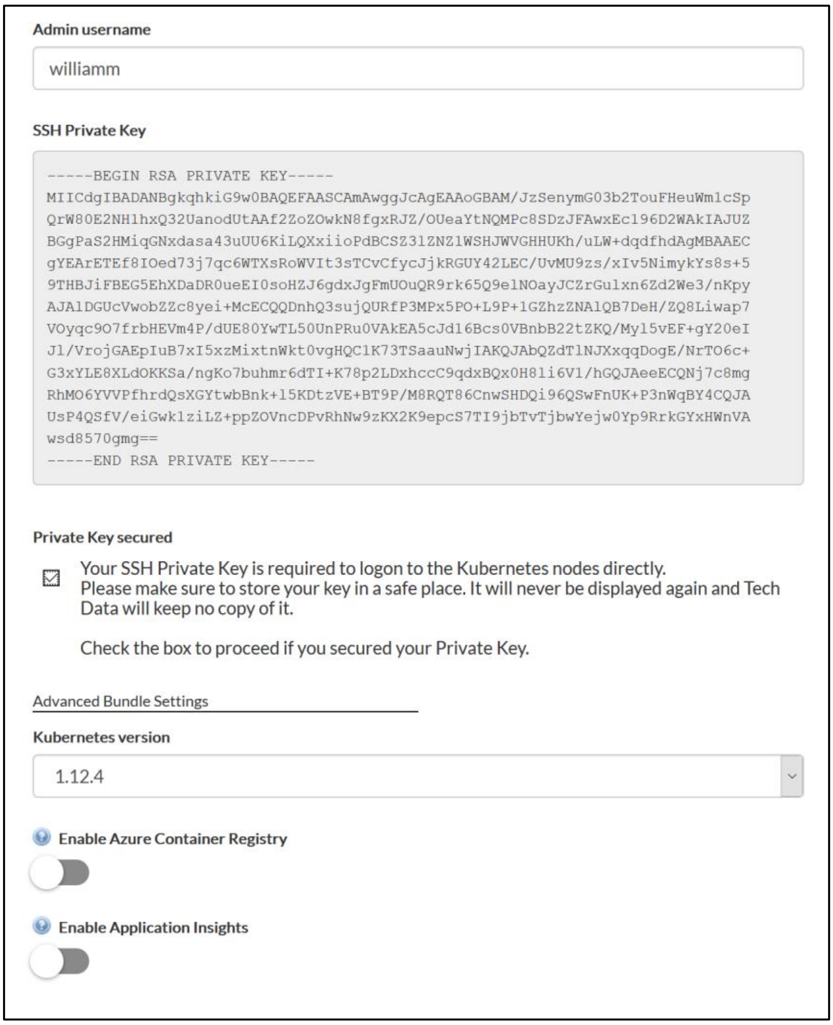
williamm

SSH Private Key

```
-----BEGIN RSA PRIVATE KEY-----
MIICdgIBADANBgkqhkiG9w0BAQEFAASCAmAwggJcAgEAAoGBAM/JzSenymG03b2TouFHeuWm1cSp
QrW80E2NH1hxQ32UanodUtAAf2ZoZOwkN8fgxRJZ/OUeaYtNQMPc8SDzJFAwxEc196D2WAkIAJUZ
BGgPaS2HMiqGNxdasa43uUU6KiLQXxiioPdBCSZ31ZNZ1WSHJWVGHHUKh/uLW+dqdfhdAgMBAAEC
gYEArETEf8IOed73j7qc6WTXsRoWVIt3sTCvCfycJjkRGUY42LEC/UvMU9zs/xIv5NimykYs8s+5
9THBJiFBEG5EhXDaDR0ueEI0soHZJ6gdxJgFmUOuQR9rk65Q9elNOayJCZrGulxn6Zd2We3/nKpy
AJAlDGUcVwobZZc8yei+McECQQDnhQ3sujQURfP3MPx5PO+L9P+1GZhzZNAlQB7DeH/ZQ8Liwap7
VOyqc9O7frbHEVm4P/dUE80YwTL50UnPRu0VAkEA5cJd16Bcs0VBnbB22tZKQ/Myl5vEF+gY20eI
Jl/VrojGAEpIuB7xI5xzMixtnWkt0vgHQC1K73TSaauNwjIAKQJAbQZdTlNJXxqqDogE/NrTO6c+
G3xYLE8XLdOKKSa/ngKo7buhmr6dTI+K78p2LDxhccC9qdxBQx0H8li6V1/hGQJAeeECQNj7c8mg
RhMO6YVVPfhrdQsXGYtwbBnk+l5KDtzVE+BT9P/M8RQT86CnwSHDQi96QSwFnUK+P3nWqBY4CQJA
UsP4QSfV/eiGwk1ziLZ+ppZOVncDPvRhNw9zKX2K9epcS7TI9jbTvTjbwYejw0Yp9RrkGYxHWnVA
wsd8570gmg==
-----END RSA PRIVATE KEY-----
```

Fill the Basic Information.
Select Location from location drop down and fill in the Resource Group Name.
Fill in the Cluster name and the DNS Prefix.
You can then choose the Deployment Size.

A SSH key pair will get generated and you need to copy and save the private key.
Once the Managed Containers on Azure bundle is deployed in the Azure portal, you might need to use this Key to login into the underlying VMs Agents.



Admin username

williamm

SSH Private Key

```
-----BEGIN RSA PRIVATE KEY-----
MIICdgIBADANBgkqhkiG9w0BAQEFAASCAmAwggJcAgEAAoGBAM/JzSenymG03b2TouFHeuWm1cSp
QrW80E2NH1hxQ32UanodUtAAf2ZoZOwkN8fgxRJZ/OUeaYtNQMPc8SDzJFAwxEc196D2WAkIAJUZ
BGgPaS2HMiqGNxdasa43uUU6KiLQXxiioPdBCSZ31ZNZ1WSHJWVGHHUKh/uLW+dqdfhdAgMBAAEC
gYEArETEf8IOed73j7qc6WTXsRoWVIt3sTCvCfycJjkRGUY42LEC/UvMU9zs/xIv5NimykYs8s+5
9THBJiFBEG5EhXDaDR0ueEI0soHZJ6gdxJgFmUOuQR9rk65Q9elNOayJCZrGulxn6Zd2We3/nKpy
AJA1DGUcVwobZZc8yei+McECQQDnhQ3sujQURfP3MPx5PO+L9P+1GZhzZNA1QB7DeH/ZQ8Liwap7
VOyqc9O7frbHEVm4P/dUE80YwTL50UnPRu0VAkEA5cJd16Bcs0VBnbB22tZKQ/Myl5vEF+gY20eI
Jl/VrojGAEpIuB7xI5xzMixtnWkt0vgHQC1K73TSaauNwjIAKQJAbQZdTlNJXxqqDogE/NrTO6c+
G3xYLE8XLdOKKSa/ngKo7buhmr6dTI+K78p2LDxhccC9qdxBQx0H8li6V1/hGQJAeeECQNj7c8mg
RhMO6YVVPfhrdQsXGYtwbBnk+l5KDtzVE+BT9P/M8RQT86CnwSHDQi96QSwFnUK+P3nWqBY4CQJA
UsP4QSfV/eiGwk1ziLZ+ppZOVncDPvRhNw9zKX2K9epcS7TI9jbTvTjbwYejw0Yp9RrkGYxHWnVA
wsd8570gmg==
-----END RSA PRIVATE KEY-----
```

Private Key secured

☑ Your SSH Private Key is required to logon to the Kubernetes nodes directly.
Please make sure to store your key in a safe place. It will never be displayed again and Tech Data will keep no copy of it.

Check the box to proceed if you secured your Private Key.

Advanced Bundle Settings

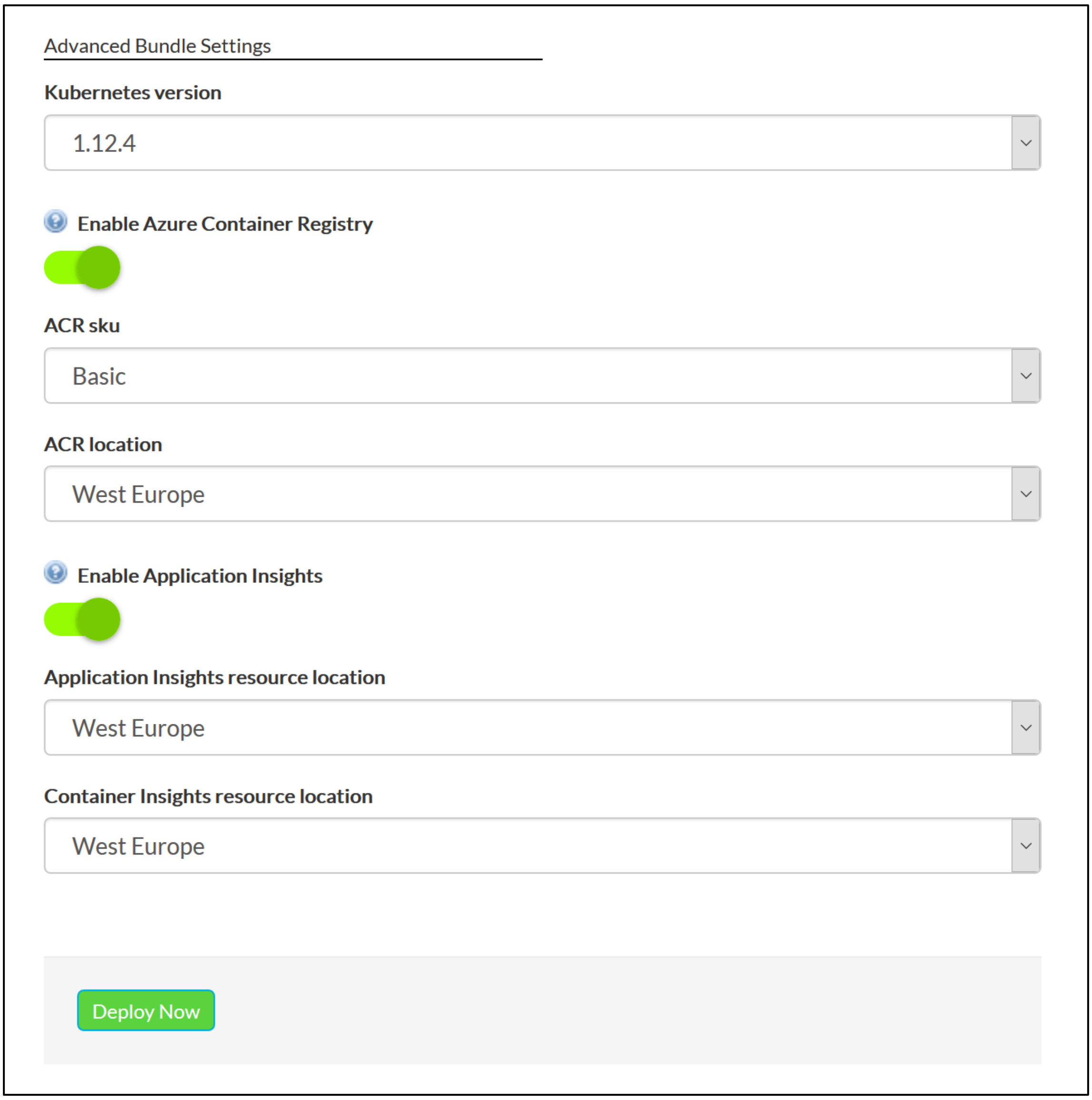
Kubernetes version

1.12.4

Enable Azure Container Registry

Enable Application Insights

SSH Private Key:
You will be given your Private SSH Key during the order of your Managed Container bundle. Please make sure you secure this key and store it in a safe place as you will need it for SSH access to any of your instances. Your key will be displayed only once and there is no way to recover it later on. For security reasons, Tech Data does not keep a copy.



Advanced Bundle Settings

Kubernetes version: 1.12.4

Enable Azure Container Registry: ●

ACR sku: Basic

ACR location: West Europe

Enable Application Insights: ●

Application Insights resource location: West Europe

Container Insights resource location: West Europe

You can select your Kubernetes Version. Keep in mind it is easy to update your managed cluster, but you cannot downgrade it.

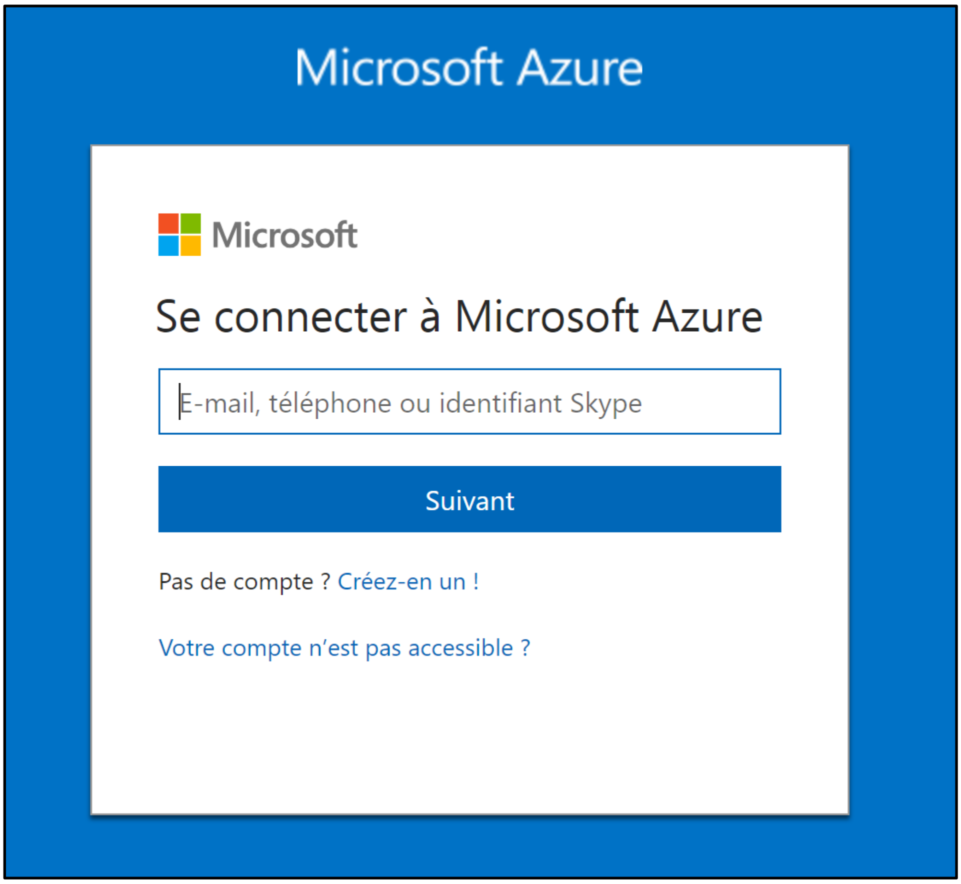
Enable Azure Container Registry: Deploys an Azure Container Registry to store your container imaged.
Enable Application Insights: Deploys an Application Insights you can use later on to monitor your applications.

Click on ‘Continue Configuration’ button.

1.2 How to connect.

Connect to the Azure Portal with your credentials.

- You would need to login to the Azure portal to get the IP address.
    - https://portal.azure.com
    - You would need to login using the same user name and password as the one created in StreamOne and what was emailed to you.
- For example: john.doe@contoso.onmicrosoft.com
- It will give you a one-time password and you will need to change it.



Microsoft Azure

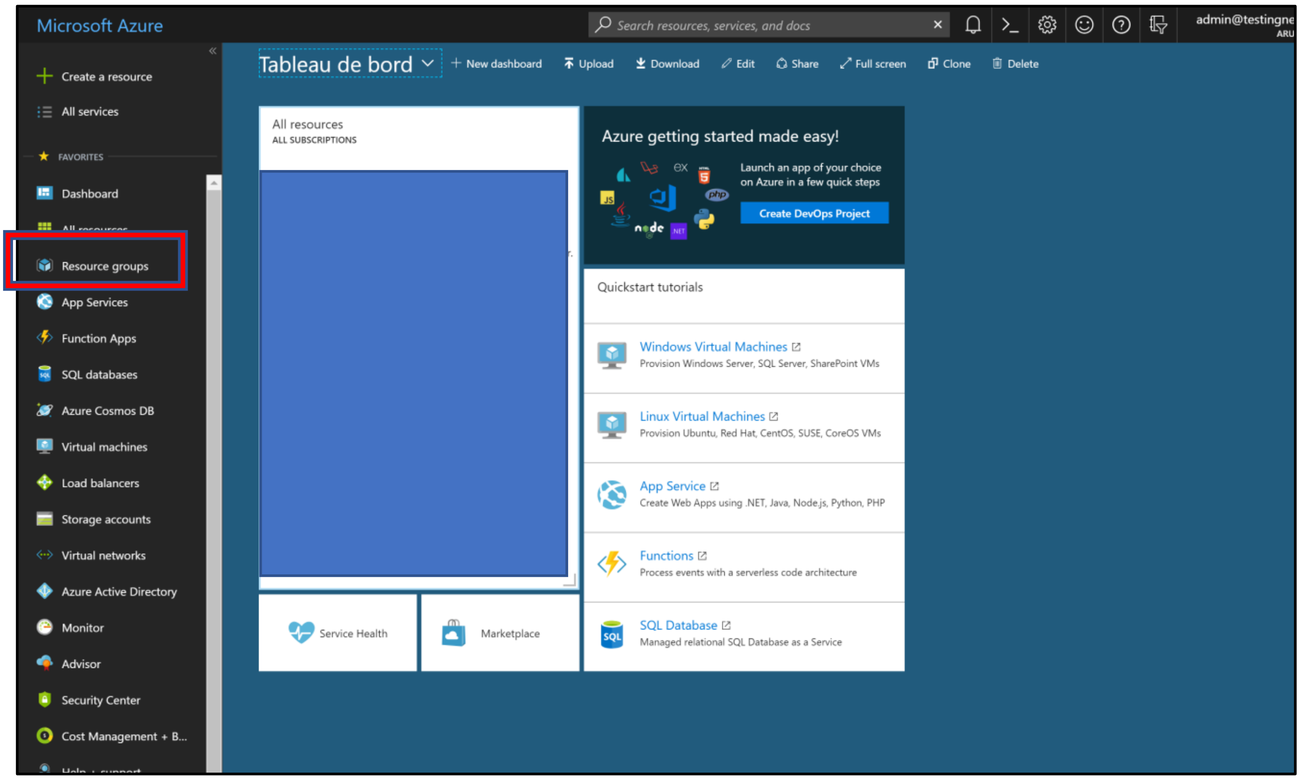
Microsoft

Se connecter à Microsoft Azure

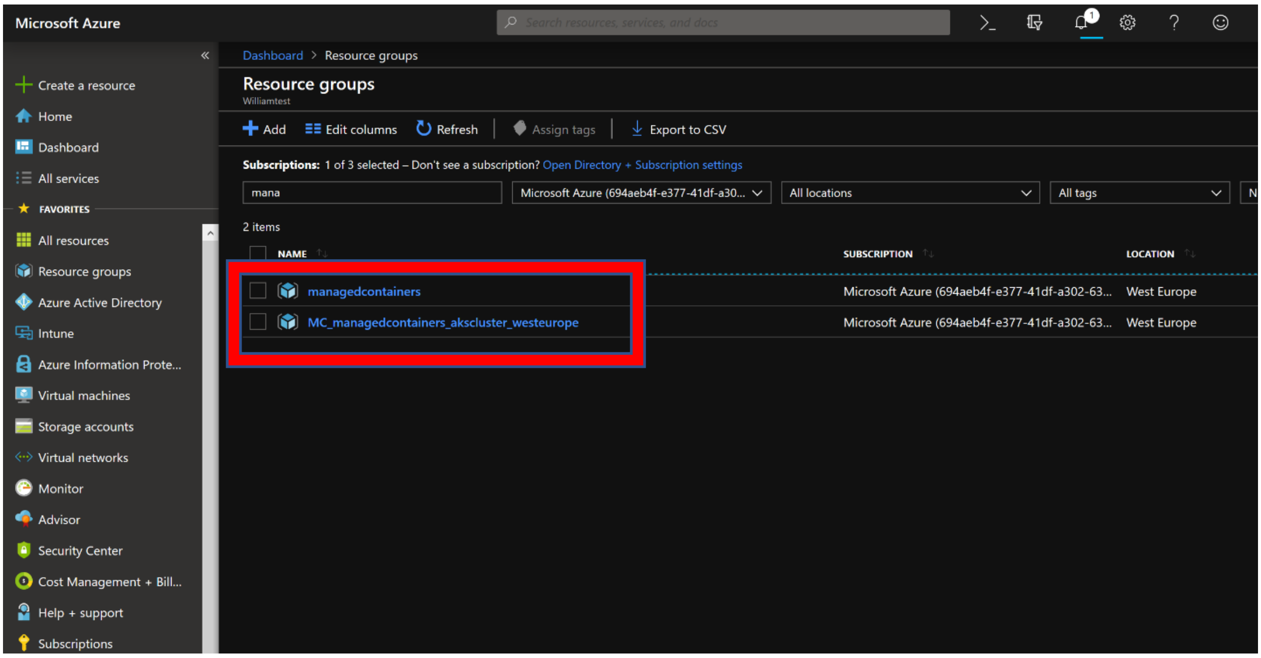
E-mail, téléphone ou identifiant Skype

Suivant
Pas de compte ? Créez-en un !
Votre compte n'est pas accessible ?

You will then be connected to the Azure Portal. Go to Resource groups.



You will find two Resource Groups into which your resources have been deployed.



Resource groups
Williamtest

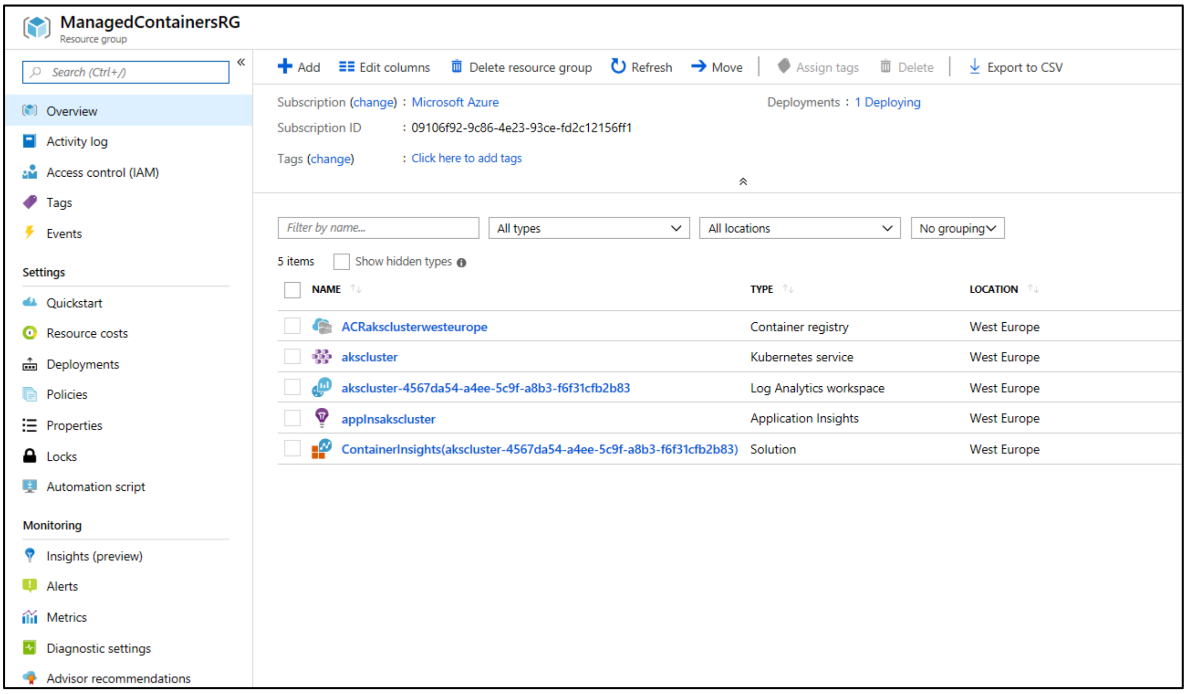
Subscriptions: 1 of 3 selected – Don't see a subscription? Open Directory + Subscription settings

mana | Microsoft Azure (694aeb4f-e377-41df-a30...

2 items

NAME	SUBSCRIPTION	LOCATION
managedcontainers	Microsoft Azure (694aeb4f-e377-41df-a302-63...	West Europe
MC_managedcontainers_akscluster_westeurope	Microsoft Azure (694aeb4f-e377-41df-a302-63...	West Europe

Within the first resource group, you will find several components:



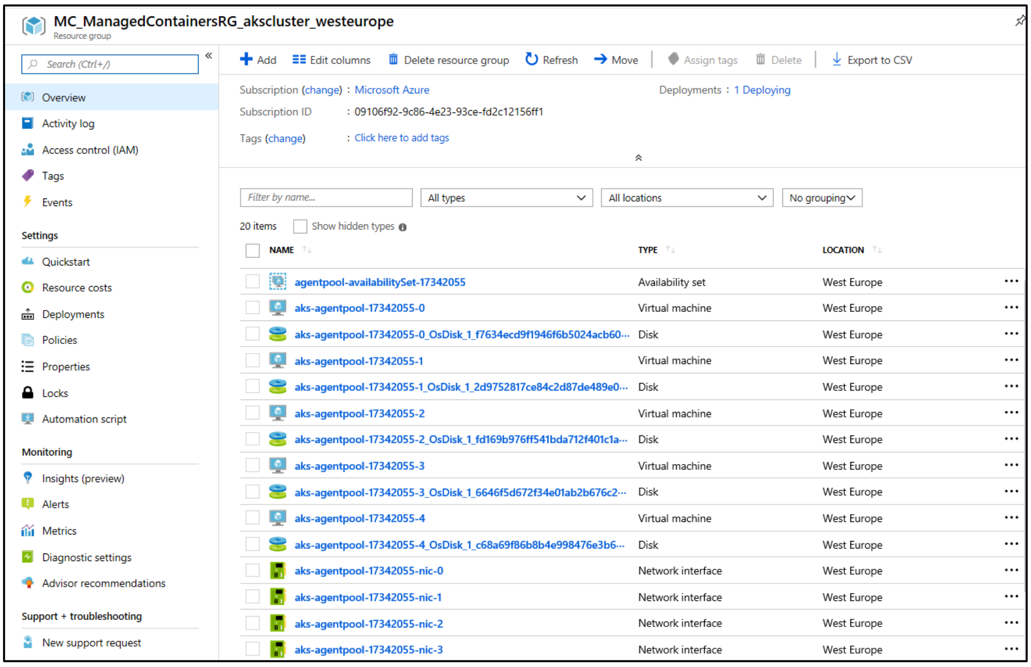
Subscription (change) : Microsoft Azure
Subscription ID : 09106f92-9c86-4e23-93ce-fd2c12156ff1
Tags (change) : Click here to add tags
Deployments : 1 Deploying

5 items

NAME	TYPE	LOCATION
ACRaksclusterwesteurope	Container registry	West Europe
akscluster	Kubernetes service	West Europe
akscluster-4567da54-a4ee-5c9f-a8b3-f6f31cfb2b83	Log Analytics workspace	West Europe
appInsakscluster	Application Insights	West Europe
ContainerInsights(akscluster-4567da54-a4ee-5c9f-a8b3-f6f31cfb2b83)	Solution	West Europe

- The Container Registry (to store your container images)
- The Kubernetes Service (your cluster)
- The Log Analytics Workspace (used to store the logs)
- Application Insights (used for application monitoring)
- Container Insights (linked to Log Analytics, used for monitoring your containers platform)

Within the second resource group, you will find the infrastructure components linked to Kubernetes Services:



MC_ManagedContainersRG_akscluster_westeurope
Resource group

Subscription (change) : Microsoft Azure

Subscription ID : 09106f92-9c86-4e23-93ce-fd2c12156ff1

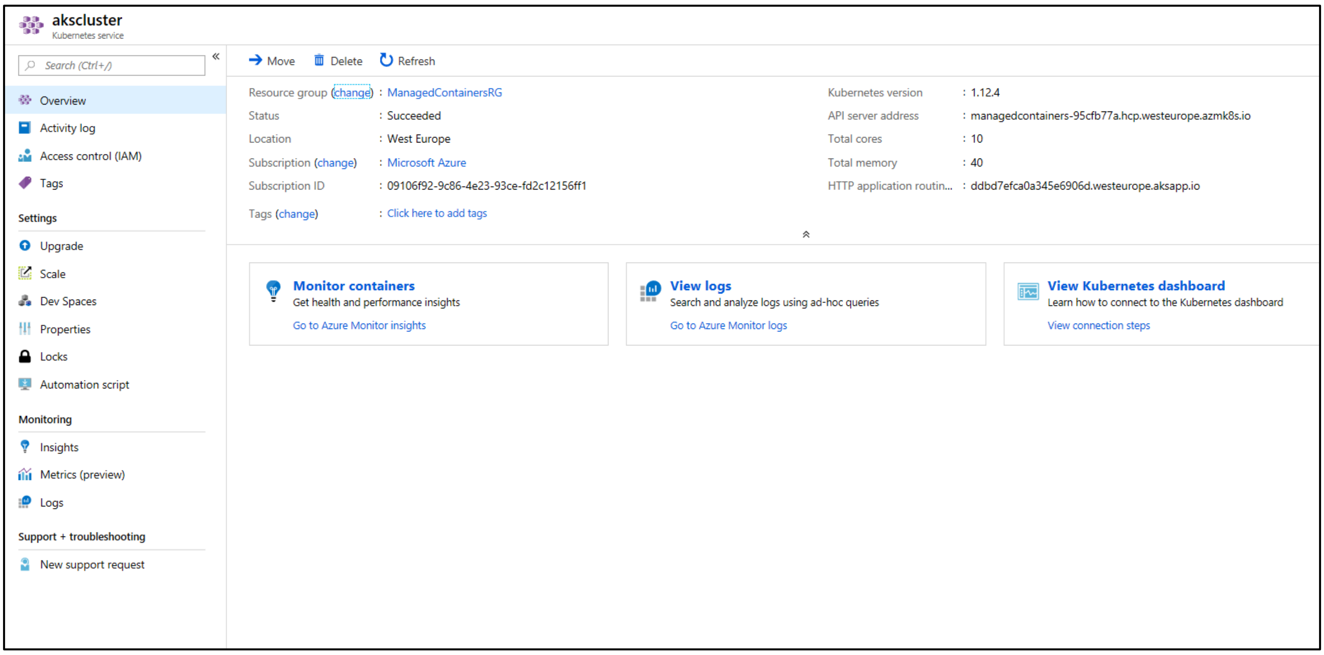
Tags (change) : Click here to add tags

Deployments : 1 Deploying

20 items □ Show hidden types

NAME	TYPE	LOCATION
agentpool-availabilitySet-17342055	Availability set	West Europe
aks-agentpool-17342055-0	Virtual machine	West Europe
aks-agentpool-17342055-0_OsDisk_1_f7634ecd9f1946f6b5024acb60···	Disk	West Europe
aks-agentpool-17342055-1	Virtual machine	West Europe
aks-agentpool-17342055-1_OsDisk_1_2d9752817ce84c2d87de489e0···	Disk	West Europe
aks-agentpool-17342055-2	Virtual machine	West Europe
aks-agentpool-17342055-2_OsDisk_1_fd169b976ff541bda712f401c1a···	Disk	West Europe
aks-agentpool-17342055-3	Virtual machine	West Europe
aks-agentpool-17342055-3_OsDisk_1_6646f5d672f34e01ab2b676c2···	Disk	West Europe
aks-agentpool-17342055-4	Virtual machine	West Europe
aks-agentpool-17342055-4_OsDisk_1_c68a69f86b8b4e998476e3b6···	Disk	West Europe
aks-agentpool-17342055-nic-0	Network interface	West Europe
aks-agentpool-17342055-nic-1	Network interface	West Europe
aks-agentpool-17342055-nic-2	Network interface	West Europe
aks-agentpool-17342055-nic-3	Network interface	West Europe

Go back to the first resource group and click the Kubernetes Service:



akscluster
Kubernetes service

Resource group (change) : ManagedContainersRG
Status : Succeeded
Location : West Europe
Subscription (change) : Microsoft Azure
Subscription ID : 09106f92-9c86-4e23-93ce-fd2c12156ff1
Tags (change) : Click here to add tags

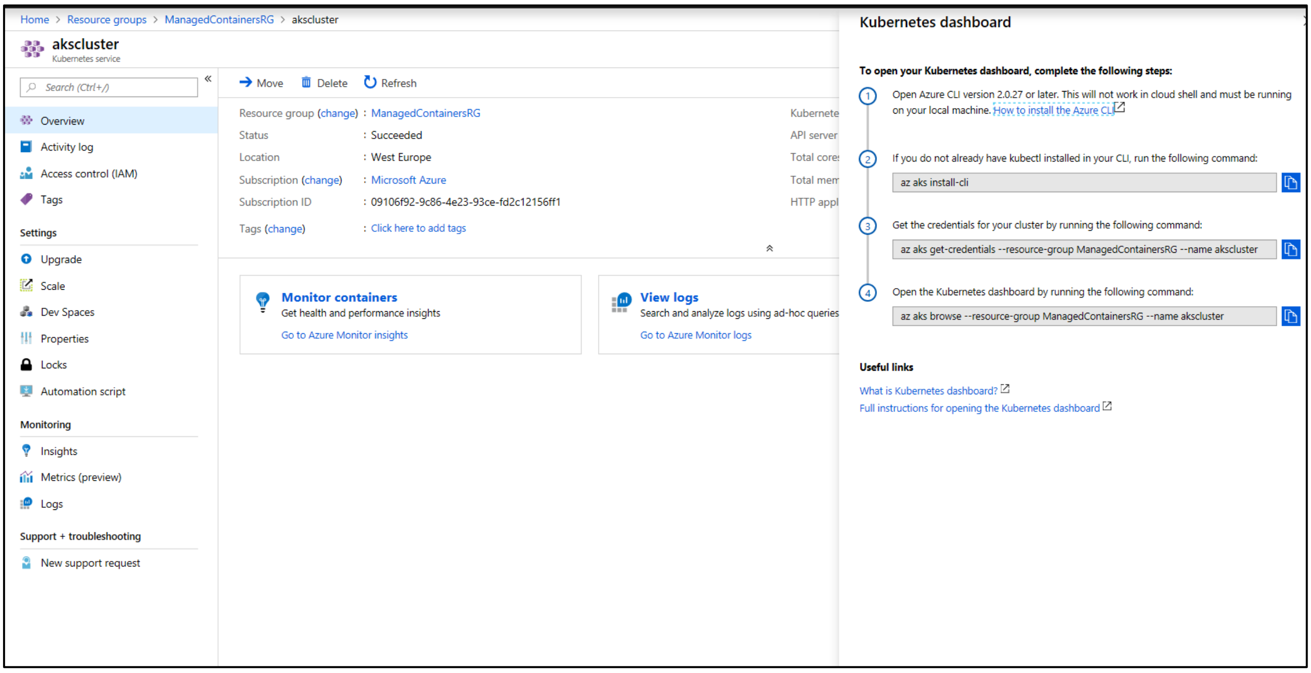
Kubernetes version : 1.12.4
API server address : managedcontainers-95cfb77a.hcp.westeurope.azmk8s.io
Total cores : 10
Total memory : 40
HTTP application routin... : ddbd7efca0a345e6906d.westeurope.aksapp.io

Monitor containers
Get health and performance insights
Go to Azure Monitor insights

View logs
Search and analyze logs using ad-hoc queries
Go to Azure Monitor logs

View Kubernetes dashboard
Learn how to connect to the Kubernetes dashboard
View connection steps

Click on View Kubernetes Dashboard:



Resource group (change) : ManagedContainersRG
Status : Succeeded
Location : West Europe
Subscription (change) : Microsoft Azure
Subscription ID : 09106f92-9c86-4e23-93ce-fd2c12156ff1
Tags (change) : Click here to add tags

Kubernetes dashboard

To open your Kubernetes dashboard, complete the following steps:

1. Open Azure CLI version 2.0.27 or later. This will not work in cloud shell and must be running on your local machine. How to install the Azure CLI
2. If you do not already have kubectl installed in your CLI, run the following command:
   ```
   az aks install-cli
   ```
3. Get the credentials for your cluster by running the following command:
   ```
   az aks get-credentials --resource-group ManagedContainersRG --name akscluster
   ```
4. Open the Kubernetes dashboard by running the following command:
   ```
   az aks browse --resource-group ManagedContainersRG --name akscluster
   ```

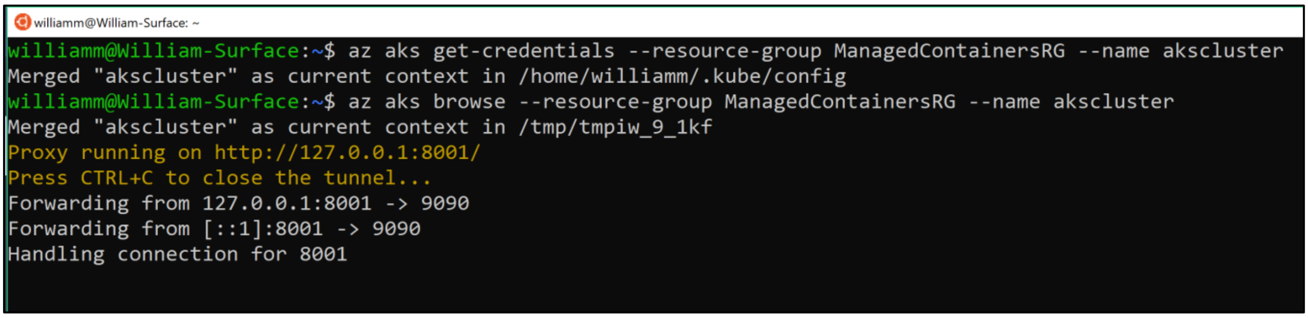
Useful links

What is Kubernetes dashboard?
Full instructions for opening the Kubernetes dashboard

To access your Kubernetes Dashboard, you need to connect with Azure CLI and set up a Proxy tunnel to access securely.
To get more info on how to install Azure CLI:
https://docs.microsoft.com/en-gb/cli/azure/install-azure-cli?view=azure-cli-latest

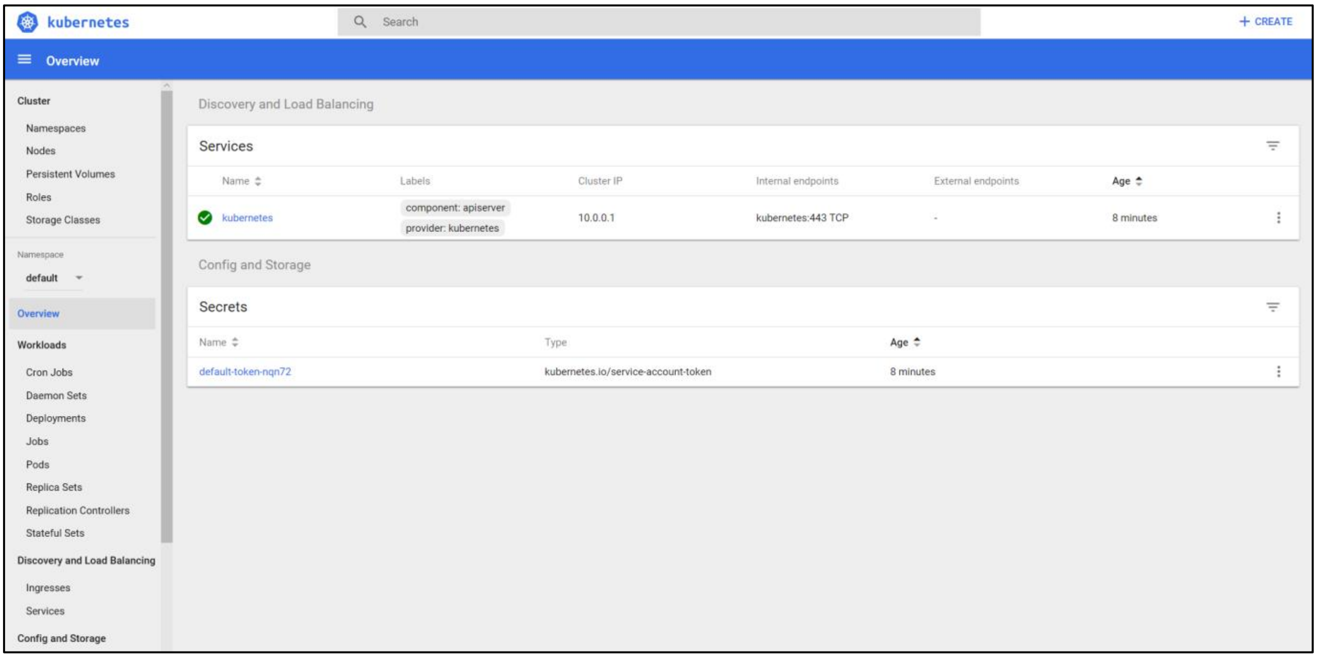
Once you are using the Azure CLI, connect to Azure with the command “az login”.
Then use the command “az aks install-cli” so you can install the Azure Kubernetes Services CLI.

Then run the following commands to save the credentials and start the Proxy tunnel:



```
williamm@William-Surface:~$ az aks get-credentials --resource-group ManagedContainersRG --name akscluster
Merged "akscluster" as current context in /home/williamm/.kube/config
williamm@William-Surface:~$ az aks browse --resource-group ManagedContainersRG --name akscluster
Merged "akscluster" as current context in /tmp/tmpiw_9_1kf
Proxy running on http://127.0.0.1:8001/
Press CTRL+C to close the tunnel...
Forwarding from 127.0.0.1:8001 -> 9090
Forwarding from [::1]:8001 -> 9090
Handling connection for 8001
```

Open your web browser and go to http://127.0.0.1:8001/



Discovery and Load Balancing

Services

Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
kubernetes	component: apiserver provider: kubernetes	10.0.0.1	kubernetes:443 TCP	-	8 minutes

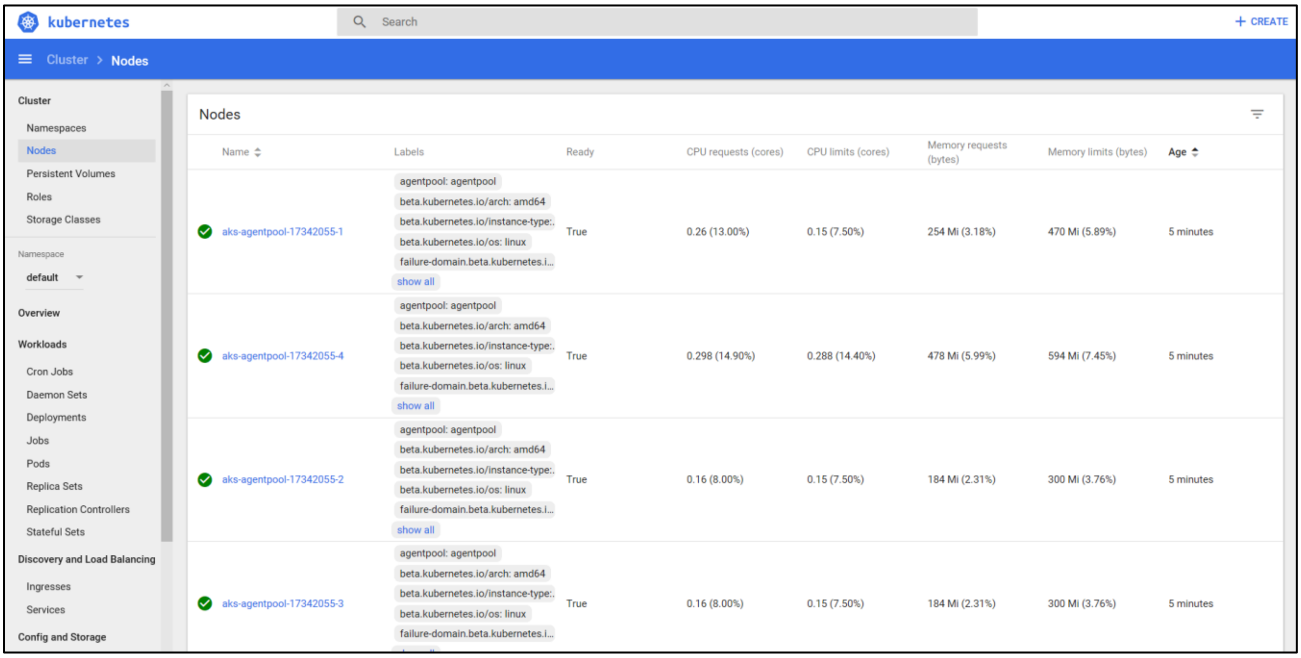
Config and Storage

Secrets

Name	Type	Age
default-token-nqn72	kubernetes.io/service-account-token	8 minutes

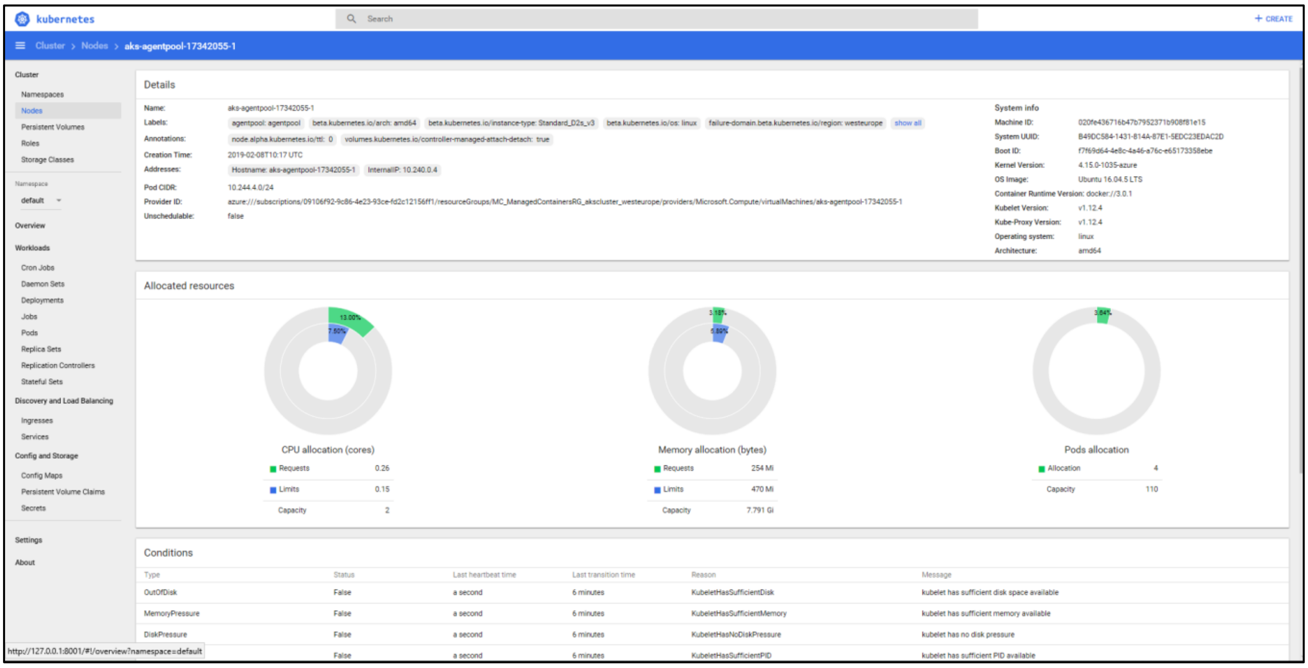
You are now connected to your Kubernetes Dashboard.

You can view your nodes:



Nodes

Name	Labels	Ready	CPU requests (cores)	CPU limits (cores)	Memory requests (bytes)	Memory limits (bytes)	Age
aks-agentpool-17342055-1	agentpool: agentpool beta.kubernetes.io/arch: amd64 beta.kubernetes.io/instance-type:. beta.kubernetes.io/os: linux failure-domain.beta.kubernetes.i... show all	True	0.26 (13.00%)	0.15 (7.50%)	254 Mi (3.18%)	470 Mi (5.89%)	5 minutes
aks-agentpool-17342055-4	agentpool: agentpool beta.kubernetes.io/arch: amd64 beta.kubernetes.io/instance-type:. beta.kubernetes.io/os: linux failure-domain.beta.kubernetes.i... show all	True	0.298 (14.90%)	0.288 (14.40%)	478 Mi (5.99%)	594 Mi (7.45%)	5 minutes
aks-agentpool-17342055-2	agentpool: agentpool beta.kubernetes.io/arch: amd64 beta.kubernetes.io/instance-type:. beta.kubernetes.io/os: linux failure-domain.beta.kubernetes.i... show all	True	0.16 (8.00%)	0.15 (7.50%)	184 Mi (2.31%)	300 Mi (3.76%)	5 minutes
aks-agentpool-17342055-3	agentpool: agentpool beta.kubernetes.io/arch: amd64 beta.kubernetes.io/instance-type:. beta.kubernetes.io/os: linux failure-domain.beta.kubernetes.i...	True	0.16 (8.00%)	0.15 (7.50%)	184 Mi (2.31%)	300 Mi (3.76%)	5 minutes



Details

Name: aks-agentpool-17342055-1
Labels: agentpool: agentpool | beta.kubernetes.io/arch: amd64 | beta.kubernetes.io/instance-type: Standard_D2s_v3 | beta.kubernetes.io/os: linux | failure-domain.beta.kubernetes.io/region: westeurope | show all
Annotations: node.alpha.kubernetes.io/ttl: 0 | volumes.kubernetes.io/controller-managed-attach-detach: true
Creation Time: 2019-02-08T10:17 UTC
Addresses: Hostname: aks-agentpool-17342055-1 | InternalIP: 10.240.0.4
Pod CIDR: 10.244.4.0/24
Provider ID: azure:///subscriptions/09106f92-9c86-4e23-93ce-fd2c12156ff1/resourceGroups/MC_ManagedContainersRG_akscluster_westeurope/providers/Microsoft.Compute/virtualMachines/aks-agentpool-17342055-1
Unschedulable: false

System info
Machine ID: 020fe436716b47b7952371b908f81e15
System UUID: B49DC584-1431-814A-87E1-5EDC23EDAC2D
Boot ID: f7f69d64-4e8c-4a46-a76c-e65173358ebe
Kernel Version: 4.15.0-1035-azure
OS Image: Ubuntu 16.04.5 LTS
Container Runtime Version: docker://3.0.1
Kubelet Version: v1.12.4
Kube-Proxy Version: v1.12.4
Operating system: linux
Architecture: amd64

Allocated resources

CPU allocation (cores)

🟩 Requests	0.26
🟦 Limits	0.15
Capacity	2

Memory allocation (bytes)

🟩 Requests	254 Mi
🟦 Limits	470 Mi
Capacity	7.791 Gi

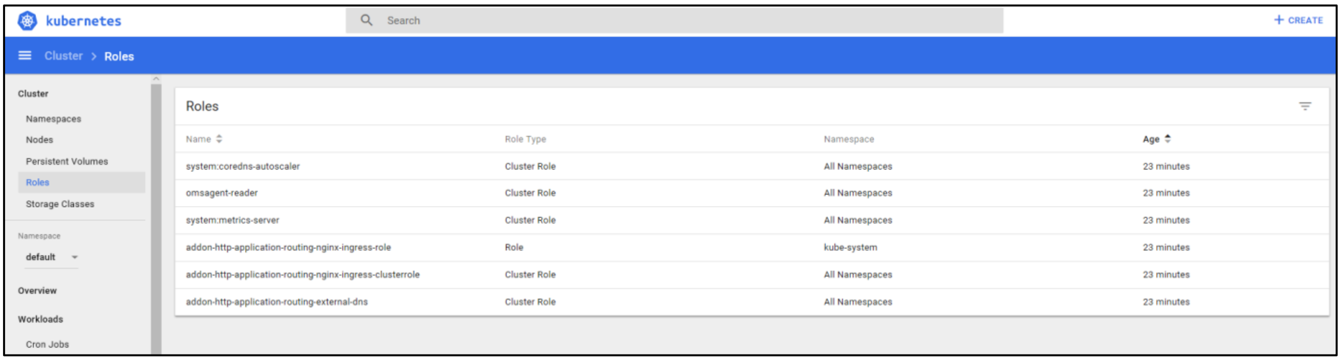
Pods allocation

🟩 Allocation	4
Capacity	110

Conditions

Type	Status	Last heartbeat time	Last transition time	Reason	Message
OutOfDisk	False	a second	6 minutes	KubeletHasSufficientDisk	kubelet has sufficient disk space available
MemoryPressure	False	a second	6 minutes	KubeletHasSufficientMemory	kubelet has sufficient memory available
DiskPressure	False	a second	6 minutes	KubeletHasNoDiskPressure	kubelet has no disk pressure
	False	a second	6 minutes	KubeletHasSufficientPID	kubelet has sufficient PID available

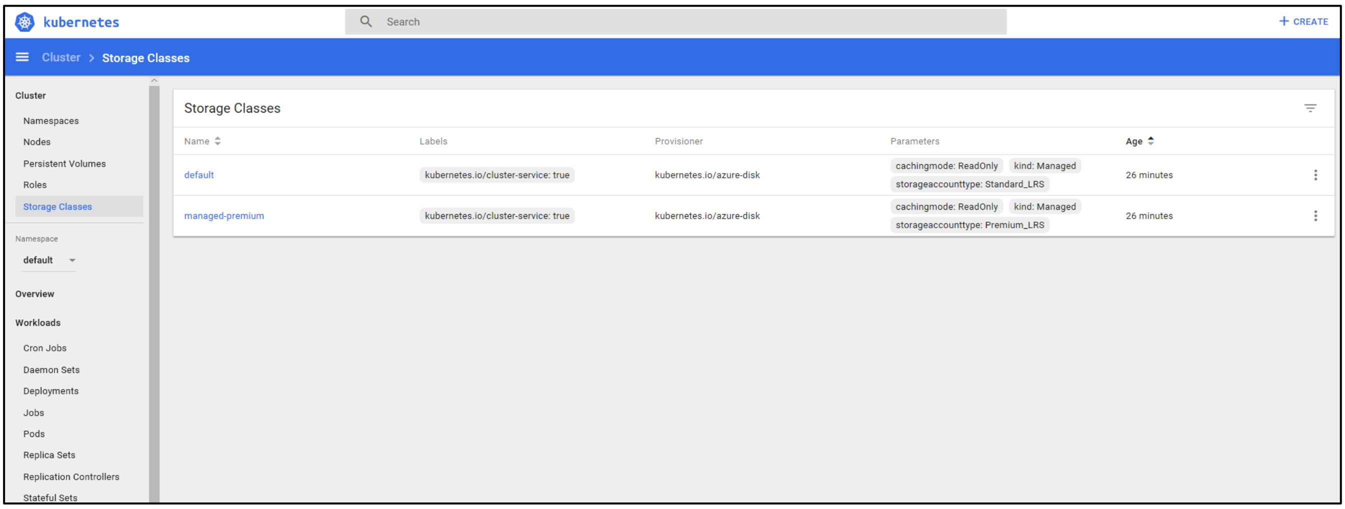
You can create Roles:



Roles

Name	Role Type	Namespace	Age
system:coredns-autoscaler	Cluster Role	All Namespaces	23 minutes
omsagent-reader	Cluster Role	All Namespaces	23 minutes
system:metrics-server	Cluster Role	All Namespaces	23 minutes
addon-http-application-routing-nginx-ingress-role	Role	kube-system	23 minutes
addon-http-application-routing-nginx-ingress-clusterrole	Cluster Role	All Namespaces	23 minutes
addon-http-application-routing-external-dns	Cluster Role	All Namespaces	23 minutes

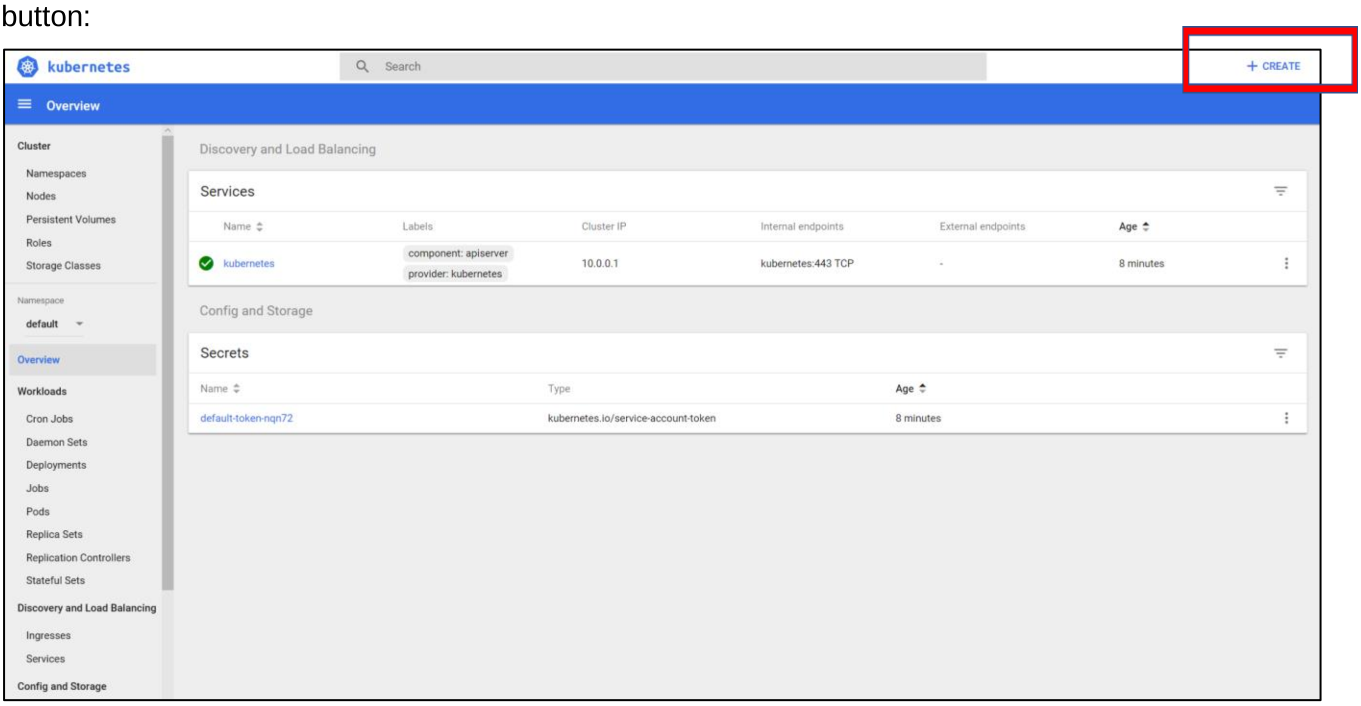
Or check your storage classes:



Storage Classes

Name	Labels	Provisioner	Parameters	Age
default	kubernetes.io/cluster-service: true	kubernetes.io/azure-disk	cachingmode: ReadOnly kind: Managed storageaccounttype: Standard_LRS	26 minutes
managed-premium	kubernetes.io/cluster-service: true	kubernetes.io/azure-disk	cachingmode: ReadOnly kind: Managed storageaccounttype: Premium_LRS	26 minutes

On the dashboard, you can create a new deployment, by clicking on the “+ Create” button:



Discovery and Load Balancing

Services

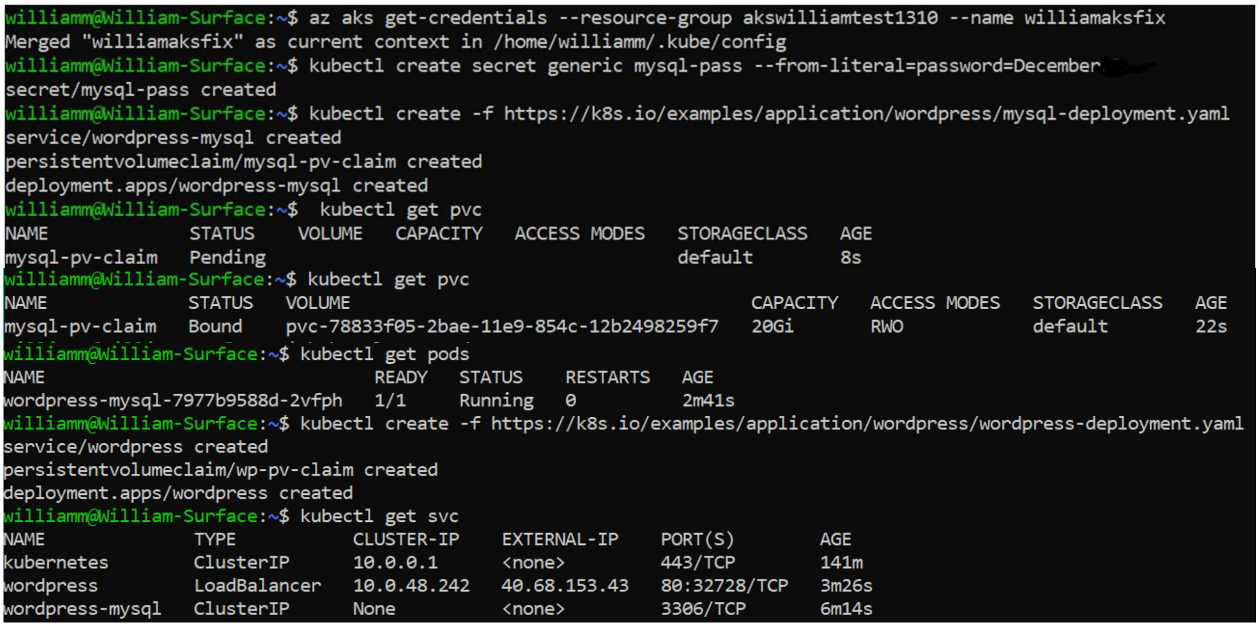
Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓ kubernetes	component: apiserver provider: kubernetes	10.0.0.1	kubernetes:443 TCP	-	8 minutes

Config and Storage

Secrets

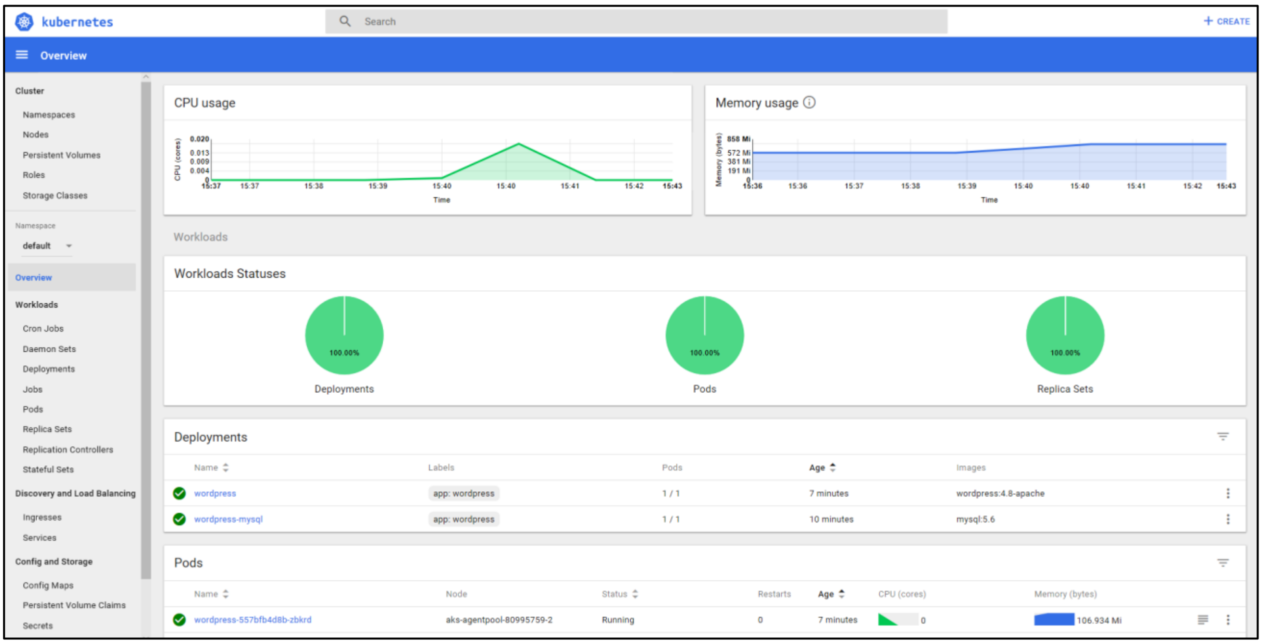
Name	Type	Age
default-token-nqn72	kubernetes.io/service-account-token	8 minutes

Or Using the kubectl command lines:



```
williamm@William-Surface:~$ az aks get-credentials --resource-group akswilliamtest1310 --name williamaksfix
Merged "williamaksfix" as current context in /home/williamm/.kube/config
williamm@William-Surface:~$ kubectl create secret generic mysql-pass --from-literal=password=December[redacted]
secret/mysql-pass created
williamm@William-Surface:~$ kubectl create -f https://k8s.io/examples/application/wordpress/mysql-deployment.yaml
service/wordpress-mysql created
persistentvolumeclaim/mysql-pv-claim created
deployment.apps/wordpress-mysql created
williamm@William-Surface:~$  kubectl get pvc
NAME             STATUS    VOLUME   CAPACITY   ACCESS MODES   STORAGECLASS   AGE
mysql-pv-claim   Pending                                      default        8s
williamm@William-Surface:~$ kubectl get pvc
NAME             STATUS   VOLUME                                     CAPACITY   ACCESS MODES   STORAGECLASS   AGE
mysql-pv-claim   Bound    pvc-78833f05-2bae-11e9-854c-12b2498259f7   20Gi       RWO            default        22s
williamm@William-Surface:~$ kubectl get pods
NAME                               READY   STATUS    RESTARTS   AGE
wordpress-mysql-7977b9588d-2vfph   1/1     Running   0          2m41s
williamm@William-Surface:~$ kubectl create -f https://k8s.io/examples/application/wordpress/wordpress-deployment.yaml
service/wordpress created
persistentvolumeclaim/wp-pv-claim created
deployment.apps/wordpress created
williamm@William-Surface:~$ kubectl get svc
NAME              TYPE           CLUSTER-IP    EXTERNAL-IP     PORT(S)        AGE
kubernetes        ClusterIP      10.0.0.1      <none>          443/TCP        141m
wordpress         LoadBalancer   10.0.48.242   40.68.153.43    80:32728/TCP   3m26s
wordpress-mysql   ClusterIP      None          <none>          3306/TCP       6m14s
```

Your deployment should be successful:

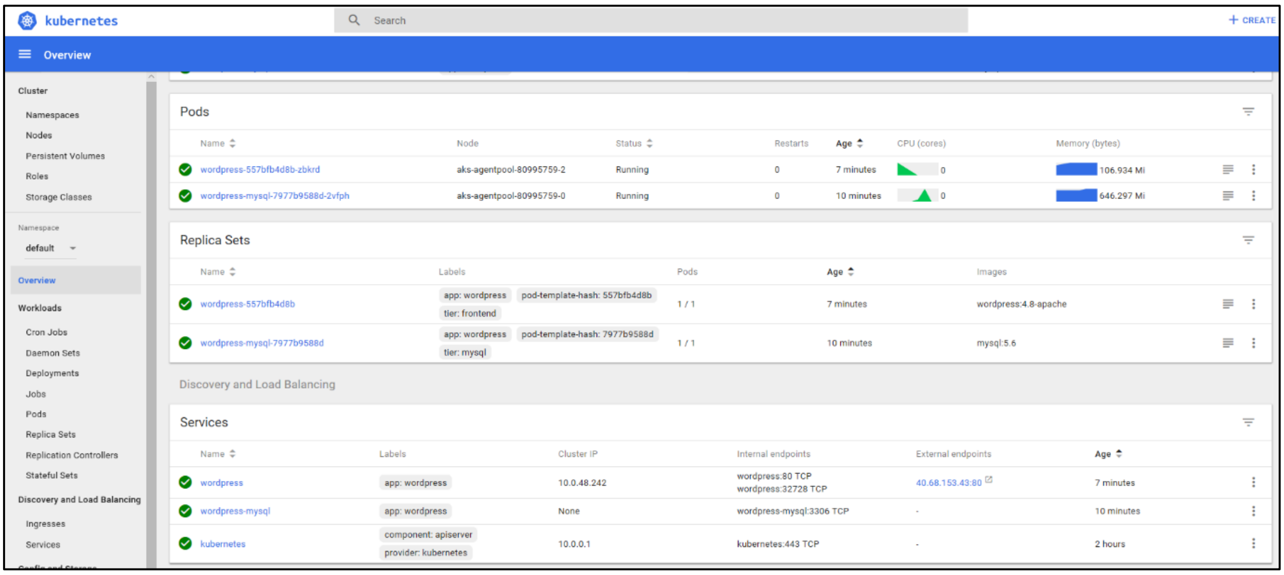


Deployments

	Name	Labels	Pods	Age	Images
✓	wordpress	app: wordpress	1 / 1	7 minutes	wordpress:4.8-apache
✓	wordpress-mysql	app: wordpress	1 / 1	10 minutes	mysql:5.6

Pods

	Name	Node	Status	Restarts	Age	CPU (cores)	Memory (bytes)
✓	wordpress-557bfb4d8b-zbkrd	aks-agentpool-80995759-2	Running	0	7 minutes	0	106.934 Mi



Pods

	Name	Node	Status	Restarts	Age	CPU (cores)	Memory (bytes)
✓	wordpress-557bfb4d8b-zbkrd	aks-agentpool-80995759-2	Running	0	7 minutes	0	106.934 Mi
✓	wordpress-mysql-7977b9588d-2vfph	aks-agentpool-80995759-0	Running	0	10 minutes	0	646.297 Mi

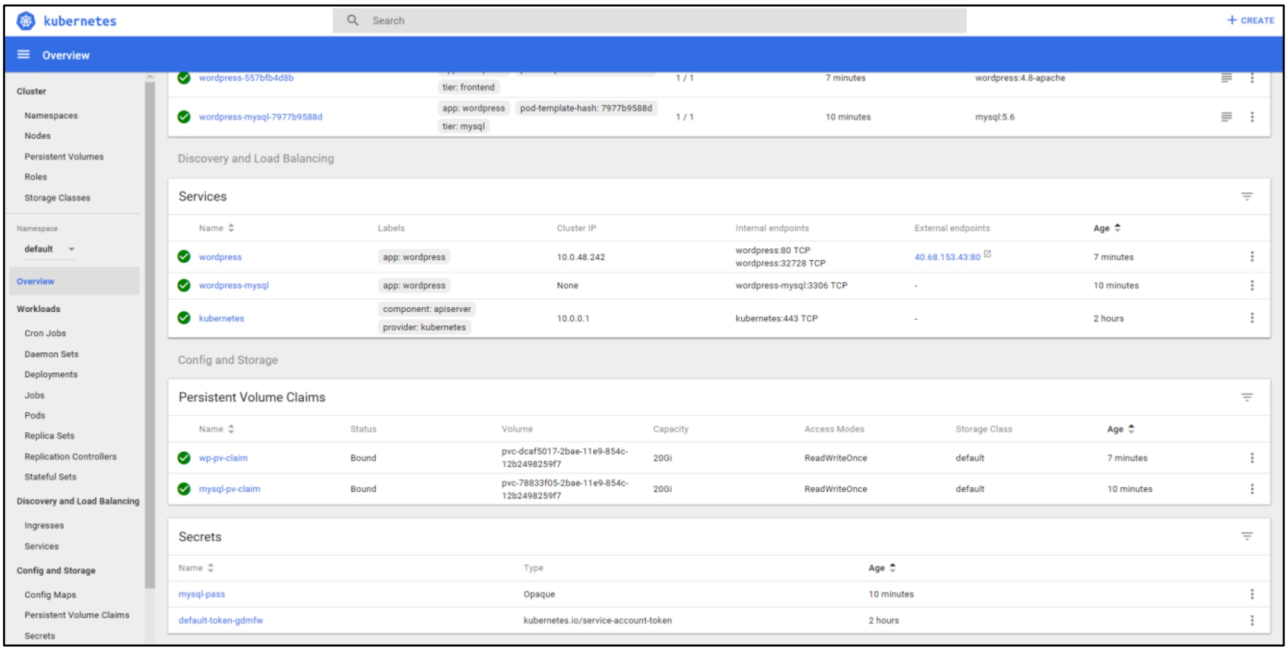
Replica Sets

	Name	Labels	Pods	Age	Images
✓	wordpress-557bfb4d8b	app: wordpress pod-template-hash: 557bfb4d8b tier: frontend	1 / 1	7 minutes	wordpress:4.8-apache
✓	wordpress-mysql-7977b9588d	app: wordpress pod-template-hash: 7977b9588d tier: mysql	1 / 1	10 minutes	mysql:5.6

Discovery and Load Balancing

Services

	Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓	wordpress	app: wordpress	10.0.48.242	wordpress:80 TCP wordpress:32728 TCP	40.68.153.43:80	7 minutes
✓	wordpress-mysql	app: wordpress	None	wordpress-mysql:3306 TCP	-	10 minutes
✓	kubernetes	component: apiserver provider: kubernetes	10.0.0.1	kubernetes:443 TCP	-	2 hours



✓ wordpress-557bfb4d8b	tier: frontend	1 / 1	7 minutes	wordpress:4.8-apache
✓ wordpress-mysql-7977b9588d	app: wordpress pod-template-hash: 7977b9588d tier: mysql	1 / 1	10 minutes	mysql:5.6

Discovery and Load Balancing

Services

	Name	Labels	Cluster IP	Internal endpoints	External endpoints	Age
✓	wordpress	app: wordpress	10.0.48.242	wordpress:80 TCP wordpress:32728 TCP	40.68.153.43:80	7 minutes
✓	wordpress-mysql	app: wordpress	None	wordpress-mysql:3306 TCP	-	10 minutes
✓	kubernetes	component: apiserver provider: kubernetes	10.0.0.1	kubernetes:443 TCP	-	2 hours

Config and Storage

Persistent Volume Claims

	Name	Status	Volume	Capacity	Access Modes	Storage Class	Age
✓	wp-pv-claim	Bound	pvc-dcaf5017-2bae-11e9-854c-12b2498259f7	20Gi	ReadWriteOnce	default	7 minutes
✓	mysql-pv-claim	Bound	pvc-78833f05-2bae-11e9-854c-12b2498259f7	20Gi	ReadWriteOnce	default	10 minutes

Secrets

Name	Type	Age
mysql-pass	Opaque	10 minutes
default-token-gdmfw	kubernetes.io/service-account-token	2 hours

1.3 Post-Deployment Tasks.

This part will be dedicated to give you some pointers regarding how to use the other services being deployed in the bundle.

1.3.1 How to use the Azure Container Registry

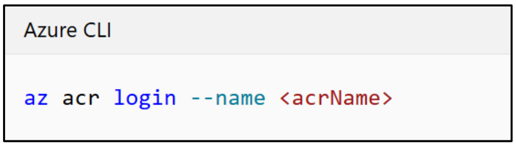
Azure Container Registry (ACR) is a private registry for container images. A private container registry lets you securely build and deploy your applications and custom code. In this tutorial, you deploy an ACR instance and push a container image to it. You learn how to:

- Tag a container image for ACR
- Upload the image to ACR
- View images in your registry

This tutorial requires that you're running the Azure CLI version 2.0.53 or later. Run “az –version” to find the version. If you need to install or upgrade, see Install Azure CLI: https://docs.microsoft.com/en-gb/cli/azure/install-azure-cli?view=azure-cli-latest

Log in to the container registry

To use the ACR instance, you must first log in. Use the “az acr login” command and provide the unique name given to the container registry in the previous step.



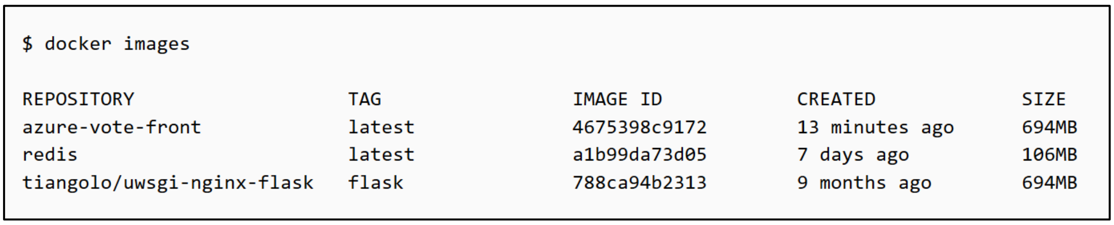
Azure CLI

```
az acr login --name <acrName>
```

The command returns a *Login Succeeded* message once completed.

Tag a container image

To see a list of your current local images, use the docker images command:



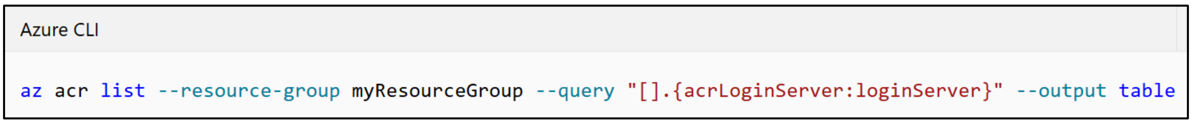
```
$ docker images

REPOSITORY                     TAG            IMAGE ID         CREATED           SIZE
azure-vote-front               latest         4675398c9172     13 minutes ago    694MB
redis                          latest         a1b99da73d05     7 days ago        106MB
tiangolo/uwsgi-nginx-flask     flask          788ca94b2313     9 months ago      694MB
```

(These containers are used as examples)

To use the azure-vote-front container image with ACR, the image needs to be tagged with the login server address of your registry. This tag is used for routing when pushing container images to an image registry.

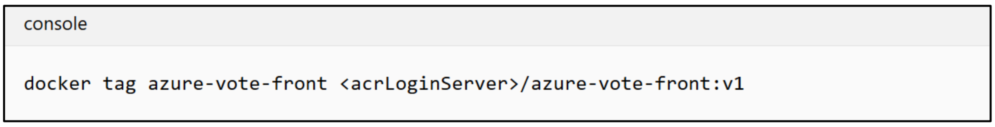
To get the login server address, use the “az acr list” command and query for the “loginServer” as follows:



Azure CLI

```
az acr list --resource-group myResourceGroup --query "[].{acrLoginServer:loginServer}" --output table
```

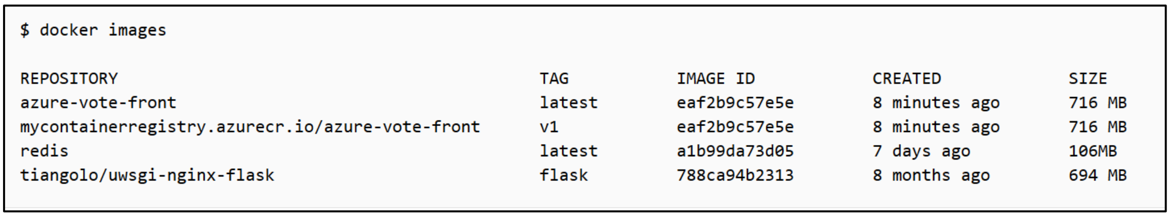
Now, tag your local azure-vote-front image with the “acrloginServer” address of the container registry. To indicate the image version, add :v1 to the end of the image name:



console

```
docker tag azure-vote-front <acrLoginServer>/azure-vote-front:v1
```

To verify the tags are applied, run “docker images” again. An image is tagged with the ACR instance address and a version number.

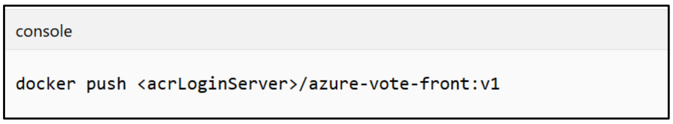


```
$ docker images

REPOSITORY                                       TAG        IMAGE ID        CREATED          SIZE
azure-vote-front                                 latest     eaf2b9c57e5e    8 minutes ago    716 MB
mycontainerregistry.azurecr.io/azure-vote-front  v1         eaf2b9c57e5e    8 minutes ago    716 MB
redis                                            latest     a1b99da73d05    7 days ago       106MB
tiangolo/uwsgi-nginx-flask                       flask      788ca94b2313    8 months ago     694 MB
```

Push images to registry

With your image built and tagged, push the azure-vote-front image to your ACR instance. Use docker push and provide your own “acrLoginServer” address for the image name as follows:



console

```
docker push <acrLoginServer>/azure-vote-front:v1
```

It may take a few minutes to complete the image push to ACR.

1.3.2 How to monitor the Managed Containers Bundle with Containers Insights (Azure Monitor for containers)

Azure Monitor for containers is a feature designed to monitor the performance of container workloads deployed to either Azure Container Instances or managed Kubernetes clusters hosted on Azure Kubernetes Service (AKS). Monitoring your containers is critical, especially when you're running a production cluster, at scale, with multiple applications.

Azure Monitor for containers gives you performance visibility by collecting memory and processor metrics from controllers, nodes, and containers that are available in Kubernetes through the Metrics API. Container logs are also collected. After you enable monitoring from Kubernetes clusters, these metrics and logs are automatically collected for you through a containerized version of the Log Analytics agent for Linux and stored in your Log Analytics workspace.

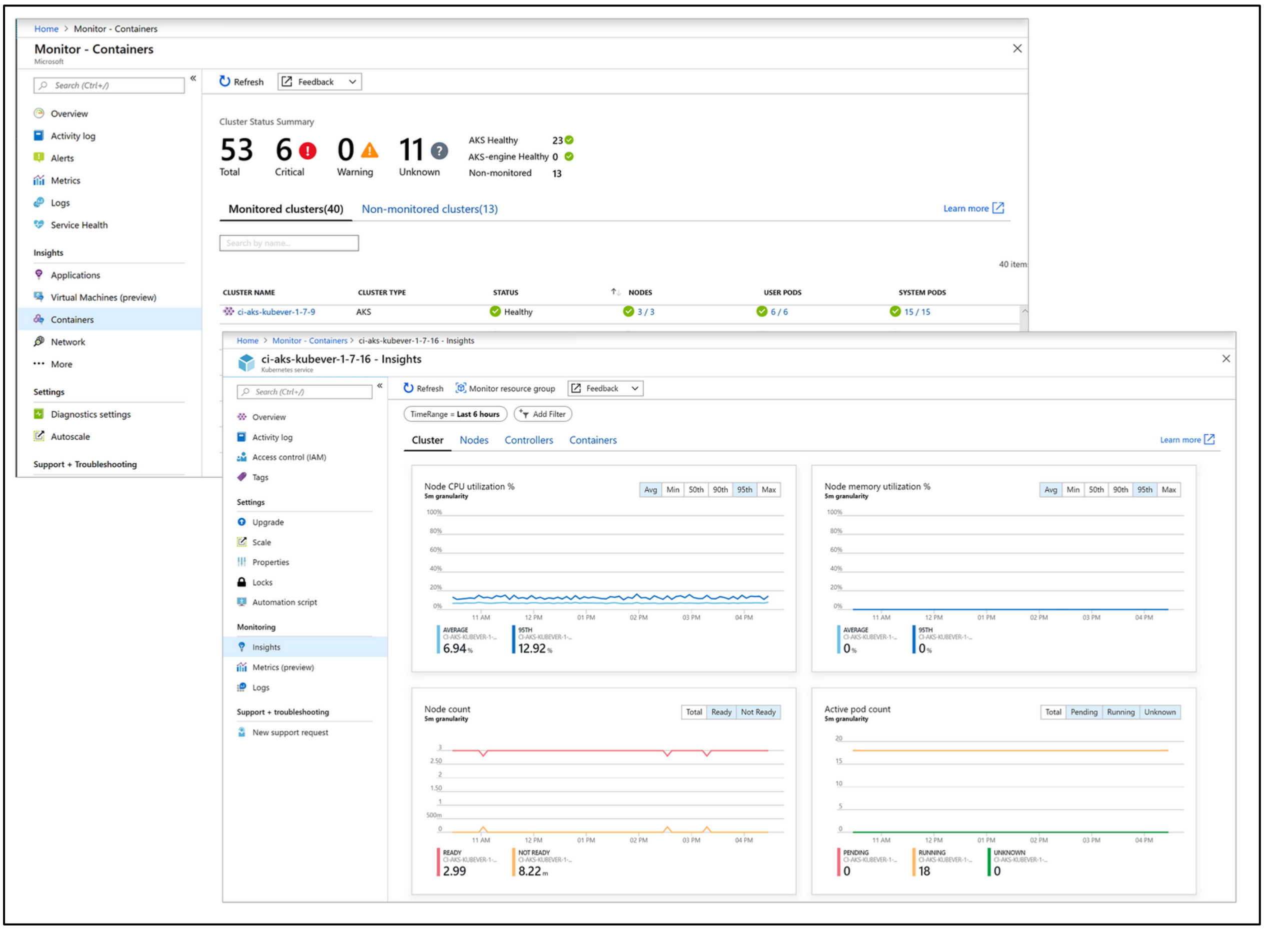
What does Azure Monitor for containers provide?

Azure Monitor for containers includes several pre-defined views that show the residing container workloads and what affects the performance health of the monitored Kubernetes cluster so that you can:

- Identify AKS containers that are running on the node and their average processor and memory utilization. This knowledge can help you identify resource bottlenecks.
- Identify processor and memory utilization of container groups and their containers hosted in Azure Container Instances. Identify where the container resides in a controller or a pod. This knowledge can help you view the controller's or pod's overall performance.
- Review the resource utilization of workloads running on the host that are unrelated to the standard processes that support the pod.
- Understand the behavior of the cluster under average and heaviest loads. This knowledge can help you identify capacity needs and determine the maximum load that the cluster can sustain.

How do I access this feature?

You can access Azure Monitor for containers two ways, from Azure Monitor or directly from the selected AKS cluster. From Azure Monitor you have a global perspective of all the containers deployed, which are monitored and which are not, allowing you to search and filter across your subscriptions and resource groups, and then drill into Azure Monitor for containers from the selected container. Otherwise, you can simply access the feature directly from a selected AKS container from the AKS page.



Home > Monitor - Containers

Monitor - Containers

Cluster Status Summary

53 Total · 6 Critical · 0 Warning · 11 Unknown

AKS Healthy 23
AKS-engine Healthy 0
Non-monitored 13

Monitored clusters(40) · Non-monitored clusters(13)

CLUSTER NAME	CLUSTER TYPE	STATUS	NODES	USER PODS	SYSTEM PODS
ci-aks-kubever-1-7-9	AKS	Healthy	3 / 3	6 / 6	15 / 15

Home > Monitor - Containers > ci-aks-kubever-1-7-16 - Insights

ci-aks-kubever-1-7-16 - Insights

TimeRange = Last 6 hours

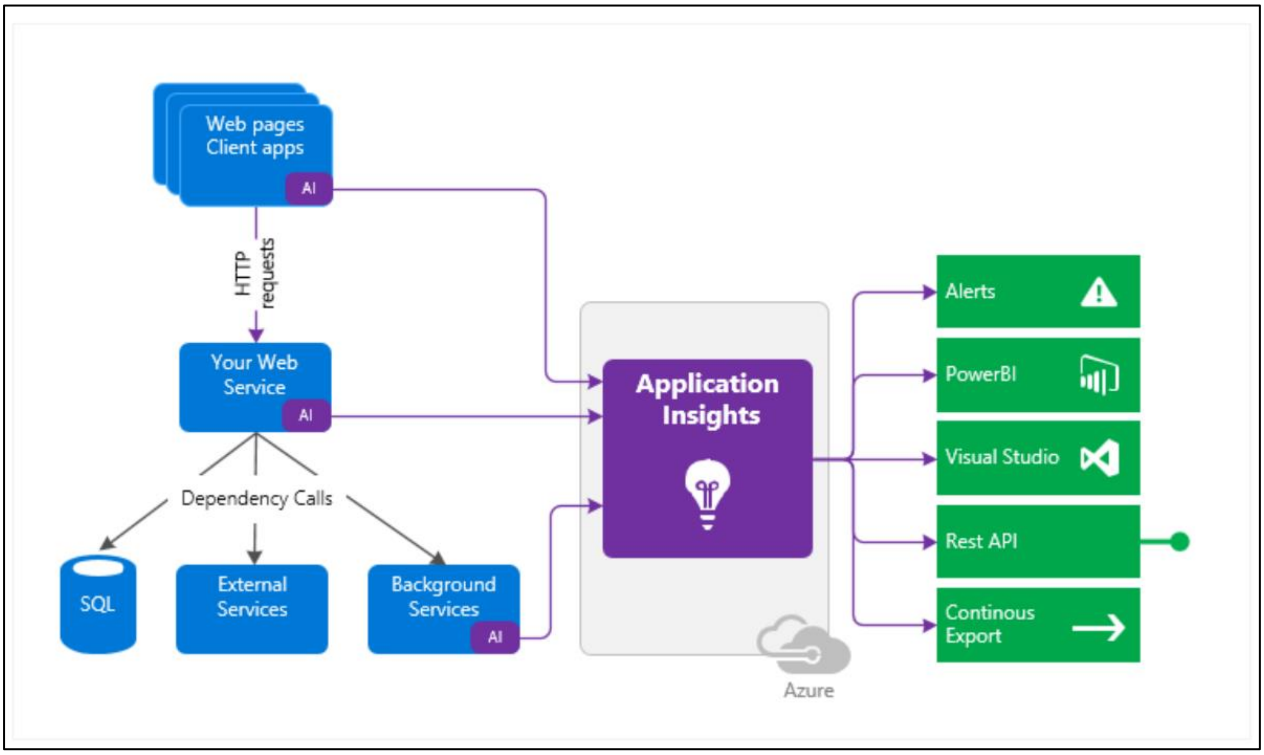
1.3.3 How to monitor the Managed Containers Bundle with Containers Insights (Azure Monitor for containers)

Application Insights is an extensible Application Performance Management (APM) service for web developers on multiple platforms. Use it to monitor your live web application. It will automatically detect performance anomalies. It includes powerful analytics tools to help you diagnose issues and to understand what users actually do with your app. It's designed to help you continuously improve performance and usability. It works for apps on a wide variety of platforms including .NET, Node.js and J2EE, hosted on-premises, hybrid, or any public cloud. It integrates with your DevOps process, and has connection points to a variety of development tools. It can monitor and analyze telemetry from mobile apps by integrating with Visual Studio App Center.

How does Application Insights work?

You install a small instrumentation package in your application, and set up an Application Insights resource in the Microsoft Azure portal. The instrumentation monitors your app and sends telemetry data to the portal. (The application can run anywhere - it doesn't have to be hosted in Azure.)

You can instrument not only the web service application, but also any background components, and the JavaScript in the web pages themselves.



In addition, you can pull in telemetry from the host environments such as performance counters, Azure diagnostics, or Docker logs. You can also set up web tests that periodically send synthetic requests to your web service.

All these telemetry streams are integrated in the Azure portal, where you can apply powerful analytic and search tools to the raw data.

What’s the overhead?

The impact on your app's performance is very small. Tracking calls are non-blocking, and are batched and sent in a separate thread.

What does Application Insights monitor?

Application Insights is aimed at the development team, to help you understand how your app is performing and how it's being used. It monitors:

- **Request rates, response times, and failure rates** - Find out which pages are most popular, at what times of day, and where your users are. See which pages perform best. If your response times and failure rates go high when there are more requests, then perhaps you have a resourcing problem.

- **Dependency rates, response times, and failure rates** - Find out whether external services are slowing you down.

- **Exceptions** - Analyze the aggregated statistics, or pick specific instances and drill into the stack trace and related requests. Both server and browser exceptions are reported.

- **Page views and load performance** - reported by your users' browsers.

- **AJAX calls** from web pages - rates, response times, and failure rates.

- **User and session counts**.

- **Performance counters** from your Windows or Linux server machines, such as CPU, memory, and network usage.

- **Host diagnostics** from Docker or Azure.

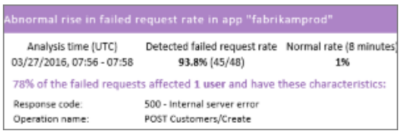
- **Diagnostic trace logs** from your app - so that you can correlate trace events with requests.

- **Custom events and metrics** that you write yourself in the client or server code, to track business events such as items sold or games won.

Where do I see my telemetry?

Smart detection and manual alerts

Automatic alerts adapt to your app's normal patterns of telemetry and trigger when there's something outside the usual pattern. You can also set alerts on particular levels of custom or standard metrics.



Abnormal rise in failed request rate in app "fabrikamprod"

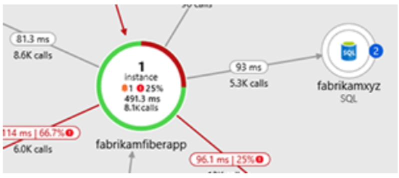
Analysis time (UTC)	Detected failed request rate	Normal rate (8 minutes)
03/27/2016, 07:56 - 07:58	**93.8%** (45/48)	**1%**

78% of the failed requests affected **1 user** and have these characteristics:

Response code:	500 - Internal server error
Operation name:	POST Customers/Create

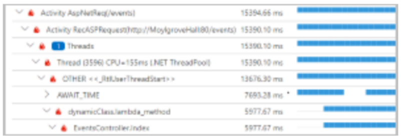
Application map

The components of your app, with key metrics and alerts.



Profiler

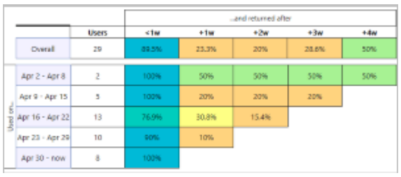
Inspect the execution profiles of sampled requests.



```
∨ Activity AspNetReq(/events)                                    15394.66 ms
  ∨ Activity RecASPRequest(http://MoylgroveHall80/events)        15390.10 ms
    ∨ 1 Threads                                                  15390.10 ms
      ∨ Thread (3596) CPU=155ms (.NET ThreadPool)                15390.10 ms
        ∨ OTHER <<_RtlUserThreadStart>>                          13676.30 ms
          > AWAIT_TIME                                           7693.28 ms
          ∨ dynamicClass.lambda_method                           5977.67 ms
            ∨ EventsController.Index                             5977.67 ms
```

Usage analysis

Analyze user segmentation and retention.

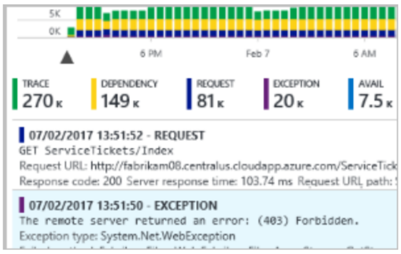


			...and returned after			
	Users	<1w	+1w	+2w	+3w	+4w
Overall	29	89.5%	23.3%	20%	28.6%	50%
Apr 2 - Apr 8	2	100%	50%	50%	50%	50%
Apr 9 - Apr 15	5	100%	20%	20%	20%	
Apr 16 - Apr 22	13	76.9%	30.8%	15.4%		
Apr 23 - Apr 29	10	90%	10%			
Apr 30 - now	8	100%				

Used on...

Diagnostic search for instance data

Search and filter events such as requests, exceptions, dependency calls, log traces, and page views.

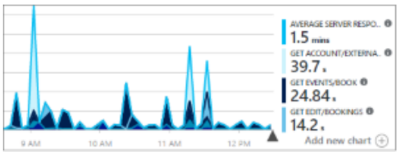


07/02/2017 13:51:52 - REQUEST
GET ServiceTickets/Index
Request URL: http://fabrikam08.centralus.cloudapp.azure.com/ServiceTick
Response code: 200 Server response time: 103.74 ms Request URL path:

07/02/2017 13:51:50 - EXCEPTION
The remote server returned an error: (403) Forbidden.
Exception type: System.Net.WebException

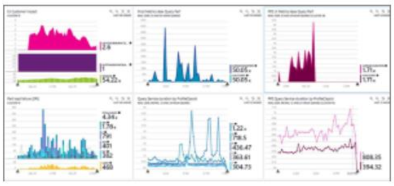
Metrics Explorer for aggregated data

Explore, filter, and segment aggregated data such as rates of requests, failures, and exceptions; response times, page load times.



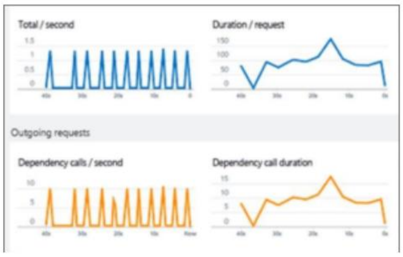
Dashboards

Mash up data from multiple resources and share with others. Great for multi-component applications, and for continuous display in the team room.



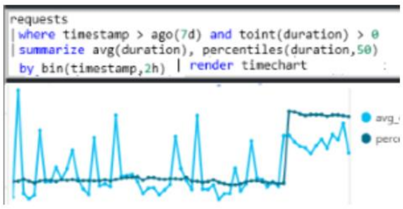
Live Metrics Stream

When you deploy a new build, watch these near-real-time performance indicators to make sure everything works as expected.



Analytics

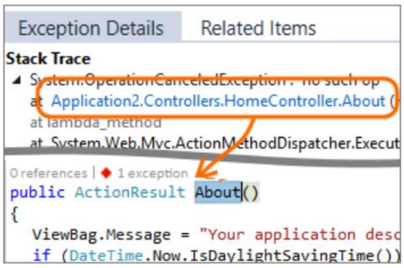
Answer tough questions about your app's performance and usage by using this powerful query language.



```
requests
|where timestamp > ago(7d) and toint(duration) > 0
|summarize avg(duration), percentiles(duration,50)
 by bin(timestamp,2h) | render timechart
```

Visual Studio

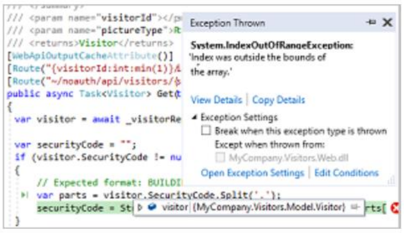
See performance data in the code. Go to code from stack traces.



```
◢ System.OperationCanceledException : no such op
   at Application2.Controllers.HomeController.About (
   at lambda_method
   at System.Web.Mvc.ActionMethodDispatcher.Execut
0 references | 1 exception
public ActionResult About()
{
   ViewBag.Message = "Your application desc
   if (DateTime.Now.IsDaylightSavingTime())
```

Snapshot debugger

Debug snapshots sampled from live operations, with parameter values.



```
/// <param name="visitorId"></p
/// <param name="pictureType">R
/// <returns>Visitor</returns>
[WebApiOutputCacheAttribute()]
[Route("{visitorId:int:min(1)}/
[Route("~/noauth/api/visitors/{
public async Task<Visitor> Get(
{
  var visitor = await _visitorRe

  var securityCode = "";
  if (visitor.SecurityCode != nu
  {
     // Expected format: BUILDI
     var parts = visitor.SecurityCode.Split('.');
     securityCode = St
  }
```

Exception Thrown

System.IndexOutOfRangeException: 'Index was outside the bounds of the array.'

☐ Break when this exception type is thrown

Except when thrown from:

☐ MyCompany.Visitors.Web.dll

Open Exception Settings | Edit Conditions
visitor {MyCompany.Visitors.Model.Visitor}

Power BI

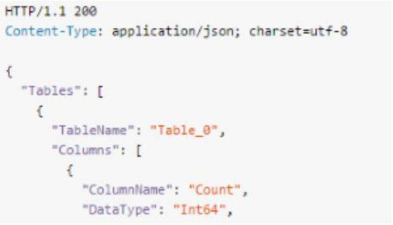
Integrate usage metrics with other business intelligence.

REST API

Write code to run queries over your metrics and raw data.

Continuous export

Bulk export of raw data to storage as soon as it arrives.



```
HTTP/1.1 200
Content-Type: application/json; charset=utf-8

{
  "Tables": [
    {
      "TableName": "Table_0",
      "Columns": [
        {
          "ColumnName": "Count",
          "DataType": "Int64",
```

How do I use Application Insights?

Monitor

Install Application Insights in your app, set up availability web tests, and:

- Set up a dashboard for your team room to keep an eye on load, responsiveness, and the performance of your dependencies, page loads, and AJAX calls.
- Discover which are the slowest and most failing requests.
- Watch Live Stream when you deploy a new release, to know immediately about any degradation.

Detect, Diagnose

When you receive an alert or discover a problem:

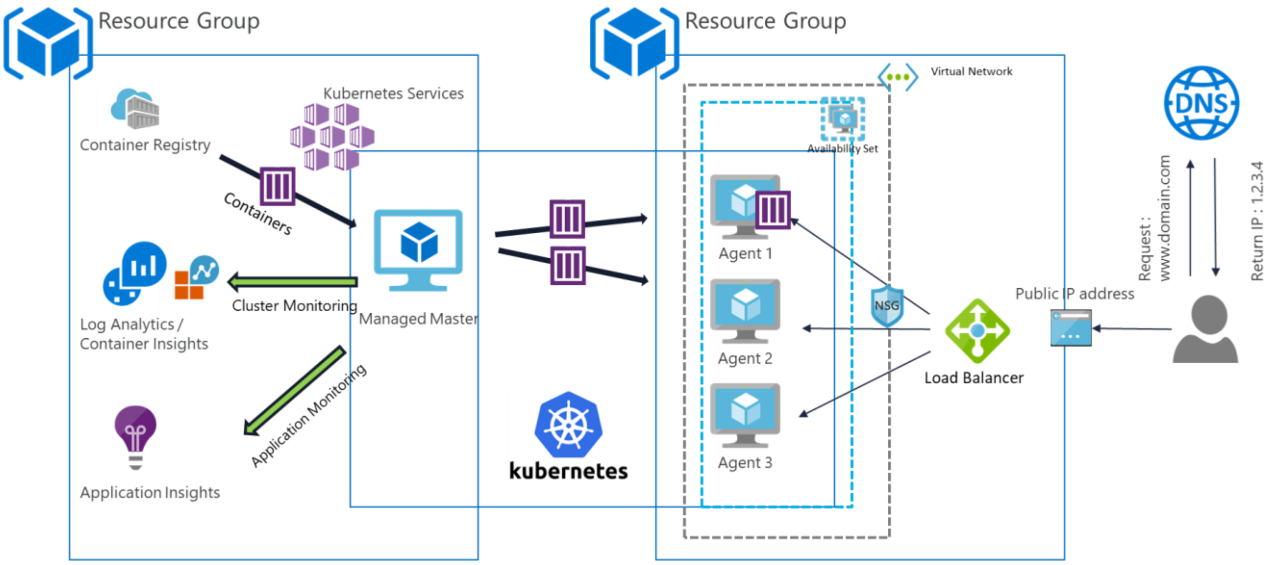
- Assess how many users are affected.
- Correlate failures with exceptions, dependency calls and traces.
- Examine profiler, snapshots, stack dumps, and trace logs.

Build, Measure, Learn

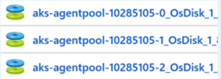
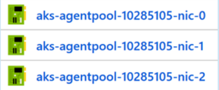
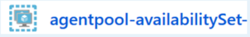
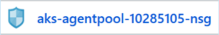
Measure the effectiveness of each new feature that you deploy.

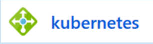
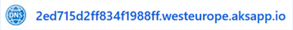
- Plan to measure how customers use new UX or business features.
- Write custom telemetry into your code.
- Base the next development cycle on hard evidence from your telemetry.

2. Azure Notions.



	Resource	Properties	Description
akscluster	Kubernetes Service	Managed Kubernetes	Azure Kubernetes Service is a managed Kubernetes cluster in Azure. AKS reduces the complexity and operational overhead of managing Kubernetes, offloading much of that responsibility to Azure. Azure handles critical tasks like health monitoring and maintenance. The Kubernetes masters are managed by Azure.
ACRakscluster	Container Registry	Managed Docker Registry	Azure Container Registry is a managed Docker registry service based on the open-source Docker Registry 2.0. Azure container registries are used to store and manage private Docker container images, from your existing container development and deployment pipelines.
applnsakscluster	Application Insights	Part of Azure Monitor	Application Insights is an Application Performance Management (APM) service for web developers on multiple platforms. It detects performance anomalies and includes analytics tools to help diagnose issues and to understand what users actually do within the app. It works for apps on a wide variety of platforms including .NET, Node.js and J2EE.
ContainerInsights	Container Insights	Azure Monitor for Containers	Azure Monitor for containers is designed to monitor the performance of container workloads deployed to AKS. Monitoring your containers is critical, especially when you're running a production cluster, at scale, with multiple applications. It gives you performance visibility by collecting metrics from controllers, nodes, and containers that are available in Kubernetes through the Metrics API. Container logs are also collected. After you enable monitoring, these metrics and logs are automatically collected through a containerized version of the Log Analytics agent for Linux and stored in your Log Analytics workspace.
akscluster-4567da54-a4ee-5c9f-	Log Analytics	Log Analytics in Azure Monitor	Log data collected by Azure Monitor is stored in Log Analytics which includes a rich query language to quickly retrieve, consolidate, and analyze collected data. You can create and test queries using the Log Analytics page in the Azure portal and then either directly analyze the data using these tools or save queries for use with visualizations or alert rules.

	Resource	Properties	Description
aks-agentpool-10285105-0 aks-agentpool-10285105-1 aks-agentpool-10285105-2	Virtual Machines	1, 2, 3 or more VM agents	AKS nodes run on Azure virtual machines. You can connect storage to nodes and pods, upgrade cluster components, and use GPUs.
 aks-agentpool-10285105-0_OsDisk_1_ aks-agentpool-10285105-1_OsDisk_1_ aks-agentpool-10285105-2_OsDisk_1_	Managed Disk	1 OS Disk per VM Agent	To support application workloads, you can mount storage volumes for persistent data. Both static and dynamic volumes can be used. Depending on how many connected pods are to share the storage, you can use storage backed by either Azure Disks for single pod access, or Azure Files for multiple concurrent pod access.
 aks-agentpool-10285105-nic-0 aks-agentpool-10285105-nic-1 aks-agentpool-10285105-nic-2	Network Interface	1 NIC per VM Agent	The Network Interface Card is what connects the Virtual Machine to the Network Security Group
 agentpool-availabilitySet-	Availability Set	1 Availability Set for VM Agents	VMs are placed in a logical grouping called an availability set so they are distributed across the underlying infrastructure. If there is a planned maintenance event in Azure or an underlying hardware/infrastructure fault, the use of availability sets ensures that at least one VM remains running.
 aks-agentpool-10285105-nsg	Network Security Group	1 NSG for VM Agents	The purpose of NSG is to restrict traffic from outside of the VNet to servers inside of the VNet. They are also used to restrict server to server communications inside the VNet.

	Resource	Properties	Description
aks-vnet-10285105	Virtual Network	Address prefix: 10.0.0.0/8	Azure VNet provides the ability to set up custom virtual networking which includes subnets, and IP address ranges.
kubernetes-ab5710da9	Public IP address	1 Public IP for the Load Balancer	IP address for the load balancer for application access from outside the cluster
 kubernetes	Load Balancer	Load Balancer 2 probes and 2 rules for TCP 80 and TCP 443	Load balancer for application access from outside the cluster
 2ed715d2ff834f1988ff.westeurope.aksapp.io	DNS Zone	DNS Zone for HTTP Application Routing	The HTTP application routing add-on makes it easy to access applications deployed to an AKS cluster. HTTP application routing solution configures an ingress controller in the AKS cluster. As applications are deployed, publicly accessible DNS names are auto configured. The HTTP application routing configures a DNS zone and integrates it with the AKS cluster. You can then deploy Kubernetes ingress resources as normal.