

The logo for Chicago Monitoring Enthusiasts features the text "Chicago Monitoring Enthusiasts" in a bold, red, serif font. The text is centered between two horizontal, light blue brushstroke-like bars. The entire logo is set against a white background that is part of a larger circular design.

**Chicago Monitoring
Enthusiasts**

May 2022
Virtual
Meetup



What We're About

This group is for everyone who needs to Monitor their Applications and their related Infrastructure that is high-churn, ephemeral and exploding in Data ingestion.



Looking For Speakers

- Come share a story of monitoring and or tools you use.

- _____



Partner with 3Cloud on Your Azure Journey

WE ARE THE LARGEST PUREPLAY AZURE SERVICES PROVIDER IN THE WORLD

• **100%**

focused on Microsoft Azure

400+

full-time, U.S.-based
Azure experts across six
practice areas

15+

years of average
technology experience

500+

clients across the U.S.

3Cloud National Azure Practices



Azure Strategy & Advisory



Azure Infrastructure



Azure Data,
Analytics, & AI



Azure DevOps & Automation



Azure Application Modernization



Azure Managed
Services & Support

Let's Talk About Azure Monitor

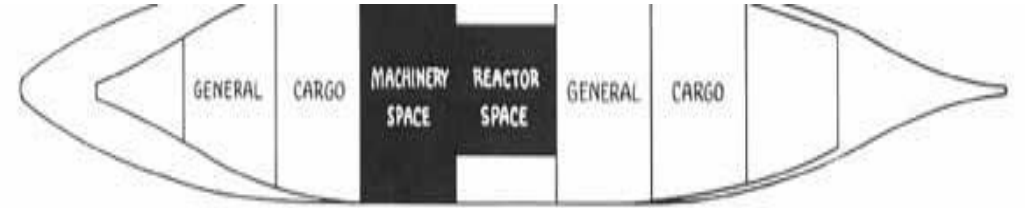
- What is it?
- What does it cost?
- What is Application Insights?
- What types of data is available?
- How do I visualize Monitoring data?
- How can I monitor Kubernetes?
- Much more!!

What is Azure Monitor?

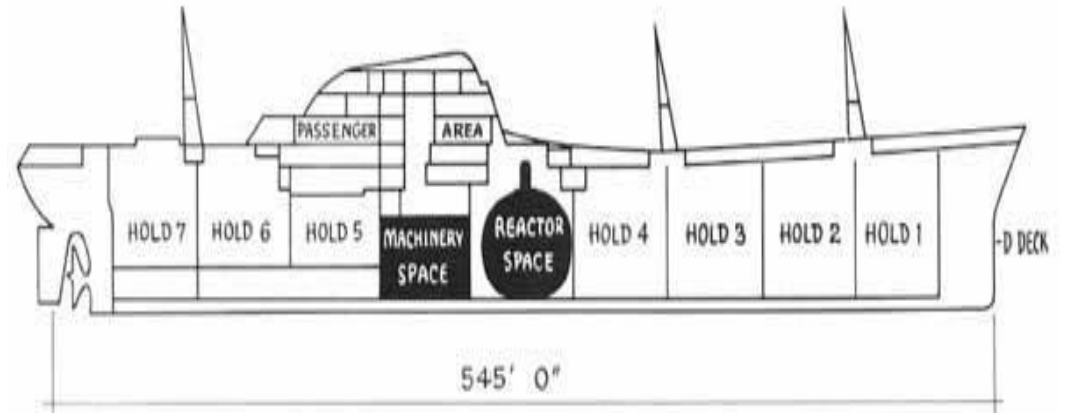


Azure Monitor

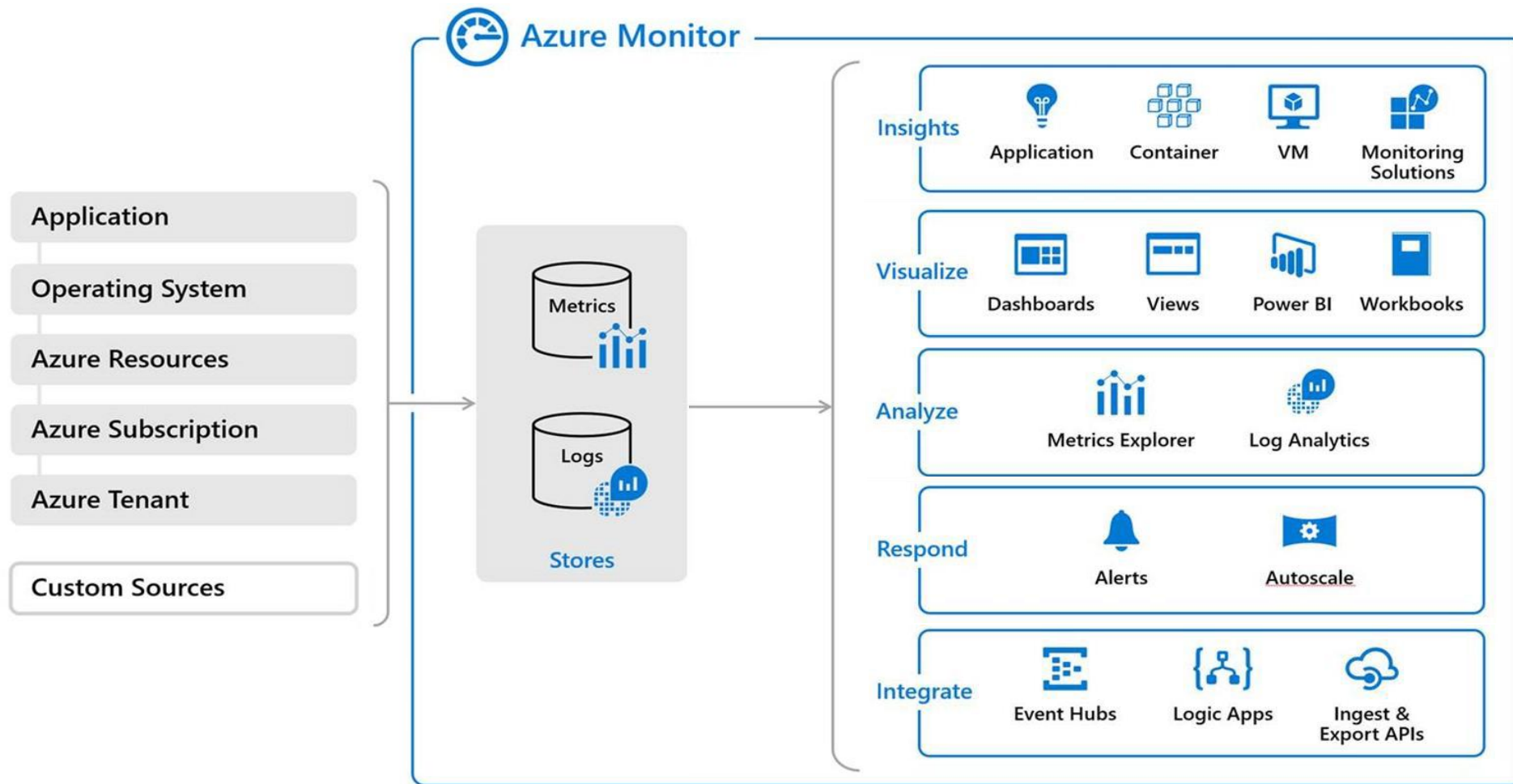
An Azure Service that collects, analyzes and acts on telemetry data from your Azure and on-premises environments.



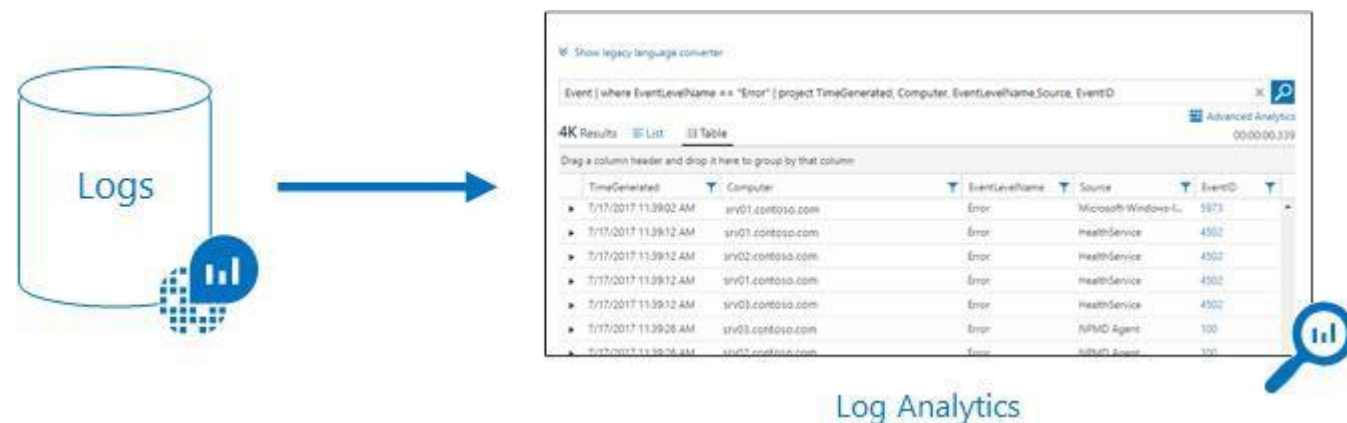
D DECK



Azure Monitor High Level Overview



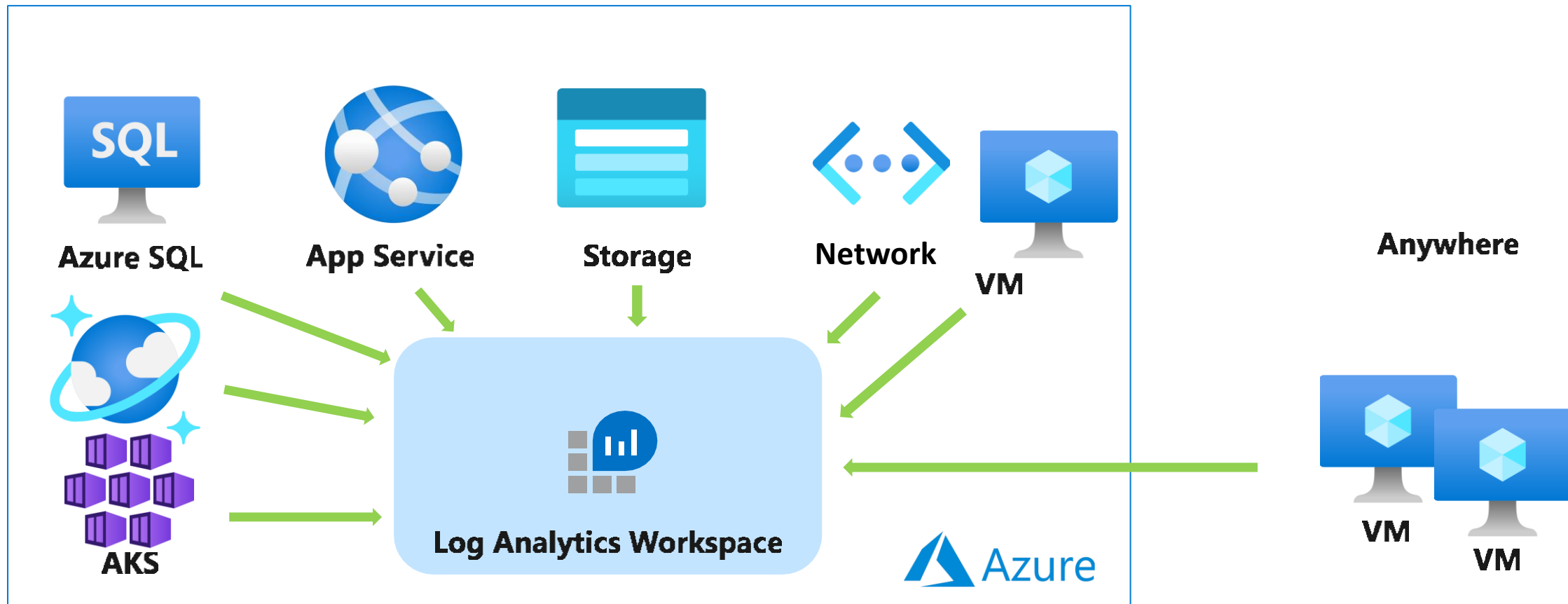
What types of data is available?



- Numerical values
 - Lightweight
 - Only Aggregates are stored
 - Collected at regular intervals
 - Can be used in simple logic expressions (ex: CPU > 80%)
-
- Structured telemetry from different sources
 - Verbose and descriptive.
 - All entries stored without aggregation
 - Can contain complex structures (XML, Json, etc.)

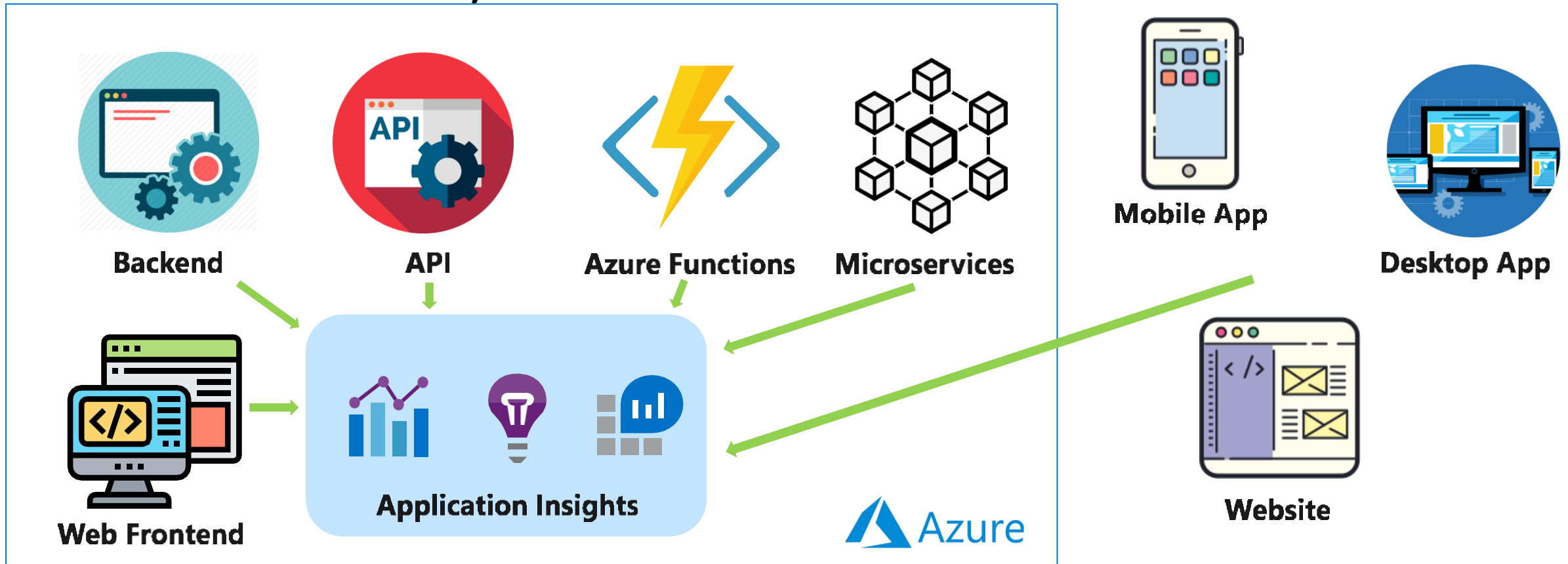
Log Analytics Workspace

Log Analytics Workspace (aka Log Analytics) A central database that can contain metrics/logs from multiple resources, subscriptions, operating systems, etc. from within Azure and from external sources.



Application Insights

Application Insights A central database that can contain metrics/logs from multiple application components running with Azure and externally.





Demo Of Azure Monitor

Respond to Telemetry Data



Define alerts based on metrics or log thresholds

Alert logic

Monitoring 1 time series (\$0.10/time series)

Threshold

Static

Dynamic

Operator

Greater than

Aggregation type *

Total

Threshold value *

10

seconds

Condition preview

Whenever the total cpu time is greater than 10 seconds

Evaluated based on

Aggregation granularity (Period) *

5 minutes

Frequency of evaluation

Every 5 Minutes

Respond to Telemetry Data



Alerts can trigger simple notifications and complex actions

Email/SMS message/Push/Voice

Add or edit an Email/SMS/Push/Voice action



Email

Email *



SMS (Carrier charges may apply)

Country code *

1

Phone number *



Azure app Push Notifications

Azure account email *



Voice

Country code *

1

Phone number *

Actions

Configure the method in which actions are performed, and add a unique descriptive

Action type ⓘ

Automation Runbook

Azure Function

ITSM

Logic App

Secure Webhook

Webhook

Respond to Telemetry Data

Respond


Alerts


Autoscale

Manage Alerts accross your entire subscription.

Total alerts

6

Since 8/26/2020, 11:54:18 AM

Smart groups (preview) ⓘ

4 

33.33% Reduction

Total alert rules







9

Enabled 9

Action rules (preview) ⓘ

0

Enabled 0

Severity	Total alerts	New
 Sev 0	0	0
 Sev 1	0	0
 Sev 2	0	0
 Sev 3	6 	6
 Sev 4	0	0

Scale resources based on metric values

Autoscale

X



Average ▼

App Service plans standard metrics CPU Percentage

Add

+

Time (UTC-06:00)	Percentage
11:45 PM	0%
12:00 AM	0.5%
12:15 AM	0.5%
12:30 AM	0.5%
12:45 AM	0%
1:00 AM	0%
1:15 AM	10%
1:30 AM	27%
1:45 AM	10%
2:00 AM	1%
2:15 AM	1.5%
2:30 AM	1.5%
2:45 AM	5%
3:00 AM	14%

Greater than

70

%

10

Average 

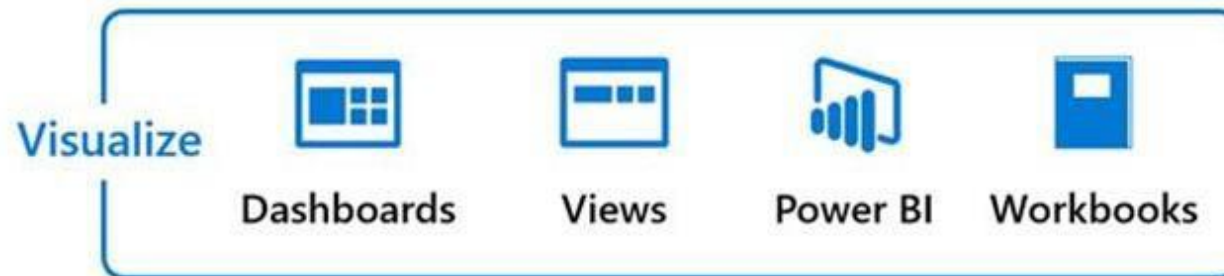


Increase count by ▼

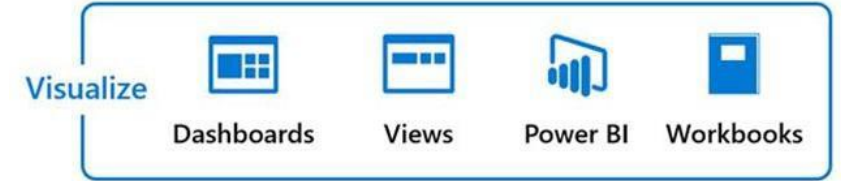
5

1

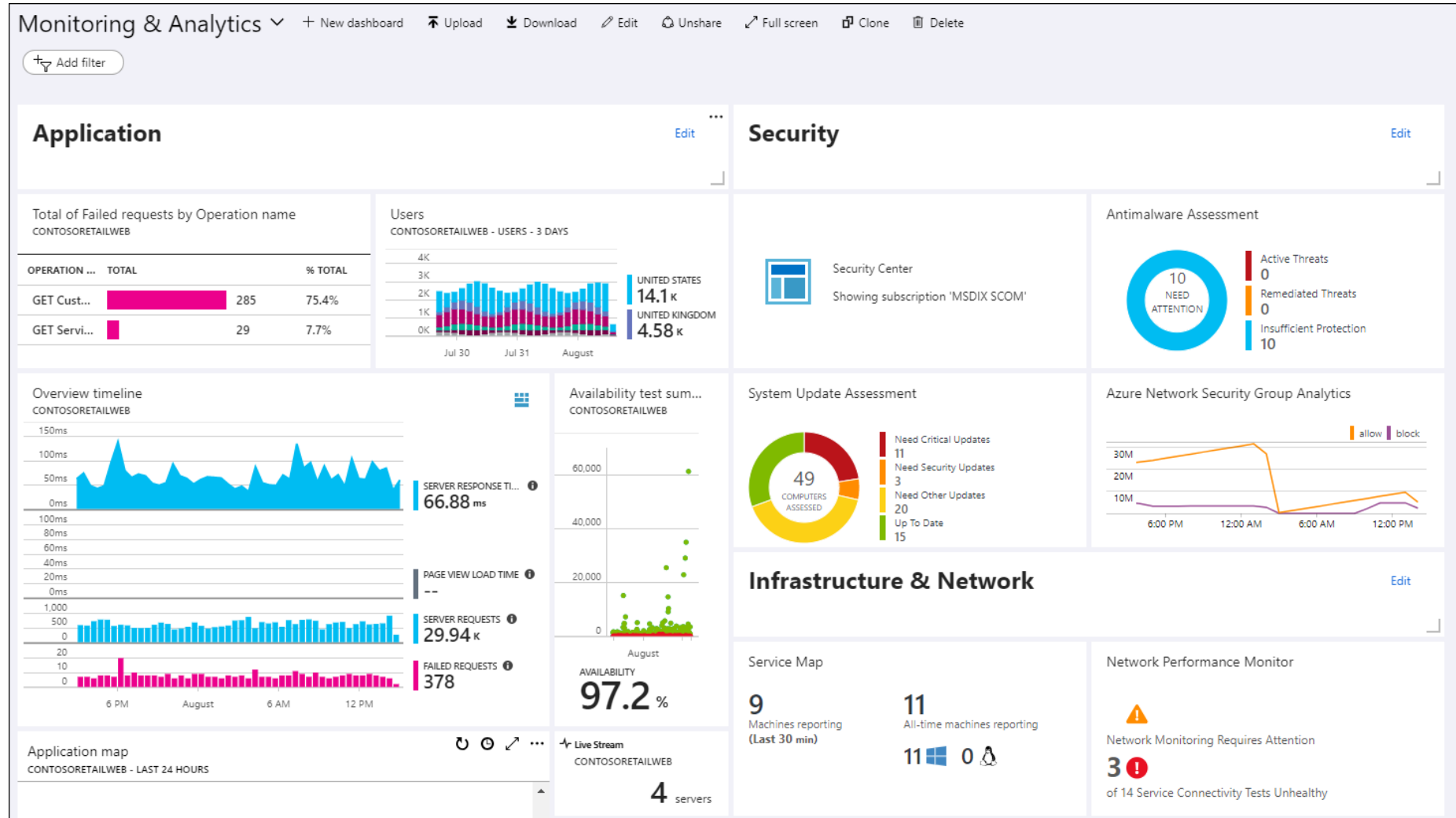
You can Visualize Telemetry data



Visualize Telemetry Data



Use Live Dashboards to get an overview of your resources and applications



Visualize Telemetry Data



Workbooks allow you to focus on specific aspects on your telemetry data

Performance Analysis

Subscriptions: Richards Dev Acct
Workspaces: CME05112022-LAW
Time Range: Last 4 hours

Top 100 Machines | Top 10 Machines

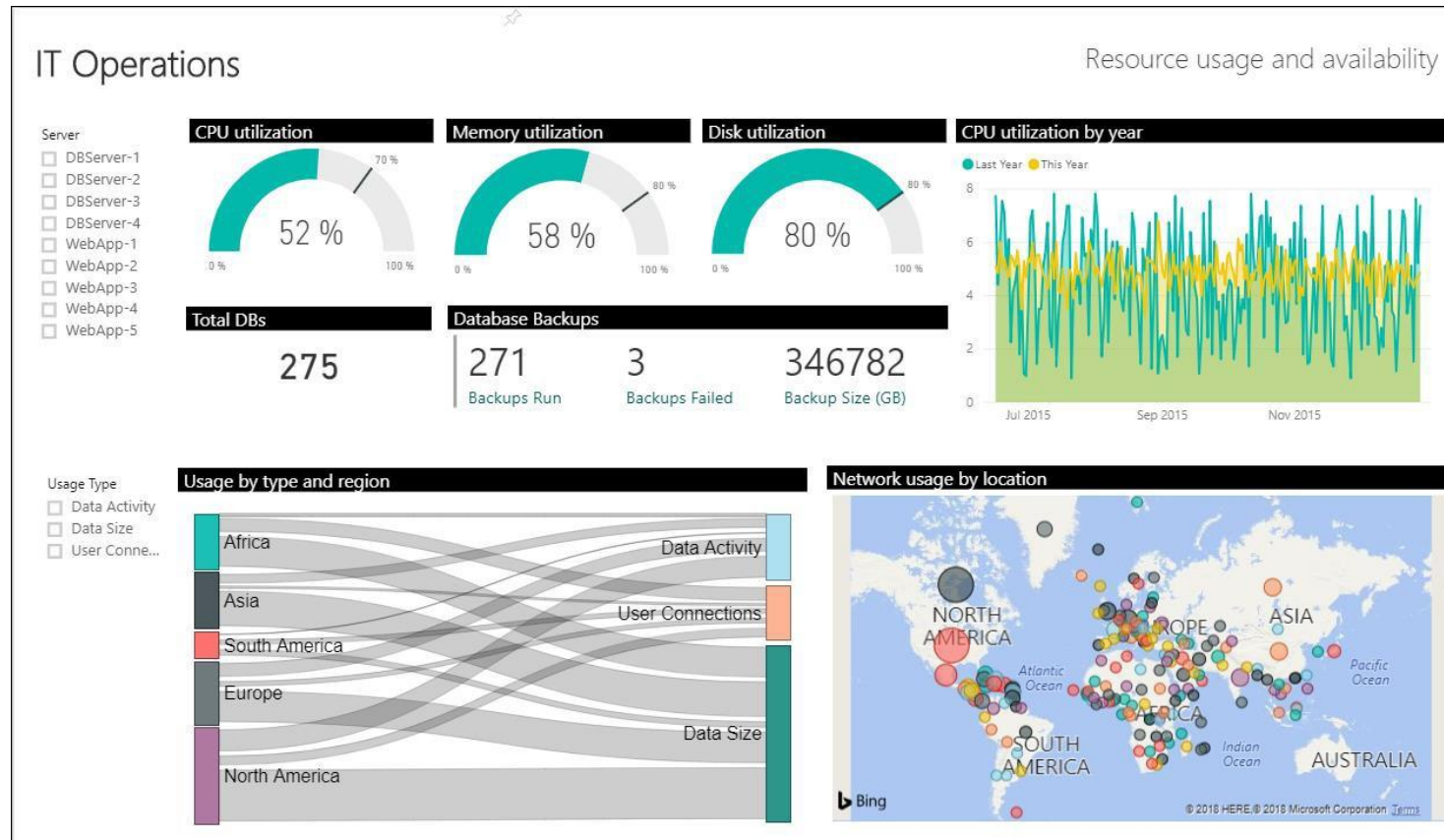
Computer Name Contain...
Counter: AvailableMB
Aggregators: 3 selected
TableTrend: Average

ResourceName	Type	Average	P95th	Max	Trend (Average)	Properti...
vm-without-ep	Azure Virtual Machine	1,432.254	1,438	1,446	<div></div>	Info
vm-with-ep	Azure Virtual Machine	1,103.254	1,110	1,119	<div></div>	Info
WIN-JEV2G3H5JKM	Non-Azure Virtual Machine	1,046.309	1,057	1,060	<div></div>	Info
azmon	Azure Virtual Machine	263.117	278.09	279.438	<div></div>	Info

Visualize Telemetry Data



Power BI is a business analytics service that provides interactive visualizations across a variety of data sources and make data available to others within/outside your organization.



Visualize Telemetry Data



Leverage external tools, like Grafana to visualize data outside of Azure

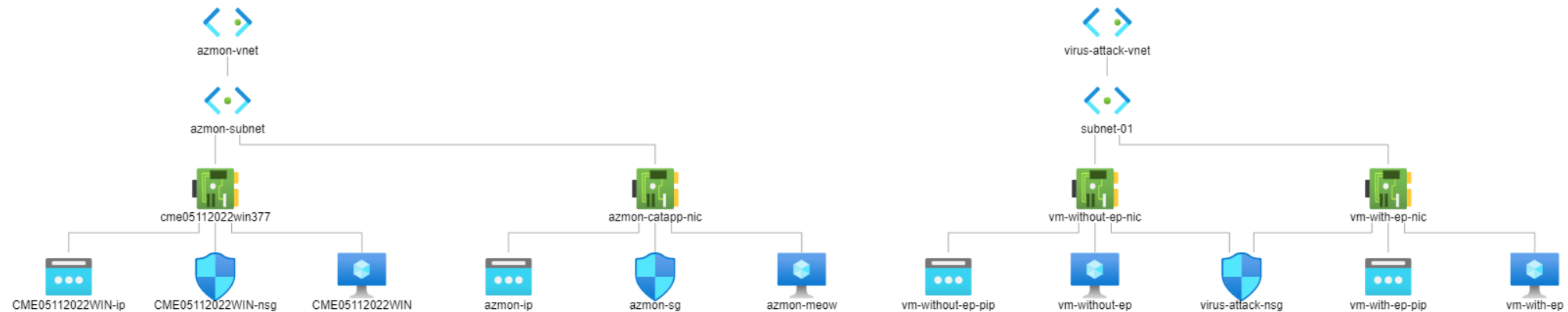




Demo Of Network Watcher

Network Watcher

Provides tools to monitor, diagnose, view metrics, and enable or disable logs for resources in an Azure virtual network.





Demo Of App Insights

Sending Telemetry to Application Insights

- Applications components use language specific SDKs to send telemetry to Application Insights
- An Instrumentation Key uniquely identifies an instance of Application Insights
- Currently, there are SDKs available for:
 - ASP.NET
 - ASP.NET Core
 - Javascript
 - Java
 - Node.js
 - Python

Sending Telemetry to Application Insights

Once the SDK is installed, the app is configured to send telemetry to Azure.

```
export class ApplicationInsightsService {
  private appInsights = new ApplicationInsights({
    config: {
      instrumentationKey: "82ec5787-acd3-4d75-a",
      enableAutoRouteTracking: true,
      enableCorsCorrelation: true,
    },
  });
}
```

Angular

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: main-configmap
data:
  APPINSIGHTS_INSTRUMENTATIONKEY: "2d5e41d1-a094-4
```

Microservice in Kubernetes

```
<script type="text/javascript">
!function(T,l,y){var S=T.location,u=
src: "https://az416426.vo.msecnd.net
//name: "appInsights", // Global SDK
//ld: 0, // Defines the load delay (
//useXhr: 1, // Use XHR instead of f
//crossOrigin: "anonymous", // When
cfg: { // Application Insights Confi
    instrumentationKey: "82ec5787-ac
    /* ...Other Configuration Option
}});
</script>
```

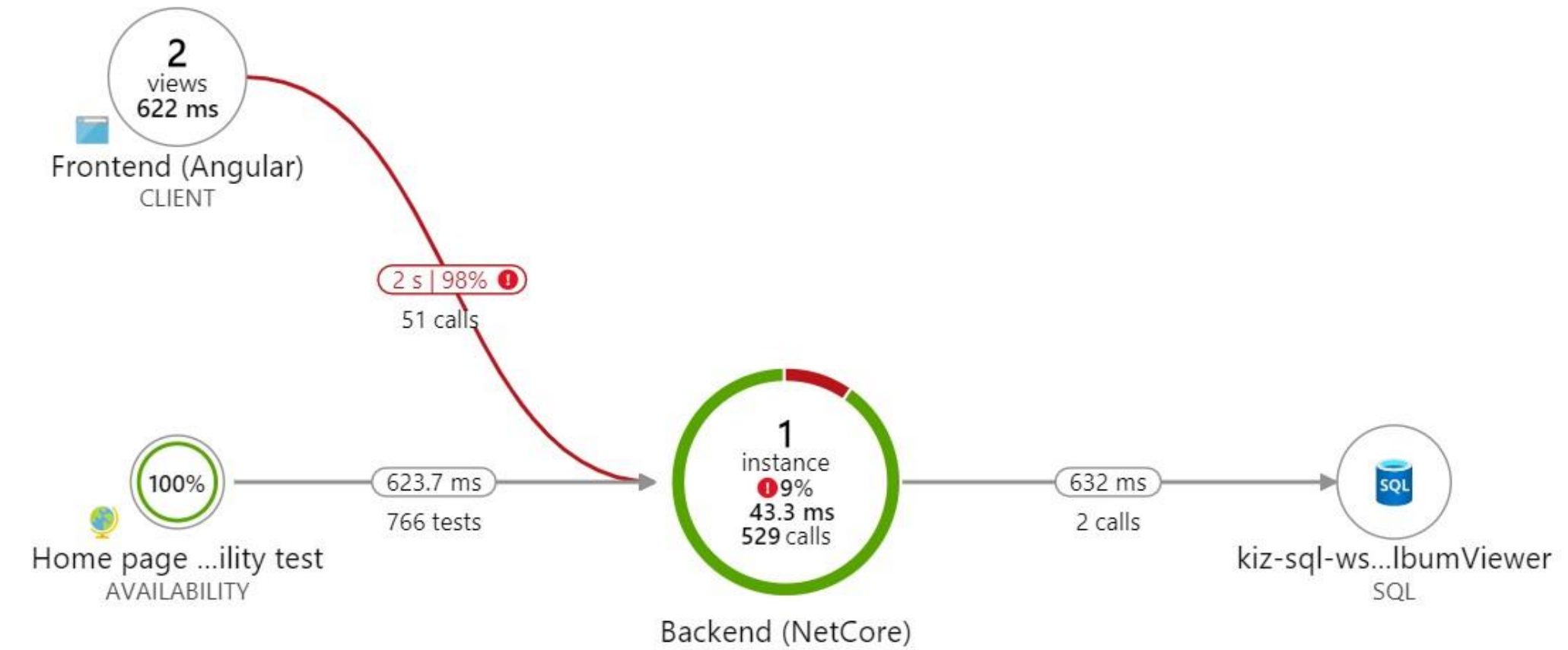
Javascript

```
var aiOptions = new ApplicationInsightsServiceOptions();
aiOptions.DeveloperMode = false;
aiOptions.EnableAdaptiveSampling = false;
aiOptions.InstrumentationKey = "82ec5787-acd3-4d75-a6e8-5
services.AddApplicationInsightsTelemetry(aiOptions);
```

.NET Core

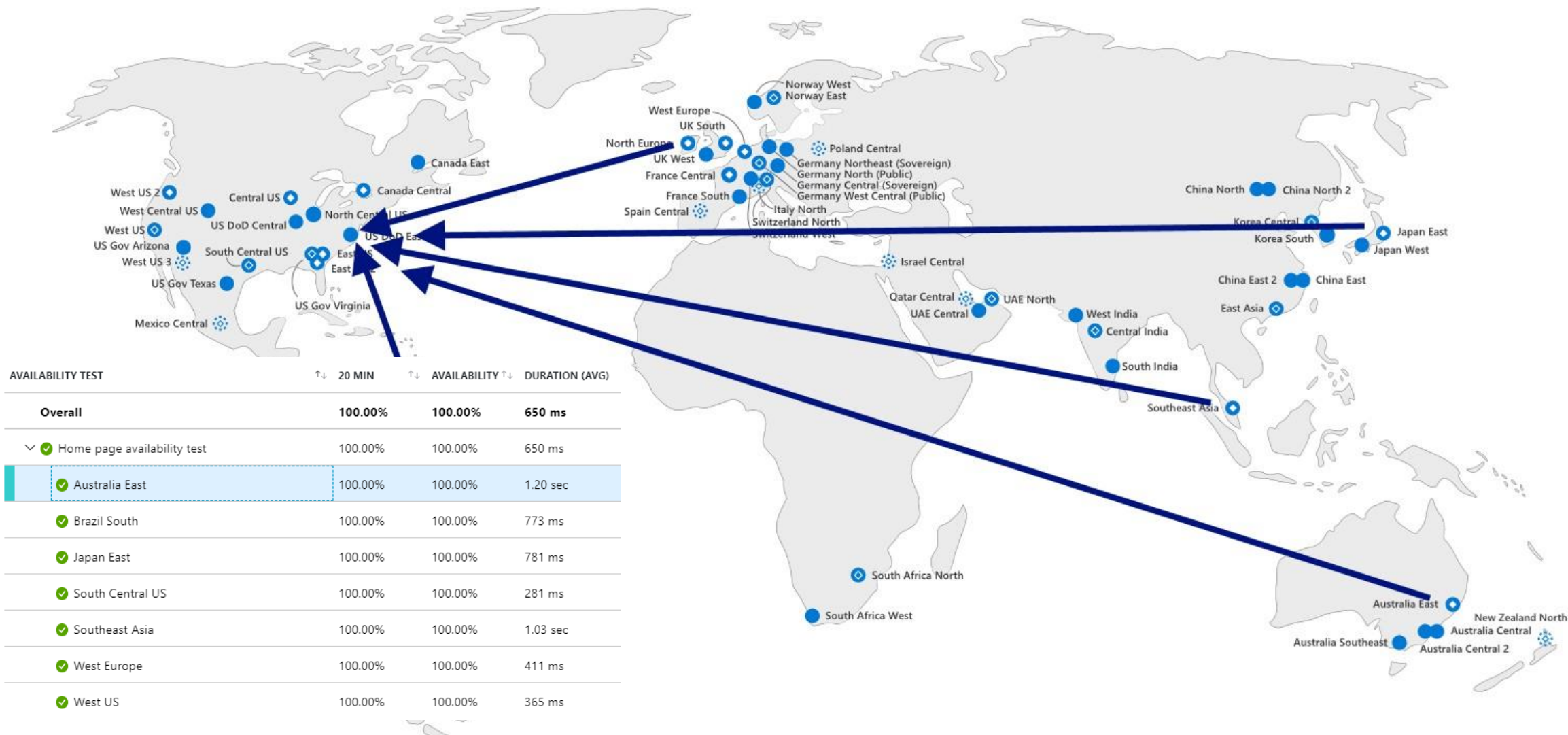
Application Performance Management Service

Application Insights allows you to see your applications as a connected map, rather than just a collection of disjointed resources.



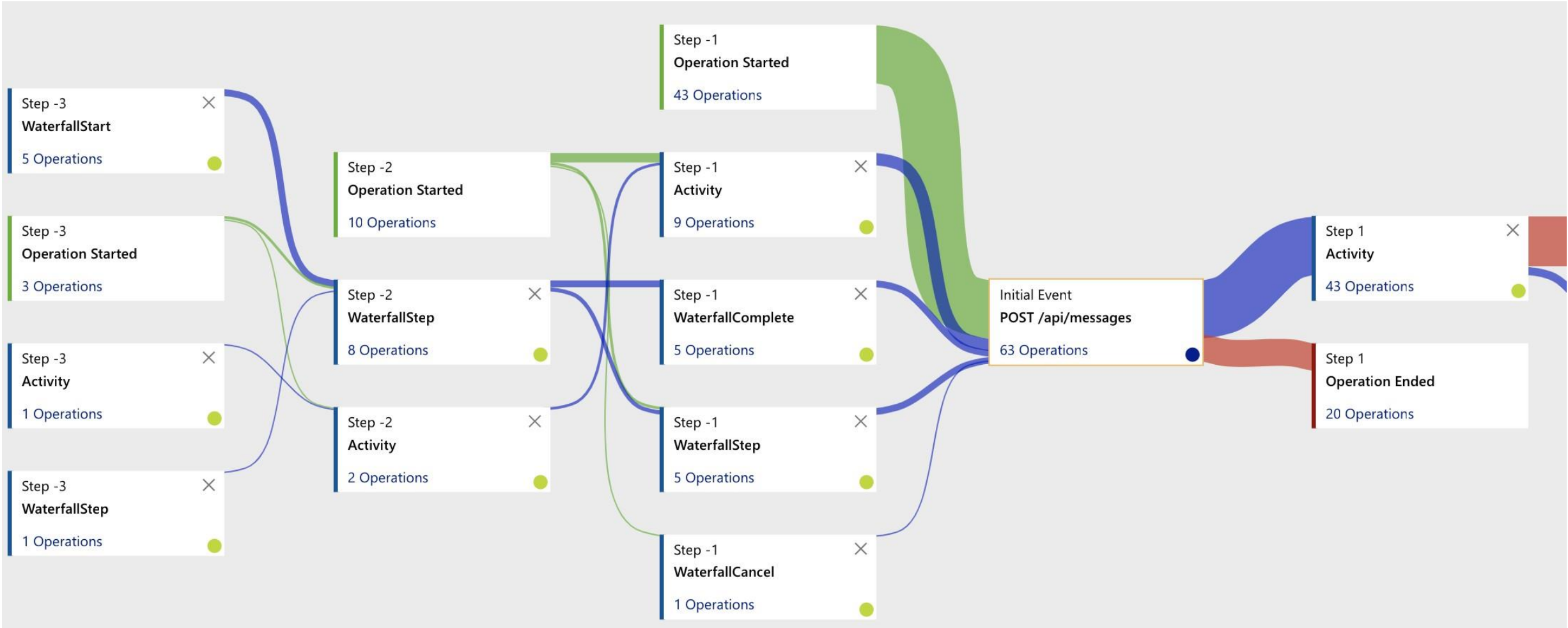
Global Availability Testing

Check your application's availability and latency from various locations



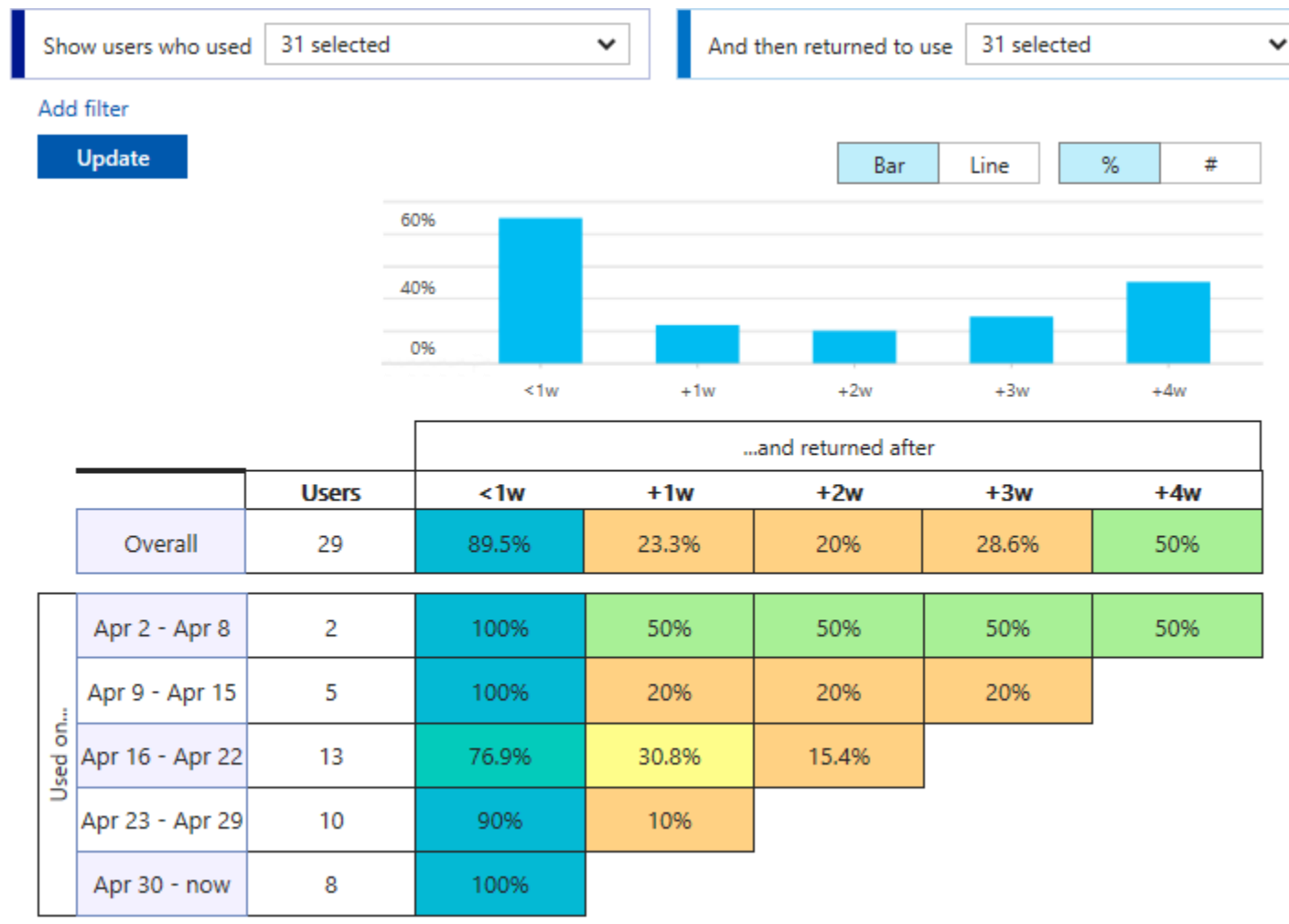
User Flow Analysis

Event tracking helps you understand how people use your application.



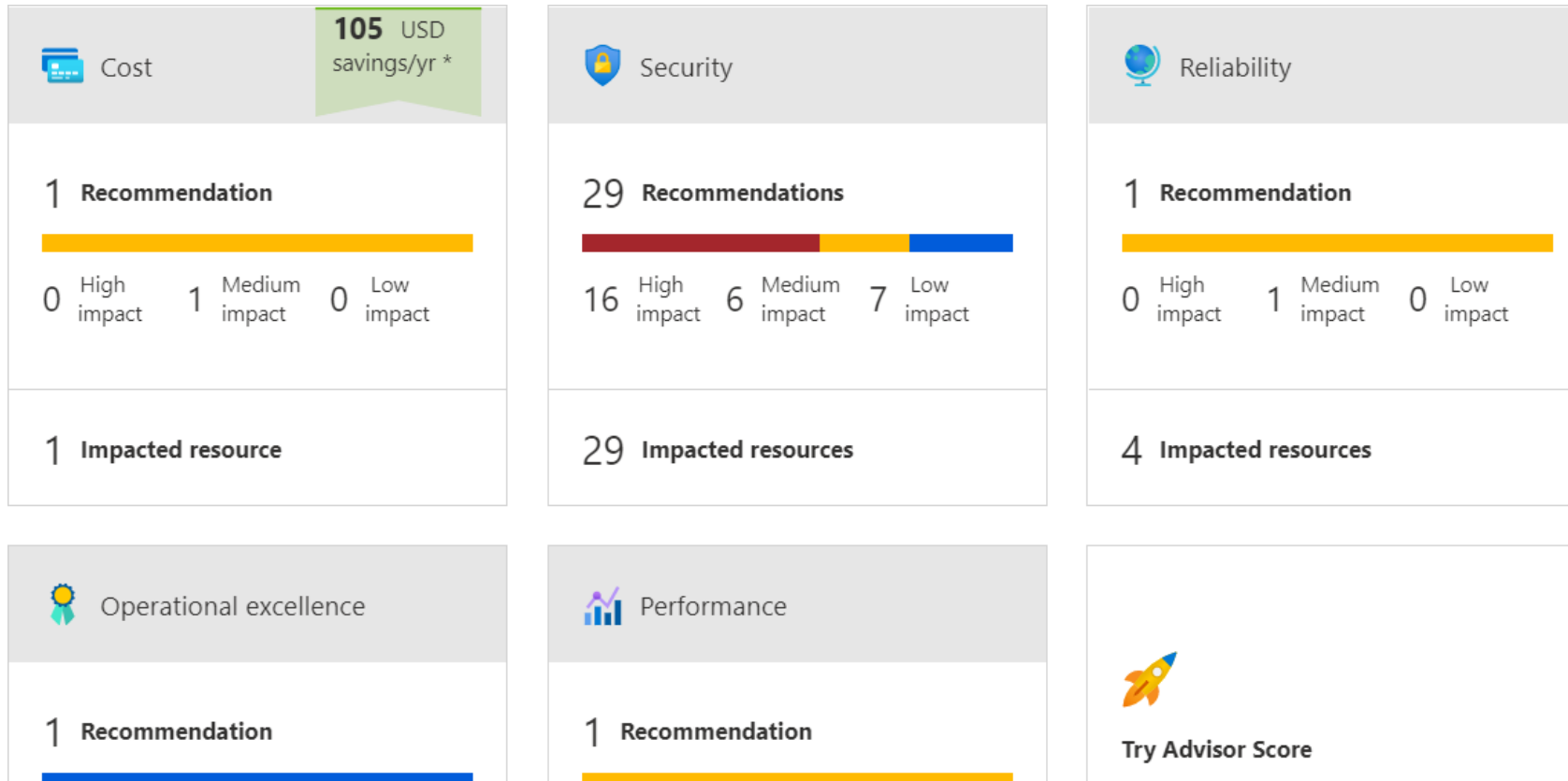
Retention Analysis

User and Session tracking help you gain insights how often users return.



Azure Advisor

Analyzes your configurations and usage telemetry and offers personalized, actionable recommendations to help you optimize your Azure resources for reliability, security, operational excellence, performance, and cost.



It's Look At The Cost



Service Health

Provides you with a customizable dashboard and alerts which track the health of your Azure services in the regions where you use them.

Issue Name	↑↓ Tracking ID	↑↓ Service(s)	↑↓ Region(s)	↑↓ Maintenance Start Time	↑↓
Planned Maintenance Notification fo...	TKCC-LP0	Azure Database for My...	East US	2020-09-28T21:00:00Z	
Azure SQL VM Service Maintenance	DMP9-DD0	Virtual Machines	Global	2020-09-24T00:00:00Z	

See 1 maintenance incident(s) outside of your filter.

Summary

Issue updates

Tracking ID

TKCC-LP0

Share the below link with your team or use it for reference in your problem management system

<https://app.azure.com/h/TKCC-LP0/ad713c>



Impacted service(s)

Azure Database for MySQL

Impacted region(s)

East US



Download the issue summary as a PDF.



Track this issue on mobile.



Quickly connect with our problem-solving experts.

[Tweet @AzureSupport](#)



Demo AKS Monitoring

Monitor the AKS Cluster

Use *Azure Monitor for Containers* to monitor the state of the nodes, controllers and pods in the cluster (using data in a Log Analytics Workspace)

3 items

NAME	STATUS	MAX %	MAX	CONTAINERS	UPTIME	CONTROLLER	TREND MAX % (1 BAR = 15M)
aks-nodepool1-241...	Ok	39%	2.68 GB	7	47 days	-	
Other Processes	-	0%	2.04 GB	-	-	-	
micro-image-r...	Ok	81%	208.37 MB	1	27 days	micro-image-res...	
micro-im...	Ok	81%	208.37 MB	1	27 days	micro-image-re...	
micro-messag...	Ok	37%	95.8 MB	1	47 days	micro-message-...	
micro-me...	Ok	37%	95.8 MB	1	47 days	micro-message-...	
micro-rabbit-6...	Ok	30%	154.56 MB	1	47 days	micro-rabbit-64...	
micro-rab...	Ok	30%	154.56 MB	1	47 days	micro-rabbit-64...	
omsagent-fk9xv	Ok	26%	154.96 MB	1	8 days	omsagent	
omsagent	Ok	26%	154.96 MB	1	8 days	omsagent	

Monitor the Microservices Application

Use *Application Insights* to monitor the state of the application(s) and services running inside the cluster

