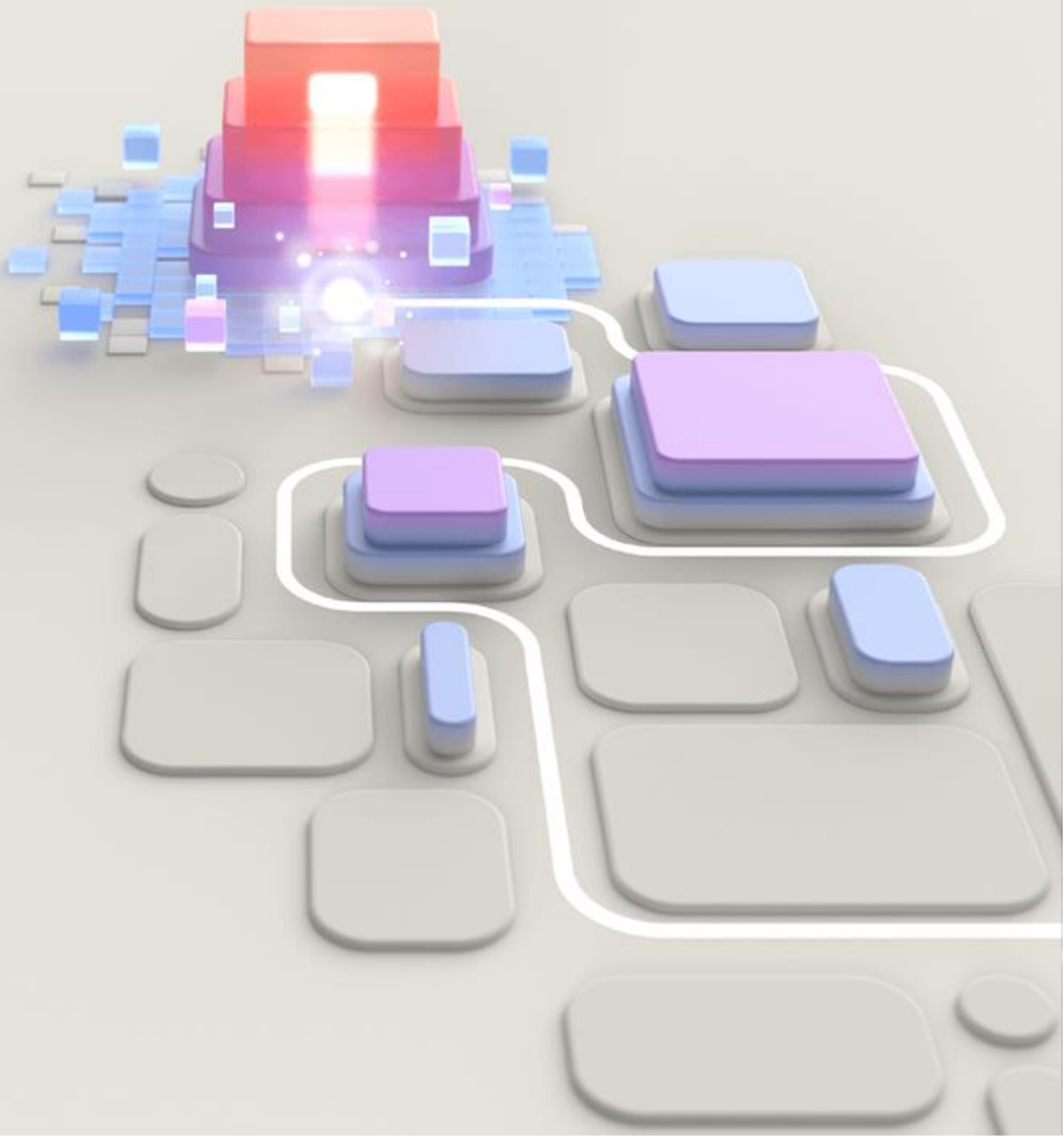
Microsoft



Azure Monitoring

Learning Objectives - Administer Monitoring

- Configure Azure Monitor
- Improve incident response with alerting on Azure
- Configure Log Analytics
- Lab 11 – Implement Monitoring

Configure Azure Monitor

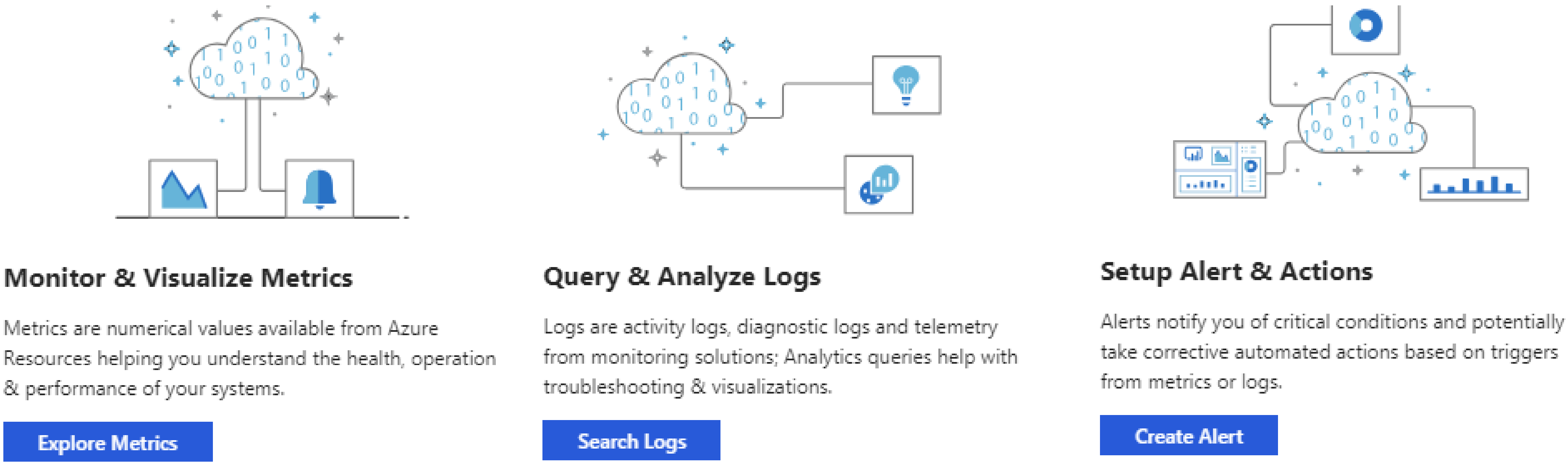
Learning Objectives - Configure Azure Monitor

- Describe Azure Monitor Key Capabilities
- Describe Azure Monitor Components
- Define Metrics and Logs
- Identify Data Types
- Describe Activity Log Events
- Learning Recap

Monitor and maintain Azure resources (10–15%): Monitor resources in Azure

- Interpret metrics in Azure Monitor
- Configure log settings in Azure Monitor
- Configure and interpret monitoring of virtual machines, storage accounts, and networks by using Azure Monitor Insights

Describe Azure Monitor Key Capabilities



Monitor & Visualize Metrics

Metrics are numerical values available from Azure Resources helping you understand the health, operation & performance of your systems.

Query & Analyze Logs

Logs are activity logs, diagnostic logs and telemetry from monitoring solutions; Analytics queries help with troubleshooting & visualizations.

Setup Alert & Actions

Alerts notify you of critical conditions and potentially take corrective automated actions based on triggers from metrics or logs.

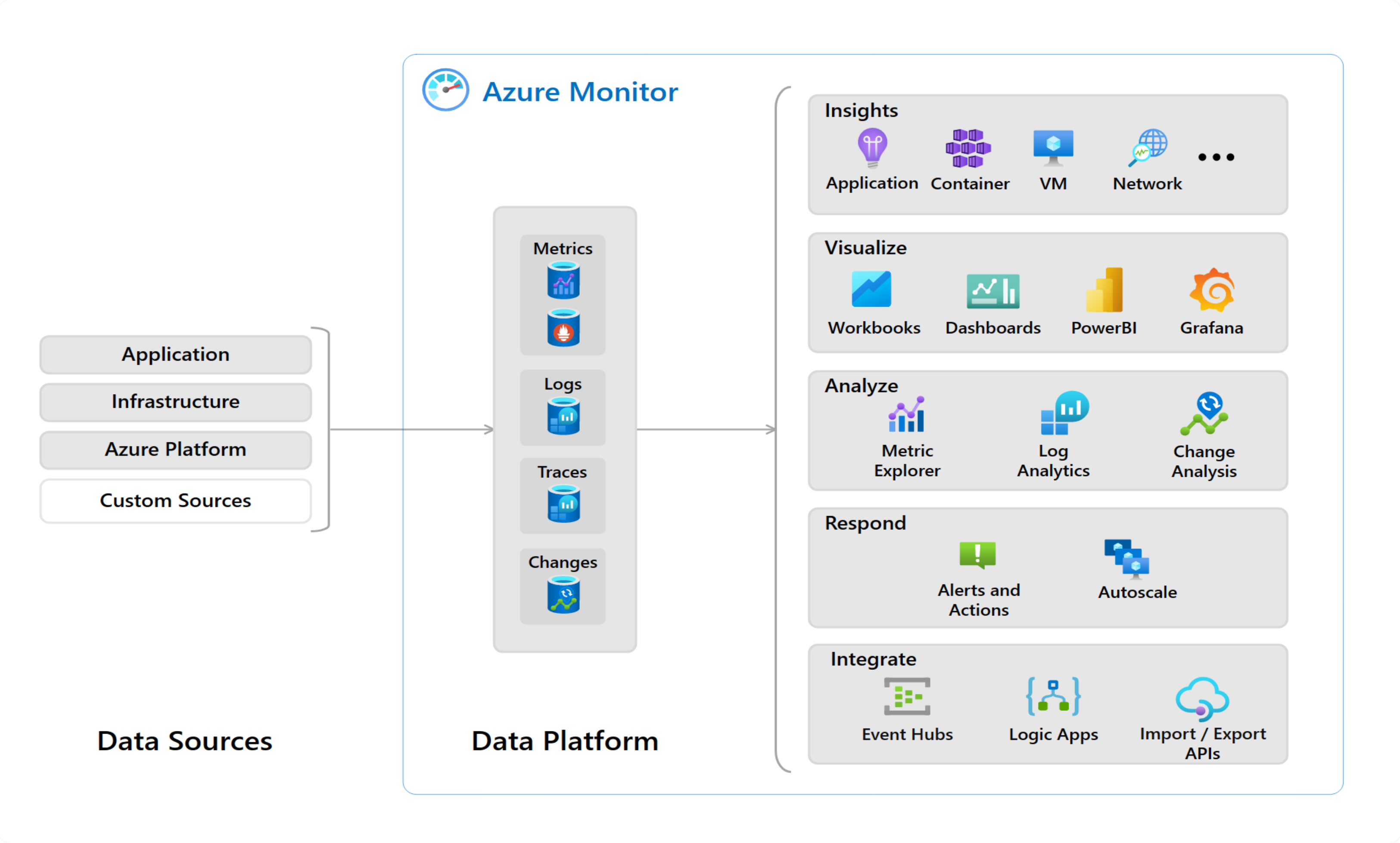
Core monitoring for Azure services

Collects metrics, activity logs, and diagnostic logs

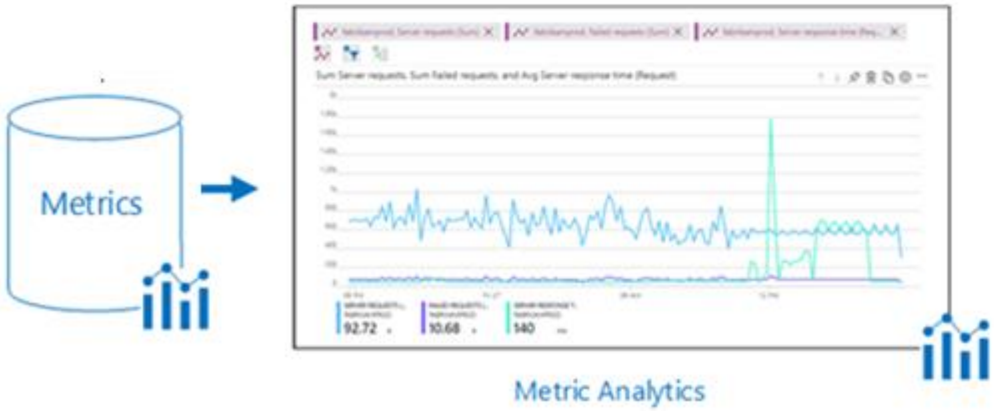
Use for time critical alerts and notifications

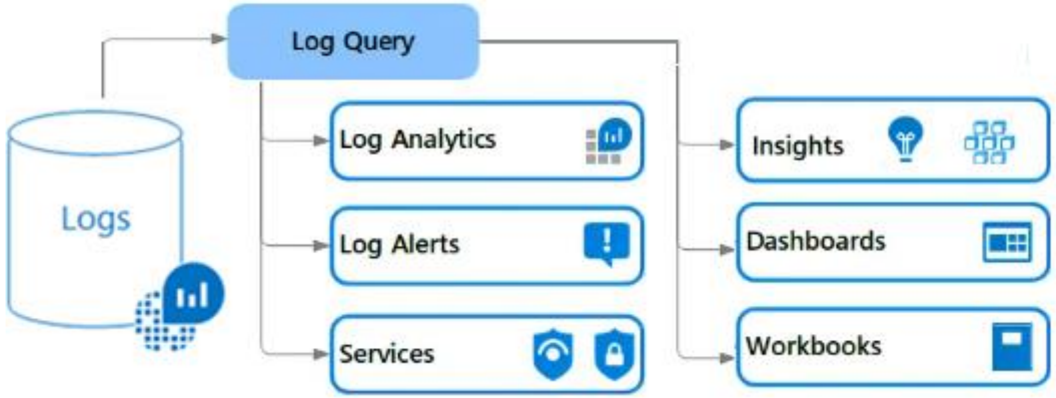
Understand Azure Monitor Components

- Application monitoring data
- Guest OS monitoring
- Azure resource monitoring
- Azure subscription monitoring
- Azure tenant monitoring



Define Metrics and Logs





- Metrics are numerical values that describe some aspect of a system at a point in time
- They are lightweight and capable of supporting near real-time scenarios

- Logs contain different kinds of data organized into records with different sets of properties for each type
- Telemetry (events, traces) and performance data can be combined for analysis

Describe Activity Log Events

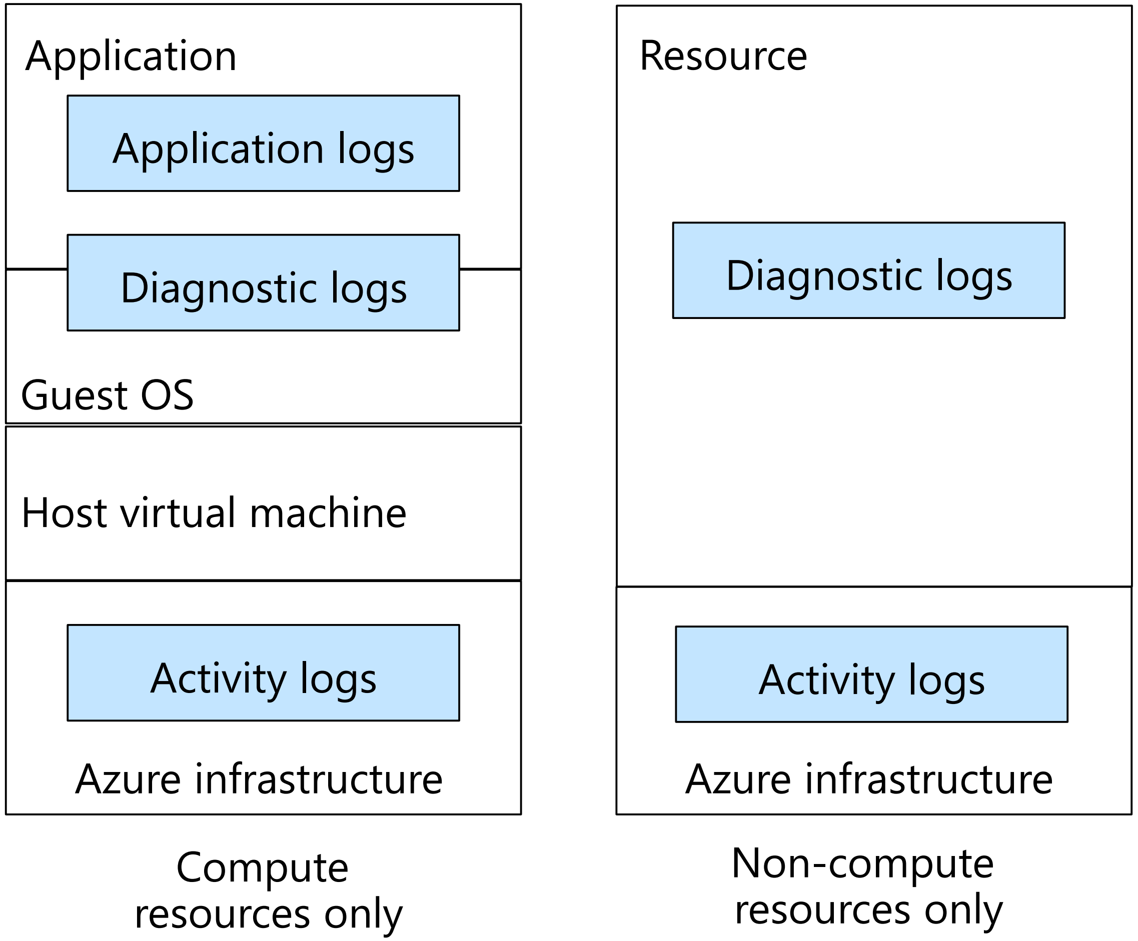
Send data to Log Analytics for advanced search and alerts

Query or manage events in the Portal, PowerShell, CLI, and REST API

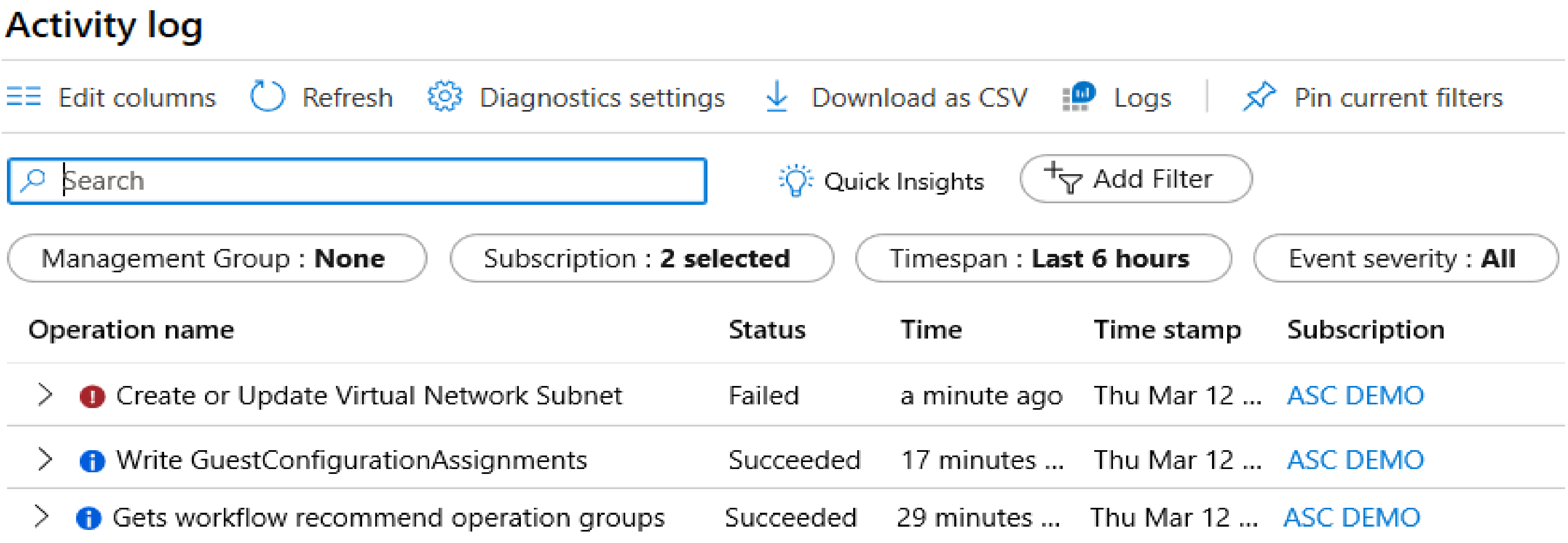
Stream information to Event Hub

Archive data to a storage account

Analyze data with Power BI



Query the Activity Log



Activity log

Management Group : **None**
Subscription : **2 selected**
Timespan : **Last 6 hours**
Event severity : **All**

Operation name	Status	Time	Time stamp	Subscription
Create or Update Virtual Network Subnet	Failed	a minute ago	Thu Mar 12 ...	ASC DEMO
Write GuestConfigurationAssignments	Succeeded	17 minutes ...	Thu Mar 12 ...	ASC DEMO
Gets workflow recommend operation groups	Succeeded	29 minutes ...	Thu Mar 12 ...	ASC DEMO

Filter by Management group, Subscription, Timespan, and Event Severity

Add a filter, like Event Category (Security, Recommendations, Alerts)

Pin current filters and download as CSV

Learning Recap – Configure Azure Monitor

Check your knowledge questions and additional study

- Analyze your Azure infrastructure by using Azure Monitor logs (sandbox)
- Monitor your Azure virtual machines with Azure Monitor
- Monitor, diagnose, and troubleshoot your Azure storage (sandbox)

A *sandbox* indicates an additional hands-on exercise.

Improve incident response with alerting on Azure

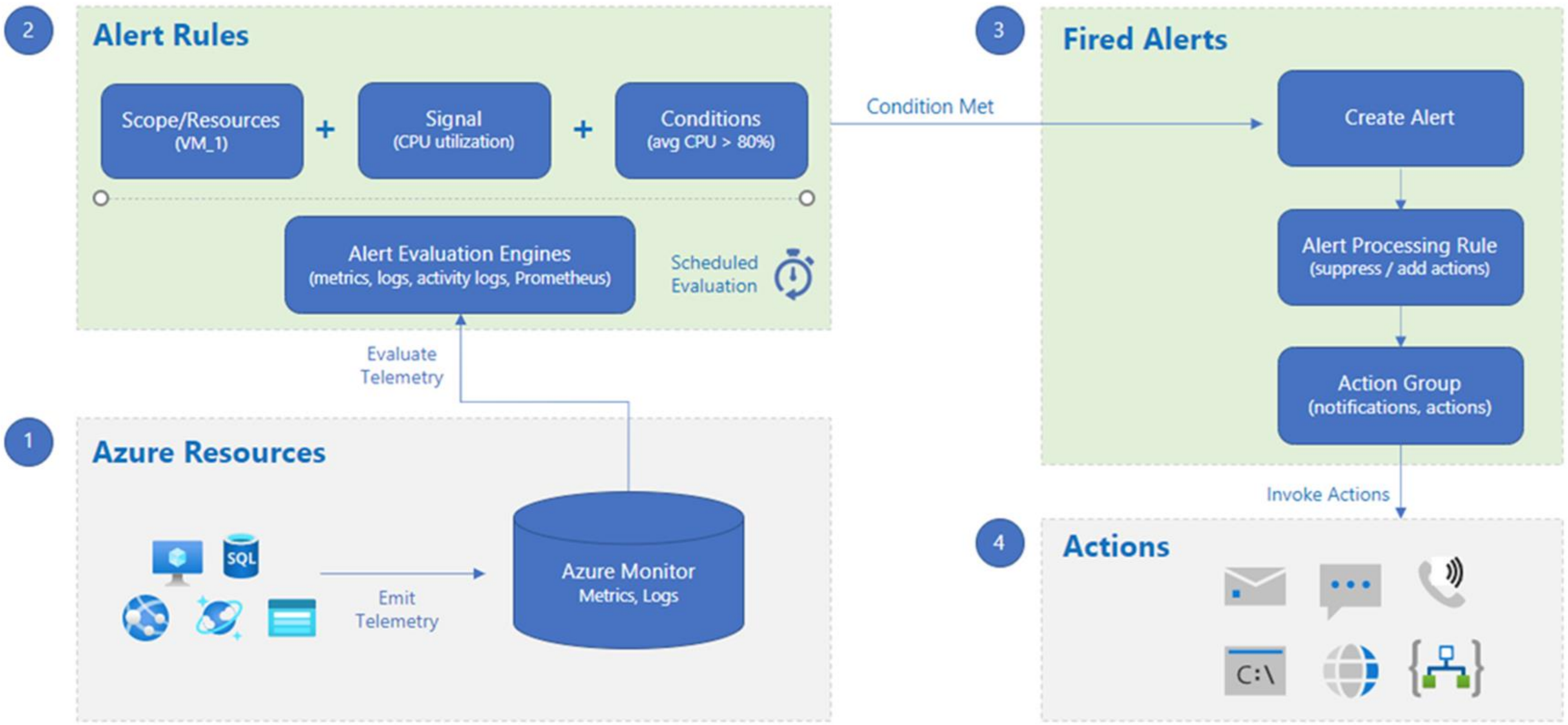
Improve incident response with alerting on Azure - Overview

- Manage Azure Monitor Alerts
- Create Alert Rules
- Create Action Groups
- Demonstration – Alerts
- Learning Recap

Monitor and maintain Azure resources (10–15%): Monitor resources in Azure

- Set up alert rules, action groups, and alert processing rules in Azure Monitor

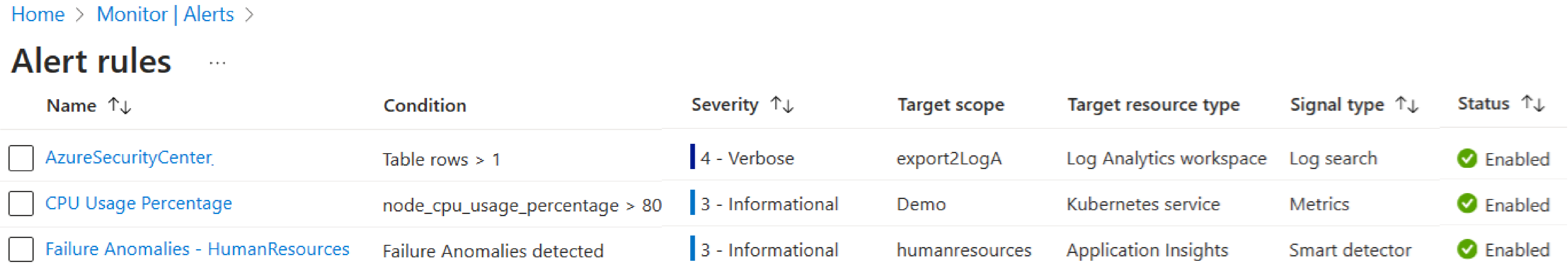
Manage Azure Monitor Alerts



Demonstration – Alerts

- Create and configure an alert rule
- Review alerts

Create Alert Rules



Home > Monitor | Alerts >

Alert rules ...

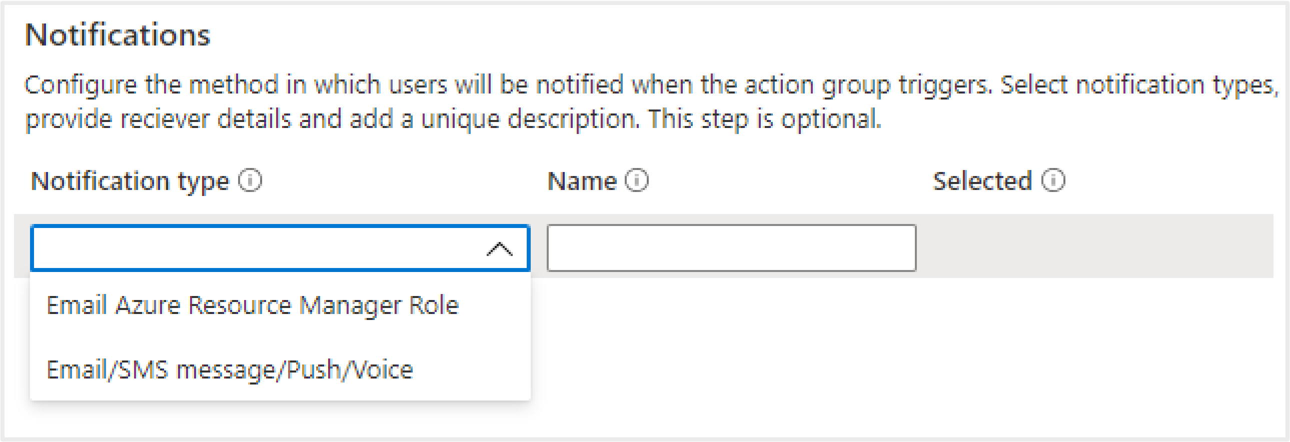
	Name ↑↓	Condition	Severity ↑↓	Target scope	Target resource type	Signal type ↑↓	Status ↑↓
□	AzureSecurityCenter	Table rows > 1	4 - Verbose	export2LogA	Log Analytics workspace	Log search	✓ Enabled
□	CPU Usage Percentage	node_cpu_usage_percentage > 80	3 - Informational	Demo	Kubernetes service	Metrics	✓ Enabled
□	Failure Anomalies - HumanResources	Failure Anomalies detected	3 - Informational	humanresources	Application Insights	Smart detector	✓ Enabled

- Alert rules combine the resources to be monitored, the signal or data from the resource, and the conditions.
- You can enable recommended out-of-the-box alert rules in the Azure portal.

Create Action Groups

Defines a set of notifications and/or actions when an alert is triggered

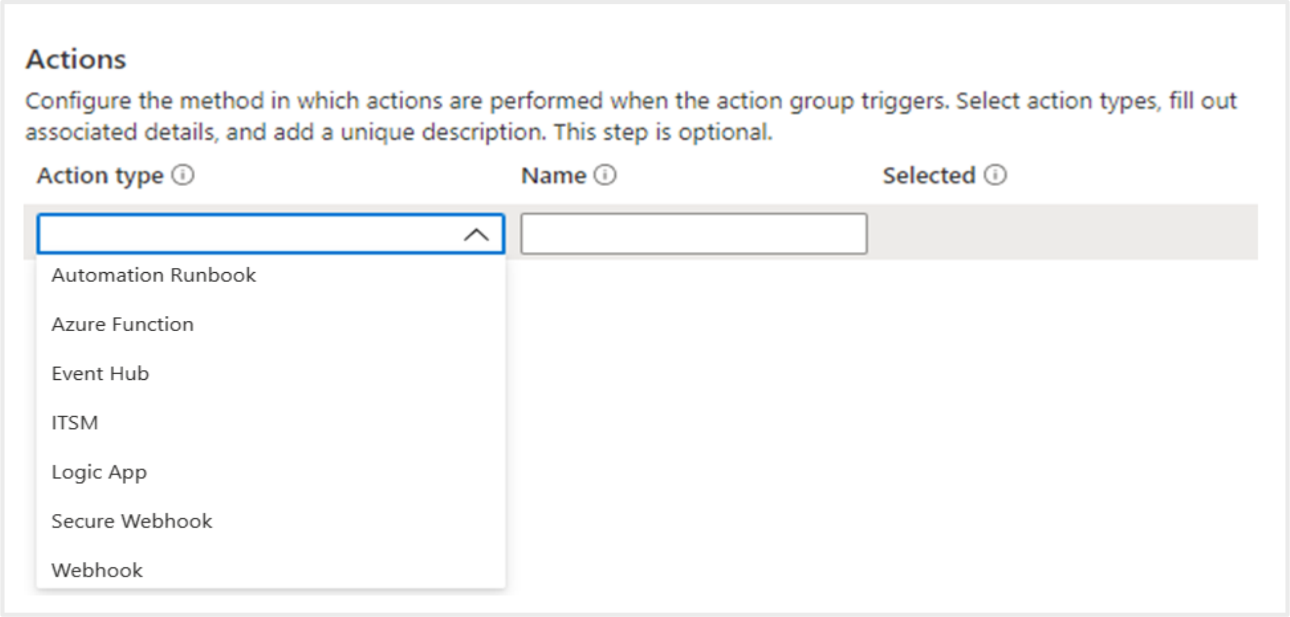
You can add up to five action groups to an alert rule. Multiple alert rules can use the same action group.



Notifications

Configure the method in which users will be notified when the action group triggers. Select notification types, provide reciever details and add a unique description. This step is optional.

Notification type ⓘ
Name ⓘ
Selected ⓘ
Email Azure Resource Manager Role
Email/SMS message/Push/Voice



Actions

Configure the method in which actions are performed when the action group triggers. Select action types, fill out associated details, and add a unique description. This step is optional.

Learning Recap – Configure Azure Alerts

Check your knowledge questions and additional study

- Improve incident response with alerting on Azure (sandbox)
- Configure for alerts and detections in Microsoft Defender for Endpoint
- Remediate security alerts using Microsoft Defender for Cloud

A *sandbox* indicates an additional hands-on exercise.

Configure Log Analytics

Learning Objectives - Configure Log Analytics

- Determine Log Analytics Uses
- Create a Workspace
- Query Log Analytics Data
- Structure Log Analytics Queries
- Demonstration – Log Analytics
- Learning Recap

Monitor and maintain Azure resources (10–15%): Monitor resources in Azure

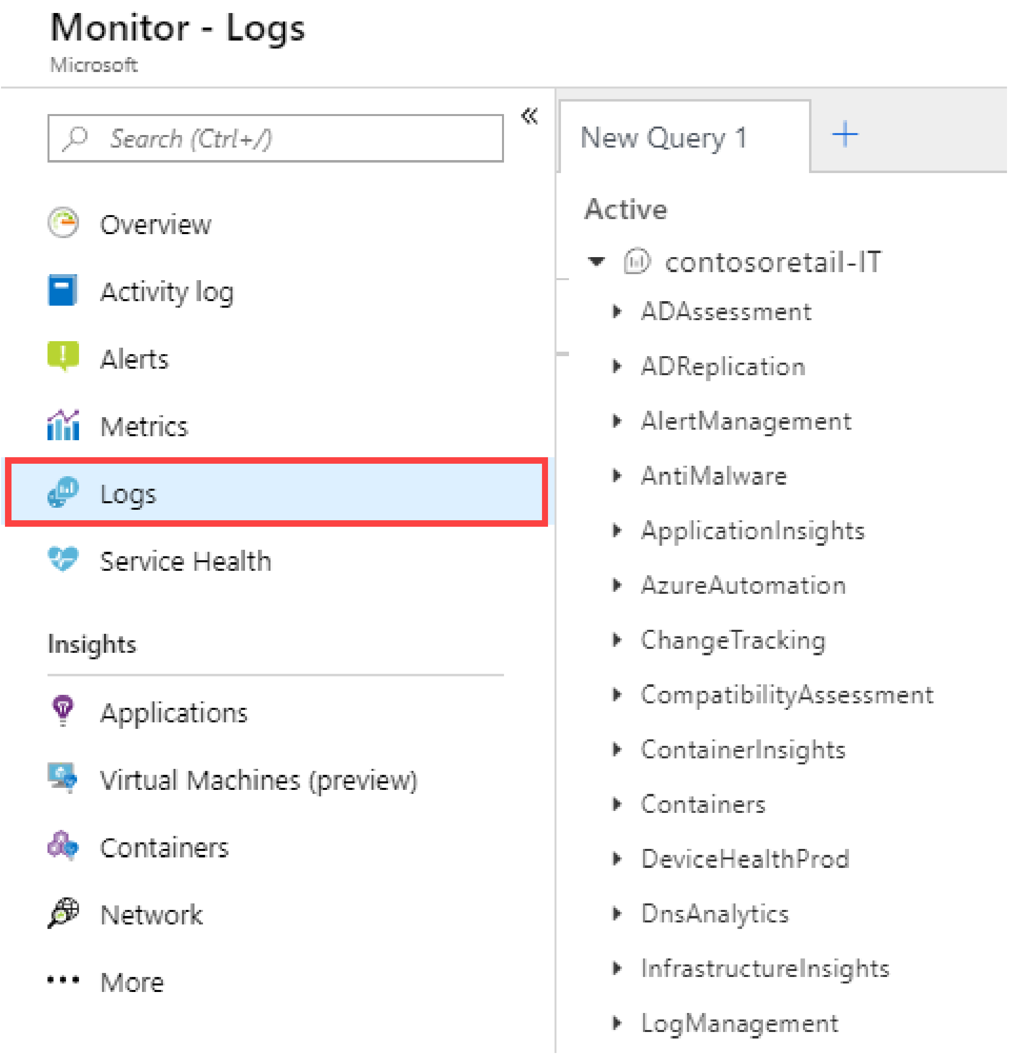
- Query and analyze logs in Azure Monitor

Determine Log Analytics Uses

A service that helps you collect and analyze data generated by resources in your cloud and on-premises environments

Write log queries and interactively analyze their results

Examples include assessing system updates and troubleshooting operational incidents


Monitor - Logs
Microsoft

Demonstration – Log Analytics

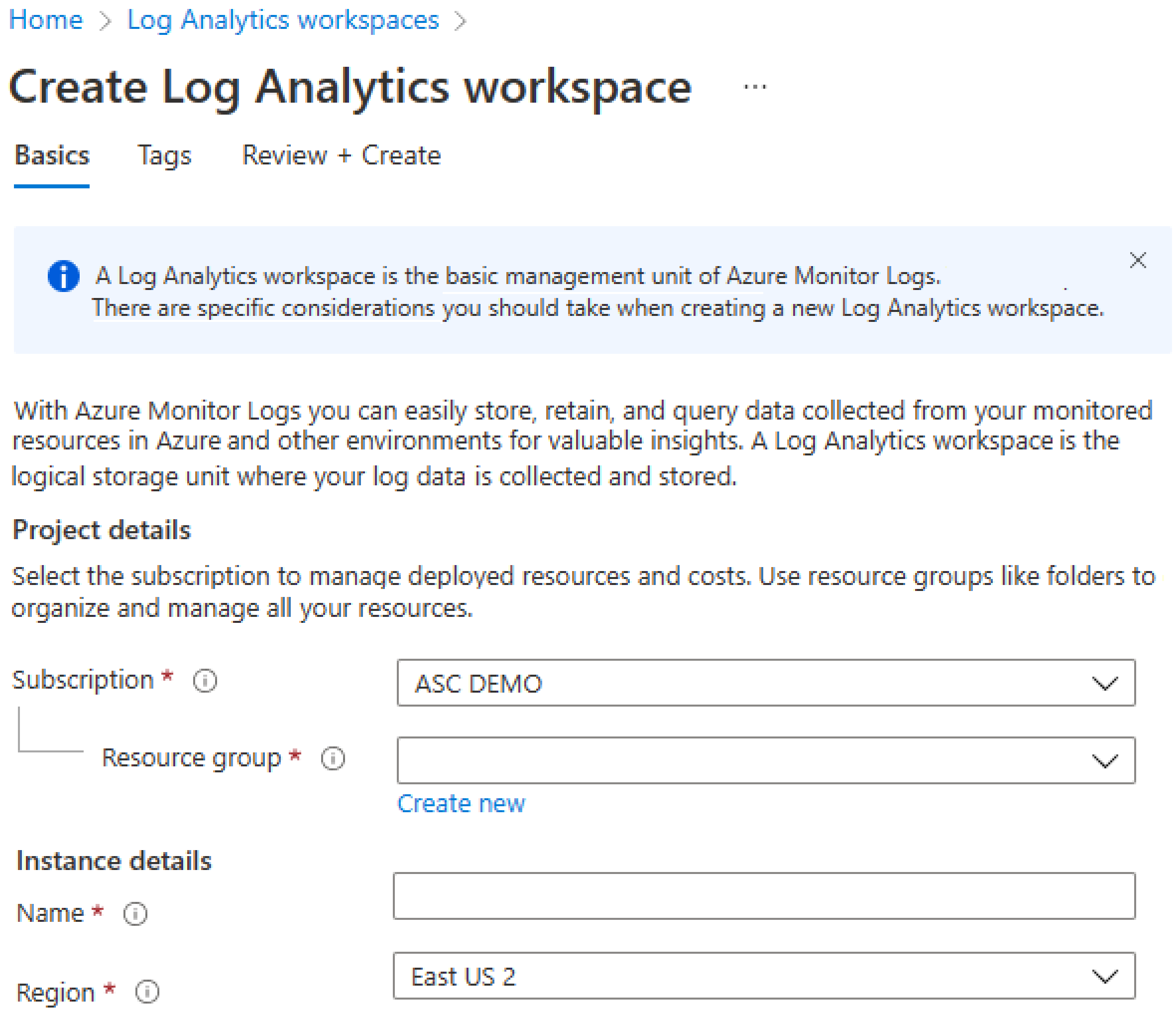
- Review built-in log queries
- Review the KQL language

Create a Workspace

A workspace is an Azure resource and is a container where data is collected, aggregated, analyzed, and presented

You can have multiple workspaces per Azure subscription, and you can have access to more than one workspace

A workspace provides a geographic location, data isolation, and scope



Create Log Analytics workspace ...

A Log Analytics workspace is the basic management unit of Azure Monitor Logs.
There are specific considerations you should take when creating a new Log Analytics workspace.

With Azure Monitor Logs you can easily store, retain, and query data collected from your monitored resources in Azure and other environments for valuable insights. A Log Analytics workspace is the logical storage unit where your log data is collected and stored.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *	ASC DEMO
Resource group *	
	Create new

Instance details

Name *	
Region *	East US 2

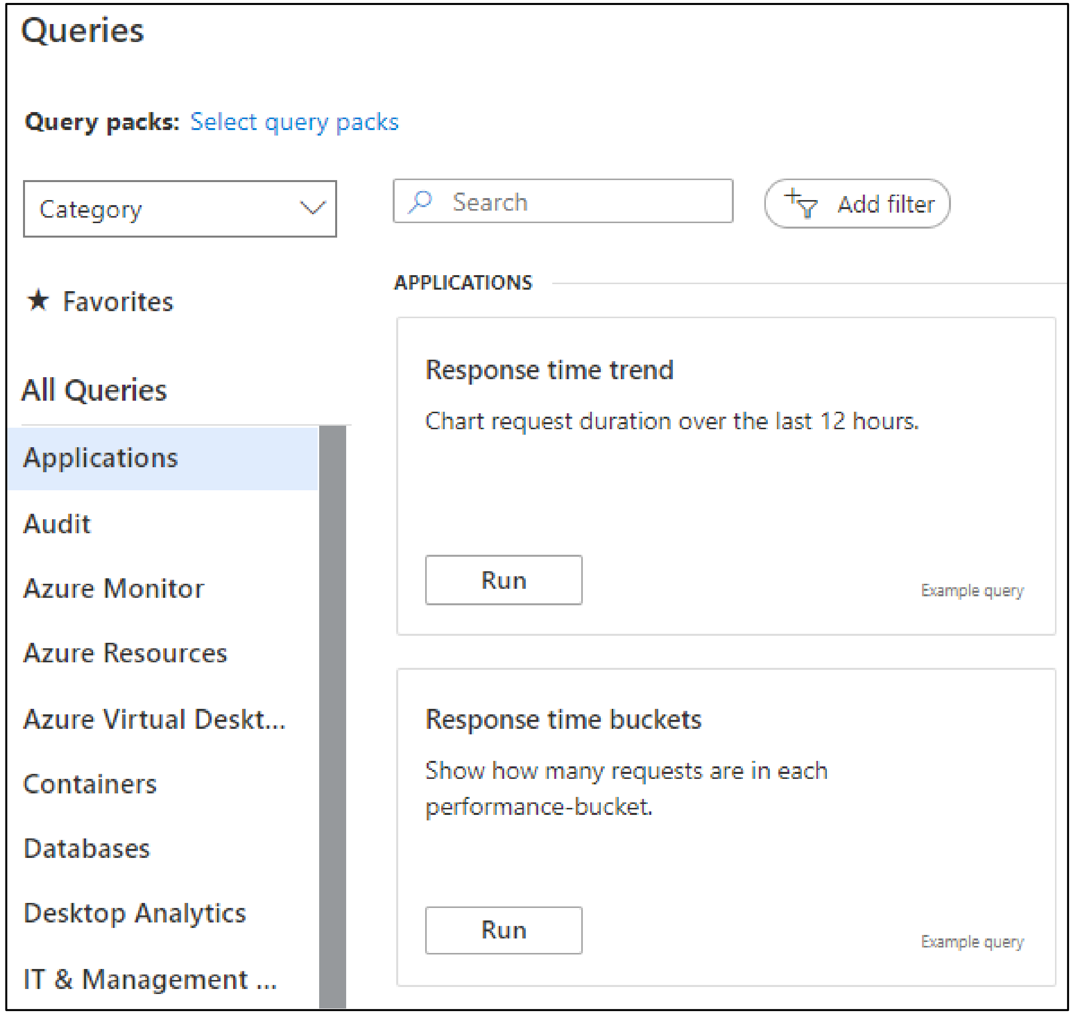
Query Log Analytics Data

Common queries and a query language (KQL) for custom searches

Quickly retrieve and consolidate data in the repository

Save or have log searches run automatically to create an alert

Export the data to Power BI or Excel



Queries

Query packs: Select query packs

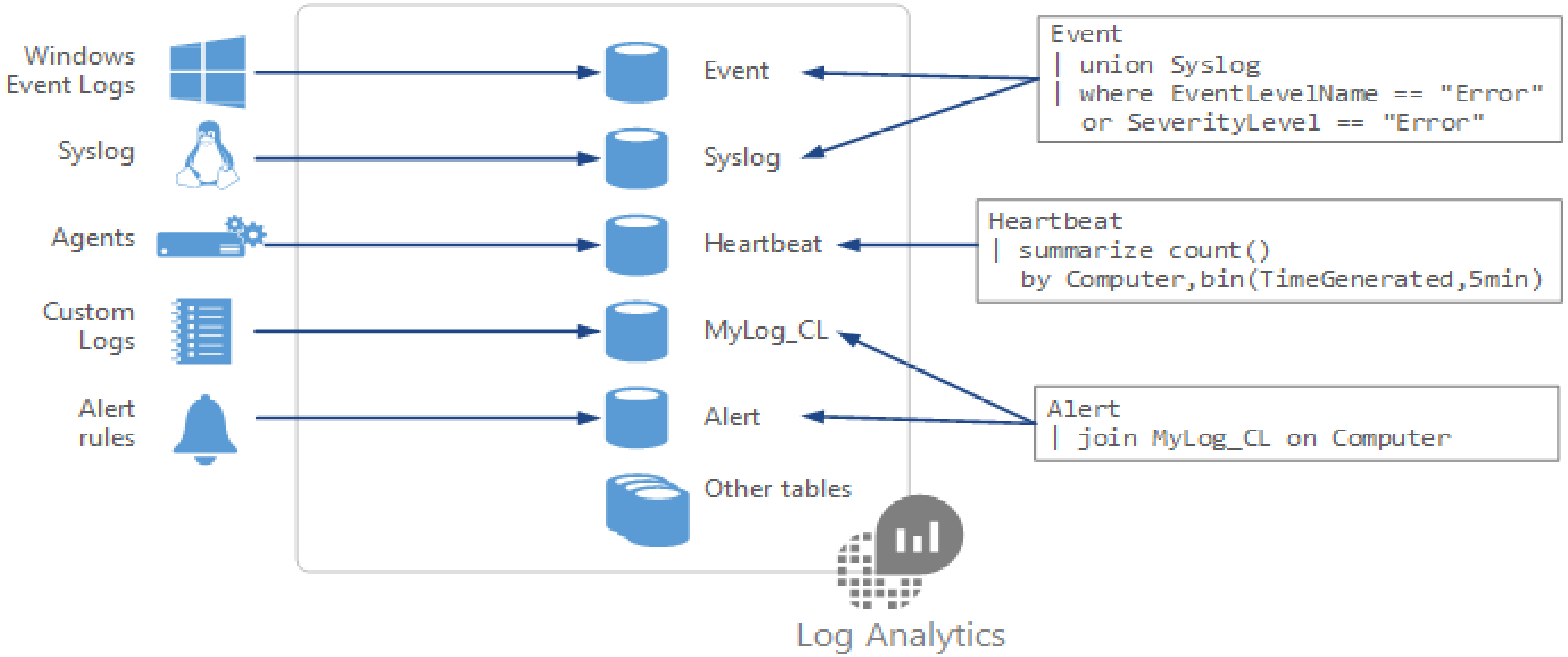
Response time trend

Chart request duration over the last 12 hours.

Response time buckets

Show how many requests are in each performance-bucket.

Structure Log Analytics Queries



```
Event
| union Syslog
| where EventLevelName == "Error"
  or SeverityLevel == "Error"
```

```
Heartbeat
| summarize count()
  by Computer,bin(TimeGenerated,5min)
```

```
Alert
| join MyLog_CL on Computer
```

```
Event
| where (EventLevelName == "Error")
| where (TimeGenerated > ago(1days))
| summarize ErrorCount = count() by Computer
| top 10 by ErrorCount desc
```

Learning Recap – Configure Log Analytics

Check your knowledge questions and additional study

- Write your first query with Kusto Query Language

Lab – Implement Monitoring

Lab 11 – Implement monitoring

In this lab, you learn about Azure Monitor.

You learn to create an alert to be sent to an action group.

You trigger the alert and check the activity log.

Job Skills

Task 1: Use a template to provision an infrastructure.

Task 2: Create an alert.

Task 3: Configure action group notifications.

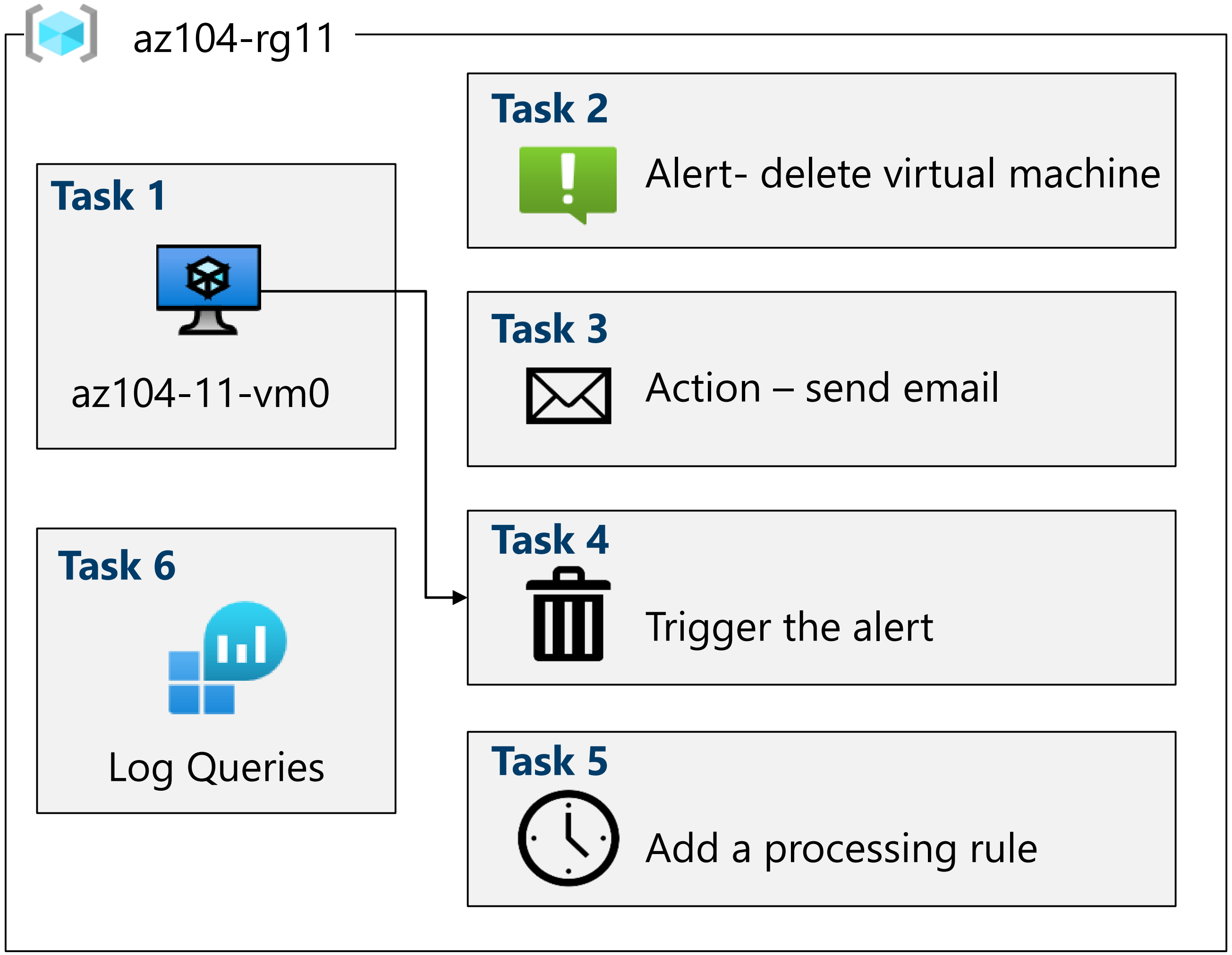
Task 4: Trigger an alert and confirm it is working.

Task 5: Configure an alert rule.

Task 6: Use Azure Monitor log queries.

Next slide for an architecture diagram →

Lab 11 – Architecture diagram



az104-rg11

Task 1

az104-11-vm0

Task 2

Alert- delete virtual machine

Task 3

Action – send email

Task 4

Trigger the alert

Task 5

Add a processing rule

Task 6

Log Queries

End of presentation