Serverless Azure Automation Part 2

Azure Alerts & Logic Apps

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Hello!

Thank you for joining us today

Speaker: Massimo Bonanni

- Trainer, Speaker, Writer……Geek……LEGO addicted!!!
- Based in Rome, Italy
- 20+ years of experience in IT
- 100+ sessions in technical conferences
- Former Microsoft MVP (Development tools, Windows development)
- Community Guy!!!!

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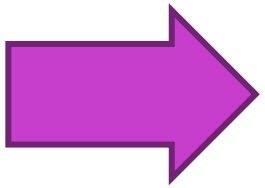
"**Automation** is the technique of making an apparatus, a process, or a system operate **automatically**."

ISA (International Society of Automation)

Automation components

React

- This component "observes" a resource or condition and reports its change.
- The two main reaction technologies in Azure are **events** and **alerts**
- Even a **timer** can be considered a react mechanism



Compute

- This component actually performs the automation task.
- The technologies used must be able to interact natively with the reaction component.
- The two Serverless technologies in Azure that integrate with events and alerts are **Azure Functions** and **Azure Logic App**.

Why Serverless?

Event-Driven Automation

Serverless platforms provide an event-driven compute platform that allows you to write code to react to critical events from various sources, enhancing automation capabilities.

Scalability

Serverless solutions automatically scale up and down in response to traffic, which is ideal for automation tasks that can vary in volume, ensuring efficient resource utilization.

Focus on Business Logic

By automating server management tasks, serverless computing allows developers to concentrate on writing code and optimizing business logic, increasing productivity and efficiency.

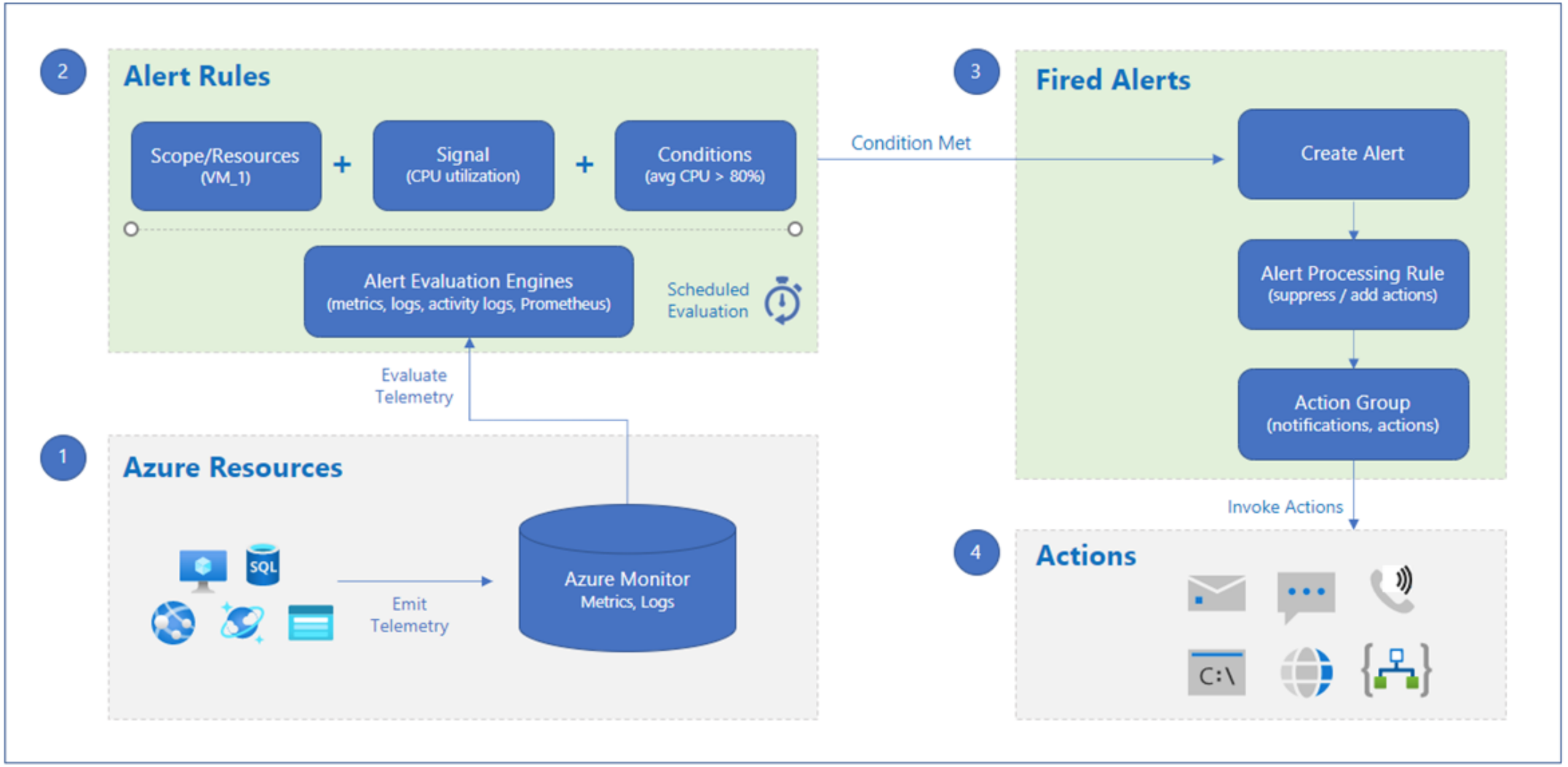
Cost Efficiency

Serverless computing can be more cost-effective than traditional cloud services: you only pay for the resources you use, which means you're not paying for idle capacity.

Azure Alerts

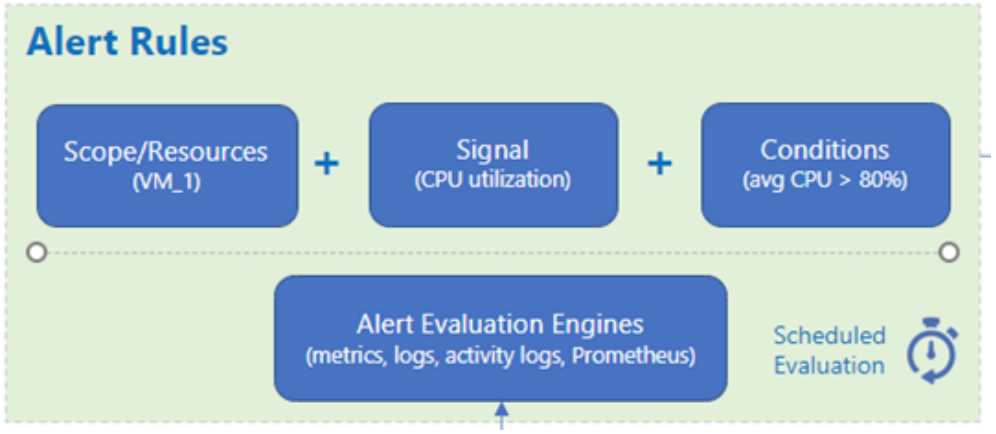
Alerts proactively notify you when issues are found with your infrastructure or application using your monitoring data in Azure Monitor.

Azure Monitor Alert architecture



Alert Rules

- An alert rule **monitors** your data and **captures** a signal that indicates something is happening on the specified resource. The alert rule **analyzes** the signal and checks to see if the signal meets the criteria of the condition.



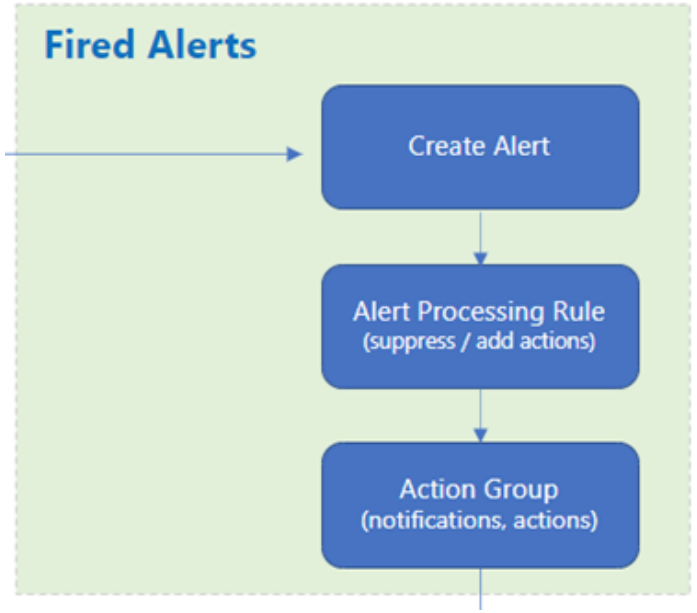
- An alert rule combines:
  - ✓ The resources to be monitored.
  - ✓ The signal or data from the resource.
  - ✓ Conditions.

- An alert is triggered if the conditions of the alert rule are met. The alert **initiates** the associated **action group** and updates the state of the alert.

Action Group

- Action Group is a collection of **notification preferences**.

- Action Group can contain a set of **Notifications**:
  - ✓ Email
  - ✓ SMS
  - ✓ Voice
  - ✓ Azure App push notification



- Action Group can contain a set of **Actions**:
  - ✓ Automation Runbook
  - ✓ Event hub
  - ✓ Azure Function
  - ✓ ITSM
  - ✓ Azure Logic App
  - ✓ WebHook

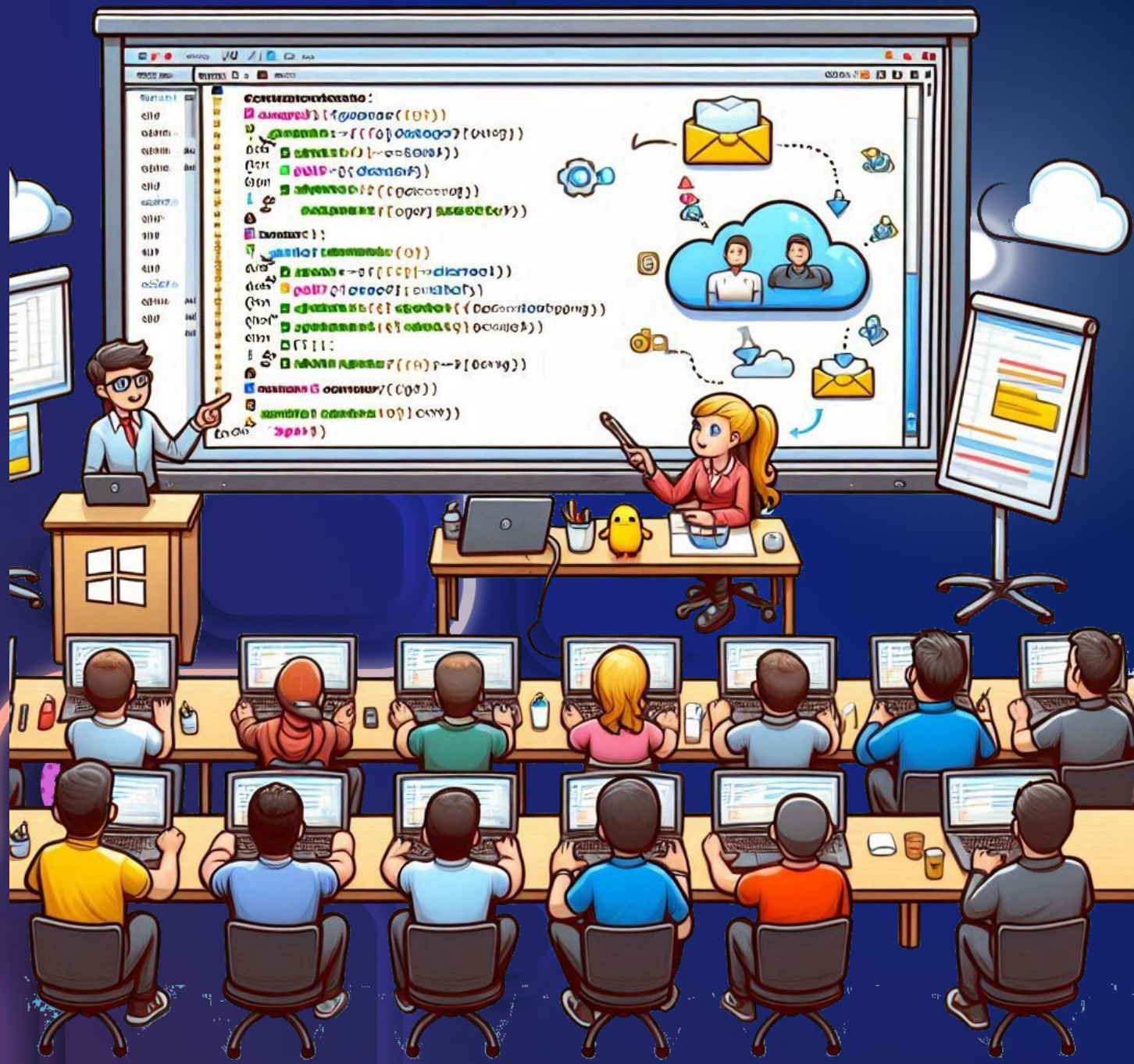
- You can use an Action Group in more than one alert rule.

What you can alert on

- Metric values
- Log search queries
- Activity log events
- Smart detections
- Prometheus

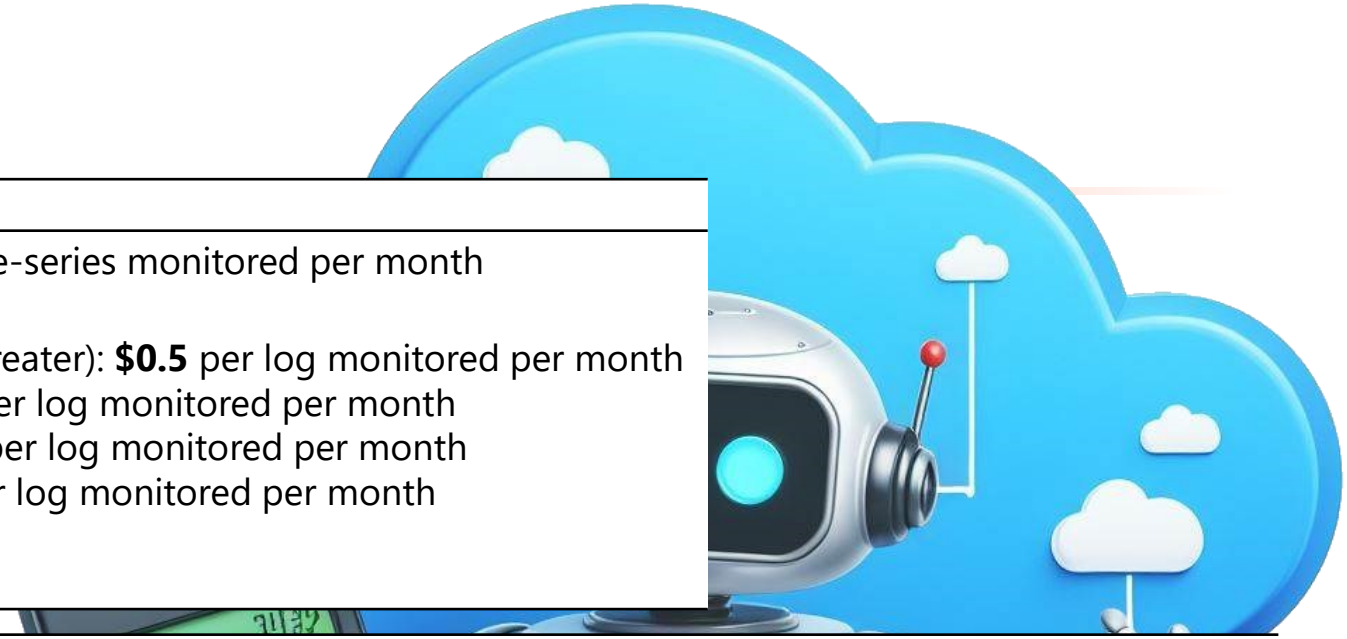
DEMO

Azure Alert



Azure Alerts Costs

Alert Signal	Free units included	Price
Metrics	10 monitored metric time-series per month	**$0.10** per metric time-series monitored per month
Log	None	15-min interval (or greater): **$0.5** per log monitored per month 10-min interval: **$1** per log monitored per month 5-min interval: **$1.5** per log monitored per month 1-min interval: **$3** per log monitored per month
Activity Log	Limited to 100 rules per subscription	Free

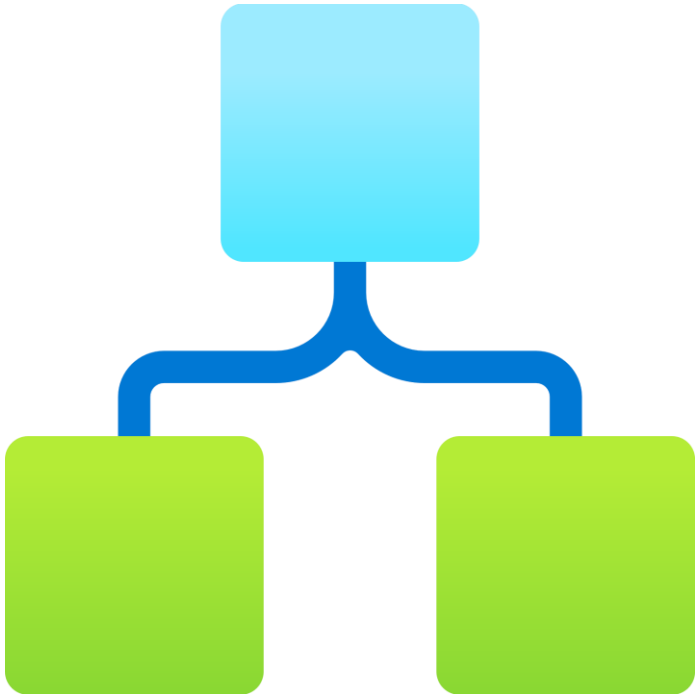


Example : You want to restart a web site every time someone stops it. Suppose the stop command will be executed, every month, 1000 times.

Feature	Free units included	Price
ITSM connector	1,000 events per month	**$5**/1,000 events
Emails	1,000 emails per month	**$2**/100,000 emails
Push notification (to Azure Mobile App)	1,000 notifications per month	**$2**/100,000 notifications
Secure web hooks	1 secure web hook	**$6**/1,000,000 secure web hooks
Web hooks	100,000 web hooks per month	**$0.60**/1,000,000 web hooks

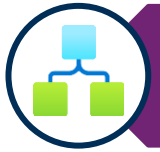
Alert baseb on Activity Log	**Free**
Total monthly cost	**$0**

Logic Apps

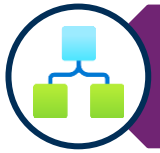


Azure Logic Apps is a cloud platform where you can create and run automated workflows with little to no code. You can quickly build a workflow that integrates and manages your apps, data, services, and systems.

Logic Apps scenarios



Automating Business Processes: You can automate repetitive tasks such as order processing, invoicing, and customer notifications.



Integrating Different Systems: Logic Apps can connect various systems and services, both on-premises and in the cloud.

Data Transformation and Movement: You can use Logic Apps to transform and move data between different systems.

Monitoring and Alerting: Set up workflows to monitor systems and trigger alerts based on specific conditions.

Scheduling and Orchestration: You can schedule tasks to run at specific times or intervals and orchestrate complex workflows that involve multiple steps and conditions.

Connecting to External APIs: Logic Apps can connect to external APIs to fetch or send data. This is useful for integrating with third-party.

Logic Apps benefits

- Ease of Use
- Scalability and Flexibility
- Integration and Connectivity
- Cost-Effective
- Rapid Development and Deployment
- Enterprise-Grade Security
- Hybrid and Multi-Cloud Support

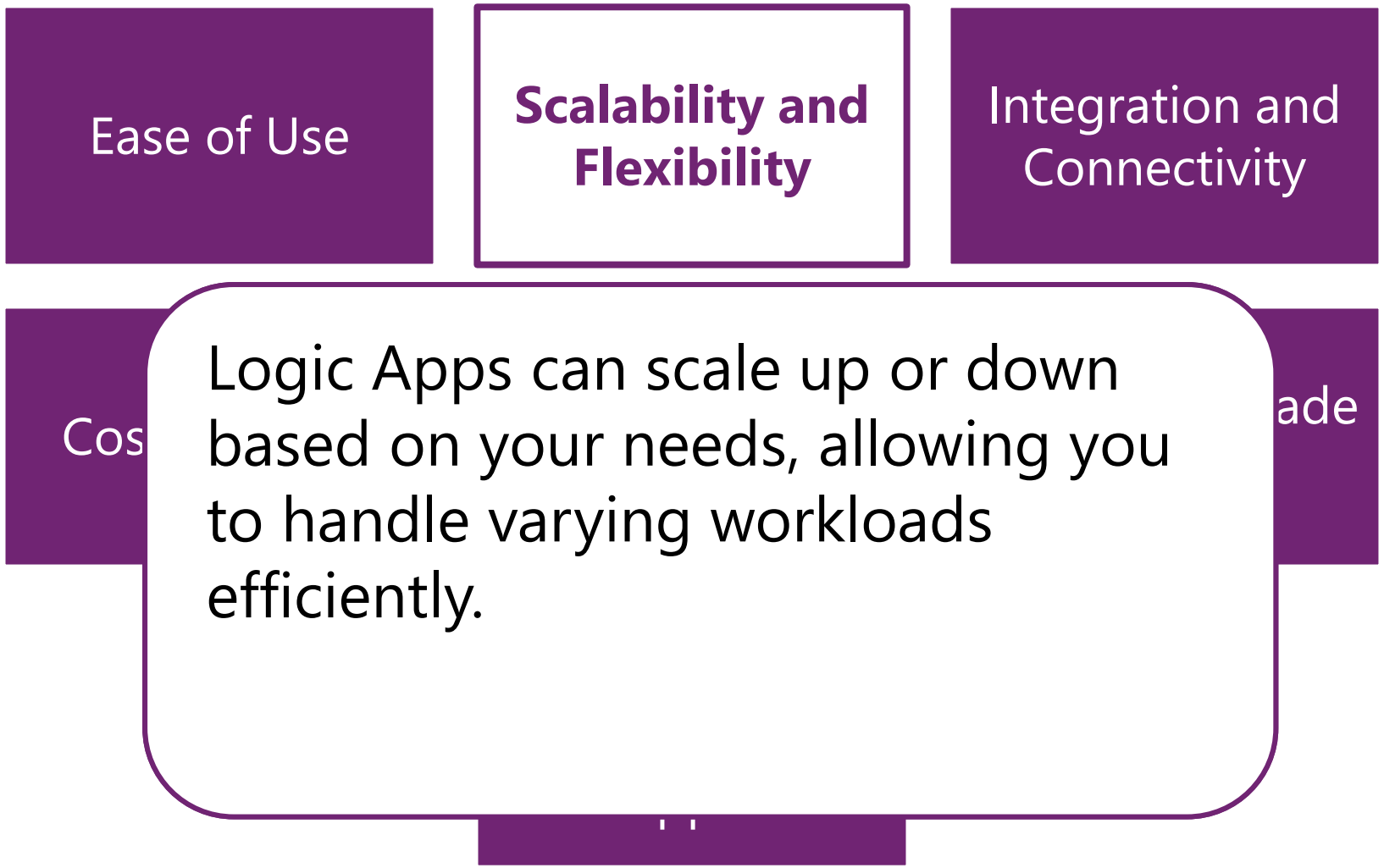
Logic Apps benefits

Ease of Use

Cost-Effective

With a visual designer and prebuilt templates, you can create workflows without writing code, making it accessible even for those with limited technical skills.

Logic Apps benefits



Logic Apps benefits

It comes with a wide range of connectors for both Microsoft and non-Microsoft services, enabling seamless integration across different platforms.

Integration and Connectivity

Enterprise-Grade Security

Logic Apps benefits

Ease of Use

Cost-Effective

You only pay for what you use, making it a cost-effective solution for automating tasks and processes.

Logic Apps benefits

Ease of Use

Scalability and Flexibility

Cost-Effective

Rapid Development and Deployment

Hybrid and Multi-Cloud Support

The platform supports quick development and deployment of workflows, helping you bring solutions to market faster.

Logic Apps benefits

Azure Logic Apps provides robust security features, including compliance with various industry standards and regulations.

Integration and Connectivity

Enterprise-Grade Security

Logic Apps benefits

You can connect and integrate on-premises systems, cloud services, and even other cloud providers, offering great flexibility for hybrid environments.

Hybrid and Multi-Cloud Support

Hosting

Consumption plan

Cost: You pay only for the actions and triggers that your workflows use.

Simplicity: Ideal for getting started quickly with minimal setup. It's a fully managed, multi-tenant environment.

Scalability: Automatically scales to handle varying workloads without manual intervention..

Use Case: Best suited for ad-hoc, entry-level, or limited use cases where you don't need advanced networking features.

Standard plan

Cost: Based on a hosting plan, which can be more predictable for high-frequency or enterprise-level workloads.

Control: Provides more control over the hosting environment, including support for multiple workflows within a single logic app.

Networking: Offers advanced networking features like VNet integration, providing better isolation and security.

Performance: Suitable for complex and large-scale integration solutions that require enhanced performance and reliability.

Use Case: Ideal for enterprise-level applications with predictable workloads and a need for advanced management features.

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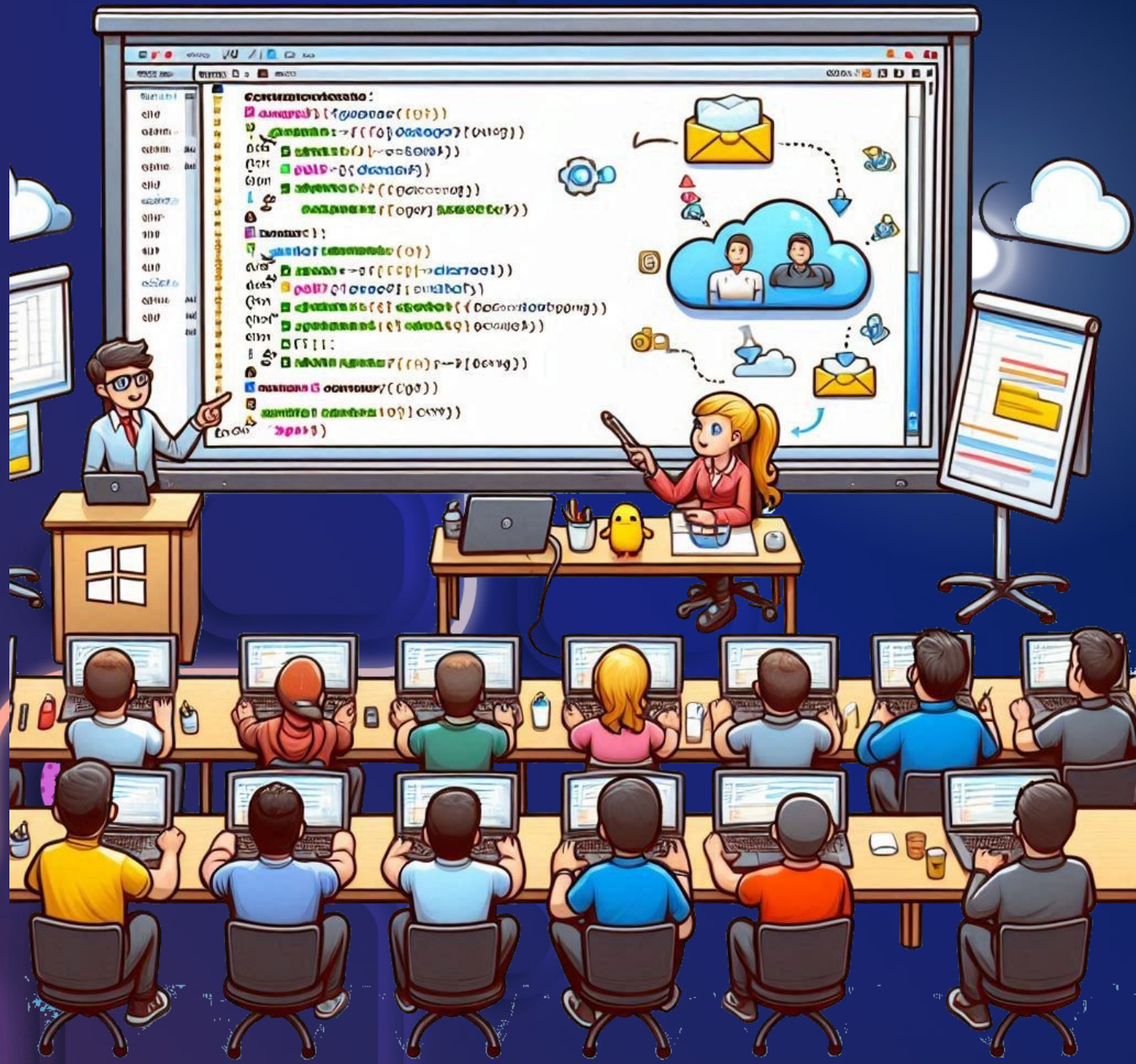
Azure Logic Apps



Azure Logic Apps Costs

	Price Per Execution
Actions	First 4,000 actions free - Included $0.000025

	Price Per Call
Standard Connector	$0.000125
Enterprise Connector	$0.001

Example : You want to restart a web site every time someone stops it. Suppose the stop command will be executed, every month, 1000 times.

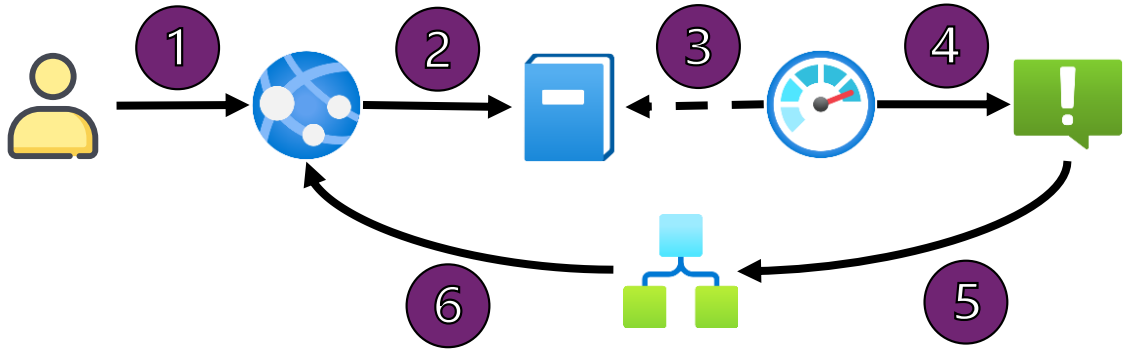
- 2 standard connectors:
  - ✓ 1 trigger for the alert,
  - ✓ 1 connector to restart the App Service

Number of executions	
Alert trigger	1,000 x **$0.000125**
App Service connector	1,000 x **$0.000125**
Total monthly cost	**$0.25**

Connect the dots….

Restarts an App Service every time it is turned-off

1. Someone stops the App Service
2. Azure writes the log `Stop Web App` in Activity Log
3. Azure Monitor notices that the log has been written
4. Azure Monitor issues the alert
5. The action in the Alert Action Group calls the Logic App
6. Logic App restarts the App Service



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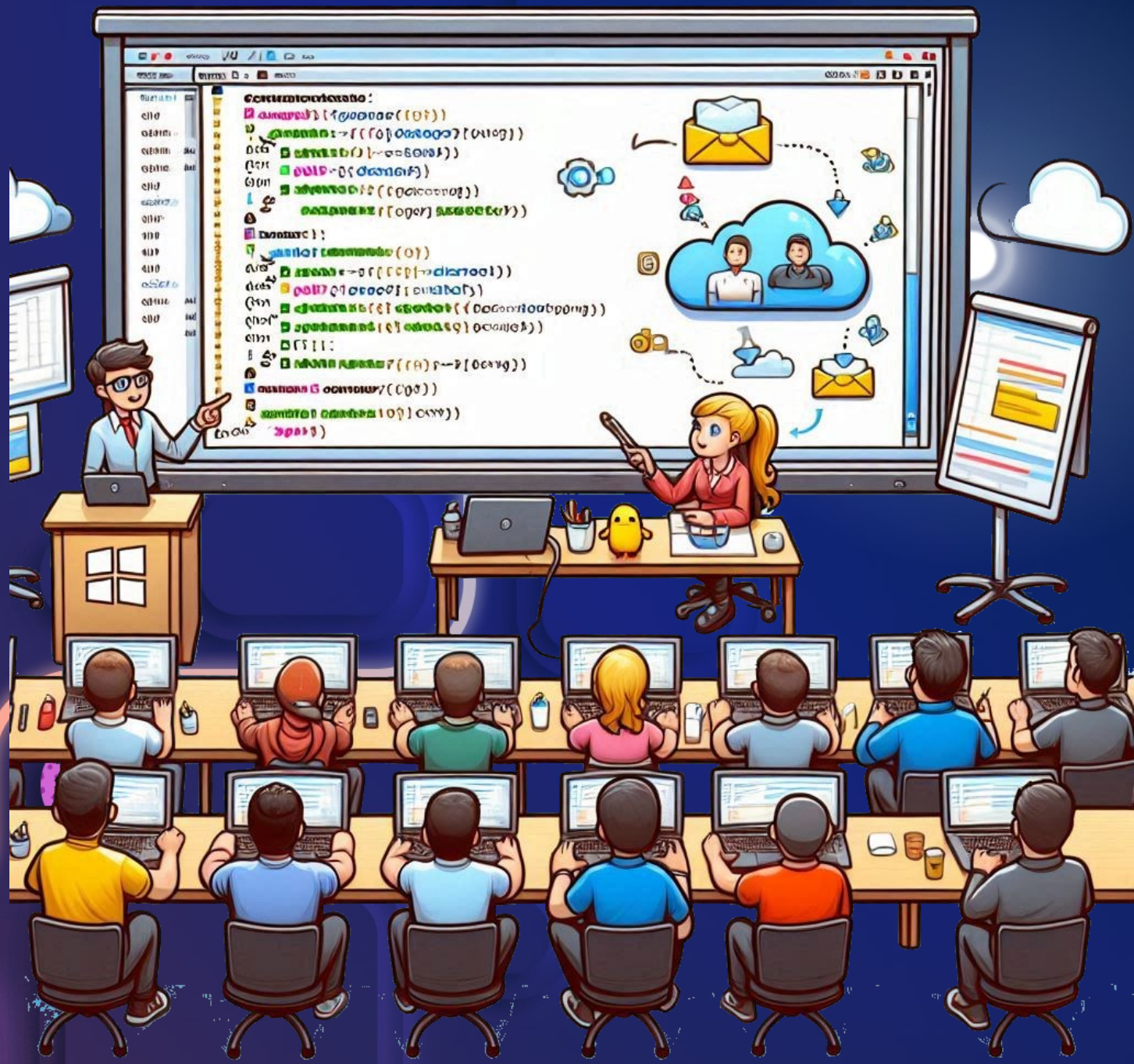
Azure Alerts +
Azure Logic Apps



Events

- Using Pub/Sub you can add new handler quickly
- Events are routed as soon as possible to the handlers
- You can filter the events based on the data properties

Alerts

- You can create a common behavior using the Action Group
- Alerts are signaled when data is available in the log
- You can react to your custom metrics in your application log

Q&A

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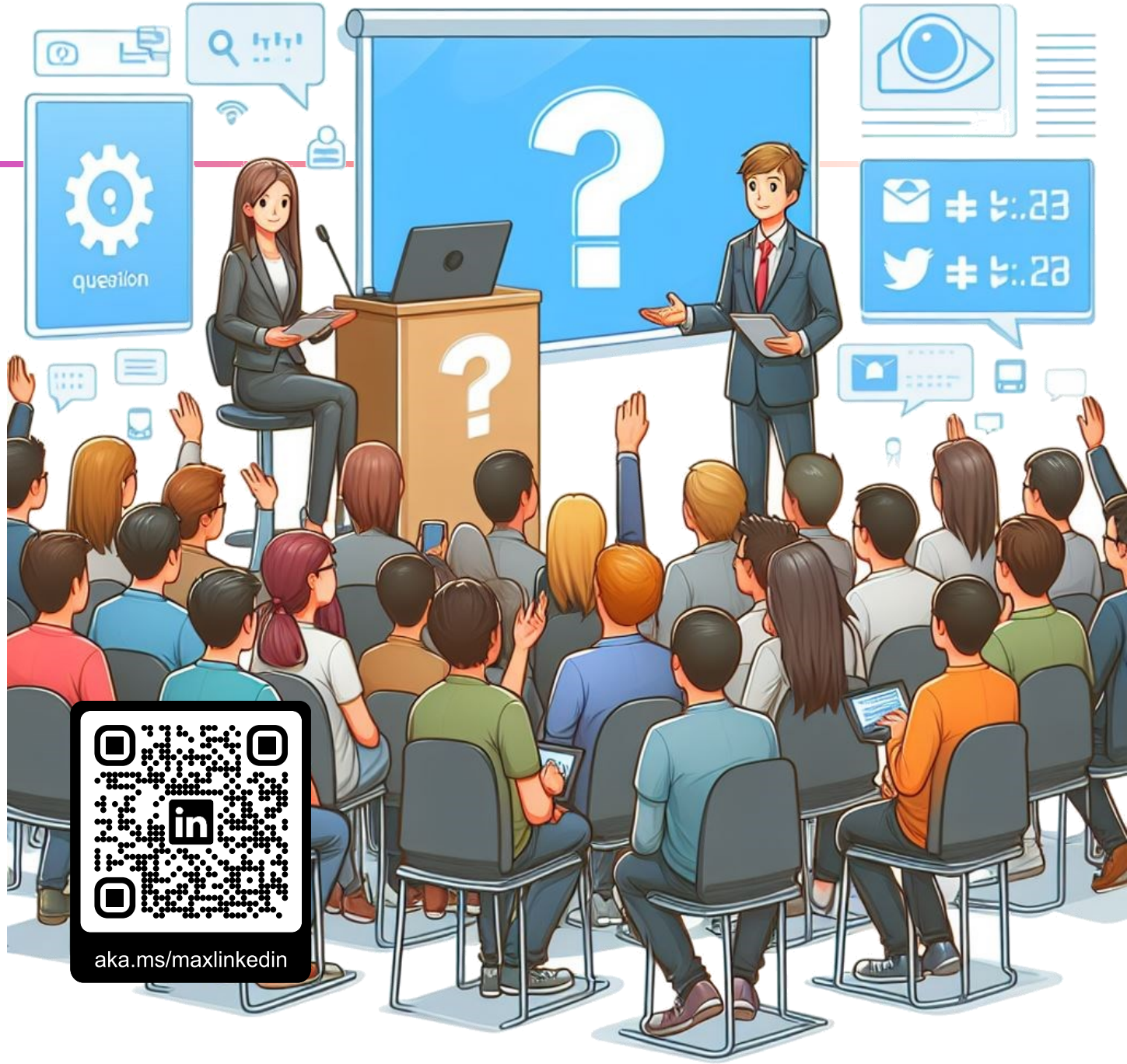

References

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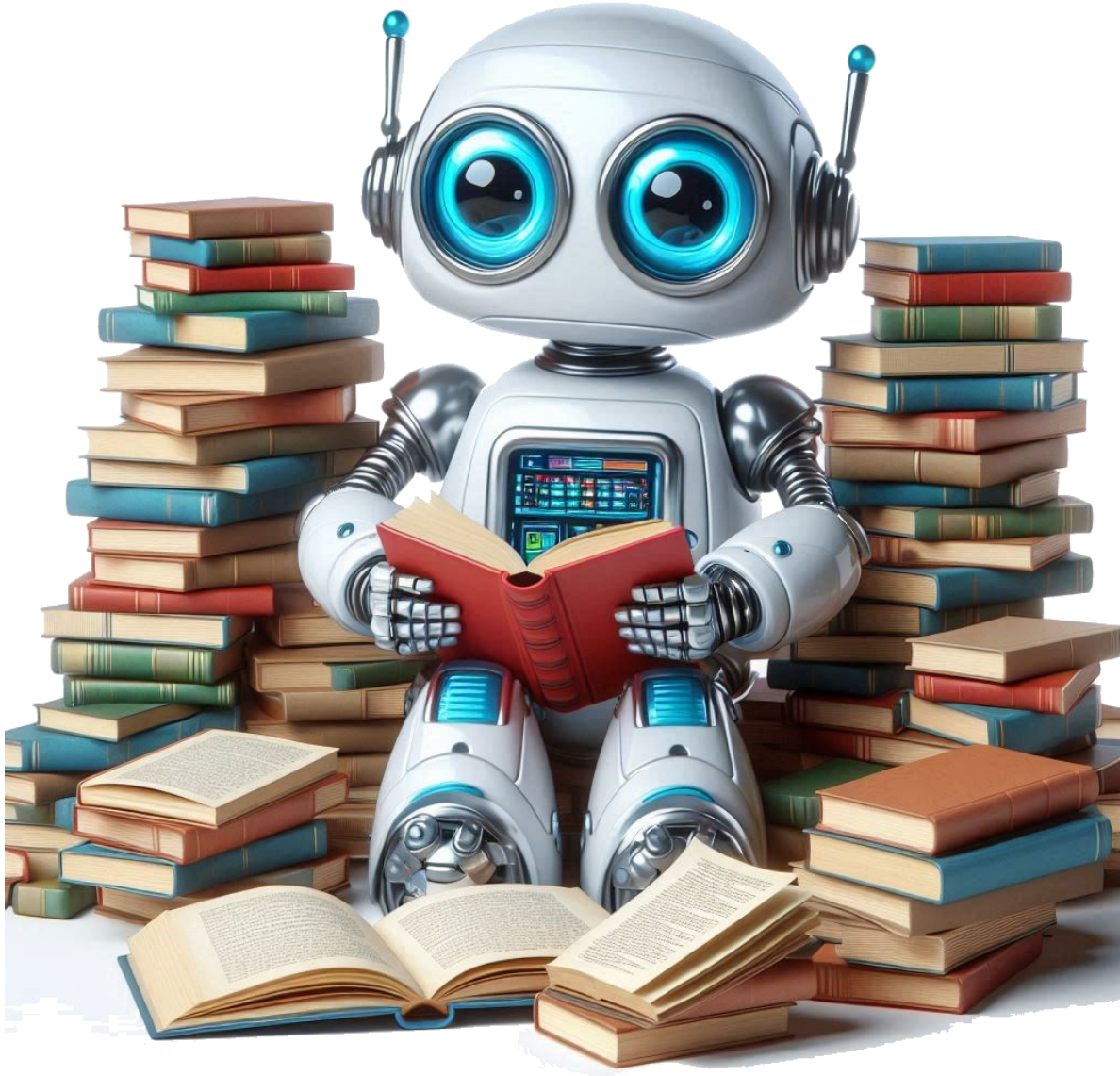
- Configure alerts and responses - Training | Microsoft Learn
- Azure Logic Apps Overview | Microsoft Learn
- Introduction to Azure Logic Apps - Training | Microsoft Learn
- Build automated workflows to integrate data and apps with Azure Logic Apps - Training | Microsoft Learn

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