Preparation to exam AI 100

« Designing and Implementing an Azure AI Solution »

Module 3 – Implement and Monitor AI Solution (25-30%)

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Objectives

- Implement an AI workflow
- May include but is not limited to:
  - Develop AI pipeline
  - Manage the flow of data through solution components
  - Implement data logging processes
  - Define and construct interfaces for custom AI services
  - Integrate AI models with other solution components
  - Design solution endpoints
  - Develop streaming solutions

Objectives

- Integrate AI services with solution components
- May include but is not limited to:
  - Configure prerequisite components and input datasets to allow consumption of Cognitive Services APIs
  - Configure integration with Azure Services
  - Configure prerequisite components to allow connectivity with Bot Framework
  - Implement Azure Search in a solution

Objectives

- Monitor and evaluate the AI environment
- May include but is not limited to:
  - Identify the differences between KPIs, reported metrics, and root causes of the differences
  - Identify the differences between expected and actual workflow throughput
  - Maintain the AI solution for continuous improvement
  - Monitor AI components for availability
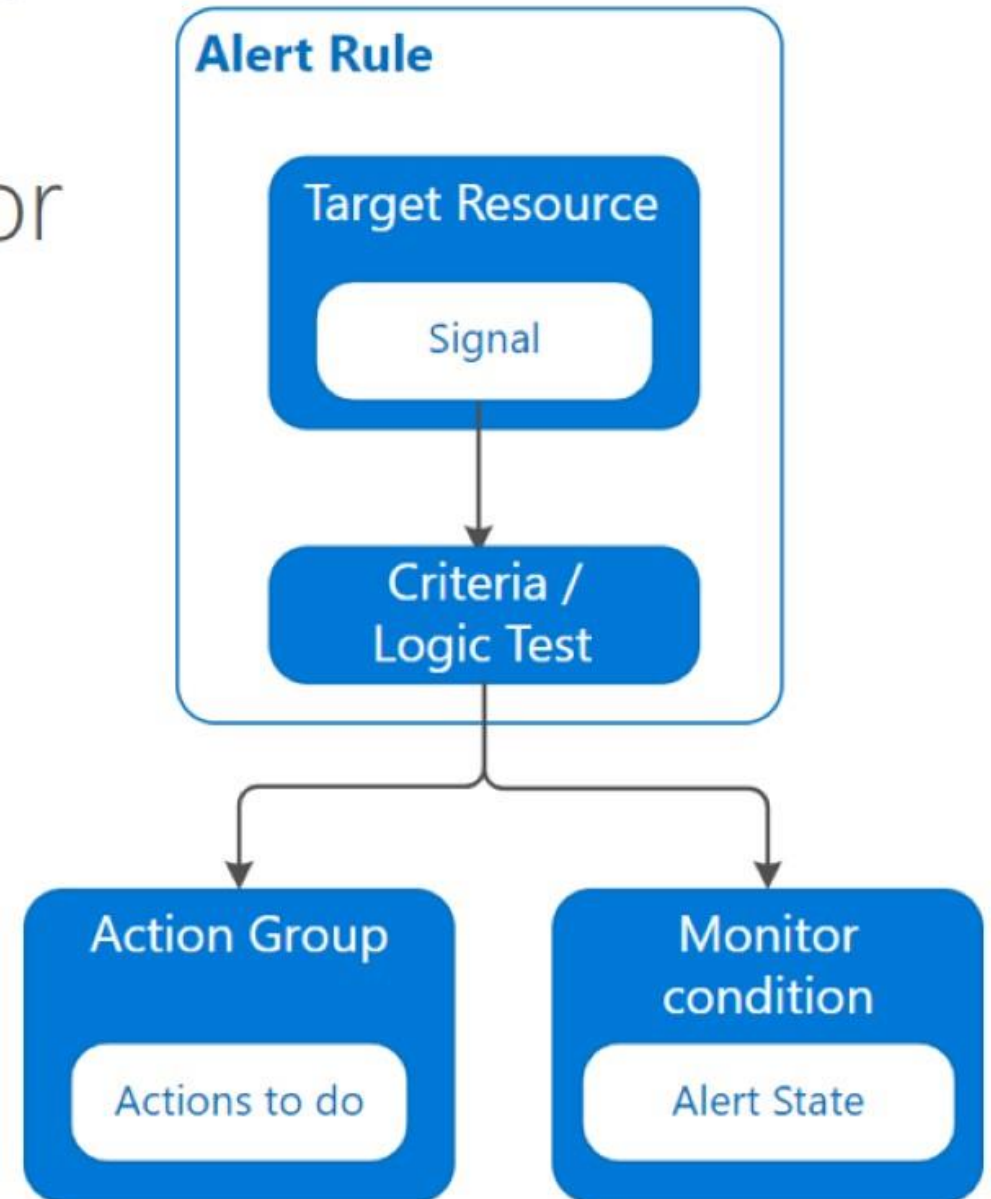 - Recommend changes to an AI solution based on performance data

Azure Key Vault

- You must use Azure Key Vault if you have secret or cryptographic keys to protect

- For example if you want to encryp et rest an Azure Storage Account with your own key generated on an HSM in your Datacenter, you will have to import the key in an Azure Key Vault

Monitor and evaluate the AI environment

Microsoft

Monitor Cognitive Service

- Alert, metrics in Azure Monitor

- You can define Alerts on :
  - Metric values
  - Log search queries
  - Activity Log Events

Alert Rule

Target Resource

Signal

Criteria / Logic Test

Action Group

Actions to do

Monitor condition

Alert State

PrepaAI100-TextAnalytics - Metrics
Cognitive Services

+ New chart ↻ Refresh ↗ Share ∨ ☺ Feedback ∨   Las

RESOURCE MANAGEMENT

🔑 Keys

☁ Quick start

✎ Pricing tier

Billing By Subscription

Properties

🔒 Locks

Export template

Monitoring

⚠ Alerts

Metrics

Diagnostic settings

🔍 Logs

Chart Title ✎

⩘ Add metric ⩘ Add filter ⩘ Apply splitting   ⬚ Line chart ∨ 💬 New alert rule 📌 Pin t

RESOURCE	METRIC NAMESPACE	METRIC	AGGREGATION
PrepaAI100-TextAnalytics	Cognitive Service st... ∨	Select metric ∨	Select aggregation ∨	⊗

```
100

90

80                    Blocked Calls

70                    Client Errors
                      Data In
60                    Data Out

50                    Latency
                Select a metric ab    w:
40                    Server Errors

30                    Successful Calls

20                    Total Calls
```

Filter + Split ⬈   Plot multiple metrics ⬈   Build custom dashboards ⬈

Apply filters and splits to identify   Create charts with multiple metrics   Pin charts to your dashboards
outlying segments   and resources

Monitor - Alerts
Microsoft

Search (Ctrl+/)

- Overview
- Activity log
- **Alerts**
- Metrics
- Logs
- Service Health
- Workbooks (preview)

Insights

- Applications
- Virtual Machines (preview)
- Containers
- Network
- ⋯ More

+ New alert rule ⚙ Manage alert rules Manage actions 🔔 View classic alerts ↻ Refresh ☺ Provide feedback

Don't see a subscription? Open Directory + Subscription settings

* Subscription ℹ

Conso interne de la plateforme Wi... ⌄

Resource group ℹ

Type to start filtering ... ⌄

Resource ℹ

Type to start filtering ... ⌄

Time range ℹ

Past 24 hours

All is good! You have no alerts.

Create rule
Rules management

Select a resource

Select the resource(s) you want to monitor. Available signals for your selection will show up on the bottom right.

* RESOURCE

Select the target(s) that you wish to monitor

[Select]

* CONDITION

No condition defined, click on 'Add condition' to

[Add]

ACTIONS

No configured actions

[Add]

ALERT DETAILS

* Alert rule name ⓘ

Specify alert rule name. Sample: 'Percentage CPU g

Description

Specify alert description here...

[Create alert rule]

* Filter by subscription ⓘ

Conso interne de la plateforme Windows... ⌄

Filter by resource type ⓘ

Cognitive Services ⌄

Location ⓘ

West Europe ⌄

🔍 Search to filter items...

RESOURCE

▼ 🔑 **Conso interne de la plateforme Windows Azure 2**

　　▼ 📦 **RG-Prepa-AI-100**

　　　　🧠 PrepaAI100-CognitiveServices

　　　　🧠 PrepaAI100-TextAnalytics

Selection preview

Available signal(s) :

[Done]

Create rule
Rules management

 RESOURCE

 PrepaAI100-CognitiveServices

Select

 CONDITION

No condition defined, click on 'Add condition' to

Add

 ACTIONS

View configured actions

Add
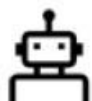
ALERT DETAILS

* Alert rule name ⓘ

Specify alert rule name. Sample: 'Percentage CPU g

Description

Specify alert description here

Configure signal logic

Choose a signal below and configure the logic on the next screen to define the alert condition.

Signal type ⓘ

| All ⌄ |

Monitor service ⓘ

| All ⌄ |

Displaying 1 - 18 signals out of total 18 signals

🔍 Search by signal name

SIGNAL NAME ↑↓	SIGNAL TYPE ↑↓	MONITOR SERVICE ↑↓
Total Calls	〰 Metric	Platform
Successful Calls	〰 Metric	Platform
Total Errors	〰 Metric	Platform
Blocked Calls	〰 Metric	Platform
Server Errors	〰 Metric	Platform
Client Errors	〰 Metric	Platform
Data In	〰 Metric	Platform
Data Out	〰 Metric	Platform
Latency	〰 Metric	Platform
Characters Translated	〰 Metric	Platform

Create rule
Rules management

* RESOURCE

🧠 PrepaAI100-CognitiveServices 🔑

[Select]

* CONDITION

No condition defined, click on 'Add condition' to

[Add]

ACTIONS

View configured actions

[Add]

ALERT DETAILS

* Alert rule name ⓘ

Specify alert rule name. Sample: 'Percentage CPU g

Description

Configure signal logic

Blocked Calls	〰	Metric	Platform
Server Errors	〰	Metric	Platform
Client Errors	〰	Metric	Platform
Data In	〰	Metric	Platform
Data Out	〰	Metric	Platform
Latency	〰	Metric	Platform
Characters Translated	〰	Metric	Platform
Characters Trained	〰	Metric	Platform
Total Transactions	〰	Metric	Platform
Total Token Calls	〰	Metric	Platform
All Administrative operations	🗒	Activity Log	Administrative
Write API Account (accounts)	🗒	Activity Log	Administrative
Delete API Account (accounts)	🗒	Activity Log	Administrative
List Keys (accounts)	🗒	Activity Log	Administrative
Regenerate Key (accounts)	🗒	Activity Log	Administrative

Create rule

Rules management

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* RESOURCE   **HIERARCHY**

PrepaAI100-CognitiveServices   🔑 Conso interne de la plateforme   >   RG-Prepa-AI-
                                                    Windows Azure 2   100
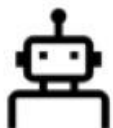
Select

* CONDITION

✅ Whenever the Administrative Activity Log "Regenerate Key (acco...   🗑

Add

ℹ️ We currently support configuring only two metrics signals or one log search signal or one activity log signal per alert rule. An alert will be triggered when the conditions for all the above configured criteria are met

ACTIONS

View configured actions

Add

Add action group

* Action group name ⓘ   Prepa-AI-100-ActionGroup

* Short name ⓘ   AI100-AC

* Subscription ⓘ   Conso interne de la plateforme Windows Azure 2

* Resource group ⓘ   Default-ActivityLogAlerts

Actions

ACTION NAME	ACTION TYPE	STATUS
Notification ✔	Email/SMS/Push/Voice ⌄	
Please configure the action by clicking the link.		
Unique name for the action	⌄	

Privacy Statement

Pricing

ⓘ Have a consistent format in emails, notifications and other endpoints irrespective of monitoring source. You can enable per action by editing det

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Email/SMS/Push/Voice   ✕

☑ Email

myadminemail@microsoft.com   ✔

☐ SMS

Country code   *** Phone number**

1   ⌄   1234567890

ⓘ Carrier charges may apply.

☐ Azure app Push Notifications

Learn about the connecting to your Azure resources using the Azure app.

email@example.com

This is the email you use to log into your Azure account.

☐ Voice

Country code   *** Phone number**

1   ⌄   1234567890

Enable the common alert schema. Learn more

Yes   **No**

OK

Monitor your Azure Machine Learning models with Application Insights

- https://docs.microsoft.com/en-us/azure/machine-learning/service/how-to-enable-app-insights

Azure Diagnostic Logs

Diagnostic logs provide rich frequent data about the operation of an Azure resource. Azure monitor makes two types of logs available –
- Tenant logs – the logs that come from tenant level series that exist out side an Azure subscription such as AAD logs
- Resource logs – the logs that come from each resource

Azure Logic Apps

Logic apps simplifies how you build automated scalable workflows that integrate with data across cloud services and on-premises systems

Think – logic app for sending notifications

Azure Storage Analytics

Performs logging and provides metrics data for a storage account

You can use this data to trace requests, analyze usage trends and diagnose issues with your storage accoint

Azure Anomaly detector

Allows you to monitor and detect abnormalities in your time series data

The API adapts by automatically identifying and applying the best fitting models to your data