Microsoft Azure Administrator Associate Training(AZ-104)

Module 9

Agenda

01 Azure Monitor

02 Azure Metrics

03 Log Analytics

04 Alerts and Actions

05 Application Insights

06 Backup Reports

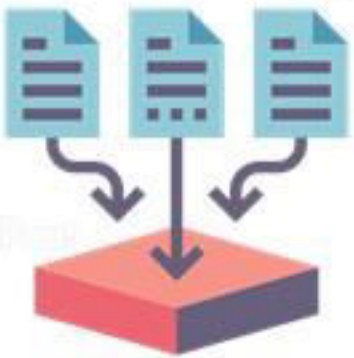
07 Recovery Services Vault

08 Backing up and Restoring an Azure VM

Azure Monitor

What is Azure Monitor?

Azure Monitor is a service to maximize the productivity of our Azure services and applications by providing a solution for **collecting, analyzing, and acting on telemetry** from our cloud and on-premises environments



Collecting

Analyzing

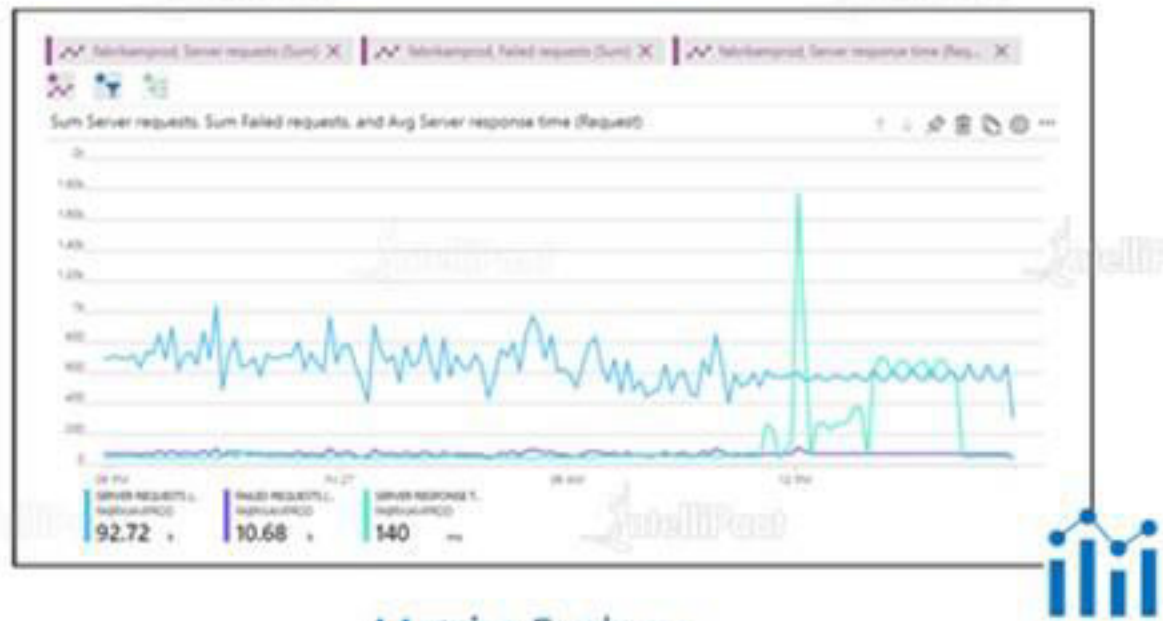
Generating Alerts

Why do we need Azure Monitor?

These are some of the use cases where Azure Monitor is used:

What is Azure Monitor?

Azure Monitor is made up of two data types: **Metrics and Logs**



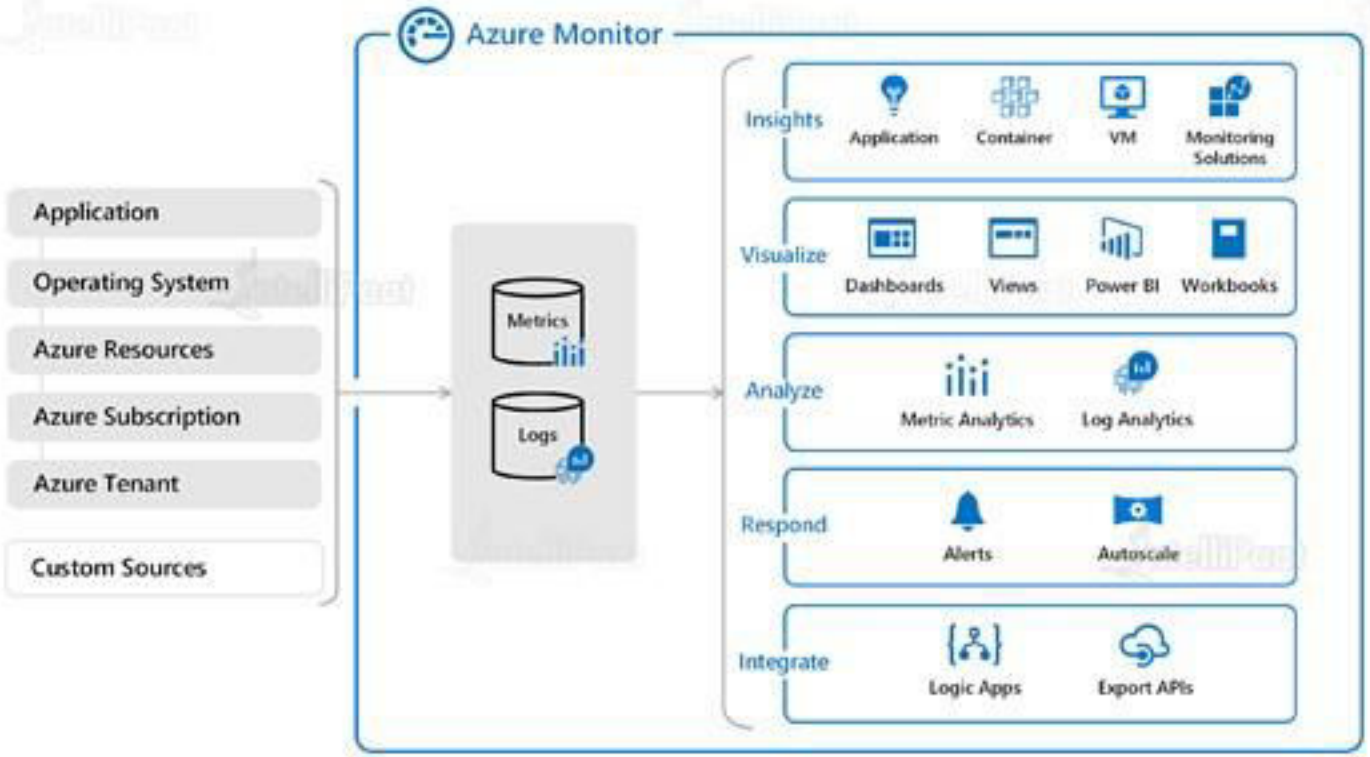
Metrics Explorer

What is Azure Monitor?

Azure Monitor is made up of two data types: **Metrics and Logs**

An Overview of the Working of Azure Monitor

In the center of the below chart, we have the two data stores, **Metrics and Logs**. In the left side, we have the sources of monitoring data, and in the right side is a list of services provided by Azure Monitor based on the data collected

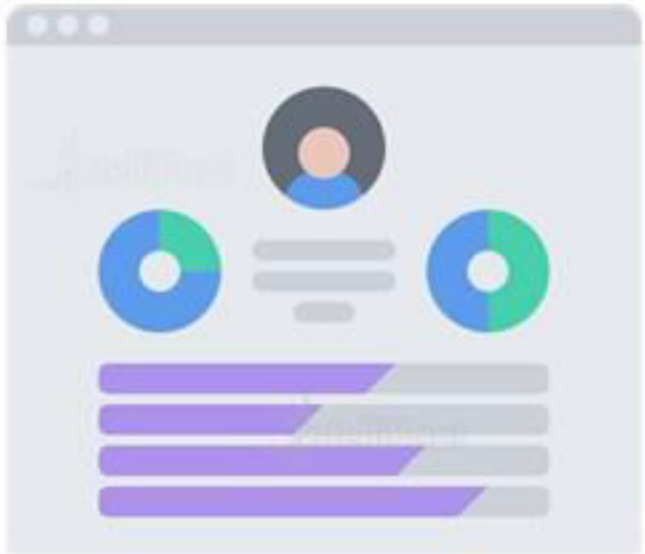


Azure Metrics

What are Metrics?

Metrics are introduced in Azure Monitor particularly for the **faster alerting** and **detecting of issues**

These values are used to describe one aspect of a system at a time. In Azure Monitor, they are lightweight and capable of supporting near real-time scenarios



Azure Metrics: The Structure of Data

The data collected by Azure Metrics is a **time-series database**

Each set of metric values is a time-series data with the following properties:

- The time the value is collected
- The resource the value is associated with
- A namespace that acts like a category for the metric
- A metric name
- The value itself

Hands-on: Configuring and Interpreting Azure Metrics

Hands-on

1. Deploy a Metric for tracking the CPU Consumption of a Virtual Machine

2. Increase and Decrease the stress levels of the Virtual Machine to notice the change in metrics

Azure Log Analytics

What are Logs?

Logs are essentially used to describe events, collected sporadically

They are numerical data combined with text in the form of detailed descriptions

Telemetry such as events and traces is stored in Azure Monitor Logs, in addition to the performance data, so that it can all be combined for analysis

Azure Log: The Structure of Data

All logs in Azure Monitor are stored in the Log analytics workshop

They are stored in the form of multiple tables

- All tables share some common properties. However, each has a **unique set of properties** depending on the kind of data it stores
- A new workspace will have standard set of tables, and more tables will be added by different monitoring solutions and other services that write to the workspace

Hands-on: Configuring Log Analytics

Hands-on

1. Create a Log Analytics workspace and connect to a Virtual Machine

2. Run basic Log queries to Monitor the Virtual Machine

Alerts and Actions

What are Alerts?

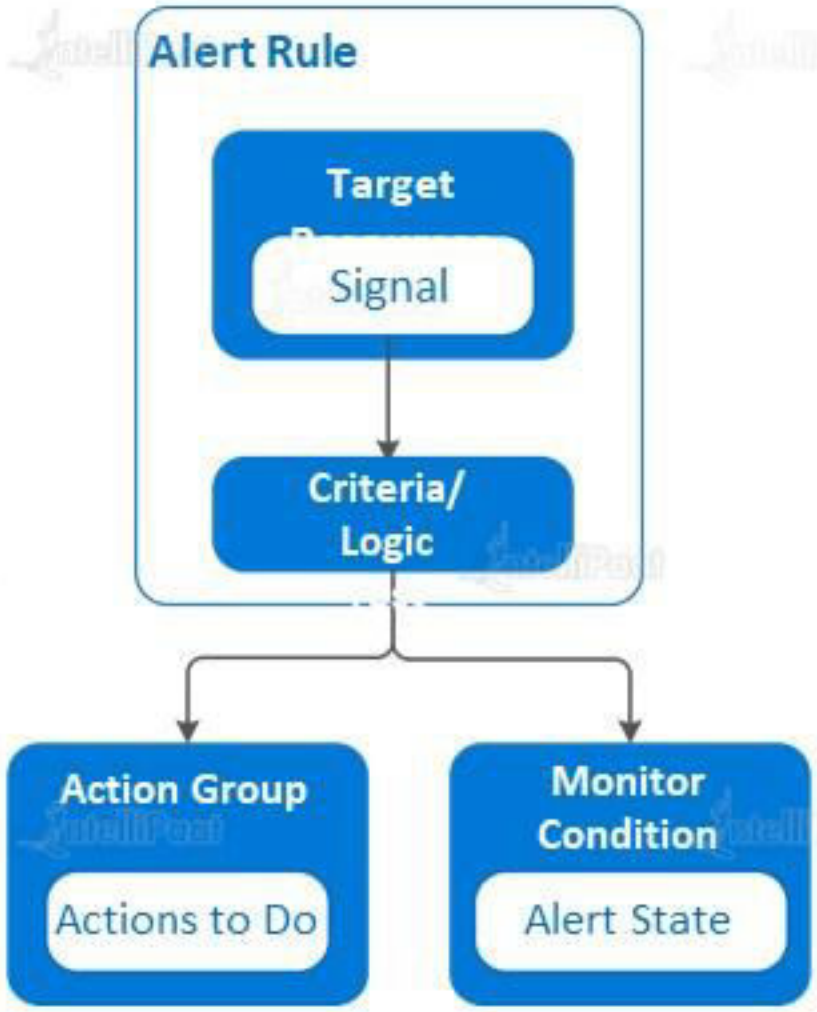
In Microsoft Azure, alerts are used to **notify important conditions**. They are the result of the continuous monitoring of data, and they reach out to the owner of the system before users do so that the owner will be able to address issues first

The previous alert experience and alert types are called **classic alerts**

Workflow of Alert Rule

The following are the key attributes of an alert rule:

01	02	03	04
Target Resource	**Criteria**	**Severity**	**Action**
Scope and signals available for alerting	Combination of signal and logic applied on a target resource	Defining the severity of the alert once the criteria is matched	Specific action is taken when an alert is fired



Hands-on: Configuring Alerts and Actions

Hands-on

1. Set up an Action group to alert the administrator if the CPU consumption level is greater than 60%

2. Verify the action by checking the alerts

Azure Application Insights

What are Application Insights?

Application Insights is a service provided by Microsoft Azure to monitor our applications that are live. It automatically deals with performance anomalies and uses powerful analytical tools to understand how users are working with the application

How does Application Insights work?

- Install a small instrumentation package in our application
- Set up an Application Insights resource in Microsoft Azure Portal
- The instrumentation monitors our app and sends telemetry data to Azure Monitor

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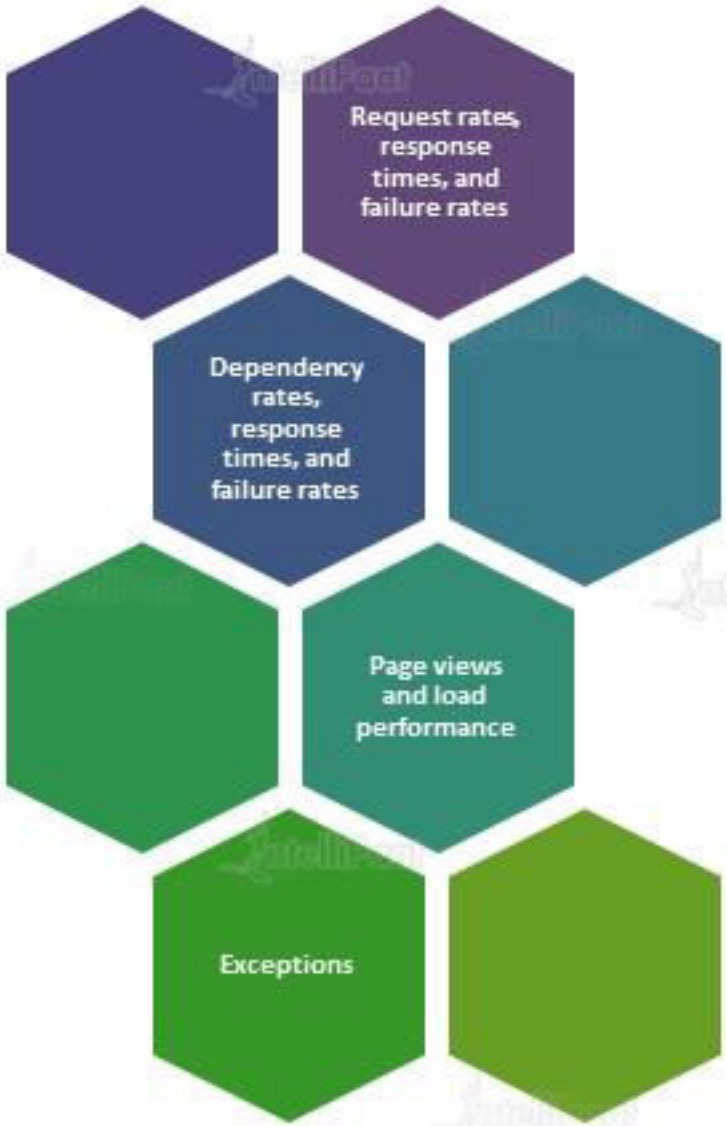
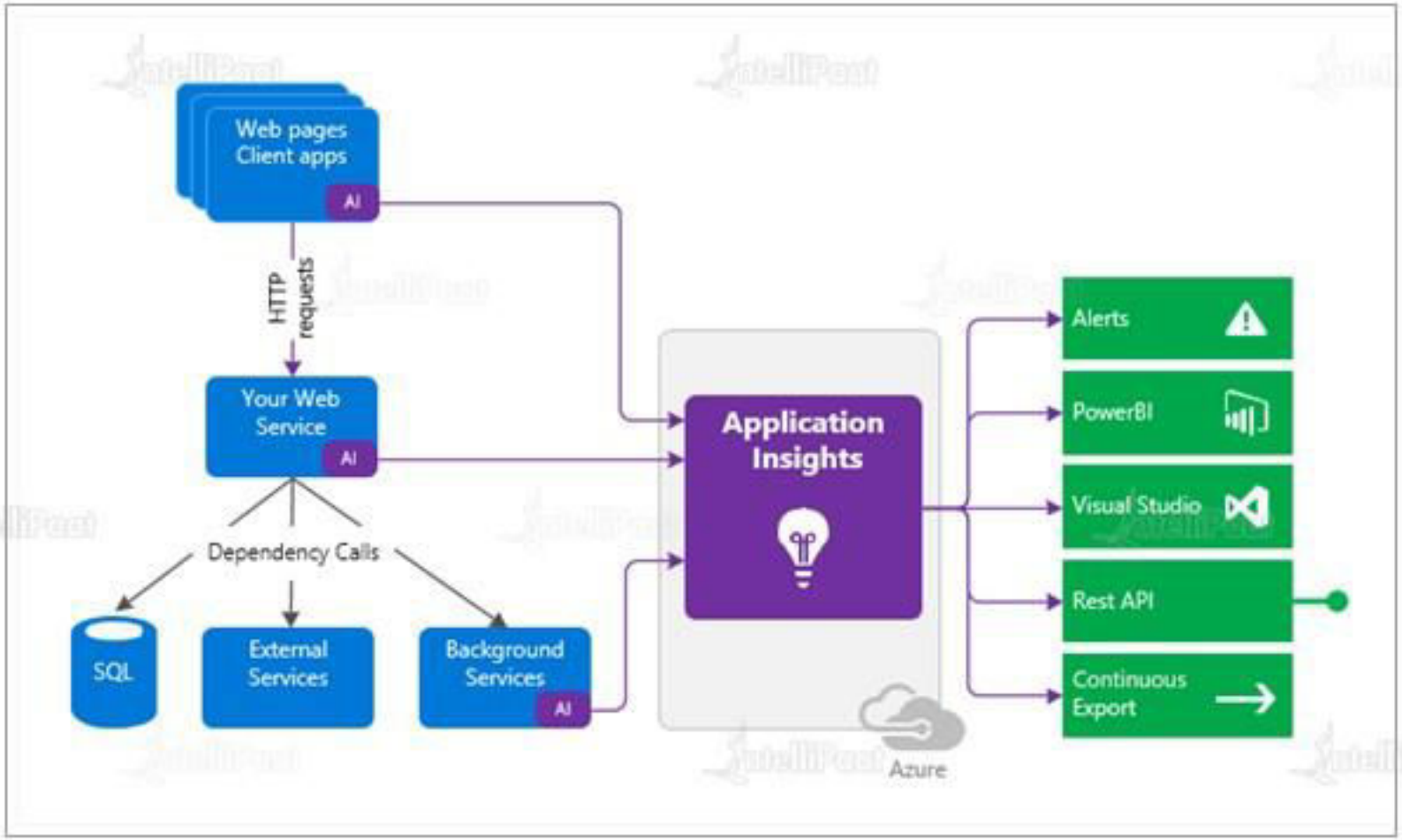
What all does Application Insights monitor?





The representation of the architecture of an Application Insight

Backup Reports

Why do we need Backup Reports?

Azure Backup is a service provided by Azure to help get rich and deep insights on the backup reports. This includes allocating and forecasting cloud storage consumed, auditing backup and restore, and identifying key trends

Recovery Service Vaults

What are Recovery Service Vaults?

Recovery service vaults are a storage entity provided by Microsoft Azure to store different types of data. The data may include copies of other data and the configuration information for VMs, workloads, servers, or workstations

What are the specific uses of Recover service vaults?

- Holding backup data for various Azure services
- Supporting System Center DPM, Windows Server, Azure Backup Server, and more
- Making it easier to organize our backup data, while minimizing management overhead

Hands-on: Creating a Recovery Service Vault

Hands-on

1. Create a Recovery Service vault and add a Virtual Machine as a Backup item

2. Generate backup reports for the Virtual Machine

3. Use the Backup created to deploy another Virtual Machine

Backing Up an Azure VM

What is Azure Backup Service?

Azure offers a built-in backup service that lets users backup their data to the Microsoft Azure Cloud. This service can also be used to take on-point backups of Azure VMs

VM backups in Azure are stored in Recovery Service vaults. We can access these Recovery Service vaults through Azure Portal

- Azure gives full flexibility to configure and modify a VM backup
- We can choose when to create a backup according to the time that works best for us
- We can keep a backup enabled as long as we want
- Recovery Service vaults are connected to our storage account and scale automatically to accommodate our backup
- Azure backup is a pay-as-you-go service, i.e., we need to only pay for the storage amount we use

Restoring a Backup

Create a New VM

We quickly create and get a basic VM up and running from a restore point. We can specify a name for the VM and a storage account for the restored VM

Replace the Existing

We can restore a disk and use it to replace the disk on the existing VM. The current VM must exist. If it's being deleted, this option can't be used

Restore the Disk

Restores a VM disk, which can then be used to create a new VM. Alternatively, we can attach the disk to an existing VM

Hands-on: Backing up and Restoring an Azure Virtual Machine

Hands-on

1. Backup a Virtual Machine using Azure Backup Wizard

2. Restore the Virtual Machine using the Backup created

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