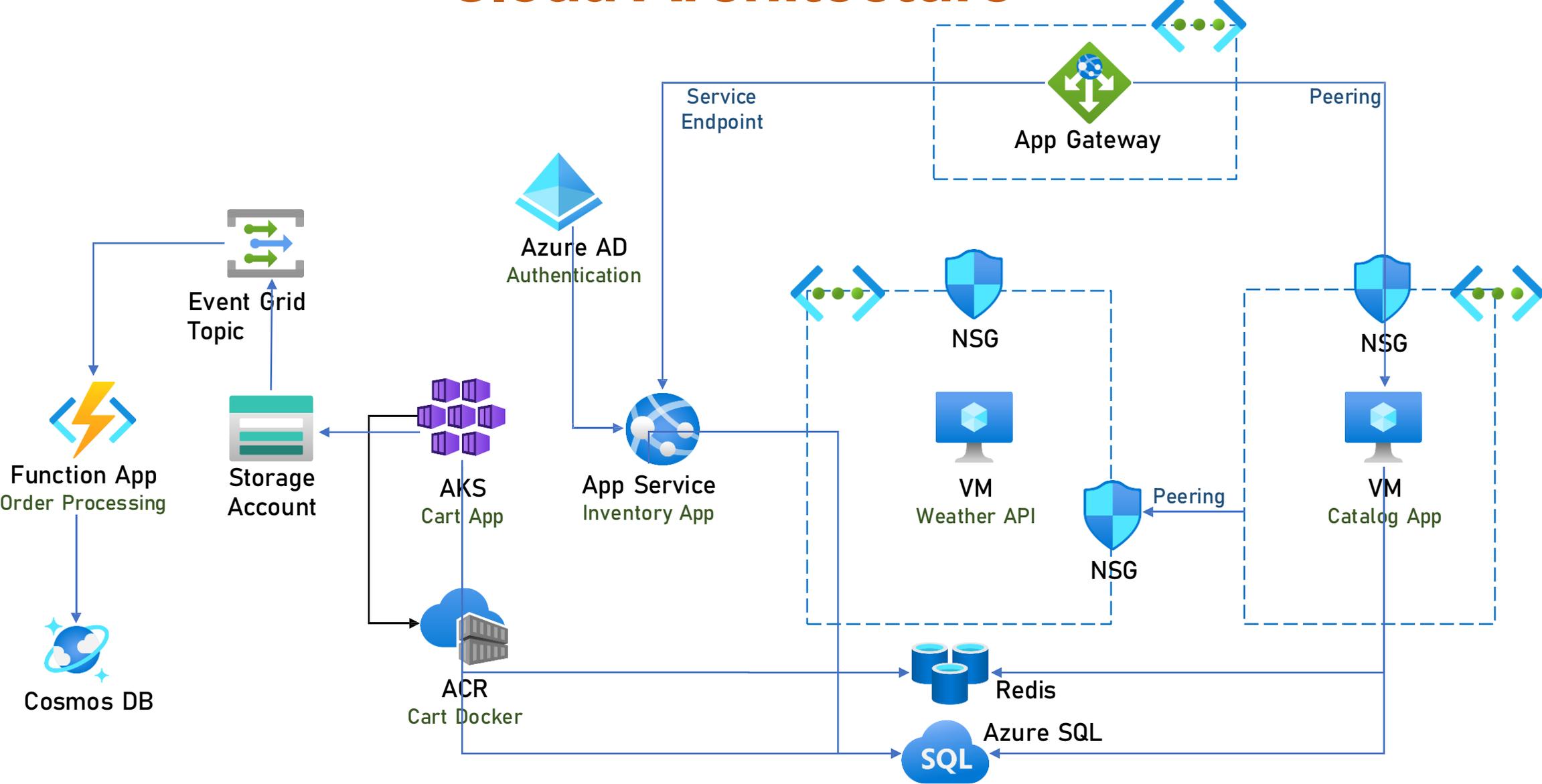# Monitoring in Azure

Monitoring

- A working app is not enough

- We must know its status, how it performs, and when it

  has problems

- This is done via monitoring

ReadIt!
Cloud Architecture

Monitoring in Azure

- Azure offers a lot of built in monitoring mechanisms

- It's a good idea to be familiar with as many as possible

- Also – a centralized monitoring hub where all monitoring data is streamed, and can be queried, or used for triggers

- Extremely cost effective

Monitoring in Azure

- Monitoring is based on two types of data:

Metrics →
- Numeric values describing resource's aspect at a specific point in time
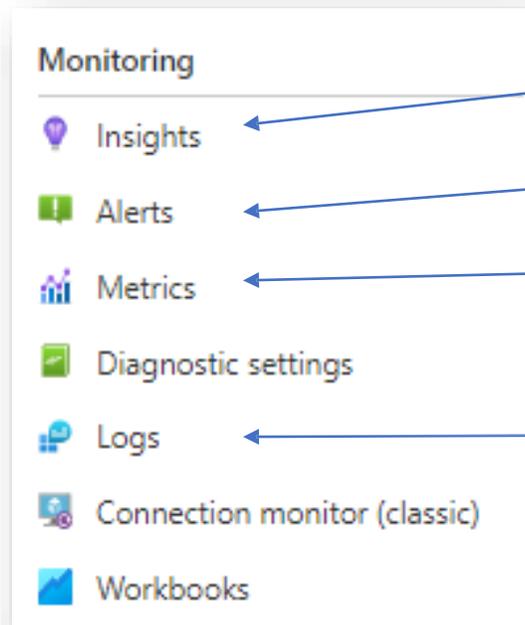- Examples: CPU, Disk, Response Time

Logs →
- Events that occurred in the system
- Textual & numeric
- Examples: System started, Error occurred

Resource Monitoring

- Almost every resource in Azure has a "Monitoring" section

Monitoring

- Insights — Various insights about the resource
- Alerts — Alerts to be triggered when something happens
- Metrics — Metrics about the resource (CPU, Disk, RAM etc.)
- Diagnostic settings
- Logs — Log records about various events
- Connection monitor (classic)
- Workbooks

Alerts

- Get notifications about events in your resources

- Examples:

  - VM's CPU goes above 90%

  - More than 20% of requests fails

  - Server error occurs in the last hour

Alerts Components

Condition → When to trigger the alert (ie. CPU goes above 90%)

Actions → What to do? Usually – send notifications. Notifications are sent to **Action Groups**.

Details → Contents of notification

Alerts Pricing

- Per metrics measured (0.10$ / metric)

- Per notification type

  - 1K email, 1K push notifications, 100K web hooks, 100 SMS in the US
    are included for free each month

- All in all – quite cost effective

Logs & Analytics Workspace

- Almost every Azure resource generate logs

- Might contain data about performance, events, errors etc.

- Logs records need central repository to be stored and viewed

- This is the Log Analytics Workspace

Log Analytics Workspace

- A central location for storing, organizing and analyzing logs

- Aggregates logs from all connected, monitored resources

- Uses specialized query language to query logs

- Located in a designated region

- Better be the same region of the resources to save costs

Log Analytics Workspace
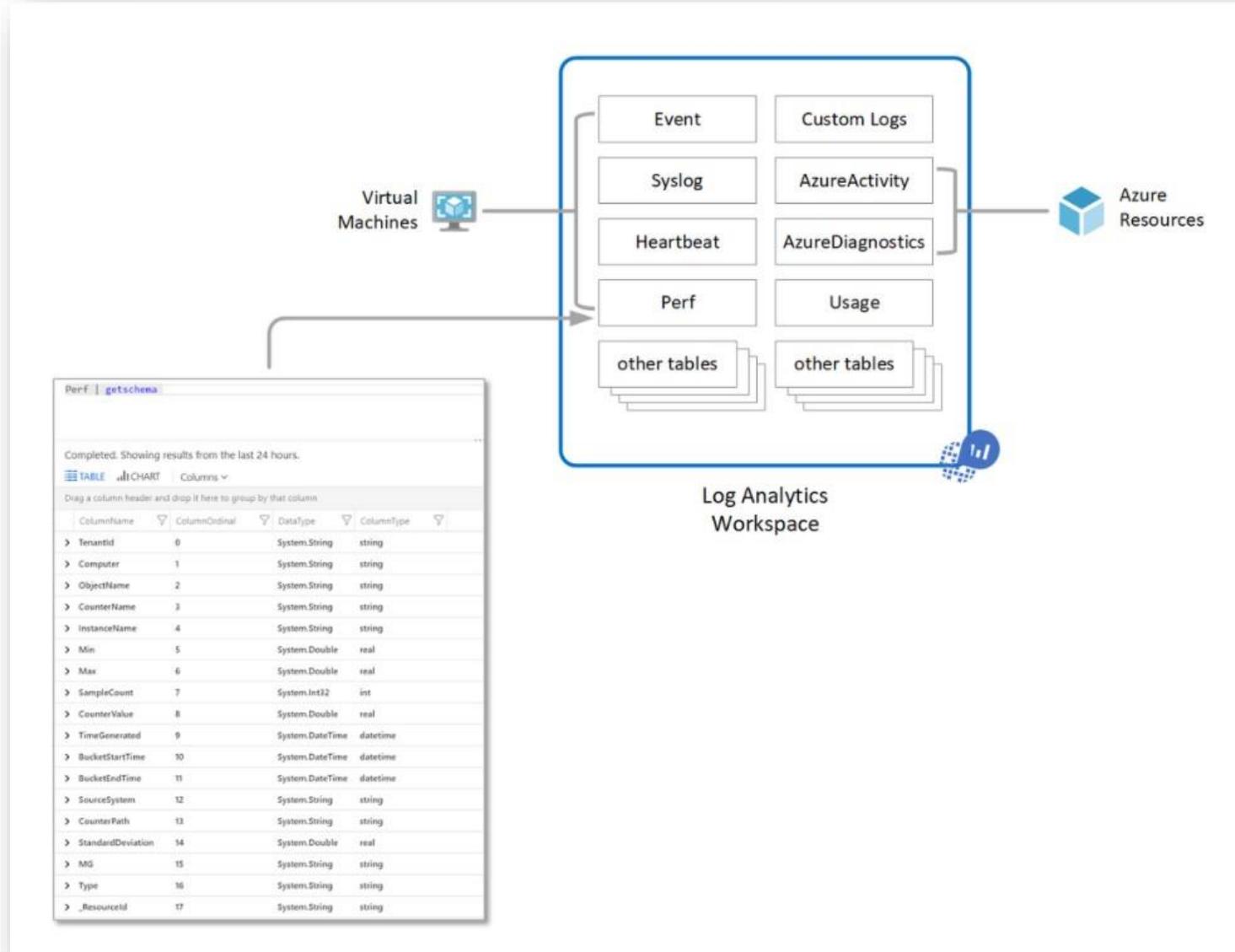
Insights

- A collection of metrics, statistics and insights about the resource

- Specific to resource type

- Generated automatically

- Code-based services (App Services, apps on VMs) can integrate Application Insights into the code and gain a lot of data about app usage, performance, etc.

Azure Monitor

- A central location for all the monitoring aspects of Azure's

  resources

- Provides access to metrics, logs, insights and more

- Has additional capabilities not found in the individual
  resources

Resource Tags

- Resources are organized into Resource Groups

- Sometimes we want more information about resources:

  - Which environment? Test? Production?

  - To which app it belongs?

  - Which group is responsible for it?

Resource Tags

- For this we have Resource Tags

- Tags help organize resources using name-value pairs

- Examples:

  - Environment: Test

  - App: readit

  - Group: the-A-team

Resource Tags

- Can be set during creation of resource or after that

- Useful for many scenarios:

    - Resource querying (show all resource of the A team)

    - Cost analysis (how much did the test environment cost last month?)

    - And more…

Cloud Architecture