

## Session 12:

# Implementing Traffic Management and Monitoring Strategies for Web Services

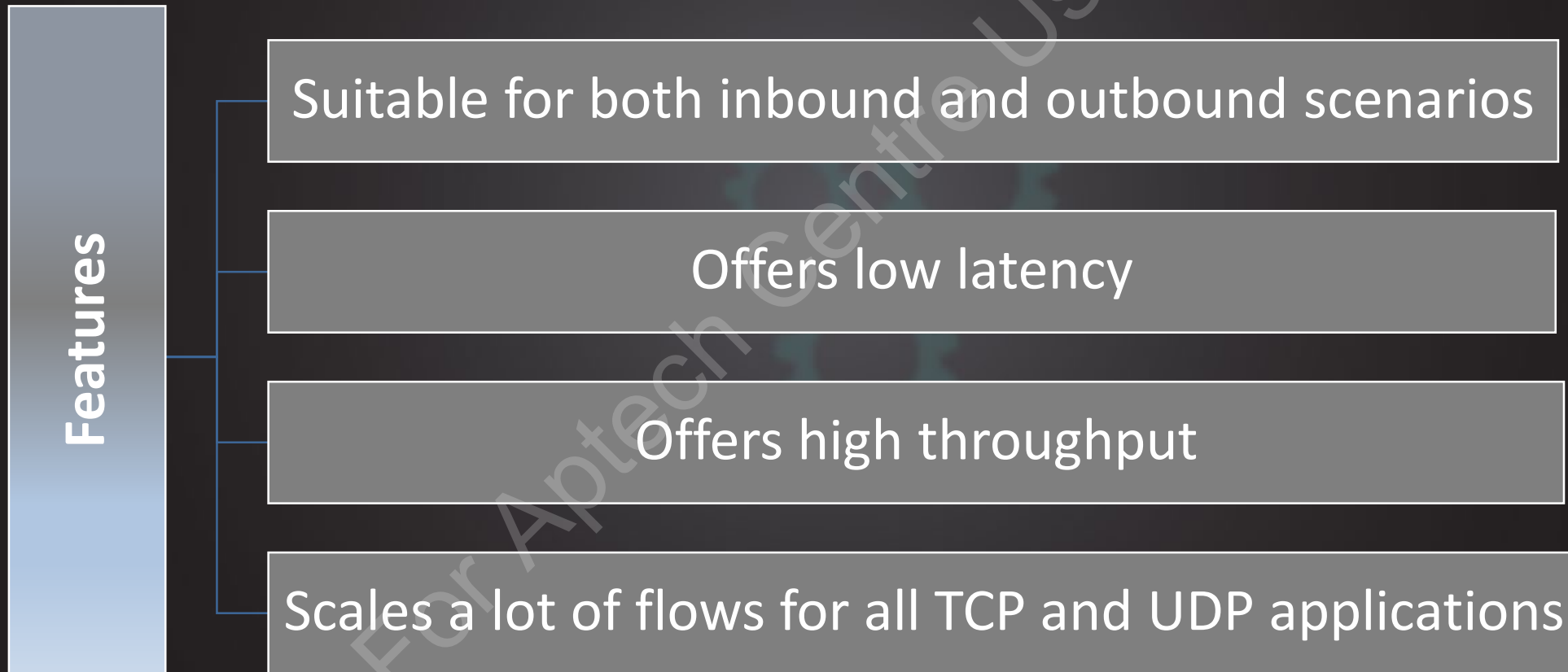
# Session Overview

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- Explain Azure load balancer and its components
- Describe how to work with Azure Application Gateway and Traffic Manager
- Explain Azure Application Insights and Log Analytics
- Explain how to configure Application Insights
- Describe Azure Event Hubs and Stream Analytics

# Introduction to Azure Load Balancer [1-4]

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# Introduction to Azure Load Balancer [2-4]

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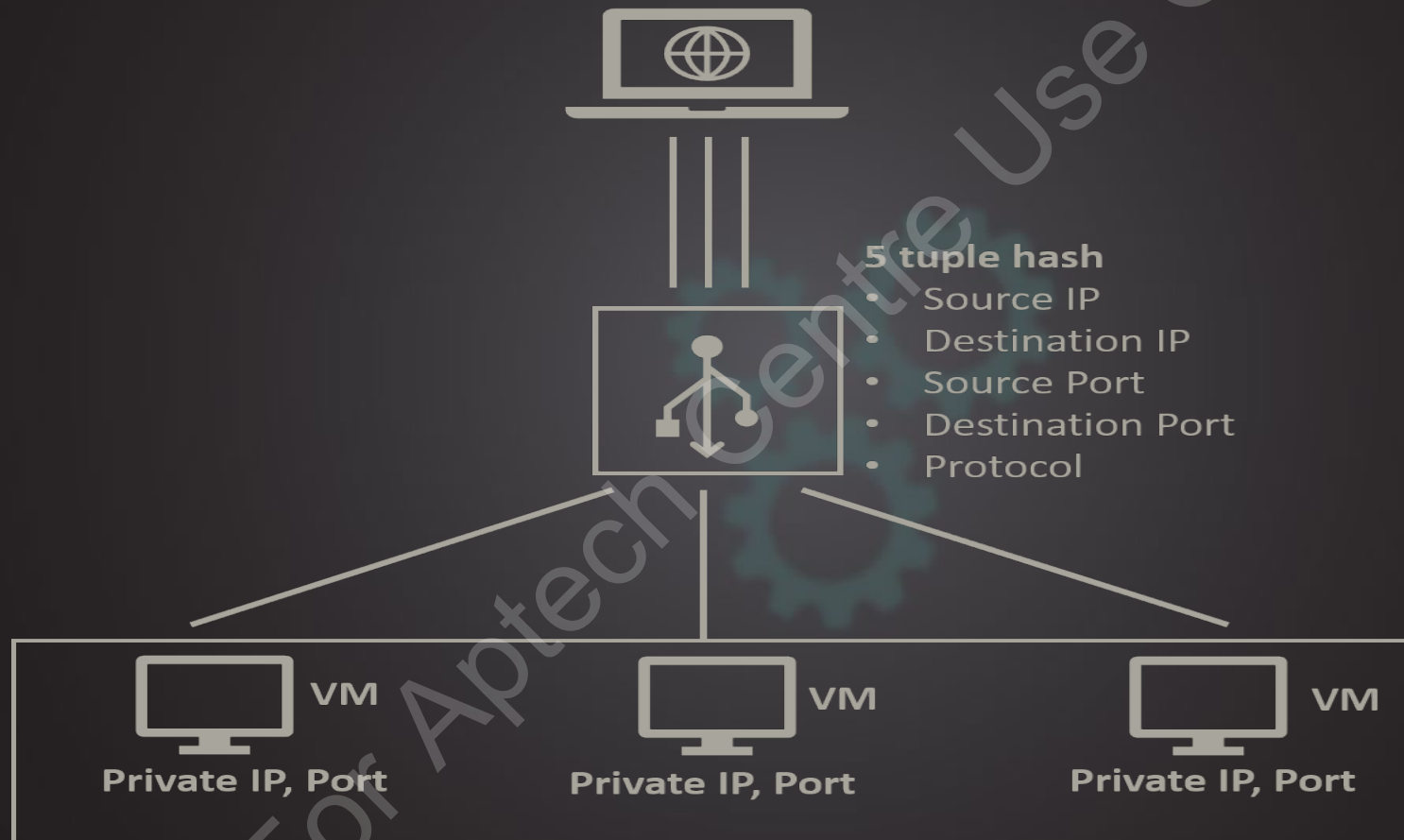
Load balancing of inbound Internet traffic to their VMs, which is called as a public load balancer.

Load balancing of traffic across VMs within a virtual network. Developers can go to the frontend of a load balancer from a given network in instances, such as a hybrid scenario.

Forwarding port traffic to the destined port on specific VMs with inbound rules of Network Address Translation (NAT).

Giving outgoing connectivity for VMs within the virtual network by employing a public load balancer.

# Introduction to Azure Load Balancer [3-4]



***Hash-based Traffic Distribution by Azure Load Balancer***

# Introduction to Azure Load Balancer [4-4]

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Load balancing

Port forwarding

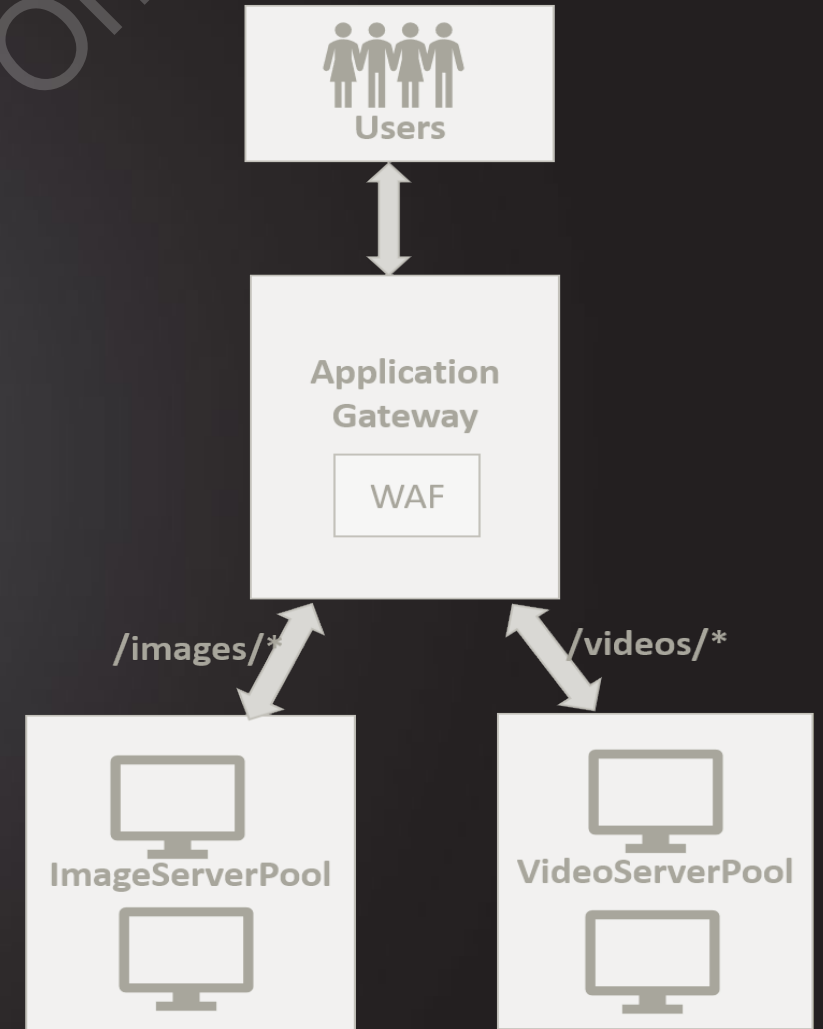
Automatic  
reconfiguration

Health probes

Application  
agnostic and  
transparent

# Working with Azure Application Gateway and Traffic Manager [1-2]

The Azure application gateway can be defined as a load balancer suitable for handling incoming Web traffic and targeting it towards the Web applications.



*Role of an Application Gateway*

# Working with Azure Application Gateway and Traffic Manager [2-2]

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URL-based routing

Multiple-site hosting

Redirection

Session affinity



# Azure Traffic Manager

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Enhance application  
accessibility

Perform maintenance  
without any deferment

Distribute traffic in case of  
huge setups

Enhance performance of  
applications

Merge hybrid applications

# Introduction to Azure Application Insights and Log Analytics [1-2]

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## Application Insights

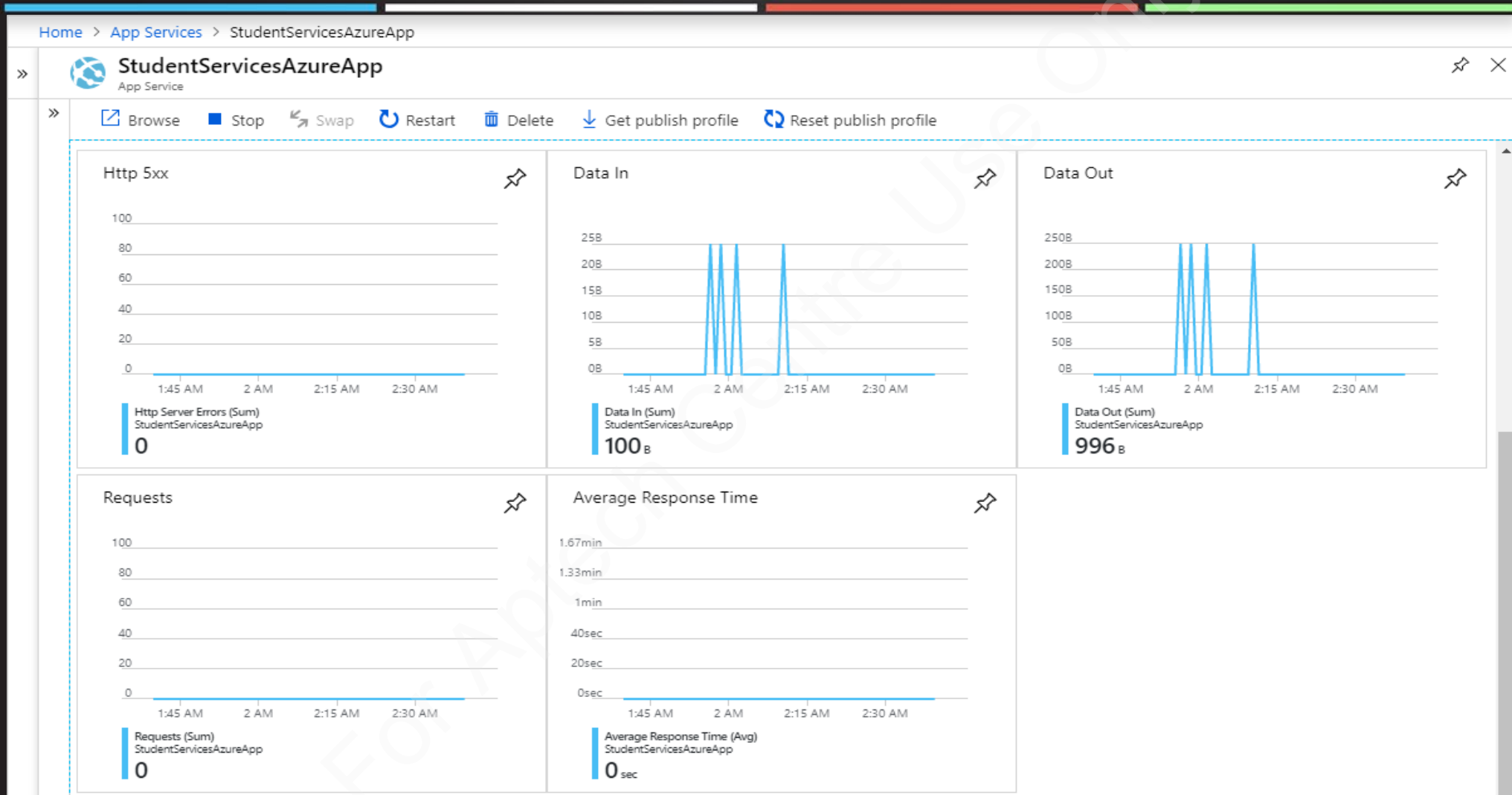
Helps developers in Application Performance Management (APM) when working on numerous environments such as .NET, Node.js, and J2EE.

Assists in tracking live Web applications and identify performance glitches through various analytics tools.

Works on applications installed on the system or in the cloud.

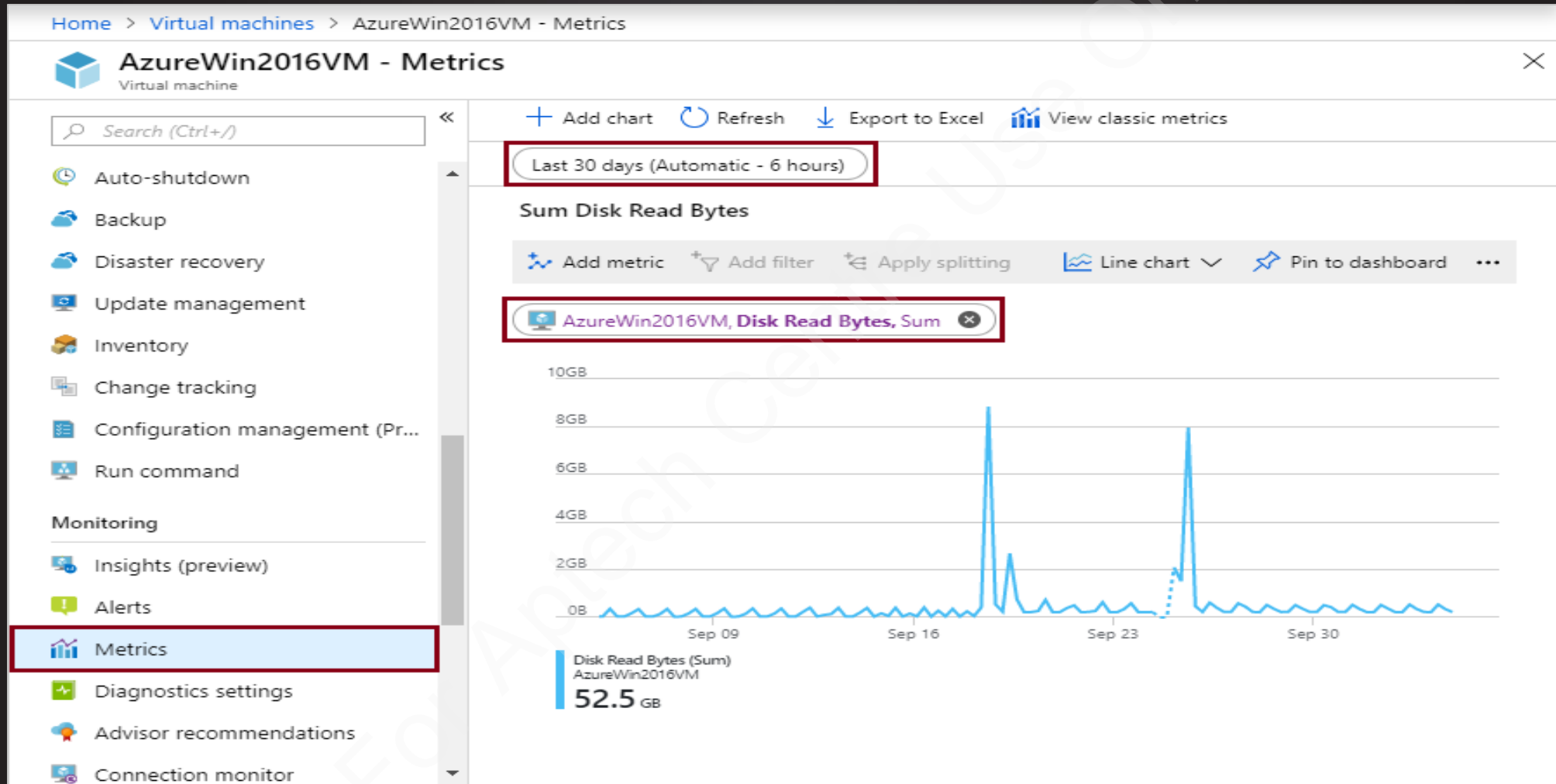
Supports DevOps process and provides connection points to various development tools.

# Introduction to Azure Application Insights and Log Analytics [2-2]



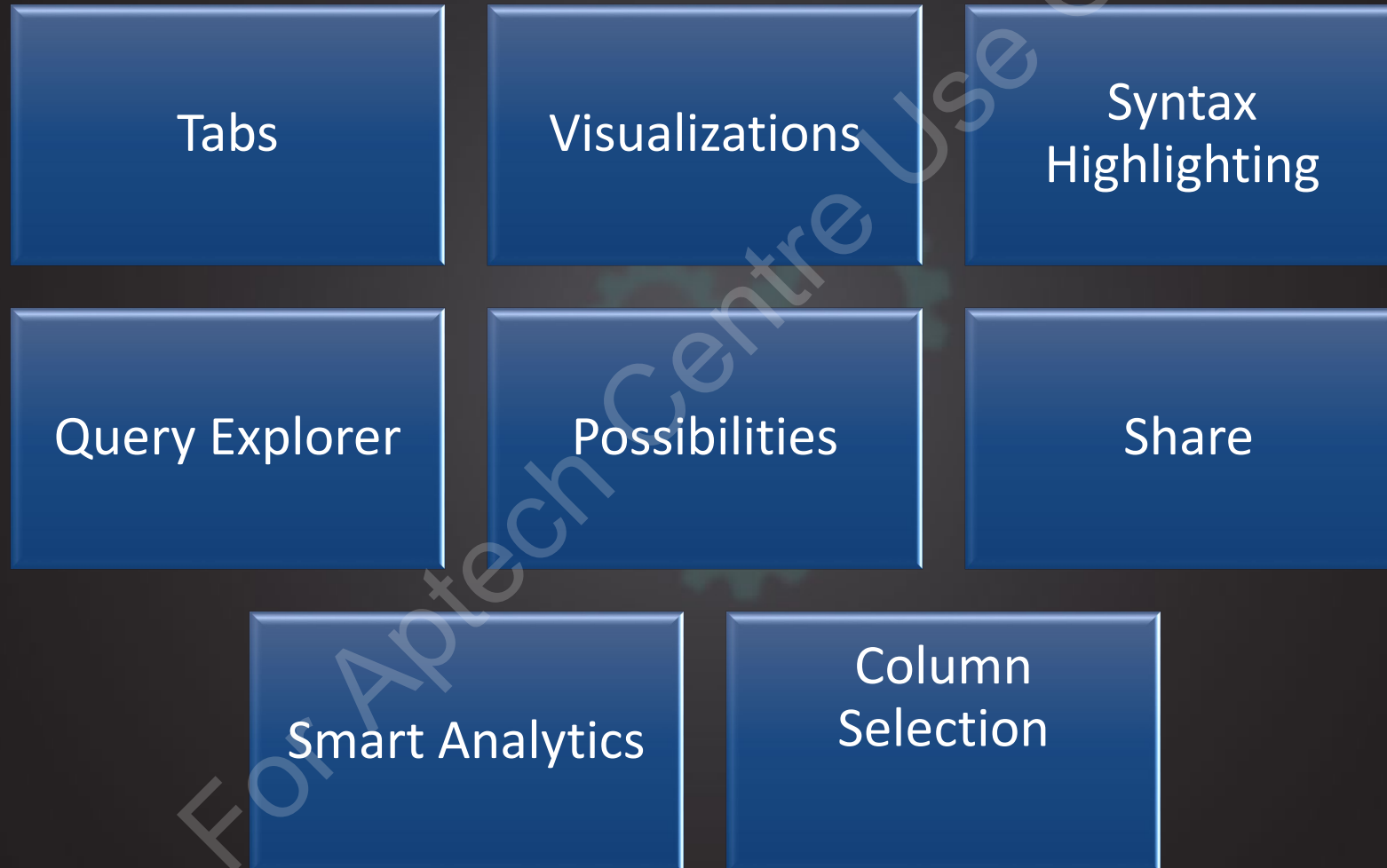
*Application Insight for Azure Web App*

# Azure Log Analytics [1-2]



*Azure Virtual Machine Metrics*

# Azure Log Analytics [2-2]



# Configuring Application Insights [1-4]

## Step 1

Log in to Azure Portal with the login id and password.

## Step 2

From the main menu on the left, click **App Services**, which loads the list of the running Web Application. Following Figure shows the Web Application List page.

Web Application List Page

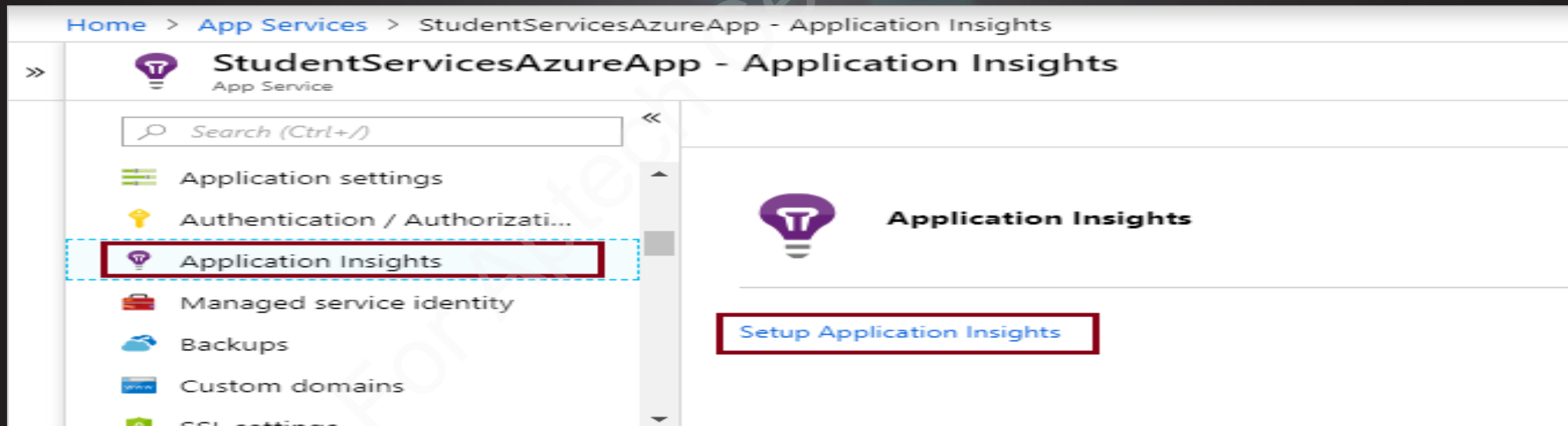
The screenshot displays the 'App Services' page in the Azure Portal. The breadcrumb navigation shows 'Home > App Services'. The page title is 'App Services' with 'Default Directory' below it. A toolbar contains buttons for '+ Add', 'Edit columns', 'Refresh', 'Assign tags', 'Start', 'Restart', 'Stop', and 'Delete'. Below the toolbar, the subscription is listed as 'Pay-As-You-Go'. There are filter controls for 'Filter by name...', 'All resource groups', 'All locations', 'All tags', and 'No grouping'. A table lists 2 items. The first item is 'func-getfullname' (Function App) and the second is 'StudentServicesAzureApp' (Web app), which is highlighted with a red box. Both are in 'Running' status and located in 'Central US'.

<input type="checkbox"/>	NAME ↑↓	STATUS	APP TYPE	APP SERVIC...	LOCATION ↑↓	SUBSCRIPTI... ↑↓
<input type="checkbox"/>	func-getfullname	Running	Function App	CentralUSPlan	Central US	Pay-As-You-Go ...
<input type="checkbox"/>	StudentServicesAzureApp	Running	Web app	StudentServic...	Central US	Pay-As-You-Go ...

# Configuring Application Insights [2-4]

## Step 3

Select and click the Web App created and hosted earlier. This loads the **Web App** properties page. Click **Application Insight** from the menu on the left. As there is no Application Insight created yet, this loads an empty screen as shown in the following Figure.

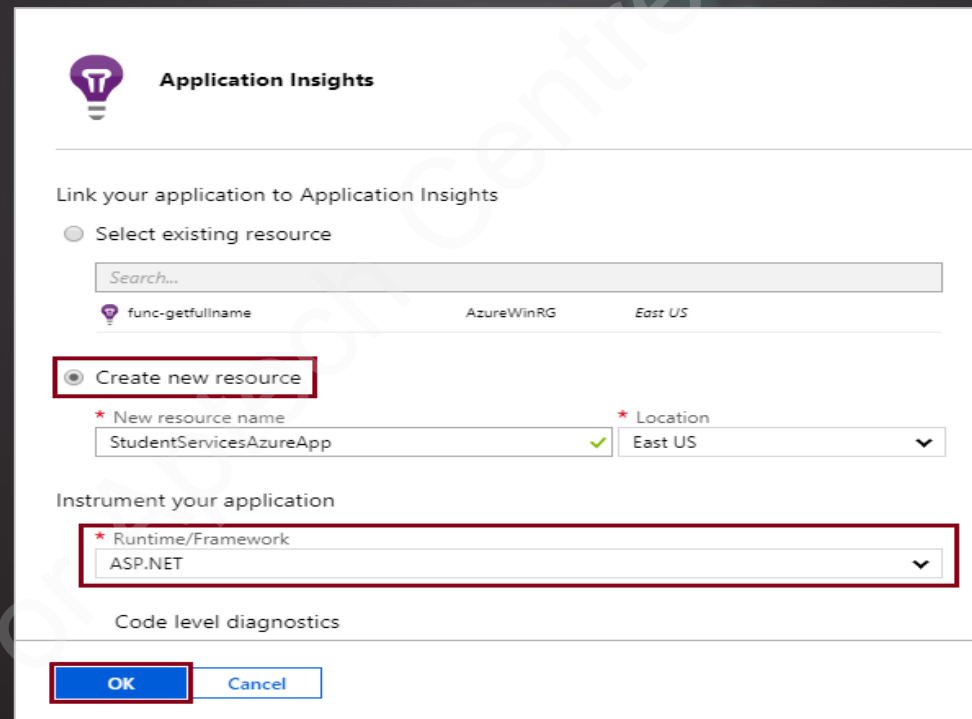


*Web App Application Insight*

# Configuring Application Insights [3-4]

## Step 4

In the **Application Insight** page, click **Setup Application Insights** button to start a new Application Insight. Following Figure shows the creation of a new Application Insight.



The screenshot shows the 'Application Insights' dialog box with the title 'Link your application to Application Insights'. It has two radio buttons: 'Select existing resource' and 'Create new resource'. The 'Create new resource' option is selected and highlighted with a red box. Below it, there are two fields: '\* New resource name' with the value 'StudentServicesAzureApp' and a green checkmark, and '\* Location' with the value 'East US'. Below these, there is a section 'Instrument your application' with a dropdown menu for '\* Runtime/Framework' showing 'ASP.NET', which is also highlighted with a red box. At the bottom, there are 'OK' and 'Cancel' buttons, with the 'OK' button highlighted by a red box. The background of the dialog is white, and the overall interface is clean and modern.

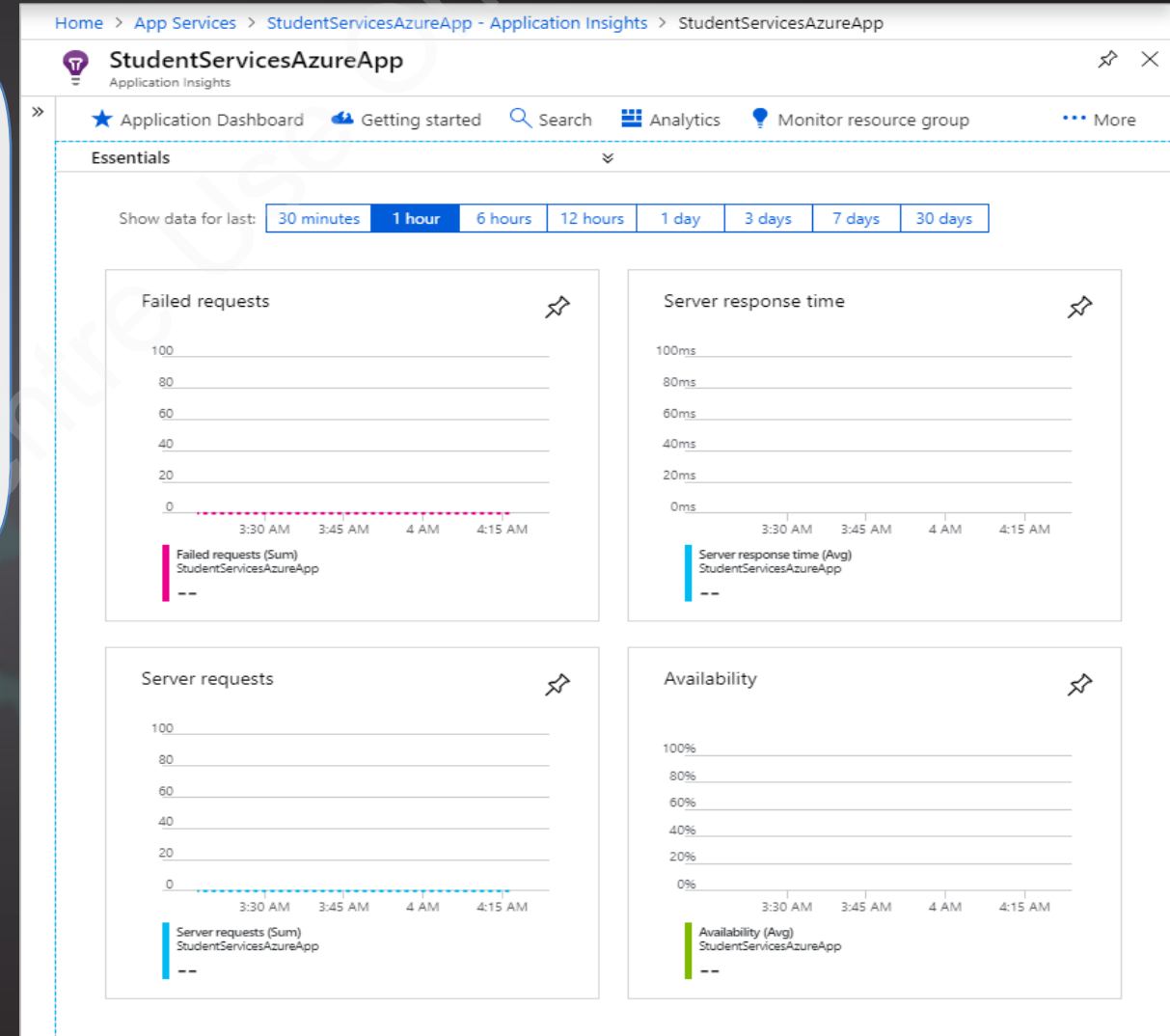
*Creation of a New Application Insight*



# Configuring Application Insights [4-4]

## Step 5

Provide the required information, such as New resource name, Runtime/Framework, and so on and click **OK**. A conformation window pops up. Click **Confirm** to continue the creation process.



*Application Insight Graph*

# Introduction to Azure Event Hubs and Stream Analytics

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To identify any anomalies, such as fraud or outliers

To implement logging in applications

To perform analytics pipelines, for example, clickstreams

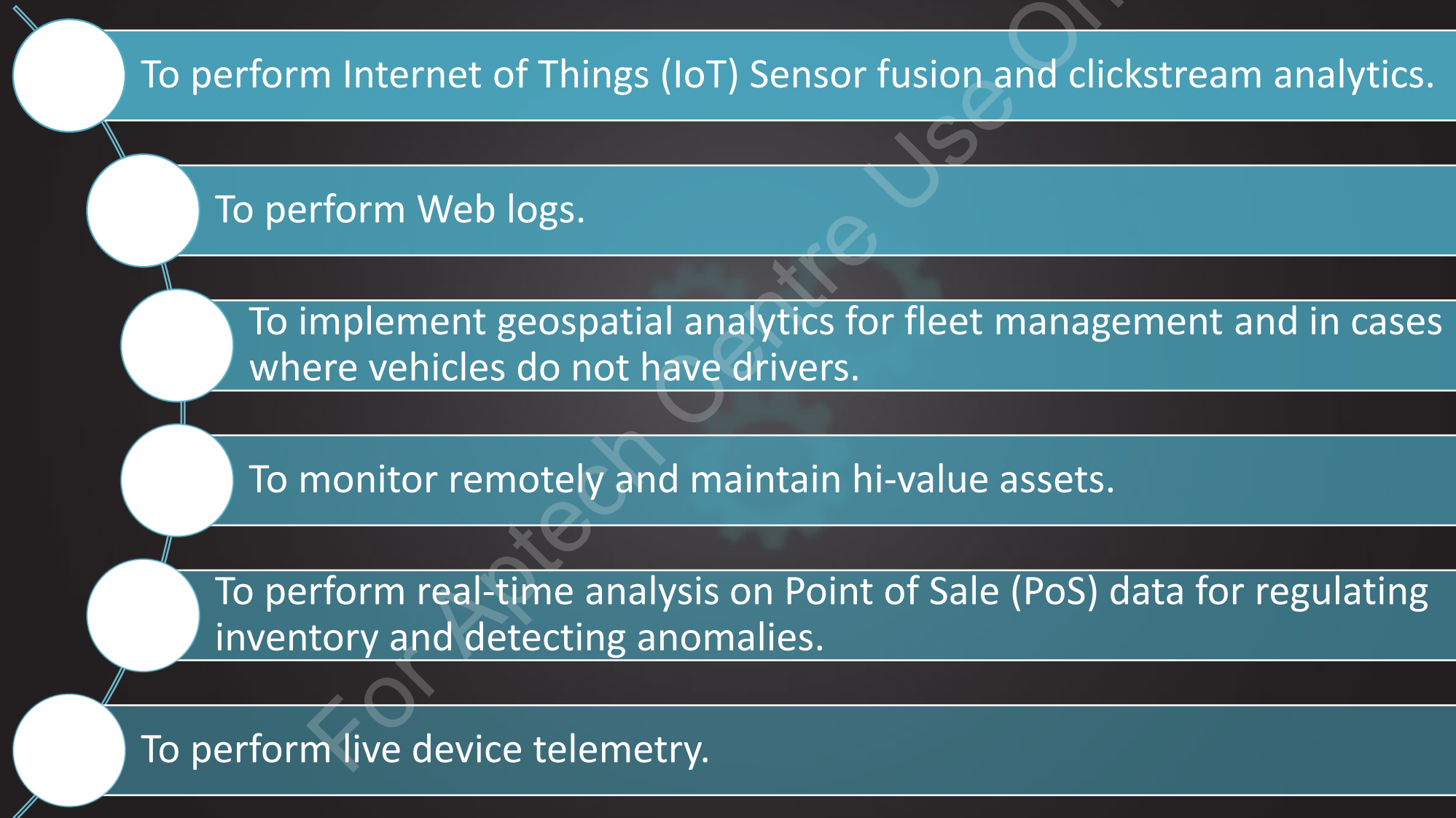
To perform real-time dashboarding

To archive information

To process transactions

To process user and device telemetry

# Stream Analytics



# Summary

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- Azure Load Balancer is a tool that helps developers to scale their applications, thus, providing high availability for their services.
- Azure Application Gateway is a load balancer suitable for handling incoming Web traffic and targeting it towards the Web applications.
- Azure Traffic Manager allows developers to allocate traffic globally. It is dependent on DNS and offers good accessibility and responds quickly.
- Application Insights is a service that helps developers in Application Performance Management (APM) when working on numerous environments.
- While Azure Event Hubs provides an environment that allows to stream Big Data, Azure Stream Analytics is an engine that executes events and allows developers to study large sections of information arriving from various devices.