Application Insights

Application Insights in Azure is a powerful Application Performance Management (APM) service that helps developers monitor, analyze, and optimize the performance and usage of their applications. It's part of the broader Azure Monitor suite and is particularly useful for identifying performance issues, understanding user behavior, and diagnosing application failures.Azure Application Insights is a comprehensive Application Performance Management (APM) service in Azure that helps you monitor live applications. It automatically detects performance anomalies, provides powerful analytics tools to diagnose issues, and gives insights into user behavior. Essentially, it helps you keep your applications running smoothly and efficiently.
Azure Application Insights is a feature of Azure Monitor that provides powerful application performance management (APM) capabilities. It is designed to help developers and DevOps teams monitor the performance, availability, and usage of their applications in real-time.

Key Features of Application Insights:

1. **Smart Detection:** Automatically detects performance anomalies, such as unusual patterns in failed requests, performance degradations, or memory leaks.
2. **Performance Monitoring:** Provides detailed performance metrics, such as response times, request rates, and dependency durations.
3. **Failure Analysis:** Helps you diagnose the root cause of application failures by providing detailed error information, including stack traces and request details.
4. **Usage Analysis:** Provides insights into how users are interacting with your application, such as which pages are most popular, how long users spend on each page, and user demographics.
5. **Availability Monitoring:** Monitors the availability of your application by sending web requests to your application from various locations around the world.

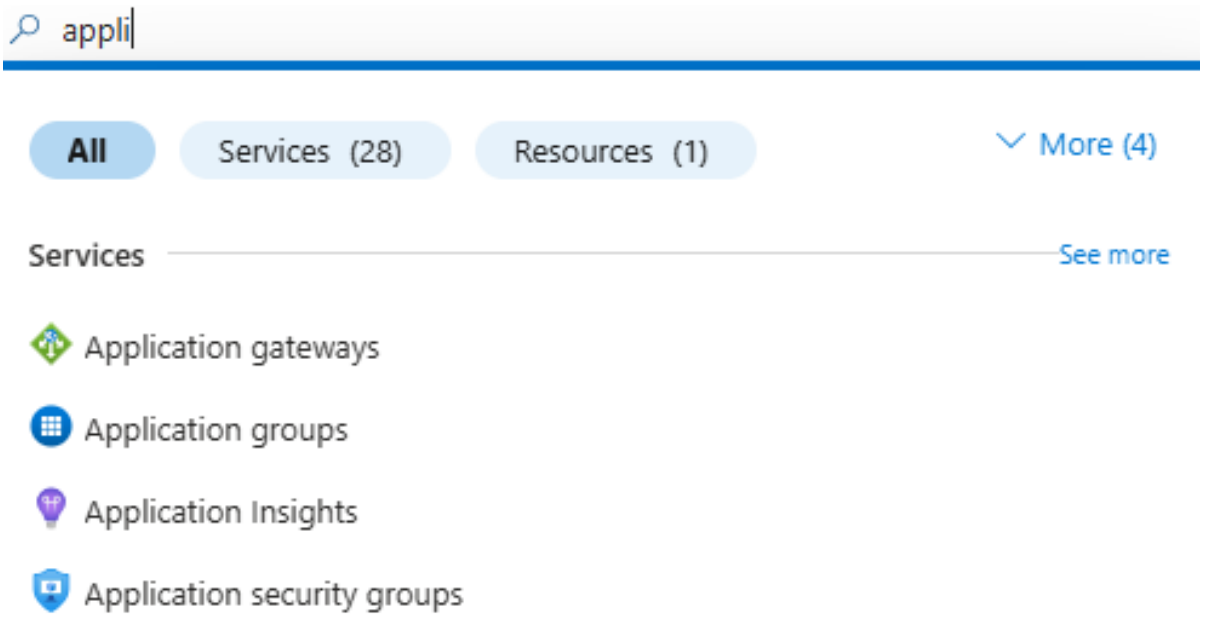
Use Cases for Application Insights:

1. **Web Applications:** Monitor the performance and usage of web applications, identify performance bottlenecks, and diagnose errors.
2. **Mobile Apps:** Track usage, performance, and errors in mobile apps running on various platforms.
3. **Microservices:** Monitor the performance and health of microservices architectures, identify dependencies, and diagnose issues across services.
4. **Background Services:** Monitor the performance and health of background services and jobs.
5. **APIs:** Track the usage and performance of APIs, identify performance bottlenecks, and diagnose errors.

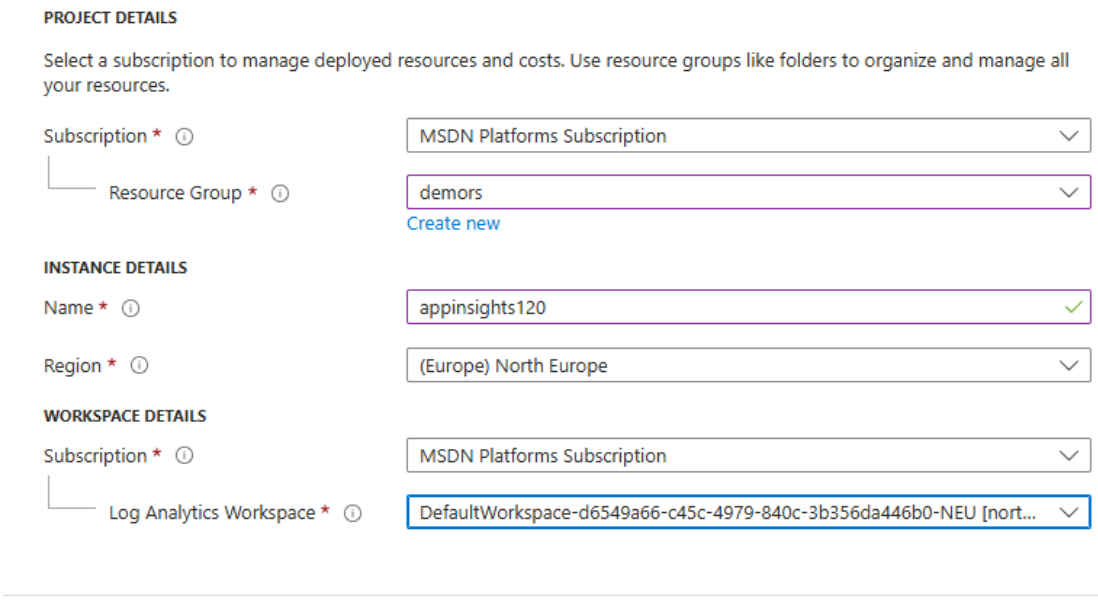
The end goal of Application Insights is to provide comprehensive monitoring and performance management for live web applications, enabling developers to ensure optimal performance, detect and resolve issues, and improve user experience. By integrating Application Insights with an Azure Web App or other platforms, developers gain real-time visibility into metrics such as response times, request rates, and errors. It also tracks user interactions and application dependencies. Through telemetry data and analytics, Application Insights empowers teams to proactively address performance bottlenecks, optimize code, and enhance application reliability, ultimately delivering a seamless and efficient experience for end-users.

To begin with the lab

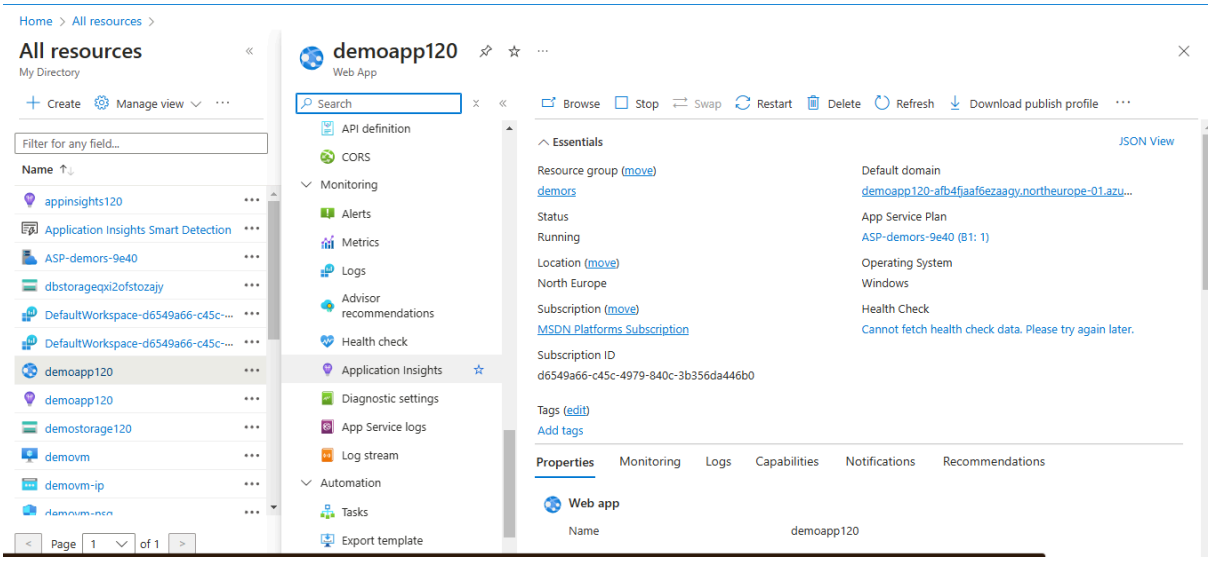
1. Firstly you need to establish an Application Insights Resource to do so access the Azure Portal and search for Application Insights.
2. Initiate the creation of a new resource within your selected Resource Group and select a distinctive name and region (for instance, North Europe).



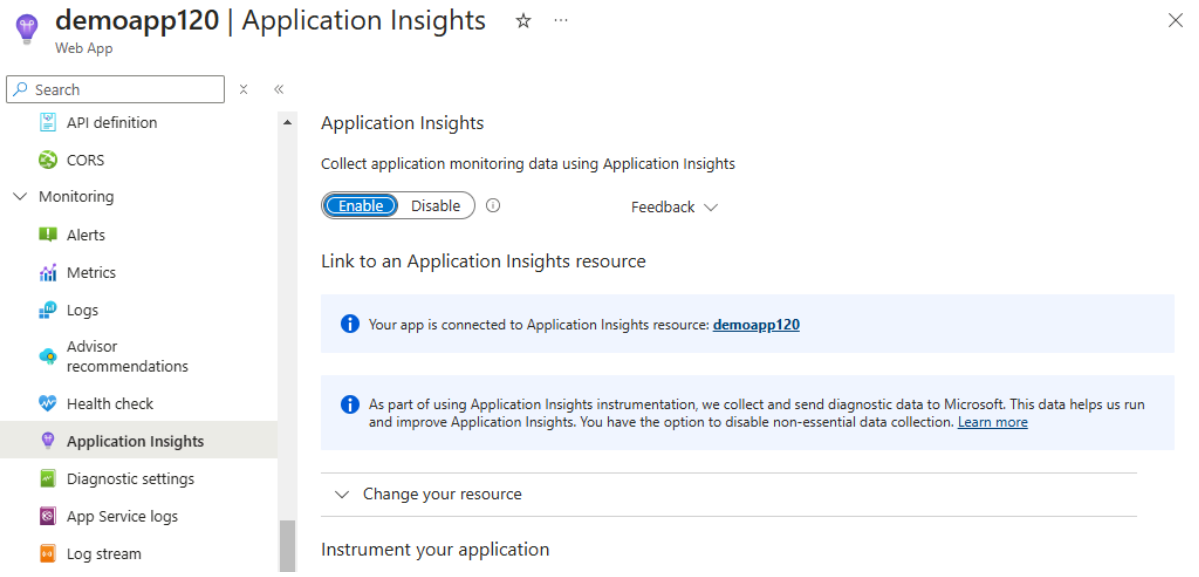
3. Opt for a workspace-based setup to transmit telemetry data to a Log Analytics Workspace.Examine the details and proceed to create the resource.

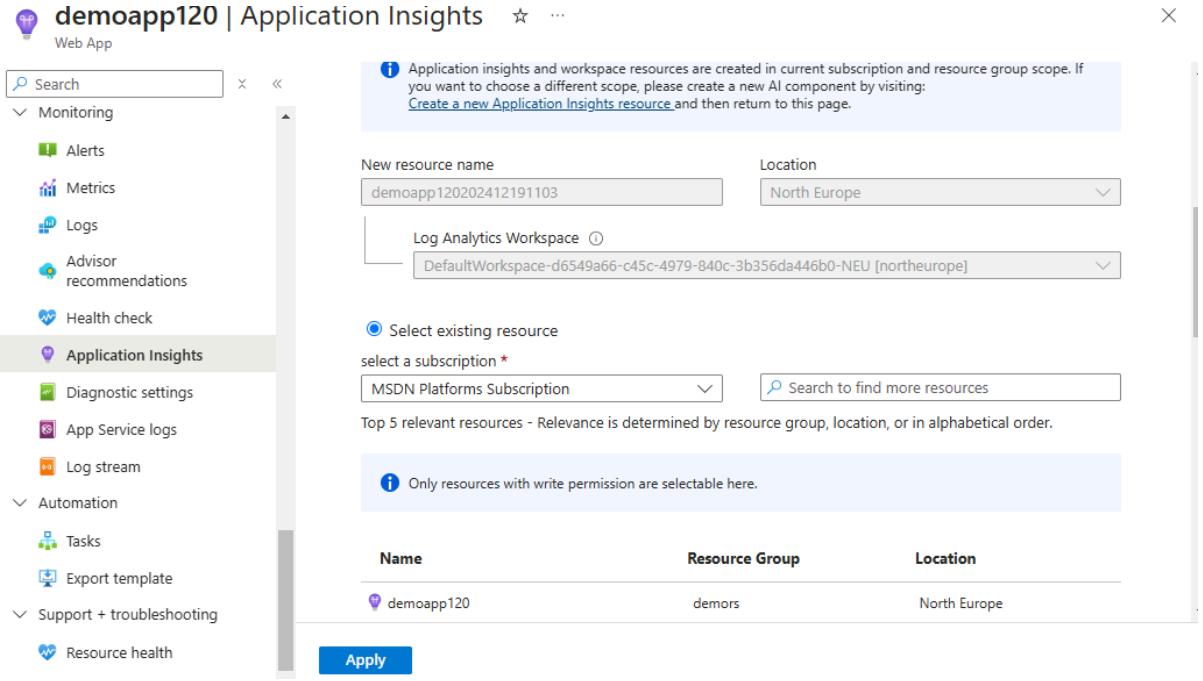


4. Access the Azure Web App. Navigate to the Settings section and find Application Insights.

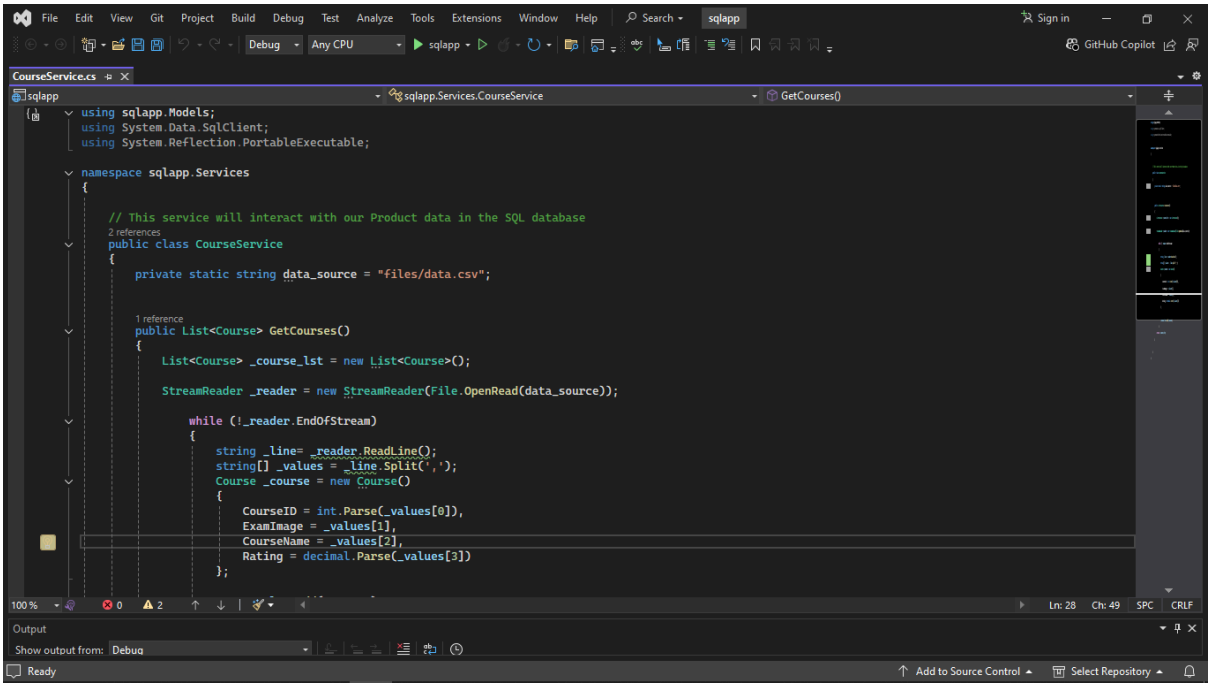


5. Turn on Application Insights and select the existing resource you created and leave other settings as default and apply changes.

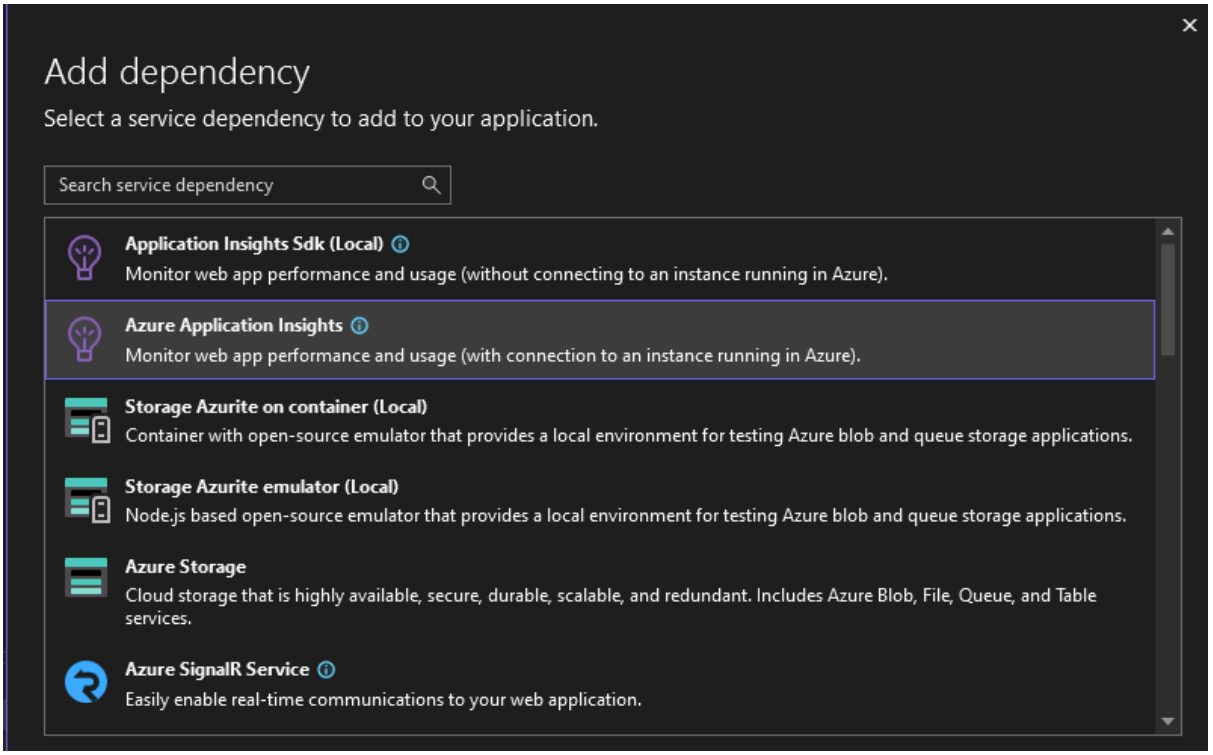




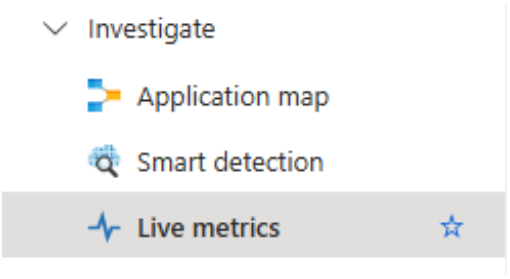
6. In your .NET project, access the project settings by right-clicking on it and selecting the option to Configure Application Insights.



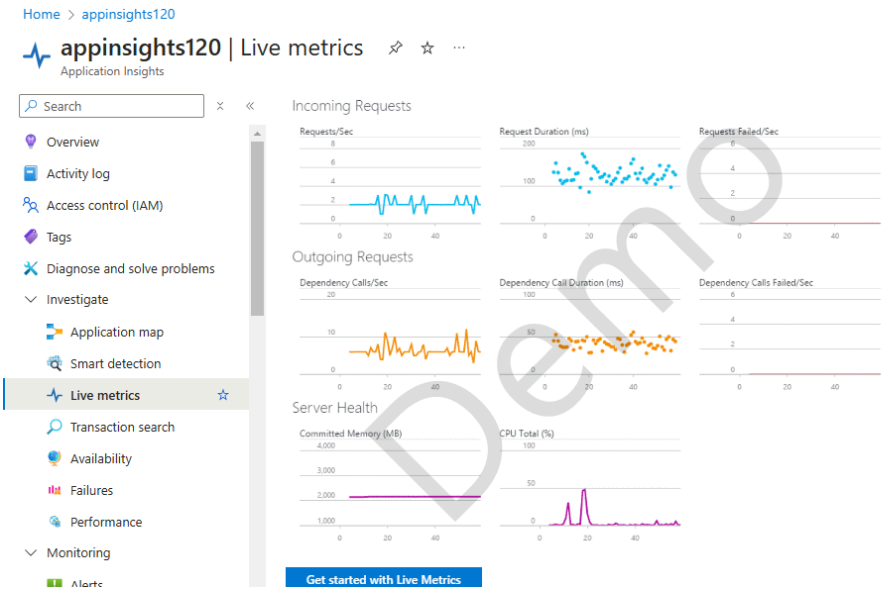
7. Opt to connect to Azure and then choose the relevant Application Insights resource. Ensure that you utilize a secure connection string for the integration process.

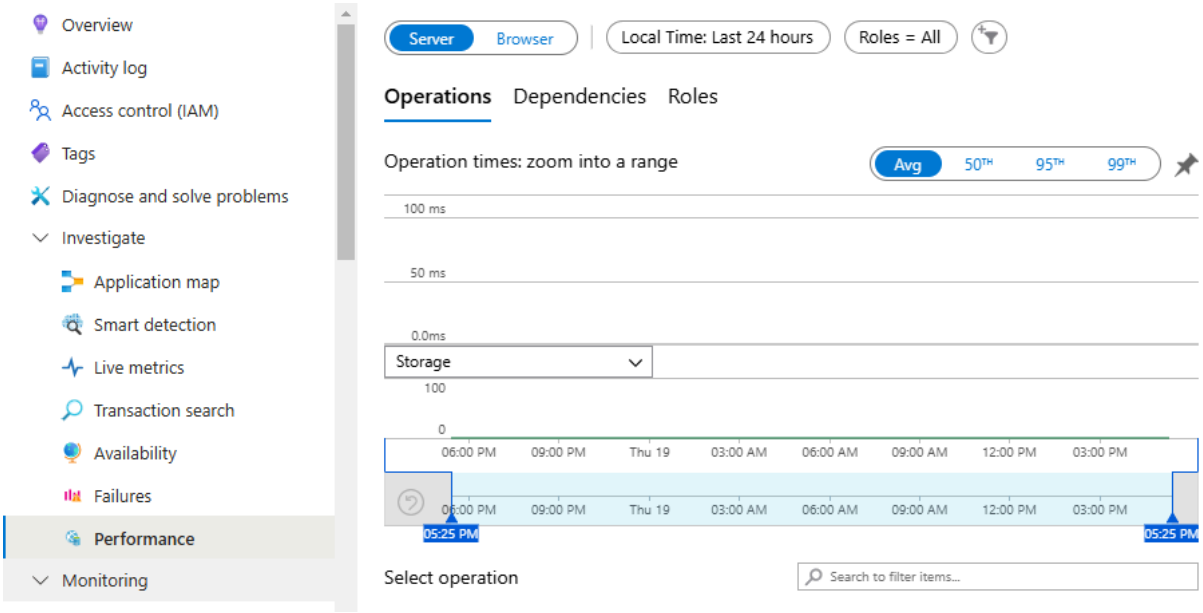


8. Ensure the necessary Application Insights packages are added to the project and publish the updated project back to the **Azure Web App** using the existing publish profile.
9. Now Access Live Metrics within the Application Insights resource. Monitor real-time information regarding application usage, requests, and operations.



10. Access the Performance section within Application Insights. Examine metrics including Types of operations (e.g., GET requests), Average response durations, Count of invocations for particular pages.

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