

Blueprint – Azure Application Insights

Revision History

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1. Scope

This document provides the blueprint for the Application Insights service offered by Azure. This contains the below.

1. Service Usage
2. Provisioning Scripts
3. Support Objectives
4. Monitoring metrics
5. Monitoring Setup Scripts

2. Overview

Application Insights is an extensible Application Performance Management (APM) service for web developers on multiple platforms. Use it to monitor your live web application. It will automatically detect performance anomalies. It includes powerful analytics tools to help you diagnose issues and to understand what users actually do with your app. It's designed to help you continuously improve performance and usability. It works for apps on a wide variety of platforms including .NET, Node.js and J2EE, hosted on-premises or in the cloud. It integrates with your DevOps process, and has connection points to a variety of development tools.

3. Service Usage

3.1 Technical Limitations

- Data is not encrypted at rest

3.2 Best Practices

- Confidential data should not be logged using Application Insights
- It is recommended to use separate instrumentation keys per application

3.3 Microsoft SLA

Data latency will not exceed 2 hours at least 99.9% of the time. Refer https://azure.microsoft.com/en-us/support/legal/sla/application-insights/v1_0/.

3.4 Service Connectivity

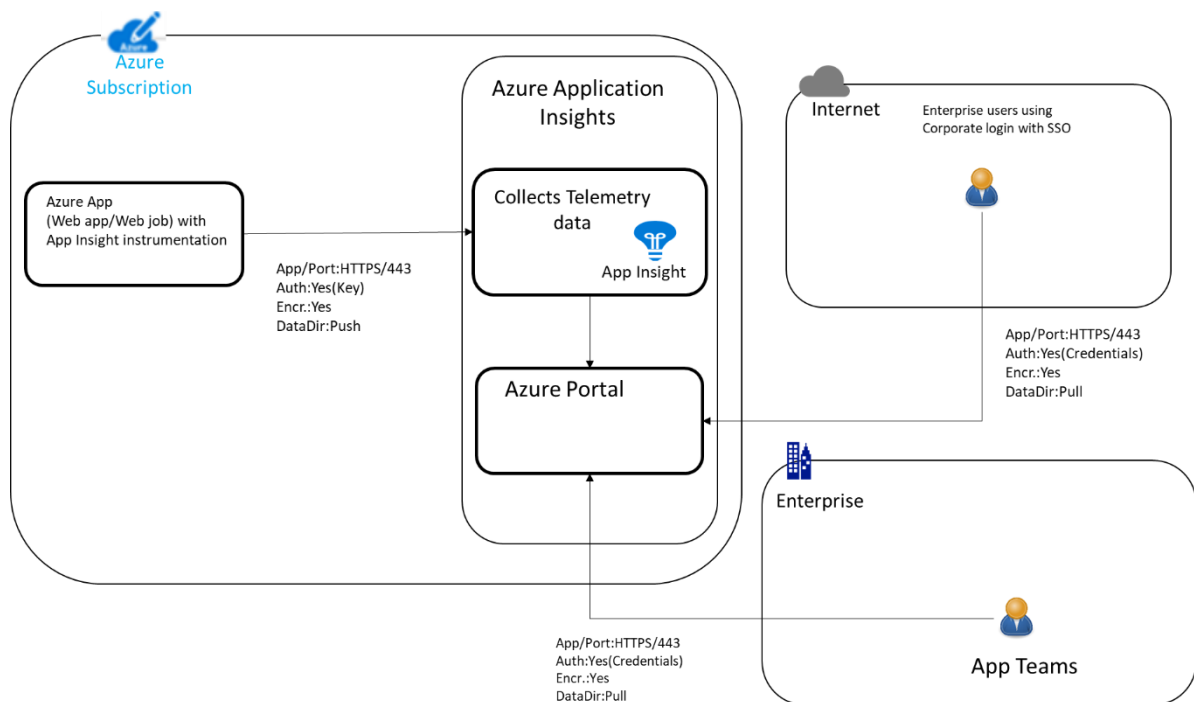
The application will connect with Azure App Insights using Azure REST API.

3.5 Additional Notes

- Raw data points are retained only for a maximum of 90 days. Use continuous export (if needed for archive) to store older raw data points. Additional costs apply if continuous export is enabled. Refer <https://azure.microsoft.com/en-us/pricing/details/application-insights/>

- Data sent from https pages are encrypted in transit. Data sent from http pages are not encrypted in transit
- App telemetry data is stored in USA, Europe and South east Asia locations. However, this service supports applications hosted in all locations
- Backups are not available for app telemetry data. It is recommended to use Continuous export to archive app telemetry data.

3.6 Service Usage Diagram



4. [Provisioning Script](#)

The below ARM template can be used to provision an instance of the service.

This consists of the below parameters

Parameter Name	Description
AppInsightName	Name of the App Insight instance
ApplicationType	Type of application being monitored using the provisioned App Insight instance
TagValues	Enter the tag values to be set for the instance

Template Script

```
{
  "$schema": "http://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
  "contentVersion": "1.0.0.0",
  "parameters": {
    "AppInsightName": {
      "type": "string",
      "metadata": {
        "description": "Enter the application name that you are going to provision."
      }
    },
    "ApplicationType": {
      "type": "string",
      "defaultValue": "ASP.NET web application",
      "allowedValues": [
        "ASP.NET web application",
        "Java web application",
        "HockeyApp bridge application",
        "Node.js Application",
        "General"
      ],
      "metadata": {
        "description": "Enter the application type according to your choice."
      }
    },
    "Location": {
      "type": "string",
      "defaultValue": "South Central US",
      "allowedValues": [
        "South Central US",
        "North Central US"
      ],
      "metadata": {
        "description": "Enter the Azure locations in which the resources exists, or to be created .."
      }
    },
    "TagValues": {
```

```

        "defaultValue": {
            "Tag1Name": "Tag1Value",
            "Tag2Name": "Tag2Value"
        },
        "type": "object"
    }
},
"variables": {},
"resources": [
    {
        "type": "microsoft.insights/components",
        "kind": "web",
        "name": "[parameters('AppInsightName')]",
        "apiVersion": "2014-04-01",
        "location": "[parameters('Location')]",
        "tags": "[parameters('TagValues')]",
        "properties": {
            "ApplicationId": "[parameters('AppInsightName')]"
        },
        "dependsOn": []
    }
]
}

```

5. [Support Objectives](#)

Below are the objectives to be fulfilled while providing support for instances of Azure Application Insights.

1. Provisioning App Insight instances
2. De-provisioning App insight instances
3. Onboarding existing App insight instances
 - a. Updating tags

6. [Monitoring Metrics](#)

This section details the metrics which are to be monitored for instances of Azure Application Insights.

6.1 Recommended Metrics

The following metrics are recommended to be enabled by default:

	Category	Operator Type	Threshold	Unit	Frequency in Mins (5 or 15)
Test duration	Information	>	240	seconds	5

Failed requests	Information	>	40	count	15
Server exceptions	Information	>	Production: 40 Development: 50	count	15
Browser exceptions	Information	>	Production: 40 Development: 50	count	15
Available memory	Information	>	Production: 75% of total memory size Development: 85% of total memory size	bytes	5
Server response time	Performance	>	Production: 3 Development: 5	seconds	5

6.2 Optional Metrics

The following monitoring metrics are optional and can be enabled on a need basis.

Metrics	Category	Operator Type	Threshold	Unit	Frequency in Mins (5 or 15)
Page views	Information	>	100000	count	5
Request rate	Performance	>	10	count/second	5
Exception Rate	Information	>	10	count/second	15
Process IO rate	Information	>	20480	bytes	5
ASP.Net request in application queue	Information	>	10	count	5
ASP.NET request rate	Information	>	10	count/second	5
Page Load network connect time	Performance	>	Production: 3 Development: 5	seconds	5
Send request time	Performance	>	Production: 3 Development: 5	seconds	5
Receiving response time	Performance	>	Production: 3 Development: 5	seconds	5
Client processing time	Performance	>	Production: 3 Development: 5	seconds	5
Browser page load time	Information	>	Production: 3 Development: 5	seconds	5

ASP.NET request execution time	Information	>	Production: 3 Development: 5	seconds	5
ASP.NET request execution time	Information	>	Production: 3 Development: 5	seconds	5
ASP.NET request execution time	Information	>	Production: 3 Development: 5	seconds	5
Process CPU	Performance	>	Production: 70 Development: 85	percent	15
Process CPU (all cores)	Performance	>	Production: 70 Development: 85	percent	15
Process private bytes	Information	>	20480	bytes	15
Processor time	Performance	>	Production: 70 Development: 85	percent	15
Availability	Information	>	Production: 70 Development: 85	percent	15

7. [Monitoring Metrics Setup Script](#)

Monitoring metrics can be setup either manually on the console for Application Insights or by using Standard templates.