

# Tweet della giornata



#GlobalAzure

@clouddgen\_verona



2018  
Global Azure  
BOOTCAMP

ARGOMENTO

# Monitor and diagnose your app with Application Insights

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- Application Performance Management (APM)
- Per web developers
- Multi platform / multi language
  - .NET, Node.js and J2EE
  - SDK, REST
- PaaS
  - Billing su quantità di dati
  - Profilo free disponibile
- Integrabile con Visual Studio App Center and HockeyApp



- Request rates, response times, and failure rates
- Dependency rates, response times, and failure rates
- Exceptions
- Page views and load performance
- AJAX calls from web pages
- User and session counts.
- Performance counters
- Host diagnostics from Docker or Azure.
- Diagnostic trace logs
- Custom events and metric

# Setup



## Dal portale

This screenshot shows the 'Application Insights' setup page in the Azure portal. The page is titled 'Application Insights' with a subtitle 'Monitor web app performance and usage'. It contains several configuration sections: 'Name' with a text input field containing 'enter name'; 'Application Type' with a dropdown menu set to 'ASP.NET web application'; 'Subscription' with a dropdown menu set to 'Ricciolo - Windows Azure MSDN - Visual St'; 'Resource Group' with radio buttons for 'Create new' (selected) and 'Use existing', followed by an empty text input field; 'Location' with a dropdown menu set to 'West Europe'; 'OS' with tabs for 'Windows' (selected) and 'Linux'; 'App Service plan/Location' with a dropdown menu set to 'Default1(West Europe)'; 'Application Insights' with a toggle switch set to 'On'; and 'Application Insights Location' with a dropdown menu set to 'East US'.

## Da Visual Studio

This screenshot shows the 'Application Insights' setup page in Visual Studio. The page has a light gray background and a purple header with the 'Application Insights' logo. Below the header, it says 'Gain insights through telemetry, analytics and smart detection'. The setup form includes: 'Account' with a dropdown menu showing 'Microsoft account ricciolocristian@hotmail.com'; 'Subscription' with a dropdown menu set to 'Ricciolo - Windows Azure MSDN - Visual Studio Ultimate'; 'Resource' with a dropdown menu set to 'globalbootcamp (Existing resource)'; a link 'Configure settings...'; 'Pricing' with a link 'Visit our pricing page for details.'; and a blue 'Register' button at the bottom.

## Da script Power Shell ARM

- ASP.NET
  - NuGet Microsoft.ApplicationInsights.\*
  - Configurazione applicationinsights.config
- ASP.NET Core
  - NuGet Microsoft.ApplicationInsights.AspNetCore

```
public void ConfigureServices(IServiceCollection services)
{
    services.AddMvc();
    services.AddApplicationInsightsTelemetry();
}
```
- Node.js
  - npm applicationinsights

```
const appInsights = require("applicationinsights");
appInsights.setup("<instrumentation_key>");
appInsights.start();
```
- Java
  - Application Insights Java SDK / Gradle / Maven support
  - Configurazione ApplicationInsights.xml
- Set del **InstrumentationKey**

- Visualizzazione grafici metriche
  - Tipologie e intervalli
- Lista delle registrazioni
- Filtri e aggregazioni
  - Temporal, proprietà
  - Conta, somma, media, unico, minimo, massimo, percentuali
- Salvataggio dei report
- Pin su dashboard
- Alert sulle metriche

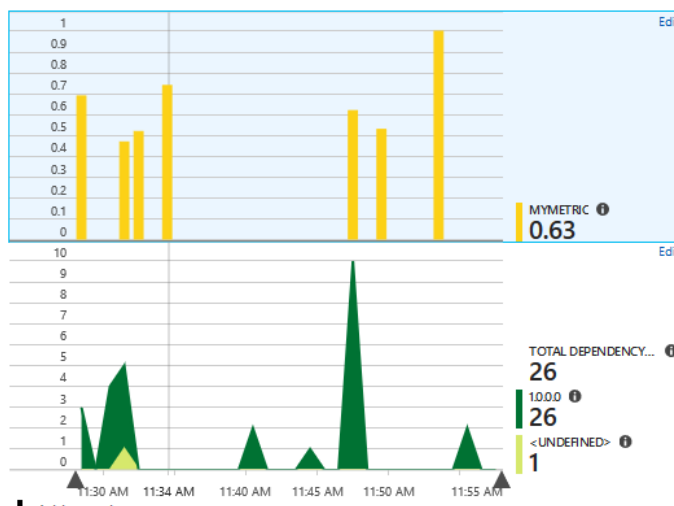


Chart type ⓘ

Line Area Bar Grid

Aggregation ⓘ

Average

Chart height ⓘ

4

Color palette ⓘ

Yellow

Grouping ⓘ

On Off

Metrics ⓘ

Find metrics...

- ▶ Usage
- ▶ Failure
- ▶ Server
- ▶ Availability
- ▶ Client
- ▶ Performance Counter
- ▶ Aggregated metrics (preview)
- ▼ Custom
  - ☐ HeartbeatState
  - ☒ myMetric



# Failures and snapshot debugger



- Tracking delle eccezioni
  - Stack completo
- Correlazione con le altre metriche
  - Aggregazione per tipo di eccezione
- Integrazione con Visual Studio

```
[HttpGet("[action]")]
0 references | 0 requests, 11 live | 0 exceptions, 11 live
public IActionResult RaiseError()
{
    ...
}
```

- Snapshot debugger
  - Minidump del processo
  - Debug da Visual Studio
  - Pensato per la produzione

+ Create work item    Open debug snapshot

 **EXCEPTION**  
System.NullReferenceException

Exception Properties [Show all](#)

Event time	4/18/2018, 12:16:27 PM	...
Message	Object reference not set to an instance of an object.	...
Exception type	System.NullReferenceException	...
Failed method	Demo.Controllers.SampleDataController.RaiseError	...

```
[HttpGet("[action]")]
0 references | 7 requests, 11 live | 14 exceptions, 11 live
public IActionResult RaiseError()
{
    int number = 5;    number = Cannot obtain va
    string s = null;    s = Cannot obtain value of

    int n = s.Length + number;    ✖ Canno
```

- REST API
  - Metriche, eventi, query (analytics)
  - Serve App ID e API key
- Portale <https://dev.applicationinsights.io/>
- API Explorer per testare
- Ideale per reportistica personalizzata
  - KPI su pagine web
- Utilizzabile con
  - Excel (FromWeb source)
  - Power BI (Get data web)

## Application (use demo app)

Application ID

888ac-1545-4882-b547-01c150ba9120

API Key

!t74l3uo4iw5byfgtiwp4gjdfp8w6wercoh

## Parameters (query syntax)

Timespan

default: PT12H (last 12 hours)

Query

requests | limit 10

Fetch!

## Request

HTTP **cURL**

```
GET /v1/apps/3cc88ac-1545-4882-b547-01c150ba9120/query?query=requests%20%7C%20limit%2010 HTTP/1.1
Host: api.applicationinsights.io
x-api-key: f2cx2t74l3uo4iw5byfgtiwp4gjdfp8w6wercoh
```

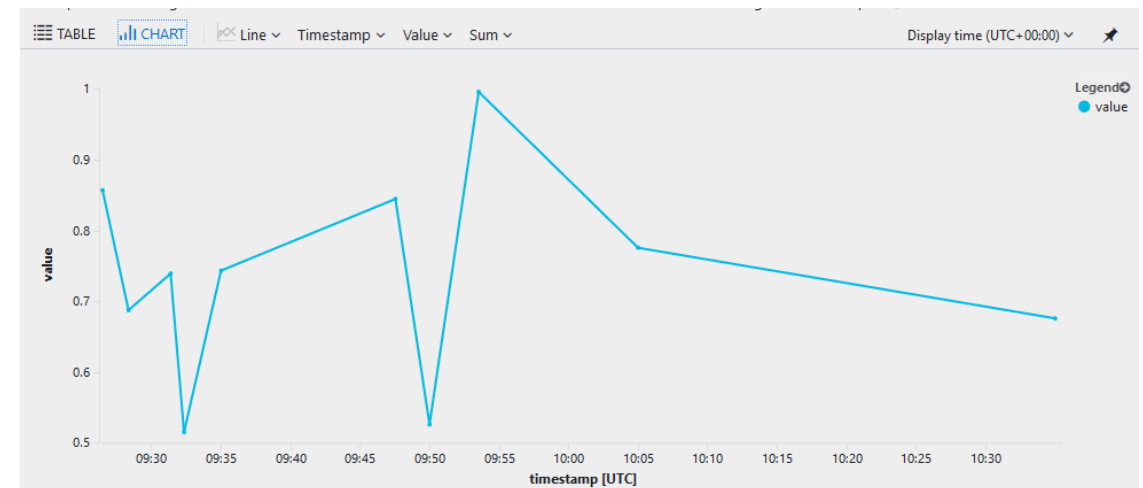
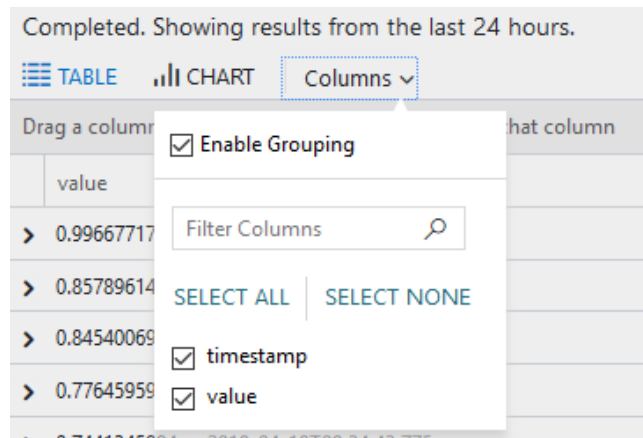
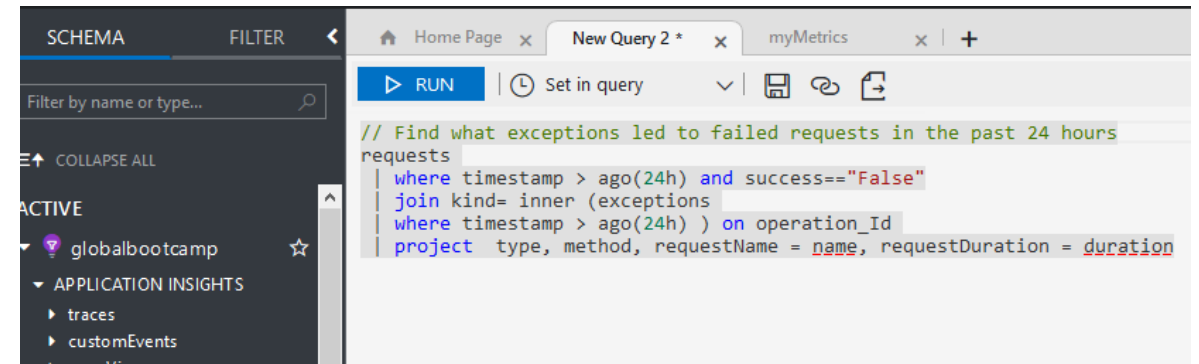
## Response

HTTP

```
HTTP/1.1 200
Content-Type: application/json; charset=utf-8

{
  "tables": [
    {
      "name": "PrimaryResult",
      "columns": [
        {
          "name": "timestamp",
          "type": "datetime"
        }
      ]
    }
  ]
}
```

- Strumento di analisi separato
- Query con liste e generazione grafici
  - Più funzionalità e più rapido
  - Più tecnico (Query Language)
- Salvataggio report e esportazione CSV
- Query utilizzabili anche via REST



- Machine learning su anomalie
- Configurabile
- E-mail di alert

## Smart Detection rules

ENABLED	NAME	INFO	SEVERITY
✓	Slow page load time	i	Information
✓	Slow server response time	i	Information
✓	Long dependency duration	i	Information
✓	Degradation in server response time	i	Information
✓	Azure cloud service issues	i	Information
✓	Degradation in dependency duration	i	Information
✓	Degradation in trace severity ratio (preview)	i	Information
✓	Abnormal rise in exception volume (preview)	i	Information
✓	Potential memory leak detected (preview)	i	Information
✓	Potential security issue detected (preview)	i	Information
✓	Resource utilization issue detected (preview)	i	Information

# Availability



- Test multipli da più location
  - Utile anche per always on
- URL ping test o Multi step web test

\* URL ⓘ

Parse dependent requests ⓘ



Enable retries for availability test failures. ⓘ



Test frequency ⓘ

5 minutes ▾

Test locations ⓘ

5 location(s) configured >

Success criteria ⓘ

HTTP response: 200, Test Timeou... >

- E-mail o web hook in caso di insuccesso

Alert locations threshold ⓘ

3

Alert failure time window ⓘ

5 minutes ▾

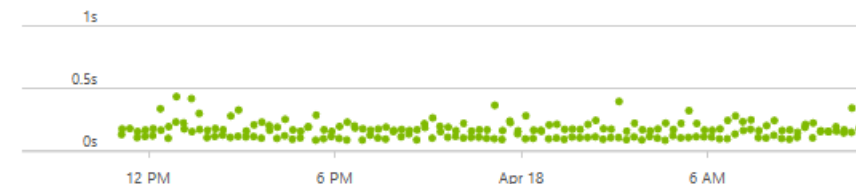
Send alert emails to subscription admins



Send alert emails to these email addresses: ⓘ

Webhook ⓘ

[Learn more about configuring webhooks](#)



AVAILABILITY 100 %  
AVERAGE TEST DURATION 181 ms  
TOTAL SUCCESSFUL TESTS 192  
TOTAL FAILED TESTS 0

All availability tests

TEST NAME	20 MIN	1 H	24 H	72 H
✓ Uptime	100%	100%	100%	100%

< 1 / 1 >

- Tracking
    - Browser exceptions
    - Page load performance
    - AJAX performance
  - Dal portale lo script da inserire
- Guidance**

 Easy to get started. Simply paste the following into your master page

```
<!--
To collect end-user usage analytics about your application,
insert the following script into each page you want to track.
Place this code immediately before the closing </head> tag,
and before any other scripts. Your first data will appear
automatically in just a few seconds.
-->
<script type="text/javascript">
  var appInsights=window.appInsights||function(a){
    function b(a){c[a]=function(){var b=arguments;c.queue.push(fu
    }({
      instrumentationKey:"31034327-6743-4d63-971f-bde0e7de7614"
    });
  };
  window.appInsights=appInsights,appInsights.queue&&0===appInsigh
</script>
```

- Tracking personalizzato

```
appInsights.trackPageView(myPageName);
```


- Alert configurabile su ogni metrica
- E-mail e chiamate a web hook
  - Ottimo in unione a Azure Functions

**WARNING**

Average Server exceptions is 2 : crossed threshold for 60 minutes

[View application in Azure Portal](#)

**Time** 04/18/2018 07:30:46 (UTC)

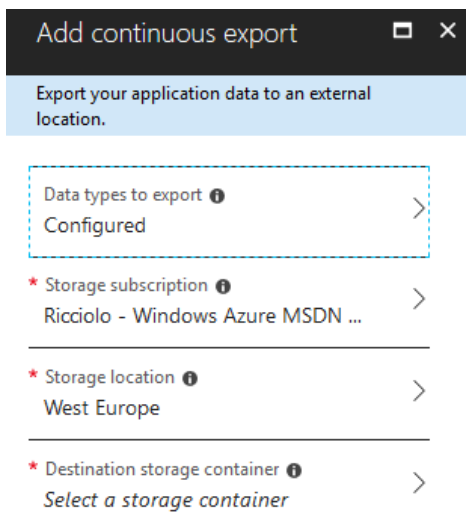
 **SUCCESS**

Average Server exceptions is 0 : within threshold for 60 minutes

[View application in Azure Portal](#)

**Time** 04/18/2018 08:31:12 (UTC)

- Continuos export



- Power BI
  - Power BI adapter, Export Analytics queries, Continuous export and Azure Stream Analytics.
- Integrazione tracking system
  - Visual Studio Team Service e GitHub







# Grazie

Domande?



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