What Is Log Analytics? It's More Than Just an Azure Service

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Log analytics is the process of analyzing aggregated log data to extract knowledge from them. Continuing the long and somewhat unfortunate Micro
after what they do, Log Analytics is also the name of a service by Microsoft that helps you collect and analyze log data from Azure.

So, that's what today's post is all about: log analytics. We'll offer you a guide on this term, covering both of its "flavors," if you will. We'll start with t
how it works. Then, we go on to cover "log analytics" as a concept. We'll define it in more detail, walk you through the motivations behind its use, a

What Is Log Analytics? The Microsoft Flavor

Microsoft Azure is a collection of cloud computing services by Microsoft, being a competitor of Amazon AWS and Google Cloud. It shouldn't come a
which you can analyze to obtain insights. That's the job of Log Analytics, the service.

What Is Microsoft Log Analytics?

Log Analytics, in short, is a service for querying and analyzing log data in Azure. It's a part of Azure Monitor, which is a solution that allows you to co
both your cloud and on-premises environments.

With Log Analytics, you can write queries using its custom query language called Kusto. Then, you can run your queries and do all sorts of useful thi
not only filter, sort, and group them but also create and share visuals—e.g., charts and graphs—of them.

It's also possible to save, copy, load, and share not only the results themselves but also the queries that originated them.

What Is Kusto Query Language?

Kusto Query Language (KQL) is the custom query language you have to use to query the Azure log databases. So, if you're working with Azure Monit
Logs (which includes Log Analytics), among other services, KQL is your new buddy.

Here's a simple example of KQL, in which we search for the currencies of error in a table called **Event**:

```
Event
| search "error"
```

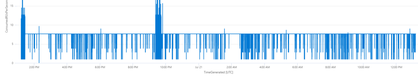
Here's a more involved example, straight out from an Azure Log Monitor demo environment, which filters and summarize the data from a **Usage** tab

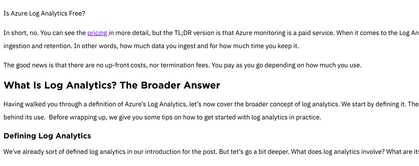
```
// Billable performance data
// Calculate the volume of billable data (in GB) for Perf data, over the last day.
Usage
| where TimeGenerated > ago(1d)
| where IsBillable == true
| where DataType == "Perf"
| summarize TotalVolumeGB = sum(Quantity) / 1024
```

Let's see a final example:

```
// Consumed RU/s in last 24 hours
// Identify consumed RU/s on Cosmos databases and collections.
//You can compare the RU/s consumption with your provisioned RU/s to determine if you should scale up or dow
AzureDiagnostics
| where TimeGenerated >= ago(24hr)
| where Category == "DataPlaneRequests"
//| where collectionName_s == "CollectionToAnalyze" //Replace to target the query to a collection
| summarize ConsumedRUsPerSecond = sum(todouble(requestCharge_s)) by collectionName_s, _ResourceId, bin(Time
| project TimeGenerated , ConsumedRUsPerSecond , collectionName_s , _ResourceId
| render timechart
```

Notice how it ends with the "render timechart" instruction. That's a handy way of generating visualizations for your queries. The example above ger





Is Azure Log Analytics Free?

In short, no. You can see the pricing in more detail, but the TL;DR version is that Azure monitoring is a paid service. When it comes to the Log Analyt
ingestion and retention. In other words, how much data you ingest and for how much time you keep it.

The good news is that there are no up-front costs, nor termination fees. You pay as you go depending on how much you use.

What Is Log Analytics? The Broader Answer

Having walked you through a definition of Azure's Log Analytics, let's now cover the broader concept of log analytics. We start by defining it. Then w
behind its use. Before wrapping up, we give you some tips on how to get started with log analytics in practice.

Defining Log Analytics

We've already sort of defined log analytics in our introduction for the post. But let's go a bit deeper. What does log analytics involve? What are its m

The first crucial component of log analytics is *searching*. Even a small to medium-sized organization can generate gigabytes worth of log data every
organization
aggregates log data from many different sources, which is a thing you should be doing, by the way. Without efficient and fast searching capabilities,
akin to searching for a needle in a haystack—only there are thousands of similar-looking needles, and the haystack itself grows and changes by the

The most important component of log analytics is the analysis itself, which is the raison d'être of the whole process.

The third main component of log analytics is *visualization*. As they say, a picture is worth a thousand words, but when it comes to log analytics, a vis
chart can be such a powerful way of conveying information than even ten thousand words couldn't be a match for it.

> **Without efficient and fast searching capabilities, finding the information you need would be akin to searching for a needle in a haystack**

Motivations

The main motivation behind log analytics is that if you don't do it you're wasting an enormous potential. Your log data might be able to give you a ur
organization, and that's especially true when you have centralized logging. Using your logging strategy as a mere troubleshoot helper is unfortunate
have the opportunity to prevent them from happening in the first place.

So, specifically speaking, here are some of the benefits and use cases for log analytics:

- **Discover patterns in user behavior.** Understanding how users behave when using the application is valuable, both from a UX perspective (i.e usability and user experience of their apps) and from a sales perspective (by better understanding the user, you can create opportunities of fu recommendations.)
- **Find security breaches.** By analyzing security logs, it's possible to detect attempts to breach security.
- **Detect suspicious behavior.** Log analytics and monitoring might help detect suspicious behavior, such as a user attempting to log in simultan to make a purchase that doesn't match the user's typical behavior.
- **Real-time monitoring and alerting.** It's possible to use log analytics to identify patterns that might result in problems and create specific ale be able to act promptly and stop a problem before it gets critical.

How Log Analytics Work

Log analytics is part of an overall log management strategy. Such a strategy will definitely include log collection, which is the first step in the journe

When your log data is all in one place, it's time for it to be aggregated. Think about it: just having lots of log files from entirely different sources toge
might use different formats for dates and times. Also, they most likely won't use the same naming conventions for the log levels. While some of the
best practices, others might not. Log aggregation is your friend here: it helps you smooth out all of those differences, normalizing the variety of log f
then parsing all of that to be able to treat your log data as...well, as data, instead of just plain text.

> **Helps you smooth out all of those differences, normalizing the variety of log formats into a canonical representation**

Finally, you can use your tool of choice to perform log analytics. By using techniques like pattern recognition, classification, tagging, correlation ana
others, your log analytics tool will allow you to run queries against your logs and manipulate the results in ways that enable you to extract insights f

How to Get Started

The first step to getting started with log analytics is adopting logging itself. We've published many posts on how to get started with logging on a vari
and Java to Python, Ruby, Node.js, and a lot more. There's no reason not to use logging, so if you don't, start right away.

After that, you should prepare your logs for consumption by being kind to them. Use log levels correctly, keep your logs well-formatted, and follow
have a healthy logging strategy in place, the only step left is to find a good tool to help you. And though there are many available options, we want t

Scalyr's offering is a complete log management solution that offers fast ingest and search, real-time monitoring, powerful querying capabilities, an
that power. Give it a try today.

You Might Not Need Log Analytics...But You'd Better Use Log Analytics!

In today's post, you've learned the difference between Log Analytics and log analytics. While the former is a specific Azure service, the latter is the
stack agnostic.

Now you understand more about both the Microsoft service and the general log analytics technique. And while Log Analytics might or might not be
and your organization want to make the most out of your logging strategy.

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