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Monitor your service health

8 minutes

Defining policy and access provides fine-grained control over resources in your cloud IT infrastructure. Once those resources are deployed, you will want to know about any issues or performance problems they might encounter.

Azure provides two primary services to monitor the health of your apps and resources.

1. Azure Monitor
2. Azure Service Health

Azure Monitor

Azure Monitor maximizes the availability and performance of your applications by delivering a comprehensive solution for collecting, analyzing, and acting on telemetry from your cloud and on-premises environments. It helps you understand how your applications are performing and proactively identifies issues affecting them and the resources they depend on.

Data sources

Azure Monitor can collect data from a variety of sources. You can think of monitoring data for your applications in tiers ranging from your application, any operating system and services it relies on, and down to the platform itself.

Data tier	Description
Application monitoring data	Data about the performance and functionality of the code you have written, regardless of its platform.
Guest OS monitoring data	Data about the operating system on which your application is running. This could be running in Azure, another cloud, or on-premises.
Azure resource monitoring data	Data about the operation of an Azure resource.
Azure subscription monitoring data	Data about the operation and management of an Azure subscription, as well as data about the health and operation of Azure itself.
Azure tenant monitoring data	Data about the operation of tenant-level Azure services, such as Azure Active Directory.

Diagnostic settings

As soon as you create an Azure subscription and start adding resources such as virtual machines and web apps, Azure Monitor starts collecting data. *Activity Logs* record when resources are created or modified and *Metrics* tell you how the resource is performing and the resources that it's consuming.

You can extend the data you're collecting into the actual operation of the resources by enabling **diagnostics** and adding an agent to compute resources. Under resource settings, you can enable Diagnostics

- *Enable guest-level monitoring*
- *Performance counters*: collect performance data
- *Event Logs*: enable various event logs

- *Crash Dumps*: enable or disable
- *Sinks*: send your diagnostic data to other services for more analysis
- *Agent*: configure agent settings

Getting more data from your apps

Data monitoring is only useful if it improves your visibility of the operations in your computing environment. Azure Monitor includes several features and tools that provide valuable insights into your applications, and the other resources they may depend on.

Application Insights is a service that monitors the availability, performance, and usage of your web applications, whether they're hosted in the cloud or on-premises. It leverages the powerful data analysis platform in Log Analytics to provide you with deeper insights into your application's operations. Application Insights can diagnose errors without waiting for a user to report them. Application Insights includes connection points to a variety of development tools, and integrates with Microsoft Visual Studio to support your DevOps processes.

Azure Monitor for containers is a service that is designed to monitor the performance of container workloads, which are deployed to managed Kubernetes clusters, hosted on Azure Kubernetes Service (AKS). It gives you performance visibility by collecting memory and processor metrics from controllers, nodes, and containers, which are available in Kubernetes through the metrics API. Container logs are also collected.

Azure Monitor for VMs is a service that monitors your Azure VMs at scale, by analyzing the performance and health of your Windows and Linux VMs (including their different processes and interconnected dependencies on other resources, and external processes). Azure Monitor for VMs includes support for monitoring performance and application dependencies for VMs hosted on-premises, and for VMs hosted with other cloud providers.

Integrating any, or all, of these monitoring services with Azure Service Health has additional benefits. Staying informed of the health status of Azure services will help you understand if, and when, an issue affecting an Azure service is impacting your environment. What may seem like a localized problem could be the result of a more widespread issue, and Azure Service Health provides this kind of insight. Azure Service Health identifies any issues with Azure services that might affect your application. Azure Service Health also helps you to plan for

scheduled maintenance.

Responding to alert conditions

In addition to allowing you to analyze your monitoring data interactively, an effective monitoring solution must respond proactively to any critical conditions that are identified within the data it collects. This might involve, for example, sending a text or email to an administrator who is responsible for investigating an issue, or launching an automated process that attempts to correct an error condition.

Alerts. Azure Monitor proactively notifies you of critical conditions using alerts, and can potentially attempt to take corrective actions. Alert rules based on metrics can provide alerts in almost real-time, based on numeric values. Alert rules based on logs allow for complex logic across data, from multiple sources.

Autoscale. Azure Monitor uses Autoscale to ensure that you have the right amount of resources running to manage the load on your application effectively. Autoscale enables you to create rules that use metrics, collected by Azure Monitor, to determine when to automatically add resources to handle increases in load. Autoscale can also help reduce your Azure costs by removing resources that are not being used. You can specify a minimum and maximum number of instances, and provide the logic that determines when Autoscale should increase or decrease resources.

Visualize monitoring data

Visualizations, such as charts and tables, are effective tools for summarizing monitoring data and for presenting data to different audiences. Azure Monitor has its own features for visualizing monitoring data, and it leverages other Azure services for publishing data for different audiences. Other tools you may use for visualizing data, for particular audiences and scenarios, include:

- Dashboards
- Views
- Power BI

Integrate with other services

You'll often need to integrate Azure Monitor with other systems, and build customized solutions that use your monitoring data. Other Azure services can work with Azure Monitor to provide this integration.

Azure Service Health

Azure Service Health is a suite of experiences that provide personalized guidance and support when issues with Azure services affect you. It can notify you, help you understand the impact of issues, and keep you updated as the issue is resolved. Azure Service Health can also help you prepare for planned maintenance and changes that could affect the availability of your resources.

Azure Service Health is composed of the following views.

Azure Status provides a global view of the health state of Azure services. With Azure Status, you can get up-to-the-minute information on service availability. Everyone has access to Azure

Status and can view all services that report their health state.

Service Health provides you with a customizable dashboard that tracks the state of your Azure services in the regions where you use them. In this dashboard, you can track active events such as ongoing service issues, upcoming planned maintenance, or relevant *Health advisories*. When events become inactive, they are placed in your *Health history* for up to 90 days. Finally, you can use the **Service Health** dashboard to create and manage service *Health alerts*, which notify you whenever there are service issues that affect you.

Resource Health helps you diagnose and obtain support when an Azure service issue affects your resources. It provides you with details about the current and past state of your resources. It also provides technical support to help you mitigate problems. In contrast to Azure Status, which informs you about service problems that affect a broad set of Azure customers, *Resource Health* gives you a personalized dashboard of your resources' health. *Resource Health* shows you times, in the past, when your resources were unavailable because of Azure service problems. It's then easier for you to understand if an SLA was violated.

Together, the Azure Service Health components provide you with a comprehensive view of the health status of Azure, at the level of granularity that is most relevant to you.

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