Azure Virtual Machine monitoring

Purpose

This page aims to articulate the requirements for SRE Virtual Machine Monitoring , Identify metrics collection, SLO dashboards and alerting.

Requirements

Hard Requirements (must have)

1. The SRE Virtual Machine Monitoring must support **metric collection** from Azure clouds.
2. The SRE Virtual Machine Monitoring must be able to **process metrics** (e.g. rates, increase, sum etc).
3. The SRE Virtual Machine Monitoring must support all related matrics for Virtual Machine.
4. The SRE Monitoring Tooling must support **SLO Dashboard** showing all SLIs, SLOs and error budget
5. The SRE Monitoring Tooling must support **SLO alerting rules** based on error budget consumption and burn rate
6. The SRE Virtual Machine Monitoring must support **integration** with 3rd party on-call and incident management tooling

Soft Requirements (should have)

1. The SRE Virtual Machine Monitoring should support **automation** with IaC patterns
   a. The SRE Virtual Machine Monitoring should support **codified SLOs alert rules**
2. The SRE Virtual Machine Monitoring should be **highly available**
3. The SRE Virtual Machine Monitoring should be **responsive**

Virtual Machine Available Metrics

METRIC NAME	DESCRIPTION	SIGNAL TYPE	COVER
sys.mem.used (count)	System Memory Used (*Shown as bytes)*	SATURATION	✅
sys.mem.free (count)	System Memory Free (*Shown as bytes)*	SATURATION	✅
sys.disk.used (count)	System Disk Used (*Shown as bytes)*	SATURATION	✅
sys.disk.free (count)	System Disk Free (*Shown as bytes)*	SATURATION	✅
azure.vm.disk_read_operations_sec (gauge)	(ARM VM only) Amount of read operations per second *Shown as operation*	TRAFFIC	✅
azure.vm.disk_write_bytes (count)	(ARM VM only) Amount of bytes written *Shown as byte*	SATURATION	✅
azure.vm.disk_write_bytes_sec (gauge)	(Classic VM only) Amount of bytes written *Shown as byte*	SATURATION	✅
azure.vm.disk_write_operations_sec (gauge)	(ARM VM only) Amount of write operations per second *Shown as operation*	TRAFFIC	✅
azure.vm.percentage_cpu (gauge)	Percentage of CPU resources used *Shown as percent*	SATURATION	✅
azure.vm.status (gauge)	Status of Azure VM	ERROR	✅

azure.vm.network_in (gauge)	Number of bytes received on all network interfaces by the instance. *Shown as byte*	SATURATION	✓
azure.vm.network_in_total (gauge)	The number of bytes received on all network interfaces by the Virtual Machine(s) (Incoming Traffic) *Shown as byte*	SATURATION	✓
azure.vm.network_out (gauge)	Number of bytes sent on all network interfaces by the instance. *Shown as byte*	SATURATION	✓
azure.vm.network_out_total (gauge)	The number of bytes sent on all network interfaces by the Virtual Machine(s) (Incoming Traffic) *Shown as byte*	SATURATION	✓

DataDog Dashboard

Azure Virtual Machines dashboard Gitlab Repo

LINK TO GITLAB