Ensure your Azure VMs has monitoring diagnostics metrics enabled

Why should you ensure that all your VMs have their monitoring diagnostics metrics enabled?

This helps you to:

- monitor the health of your VMs
- know when your VMs are reaching their memory, disk, CPU upper limits
- detect usage trends and anomalies
- set alert rules based on lower or upper thresholds
- control your costs by sizing according to required usage
- get cost effective sizing optimization recommendations from Cloudyn

Let's say you want to monitor the CPU % and Memory % of your Azure VMs.
These correspond to: "[Host] Percentage CPU" and "Memory percentage" / "Mem. percent available".

It should be easy within the Azure Portal to:

- create a graph containing these metrics for any of your Virtual machines, or
- set Alert rules on these metrics

Unfortunately, it is common for some or all of these metrics not be unavailable due to incorrect configuration.

Try the following steps to determine the available metrics:
Under "Virtual machines", select a VM, click Monitoring "Metrics". You should see a checkbox list including the above metrics.
Under "Virtual machines (classic)", select a VM, clicking "Overview", select the default graph containing "CPU Percentage". Clicking "Edit" should the above metrics

If you have VMs where these metrics are not available to be chosen, then follow the steps below.

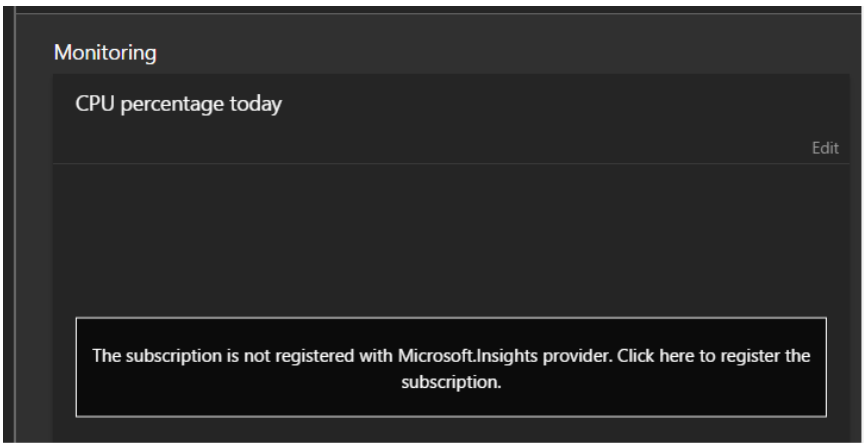
How are your VMs currently configured?

Enabling diagnostics metrics requires the following steps:

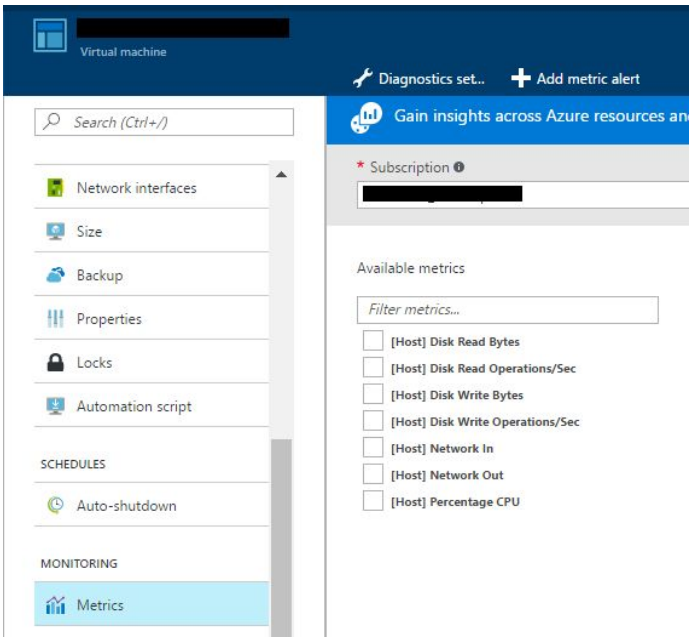
- Register "Microsoft.Insights" Resource provider on all subscriptions.
- For each VM, enable diagnostics settings, specify a storage account, and check "Basic metrics"

There are "Standard metrics" (ie Host metrics), eg "[Host] Percentage CPU".
There are "Basic metrics" (ie Extended metrics), eg "Memory percentage" / "Mem. percent available".

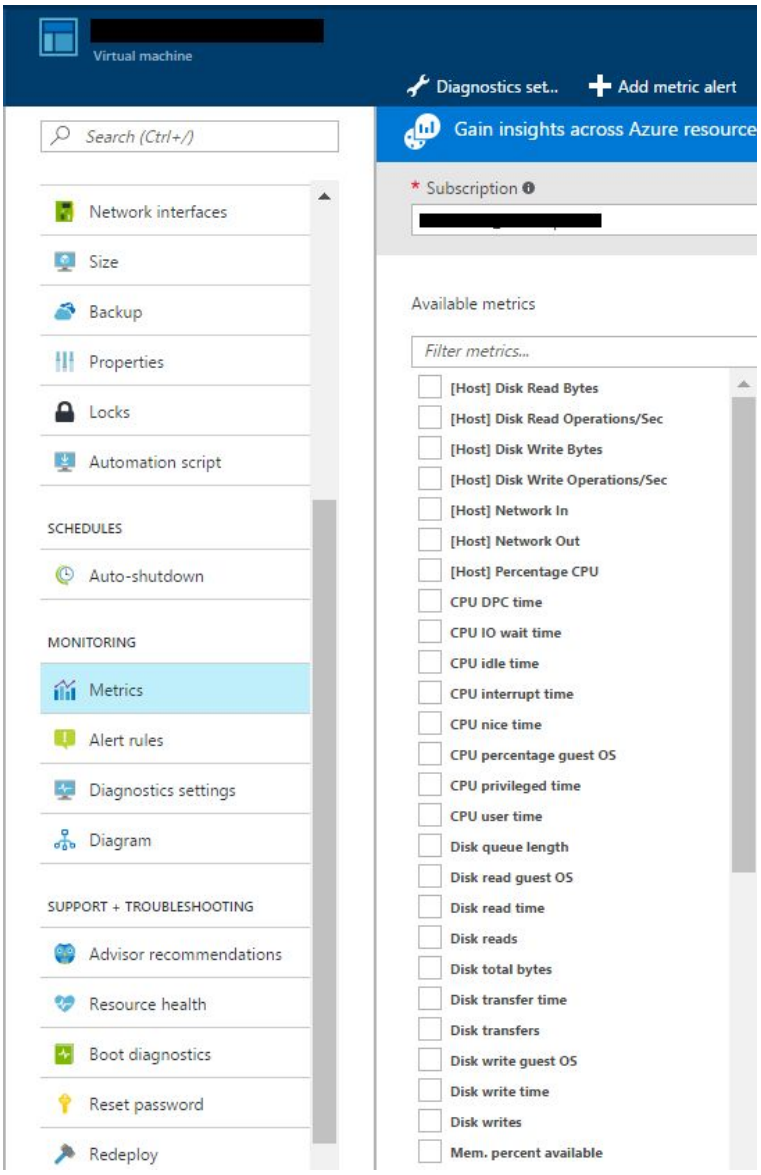
If "Microsoft.Insights" is not registered, then Standard metrics would not be available for Classic VMs (and in some cases, “Resource Manager” VMs), and Extended metrics would not be available for any VMs. This would result in an error such as:



If diagnostics settings is not configured for a VM (but "Microsoft.Insights is enabled" for classic VMs), then only Standard metrics would be available.



Extended metrics is only available if both "Microsoft.Insights" is registered, and diagnostics settings are configured



Automate enabling diagnostics on your VMs

To automate enabling diagnostics on your VM, you can use the utility available at https://github.com/Cloudyn/azure-enable-diagnostics

The utility addresses enabling diagnostics on one or many VMs (Classic or ARM), in one or many subscriptions, taking into account your storage account policy.

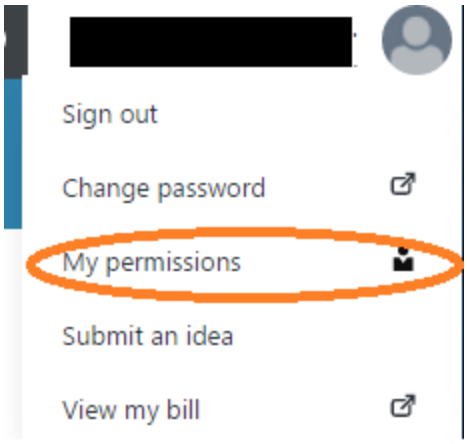
The utility automates performing steps similar to the manual steps described in the next section.

Manually enable diagnostics on your VMs

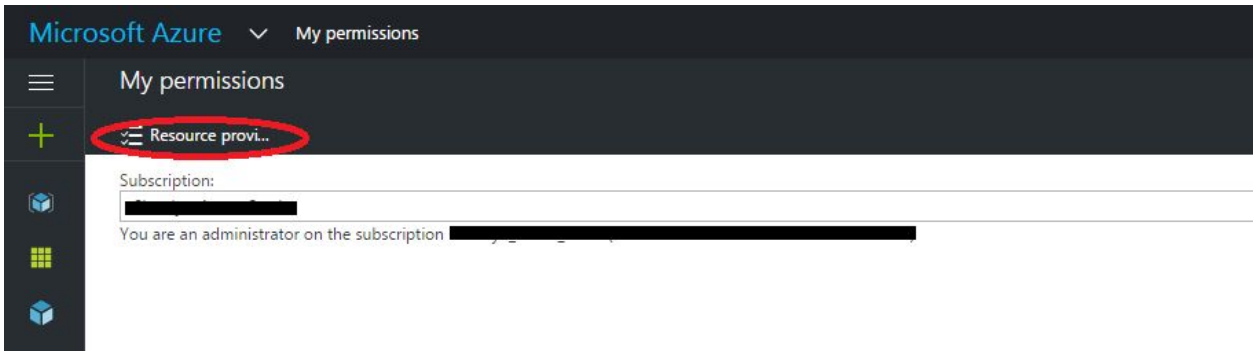
The following shows the manual steps for enabling diagnostic metrics.

Subscription Configuration

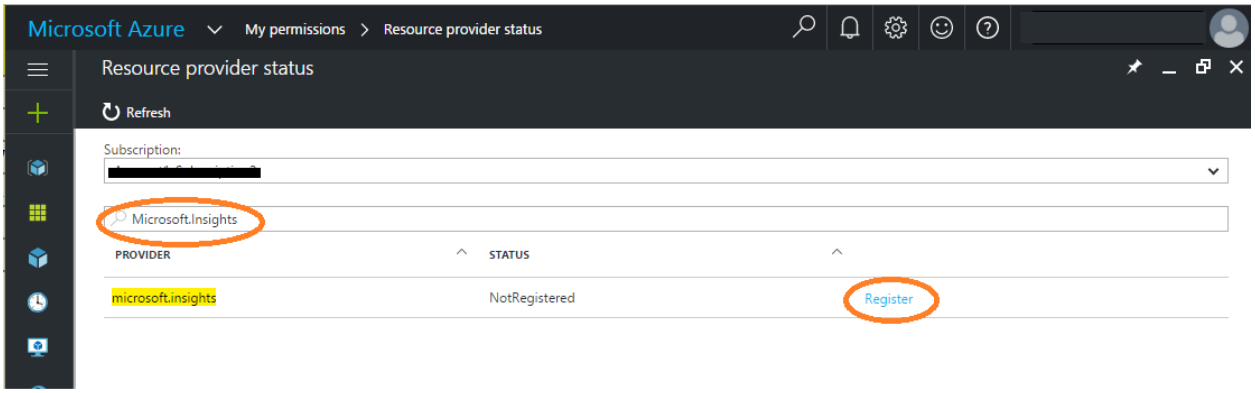
In the Azure Portal, click on the user icon at the top right. Select "My Permissions".



Select "Resource Provider Status".

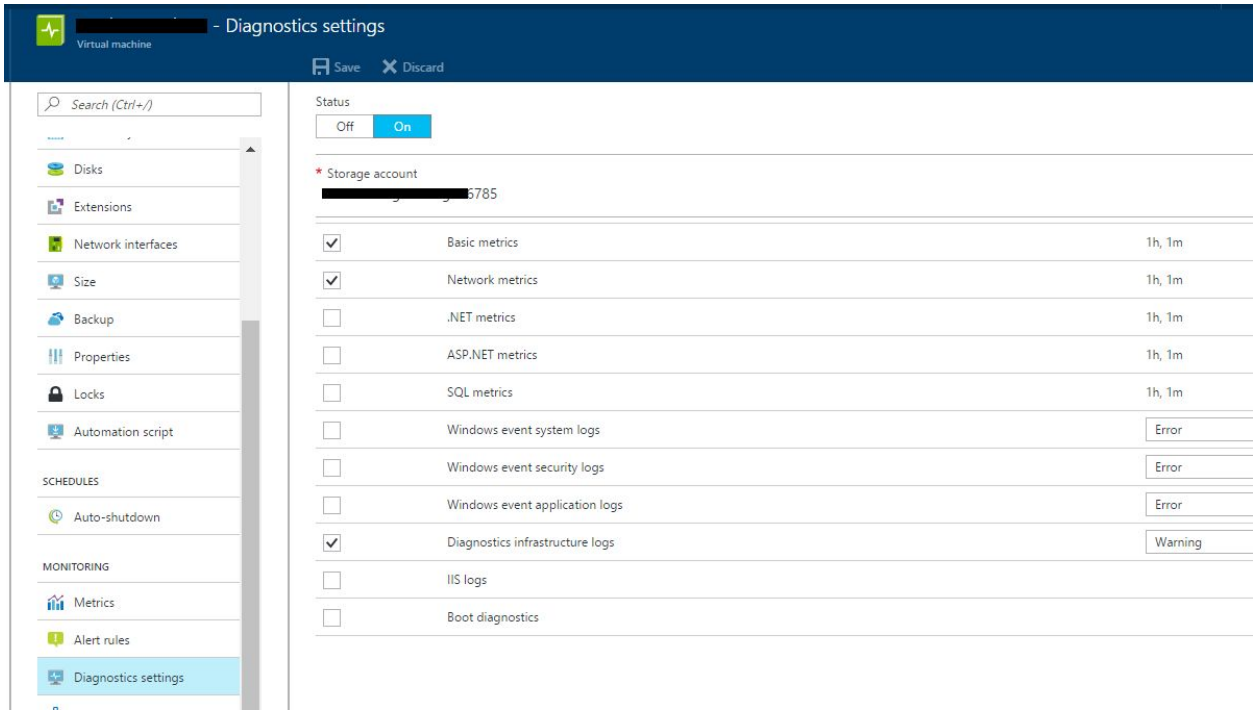


For each Azure Subscription:
Search for "Microsoft.Insights". If it is not registered, then click "Register"

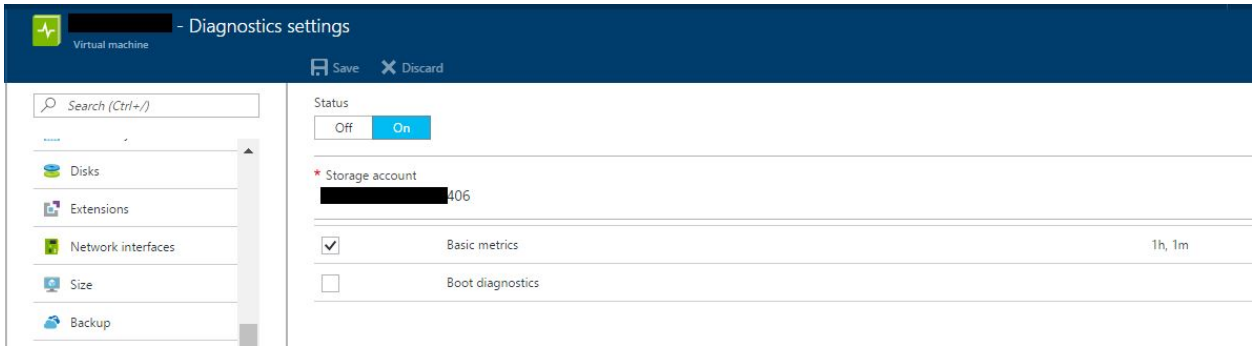


VM Configuration

Select "Virtual Machine" or "Virtual Machine (classic)". Select "Diagnostics settings" (or "Diagnostics"). Enable the Status, choose a Storage account, and select "Basic Metrics".
For Windows machines:

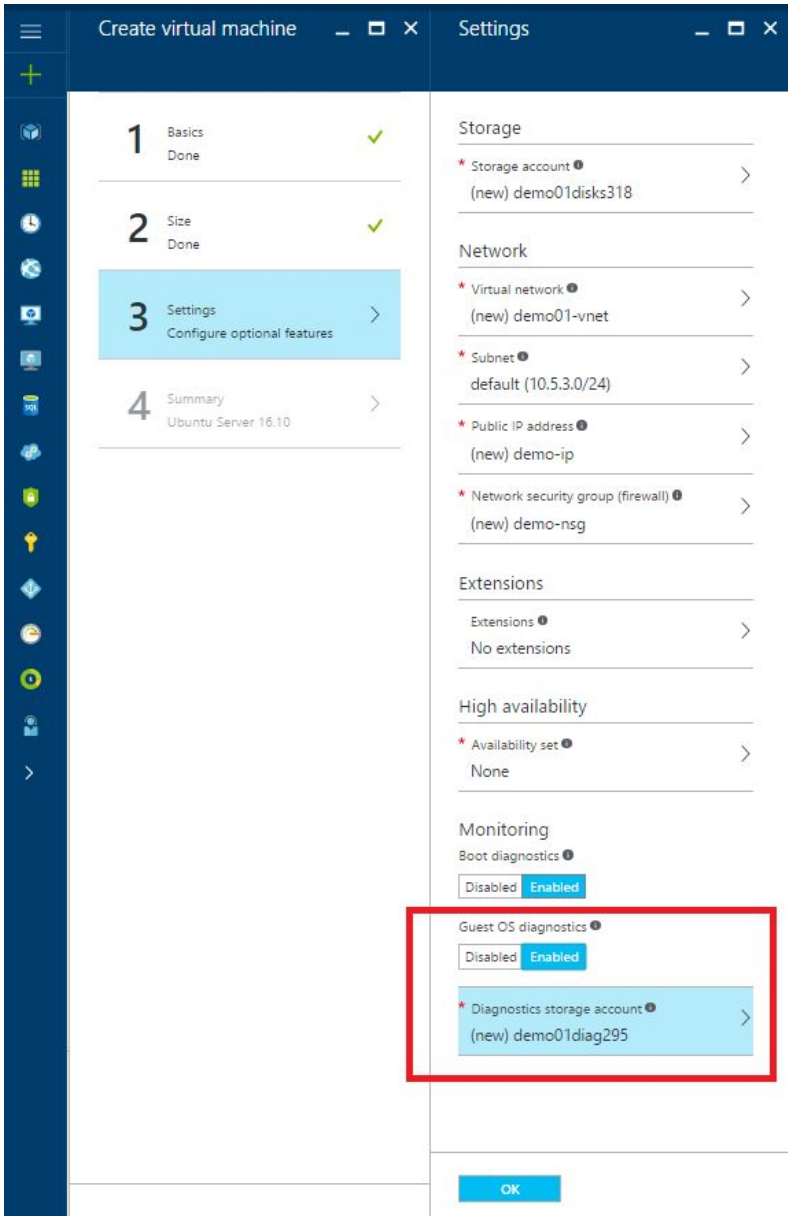


For linux machines:



Setting up diagnostics for New VMs

When creating a new VM, then under Monitoring, ensure “Guest OS diagnostics” is enabled, and a suitable storage account is selected.
If this is not done at the time of creation, then see the above automated or manual steps for enabling diagnostics on existing VMs.



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