



Virtual Machine Monitoring

Intel® Platform Service Assurance

This feature brief describes the metrics and events provided by virtual machines that can be collected and reported using libvirt to support platform service assurance.



Abstract

This feature brief describes the virtual machine monitoring metrics and events provided by libvirt, a toolkit for managing virtualization hosts (see Ref. 1).

Feature Description

Libvirt exposes the stats and events it collects for each virtual machine (VM) through an interface that is used by the virt plugin to further expose the VM telemetry to higher-level management systems.

The virt plug-in provides fundamental virtual machine statistics including CPU, storage, and network load (see Ref. 2). The virtual machine monitoring feature extends the virt plug-in functionality to retrieve extra statistics and event capabilities that are important for platform service assurance.

Feature Data Sets

Statistics provided in addition to the statistics gathered by the standard virt plug-in include:

- Cpu_affinity – the pinning of virtual CPUs to physical CPUs
- Job_stats – information about progress of a background or completed job on a domain
- Disk_error – disk error code
- Percent – CPU utilization in percentage per domain
- Perf – performance metrics

Monitored events in addition to the events monitored by the standard virt plug-in include:

- Domain_state change – the domain state change (for example, a change to running, paused, and so on) and reason in a human-readable format

Configuration

The additional statistics provided by the virtual machine monitoring feature are configured in the virt plug-in section of the telemetry plug-in configuration file.

Telemetry Collection Framework Support

The virtual machine monitoring feature uses a collectd plug-in called virt that collects virtual machine statistics and event information and provides them to higher-level management systems (see Ref. 3 for details on collectd).

External Interface Support

There is currently no external interface support for this feature.

Feature Dependencies

The virtual machine monitoring feature depends on having the following features running on the platform:

- Libvirt (see Ref. 1 for details)
- Libxml2, a library that other components depend on
- Collectd (see Ref. 3 for details)
- Collectd Ceilometer¹, Gnocchi and Aodh plug-ins for delivery of metrics to OpenStack* (see Ref. 4 for details)

Where to Get More Information

For more information, visit <https://networkbuilders.intel.com/network-technologies/serviceassurance>

REFERENCES

TITLE	LINK
Ref. 1: libvirt	https://libvirt.org/index.html
Ref. 2: collectd standard virt plug-in documentation	https://collectd.org/documentation/manpages/collectd.conf.5.shtml#plugin_virt
Ref. 3: collectd	https://collectd.org/documentation.shtml
Ref. 4: OpenStack Ceilometer, Gnocchi, and Aodh	https://wiki.openstack.org/wiki/Telemetry



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¹The Ceilometer interface is being deprecated. Platform telemetry will be delivered directly to OpenStack Gnocchi, and events will be delivered to OpenStack Aodh. See Ref. 7 for details.