FEATURE BRIEF

Service Assurance for Virtualized Networks featuring
Intel® Infrastructure Management Technologies

Retrieving Redfish* Platform Telemetry

Intel® Platform Service Assurance

Redfish* exposes an interface to retrieve platform telemetry using collectd.

Redfish is the industry standard for remote management and monitoring, designed to replace Intelligent Platform Management Interface (IPMI) and reduce OEM implementation dependencies. The information retrieval with Redfish standard communication is based on Representational State Transfer (REST) APIs. Infrastructure compliant with this standard provides out-of-band management and monitoring capabilities independent of the platform's CPU, firmware (BIOS or UEFI), and operating system.

The daemon collectd is a mature system statistics collection mechanism widely used across the industry. It consists of the core daemon and a set of read/write plugins to collect/push telemetry respectively. Its pluggable architecture enables the collection of chosen metrics using read plugins. Write plugins push data into northbound layers such as Management and Orchestration (MANO) systems and analytics solutions.

Monitoring the health of a platform is a critical part of service assurance. Information provided by the Redfish plugin can be used for better workload placement, infrastructure optimization, and health discovery.

Feature Description

The information retrieval with Redfish standard communication is based on REST APIs using HTTP and JSON. The redfish plugin uses the Distributed Management Task Force (DMTF) libRedfish* library to leverage its communication features. The collectd redfish plugin can be used to gather platform health status information from Redfish-enabled hardware. The health status information can be pushed to analytic layers with one of many available write plugins, such as write_kafka, write_prometheus, and network plugin. This data can be used later, for example, in the intelligent placement/co-location of workloads and the fulfillment of Virtualized Network Function (VNF) requirements. The industry standard Redfish interface is supported by redfish compliant Board Management Controllers (BMCs) and other components including Intel® Rack Scale Design (RSD) architecture, such as Pod Manager (PODM) or Pooled System Management Engine (PSME).

Feature Data Sets

Metrics available through Redfish (v1.0) include:

- Temperature
- Fan speed
- Power consumption

This list will expand as the collectd redfish plugin is updated to support more recent Redfish standard versions.

Open Management Interface Support

Open management interface support includes:

- Virtual Execution System (VES) application or write_prometheus collectd plugin to provide metrics in Open Networking Automation Platform (ONAP)*
- OpenStack* collectd plugins (gnocchi and aodh) to provide metrics in OpenStack
- write_kafka and the network collectd plugin to provide metrics to Platform for Network Data Analytics (PNDA)*

Configuration

No matter what the redfish collectd plugin collects, it is configurable using Query and Service options within the collectd configure file. Currently it has been tested with Redfish v1.0 standard.

For details, please take a look at the collectd redfish plugin HLD.

Open Telemetry Collection Framework Support

The Redfish monitoring feature uses a collectd plug-in called redfish that collects out-of-band statistics information and provides the data to higher-level management systems.

Feature Dependencies

- Redfish compliant infrastructure
- On collector, a libredfish library

REFERENCES

TITLE	LINK
Ref 1: collectd	https://collectd.org/documentation.shtml
Ref 2: collectd Redfish plugin HLD	https://wiki.opnfv.org/display/fastpath/Collectd+Redfish+Plugin+HLD
Ref 3: DMTF Redfish Standard	https://www.dmtf.org/standards/redfish
Ref 4: libredfish	https://github.com/DMTF/libredfish
Ref 5: collectd OpenStack plugins	https://github.com/openstack/collectd-openstack-plugins
Ref 6: Rack Scale Design Overview	https://www.intel.com/content/www/us/en/architecture-and-technology/rack-scale-design-overview.html
Ref 7: VES plugin	https://wiki.opnfv.org/display/fastpath/VES+plugin+updates
Ref 8: collectd list of plugins	https://collectd.org/wiki/index.php/Table_of_Plugins

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