

SOLUTION BRIEF

Communications Service Providers
Telemetry

Radisys,* Intel Deliver Telemetry Framework for Cloud Services



Radisys* DCEngine* cloud server platform demonstrates support for Redfish* open standard telemetry across multiple Intel® Xeon® platforms.

radisys. Introduction

Communications service providers (CommSPs) have faced rapid-fire demands on their cloud service infrastructures, to roll out new services, keep up with emerging technologies, and stay ahead of unrelenting growth in user adoption.

In response, CommSPs are rapidly deploying systems to grow and scale cloud environments, which is populating their cloud data centers with hardware from multiple vendors. Among other challenges, each vendor solution can bring varying telemetry functions, so that there is no unified reporting of the utilization of the physical and virtual resources.

As a new entrant into the cloud systems market, the Radisys* DCEngine* needed to support the latest telemetry standards, including DMTF* Redfish.* The company teamed with Intel to embrace the Redfish open standard and give CommSPs unified tools to manage and rapidly scale their multivendor networks, while gaining the advantages of lowered costs and improved functionality.

The Challenge

Having a common telemetry is critical to being able to quickly scale pools of compute and storage resources to meet growing service demand. Each piece of network hardware offers different management solutions and different telemetry interfaces, and the lack of homogeneous interfaces impedes the ability for hyper scale-out. Integration requires resources, effort, and experience with the various protocols, tools, operations, and features of each solution. The skillset can be difficult to find, taking years to develop expertise.

Previous management solutions based on the Intelligent Platform Management Interface (IPMI) specification were designed for common server features. When servers added differentiated features, IPMI offered only a reduced set of “lowest common denominator” functions (power on/off/reboot, temperature value, text console) that could work on all platforms. The IPMI telemetry for any vendor-specific functionality required expertly programmed extensions. As new hardware systems came on the market and the pace of change related to new features increased, this restriction limited the value of IPMI as a common management information protocol—especially in massive, hyperscale data center environments.

The DMTF Redfish open standard was developed to provide a standardized interface that includes a common set of management APIs for a multivendor environment. Redfish can manage scale-out with compatibility across a broad spectrum of servers via its RESTful application program interface (RESTful API).

The RESTful interface is based on the Open Data Protocol, which utilizes HTTPS and JSON to transfer data, making it ideal for the large multivendor server environments in cloud and web-based infrastructures. Unlike IPMI, the Redfish API is designed so

that features that are not supported by the Redfish API can be made discoverable and addressable. The standard also supports extensive automation of common management tasks.

Radisys CommSP customers requested a DCEngine interface to Redfish to quickly scale compute and storage resources and integrate management of their multivendor environments. Working with Intel, Radisys demonstrated a proof of concept (PoC) in the Radisys customer lab to show how CommSPs can implement Redfish on the DCEngine using Intel® Rack Scale Design (Intel® RSD).

The PoC also demonstrated how, once implemented, the system can be used to pool compute and storage resources to quickly scale to meet evolving requirements and improve agility, and to integrate with Redfish to create a common telemetry management interface.

The Solution

DCEngine is a cloud server platform that uses an open and modular architecture to provide CommSPs with a software-defined services delivery infrastructure that delivers agile and flexible service deployment. Inspired by the Open Compute Project (OCP),¹ DCEngine is a preinstalled frame that incorporates a collection of compute and storage sleds with integrated networking and centralized power, achieving density in a single rack of up to 2.4 petabytes of storage and up to 152 Intel® Xeon® class processors in a standard 42 RU frame.

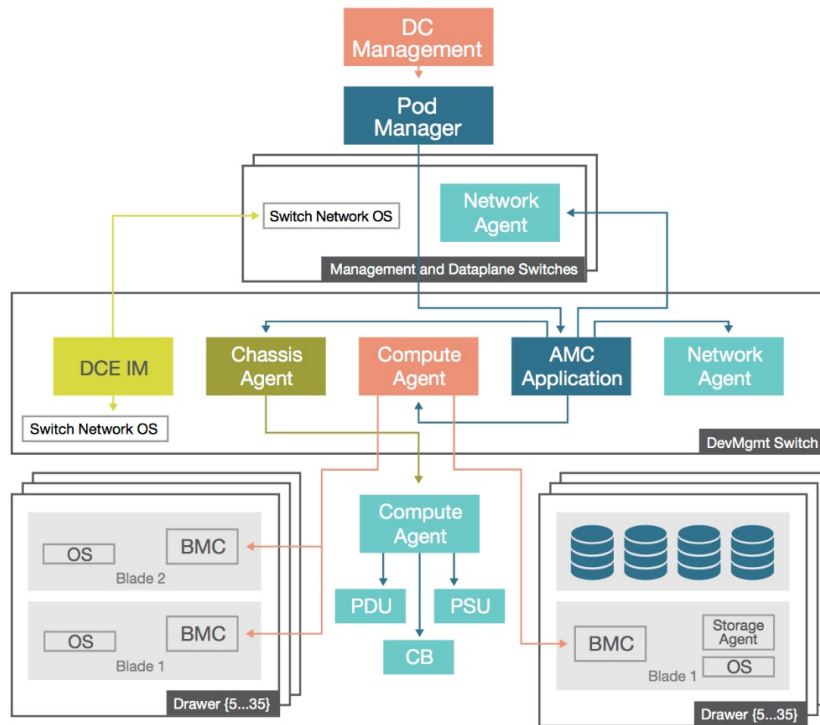
Radisys DCEngine Redfish PoC Components

Hardware

- Intel Xeon processor E5-2630L v4
- Intel® Server Board S2600TPR
- Dual-port Intel® 82599EB 10 GbE I/O Module

Software

- OpenStack* Mitaka*
- Ubuntu* 14.04 LTS
- OpenStack services: dashboard, compute, network, block storage, object storage, identity, and image
- OpenStack Ansible Deployment (OSAD), playbooks and roles for deployment and configuration on Radisys DCEngine, Radisys* MediaEngine* Virtualized Media Resource Function (vMRF)
- Intel Rack Scale Design for hardware and resource management



For the PoC, Radisys adopted Intel Rack Scale Design (Intel RSD), a server architecture that disaggregates compute, storage, and network resources and provides the ability to efficiently pool and utilize these resources. Intel RSD supports Redfish and extends the specification for value-added features such as node composability and resource pooling. The DC Engine provides a standardized telemetry interface that can interoperate with non-Radisys platforms in a mixed-vendor environment.

The PoC successfully demonstrated implementation of the Redfish API and how its full capabilities were enabled to make hardware management of the system easy. During the PoC, hardware set up and configuration and deployment of NFV and SDN infrastructures using Redfish were successfully demonstrated. The PoC also enabled resource pooling capabilities of Intel RSD when running on the DCEngine platform.

Next Generation:

Intel® Xeon® Scalable Processors Difference

Radisys has committed to developing the next-generation of DCEngine using Intel Xeon Scalable platforms. These processors have native support for Redfish and will ensure continuous Redfish support across all DCEngine platforms.

Conclusion

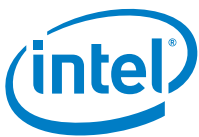
By standardizing on Intel RSD and Redfish, DCEngine delivers simplified management as well as extensive resource management capabilities. With Intel Xeon Scalable processors, DCEngine will offer native support for Redfish, providing a common telemetry for CommSPs' multivendor network environments. For CommSPs, incorporating standardization means a solution with low complexity where resource utilization is optimized, time and resources are streamlined, and therefore total cost of ownership (TCO) can be lower.

About Radisys

Radisys helps communications and content providers, and their strategic partners, create new revenue streams and drive cost out of their services delivery infrastructure. Radisys' hyperscale software-defined infrastructure, service aware traffic distribution platforms, real-time media processing engines and wireless access technologies enable its customers to maximize, virtualize and monetize their networks. For more information about Radisys, please visit www.radisys.com.

About Intel® Network Builders

Intel Network Builders is an ecosystem of independent software vendors (ISVs), operating system vendors (OSVs), original equipment manufacturers (OEMs), telecom equipment manufacturers (TEMs), system integrators (SIs), enterprises, and service providers coming together to accelerate the adoption of network functions virtualization (NFV)-based and software-defined networking (SDN)-based solutions in telecom networks and in public, private, and hybrid clouds. The Intel Network Builders program connects service providers and enterprises with the infrastructure, software, and technology vendors that are driving new solutions to the market. Learn more at <http://networkbuilders.intel.com>.



¹ <http://www.opencompute.org>

Intel technologies' features and benefits depend on system configuration and may require enabled hardware, software or service activation. Performance varies depending on system configuration. **No computer system can be absolutely secure.** Check with your system manufacturer or retailer or learn more at intel.com.

Cost reduction scenarios described are intended as examples of how a given Intel-based product, in the specified circumstances and configurations, may affect future costs and provide cost savings. Circumstances will vary. Intel does not guarantee any costs or cost reduction.

© Intel Corporation. Intel, the Intel logo, and Xeon are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

*Other names and brands may be claimed as the property of others.

1017/DO/H09/PDF

Please Recycle

336519-001US