



VERTIV WHITEPAPER

Bridging the Gap

From OpenBMC to Commercial Embedded
Management Technology

If you have spent any time managing servers, you are familiar with technologies like Dell iDRAC, HPE ILO and Cisco UCSM. These system management solutions are embedded in servers and allow administrators to monitor, remotely access and repair devices. And, if you manufacture servers, network or storage devices, or are a large enterprise, communications provider or cloud-scale customer, you are likely seeing two technology shifts, OpenBMC and Redfish, that are affecting how these devices are designed and managed.

OpenBMC is an Open Source project intended to define a standard baseboard management controller firmware stack.

Redfish is the apparent successor to the Intelligent Platform Management Interface (IPMI).

These innovations are challenging old standards and disrupting an industry that has evolved on proprietary (closed-source) products for decades. They are forcing suppliers to rethink their business models. These innovations help manufacturers integrate and port embedded technologies faster. In addition, they help customers modify and debug their own BMC management stack. But more importantly, they simplify integration with operational management applications.

With support for OpenBMC coming from IBM, Facebook, Google and Microsoft, the initial output from the community addresses the requirements for cloud-scale, server management operations and lack many of the features required for other customers.

Embedded management technology spans across the IT infrastructure, CPU architectures and a range of features tailored to varied customer segments. As the community evolves, we will see OpenBMC expand its usability across a broader range of platforms and customer segments.

While the industry waits for a complete, high-quality OpenBMC stack, manufacturers continue to research and invest in OpenBMC and Redfish technologies. Redfish is already widely adopted on Whitley generation servers and is a standard requirement in marketing documents and RFP's. OpenBMC is built on a standard Linux distribution that simplifies integration and porting, and modular components are already available that enhance performance and allow developers to easily add more advanced management features.

Supporters of OpenBMC recognize the limitations of proprietary technology. Open source allows for faster debugging and feature velocity. If the community is large and active, security vulnerabilities are patched faster; however, your business should consider the following risk factors:

- When the business lacks the right level of resources and skills
- When the desired components and features are not natively available
- When customers need prompt support
- When warranty and indemnification matter
- When having a strategic partnership and domain expert is critical to your business' success

OEM, ODM and end-users considering an open source model can benefit from working with a partner that offers a commercialized version of the product. When new OpenBMC technology is contributed to the community, the partner tests it, validates it and makes it more reliable and secure. The partner can identify performance and functional gaps and add applications that bring real value to customers. The result is an enhanced source code package, powerful, advanced applications and expert support without sacrificing the benefits of open source. For example, when new Redfish schemas are published, the partner should have a clean and simple update path to ensure compliance and compatibility.

System Management is important to today's IT infrastructure operations and will become more critical with IT-OT convergence and 5 G infrastructure expansion. Diverse edge computing is driving new requirements for remote access, power efficiency, security, cloud connectivity and holistic management of IT and OT infrastructure.

At Vertiv, we recognize the benefits of open source and the value it brings to a community. Just as important, we understand the need to contribute back to the community when it makes sense. For more than 15 years, we have used open source software in our solutions and have combined it with our innovative technologies to deliver greater value to our customers.

Open source makes our products more portable and interoperable across different platforms and gives our customers choices. Our approach is to review useful open source technology when it emerges, test it, harden it, make it secure and make it reliable. Then, we package it and support it as a commercial product.

New open source technologies and standards will continue to evolve, but like many open source projects, developing, supporting and maintaining a commercial release still takes expertise and resources that many customers lack. As pioneers of IPMI and Redfish, our system management solutions have shipped on more than 30 million servers to a range of customers operating at every scale imaginable.

Today, Vertiv continues to pioneer innovation and help our customers benefit from evolving technologies.



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