



VERTIV WHITEPAPER

Bridging the Gap

From OpenBMC to Commercial Embedded
Management Technology

The IT industry is experiencing a major shift in platform management technology. Over the past decade, IT device manufacturers and service providers have struggled with the challenges of managing datacenters with non-standard, proprietary Baseboard Management Controller (BMC) firmware. Customers who rely on these assets to run their business were often left frustrated because they had insufficient control over their datacenters. With BMC failures being one of the largest factors in datacenter reliability, customers had to rely completely on third-party BMC firmware providers. This often resulted in poor reliability, costly schedules, lack of customization, slow issue resolution, and feeling vulnerable to security threats at any given time. Furthermore, businesses who wanted standardize methods of managing IT platforms were relegated to inconsistent and non-standard vendor implementations of Intelligent Platform Management Interface (IPMI) which did little to address external security concerns. These problems have become more pronounced with Digital Transformation and expanded demand for content delivery. Edge and Hybrid Cloud computing are driving new requirements for speed, access, security, and standardized API's from IT assets. To address these challenges, customers have invested heavily in Redfish and OpenBMC adoption. These technologies are driving how IT manufacturers are designing computing equipment and how customers are managing assets.

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).

OpenBMC and Redfish are challenging old standards and disrupting an industry built on closed-source solutions. Suppliers and manufacturers are having to adapt their business models in order to endure. These innovations are helping manufacturers create and port embedded technologies faster. In addition, customers are now able to modify and debug their own BMC firmware stack, reducing downtime & reliability concerns. Finally, these technologies help simplify and standardize IT platforms, making consistent operational management of heterogenous devices and datacenters a reality.

State of OpenBMC

OpenBMC is built on a standard Linux distribution that simplifies integration and porting to different offerings. Many modular components are available that allow developers to build a BMC solution and create advanced management features. With support for OpenBMC coming largely from Facebook, Microsoft, Google, and IBM, the solution in the community addresses the requirements for cloud-scale server management. However, today's embedded management landscape spans across the entire IT infrastructure, across multiple CPU architectures, and has a range of custom features tailored to various customer segments. As the OpenBMC community evolves, we will see its usability expanded across a broad range of platforms and segments.

Supporters of OpenBMC understand the limitations of proprietary technology. Open source has all the benefits of transparency, faster debugging, feature velocity, and security patches. When the community is large and active, this process works best. Businesses considering adopting this technology should consider the following business factors in decision making:

- The right level of investment in resources and skills will be required
- Some desired components and features are likely not natively available
- Your business or customers may need prompt support
- Warranty and indemnification matter
- Having a strategic partnership and domain expert may be critical to overall success

How Vertiv Can Help

Our engineering community recognizes the benefits of open source and the value it brings to our industry. Equally as important, we understand the need to have a sound strategy for contributing to the open-source community. For nearly 20 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, enhance it, harden it, make it more secure and make it reliable. Then, we package it and support it as a commercial solution, fully supported and backed by our expertise. Vertiv features a fully open, highly secure IPMI & Redfish-compliant management solution called Avocent® Core Insight. Our firmware is based on OpenBMC, embracing the customer benefits of open source technology, while also solving the business challenges of deploying OpenBMC. We integrate additional features beyond OpenBMC to enhance security and performance. Avocent® Core Insight is hardened, fully supported, and provides customers with current & future support for the latest platform technology. It is fully customizable, scalable, and transparent to device manufacturers and service providers who desire to have greater control over their IT environments.

Conclusion

System Management is more important than ever in today's IT infrastructure. New open source technologies and standards will continue to evolve, but like many open source projects, developing, supporting and maintaining a commercial product still takes expertise and resources that many customers simply cannot provide. As pioneers of IPMI and Redfish, our system management solutions have shipped on more than 35 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 with high impact products and solutions such as Avocent® Core Insight.

