



Highlights

- Together, IBM Power Systems and Zettaset BDEncrypt help organizations address the unique challenges of keeping big data safe in distributed systems like Hadoop, NoSQL, and relational databases
 - IBM POWER8 provides industry-leading levels of performance, scalability, reliability, and security features, making it the ideal platform to support BDEncrypt
 - Zettaset BDEncrypt running on Power Systems provides an encryption infrastructure designed specifically to protect big data in distributed systems
 - BDEncrypt is proven to work well together with Power Systems and IBM Open Platform with Apache Hadoop
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IBM Power Systems and Zettaset BDEncrypt

The ideal environment for protecting big data in distributed systems

While the dawn of the big data era has certainly been a boon for many organizations across the globe, it has not come without its fair share of challenges. In particular, being able to keep all that valuable business data safe from theft or manipulation by malicious hackers has proved a constant area of concern for data center administrators.

In addition, many new factors have arisen to exacerbate this situation. For instance, while distributed big data systems such as Apache Hadoop and NoSQL offer important performance, scalability and simplicity benefits, they also lack enterprise-grade security capabilities, making them inherently insecure. Their open and distributed nature also makes them very vulnerable to attack, which is a particular area of concern for organizations operating in industries that have stringent regulations for securing personally identifiable information.

At the same time, growth in the adoption rates for cloud services has required many organizations to start rethinking their approach to security. The traditional security environment, with a corporate firewall circling the perimeter of an organization's systems and data, no longer makes sense in the new reality, where systems and data are everywhere, and there is no perimeter. Organizations must now shift their focus to securing the data itself, no matter where it may reside.

In order to address these issues and make the world safe for distributed big data once more, organizations need powerful security technology that is designed specifically for the challenges of big data in Hadoop and NoSQL environments. One example of such a technology is BDEncrypt, from IBM Business Partner Zettaset. Zettaset BDEncrypt is a powerful encryption solution that is designed specifically to meet the security needs of big data in distributed environments.



In order to make the most of the capabilities offered by BDEncrypt, organizations need to pick the right platform on which to run it. Like BDEncrypt, IBM® Power Systems™ offerings are designed specifically with the needs of big data and distributed environments in mind. In addition, IBM Power Systems offers the ideal blend of performance, reliability, and advanced security features to support BDEncrypt.

Finally, due to the unique collaboration between IBM and Zettaset, BDEncrypt and Power Systems have been proven to integrate and work well with one another. A recent integration test performed by Zettaset demonstrated that BDEncrypt and IBM Open Platform v4.1 were able to run together successfully on IBM Power Systems.

Performance and scalability

Crucially, IBM Power Systems offerings have the ability to work well in a scale-out mode, which makes them perfectly suited to support distributed systems such as Hadoop, NoSQL, and relational databases. As an organization begins to add new servers to its existing clusters in order to keep up with data growth, database administrators can feel confident that Zettaset solutions running on Power Systems will scale right along with those clusters. This means that rapid system growth will not result in gaps in security coverage.

In addition, scalability goes hand in hand with performance, and Power Systems delivers in this regard as well. Using IBM POWER8® to support Zettaset BDEncrypt allows an organization to capitalize on the many performance advantages Power provides over competing systems. For instance, when compared with x86 systems, POWER8 servers are able to offer four times more threads per core, up to four times the memory bandwidth, and as much as four times the cache space. Together, these benefits ensure that Power Systems offerings can provide performance levels that meet or exceed those required by distributed environments.

Reliability

While solutions like BDEncrypt offer a number of capabilities that can be instrumental in securing distributed data environments, those capabilities only benefit an organization if the software is actually up and running. This is why it's important to deploy BDEncrypt on a platform that offers maximum levels of reliability.

IBM Power Systems has a long history of using virtualization and partitions to optimize reliability, availability and serviceability (RAS); this means that the platform is capable of minimizing the occurrence of system failures, maintaining application operations even in the aftermath of a failure, and remedying failures quickly and without disruption. When taken together, these factors mean maximum uptime for applications like BDEncrypt.

IBM also offers a number of special optimized configurations for distributed systems, essentially allowing organizations to do more with less and consolidate their physical infrastructures significantly. In addition to providing greater simplicity and efficiency, a smaller infrastructure also has fewer potential points of failure, helping to provide a more reliable experience overall.

Security

IBM Power Systems offers built-in security and privacy measures that competing platforms simply can't match. When paired with the big data-specific security capabilities found in BDEncrypt, Power offers the ideal platform to address the security challenges of distributed systems.

With support for real-time data encryption, sophisticated application isolation, and built-in compliance alerts and reporting, Power Systems can help ensure that your organization has the level of security that today's distributed big data environments require. In addition to integrating with BDEncrypt to make sure that sensitive data is protected, Power Systems' security features also help remove manual security tasks, freeing up team members to engage in more high-value work. In addition, simplifying and automating compliance with important industry standards can help save time and money, while also protecting the company reputation and preventing legal vulnerabilities.

Zettaset BDEncrypt: A big data encryption solution to meet the needs of distributed environments

By building upon the performance, reliability and security features of the IBM Power Systems environment, the Zettaset BDEncrypt offers enterprise-grade encryption that can meet the needs of even the largest big data environments.

BDEncrypt takes a data-centric approach to security, with advanced encryption and access control technologies that help provide the maximum level of data protection possible.

In addition, the solution can be used as part of a strategic IT initiative to bring Hadoop, NoSQL and relational databases into compliance with industry regulations such as HIPAA, HITECH and PCI. For organizations operating in heavily regulated industries such as healthcare or finance, Zettaset BDEncrypt running on IBM Power Systems provides a new level of confidence and simplicity when it comes to ensuring compliance and keeping sensitive personal information safe.

BDEncrypt solution capabilities

With Zettaset BDEncrypt, organizations can take advantage of a high-performance, partition-level solution that is ideal for bulk encryption purposes. BDEncrypt can be easily deployed using either Apache Ambari or a CLI, and is built upon 256-bit Advanced Encryption Standard (AES-256), the highest level of encryption available in the world today.

BDEncrypt is able to offer the following security benefits:

- Designed from the ground up for optimal performance and scalability in distributed big data systems such as Hadoop and NoSQL, as well as relational databases
- Provides performance-optimized results for both data at rest and data in motion
- Certified for interoperability with many key manager solutions, including those that support the Key Management Interoperability Protocol (KMIP)
- Certified for interoperability with many hardware security modules, including those that support Public Key Cryptography Standard (PKCS) #11

“Businesses working with petabyte-scale data know that on-demand responses to analysis queries require infrastructure that offers both scale-out and scale-up in rack-optimized formats. At the same time, big data must be stored and processed in an environment that supports comprehensive and verifiable security. The combination of Linux on IBM Power Systems with Zettaset BDEncrypt delivers the exceptional performance and data-centric security necessary to facilitate mission-critical big data solutions.”

— Jim Vogt,
CEO, Zettaset, Inc.

About the IBM/Zettaset partnership

As two of the leading providers of security solutions for big data environments, IBM and Zettaset are working together to drive better results for organizations looking to protect big data in distributed environments.

Together, IBM Power Systems and Zettaset BDEncrypt are able to help organizations manage multiple workloads with a single platform that can offer all the protection, performance and scalability they would ever need. As a result, IBM and Zettaset are helping remove security as one of the major barriers to further enterprise adoption of distributed systems for big data, and thereby redefining what organizations can hope to accomplish using Hadoop and NoSQL.

For more information

To learn more about IBM Power Systems for the needs of your distributed big data environments, contact your IBM representative or IBM Business Partner, or visit ibm.com/power/solutions/bigdata-analytics.

To learn more about big data encryption solutions from Zettaset, visit www.zettaset.com.



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IBM Systems
Route 100
Somers, NY 10589

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