IBM z Systems
Introduction
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Node.js and IBM z Systems

Frequently Asked Questions

Worldwide

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Node.js and IBM z Systems

What is Node.js and how does it deliver value?

Node.js, often abbreviated to "Node," is a server-side runtime that is built on Google's V8 JavaScript engine. It is used to write scalable cloud and mobile applications in the JavaScript language. Node.js is popular in the cloud, mobile and JavaScript development communities.

How are clients using Node.js?

Node.js is a language of choice for new cloud native web and mobile apps. Every week thousands of new users join IBM Bluemix®, IBM's cloud platform as a service; they choose Node.js with greater frequency than any other language. This speaks to the ongoing emergence and broad popularity of Node.js with our enterprise clients, and its applicability to cloud-native and micro-service architectures. By delivering first-class support for Node.js across public, private and on-premises cloud environments, we are making it possible for developers working on apps and workloads of all types to leverage Node.js with scale and success.

How is IBM working with the community and Node.js Foundation?

IBM has a rich heritage of commitment and contribution to important open source initiatives, including leadership roles in Apache, Eclipse, Linux, OSGi, jQuery, OpenStack®, Cloud Foundry and many others. IBM has worked and will continue to work closely with and contribute to the entire Node.js community. IBM is a Platinum sponsor of the Node.js Foundation, which will drive Node.js to the next level of adoption as the source of a stable release enterprises can count on and the place for experimentation and innovation. We will take an active role in the Node.js Foundation by sitting on the Board of Directors and the Technical Steering Committee, contributing to its open source projects, providing resources to help shape and promote the organization, and allocating sponsorship funds for ongoing operations. IBM will continue to grow our technical contributions to the Node.js open source community and leverage Node.js within our portfolio of offerings.

What IBM products and services work with Node.js?

We provide the IBM SDK for Node.js on multiple operating systems and hardware platforms, and will continue to work with the community to enhance Node's Enterprise capability. Several of our shipping products, such as Rational® Software Architect, IBM Bluemix and DevOps, have already leveraged Node.js to provide enterprise capability. We have ported V8, Node's virtual machine, to three IBM platforms, which required modifying over 50 thousand lines of code -- much of which has already been contributed to the community. These ports also required us to make a number of improvements to enhance security and globalization support - again we contributed all this work back to the community.

How does Node.js work with IBM z Systems?

The IBM SDK for Node.js is available for Linux® on IBM z Systems®. Clients can simply take or develop their Node.js applications and deploy them on the mainframe. With the wealth of corporate data that either resides or originates on the mainframe, there's a strong likelihood that cloud or mobile applications and APIs built on Node.js will require access to data and services on z Systems. With Node.js, clients can now expose the Systems of Engagement opportunities from Node.js, and tie them with the trusted Systems of Records on the mainframe.

What benefits do clients gain by running Node.js on z Systems?

By deploying Node.js applications on z Systems, clients gain all the strengths, security and reliability of the mainframe. z Systems fast general-purpose processors are well suited to the Node.js single-threaded processing model. The large I/O capacity of the mainframe also complements a strength of Node.js applications: the ability to scale and maintain thousands of concurrent connections. z Systems can further provide an advantage to JavaScript applications that need to access enterprise data and transactions. Logical partitions on z Systems can be linked together by high-speed networking HiperSockets™, allowing memory-to-memory communication with drastically improved performance. JavaScript applications can leverage HiperSockets transparently to access data and transactions in other logical machines inside the box.

What is IBM's competitive differentiation regarding Node.js?

The IBM SDK for Node.js is 100% API compatible with the community version. In fact, we built the IBM SDK from the open source community code base, with extensions added for support on z Systems. Furthermore, we have leveraged the strength of monitoring and debugging tools developed for Java, and extended them to work with the IBM SDK for Node.js. Now, with the same set of tools and skills, you can diagnose both your Node.js and Java applications. Using IBM Health Center, you can monitor your Node.js applications and gain valuable insight into application hot spots, garbage collection activities, memory consumption and much more. The IBM Interactive Diagnostic Data Explorer (IDDE) is now aware of your Node.js runtime and JavaScript metadata, giving you the ability to scan the heap for JavaScript objects or walk JavaScript stack frames during postmortem analysis. Both Health Center and IDDE are available at no cost as part of IBM Support Assistant and on the Eclipse Marketplace. Support for IBM SDK for Node.js is also available upon request.

For more information, see *Node.js* (https://nodejs.org/) and *IBM SDK for Node.js* (http://www.ibm.com/developerworks/web/nodesdk/)

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