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HOW NODE.JS CAN ACCELERATE ENTERPRISE APPLICATION DEVELOPMENT

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Accelerate time to market, optimize performance, ensure compliant and secure applications, and achieve a competitive edge with Node

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INTRODUCTION

In today's fast-paced, increasingly connected global environment, an organization's success is inextricably tied to its agility—agility to adapt to market change, meet customer requirements, support evolving business need, and innovate faster than the competition.

Undoubtedly, technology has become the cornerstone to enabling the enterprise to achieve the level of flexibility required to keep up with the pace of business. We live in days of ever-more-rapid development cycles. It is no longer enough to just deliver functionality quickly; what you deliver has to have all the expected bells and whistles to provide a user experience that keeps everyone coming back for more—on the browser, phone, and tablet. The ability to accelerate innovative application development is now a key competitive differentiator.

In response to this new reality, Node.js rapidly becoming the technology of choice for enterprise companies, including the likes of Walmart and PayPal. Node's use in the enterprise has grown exponentially over the past two years, and those organizations that are using Node, and sticking with it, and deepening their investment.

Node is a framework/ecosystem written in JavaScript that speeds and simplifies application development versus traditional approaches. Node's flexibility means companies are not constrained, limited, or compromised by their technology environment. Rather, Node empowers them to quickly react to business and market change and ensure compliance with constantly changing corporate governance policies and regulatory mandates.

The following white paper examines in detail how Node can empower today's enterprise to accelerate time to market, optimize performance, ensure compliant and secure applications, and achieve a competitive edge.

NODE CAN GIVE YOU A BIG HEAD START

There are literally thousands and thousands of developers already writing applications in Node. Witness the modules and packages accessible through npm, the Node Package Manager. Third parties write and submit them, and make them freely available to the Node community at large. And large is an understatement. There are over 95,000 Node modules out there for developers to use. In fact, there are web sites that have been developed just to help developers find the modules they need, such as [nipster](#).



This existing infrastructure is a significant advantage to any enterprise considering writing Node applications. Aside from specialized business logic, most of the work is already done for your developers, significantly decreasing your time to market for new applications and functionality.

NODE OFFERS A SIMPLER DEVELOPMENT ENVIRONMENT

Traditional approaches to development are cumbersome, requiring the developer spend a few hours wrestling the system into submission—first getting the development environment right, then making sure the required versions of all the software packages are installed, and finally putting the code in the repository to test. Then invariably the developer has to circle back and find out what got left out and why the application is running on someone else's machine but not the new one.

Node streamlines this process, increasing your developers' productivity. In Node world, developers just download Node, pull their code in from the repository and go. Node can be downloaded from the Web at <http://nodejs.org/download>. There, developers will find installers for Mac, Linux, Windows, SunOS. The source code can also be downloaded and built from the ground up.

As your developers gain proficiency in Node, they will benefit from reading other people's code and seeing how Node is laid out architecturally, learning some of the dominant patterns used to get work done, and using programs built around Node to help them effectively test and deliver systems.

JAVASCRIPT IS THE MOST POPULAR LANGUAGE IN THE WORLD

There are more JavaScript developers out there than ever before. It is the lingua franca of the Web, and Node makes it even more accessible. JavaScript's popularity makes it easy to find willing JavaScript developers, and with their JavaScript knowledge, those developers are just a step away from Node.

Node elevates JavaScript to a real first-class application development language (not just a language limited to running inside a web browser) by letting you run JavaScript code on the server side as well as the client side. Node is essentially an event loop from which developers dispatch events to the code to handle. Node is single threaded and asynchronous. The pattern is well established in software development and easy to learn; using JavaScript to write logic becomes second nature very quickly. And for programmers, this is the bleeding edge. The talent pool for Node developers is strong and rapidly growing.

NODE IN ACTION: DELIVERING BOTTOM-LINE RESULTS

PayPal, the 15-year old megacorp that revolutionized the way people pay merchants, charities, and even each other, [made the jump from Java to JavaScript](#) and saw their development and product performance increase dramatically.

PayPal started by rewriting one of their existing Java projects in JavaScript and changing the development organization structure from specialized back-end and front-end teams to developers who could work across both client and server without skipping a beat. Using Node, they delivered in half the time with fewer people who only had to write two-thirds as much code. Additionally, the Node implementation of the same Java app could service twice as many requests each with 200ms (one-third) less latency. PayPal has decided to move forward with Node on their future projects as well.



NODE RUNS EVERYWHERE

JavaScript is a sweet spot. Because it runs on every browser, there is incredible pressure for all of the platforms to support Node. If a browser can run JavaScript (modern browsers are incredibly, almost horribly complex programs), then porting a bit of code that runs an event loop is quite easy.

This means that the system your developer writes is going to run from just about anywhere—on your own or a client’s platform, or served from a well-established Node server equipped to scale and manage your Node code needs. But you’ll find that your Node needs are less than you might have thought. In addition, the majority of available Node modules are free.

Developers can develop locally using Node’s built-in web server and try everything out across the web without needing to host their application in any other location. If the application is for personal use or for small groups, this may be a perfectly acceptable hosting solution. If your application outgrows the Node Server however, there are other simple, low-cost solutions that can save significant amounts of work.

MODULUS IS YOUR ONE-STOP NODE PLATFORM-AS-A-SERVICE SHOP

Once your organization has built Node applications and achieved success, you may want to serve your Node application more comprehensively. Modulus makes it easy to scale to demand with just a few simple commands—whether you need to run on one or on 100 servers.

Using Modulus, you can develop Node applications on a dedicated, enterprise-class platform, increasing your time to value in your highly transactional environment, while maintaining the agility to rapidly respond to business needs. Whether you are focused on compliance, governance, or regulation requirements, Modulus provides a Node.js environment that can be optimized and configured to meet any specialized enterprise need.

For more information, visit www.progress.com/products/modulus.

