NodeSource for IoT

Common industries:

Home security, smart appliances, health care, air travel.

From home and business security, industrial equipment and healthcare, to air travel, insurance and entertainment, the Internet of Things has spread rapidly across business sectors. Node.js is especially useful in IoT as this field continues to grow in popularity. Anytime a user has endpoints running Node.js in the field — whether it be in chipset or a kiosk/device — they need to ensure their apps are running, and doing so effectively. Collecting all that endpoint data effectively,and being able to repurpose it as well,is critical for the success of IoT implementations.

Traditionally, it's been hard to debug hardware. Writing software that enables hardware to "phone home" to web-based services can be especially tricky. Node.js is being adopted in IoT use cases for rapidly prototyping before products get hardened and mass produced. However, troubleshooting open source Node.js by itself in a debugging environment or as part of quality assurance can be difficult, if not impossible.

Node.js with NodeSource

For many IoT companies and situations, Node.js is tremendously popular - it's easy to use and rarely breaks. But when a problem does arise, understanding what went wrong, where, and how to fix it is very hard to do; whenever possible, eliminating these bugs before devices are mass produced is critical. When moving from prototype to production, when developers need to monitor and predict problems with Node.js, there is no simple solution. However, with NodeSource, you can understand what's going on in your code more than you can with Node.js alone. NodeSource can help you find the root cause of performance issues, identify what broke, and where to go within the code to fix it - saving days, or even months of work.

N|Solid for IoT

The N|Solid platform is especially helpful in IoT use cases because of how the protocol works. It moves code data away from the individual device(which might have limited storage or availability, or may not be secure)out to cloud-based, user-determined and controlled storage. In the case of quality assurance uses, developers can debug and get greater visibility into processes during product bake-in, a huge value add and tremendous resource saver.

For example, capturing forensic data can be a challenge, especially in regards to CPU profiling or memory snapshots; the very things that provide insight into application performance. It's possible to get those artifacts with Node.js and other open source products, but the unique challenges of transferring information about memory or crashing problems in order to examine them poses security challenges. Further, open source instrumentation and augmentation of scripts can present security risks, have adverse effects, or provide imprecise results.

NodeSource N|Solid removes all these friction points and makes things like profiling, snapshots or troubleshooting event-loop lag safe and simple. It's architecture allows ephemeral artifacts to be moved to a stable, user determined location. Even if the the process goes down, the artifacts remain long after a crash or device termination.

If a process in production is completely blocked and insight into a non-responsive application is required, there is no solution in the open source world. Because the NodeSource agent lives inside the event-loop it can retrieve that critical information. Further, the system uses encryption, crypto keys and curves, and is a complement to any protocol.

Rigorous development processes help, as does testing in a staging environment, but production is where the heavy loads, unique use cases and long tail anomalies occur--some patterns will only occur in a production environment. Visibility, insight and post-mortem debuggability are essential in triaging and resolving problems quickly and effectively. NodeSource saves time, money and resources in finding and fixing a bug that could take out internal business processes, applications, or APIs that are affecting customers or partners.

Key Considerations	How NodeSource Provides Value
Protecting critical data and services	N|Solid ships with configurable security policies to help harden your applications. Always-on vulnerability scanning makes you aware of emerging risks in real-time, not just at runtime.
Fast and reliable performance for end users	N|Solid provides tools for profiling application performance and supports workflows that give the entire team insight into behavior.
Relevant, Node.js-specific metrics	The N|Solid runtime agent lives natively at the application core, where it captures highly detailed, Node.js-specific metrics with greater accuracy than popular APM tools and negligible impact on performance.
Ability to rapidly detect and remediate issues and reduce or eliminate outages	Customizable alerts give your team instant notice when a problem is detected, enabling remediation of issues before they escalate to a full-scale outage and reducing mean time-to-resolution (MTTR).
Increasing innovation velocity to maintain competitive advantage	The NodeSource platform provides a turnkey way to standardize and operationalize Node.js development across multiple teams within your organization.

Download N|Solid now at downloads.nodesource.com or email sales@nodesource.com