

## Source Code Analysis Tool Extended for Multi/ManyCore

Klocwork intros multicore support to address endian and concurrency coding issues

By [Dr. Dobb's Journal](#)

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[Klocwork](#), a developer of automated source code analysis tools, has announced new capabilities to overcome the challenges of multicore and multiprocessor development.

Klocwork Truepath, Klocwork's static analysis engine, has been enhanced to address two issues related to multicore and multiprocessor development:

- **Endian incompatibilities.** Heterogeneous processor architectures require developers to ensure that their data interaction with the target processor is in the proper endian format. This is a costly and complicated problem when developing on large systems with multiple processors or during a porting effort. Klocwork's new analysis capabilities will flag instances where data is being transmitted to or from the target without being transformed.
- **Concurrency defects.** Multicore development can present challenges to software developers when ensuring parallel processes don't conflict with one another. Software deadlocks are an example of the type of issues developers need to deal with in this domain. These issues are difficult to identify and reproduce but with Klocwork's new analysis capabilities, developers can analyze the whole program space to identify situations where potential conflicts occur.

The growth in multicore and multiprocessor architectures is being driven by demand for more sophisticated feature sets, advanced user interfaces, and perpetual connectivity in next-generation embedded devices. According to data from VDC Research, use of multicore and/or multiprocessor designs is expected to grow by almost 75 percent in the next two years. Their data also shows that multicore and multiprocessor software projects are 4.5X more expensive, have 25 percent longer schedules, and require almost 3X as many software engineers. These business impacts are driving software teams to search for advanced development tools to contain and reduce these costs and associated risks.

"Our data shows that software projects using multicore and/or multiprocessor architectures have become larger, longer, and farther behind schedule than those utilizing single processor designs," says VDC's Chris Rommel. "Combined with the fact that software engineers are generally underwhelmed with the development tools that can handle this level of complexity, Klocwork's new capabilities should be a welcome addition to the mix."

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