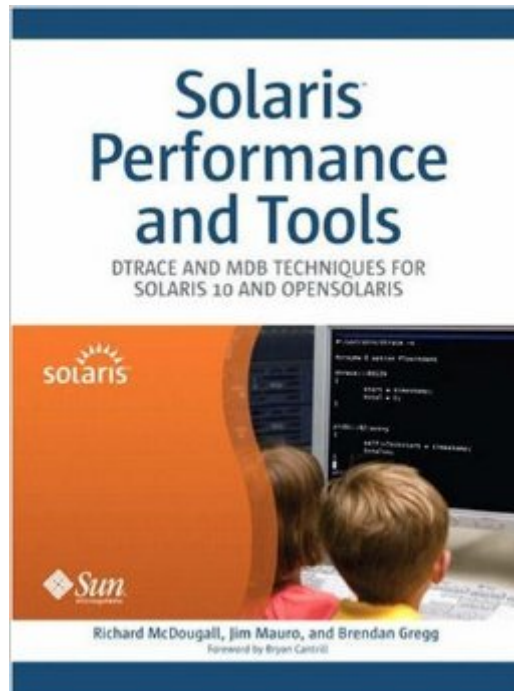# Solaris Performance And Tools: DTrace And MDB Techniques For Solaris 10 And OpenSolaris

Synopsis

"The Solaris™ Internals volumes are simply the best and most comprehensive treatment of the Solaris (and OpenSolaris) Operating Environment. Any person using Solaris--in any capacity--would be remiss not to include these two new volumes in their personal library. With advanced observability tools in Solaris (like DTrace), you will more often find yourself in what was previously unchartable territory. Solaris™ Internals, Second Edition, provides us a fantastic means to be able to quickly understand these systems and further explore the Solaris architecture--especially when coupled with OpenSolaris source availability." --Jarod Jenson, chief systems architect, Aeysis "The Solaris™ Internals volumes by Jim Mauro and Richard McDougall must be on your bookshelf if you are interested in in-depth knowledge of Solaris operating system internals and architecture. As a senior Unix engineer for many years, I found the first edition of Solaris™ Internals the only fully comprehensive source for kernel developers, systems programmers, and systems administrators. The new second edition, with the companion performance and debugging book, is an indispensable reference set, containing many useful and practical explanations of Solaris and its underlying subsystems, including tools and methods for observing and analyzing any system running Solaris 10 or OpenSolaris." --Marc Strahl, senior UNIX engineer Solaris™ Performance and Tools provides comprehensive coverage of the powerful utilities bundled with Solaris 10 and OpenSolaris, including the Solaris Dynamic Tracing facility, DTrace, and the Modular Debugger, MDB. It provides a systematic approach to understanding performance and behavior, including: Analyzing CPU utilization by the kernel and applications, including reading and understanding hardware counters Process-level resource usage and profiling Disk IO behavior and analysis Memory usage at the system and application level Network performance Monitoring and profiling the kernel, and gathering kernel statistics Using DTrace providers and aggregations MDB commands and a complete MDB tutorial The Solaris™ Internals volumes make a superb reference for anyone using Solaris 10 and OpenSolaris.

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Customer Reviews

A Sun colleague recently noted that the consistency of interfaces in Solaris isn't a strong point, and she's right. Anyone who understands much of Solaris has to manage many odd and subtle details. While the concepts that drive Unix variants are indeed powerful, it doesn't mean every contributing engineer grasps and implements them the same way.As a result, there are differing views in topic areas like performance management, including: proper methodology, or "best practices"; which statistics are useful and how to interpret them; which reports may be significant, trivial, or misleading; and of course, which tools help you get them. As a contributing author to Sun Microsystem's course on Solaris performance, I heard many of those views from many experienced trainers, Sun engineers, and other interested parties. The complexity of the topic leads many people to believe they understand it "the one way it is supposed to be understood." The passion is great, so long as it doesn't lead to a narrow-minded zeal.Solaris Performance and Tools punts on such religious matters. In my view there are some good and some disappointing outcomes. The book covers two primary areas. One, it is a detailed looks at programs used to measure system and process performance. The coverage ranges from the obvious and everyday to the highly technical and obscure. Second, there are some brief but helpful introductions to mdb and Dtrace, the killer analysis tool introduced with Solaris 10. This book doesn't often propose a method or application of these tools. It does present what the authors feel are 'the' important ways to measure CPU, disk, and I/O efficiency, but relies more on lots of output from lots of tools, commenting on them only occasionally.

"Solaris Internals" and its predecessor "Sun Performance and Tuning" are wonderful books for giving you the knowledge to know whats actually happening under the covers, but many SA's admit struggling when it comes to translating that into usable day-to-day understanding of the systems on which they manage. Just knowing how it works isn't enough to be really useful, what you need is the ability to look at the system and work out how what your seeing fits what you know."Solaris Performance and Tools" bridges that gap. Every page, cover-to-cover is filled with practical

examples and explanations of the tools that let you actually see what Solaris is doing. If you've tended to rely on only a handful of tools such as vmstat, iostat, netstat, sar, and prstat, then you really want to get this book and start digging much deeper. Even as a Sr Admin I found that there were wonderful tools available that I didn't even know existed (such as "intrstat").In particular, this book unlocks two powerful tools in Solaris 10 that can be as complex as they are powerful: DTrace and mdb. Both of these give you unparalleled power to dig your fingers into the system, but using them beyond simple one liners is more difficult than most people admin. This book gives you a great step-by-step approach to learning both. While a one-line DTrace script found in a blog might help you here and there, you won't truly understand how powerful DTrace can be untill you've builta firm foundation on which to build your own. This book is the best way to jump start that process.This truly is the only book available that opens the window to whats possible in Solaris in such a practical way.

I will make this as short as I can, unlike the one for the companion book, Solaris Internals. I have been troubleshooting Sun Solaris for 15 years, in one version or another. Crash dump analysis was the main way to get data from within the kernel and only if the system blew a gasket. There have been different methods through the years,crash, kdb, and mdb are the main ones, but now with Solaris 10 you can add a powerful tool to your knowledge tool box, DTrace. This is built in to the system code so its not a seperate program that you run, it lives in Solaris and you enable the probes you want to see. Interpreting the data is not easy if you dont know what you are looking at, so the Companion book tells you what the internal workings are so you can know what you are looking at. This book tells you how to find the most used issues or problems. It covers these things in more detail than you can find unless you work in and engineering lab and program apps for Solaris. Solaris 10 has many things in it that can throw an admin, Zones for instance, can throw you if you are having some type of performance issue, but what can you do to get the data from the kernel to watch the internal processes deep under the hood? DTrace should be the first thing out of your mouth. This is a top notch book and I understand other people's issues or questions with it, however, assume you have not touched Solaris 10 in production and your company is doing a technology refresh and migration to new Sun Hardware and Solaris 10. How are you going to help your company troubleshoot issues in this envrionment? You will use DTrace and any other tools you can. I use DTrace almost every day. I did today.

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