Problem-solving in High Performance Computing: A Situational Awareness Approach with Linux

By Igor Ljubuncic

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Problem-Solving in High Performance Computing: A Situational Awareness Approach with Linux focuses on understanding giant computing grids as cohesive systems. Unlike other titles on general problem-solving or system administration, this book offers a cohesive approach to complex, layered environments, highlighting the difference between standalone system troubleshooting and complex problem-solving in large, mission critical environments, and addressing the pitfalls of information overload, micro, and macro symptoms, also including methods for managing problems in large computing ecosystems.

The authors offer perspective gained from years of developing Intel-based systems that lead the industry in the number of hosts, software tools, and licenses used in chip design. The book offers unique, real-life examples that emphasize the magnitude and operational complexity of high performance computer systems.

- Provides insider perspectives on challenges in high performance environments with thousands of servers, millions of cores, distributed data centers, and petabytes of shared data
- Covers analysis, troubleshooting, and system optimization, from initial diagnostics to deep dives into kernel crash dumps
- Presents macro principles that appeal to a wide range of users and various real-life, complex problems
- Includes examples from 24/7 mission-critical environments with specific HPC operational constraints

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Problem-solving in High Performance Computing: A Situational Awareness Approach with Linux By Igor Ljubuncic Bibliography

- Sales Rank: #1296220 in Books
- Published on: 2015-10-01
- Released on: 2015-09-17
- Original language: English
- Number of items: 1
- Dimensions: 9.25" h x .73" w x 7.50" l, 1.50 pounds
- Binding: Paperback
- 320 pages

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Editorial Review

From the Back Cover

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The authors offer perspective gained from years of developing Intel-based systems that lead the industry in the number of hosts, software tools and licenses used in chip design. They cover the entire stack, from identifying the problem, understanding and reproducing it; to solving it, using a methodical, top-down approach, while handling the constraints of a global computing grid. Throughout, the book offers unique, real-life examples that emphasize the magnitude and operational complexity of high performance computer systems.

About the Author
Igor Ljubuncic is a Principal Engineer with Rackspace, a managed cloud company. Previously, Igor has worked as an OS architect within Intel's IT Engineering Computing business group, exploring and developing solutions for a large, global high-performance Linux environment that supports Intel's chip design. Igor has twelve years of experience in the hi-tech industry, first as a physicist and lately in various engineering roles, with a strong focus on data-driven methodologies. To date, Igor has had fifteen patents accepted for filing with the US PTO, emphasizing on data center technologies, scheduling, and Internet of Things. He has authored several open-source projects and technical books, numerous articles accepted for publication in leading technical journals and magazines, and presented at prestigious international conferences. In his free time, Igor writes car reviews, fantasy books and manages his Linux-oriented blog, dedoimedo.com, which garners close to a million views from loyal readers every month.

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