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Methodology and Practice in Observing Kernel Networking

Title

Methodology and Practice in Observing Kernel Networking

Abstract

Blindly enumerating all counters extracted from the kernel and haphazardly monitoring every function in the hot path is hardly practical in production. Three key issues deserve greater attention: 1) performance degradation, 2) ineffective metrics, and 3) the prohibitive cost of massive data storage. In most time, system administrators are forced to spend excessive time repeatedly sifting through data to find just one or two useful historical entries to have a better understanding of what happens in the underlying layer - an exhausting ordeal. Why not identify the truly impactful key metrics, build a robust methodology around them, and then present to admins in a user-friendly way? The topic will revolve around methodologies and real-world practices in the networking domain, though such methodologies should transcend this domain.

Categories

1. What is the ultimate goal of monitoring and observations?
2. How many different types of tracing tools so far?
3. What are the different actions between testbed and production?
4. What issues do we aim to solve?
5. What is the definition of an effective metric?
6. Drop and stall issues in kernel networking.
7. Potential real issues can be effortlessly enumerated from syscall to driver.
8. Monitoring the networking on a daily basis with less performance effect in practice.
9. Massive data is not a problem if....

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