Summary of “Evolve or Die: High-Availability Design Principles Drawn from Google’s Network Infrastructure”

Hou, Jue

[jue.hou@helsinki.fi](mailto:jue.hou@helsinki.fi)

In the article “Evolve or Die: High-Availability Design Principles Drawn from Google’s Network Infrastructure”, authors mainly raised some critical principles for designing a good distributed system. After a brief introduction of the architecture of Google’s network infrastructure, authors gave a target for availability at first, which is that the downtime can only be a few minutes per month. After that, author also introduced the challenge they met in order to achieve this goal. Secondly, authors mentioned a report for failure event so that people can find root causes and learn their lessons from them. Meanwhile, authors also analyzed some common failure event from different angles. From analysis, it has been shown that failures will happen in all types of networks and across all planes. Though authors agreed that categorize root causes can be subjective, they still gave three categories for different plane: data plane, control plane and management plane. Also, along with the description of categories, some fault examples were mentioned. Finally, combined with author’s experience and analysis of failures, authors gave some principles for a whole high-available distributed system.

Overall, authors introduced what problems Google had met and what principle or lesson they can learn from them. After reading this article, I find it very difficult for me. Some words need to be read for several times to fully understand. Also, there are too many abbreviate for terms in the article. And I have to turn to further resources every time I encounter one so that things can make sense. It hence becomes an obstacle for me.