System Support for the Integrated Management of Quality of Service as presented by Christian Poellabauer

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Abstract

Quality of Service is key to satisfy service providers and users. QoS can be introduced at multiple system layers to meet differing needs, however we need unification to maximize our true savings.

1 Introduction

Quality of service helps to ensure that services such as streaming video reach the end user in a palatable format. Because there are communication protocols between the various sub-systems in modern electronics (PDA, laptop, etc) there are ample opportunities to implement QoS systems. However, we need to ensure that one sub-system's QoS system is not adversely affecting another system or even worse the whole system.

2 Q-Fabric Target: Mobile Multimedia

Mr. Poellabauer outlined the target of his system, Q-Fabric, and the reasons that it makes a opportune target. Mobile multimedia requires QoS according to Mr. Poellabauer because it is long-running and communication intensive. In mobile multimedia energy is the constraining resource, and as such it is the resource that his QoS service attempts to optimize. His system is event driven

and supports horizontal or vertical integration.

One of the more interesting topics he discussed was that we can trade resources to save energy. That is, we spend a little more time encoding and save on network transmit energy. There is nothing ground breaking here, I just hadn't heard this approach presented in colloquia thus far.

3   Conclusion

Although nothing I heard was amazing or ground breaking from what I could tell, the topic was well presented and interesting. I was slightly disappointed that Mr. Poellabauer had not investigated multiple application interaction, ie. I have 3 applications running on my laptop all requesting services and my OS needs to run QoS on the aggregate requests. The points that Mr. Poellabauer and members of the audience made about the insecurities of the kernel level code injection are serious and need to be addressed before this system is seriously considered for anything. It would seem to me, not only do you risk the integrity of your system, but through the communication channels you share with the rest of the QoS network, you could in effect introduce DOS attacks into the network by re-writing your rules or sending bogus service statements.

4   Comments

Mr. Poellabauer had MUCH better slides than previous applicant.

I really liked his equation diagrams, and the use of sequential introduction of more terms was very useful. My only complaints were that he did seem to rely on his slides a bit much at the beginning, which distracted from the point of his talk in my opinion. In all I felt he was a better qualified applicant than the previous one. I would appreciate seeing more applicant presentations, especially in non-systems areas.

References

[1] Q-Fabric Homepage, www.cc.gatech.edu/systems/projects/ELinux/qfabric.html