Case Study of Liveness Verification in IronFleet

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Abstract. Ironclad [1] and IronFleet [2] are...

1   Introduction

1.1   Formal Verification

1.2   Dafny

1.3   Ironclad and IronFleet

2   Liveness Verification

2.1   Safety vs. Liveness

2.2   Temporal Logic of Actions

3   Case Study 1

4   Case Study 2

5   Related Work

6   Conclusion

References

1. C. Hawblitzel, J. Howell, J. Lorch, A. Narayan, B. Parno, D. Zhang, and B. Zill, "Ironclad apps: End-to-end security via automated full-system verification," in *USENIX Symposium on Operating Systems Design and Implementation (OSDI)*, USENIX Advanced Computing Systems Association, October 2014.
2. C. Hawblitzel, J. Howell, M. Kapritsos, J. Lorch, B. Parno, M. L. Roberts, S. Setty, and B. Zill, "Ironfleet: Proving practical distributed systems correct," in *Proceedings of the ACM Symposium on Operating Systems Principles (SOSP)*, ACM Association for Computing Machinery, October 2015.