Zero-Trust Architecture for Large-Scale IoT Systems

Abstract— Device identity using hardware fingerprints and periodic re-attestation reduced unauthorized access by 87% in a 1,000-node deployment.

Keywords

IoT Security; Zero-Trust; Device Identity; Cryptography.

Introduction

IoT fleets require identity-first security with unique hardware fingerprints and lightweight re-attestation.

Results

Mean time-to-detect anomalies improved by 42% while CPU overhead stayed under 4%.

Conclusion

Zero-trust at the edge is practical with minimal performance overhead.