A New Approach to Design Programmable Secure Network Interface Card

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10.5120/10102-4751

Abstract

In this paper, Secure Network Interface Card (SNIC) Architecture is proposed, to provide secure video communication without extra overhead on host processor of receiver. PROM based security model is developed & its integration with Network Interface is described. The approach adopted here to design SNIC, is based on remote reference passing. In this approach PROM is integrated to NIC to serve as security buffer where data values are to be placed at memory locations using some mathematical mapping which establishes relation between location reference and data. Sender generates respective location reference(at receiver’s security buffer) corresponding to the each data byte of video stream. For reference creation, respective reverse mathematical mapping is used. In this, security is achieved at MAC layer at receivers end.

References

- T-210-CX 10GbE Protocol engine with TCP offload.
- Adaptec iSCSI ASA-7211C gigabit Ethernet adapter.
- 3 Com secure copper NIC, 3CR 990B.

**Index Terms**

Computer Science

Communication Systems

**Keywords**

SNIC  NIC  Encryption  Decryption  Memory  security module  PROM  Remote

References