

Port Knocking in Code to Bypass Firewall Protections

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Software

Abstract

Port knocking in code is an innovative method of authentication. This technology is a way of using port knocking capabilities to communicate messages through a firewall.

Problem

Communication over the internet needs authentication and privacy between the two communicating parties.

Solution

The invention takes advantage of the fact that the packets being sent in port knocking are empty to ensure that any intercepted packet will not compromise a message being sent.

Value Proposition

This technology holds great resilience against attacks while not compromising other security measures. It is also easy to implement with low overhead.

Benefit

Communication over the internet needs authentication and privacy between the two communicating parties. This means that methods for ensuring that the sender and receiver aren't imposters, and methods for ensuring that the message is sent only to the intended recipient, are vital in internet communications.

The invention takes advantage of the fact that the packets being sent in port knocking are empty to ensure that any intercepted packet will not compromise a message being sent.

Beyond a one-time pattern of port knocks to authenticate participants, coded port knocking continues with coded patterns to convey message content.

This technology holds great resilience against attacks while not compromising other security measures. It is also easy to implement with low overhead.

Market Application

This technology can help with any communication between computers where security is an issue.

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Publications

- "Communication without Connection" IEEE
[https://ieeexplore-ieee-org.dist.lib.usu.edu/
document/9796946](https://ieeexplore-ieee-org.dist.lib.usu.edu/document/9796946)

Intellectual Property

Patent No. 12,438,854 Issued October 7, 2025

"Communicating Securely Between Network Nodes"