

# **Research on IPv6 security and building an IPv6 VPN simulation model on GNS3**

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**Abstract:** In the context of the ever-expanding Internet network, IPv6 security has become an important issue. This topic focuses on researching security solutions for IPv6 and deploying a virtual private network (VPN) model based on IPv6 using the GNS3 platform. The objective of the research is to build an effective secure system to support secure network communication between computers. The topic methodology combines security theory with experimentation, thereby evaluating and comparing the reliability of IPv6 security solutions. The expected results from this research not only contribute to the body of knowledge on IPv6 security but also provide guidance on deploying secure network systems in practice.

**Keywords:** IPv6 security, GNS3 simulation, virtual private network (VPN), security theory, experimental application