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Are Virtual Private Networks (VPNs) Safe?

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Abstract: **This article raises VPNs risks and solution. Virtual private network or VPN is widely used by users for personal use when browsing the internet as it provides privacy and data security. Also, it is used by companies for remote working. Too many VPNs exist and all do not provide the same features which can pose risks.**

Keywords: **VPN, cyber, attacks, Virtual, Private Network, remote work, remote access, risk, zero-trust, Data leaks.**

I. INTRODUCTION

Virtual private networks (VPNs) have become one of the most popular security solutions that internet users use to protect their data while surfing the web. Within the past few years, the use of VPNs has become more popular for personal use, due to the increase of cyber-attacks and user awareness. Also, this has been used by companies to provide their employees with remote access to company networks. So, how secure is the VPN?

II. VPN RISKS

There are many different service providers for VPNs, and from a technical perspective, it is possible for a provider to expose users' data, because the VPN is designed to establish an encrypted tunnel between the client (which is the user side) and the server (which is at the VPN provider's location). While the users' data travel thought the VPN service provider, it can be in an unencrypted mode before it is routed in an encrypted mode to the destination. Moreover, such a VPN service provider could access the user's profile, including browsing history, to be used for advertising. It is very important for users to choose the right VPN service provider, and evaluate the security features to ensure that they are using a secure and safe VPN.

As a result of the impacts caused by COVID-19, organizations shifted their employees from in-office to remote work, which require an enterprise virtual private network (VPN) solution, to connect employees to the organization's network. It is critically important to take into consideration that the organizations must implement additional security controls to provide robust authentication, otherwise attackers may be able to access the organization's VPN.

III. CONCLUSION

All VPNs do not provide the same features, and each has its advantages and disadvantages. Therefore, users must evaluate their personal needs when choosing a VPN, and they may consider paying for one and avoiding free VPNs, as those companies that provide the service without charging fees may pay for costs through advertising, or from collecting user data and selling it to third parties.

Deploying VPNs into an environment that was not designed to for remote working poses new risks. Dealing with these risks requires a step-by-step technique that thoroughly evaluates opening up the company's network to remote access. Therefore, implementing robust configuration, intensive monitoring, and strict access controls can reduce associated risks. Organizations may consider zero-trust technology that provides confidential and secure remote access to enterprise applications.

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