Private Wireless Networks for Education

In today's digital world, Internet connectivity has become a necessity for students and educators. However, many students in K-12, higher education, and Tribal lands lack access to broadband, which affects their ability to learn and participate in the digital age. This guidebook is designed to provide information and best practices for deploying a private wireless network in educational settings.

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Lack of Broadband Access in the United States

It is estimated that **more than 18 million Americans lack access to high-speed Internet** in the United States — an equity gap that can significantly impact education. Those who lack access to broadband are at a disadvantage compared to their peers, as they are often unable to complete homework assignments, participate in online discussions, and access educational resources. This digital divide can widen the achievement gap and negatively affect future success.

To address these challenges, many schools are turning to private wireless networks. A private wireless network is separate from the public network and designed to provide high-speed Internet access, both on and off campus. Through deploying a private wireless network, schools can ensure that their students and teachers have access to reliable and high-speed Internet to support their educational goals.

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What is a Private Wireless Network?

A private wireless network is a communication network privately owned and operated, as opposed to a public network that is typically owned and operated by a telecommunications service provider. Private networks are designed for specific organizations or groups, providing secure and reliable network access for users over a defined area. These networks are often used by businesses, educational institutions, and government agencies to meet their specific needs and requirements. They can be deployed as a standalone network or integrated into existing infrastructure.

Benefits of Implementing a Private Network

→ Cellular coverage extended to areas outside of public networks

→ Improved reliability and performance through high quality connections, resulting in faster speeds and reduced downtime

→ Increased control since the institution determines who can access the network and what data is transmitted

→ Carrier-grade security standards such as SIM authorization, encryption, CIPA-compliant filtering, and APN (Access Point Name) configuration

→ Seamless mobility between the private network and public networks

→ Ability to reduce or eliminate monthly carrier bills and the risk of future rate hikes

Are you a Viable Candidate?

To help you determine if your district or campus is a good candidate for a private network, there are several questions you can ask yourself and your team:

1. Does your district or campus have areas with limited or no access to public network coverage?

2. Are your users experiencing slow network speeds or frequent outages on your current public network?

3. Do your users need seamless mobility between the private network and public network as they move between campus and off-campus locations?

4. Does your institution want control over who can access your network, including the ability to authenticate users and monitor network usage?

5. Does your institution require carrier-grade security standards such as SIM authorization, encryption, CIPA -compliant filtering, and APN configuration to integrate into your existing functionality?

Potential Pitfalls

Designing and deploying a private wireless network can be a complex and challenging process. Here are some things to consider before building one in-house.

1. Designing and deploying a network requires an elevated level of technical ability, including knowledge of networking protocols, security best practices, and radio frequency (RF) design.
2. Building a private network requires a significant investment of time and resources, including the development of network architecture, installation of components, and configuration of devices.
3. It is important to design a scalable network that not only meets current requirements, but can also accommodate future growth.
4. Incorporate appropriate security protocols to address vulnerabilities such as unauthorized access, and data breaches that can impact the integrity of sensitive information.

Working with an experienced vendor can ensure your network meets performance expectations, can support future growth, and save money by eliminating rework.

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How to Choose a Vendor

Choosing the right private wireless vendor can impact the performance, reliability, security and cost of your network. When choosing a vendor, it is important to consider the following factors:

1. Look for a vendor with a strong track record of deploying private wireless networks and a deep understanding of networking protocols, security best practices, and radio frequency (RF) design. It is also important to ensure that the vendor has the necessary expertise to integrate your network with the existing systems and builds scalability for future growth.

2. Choose a vendor that provides comprehensive support and maintenance services, including ongoing network monitoring and management, software upgrades, and technical support, as well as the training and documentation to help effectively manage and maintain your network.

3. The vendor's cost quote should include the cost of equipment, installation, and ongoing support and maintenance.

Kajeet for Private Wireless Networks

As a leading provider of wireless solutions for education for 20 years, Kajeet has extensive experience in designing, building, and managing private wireless networks for schools and universities. Kajeet has a team of experts who can work with you to assess your specific needs and develop a customized solution to meet your goals. Additionally, its network of equipment partners can help scale any size project, ensuring you have access to the best technology and resources to support your network.

To learn more, visit: Kajeet Private Networks

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About Kajeet

Kajeet provides optimized IoT connectivity, software and hardware products that deliver safe, reliable, and controlled internet connectivity to nearly 3,000 businesses, schools and districts, state and local governments, and IoT solution providers. Kajeet's Private Network solutions simplify private wireless to allow customers to design, install and manage their own private wireless networks. Kajeet is the only managed IoT connectivity services provider in the industry to offer Sentinel®, a scalable IoT management platform that includes visibility into real-time data usage, policy control management, custom content filters for added security and multi-network flexibility. Kajeet is available for hybrid and multi-network access across all major North American wireless networks, globally with coverage in 173 countries, and on multiple licensed and unlicensed networks. Kajeet holds 43 U.S. patents in mobile technologies. To learn more, visit kajeet.com and follow us on Twitter at @Kajeet.

Acknowledgments

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