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Networking Solutions to Facilitate Secure Remote Working

The long-term impact of COVID-19 on UK institutions is still unclear. However, it has likely changed the way we work, and learn, forever. School and office closures have impacted the lives of millions of students and employees alike. This has forced both public and private sector organizations to get creative in the way they deliver IT and networking services to remote users.

Across the UK and beyond, we've all heard stories about innovative applications of IT and communications infrastructure. Solutions such as mobile Wi-Fi hotspots, drive-in learning or remote network-equipped facilities are being deployed to extend connectivity to the people that need it. At the same time, organisations look for ways to bolster the performance and security of their critical applications, in order to better protect user privacy and safety, and to ensure a high-quality user experience.

Extreme offers a range of network solutions that can help. Regardless of size, environment, and deployment scenario, Extreme's curated solutions can help organizations adapt and scale to the unprecedented demand for remote working.

1. Extending Connectivity

To ensure equitable access for all users, innovators are bridging the utility gap by expanding internet connectivity beyond traditional buildings. The network infrastructure requirements can differ greatly depending on the scenario. For example, extending Wi-Fi into a parking lot to facilitate a drive-in work environment has different network requirements to a mobile Wi-Fi deployment in a rural area; which again has different network requirements to a mobile Wi-Fi hotspot deployed in an urban district with high concentrations of users.

Key factors to consider in choosing the appropriate network solution include:

- Location: Proximity to the school, office building or an existing communications infrastructure.
- Environment: Dense, urban environment (such as a multi-tenant building) where tens or hundreds of users require connectivity. Or a rural environment where a smaller number of users need to be accommodated over a broader physical area.

- **WAN Connectivity:** While Wi-Fi may be an option for extending connectivity to areas in close proximity to a school or office, remote sites need to rely on WAN connectivity. Consider the WAN options available (broadband, cellular, private) at the remote location.
- **Speed of Deployment:** What is the target timeframe for connectivity to be extended?

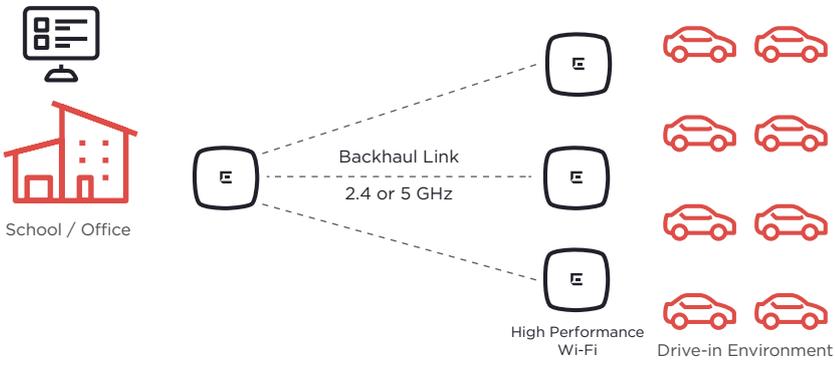
All factors need to be considered when expanding connectivity services. While speed is of the essence, upfront planning can mitigate future issues, resulting in a superior communications network infrastructure, user experience and privacy.

Extreme Networks Network Connectivity Expansion Solutions

As highlighted in the tables below, Extreme offers a range of pre-validated, curated packages enabling fast, secure, and compliant deployment for your emerging needs. There is no 'one size fits all' solution; what is best depends on your unique requirements.

Extreme Network Solutions for Extending Connectivity

Close Proximity to School or Office Building

Requirement	Extreme Solution	Benefits
<p>Extending connectivity to facilitate "drive-in" learning or working</p>	<p>Rapid Outdoor Connectivity Kit</p> <p>The Rapid Outdoor Connectivity Kit helps extend secure wireless connectivity to sites like parking lots and pop-ups (<150 ft from the building).</p> <p>The solution leverages powerful, wireless mesh technology to provide a secure, encrypted extension of the site's existing communications infrastructure. Students or workers can drive in and connect with their teachers/peers while remaining safely apart.</p>	<ul style="list-style-type: none"> • Rapid deployment: Pre-validated, curated packages; deploy without delay and without relying on external providers. • Speed and performance: Supporting Wi-Fi 6, superior performance ensures uninterrupted access to critical applications. • Facilitates Privacy: Helps maintain security and data privacy. • Optional cloud-based management: To simplify deployment and management; features such as adaptive RF management and AI/ML driven analytics dramatically simplify ongoing operations. • Connects to existing Extreme or third-party networks that are deployed within the facility.
 <p>The diagram illustrates the network architecture. On the left, a building icon labeled 'School / Office' is connected to a central access point icon. A dashed line labeled 'Backhaul Link 2.4 or 5 GHz' connects this central point to three separate access point icons. These three access points are then connected to a 'Drive-in Environment' represented by a grid of car icons. The bottom-most access point is specifically labeled 'High Performance Wi-Fi'.</p>		

Extreme Network Solutions for Extending Connectivity

Remote Locations

Requirement	Extreme Solution	Benefits
<p>Extending connectivity to remote sites</p>	<p>Extreme Portable Branch Kit</p> <p>Extreme Portable Branch Kits extend connectivity to locations beyond the property. Ideal for extending connectivity to rural locations or to urban apartment buildings.</p>	<ul style="list-style-type: none"> • Curated solutions for rapid deployment of remote connectivity, that delivers essential networking capabilities to connect, secure, and manage remote locations. • Flexible WAN Connectivity: Ability to connect remote sites with whatever WAN connectivity is readily available (broadband, LTE, private WAN). • Intelligent Traffic Management Features: Prioritise traffic from groups of users and/or prioritise critical applications over single/multiple WAN connections. • Centralised Cloud-Based Orchestration and Management: Remote locations without IT resources are managed through a single user-friendly interface. • Integrated Security Features: L2-7 firewall on the router and AP with advanced Wi-Fi security features such as WPA3, Private Pre-Shared Keys and more.
	<p>The diagram illustrates the network architecture for extending connectivity. It features a central cloud labeled 'WAN/Internet'. On the left, a 'Main Site / Branch Location' is connected to the cloud via an 'SD-WAN Router'. Above this, a 'Cloud or Local Management' interface is shown. On the right, three types of remote locations are connected to the cloud via 'SD-WAN Routers': 'Urban Apartment Buildings', 'Rural Homes', and 'Mobile Wi-Fi Hot Spots'.</p>	

2. Enabling Online Learning & Collaboration

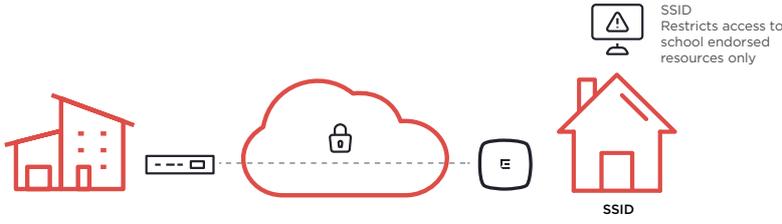
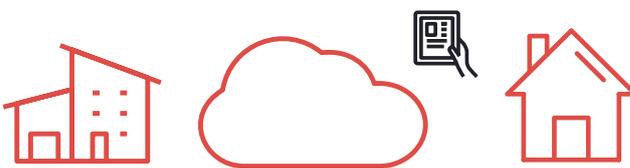
For successful online learning or collaboration, speed and security matter. As users embrace remote working in record numbers, there has been an increased focus on protecting users from malicious hackers.

To date, many government agencies, have issued public service announcements warning that attackers are increasingly targeting virtual environments. It is imperative that remote working and learning technology be secure and protect user and data privacy.

Just as when users are physically in a classroom or office, their online activity should be monitored when they work remotely.

A secure, robust networking infrastructure is vital for maintaining user safety, security, and privacy. It is essential that organisations can connect and engage with their users remotely. Extreme offers a range of remote access solutions to enable secure and seamless connectivity, as outlined in the next table.

Extreme Network Solutions for Remote Working and Telehealth Services

Requirement	Extreme Solution	Benefits
<p>Remote Access: Administrators</p>	<p>Extreme Remote Access Kit</p> <p>Secure VPN from a managed AP that is deployed at the home back to a VPN gateway or Extreme Networks controller.</p> <p>Extreme's Portable Remote Access Kits provide curated high-performance kits ideal for administrators working remotely.</p>	<ul style="list-style-type: none"> Secure, high performance connectivity that provides users a positive online experience High performance Wi-Fi for superior mobile experience Extends defined policies to the home – strong authentication and segmentation Optional cloud-management to facilitate deployment, management, and troubleshooting
 <p>The diagram illustrates a school building on the left connected via a dashed line to a central cloud containing a padlock icon, representing a secure VPN. From the cloud, a dashed line connects to a home building on the right. Above the home building is a Wi-Fi access point icon labeled 'SSID' with a warning triangle, and below it is another 'SSID' label.</p>		
<p>Remote Access: Users</p>	<p>Extreme Remote Access Kit</p> <p>Secure VPN from a school managed AP that is deployed at the home back to a VPN gateway or Extreme Networks controller.</p> <p>Extreme's Portable Remote Access Kits provide curated packages for cloud-managed remote access.</p>	<ul style="list-style-type: none"> Secure, high performance connectivity that provides users with a positive online experience Wi-Fi AP at an attractive price point Extends defined policies to the home – strong authentication and segmentation keeps users safe and ensures that they get access only to approved resources and sites.
 <p>The diagram is similar to the one above, showing a school building connected via a secure VPN cloud to a home building. A Wi-Fi AP icon labeled 'SSID' is positioned above the home building. A text box next to the SSID icon states: 'SSID Restricts access to school endorsed resources only'.</p>		
<p>Telehealth Services</p>	<p>ExtremeSwitching, ExtremeWireless, Extreme Fabric Connect</p> <p>For institutions, such as in higher education, who offer telehealth services to Extreme's networking solutions ensure your healthcare infrastructure can scale to accommodate the rapidly growing telehealth requirements.</p>	<ul style="list-style-type: none"> Delivers high performance, secure networking solutions that allow providers to realise the full potential of their telehealth services Better video clarity, security and performance Easier to deploy and scale video-based service
 <p>The diagram shows a school building on the left connected via a dashed line to a central cloud. From the cloud, a dashed line connects to a home building on the right. A hand holding a tablet device is positioned above the home building, indicating telehealth services.</p>		

Security Considerations

While the top priority is to rapidly extend connectivity to enable all users to participate in remote working, cybersecurity cannot be forgotten. Public service providers, health organizations and retailers, face an elevated level of risk of cyber security incidents. The World Health Organization reports a 2x increase in cyber-attacks and the World Economic Forum has stated that “Cybersecurity matters more than ever during the coronavirus pandemic”.

Some users have already experienced first-hand the negative impacts of security breaches, such as Zoom bombing. As more users connect through VPNs, cybercriminals are capitalising on the opportunity by exploiting critical vulnerabilities. Ransomware attacks are increasing since IT departments, tasked with rapidly extending connectivity to new locations, are too stretched to keep up with patches and security updates.

All Extreme Network solutions are designed with security in mind. A multi-layered security approach, that includes policy, segmentation/ isolation, application telemetry, and compliance are critical in hardening the network infrastructure. It is very reason why many institutions choose Extreme for their networking infrastructure.

Investment Protection

With declining IT budgets, and the constant request to do more with less, maximising return on infrastructure investment is critical. A key value of Extreme’s network solutions is their ability to be rapidly and easily deployed for different use cases, as requirements change. For example, the rapid deployment solutions outlined previously can be quickly and easily redeployed in different ways – whether it is bolstering on-site Wi-Fi, providing high performance connectivity for temporary sites or extending connectivity outdoors.

Conclusion

As remote working needs continue to evolve, the underlying network infrastructure has never been more important. Organisations require innovative, flexible and secure solutions that allow them to reach their users and support their remote access requirements.

Regardless of size, environment and deployment scenario, Extreme’s curated solutions can help. The pre-packaged solutions have been specifically designed to address the demands of remote working and business continuity – ease of use, rapid deployment, security and high performance.



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Get in touch

For more information on any of our services or to talk about how we may be able to help you, please get in touch with us using the details below.



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