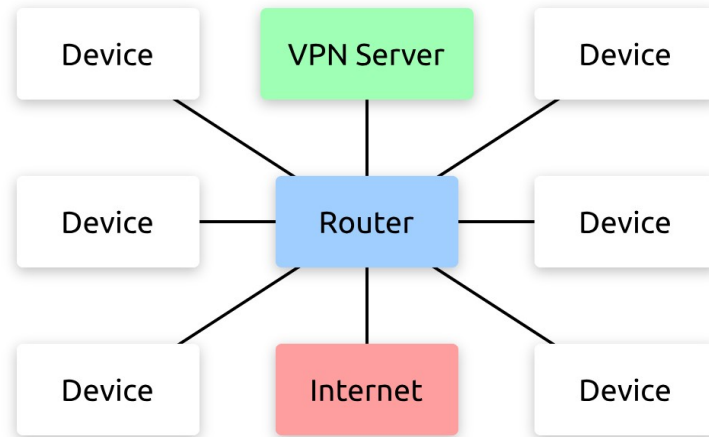


Network Topology

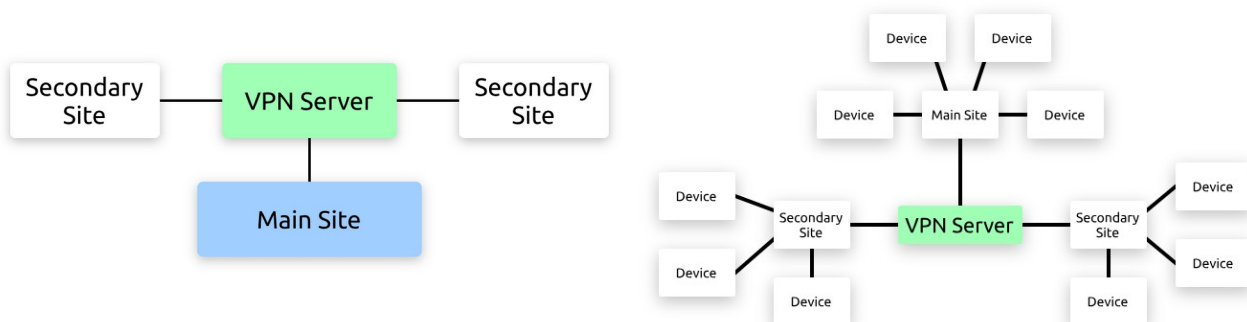
Each site uses a star topology, with a central router and a VPN server for remote connections



Star topology involves a central router to facilitate connections between devices, along with connections to the wider internet. Additionally, a VPN server allows for devices to connect as though they were on the local network. This topology is simple and easy to implement, with the ability to keep running should any device on the network fail. As well as this, the central router allows for configuration and management, which can be more difficult on more complex networks (Computerhope, 2018).

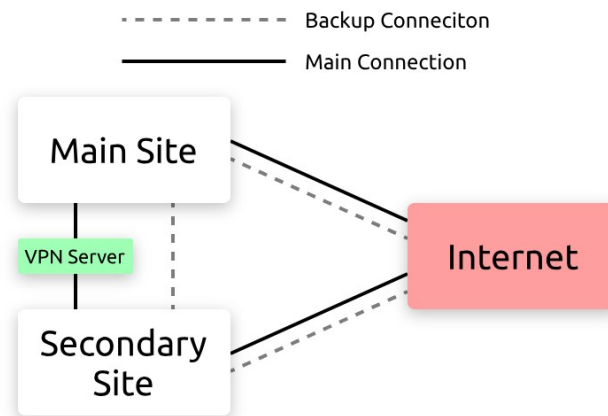
This topology does rely on two nodes that can each be points of failure, with the router at the core of the star being required for the network to connect devices, whether internal or connected through the VPN. Additionally, the VPN server could fail, dropping any remotely connected devices without any backup connection system. These two points of failure are risks that could impact productivity and functionality (Computerhope, 2018).

Each site connects to the main site through a VPN



This method of site connection has a few advantages, mainly in the security and functionality of the connection. This is an example of an intranet site-to-site VPN, which allows for encryption and the extension of the LAN of each site. This allows for more direct connections between devices on each network, facilitating access of servers and data (HowStuffWorks, 2011) (Fawkes, 2018). This turns the overall topology into groups of star networks, all connected to a central VPN server. This would be a single point of failure without the backup connections between each site.

Each site has backup methods for connecting to both the internet and the main site using wireless technology



The backup connections between each site and the internet allow for connection failover, which can be critical for connection uptime. Since the backup connections use a more direct communication method, involving wireless technology rather than an internet connection between the two, there may be less of a requirement for a VPN server. This failover capability is independent of the more standard internet connections, which would involve fiber-optics or copper cabling, thanks to being wireless and therefore isolated in case of a failure (Wyttec Business, 2017).

This level of redundancy can be beneficial for the continued operation of each site. Additionally, the backup connection between each sites facilitates disaster recovery, providing a method of direct communication between each site. This backup connection can also be used as part of a business continuity plan (Ready.gov, 2019).

The main site has a fiber-optic connection, with an SLA providing complete maintenance within 2 hours of a fault

A service-level agreement, in this case facilitating maintenance within a short timeframe, can be beneficial for connection reliability. This agreement outlines that the expected downtime for any issue regarding the fiber connection should be under 2 hours, allowing for less risk upon the reliance of this kind of connection. This SLA, combined with the backup connections, allows for a more reliable connection between the main site and the internet, minimising risk of downtime (Overby, 2017).

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