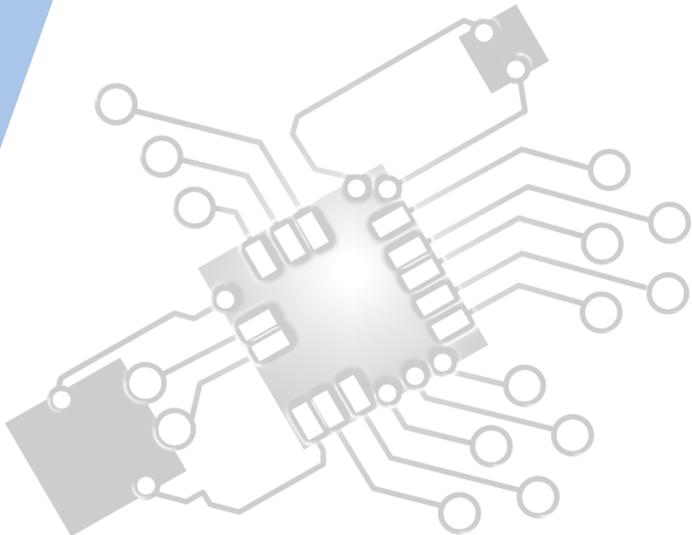




Planning & system installation

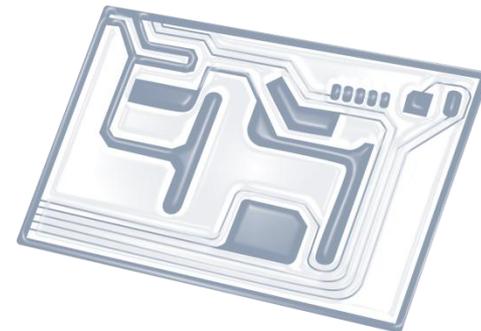
IB Computer Science



*Content developed by
Dartford Grammar School
Computer Science Department*



HL Topics 1-7, D1-4



1: System design



2: Computer Organisation



3: Networks



4: Computational thinking



5: Abstract data structures



6: Resource management



7: Control



D: OOP

HL & SL 3 Overview

Network fundamentals

- 3.1.1 Identify different types of networks
- 3.1.2 Outline the importance of standards in the construction of networks
- 3.1.3 Describe how communication over networks is broken down into different layers
- 3.1.4 Identify the technologies required to provide a VPN
- 3.1.5 Evaluate the use of a VPN

Data transmission

- 3.1.6 Define the terms: protocol, data packet
- 3.1.7 Explain why protocols are necessary
- 3.1.8 Explain why the speed of data transmission across a network can vary
- 3.1.9 Explain why compression of data is often necessary when transmitting across a network
- 3.1.10 Outline the characteristics of different transmission media
- 3.1.11 Explain how data is transmitted by packet switching

Wireless networking

- 3.1.12 Outline the advantages and disadvantages of wireless networks
- 3.1.13 Describe the hardware and software components of a wireless network
- 3.1.14 Describe the characteristics of wireless networks
- 3.1.15 Describe the different methods of network security
- 3.1.16 Evaluate the advantages and disadvantages of each method of network security



1: System design

2: Computer Organisation



3: Networks

4: Computational thinking



5: Abstract data structures

6: Resource management

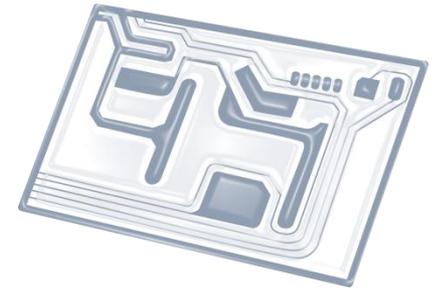


7: Control

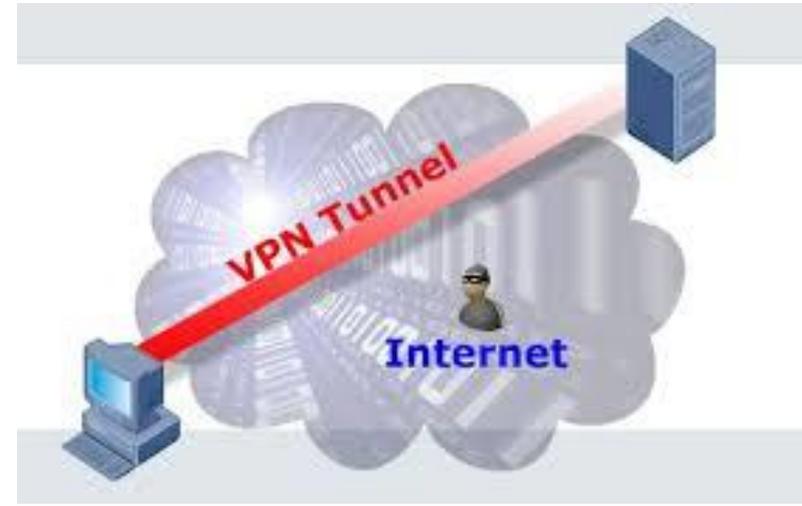
D: OOP



Topic 3.1.4

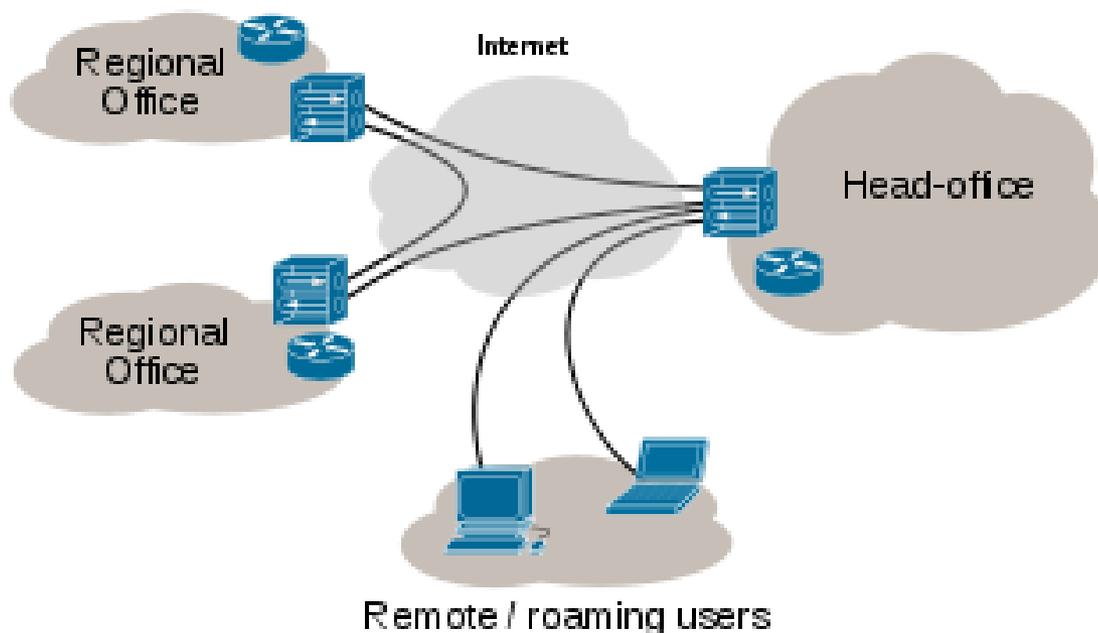


Identify the **technologies** required to provide a **VPN**



VPN

A secure network that uses primarily public, telecommunication infrastructures, such as the Internet, to extend a private network.

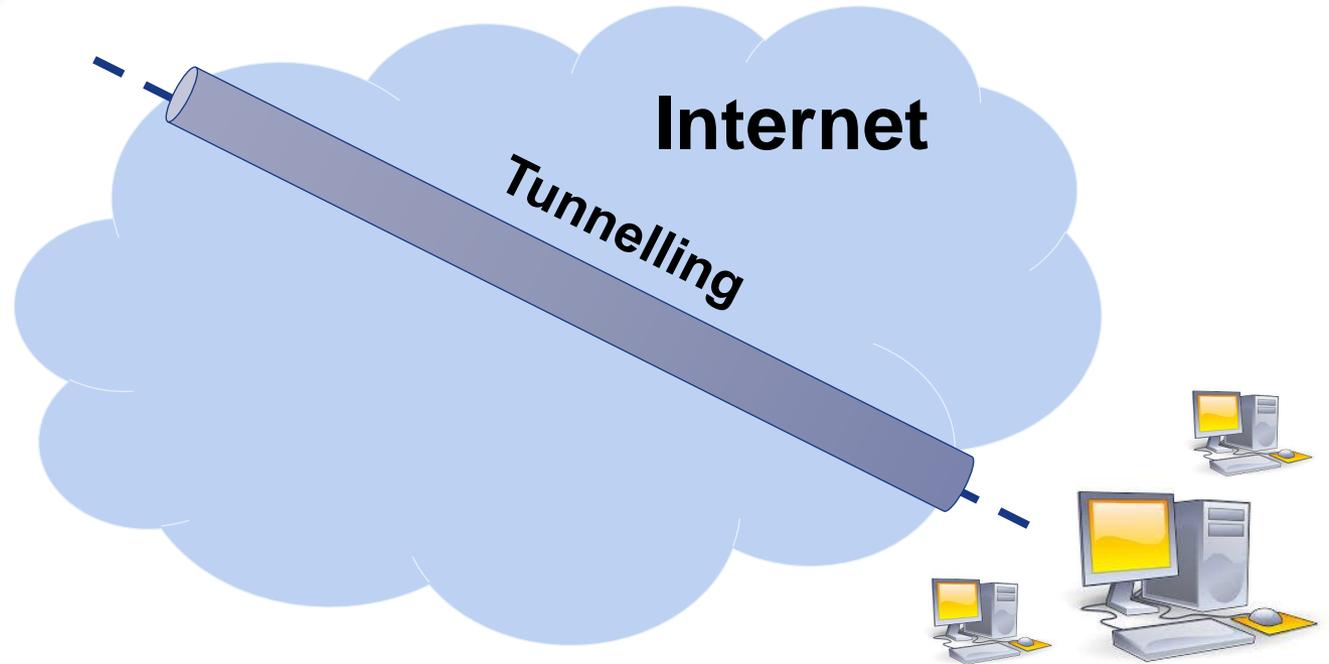


VPN

- Virtual Private Network



Home

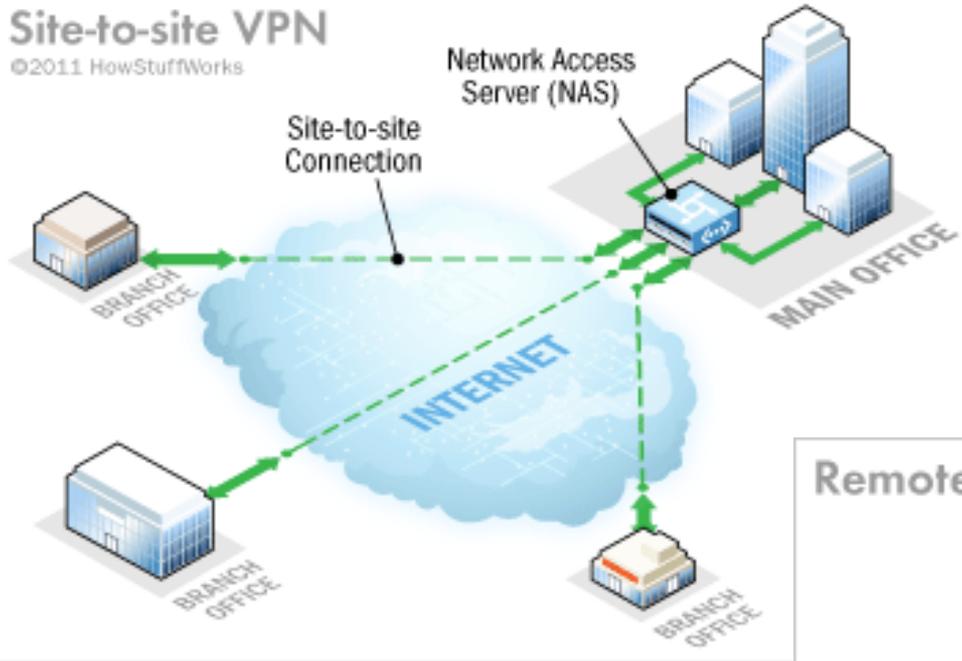


Work Location

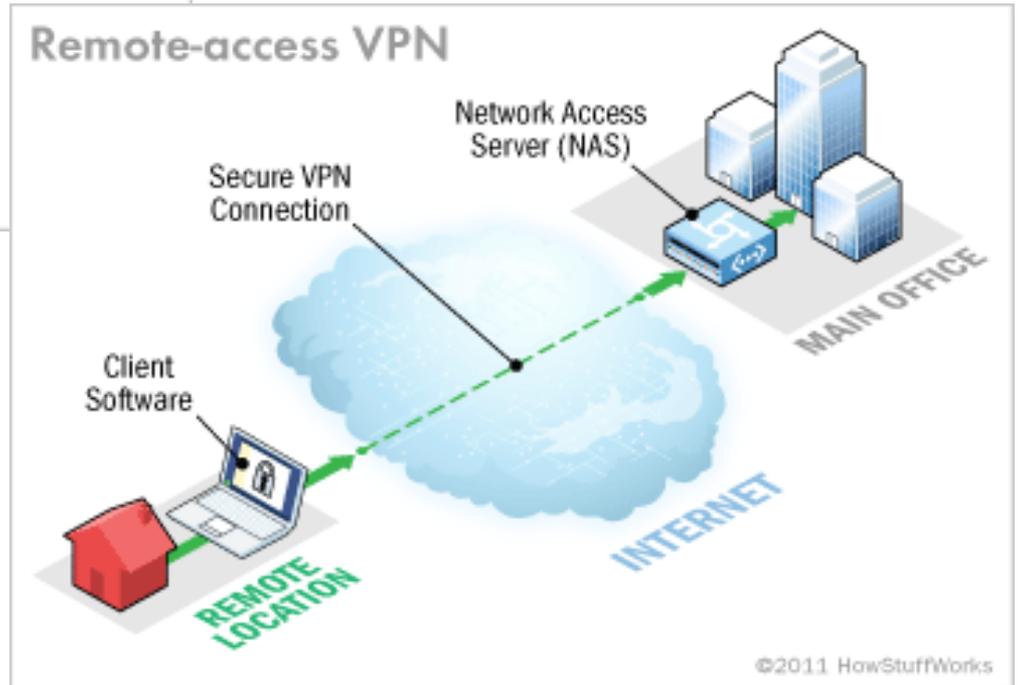
Two types

Site-to-site VPN

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Remote-access VPN



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Client - Server

VPN Client

Tends to be software installed upon the client's computer



VPN Server

The server that provides “the service”. Normally located in the office or wherever the client connects too.

Whatever VPN server you use, you must use the matching VPN client software.

Basic checklist for VPN

- ✓ A LAN that is connected to the internet.
- ✓ One computer outside of the LAN that is also connected to the internet.
- ✓ VPN client and server running on the lone machine and the original LAN
- ✓ Internet connection

