

Exercise walk-through

Protecting Networks: Segmentation ■ 3.3

eXercise

You must be able to

- explain how segmentation contains a breach
- describe a screened subnet (DMZ) and what it holds
- name ways to segment: subnetting and VLANs

Method — Why segment

Segmentation divides a network into isolated subnets. If one subnet is breached, the damage is contained and cannot spread to the rest of the network.

Method — The DMZ

A screened subnet (DMZ) sits between the internet and the private network, holding public-facing servers in a lower-security zone so they are separated from sensitive internal systems.

Practice 2.1 ■ 2 marks

Explain the main security benefit of network segmentation.

Solution 2.1

Worked steps

it contains a breach to one subnet **B1** so an adversary cannot easily reach the whole network **B1**.

Practice 2.2 ■ 2 marks

State what a screened subnet (DMZ) holds and where it sits.

Solution 2.2

Method: The DMZ

Worked steps

it holds public-facing servers **B1** between the internet and the private internal network **B1**.

Practice 2.3 ■ 2 marks

Name two ways to segment a network.

Solution 2.3

Method: Why segment

Worked steps

any two of: subnetting (by IP) **B1**; VLANs; a screened subnet/DMZ **B1**.

Exam-style 3.1 ■ 1 mark

A DMZ (screened subnet) typically holds

- A** the most secret internal data
- B** public-facing servers
- C** nothing
- D** employee laptops

Solution 3.1

Method: The DMZ

A the most secret internal data

B public-facing servers 

C nothing

D employee laptops

Worked steps

B. the DMZ holds public-facing servers.

Exam-style 3.2 ■ 1 mark

VLANs are used to

- A** increase Wi-Fi range
- B** logically separate devices on the same switch
- C** encrypt files
- D** block malware

Solution 3.2

- A increase Wi-Fi range
- B logically separate devices on the same switch** 
- C encrypt files
- D block malware

Worked steps

- B. VLANs logically separate devices sharing a switch.**

Exam-style 3.3 ■ 2 marks

A company puts its public web server in a DMZ between two firewalls.

(a) Explain how this protects the private customer database.

Solution 3.3

Method: The DMZ

Worked steps

(a) if the web server is hacked, the attacker is trapped in the DMZ **B1**; the second firewall still stands between them and the private database **B1**.