



SURNAME: Griffiths

FORENAME(S): Dave Swarr

12 Pages

1. Please give the information requested in the boxes below.
2. Enter your name in the space provided to the right, fold over and seal down (using the label provided) to hide your name.
3. The answers must be legibly written. The Examiners can either ignore illegible script or have it typed and the expense of typing charged to the candidate.
4. Write your answers in ink.
5. Begin each answer on a fresh page. Do all rough work in the answer book and cross it through.
6. No part of this book is to be torn out; it must be handed in complete.
7. If more books than one are used, fasten them together using the tags available from the invigilator(s).
8. **Every book must be handed in. In no circumstances may answer books, used or unused, be taken out of the examination venue.**

[illegible]

(Gweler yr ochr arall am y fersiwn Cymraeg)

[illegible]

(See the other side for English version)

3. Rhaid i'r atebion fod mewn llawysgriften ddarllenadwy. Gall yr Arholwyr naill ai anwybyddu sgript annarllenadwy, neu drefnu iddi gael ei theipio a chael yr ymgeisydd i dalu.
4. Ysgrifennwch eich atebion mewn inc.
5. Dechreuwch bob ateb ar dudalen newydd. Gwnewch unrhyw fras nodiadau yn y llifwr atebion a thynnu llinell drwyddynt.
6. Ni ddylid rhwngo unrhyw ran o'r llifwr hwn; rhaid ei gyflwyno yn gyfan.
7. Os defnyddir mwy nag un llifwr, rhwymwch hwy gyda'i gilydd gan ddefnyddio'r tagiau sydd ar gael oddi wrth y gwyllywr/gwylwyr.

1. Rhwch yr holl wybodaeth y gofynnir amdani yn y blychau isod.
2. Rhwch eich enw yn y lle a ddarparwyd ar y dde, plygwch ef at i seilio i lawr (gan ddefnyddio'r label a ddarparwyd) i guddio'ch enw.

Cyfarwyddiadau i Ymgeiswyr

12 Tüdalen

Llyfr Atebion Arholiadau

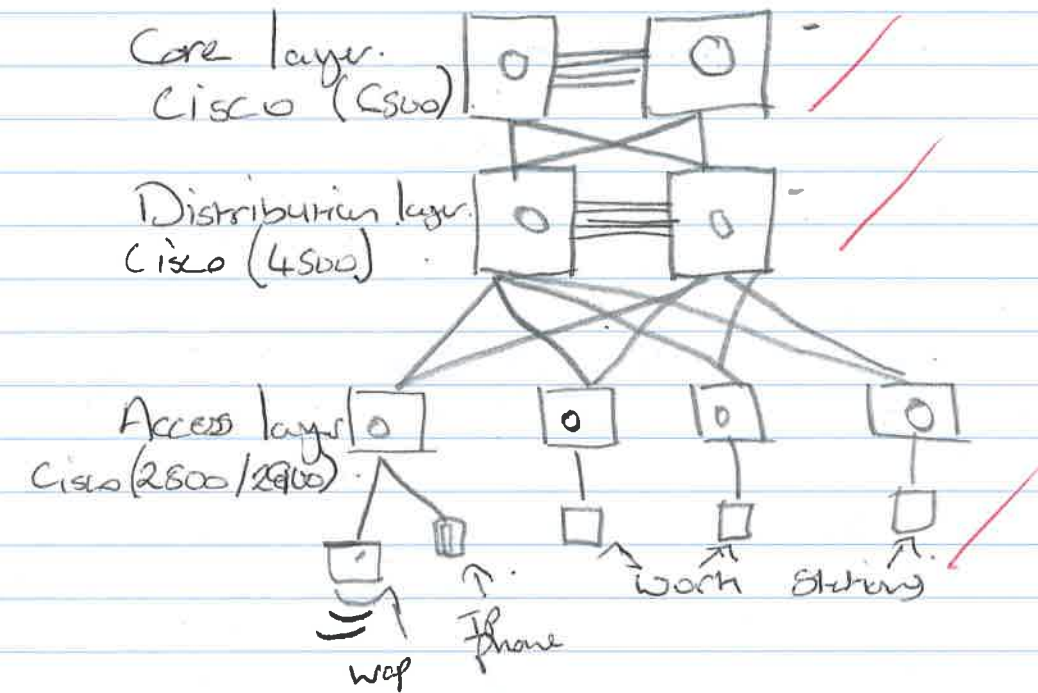


Prifysgol Cymru
y Drindod Dewi Sant
University of Wales
Trinity Saint David

Lienwch, plygwch a seliwch
(gweler nodyn 2 isod)

CYFENW:

ENW(AU) CYNTAF:

2A
IPhysical Auto.
Dynamic Spanning.

2Aii Core layer - layer 3.

- Provide 100% uptime.
- Provide redundancy.
- Operate at near wire speeds.
- Fast Switching.
- Supports routing in campus networks.
- Dynamic operation & reroutes traffic if there is a link failure.
- Cisco 6500 switches commonly utilized.

Distribution layer.

- Aggregation of access layer.
- Policy based routing.
- Provide redundancy.
- Operate at near wire speed.
- Supports routing & layer 2 VLAN termination.
- Ability to adapt to faults due to redundancy.
- Usually Cisco 4500 series switches are utilized.
- FHRP to provide access switches a redundant gateway.

Trunk

- Provides access to a way to connect with distribution layer.
- Also enables multiple communication.
- Must be same on both ends.
- Requires no switchport command.
- Requires switchport trunk encapsulation to be same.

Nonegotiate

- Port is forced into trunk mode with or not other end is in trunk mode.
- The other end must be manually configured.

Dynamic Desirable

- Automatically establishes a trunk link if other end accepts.
- Helps eliminate misconfigurations.

Dynamic Auto

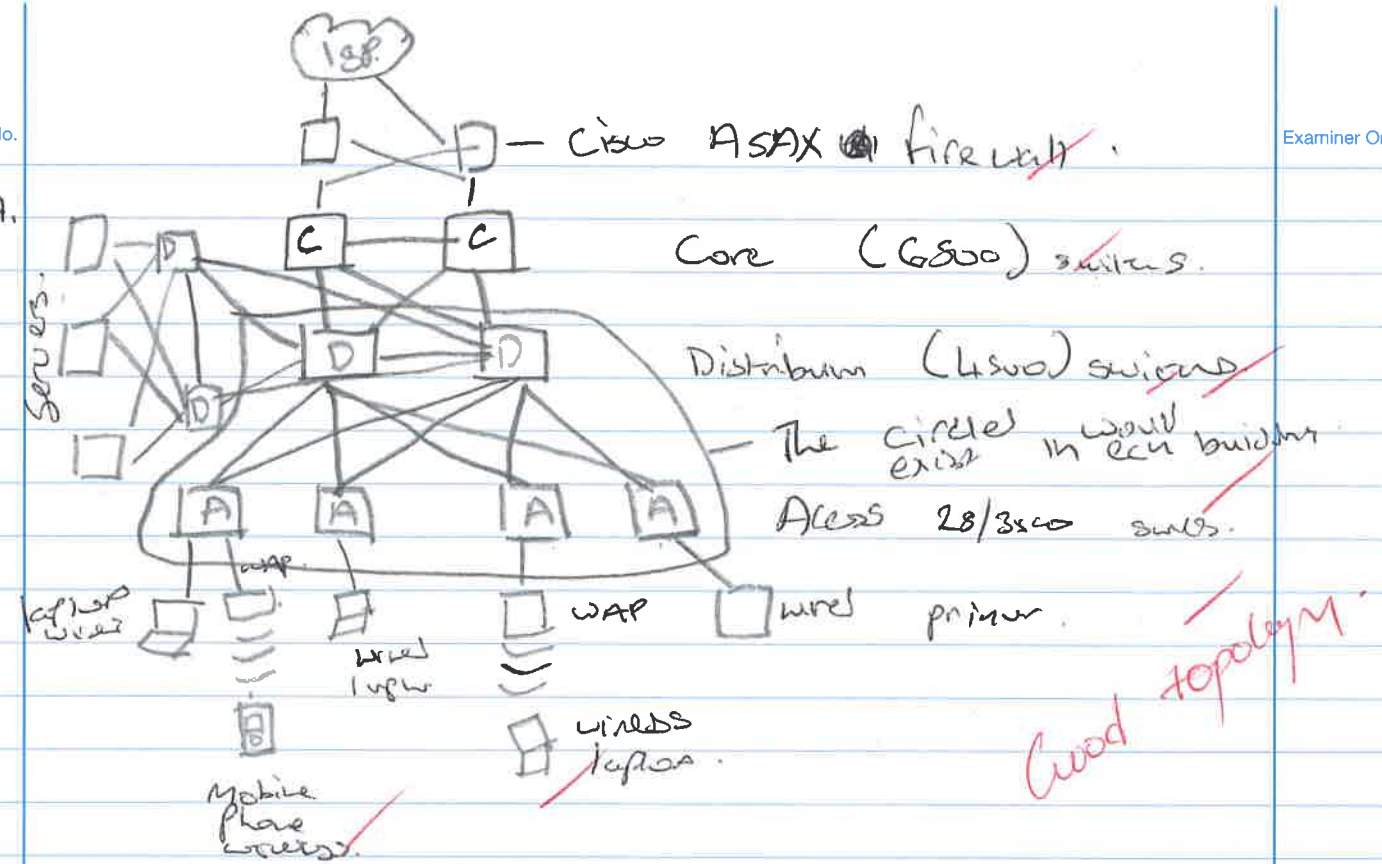
- Automatically establishes a trunk link.
- Forces other end to trunk mode.

3c Virtual Switching system

This is a virtual system that is supported by Cisco's 6500 series switch. VSS allows for up to 8 links to be grouped into a single structure. VSS virtualises the core of a network to simplify the network. The benefits of VSS are

- Simplifies design.
- Provides load balancing.
- Provides redundancy.
- Allows up to 8 links to be grouped together.
- Simplifies management.
- Less network overhead.

4A.



I would implement the Cisco hierarchical network for the SA1 campus. The core would consist of two 6500 Series switches with VSS configured on them. I would configure the distribution layers as 2 4500 switches per building with optical fiber connections to core. I would implement all policy based routing at the ~~Distribution~~ layer. This layer would use trunk links to layer 2 access switches & routing to layer 3 devices. This layer would additionally support FHRP possibly HSRP for redundancy. The access layer would support QoS, this is traffic classification & prioritization with VLANs. Staff, students & eg would be grouped into departmental VLANs & guest another group. Voice would be another VLAN. Access layer is also responsible for security, port security, DHCP snooping, IP source guard etc. All distribution & core links would use etherchannel to provide redundancy. This also increases throughput. The distribution layer would be implemented in each building with connections to each access switch.

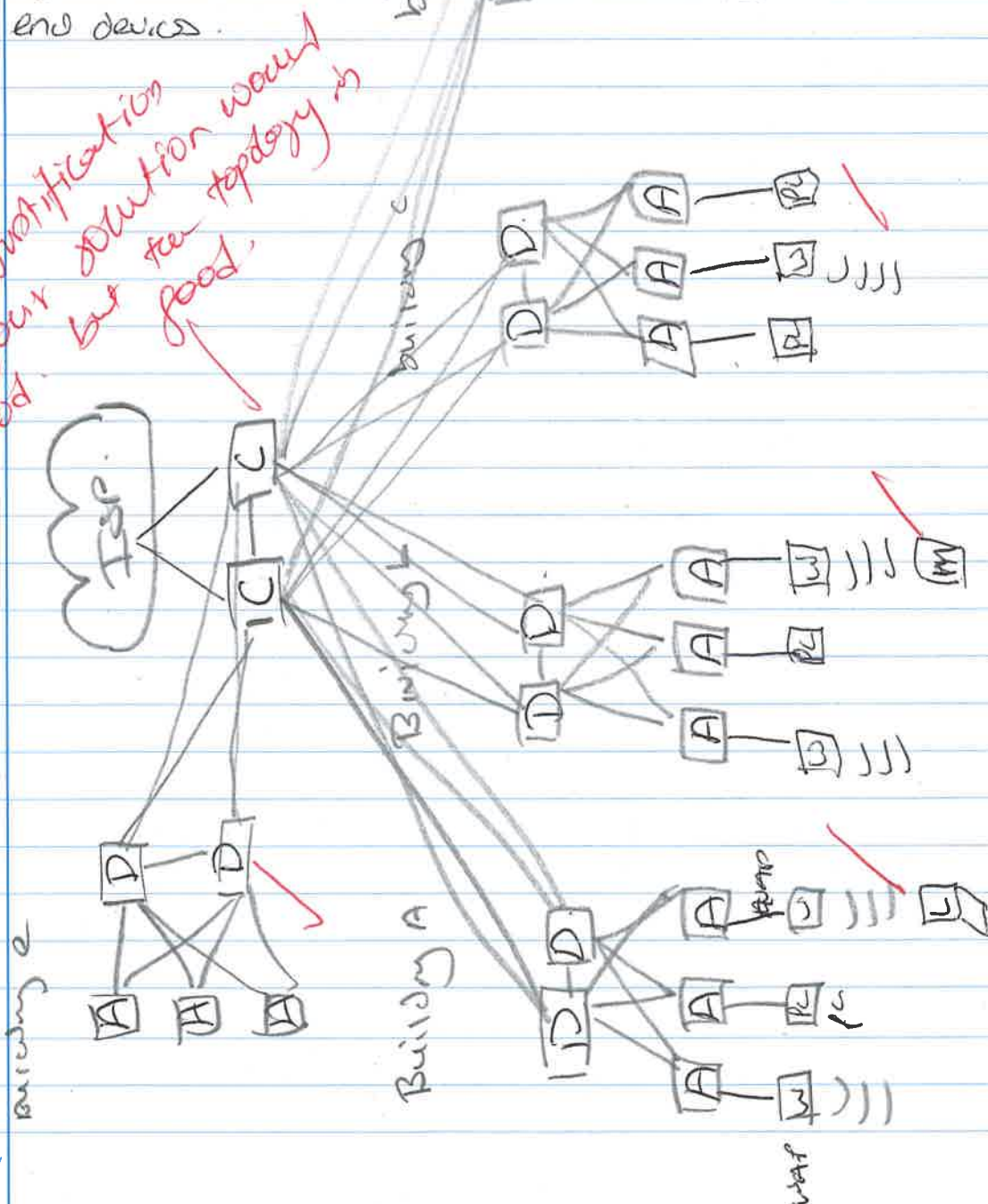
why?
6500 or nexus

Good discussion but brief

End devices want include

- o workstations.
- o printers
- o servers
- o IP phone.
- o WAP.

Figure 1 shows how the network would be in a core building, figure 2 shows the network as a whole including end devices.



C = Core
D = Distribution
A = Access
L = Laptop
M = Mobile phone (wireless)

W = WAP

PC = workstation

more discussion on choice of devices, security, better.

15