The School of Computing Sciences UTS

Cisco Systems Networking Academy

SSN (31436) - Networking Stream

Lab 5: LANs Design, Documentation and Project

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Steps for a Network Design

- Determining logical and physical topologies
- Determining types of cable to be used
- Choosing layer 2 devices
- Choosing layer 3 devices
- Placing the shared resources such as file servers and databases
- Documenting topologies, cut sheet, outlets and cable runs, devices, MAC addresses and IP addresses et. al

MDF and IDFs

- MDF (Main Distribution Facility) - the closet where the central hub is located.
  - It is also called a MCC (Main Cross Connect).
  - In a multi-floor building, MDF is usually located at a middle floor.
  - In a single floor, MDF is usually near the POP (Point of Presence) and the centre of the network.
- IDFs (Intermediate Distribution Facilities) - the closets where the additional hubs are located.
  - If a IDF is used to connect a IDF and the MDF only, it is called a ICC (Intermediate Cross Connect).
  - Otherwise, it is called a HCC (Horizontal Cross Connect).

Do's and Don’ts for Cabling

- Do’s
  - use cable ties
  - leave slack
  - leave service coils
  - support bars
  - cable management panels
  - velcro
- Don’ts
  - don’t untwist more than 1/2”
  - no > 90 degrees bends
  - no kinks
  - no stretch
  - no staple gun
  - bend radius not < 4 x Diameter of Cable

Cut Sheet and Cable Labeling

- A cut sheet is a diagram showing the locations of the cable runs.
- Cable labeling:
  - each end of a cable must be labeled
  - don't use Mr. …, use room number …
  - label cables before run them

Testing Cable Run

- Testing steps:
  - Break the system into elements
  - Note any symptoms
  - Determine the likely dysfunctional element
  - Discover the dysfunctional element using substitution or additional testing
  - Proceed to the next likely element
  - Repair the dysfunctional element
  - Replace the element if you cannot repair it

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Readings and References

- Cisco semester 1 curriculum (version 2.1.2) in *http://iwork.uts.edu.au/enrolled/*:
  - Chapters 8-9