Lecture 8a - Layer 2 Redundancy

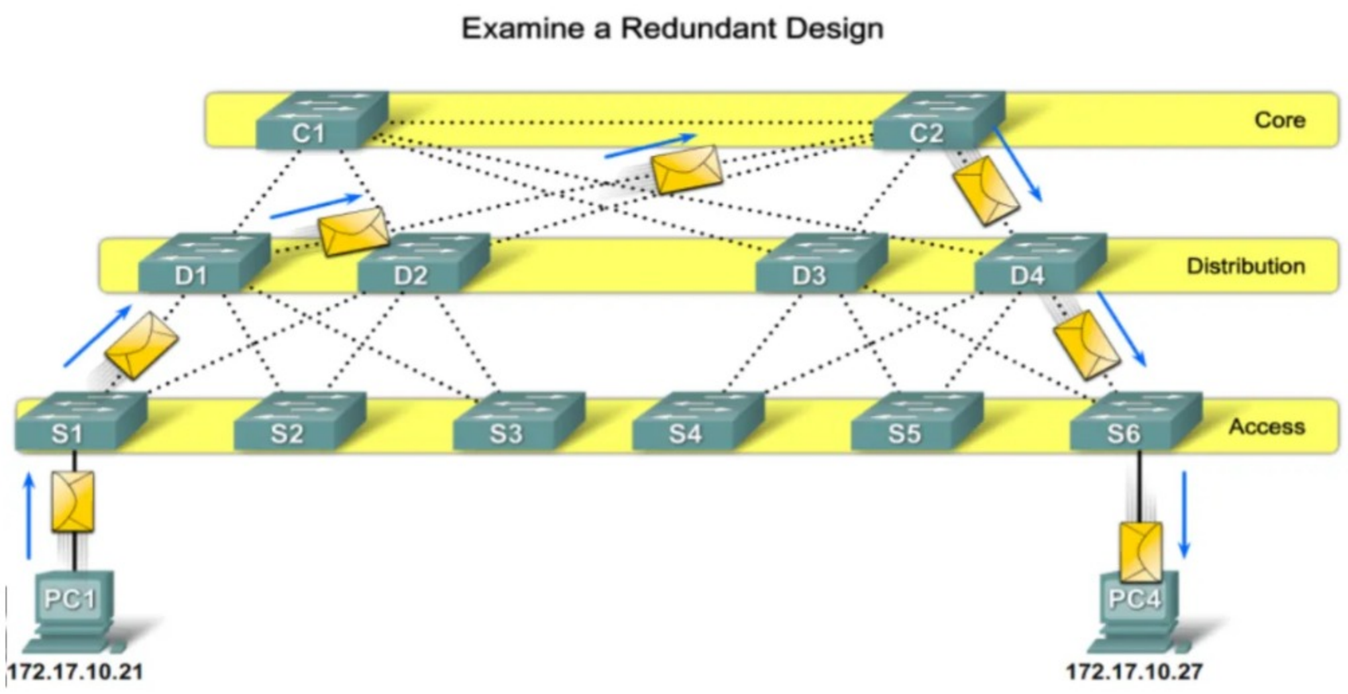
Type	Lecture
Materials	Empty
Reviewed	☑

1. Redundancy

- **Redundancy** in networks is critical, it allows networks to be **fault-tolerant**.
- The **failure** of a single link, interface, or device can cause downtime
- **Redundant topologies** protect against network downtime, by eliminating outages caused by a single point of failure
- Balance between the cost of redundancy with the need for network availability (cost of failure)
- **Five Nines uptime** – 99.999 % - 5.25 mins downtime per year

2. Redundant Design

- Each **Access** Layer Switch is connected to 2 **Distribution** Layer Switches
- Each **Distribution** Layer Switch is connected to 2 **Core** Layer Switches



3. Broadcast Storm

- When **multiple paths** exist between two, a **Layer 2 loop** can occur
- **Ethernet** frames do **not have a time to live**
- If **there is a loop**, they will continue to be forwarded from switch to switch endlessly or until a link is disrupted and breaks the loop
- **Broadcast frames** are forwarded out all switch ports, **except** the k**originating port**
- If there is **more than one path** for the frame to be forwarded out, it can result in an endless loop, a **Broadcast Storm**