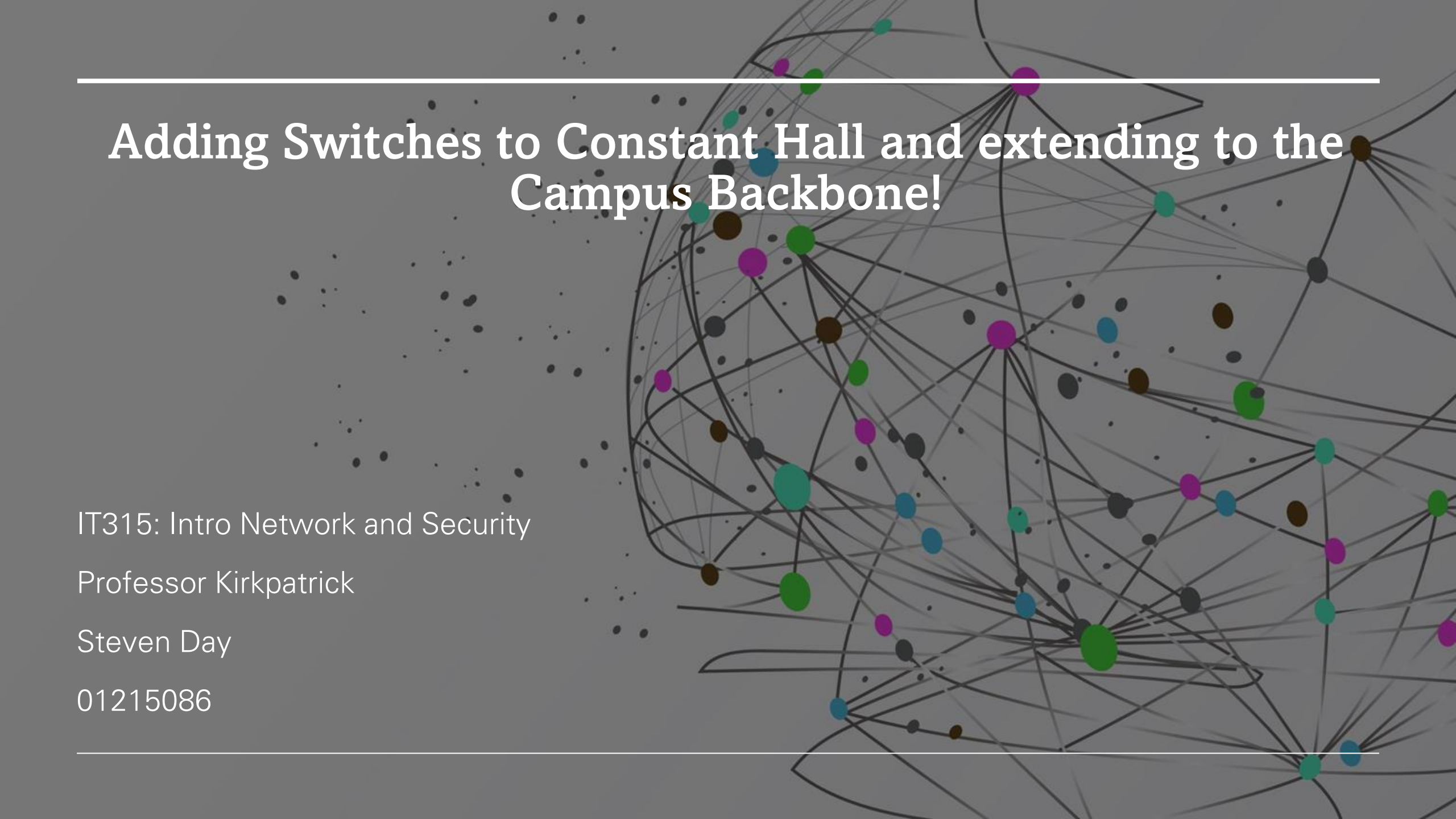
Adding Switches to Constant Hall and extending to the Campus Backbone!



IT315: Intro Network and Security

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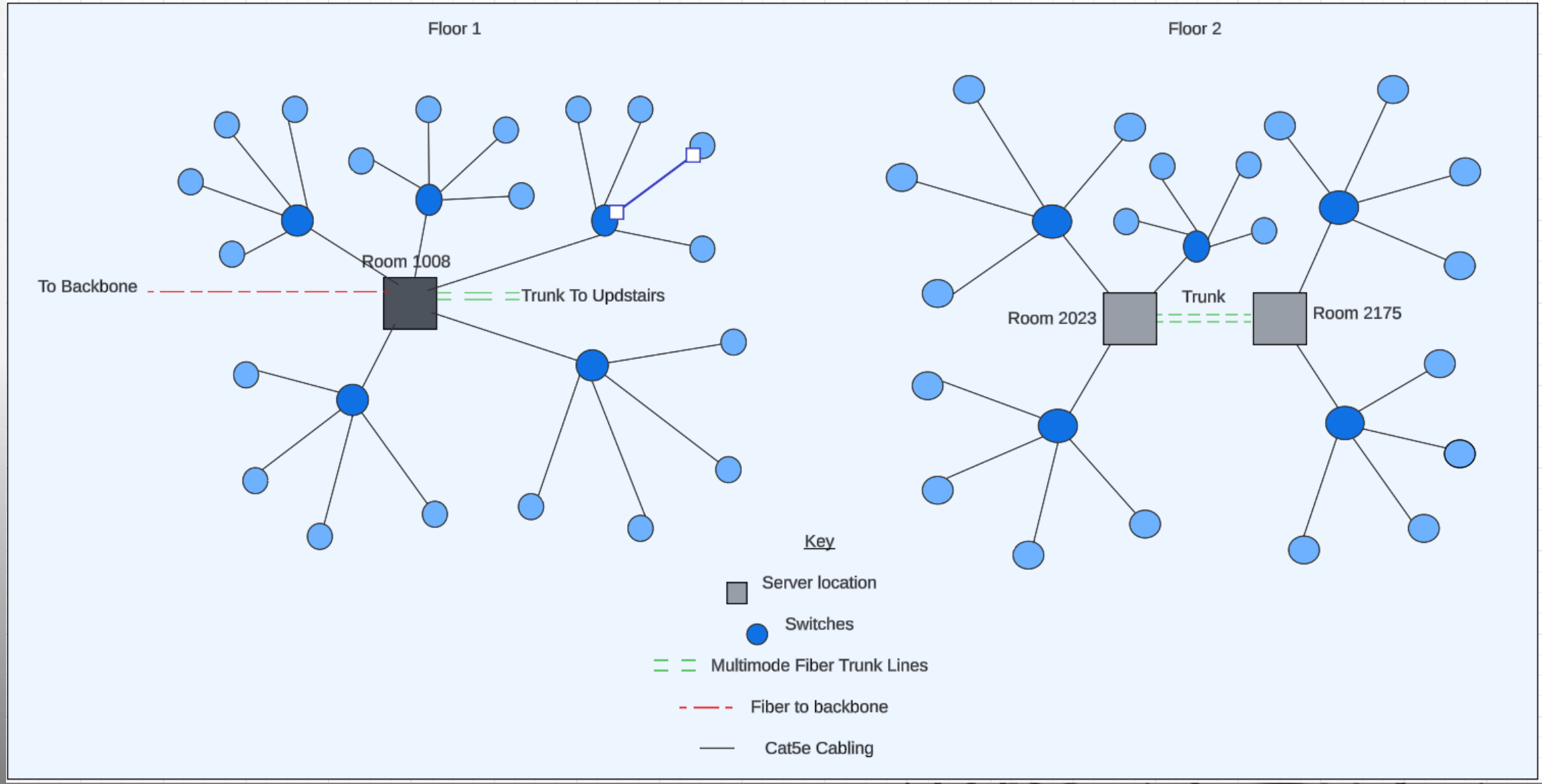

Network Diagram - Extended Star Topology

Network Information

First Floor

With 48 ports per switch, the first floor supports **240 ports** on the 5 switches for various functions Each room will be connected using **Category 5e cabling**, which supports speeds up to 1 Gbps. The five switches will be configured to manage the load across these ports, ensuring reliable internet access for all devices within the connected rooms with expansion reserves.

Second Floor

The second floor has 5 switches to accommodate the 141 rooms. Due to the high volume of users expected in these spaces, more possible ports are created to accommodate and will help facilitate seamless connectivity. This floor will also use **Category 5e cabling** to connect to the switches, ensuring that each room can support multiple devices.

Server Placement

The three servers, housed on the second floor to mitigate flooding risks, include:

Room 2023

FS, which stores files for faculty use only.

FILES, which stores files that are placed by faculty for student use.

Room 2175

WEB, which stores all of the web pages for the college

The trunk connection between Telecommunications rooms uses **multimode fiber optic cabling**, which offers high-speed data transfer rates and enhances the overall network efficiency. The use of fiber optic connections ensures that the servers can communicate rapidly with all networked devices throughout Constant Hall.

This setup with cover any bandwidth that may be required for the servers and network.

Budget

	Component	Number Needed	Cost	Total Cost
NETGEAR 48-Port Gigabit Ethernet Smart Switch (GS748T)	Switch	10	$479.99	$4,799.90

https://www.techtarget.com/searchnetworking/definition/bandwidth

References