

# **Design & Deployment of KCCT Network -The Challenges & Experiences**

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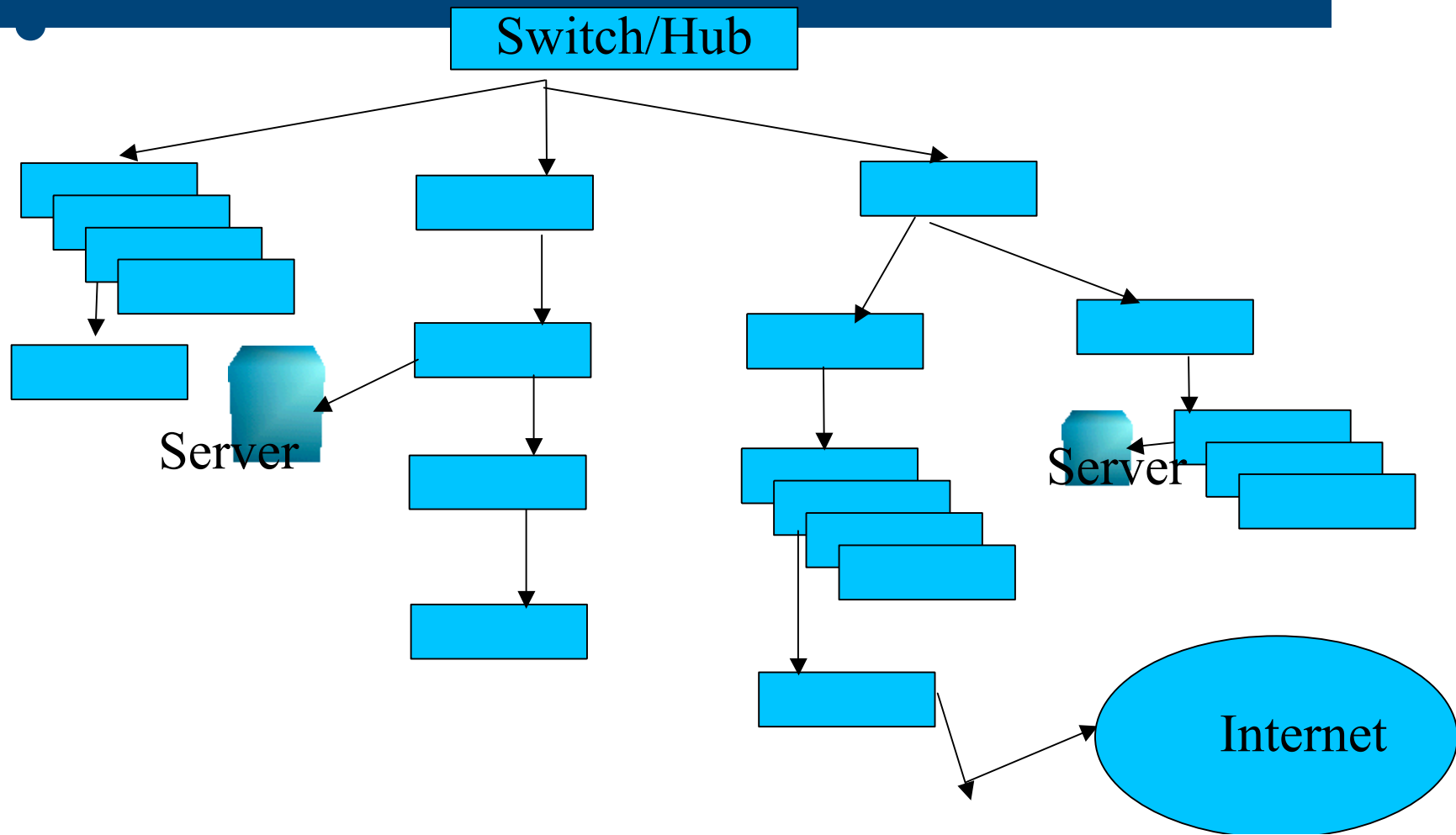
# Summary

- Previous/Initial Status (2001)
- Preferred Status
- Design Phase
- Implementation Phase
- Operation & Maintenance

# Previous/Initial State

- In 2001 the status was:
  - Lack of IP Numbering Scheme
  - Cascaded Switch/Hub Connectivity going upto 7Levels!
  - Haphazard Server Locality/Positioning
  - Upto 8 Dial-Up Points connected to different ISPs
  - Website hosted by ISP, No Corporate Mail Services

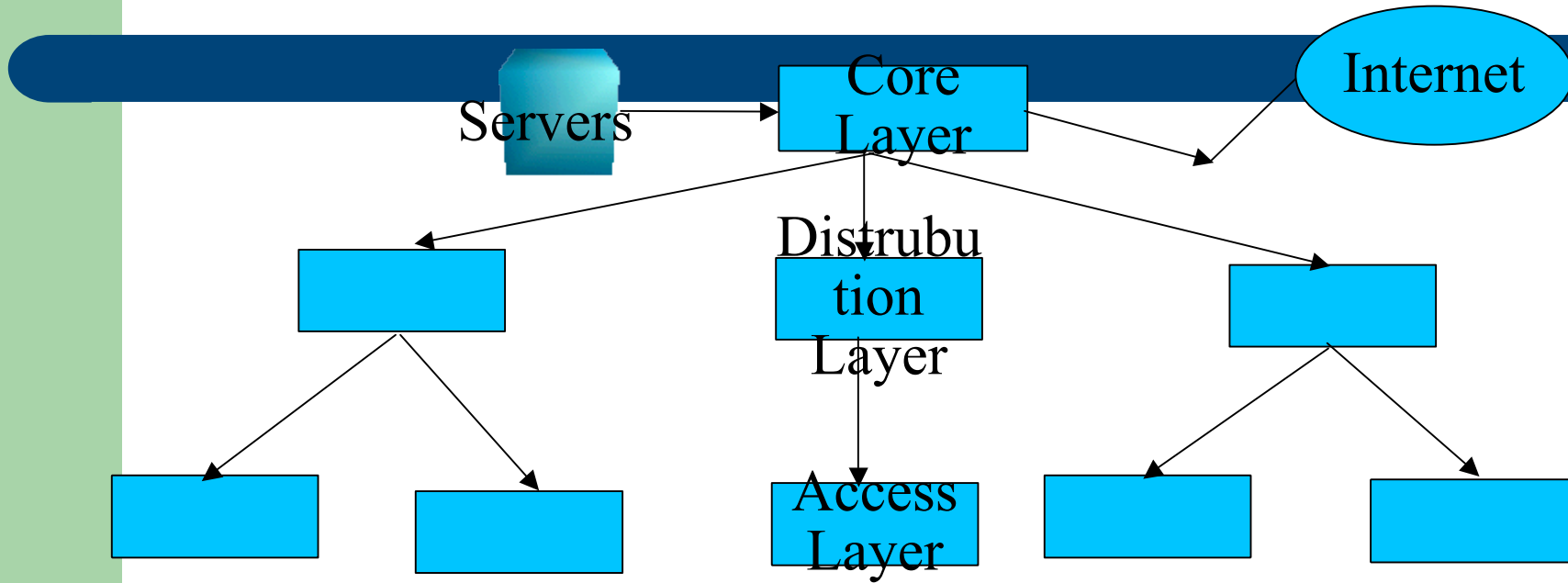
# Previous/Initial State – Switch/Hub Fabric



# Previous/Initial State-Problems

- Users Closest to the Server get Undue Advantage
  - Get Undue Advantage
  - Introduce Congestion
- Users Closest to Internet Link:
  - Get Undue Advantage
  - Introduce Congestion
- Hubs Unable to control/contain Broadcasts

# Preferred State – 3Layer Modular Design



# Design Phase

- Set Up a Technical/Steering Committee
- Identified Tasks
  - Redesign Physical & Logical Layers
  - Redesign IP Scheme
  - Redesign Web Services(smtp, www, dns, domain,etc)
  - Migration Plan
  - Timelines (Gantt Charts)
  - Competencies (Resource Personnel)
- Gained High level Corporate support

# Implementation Phase

- Lacked Core Switch, Distribution Switches
- Promoted the Best 3-Switches into the above Roles and ordered for the rest
- Plan/Design Identified how new Switches would be planted into the Network Design whenever they are acquired



# Implementation Phase

- Adopted DHCP services for new IP Scheme
- Created VLANs -staff & student
- Moved/Repositioned Internet Link, Servers,Router
- Locally Hosted Corporate domain, dns, www, mail, proxy

# Operation & Maintenance

- Monitoring of Services (www, smtp, etc) through Open Source Products:
  - Squid Proxy,
  - Squid Guard,
  - MailScanner,
  - Spammassassin,
  - Ethereal
  - Mrtg, etc
- Developing/Enforcing Corporate ICT Policies

# Challenges/Experiences

- Need to have top-level support to :
  - Formally create Technical/Steering Committee
  - Overcome Organisational Resistance
  - Escalate Procurement processes
  - Approve/Endorse Policies

# Challenges/Experiences

- Steering Committee should have Competencies in:
  - IP, Switching, Routing, WAN (CCNA or Eq.)
  - Internet -dns, domain, smtp, www (Systems Eng.)
  - Corporate Applications, Users (LAN Admin, DBA)
  - Structured Cabling (Certified Installer)

# KCCT Network – Physical View

- [KCCT Network Diagrams\KCCT Network Diag - HQ\(Physical\).doc](#)

# KCCT Network – Logical View

- [KCCT Network Diagrams\KCCT Network Logical Diagram.doc](#)

# KCCT IP Scheme

- [KCCT Network Diagrams\KCCT WAN IP address.DOC](#)

# KCCT Internet Services

- [KCCT Network Diagrams\KCCT Diagram - Corporate Services.DOC](#)



# The End

- Thank You