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CENTRALIZED DEPARTMENTAL PRINTING

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Outline

Motivation for Project
Present System Analysis
Proposed System / Solution
Steps to Solution

- Selecting software, Setting up server, BootP server on Printers etc.

Summary

Motivation

Demand for a better system!

- Present system is out-dated as per the needs of ECS (Engineering Computing Services)
- No Administration / Moderation capabilities.
- Out cry of the Engineering faculty and staff!

Desire to learn more about Network / System Administration, setting up Secure Printer Servers and playing an active role at **Rutgers University**

Present System Analysis

Open to anyone on the private
Rutgers network

- Someone at the **Rutgers - Camden/Newark** campuses (1 hr drive away) can print documents in the Engineering computer labs!

De-centralized

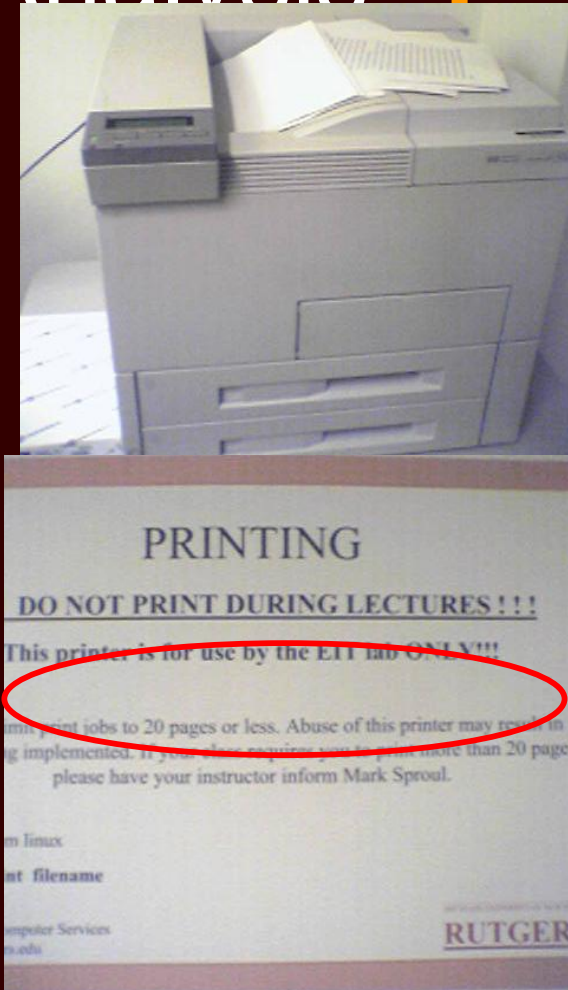
- Every printer take its jobs directly from the client
- Diverse makes and models of printers, all performing in their own individual capacity
- No user-levels

No Admin / Moderation capabilities

- Once a job has been sent, it is extremely hard to cancel the job if you did not send it
- No limitation(s) on who can print what and how much

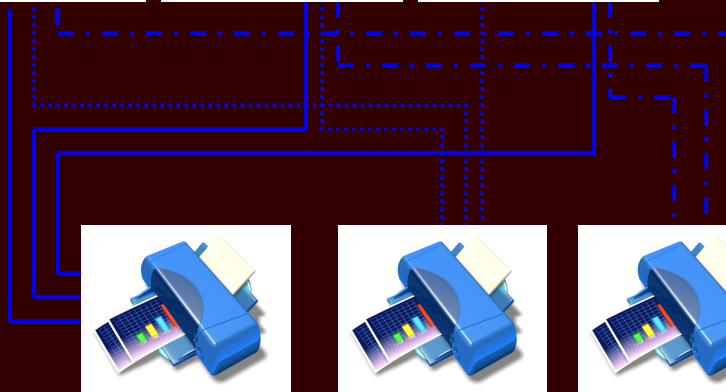
No log keeping of any sort

It's a Mess!

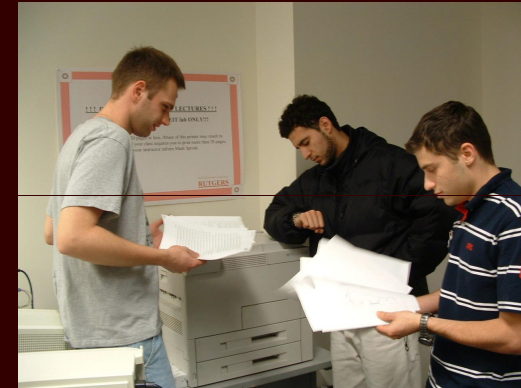


Sign in the EIT lab.
Ironical!

Present System Cont'd...

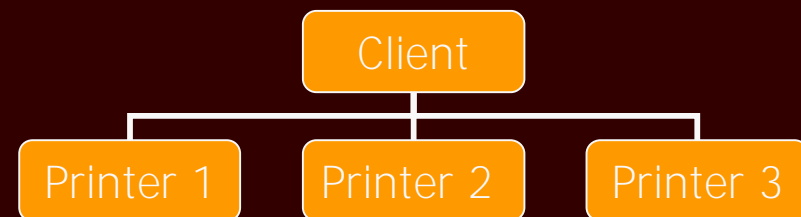


Printing from other non-Engineering sources i.e. remote printing leads to long Waiting periods and messes for Engineering Students using the lab



Every Client / Computer is able to connect to any printer in the current system directly, using TCP/IP and submit print-jobs

Estimated 20-25% of printing budget goes to unnecessary / accidental print jobs that can be prevented with proper admin.

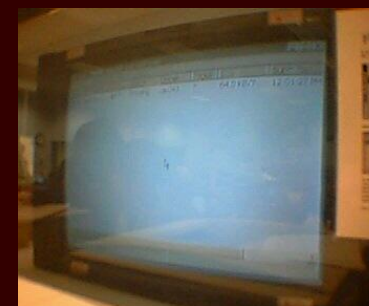
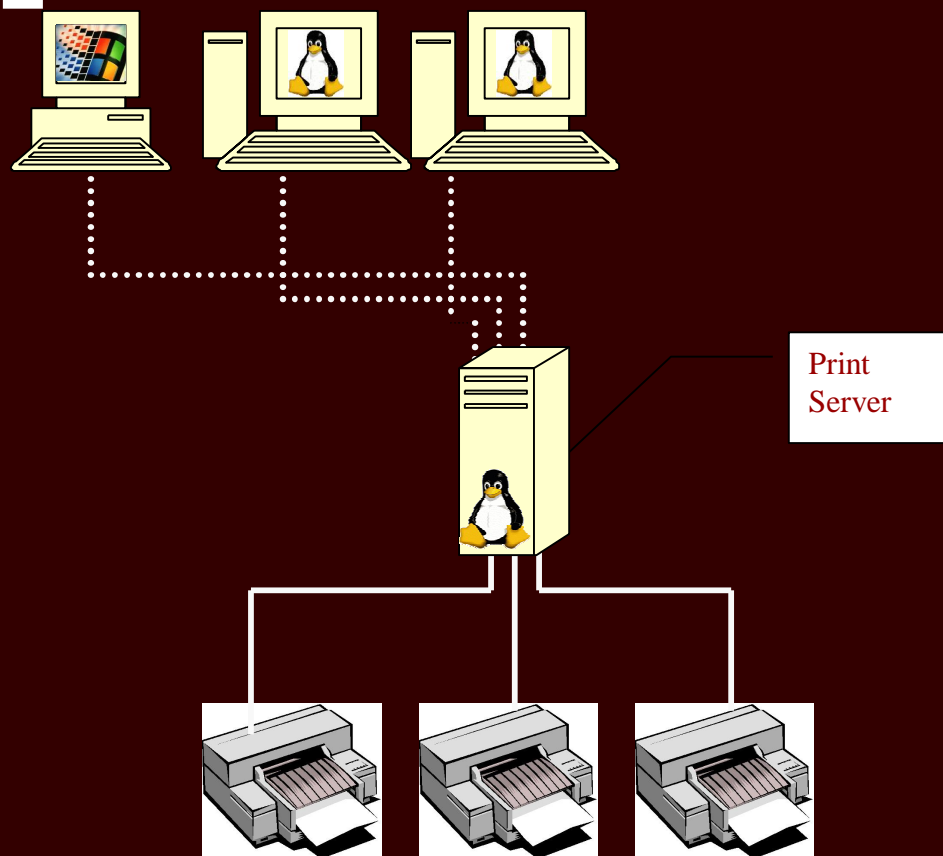


Proposed New System

Features:

- 0 Centralized!
- 0 Allows printing from different operating systems (OS)
- 0 Printing by users in the Engineering building ONLY – Access Control List
- 0 User levels with different privilege(s) and/or limitation(s)
- 0 Print queue – means fast, reliable printing
- 0 Log keeping
- 0 Filter print-jobs I.e. will not print postscript or “junk” files such as binary files
- 0 Will print to the correct printer I.e. printer located closest (physically)
- 0 Secure print server
- 0 Post print queues on a website for live viewing and administration by users and admin. respectively – Other UNISYS SCHOLAR working on this part of the Project!

New System Cont'd ...

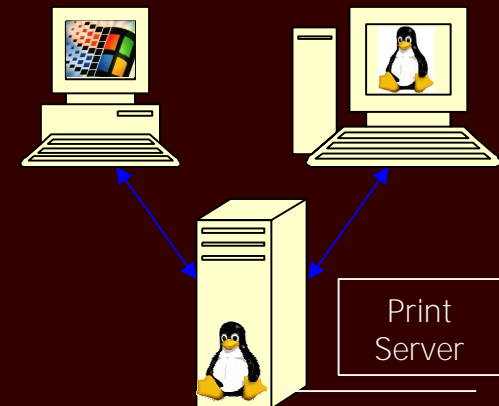


A print queue system has already been installed in many non-Engineering computers labs. Such as this one at the College Ave. Campus.

Steps For New System

Selecting Software

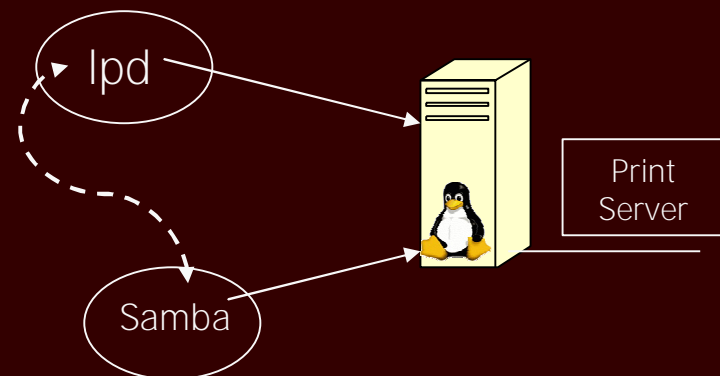
- ü Allow all the required features
- ü LPRng, CUPS – Printing Software
- ü Samba / lpd – for compatibility UNIX/ Linux & Windows
- ü Software selection will be based on:
Cost, Availability, Ease of use, Compatibility
with current software / hardware etc.



Samba allows this!

lpd- allows Unix, Win, Mac
works on tcp/515

Samba – allows Unix and Win
works on tcp/137



Steps Cont'd...

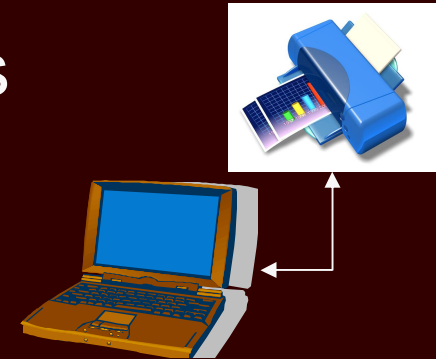
Setting up **BootP** server on Printers

Configuring printers

Access Control List

Collaboration with the other
UNISYS scholar

If all goes well, then finally **implement**
the system



A laptop could be used to go around and setup **BootP servers** on each printer and configure it for the print server

Conclusion

Creating a server for centralized departmental printing

- | Print server software: try LPRng and CUPS
- | Monitoring printer status and Accounting
- | Samba for printing from Windows clients
- | Server security
- | Access control list for accepting jobs only from the server's IP address. May require configuration of a BootP server on a laptop to set up each printer individually

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Acknowledgement

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- Dr. Doyle Knight – Rutgers University
- Amit Freeman
- And all other UNISYS Scholars

References

<http://www.linuxcourse.rutgers.edu>

<http://www.lprng.com>

<http://www.samba.org>