How to divide 4000 computers by 5 staff and get a working network

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The size of the task

18000 registered users

4200 registered machines on network

50+ ‘servers’

420GB of managed filestore

Four sites

90000 mail messages per week

Staff

16 User Support and Software Support

5 Systems

5 PC Support

3 Network Support

5 Administration

10 Operations and Reception

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Strategy

Network Everything

Simplify the problem

Design for the large scale

Automate routine tasks

Use remote control - not shoeleather

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The Network

IP on Ethernet (10M and 100M)

60+ Subnets

7 Routers and many backup paths

Internet via SuperJANET

Manage namespace with DNS

Simplify the problem

Only support Solaris and DOS/Windows

Machine setups identical in each class

One management domain

One network protocol

Every user has a login ID

Classroom machines well protected

Scaling

Start with a COW

Control the namespace

Unified filestore: NFS, Amd

Replicate popular files: SUP, pc.mount

Plan for continuous growth

pc.mount example

EDST.drives f: /vol/pc/general; j: /vol/pc/nfs_${NV}

EDST.printers lpt3: ps-a4.cho3 /end=xit,fmt=raw

/vol/pc hera-72, hera-74, timon-8, phobos-148

merit.134.83.64.0 134.83.64.0 134.83.192.0

Automation

Installation and Upgrade

Convert workstation to server

Daily chores

Installation of patches

Backup process

Remote Control

Unix servers - encrypted remote login

Console servers

Network and dial-in management

SNMP monitoring

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Summary

Simplify the problem

Design for scale

Control the namespace

Manage change carefully

Think!