IEEE 802.1

Port-based Network Access Control

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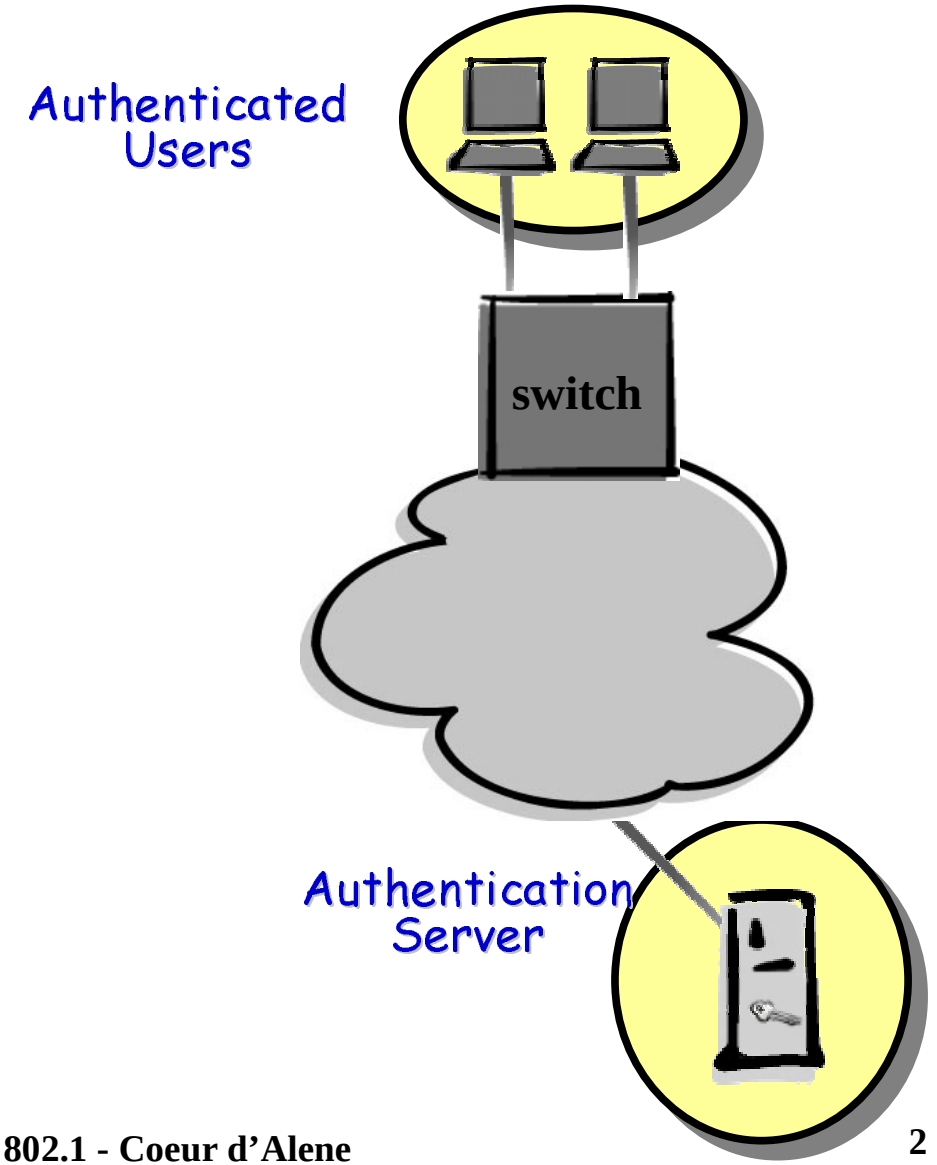
Network Access Control

- What?
  - distributed security
  - authenticate users at the switch port
  - once authenticated, operates at LAN speed
  - leverage common authentication systems
    - RADIUS
    - DIAMETER
    - LDAP compliant directory servers
    - NOS

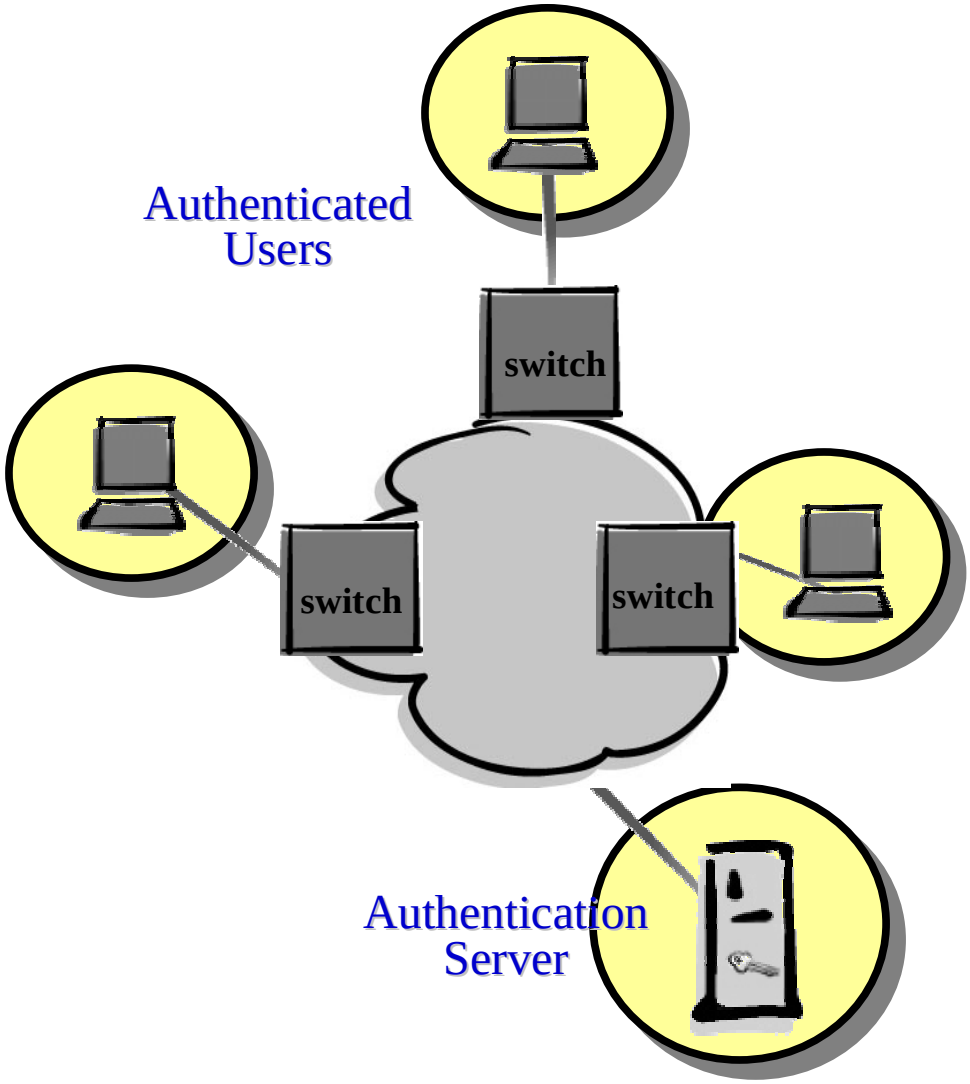


Network Access Control

- Why?
  - Perimeter security
    - access control at the edge
  - Not all users created equal
    - trust all; really trust only a few
  - Not all networks created equal
    - some require extra access control measures

Network Access Control

- Applications
  - distributed user authentication
    - not device
    - edge access control
  - user mobility with campus setting
  - leveraged by single sign-on systems
    - one ID/pswd, entered one-time



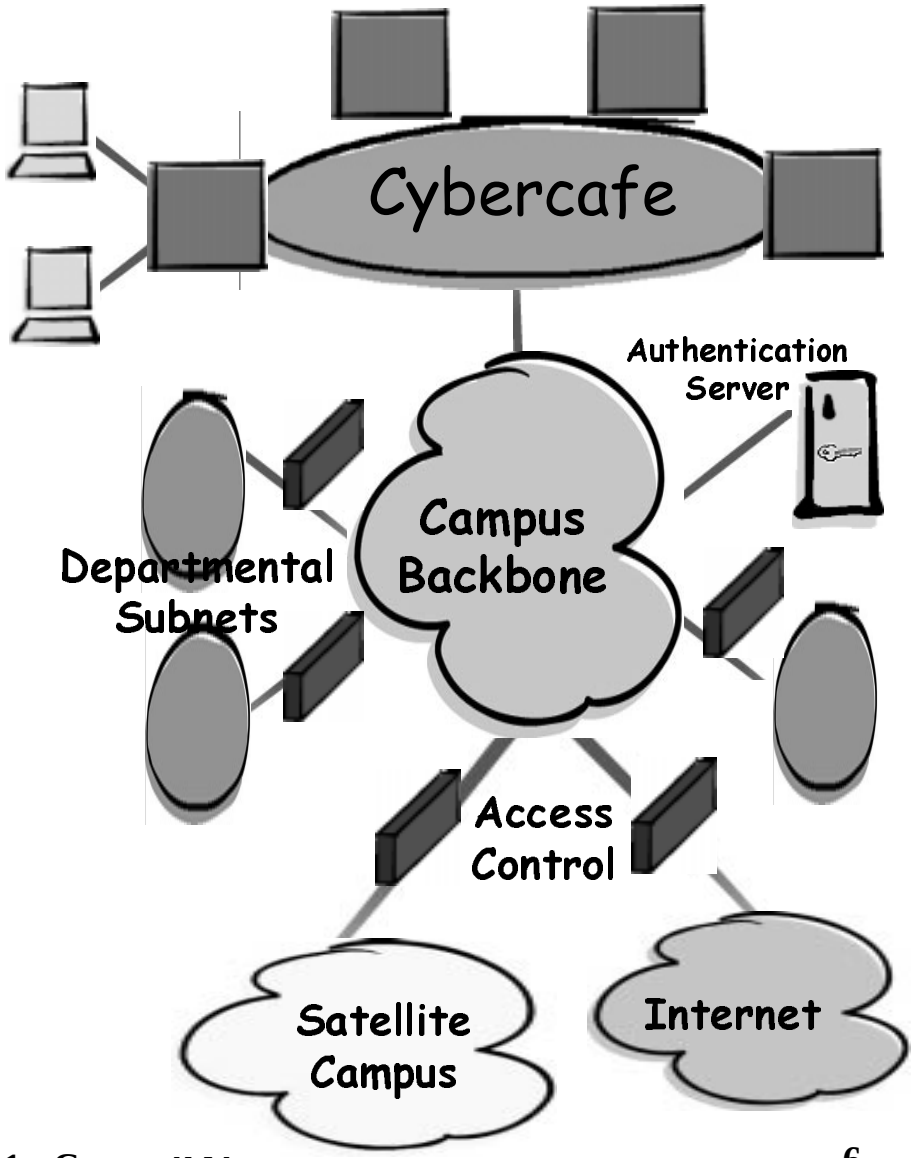
Network Access Control

- Market Demand
  - user authentication in enterprises
    - key departments (HR, Finance)
    - open computing environments (partners, visitors)
  - network ingress security
    - access control distributed to the edge
  - key verticals are ideal for switch access control
    - security conscience environments
    - mobile users
    - semi-public work environments

Key Vertical: University

Goal – authenticated open computing

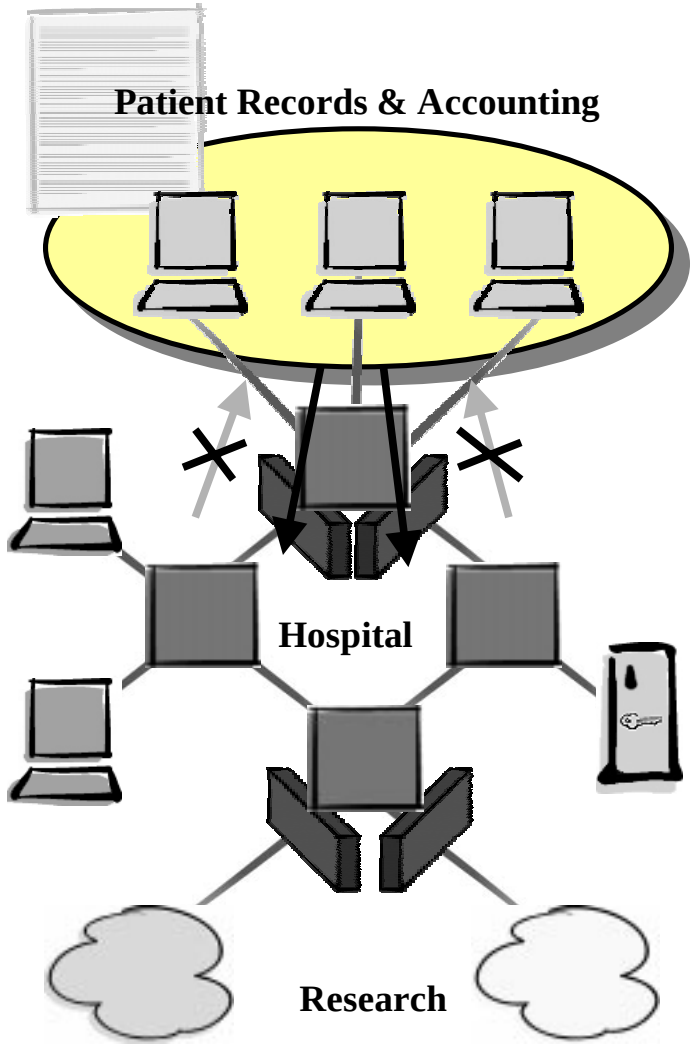
- Broad facilities
  - central campus, satellites & dorms
- Different user types
  - students - dorms, classrooms & library
  - faculty - offices & classes
  - admin - offices
- IP addressing - DHCP
- Filter between private nets



Key Vertical: Medical

Goal – patient & research confidentiality

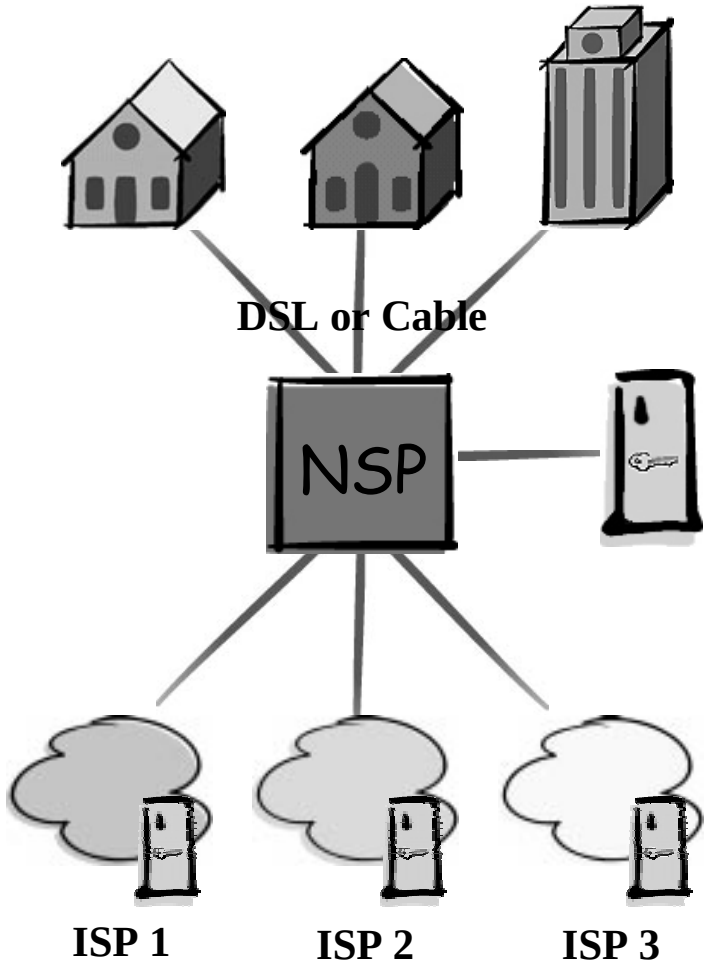
- Facilities
  - in/out patient hospital
  - research labs
- Users
  - MDs, nurses, admins
  - research Phds & techs
- Policy
  - authenticate into key subnets
  - filter / firewall internal traffic



Key Vertical: Carrier

Goal – secure, multi-layer Internet access

- users connect to network
  - via DSL or cable
- users authenticate at the NSP's POP
  - RADIUS
  - multiple authorities
  - one user per switch port
- access multiple out-sourced services
  - separate billing



Key Administration Issues

- Ethernet-only ingress; any egress interface
  - No authentication needed for inter-switch ports
- Configurable on a per port basis
  - not all switch ports must be authenticated ports
- Log-off, aging and inactivity timer options
  - re-authenticate according to policy
- Transparent to authentication server type
  - authenticator can request more information before determining the mechanism
  - smart cards, Kerberos, PKI, 1-time pswd, etc.

Key Administration Issues

- Multiple VLAN membership options
  - some want a MAC-based option = more control
  - authenticate into authorized VLAN = choice
  - client does DHCP after authentication
- Mobility
  - same look & feel regardless of campus location
  - mixed vendor enviro=common user experience
  - many users need both non-auth access and auth access, depending on local port

Other possible considerations

- Core spec for the authentication process
- Section/Appendix for port-based authentication
  - all or nothing / open or closed
- Section/Appendix for MAC-based authentication
  - VLAN membership control (IP unicast, IP multicast, IPX, AT, etc.)

Summary

- Xylan believes a standards-based switch access authentication method is required
- Key verticals markets have expressed a definite need for this capability
  - extra layer of security at the network edge
- Although port based access may be easier to implement, do not discount the control layer-2 mechanisms offer
- Xylan will support the approved spec