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SLUO
SLAC USERS ORGANIZATION

Computer Security

Review and Plans

SLAC Users Organization

Wednesday, 15 July 1998

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Security Activity

- Minor incidents occurring 4-5 times/month
  - Anonymous FTP servers used for "warez"
  - User accounts used to run IRC "bots"
- Often password "sniffed" at another site
- Cleanup requires 4-16 hours per incident
- Stolen account concerns

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Incident on 2 June 1998

- Entry from another site via rlogin (.rhosts)
- More than 25 machines compromised
  - Accounts (uid 0) created in /etc/passwd
- More than 50 user accounts used
- .rhosts to access computers
  - Potential sites - 30 edu, 6 gov, 11 others
- Internet disconnect and user revalidation

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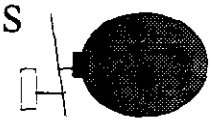
Security Exposures



- Network based attacks
  - Applies to both OS and servers (daemons)
    - Security patches not applied or old releases
    - Poorly configured
  - Default accounts and passwords
  - Inappropriate file system permissions
    - SUID/SGID
    - AFS vs. Unix

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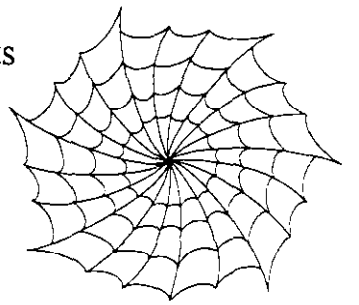
Security Exposures (cont)

- User account compromise
  - Sniffed password
  - Cracked password
  - r* commands using .rhosts
- Web of trusted hosts
  - NIS
  - .rhosts



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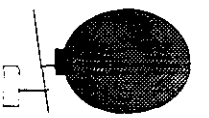
Previous Restrictions



- Web servers on port 80 and SMTP mail delivery restricted to selected hosts
- X sessions from outside the DMZ cannot open windows on SLAC networked machines without using mxcons or ssh
- Finger, NFS, TFTP, Bootp, xdmcp, DNS zone transfer and NIS blocked at the DMZ

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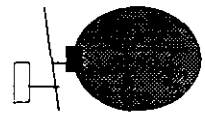
Restrictions
(additional)



- TCP/UDP ports <1024 blocked by default
  - affects rsh outgoing
- NT Networking blocked at DMZ
- NTP, FTP, POP & IMAP incoming restricted to select machines
- juno & unixhub blocked for user access
  - affects NFS file restore and archive

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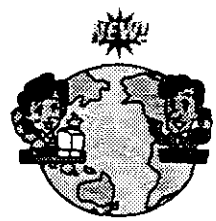
Password Handling



- Passwords can be handled through telephone call to phone number of record (need to keep info current)
- PI's at remote sites are considered as computing czars for handling accounts at their location
- More aggressive "encouragement" for selection of good passwords

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Other Changes

- Retire old machines/systems
- More checks on centrally maintained systems
  - Look for compromises and "signatures"
- Strongly discourage unencrypted passwords
  - Greatly reduce ftp servers
  - encourage use of AFS and ssh
  - Implementing SSL on webservers very soon

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Future

- Decrease exposure to cracked passwords
  - Enforce selection of stronger passwords with periodic change required
  - Simplify password changing process
  - Hide encrypted form of password
  - Centralize password database using Kerberos

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Future (cont)

- Decrease exposure to sniffed passwords
  - Strongly encourage ssh
    - telnet, rsh, rcp, rlogin replacement
    - can tunnel other protocols: X, ftp, email
    - pursue site-license for Windows
    - promise to reconnect ssh services sooner
  - Explore Virtual Private Networking

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Future (cont 2)

- Stronger push for central WinNT admin
  - NT requires professional administration
- Secure business systems & accel. controls
  - requires some infrastructure duplication
  - build security zones w/ different policies
- Aggressive application of security patches
  - may result in more reboots

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Future (cont 3)

- Increased logging of incoming and outgoing network connections and traffic
- Increased monitoring of files for signatures associated with "suspicious software"
- Restrictions placed on non-SCS managed machines connected to SLAC network

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Under Investigation

- International issues
  - US - export regulations
  - France, Russia - usage regulations
- Windows Terminal Server [Hydra]
  - Provides Windows shell environment
  - Runs multiple users at one time
  - Requires careful configuration

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Under Investigation (cont)

- Direct-dial access using ppp — Millsom@SLAC
  - 2-4 months to full deployment
  - need testers now to "bleed" for the rest of you
- Virtual private networks (VPN) — Cottrell@SLAC
  - 6 months to full deployment, pilot earlier
- Support for Linux
- Email and hard disk encryption tools

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Linux

- Do not select full install
  - Do **NOT** install **BIND** (named), **Samba**, email daemons (imapd, popd, sendmail), or other daemons (ftpd, statd, httpd, etc.) unless needed
  - To mount NFS space, the system must be scanned and problems fixed
- Limit local password file
- Keep system current (i. e. Red Hat 5.1) plus patches for mailx, etc.

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Win9x

- Follow the Windows 95 guidelines on the web page
  - Notify departmental support person
    - Disable Master Browser capability
    - Remove NetBEUI and Netware (IPX)
    - In most cases, remove File & Print Sharing
  - Non-compliance will upset many people!
- Win98 not yet fully tested

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Challenges

- Balance costs
  - Keeping intruders out
  - Detecting intruders who have entered
  - Cleaning up after intruders

- Maintain
  - Secure, reliable infrastructure
  - Open, collaborative research environment
- Be sure the Physics gets done!

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