



# Building Redundancy into Your Institution's Technology Plans

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# Internet

- Dual Internet connections
- Reasons to duplicate:
  - Hosted email
  - Hosted backups
  - Internal email server
  - Fedline
  - What other banking applications would be affected by an Internet outage?

# Internet Continued

- Firewall failover and load balancing
  - Alternate WAN port
  - Failover- If one Internet connection fails, the firewall will automatically fail over to the other connection.
  - Failback- Once connectivity is restored, the firewall will revert to the original configuration.
  - Load balancing- Split Internet traffic between two Internet connections.

# Internet Continued

- Bandwidth- Plan adequately!
- Duplicate firewall hardware
  - Active firewall- Actively responsible for forwarding traffic.
  - Passive firewall- Would assume all responsibility for forwarding traffic in the event of failure.

# Infrastructure Redundancy

- Physical vs. Virtual Servers
  - Primary benefit is recoverability
  - Duplicate server copy is ready to recover
- Critical Workstations
  - No hardware redundancy
  - Redundant machines
  - Spare machines
- Network
  - Switches
  - Network cables
  - Branch communications
- UPS
  - UPS batteries
  - Workstation UPS
- Power

# Data Redundancy

- Data Vaulting
  - Offsite backup storage
  - Local backup storage
  - Internet can be a bottleneck

# Questions?

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