Safe Computing in the Wireless Home

Saturday, April 25, 2009

Trenton Computer Festival
College of New Jersey
Ewing, New Jersey

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The connected home –

- 7 x 24 x 366
- fixed machines
- resident mobile devices
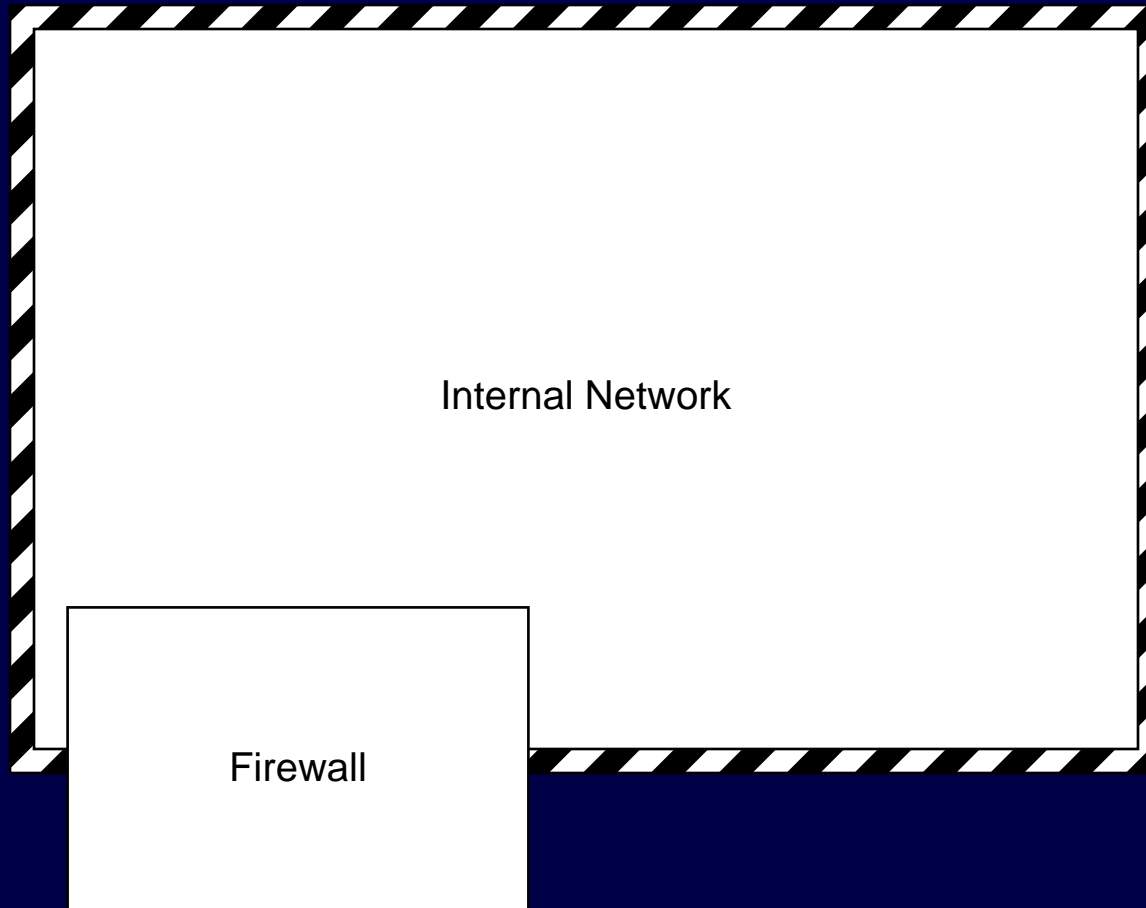- visitor devices

Internet Access has become expected

- by parents
- by children
- by guests of both

Privacy –

- Do you want your kids (and their friends) looking at your bank accounts?

Canonical Firewall Architecture

Internal Network

Firewall

The Real Issue – TRUST

- the word TRUST means different things in different contexts
- the word TRUST means different things to different communities
- In human relationships, TRUST is often used in an absolute sense
- In legal contexts, TRUST is a far different concept
- Unsurprisingly, people can often agree on wording easier than the concept

All of engineering & structural design is about safety factors.

The art of ensuring safety in the face of error, uncertainty, and imperfection.

In God we trust –
 All others we polygraph.
  – Tom Clancy

Technical TRUST – What does it mean?

- Liability exposure
- Need to know
- Things may not work as planned
- When building houses, carpenters:
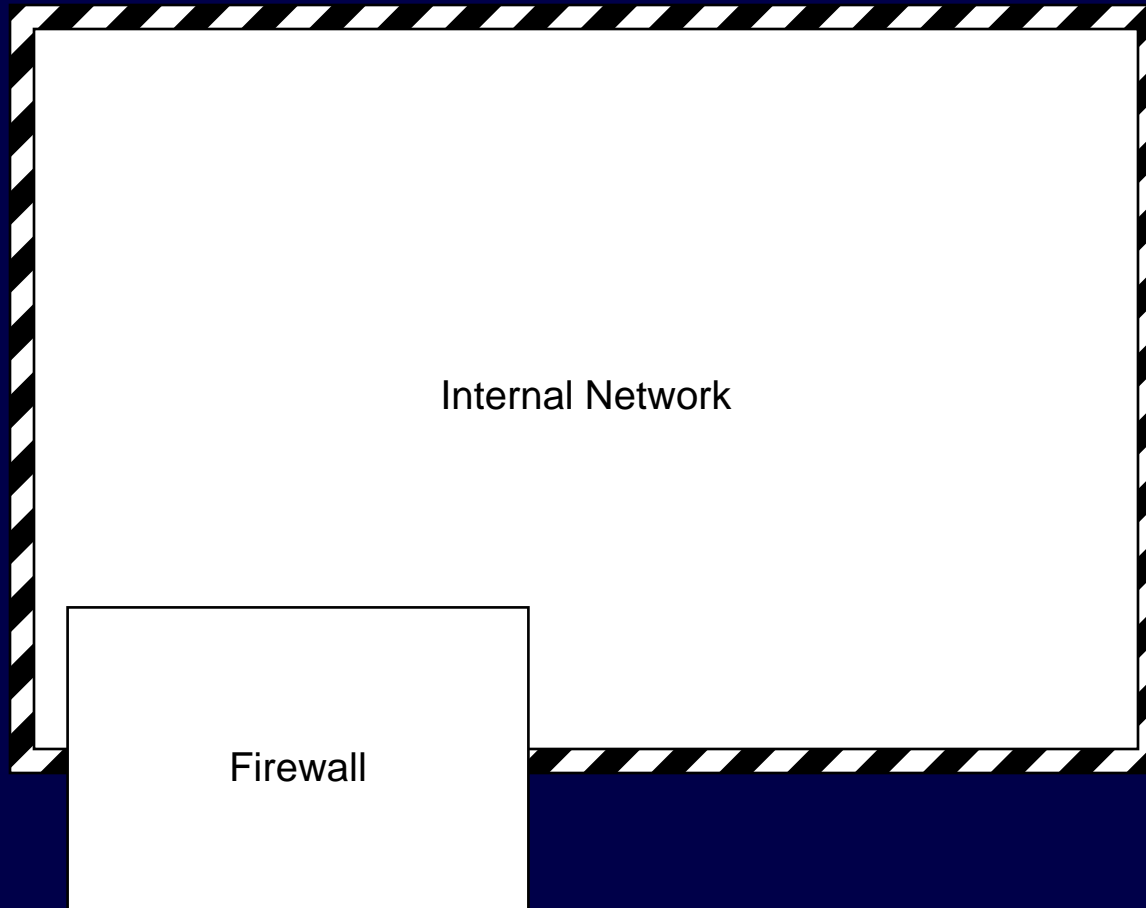 - toe-nail
  - cross-brace
  - hurricane straps

Goal – Seamless Technical TRUST –

- If you don't breach the barrier, it isn't really there. Is it?

- Insufficent walls create catastrophic failures – the "Titanic/Comet Syndrome"

Original Internet – Total TRUST

- No safeguards
- No integrity checks
- No compartmentalization
- Total Net Crash – IMP caused (SEN, 1/1981)
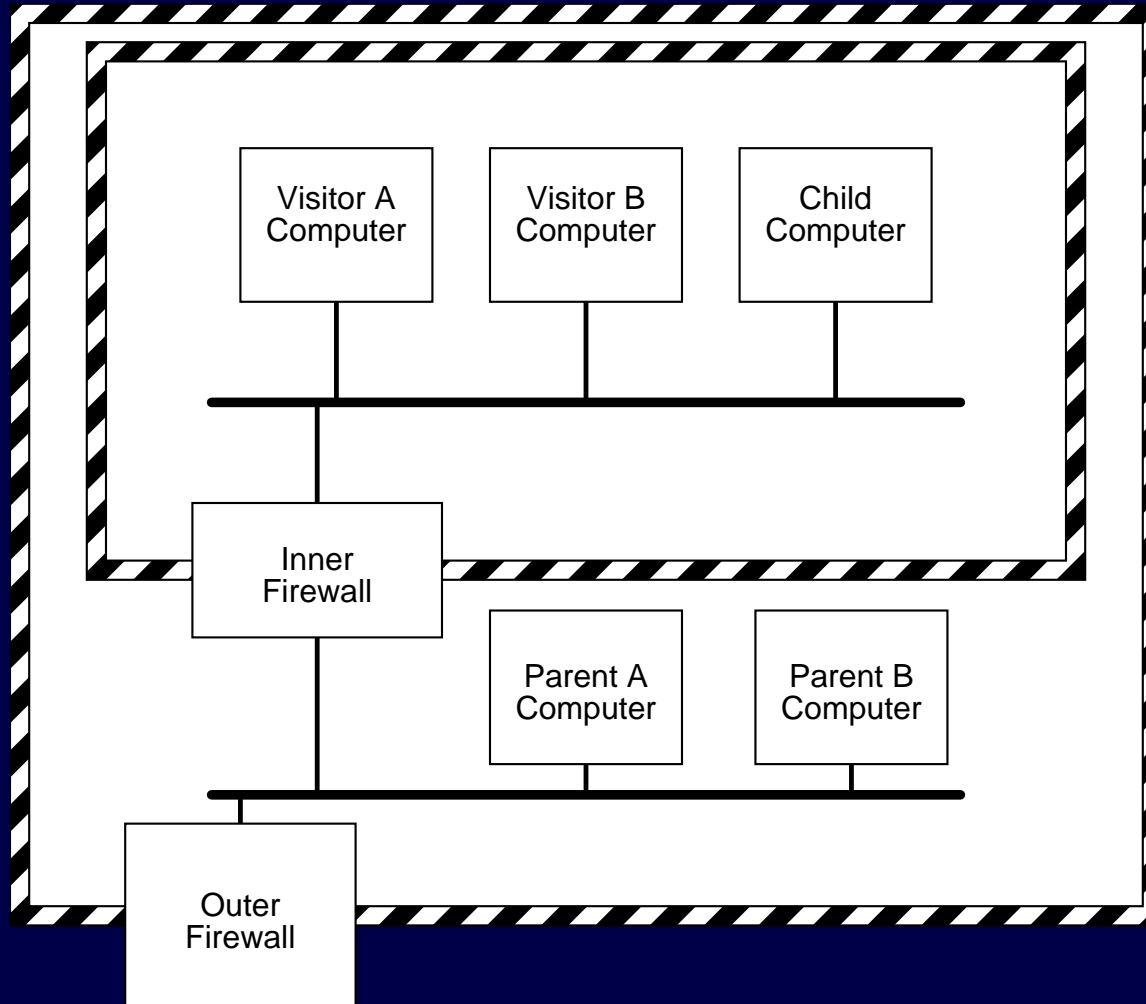- Trusting server processes (e.g., sendmail)

Traditional Simplistic Firewall Architecture

Internal Network

Firewall

Analyze the Threats

- Internal information control ("Need to know")
- Curiosity (e.g., celebrity tax returns)
- Insider fraud
- "Loose lips sink ships"
- Criminal
- Visitor-borne contagion

Traditional Simplistic Firewall Architecture with DMZ

"Inside" Community is more Diverse

- Parents
- Children
- Tradespeople
- Neighbors
- Friends
- Relatives

Questions?

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Session Notes & Materials:
http://www.rlgsc.com/trentoncomputerfestival/2009/index.html