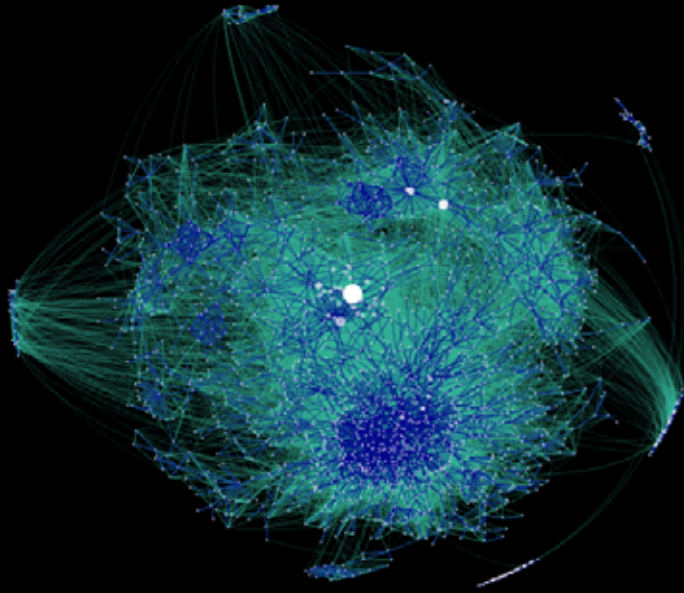


Denial of Service Attack Visualisation



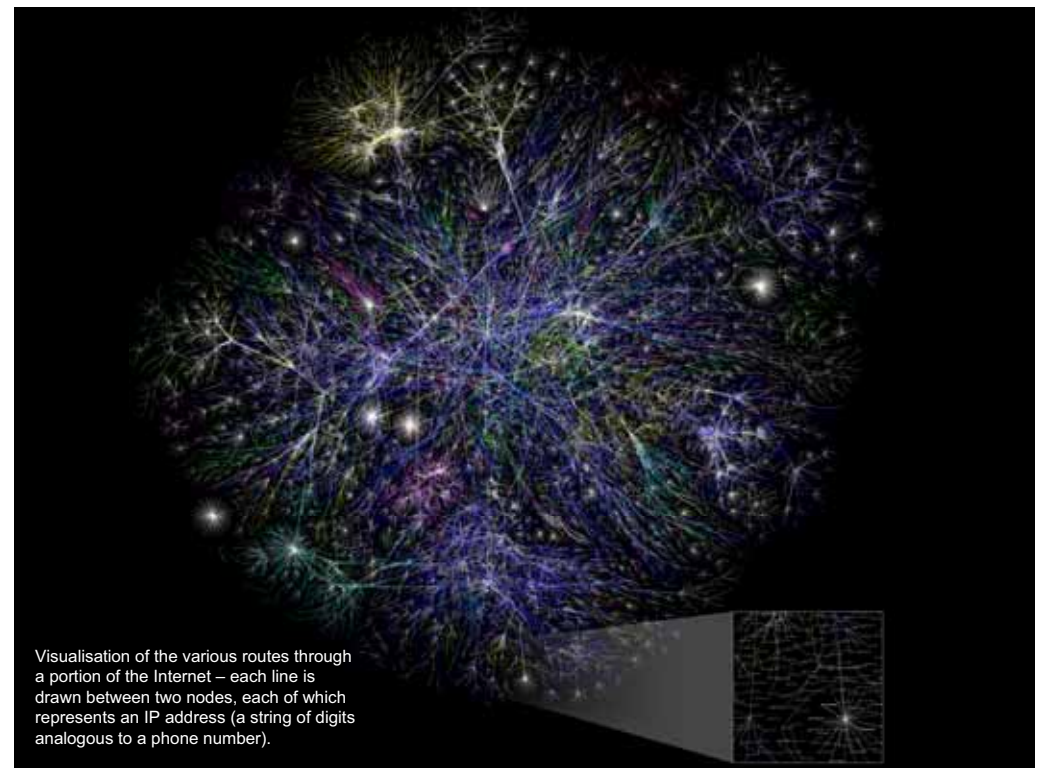
Ensuring Confidence in an Increasingly Connected Digital World



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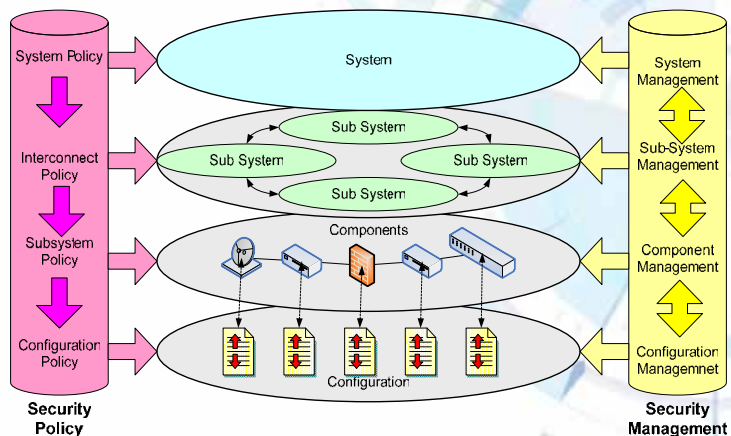
Costs of Cyber Crime and Malicious Cyber Activity

- John Walker Crime Trends Analysis estimates the cost of cyber crime at 80 Billion US dollars in 2007
 - The survey estimated the costs in Europe over 21 Billion US dollars or 0.142% of GDP
- McAfee report estimates the cost of cyber crime at One Trillion US Dollars in 2008
 - McAfee estimated that Data theft and breaches from cybercrime during 2008 may have cost businesses as much as \$1 trillion globally in lost intellectual property and expenditures.



Visualisation of the various routes through a portion of the Internet – each line is drawn between two nodes, each of which represents an IP address (a string of digits analogous to a phone number).

System Security Design



Itaipu Dam Brazil

Satellite image of Brazil on Tuesday 10th November 2009 showing the area blacked out by the Itaipu dam incident.



Threats

- Denial of Service Attacks
 - Prevent use of government systems and services usually at times when they are needed the most
- Identity Theft and Financial Fraud
 - Currently results in multi billion dollar financial losses to financial institutions and individual citizens
- Theft of Information
 - Intellectual property, commercially sensitive information and classified government data is being targeted by foreign governments



Cyber Crime – Services for Sale



Countering the Threat

- Security by Design
 - Build security into your systems and subsystems from the start and provide defence in depth
- Security Operating Centre
 - Have fully trained personnel to monitor the operation of the system to allow a rapid detection and response to an attack
- Security Audit
 - Continuously monitor and maintain the security of systems to counter new threats



Summary

- Users need to operate and collaborate on an international basis while protected from the cyber threat to their communications systems in an environment of:
 - Agreed international policies for interconnection
 - International security standards to support the policy
 - Embedded security across all interconnected systems
- Industry needs to support these activities to provide high assurance systems through:
 - Professional security architecture design
 - Security simulation, audits, training and education
 - Ongoing system security management
- Police forces and their governments can help bring this about through definition of policy and standards for:
 - International interoperability for all data and voice services
 - Interoperable identity and role management
 - Interoperable cryptography and key management