THE EU NIS DIRECTIVE

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OH DEAR - ANOTHER ONE!

• What is NIS? Why?

• What does NIS mean?

• Who’s affected and how?
DIRECTIVE ON SECURITY OF NETWORK AND INFORMATION SYSTEMS

• EU Directive 2016/1148

• Aims to improve cybersecurity across the EU

• Approved in 2016

• To be enacted in national law by May 2018

• Identify operators of essential services by Nov 2018
HIGH LEVEL PRINCIPLES

• Define/establish a competent NIS authority or authorities
• Discrete ones for each sector?
• Provide response teams to share information about risks, early warnings, cooperate on incident handling, etc.
• Reporting regimes, incident notifications
• Fines for non-compliance and/or serious outages
GENERAL APPROACH

• Light-touch and reactive supervision

• Co-operation with law enforcement and other authorities (nationally and across the EU)

• Facilitated by ENISA and European Cybercrime Centre

• Jurisdiction determined by where providers have their main establishment in the EU
SINGLE POINT OF CONTACT

- The SPOC deals with cross-border cooperation & coordination issues
- National SPOC gets reports from Competent Authorities (e.g. appropriate regulator or CSIRT)
- SPOC might interact with a Cooperation Group which consists of member states, ENISA and the EU Commission
ESSENTIAL SERVICES COVERED BY NIS DIRECTIVE

• The obvious usual suspects:
  • Transport, electricity supply, oil & gas, health care, banking & financial markets, water

• Digital Infrastructure:
  • “Important” IXPs, TLD registries & DNS providers
  • Cloud computing providers, search engines & online marketplaces

• Small and micro enterprises are exempt:
  • Less than 50 staff or a turnover below €10M/year
SIGNIFICANT INCIDENTS FOR DIGITAL INFRASTRUCTURE

Must be reported to CSIRT and/or Competent Authority:

- Risk to public safety/security or loss of life
- Loss of service for 5M+ user-hours
- Data loss or breach affecting 100,000+ users
- Damage to at least one user costing €1M or more
UK APPROACH

• Government consultation in 2017

• Defined thresholds - average query/traffic rates

• DNS & IXP operators to be overseen by Ofcom, the telecommunications regulator

  • Internet is expressly not regulated in the UK

• Ofcom decides who are Operators of Essential Services

• Information Commissioner’s Office to deal with search, cloud computing and online marketplaces
DNS THRESHOLDS

- TLDs that average 2B+ DNS queries/day
- Authoritative DNS providers hosting 250,000+ domains
- Recursive DNS services handling 2M+ queries/day from UK IP addresses
- Ofcom has wiggle room to define other OESes
  - Might need to use that
THRESHOLDS AS METRICS

• Not unreasonable starting point, but...

• Hard to accurately & independently measure because of caching, referrals, anycasting, access to query streams, etc.

• Lack of qualitative assessment leaves ugly gaps

  • .scot or .london might be important even though they don’t get enough DNS queries

• BBC only hosts ~100 domains and some of them really matter: e.g. bbc.co.uk, bbc.com
IMPLEMENTATION ISSUES

• Are important overseas TLDs in or out of scope?

• Should anycast DNS providers be included or not?

• Do registrars who park zillions of unused domains matter?

• What about small registrars who handle domains for Fortune500 or Alexa top 100 web sites?

• Independent monitoring or rely on self-reporting?
NIS ELSEWHERE

• Other EU member states following a similar approach but some details might be different

• Comms regulator probably gets oversight of DNS

• National cybersecurity organisations get some sort of hands-on or advisory role

• Legislation & consultations still under way or pending in some EU member states
QUESTIONS & COMMENT