Internet Society

Collaborative Security

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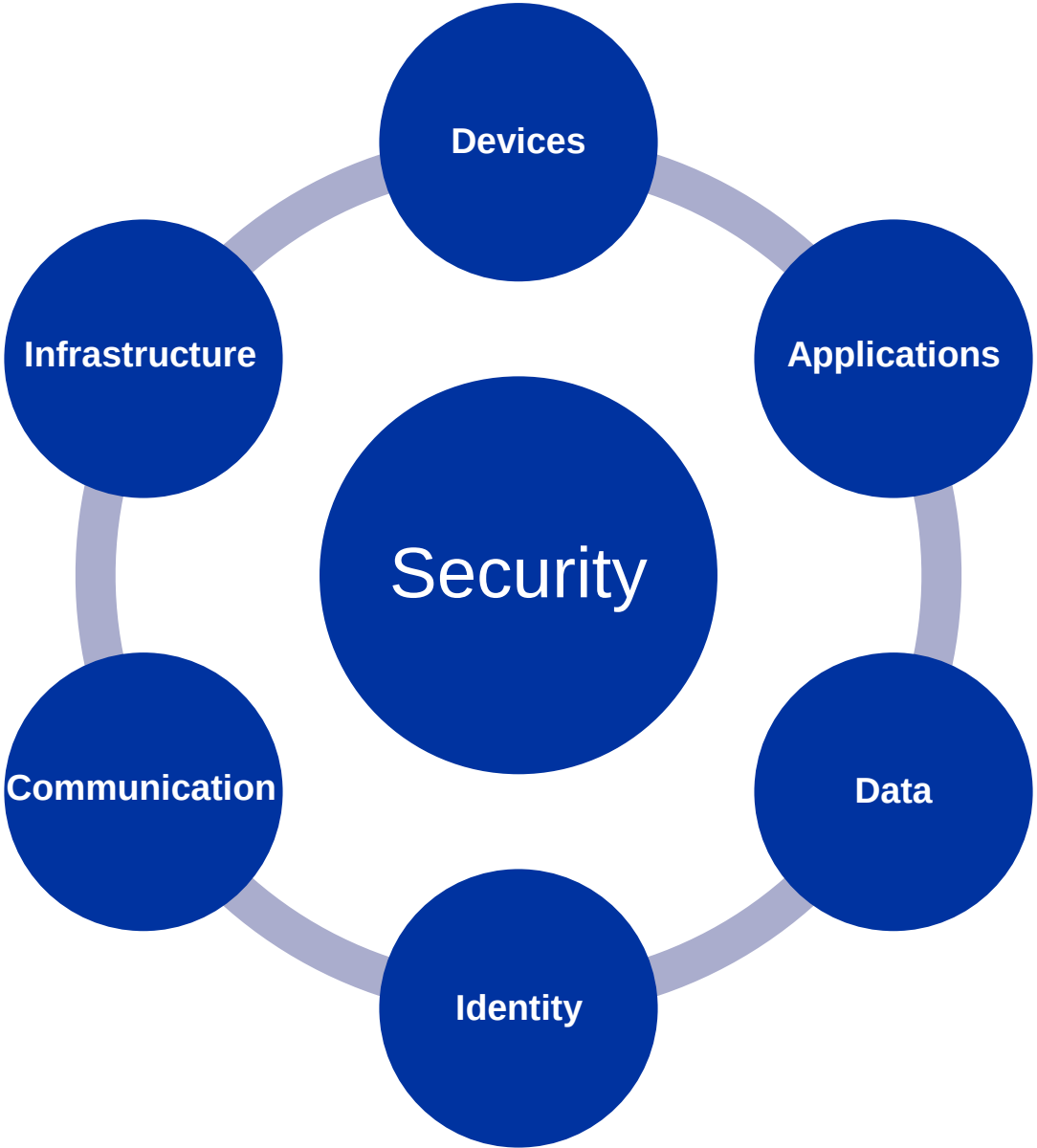
Internet Society™

What is Cybersecurity?



Fundamental Properties of the Internet

- **Global reach** (e.g. global, managed addressing and naming services)
- **Permission-free innovation**
- **Accessibility**
- **Interoperability and open standards**
- **Voluntary collaboration**
- **Reusable building blocks**

Fostering Confidence and Protecting Opportunities

Collective Responsibility

Evolution and Consensus

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Fundamental Properties and Values

Think Globally, Act Locally

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Technical Community

Create technical security solutions consistent with the fundamental properties of the Internet

• **Open standards:** The development of Internet standards within the Internet Engineering Task Force (IETF) is a prime example of solutions that **scale globally** and are available for people **to act locally**. Deployment of these standards is also a collective responsibility – especially as these standards are **voluntary** in nature.

- Secure BGB (Border Gateway Protocol)
- DNSSEC (securing integrity and authenticity of DNS responses)
- RPKI (Resource Public Key Infrastructure – certification of Internet number resources and hence foundation for global routing system)
- Kerberos Network Authentication System (verifying identities of open unprotected networks)
- TLS, IPsec…

Industry

Maintain confidence and trust in the network as a basis for business operations and services

• **Secure routing:** An initiative launched last year, the Mutually Agreed Norms for Routing Security (MANRS), is a **voluntary, bottom-up agreement between network operators** to collaborate together to improve the security of the Internet's routing system.

1. **Filtering:** Prevent propagation of incorrect routing information.
2. **Anti-spoofing:** Prevent traffic with spoofed source IP addresses.
3. **Coordination:** Facilitate global operational communication and coordination between network operators.
4. **Global Validation:** Facilitate validation of routing information on a global scale.

For more information: www.manrs.org

MANRS participants today

RIPE NCC	NL	3333	✓	✓	✓	✓
KPN	NL	1136, 5615, 8737	✓	✓	✓	✓
IT.Gate	IT	12779	✓	✓	✓	✓
Cogent Communications, Inc.	US	174	✓	✓	✓	✓
Workonline Communications	ZA	37271	✓	✓	✓	✓
BIT BV	NL	12859	✓	✓	✓	✓
OpenCarrier eG	DE	41692		✓	✓	✓
NOOR Data Networks	EG	20928	✓		✓	✓
RUNNet	RU	3267	✓	✓	✓	✓
Swisscom Ltd.	CH	3303	✓	✓	✓	✓
Gigas	ES, US	57286, 27640	✓	✓	✓	✓

Government

Leadership and coordination of cybersecurity efforts through legal reforms and public-private partnerships

• **Cybersecurity strategies:** Evidence-based strategies that **embrace technology and innovation** rather than reactive, short-term policy actions. A mandatory regulatory model is unlikely to be effective. Successful set of policies should increase Internet users' willingness to access Internet services and systems, and to participate in the ecosystem.

• **Critical Infrastructure Protection:** Often a shared responsibility between governments and commercial/ non-governmental entities.

• **Public private partnerships (PPP):** Facilitation and coordination of PPPs to facilitate information sharing and voluntary industry adoption of best practices. European examples of cybersecurity PPPs include: EC3, ECTEG, Cyber Security coalition (BE).

Collaborative Response

Leadership and coordination of cybersecurity efforts through legal reforms and public-private partnerships

• **CERTs:** Computer emergency response teams (CERTs) or computer security incident response teams (CSIRTs), established by governments, businesses, educational institutions, private enterprises and others, to fight some of the threats to Internet security. Their strength grows when they collaborate together to **share security information**. Through organizations such as the Forum for Incident Response and Security Teams (FIRST), these teams are showing the elements of "collaborative security" in action on a daily basis.

• **And more:** Hundreds of Network Operator Groups (NOGs) around the world; the DNS security community; academic conferences such as NDSS, bringing together security researchers.

Get Involved

There are so many ways to support the Internet. Explore how you can make an impact.

- Become a Member
- Join a Chapter
- Attend an Event

This is your Internet. Join it!

www.internetsociety.org

For any questions, please contact me at: palovirta@isoc.org