RP#80

RESEARCH PROJECT

PREVENTING MOST COMMON ATTACKS ON CRITICAL INFRASTRUCTURES

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RESEARCH QUESTIONS

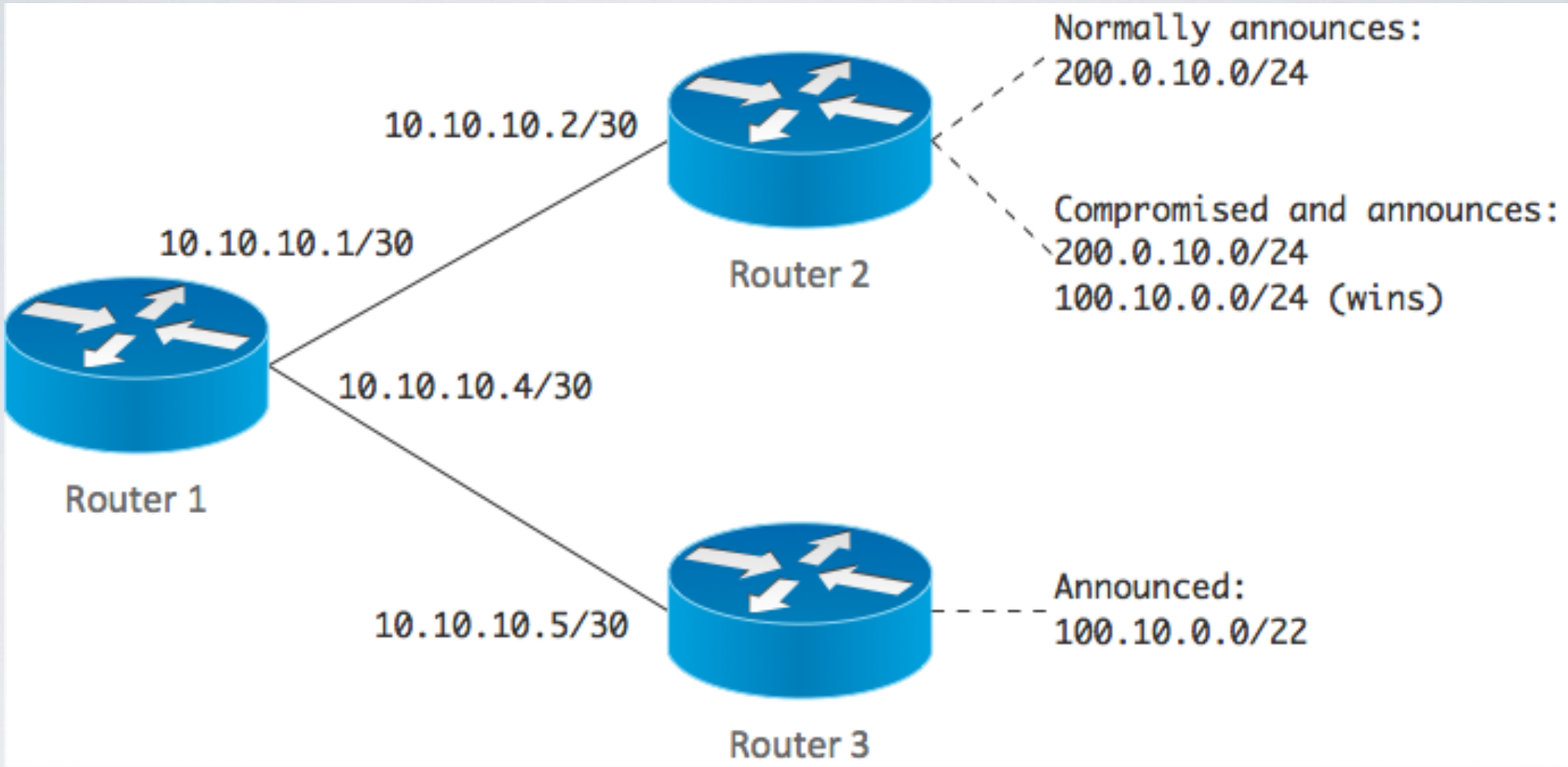
- *Which techniques are available today that could be used to mitigate common attacks?*
- What kind of attacks are critical infrastructures suffering from?
- What kind of techniques can be used?
- Why are these techniques not common practices?

INTERVIEWED COMPANIES

- KPN
- A2B Internet (Erik Bais)
- NLnet (Marc Gauw)
- A multinational company

COMMON ATTACKS

- BGP Hijacking
- DDoS
- Email Abuse (e.g. Phishing)



EXAMPLE: BGP PREFIX HIJACKING

MEASURES: BGP HIJACKING (I)

- Peer Policies
- Detailed route filtering per neighbour
- Prefix
- AS_PATH filtering
- IRR

MEASURES: BGP HIJACKING (II)

- Securing BGP sessions

- BGP Origin Validation/BGPsec

MEASURES: DDoS ATTACKS

- Scrubbing
- Ingress / egress / uRPF
- BGP FlowSpec
- Trusted Networks Initiative

TRUSTED NETWORKS INITIATIVE

- Last-resort solution for DDoS mitigation
- “Raising the Internet bridges”
- AMS-IX / NL-IX
- Foreign equivalent: The FENIX Project (Czech)

MEASURES: EMAIL ABUSE (I)

- SPF
- DKIM
- DMARC

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MEASURES: BUSINESS

- Creating awareness
- Creating business cases for security measures
- Possible reputation damage
- CERT

CONCLUSION

- Identified common attacks
- Techniques are not the problem
- Awareness
  - "Get Hacked!"
- Balance between Business & Security
- Implement suggested security measures

REMARKS

- More mitigation techniques

- Configuration examples

THANK YOU FOR YOUR TIME

QUESTIONS?