EAGER: Collaborative: Leveraging High-Density Internet Peering Hubs to Mitigate Large-Scale DDoS Attacks

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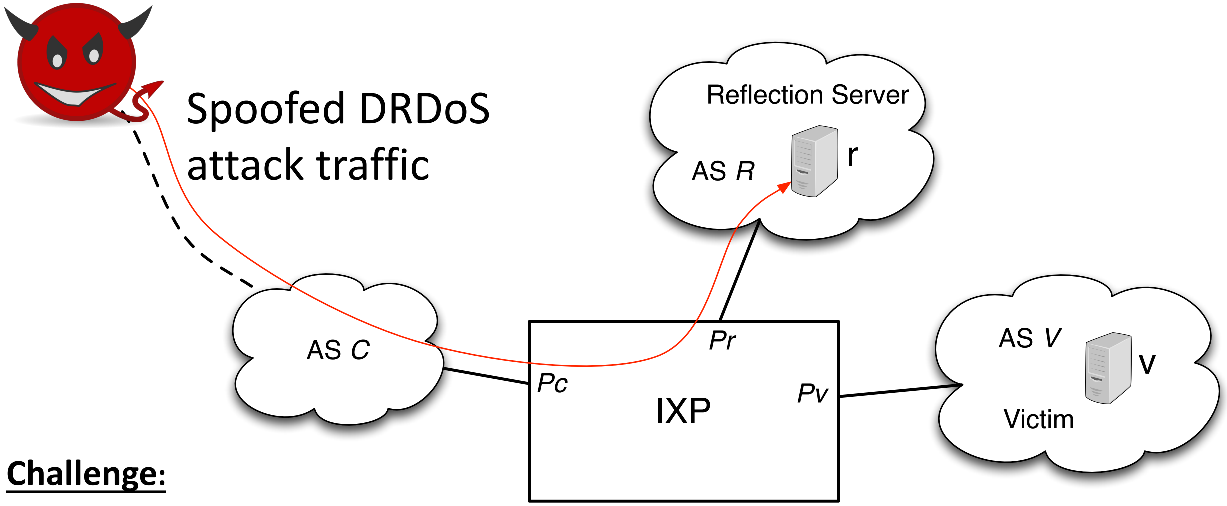

Spoofed DRDoS attack traffic

AS-to-Port Matrix

Before Spoofed Traffic

		Pc		*Pv*	
AS *V*	0 0	0	0 0	W	0 0

After Spoofed Traffic

		Pc		*Pv*	
AS *V*	0 0	Y	0 0	W	0 0

Challenge:

- Volumetric DRDoS attacks can completely overwhelm a victim network
- How can we filter out DRDoS attack traffic upstream, so that the target AS's bandwidth is not exhausted?

Solution:

- Build a DDoS defense that can be deployed at IXPs
- Filter DRDoS traffic at IXPs where the victim (or its upstream providers) peers with other networks

Scientific Impact:

- Develop DRDoS defense based on anomaly detection
- Learn how traffic normally crosses the IXP
- Detect spoofed DRDoS traffic by detecting anomalous traffic routing paths
- Block DRDoS attack traffic before it reaches the victim (selective blackholing)

Broader Impact:

- Open-source DRDoS defense system specifically for IXPs
- IXP operators can collectively defend DRDoS victims
- Significant contribution to improving Internet security