The $30 Trojan horse

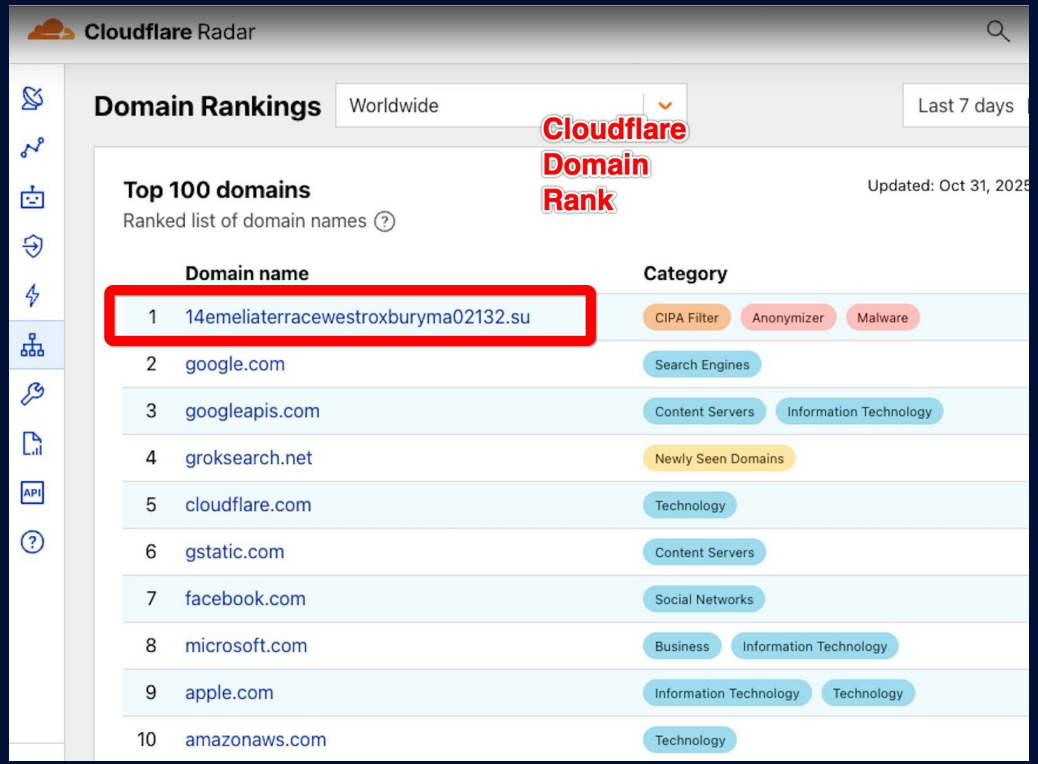
How off-brand Android TV boxes became DDoS infrastructure

Jérôme Meyer

Nokia Deepfield Emergency Response Team (ERT)

31 October 2025: something strange in (Cloudflare) DNS ranking

Wait, what's at number one?



- A botnet C2 domain with more DNS queries than Google
- .su = Soviet Union TLD (yes, it still exists)

https://x.com/Xlab_qax/status/1984194350277157146

How we got here

Not our problem (until it was)

2014-2023: "Someone else's problem"

- Fraud infrastructure (credential stuffing, ad fraud)
- Not a network threat — abuse team territory

2024: First network impacts

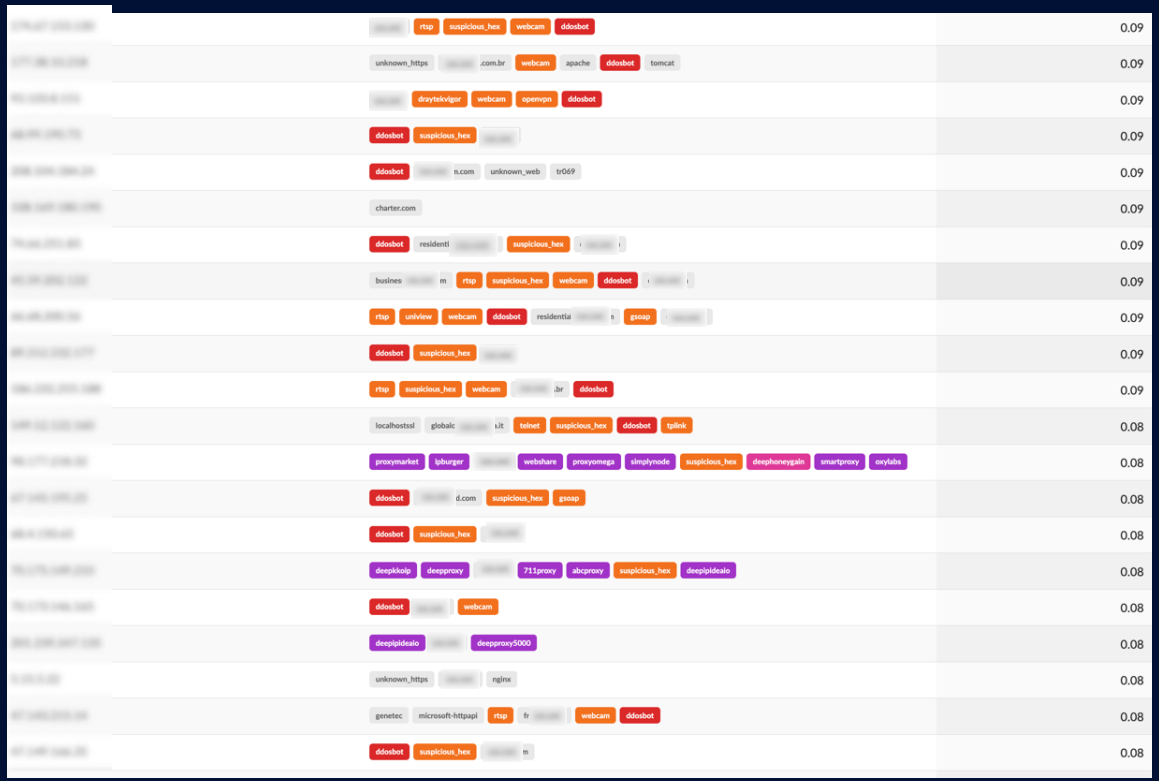
- NoName057(16) weaponizes free VPN apps for DDoS
- Residential endpoints begin appearing in attacks

2025: ResHydra emerges

- We start talking about "ResHydra" (early 2025): Residential proxies weaponized as DDoS infrastructure
- Rapid botnet succession: RapperBot → Aisuru → Kimwolf
- Latent attack surface: 100-200M consumer endpoints

Motivation Bot / Proxy

example of DDoS botnet with proxy components (May 2024)



2024: **occasional** res proxy in DDoS

- Probable **CVE**
- Active in **Botnet** (48h)
- Active in **Proxy** (24h)
- Active in **Monetization** (48h)

Motivation Bot / Proxy

example of DDoS primarily using res proxy (May 2025)

Proto	TCPFlag	Peer	Src IP	SPort	Dst IP	DPort	Detect	Src Genome	Bytes	Len
17				49676		3002		deepproxy8886	16605040640	1,428
17				36663		3002		proxyomega deeptorrent deepipdealo deepproxy deepproxy8886 plainproxies	16051539968	1,428
17				16014		3002			14022034432	1,428
17				56899		3002			12361530368	1,428
17				47839		3002		lunaproxy deeptorrent deepipdealo deepproxy deepkkoip 711proxy proxycake proxyempire deepproxy8886 flyproxy	11254528000	1,428
17				9170		3002		proxyempire deepipdealo deepproxy	10701026304	1,428
17				6194		3002		deeptorrent maximuma.net deepproxy dabproxy deepproxy8886	9778524160	1,428
17				31456		3002		rtsp gsoap webcam soap	9700253696	1,428
17				9816		3002			9225022464	1,428
17				22964		3002		lunaproxy enigmaproxy deepipdealo deepproxy deepkkoip 711proxy proxyempire flyproxy plainproxies	9225022464	1,428
17				17877		3002		webshare deepipdealo deepproxy dabproxy proxycake	8487021056	1,428
17				52109		3002		deeptorrent deepproxy dabproxy proxyempire	8487021056	1,428

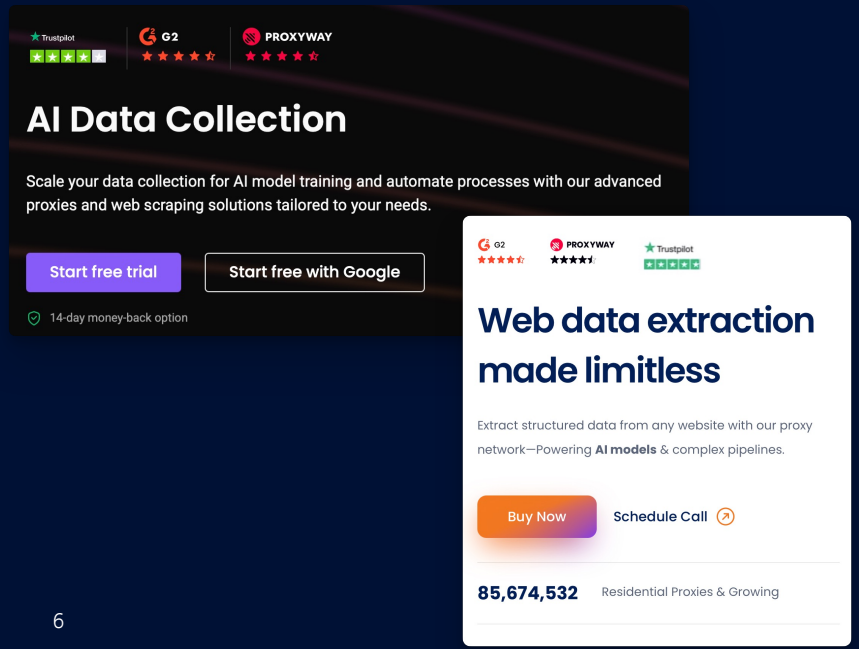
2025:

Regular, daily large-scale res proxy DDoS

AI needs data, criminals need revenue

Supply, meet demand

Demand side: AI training pipeline



Supply side: Symmetric Gigabit changed the math

- Average endpoint bandwidth: 275 Mbps → 482 Mbps (+75%)
  - (North American botnet endpoints, Q2 2024 → Q2 2025)
- Supply chain compromises at scale
  - TOTOLINK firmware server: 100K+ routers in one operation

The attack surface shift

The devices you can't see

“Conventional” DDoS botnets (2016-2024)

- Exposed IoT devices
- IP cameras, DVRs, routers
- Port forwarding, mostly static IPs
- Directly internet-facing

- You can scan for them
- **~1M** active bots at peak

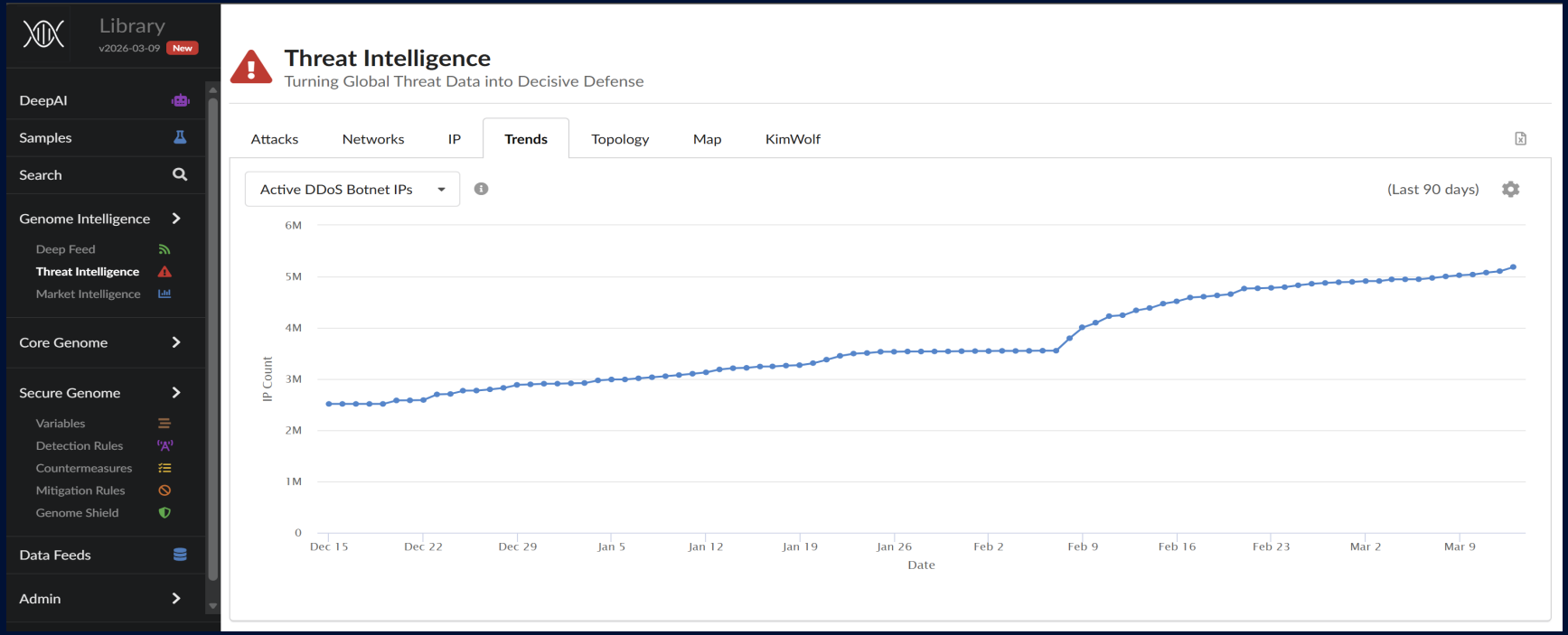
ResHydra/Kimwolf era (2025+)

- Consumer endpoints
- Android TV boxes, mobile apps
- "Free" VPN software
- Behind NAT / CGNAT

- Mostly only outbound
- **100-200M** exploitable surface

Daily Active DDoS Botnet Endpoints

Growth from 1M enterprise botnet in 1H2025 to 5M resproxy + enterprise



Data from Deepfield Secure Genome

2025: the year everything scaled

RapperBot

- Early 2025
- 30-50k bots

Single largest DDoS botnet we tracked (then)

Aisuru

- Mid-2025
- 300-500k bots

Absorbed RapperBot nodes post LE take-down

Kimwolf

- Late 2025
- ~3M active (DDoS)
- 100-200M latent capacity (ResHydra: res proxies weaponized for volumetric DDoS)

Overtaking Aisuru in observed attack volume

Kimwolf

The big one

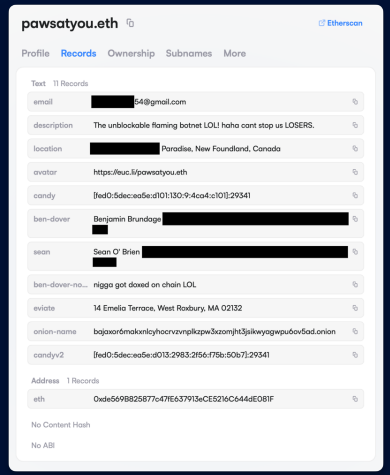
Emerged in late 2025

What we know

- Apparent operator overlap with Aisuru
- Larger volumetric DDoS capability
- C2 include `re6ce[.]eth` (ENS)
- ~3M bots active for DDoS
- November 2025: Overtaking Aisuru in observed volume
- LE action on 19 March — disruption ongoing

Latent capacity

- Current DDoS usage: ~3M active bots
- 100-200M endpoints potentially available (ResHydra)



Kimwolf

The `0.0.0.0` trick: When the proxy SDK routes traffic to itself

Attacker
purchases IPIDEA proxy

→

Proxy
routes to `xd.resi[.]to`

→

`0.0.0.0`
Resolves to device itself

→

`ADB:5555`
Unauthenticated shell

- Attacker doesn't need to scan the internet
- Proxy SDK routes request to device's own loopback
- Device "scans itself" for open ADB
- Attacker gets shell access
- Device joins botnet and becomes proxy node

https://synthient.com/blog/a-broken-system-fueling-botnets

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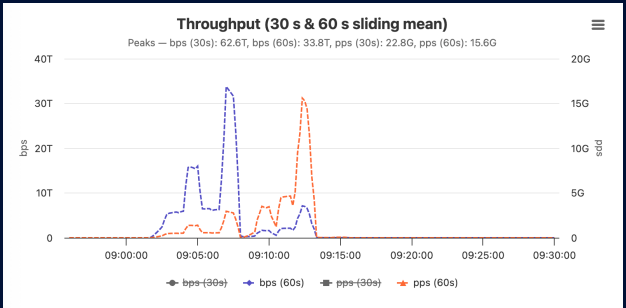
Attack capabilities

Real devices, real IPs, real problem

- **February**: 6.5 Tbps (Nokia Deepfield)
- **April**: 4.8 Gpps (Cloudflare)
- **September**:
  - 11.5 Tbps (Cloudflare / XLab)
  - 22 Tbps (Cloudflare)
- **October**: 33 Tbps (Nokia Deepfield)



Attack vectors

- UDP floods (500-700 byte packets, randomized ports)
- TCP floods with randomized flags
- GRE floods
- HTTP(s) via res proxy module

Virtually no IP address spoofing: real devices, real IPs

Attack capabilities

Real devices, real IPs, real problem

botmon **L7 attack summary (60m) – kimwolf**

- `login.live.com` (AS8075/microsoft.com/US) | HTTP | 34900 reqs (password, email)
  └─ [redacted]
- `i.instagram.com` (AS32934/facebook.com/NL) | HTTP | 1 reqs (account_enum)
  └─ [redacted]

Total: 34901 requests to 2 hosts

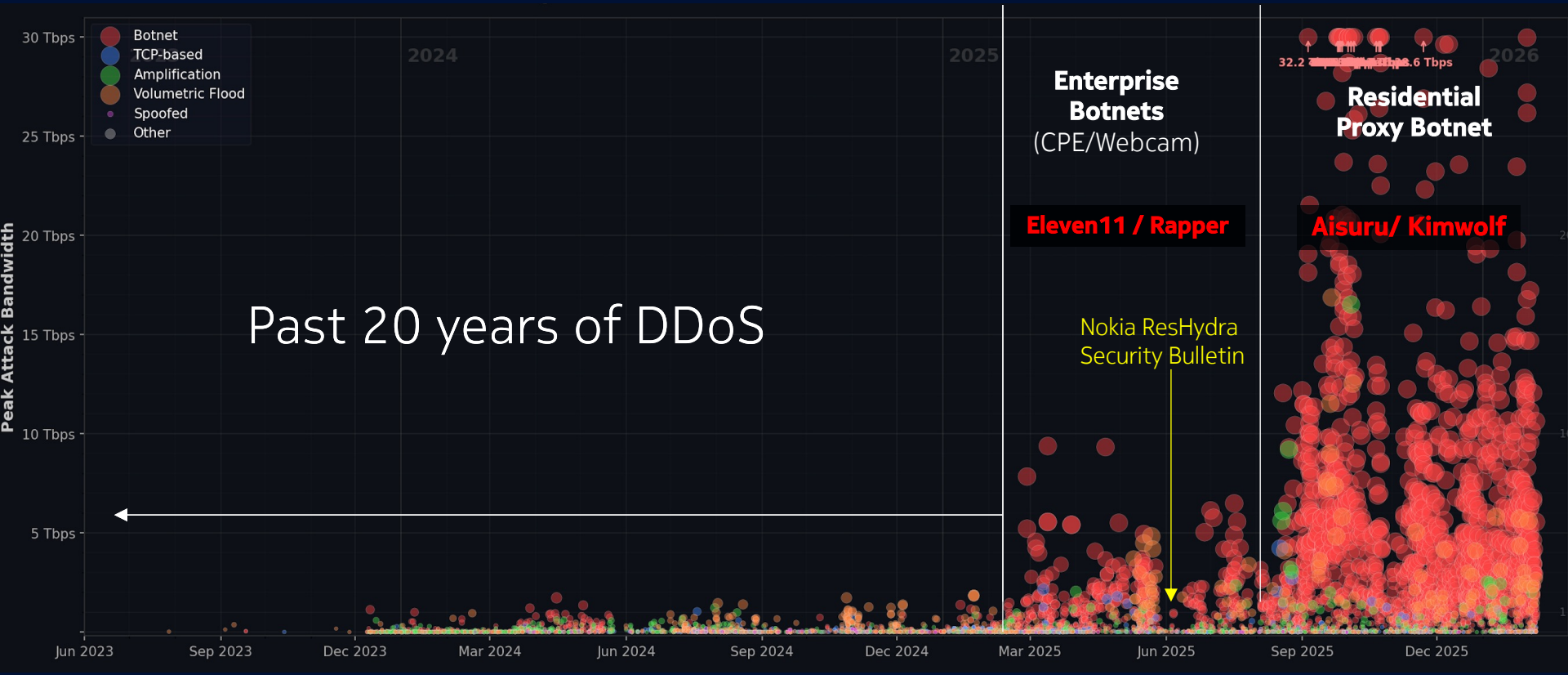
- L7 credential stuffing + account enumeration attacks (sinkholed) from recent Kimwolf payload (2026-02-05)

botmon **L3/L4 attack alert – kimwolf**

- `66.165.249.74` (AS29802/hivelocity.net/US) | UDP/:2589 | 540B (fixed) | 1.1M pps (5580.6 Mbps)
  └─ 72.6M pkts / 42.2 GB over 65s

- UDP flood from recent Kimwolf payload (2026-02-05)

Kimwolf / Aisuru



Sample of attacks over last 12 months. Each circle represents individual attack with color (e.g. red == botnet) mapping to attack type and size of circle correlates to duration. DDoS transition from enterprise botnet to Resproxy August 2025

Your network is the weapon
(and sometimes, the target)

Outbound impact

- Attack traffic from your users overwhelms your infra
- CGNAT device failures observed under attack load; congested peering links in several networks
- Non-infected subscribers experience collateral outages

Six families, one attack surface, three months

Pulling the thread from Kimwolf revealed an ecosystem

The thread

- We analyzed Kimwolf in late 2025 — 3M active bots, ENS-based C2
- Shared cryptographic fingerprint (RC4+LCG, seed `0xe0a4cbd6`) linked it to Aisuru and Jackskid
- Identical port pools, signing certificates, and co-located infrastructure confirmed: one operation, multiple codebases

The land rush

Once ADB-via-proxy proved viable, independent operators piled on:

- **Katana** (Mar): On-device rootkit compiled via TinyCC
- **CECbot** (Mar 20): First malware to weaponize HDMI-CEC — TV appears off, bot keeps running
- **Drifter** (Mar 28): Independent codebase, 2.6 Tbps from 80K sources, masquerades as CCTV management traffic

All published at https://github.com/**deepfield/public-research**

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Summary & close

1. These devices are **already on your network**

   Budget Android TV boxes in student housing, mobile apps with embedded proxy SDKs — they arrive compromised, no user error required

2. **Look for C2**, not just attack traffic

   ENS queries from residential subnets, DNS to .su/.st/OpenNIC TLDs, outbound traffic on non-standard port pools — these are the signals that precede attacks

3. **Disruption at the edge** works

   Blocking C2 communication stops both the DDoS commands and the proxy revenue — one policy, two threats neutralized

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