DNS4EU
Public resolvers

Approaching to public launch

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Co-funded by
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Agenda

1. DNS4EU products

2. Public resolvers

3. Threat Intelligence

4. DDoS protection

4. Private data anonymization

5. Comparison with other services

6. Adoption

DNS4EU Product overview

Governments
Commercial offering

For national cyber security center, covering all governmental bodies

Option of on-prem, cloud & hybrid deployment, administration console with monitoring, integrations and advanced multi-tenancy.

ISPs and Telcos
Commercial offering

For connectivity providers, offered as value-added service

White-labeling, End customer portal, integration with CRM, national regulations, network insights.

Public resolvers
Free public service

For general & expert public

Community-driven threat-intelligence, private data anonymization, different filtering options, distributed nodes across the EU.

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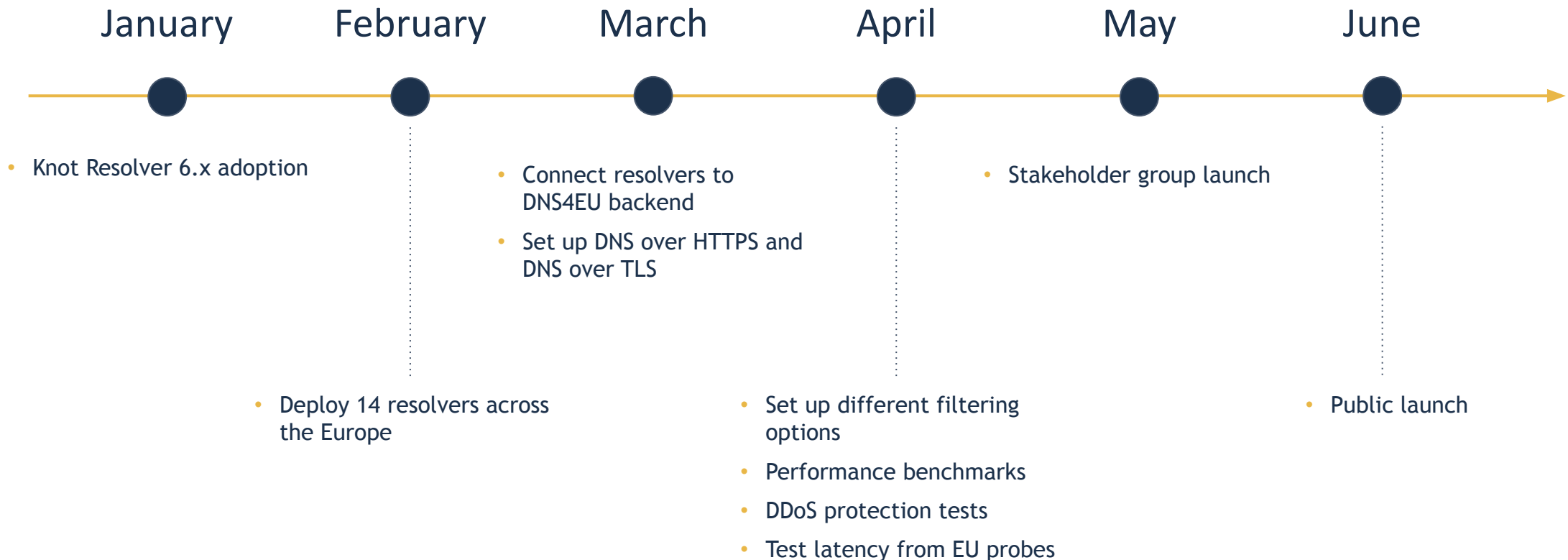White-labeling, End customer portal, integration with CRM, national regulations, network insights.

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Public resolvers timeline

January
- Knot Resolver 6.x adoption

February
- Deploy 14 resolvers across the Europe

March
- Connect resolvers to DNS4EU backend
- Set up DNS over HTTPS and DNS over TLS

April
- Set up different filtering options
- Performance benchmarks
- DDoS protection tests
- Test latency from EU probes

May
- Stakeholder group launch

June
- Public launch

Public resolvers map

Threat intelligence

DNS4EU threat intelligence

Industry standard

Public and community data sourcing

Proprietary threat intelligence, threat feed licenses

Other partnerships, e.g. abuse operators

Threat hunting by security experts

Telco market leadership

Telco fraud prevention teams

Telco crowdsourcing

DNS4EU Consortium

Consortial partners

MISP integration with national CERTs & NSCSs

R&D with academia (CVUT, NASK)

Community-driven intelligence

Whalebone in-house research
Commercial offering for governments and connectivity providers

Agent for malicious domain prediction and early detection

Network Traffic Analyzer

Whalebone Virtual Analyst

Whalebone DGA Sonar

Whalebone DNS tunnel Block

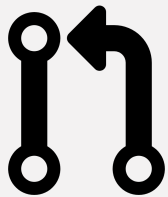# Community-driven threat intelligence

Community

Whalebone
TI team

DNS4EU
resolvers

Pull request

```
domain;category*;threat_name*;country*;note*;
www.projectplan365.com; compromised; gootloader;;;
```

Categories: Malicious*, C&C, Coinminer, Compromised website, Malware, Phishing, Spam

Community-driven threat intelligence

March 2025

Best contributors

72 domains

Michal Cáb
MichalCab

41 domains

Paweł Pawliński
pp-

21 domains

Robert Šefr
robcza

Contributors with the highest impact

5.1M queries

Peter Thomassen
peterthomassen

2.3M queries

Michal Havelka
mhavelka

0.8M queries

Vladimír Čunát
vcunat

Public resolvers filtering options

PROTECTED

XX.XX.XX.1

Protected resolution

FILTERED

XX.XX.XX.11

Protected resolution with child protection & ad-filtering

XX.XX.XX.12

Protected resolution child protection

XX.XX.XX.13

Protected resolution with ad-filtering

PURE

XX.XX.XX.100

Pure resolution

DDoS protection & high-availability

Network level (Anycast)

- Traffic routed to the nearest resolver
- ASN not announced once resolver not available → traffic re-routed

Infrastructure level (Datapacket Shield)

- Dedicated hardware in the data centers
- Intercepting packets on L4 layer (SYN floods, Volumetric shields)

Application level (Knot Resolver 6.x)

- Query rate-limiting per IP range (configurable)
- Queue prioritization based on resources consumption

Private data anonymization

- Many public services do not (fully) anonymize the data

- There is no legal control over the data

- DNS4EU private data anonymization on the resolver

- Domains preserved for the analysis

[DNS-OARC recording](#)
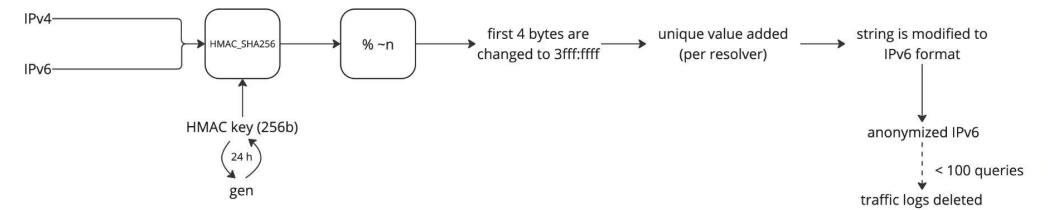
Public resolvers comparison

Feature	DNS4EU	Google	Cloudflare	Quad 9	AdGuard *(commercial)*
DNSSEC	Yes	Yes	Yes	Yes	Yes
DNS over HTTPS/TLS	Yes	Yes	Yes	Yes	Yes
DNS over QUIC	in 2025	No	No	No	Yes
Private data anonymization	Yes	*No*	*No*	Yes	No
Filtering options	Pure Protective Child protection Advertisement	Pure	Pure Protective Child protection	Pure Protective	Pure Protective Child protection Advertisement

[Full comparison](#)

Public resolvers adoption

- Will you use public DNS4EU resolvers? Would you recommend it to your friends?

- What do you consider as main benefits?

- Do you miss anything and expect it?

- Do you have any concerns for usage?