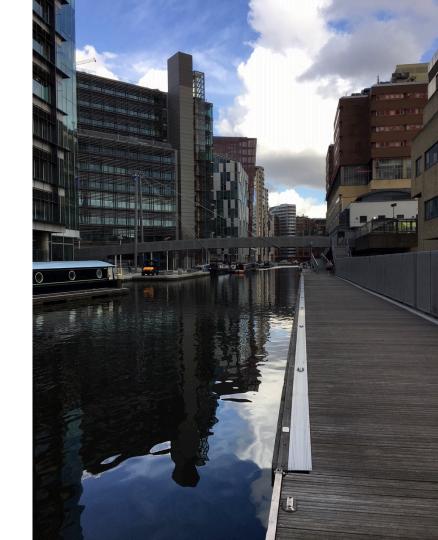
# IETF Hackathon: DOTS Interop

IETF 101 17-18 March, 2018 London



#### **DOTS Hackathon Plan**

- Test the interoperability between independent implementations:
  - See the maturity of these core specs of DOTS protocol
    - draft-ietf-dots-signal-channel-17
    - draft-ietf-dots-data-channel-13
- Implementations
  - OSS by NTT: nttdots: https://github.com/nttdots/go-dots
  - Proprietary implementation of NCC Group
  - Proprietary implementation of Arbor (couldn't attend this time)
  - Proprietary implementation of Huawei based on nttdots

## **DOTS Hackathon Achieved**

	ft version: draft-ietf-dots-signal-ch										
https://datatracker.ietf.org/doc/draft-ietf-dots-signal-channel/											
Pur	pose: Check interoperability of the	e message	es on the signa	l channel							
# DOTS Signal Channel Features implementation status						# Interoperability	# Interoperability Testing Results				
#	feature	ncc*	nttdots*	huawei	arbor			DOTS Server			
1	Session Configuration	✓	$\overline{\checkmark}$			1. Session Con	figuration	ncc	nttdots	huawei	arbor
2	Mitigation Request	<b>▽</b>	✓				ncc	✓	✓		
3	CoAP Ping	✓	<b>~</b>				go-dots(ntt)	<b>▽</b>	$\overline{\checkmark}$		
4	observe	▼					huawei				
5	efficacy update	<b>V</b>				DOTS Client	arbor				
6	request confliction handling	<b>V</b>									
7	confliction notify										
8	deadman's trigger	man's trigger						DOTS Server			
9	gateway function	$\overline{\checkmark}$				2. Mitigation Re	2. Mitigation Request		nttdots	huawei	arbor
10	redirection						ncc	▼ *	▼ *		
11	happy eyeballs	✓					go-dots(ntt)	▼ *	▼ *		
	* supporting both PKI and PSK						huawei				
						DOTS Client	arbor				
# DOTS Data Channel Features implementation status							* supporting mid	/cuid in URI-Pa			
# 1	feature	ncc	nttdots	huawei	arbor						
	Register DOTS clients							DOTS Server			
	Register Alias	<b>V</b>				3. CoAP Ping		ncc	nttdots	huawei	arbor
3	Register Filtering Rules	▼					ncc	<b>▽</b>	▼		
							go-dots(ntt)	▼	<b>▽</b>		
							huawei				
						DOTS Client	arbor				

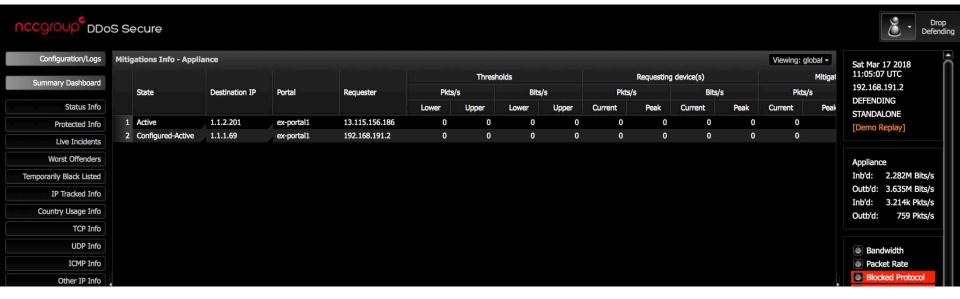
# We are getting there!

- DOTS (DDoS Open Threat Signaling) protocol
  - Makes Distributed Denial of Service (DDoS) Protection more effective with its programmatic capability.
  - -Protects the Internet from DDoS attacks.

 We confirmed that we can do cooperative DDoS Protection operations between (at least 2) independent implementations

# **Example Protection of IP**

 Successful Mitigation Request from OSS DOTS client (nttdots) to proprietary DOTS server (NCC Group) – and vice versa.



### What we learned

- We can meet the expectations for DOTS protocol from the market soon
  - Draft Signal Channel spec is almost stable
- In the Hackathon, we tested based on proposing spec (to be included in the coming -18 draft), so it is proven to work!
- Discussed and clarified a lot about the current drafts text
- Discussed adding new feature on the protocol, which could be included in the DOTS spec in future

# Achievements in detail (for WG)

#### **Achievement 1. During the Hackathon**

Successfully worked interoperable features

- CRUD operations on session configuration and mitigation request
- gateway function (on NCC Group side)
  - Nttdots client traffic to NCC Group DOTS Gateway relayed to nttdots server + cdid addition
  - the usage of "cdid" is now under discussion
- PKI and PSK mode on DTLS
- cuid/mid in URI-path: it helps an implementation using libcoap

#### **Achievement 2. In preparation for the Hackathon**

Actually nttdots and NCC Group did interop tests internally 3 times! before the Hackathon

- Agreed on trying with the latest spec (-17 or later)
  - Updated models so as to comply with that
- Added CoAP ping capability (on nttdots side)
- Many fixes of the code on both side

## Wrap Up

Team members:

Kaname Nishizuka (NTTCom)

Jon Shallow (NCC Group)

Liang 'Frank' Xia (Huawei)

First timers @ IETF/Hackathon:

Nagata Takahiko (Lepidum)

Dong Yue (Huawei)

Thank You