Working together to improve routing security for all

The MANRS IXP Programme

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A bit of history

EURO-IX 28th Forum: "What is in MANRS for an IXP?"

Is routing security important for your community?

- An opportunity to build a "safe neighborhood"

Do you need a global reference point?

- A platform where you can organize related activities

Are you willing to feed your expertise back to MANRS?

- Strengthening the global community

Developing a set of useful actions
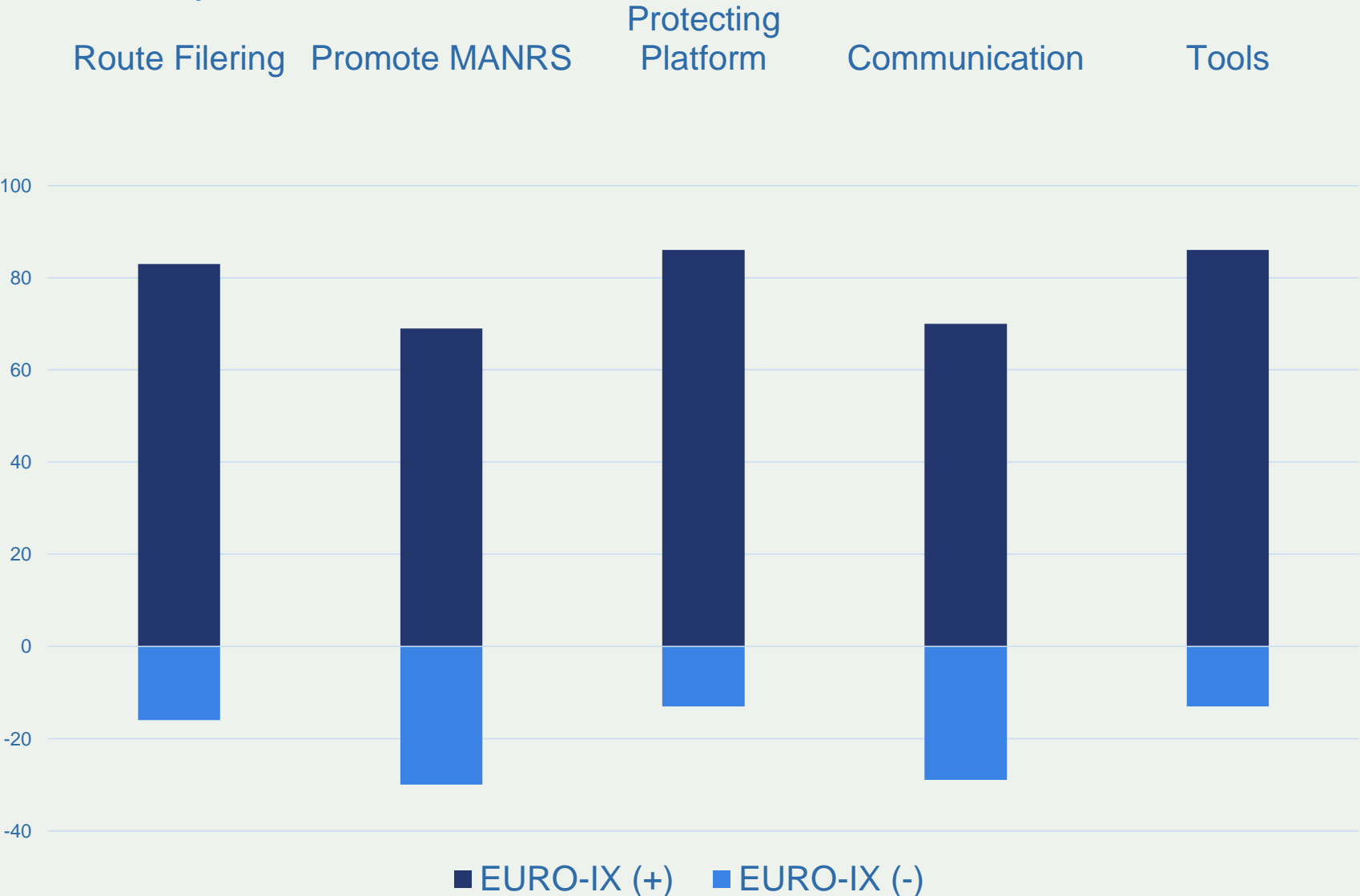
Development team

- AMS-IX, AOIX, BKNIX, CABASE, DE-CIX, IIFON, IXPN, LONAP, NIC.CR, RINEX, TorIX

Requirements

- Improve routing resilience and security
- Be useful to IXP members
- Do not set the bar too high, so that few IXPs can join
- Do not set it too low, so it makes no difference
- Make the actions concrete and measurable

EURO-IX 31ˢᵗ Forum

Implemented/Easy vs Difficult/Not Useful

The IXP Programme
Launched April 23, 2018

Increasing MANRS adoption

- The IXP Program is building on the success of the MANRS initiative, which now has more than 50 members. MANRS is definitely getting momentum and we expect the number of network operators joining it reaching 100 by the end of the year.

- IXPs are important partners in the MANRS community. Each of them forms a local community with a common operational objective. They can also tangibly contribute to significantly improving routing security.

- The IXP Program will help IXPs build safe neighborhoods, leveraging the MANRS security baseline.

Action 1. Facilitate prevention of propagation of incorrect routing information (Mandatory)

The IXP implements filtering of route announcements at the Route Server based on routing information data (IRR and/or RPKI)

Action 2. Promote MANRS in the IXP membership (Mandatory)

Action 2-1: Offer assistance to its members to maintain accurate routing information in an appropriate repository (IRR and/or RPKI)

OR

Action 2-2: Offer assistance in implementing MANRS ISP Actions for the members

OR

Action 2-3: Indicate MANRS participation on the member list and the website

OR

Action 2-4: Provide incentives linked to MANRS readiness

Action 3. Protect the peering platform

The IXP has a published policy of traffic not allowed on the peering fabric and performs filtering of such traffic.

Action 4. Facilitate global operational communication and coordination between network operators

The IXP facilitates communication among members by providing necessary mailing lists, and member directories.

Action 5. Provide monitoring and debugging tools to participants

The IXP provides a looking glass for its members.

Join the group of initial participants for the launch of the programme

Your IXP has to implement the majority (3/5) of the Actions, including mandatory 1&2

Why are we doing this?

We Are In This Together

Network operators and IXPs have a responsibility to ensure a globally robust and secure routing infrastructure.

Operator's network safety depends on actions of other players that weed out bad actors and accidental misconfigurations that wreak havoc on the Internet.

IXPs play an important role.

The more network operators and IXPs work together, the fewer incidents there will be, and the less damage they can do.

Organization	Country	Action 1: Prevent Incorrect Routing Information	Action 2.1 Assist in Correct Routing Information	Action 2.2 Assist in MANRS ISP Actions	Action 2.3 Indicate MANRS participation	Action 2.4 Incentives for MANRS Participation	Action 3. Protect the Peering Platform	Action 4. Facilitate Global Communication	Action 5. Provide Monitoring and Debugging Tools
NAP.EC/AEPROVI	EC	✓	✓	✓			✓	✓	✓
JPNAP (Internet Multifeed Co.)	JP	✓	✓				✓		✓
CABASE	AR	✓	✓		✓		✓	✓	✓
YYCIX	CA	✓	✓				✓	✓	✓
CRIX (NIC Costa Rica)	CR	✓	✓	✓	✓	✓		✓	✓
INEX (Internet Neutral Exchange Association CLG)	IE	✓	✓		✓		✓	✓	✓
AMS-IX	NL	✓	✓	✓			✓	✓	✓
Netnod	SE	✓	✓		✓		✓	✓	
MSK-IX	RU	✓	✓		✓		✓	✓	✓
DE-CIX	DE	✓	✓				✓	✓	✓
RINEX (Rwanda Internet Exchange)	RW	✓	✓		✓		✓	✓	✓
TorIX (Toronto Internet Exchange Community)	CA	✓	✓		✓		✓	✓	✓
Asteroid (Asteroid International BV)		✓	✓	✓	✓		✓	✓	✓

LEARN MORE:
https://www.manrs.org/ixp

JOIN:

https://www.manrs.org/join-ixp

Bogon IPv4 Prefix Announcement

103.251.71.0/24   AS132900   TSIC-AS-AP Thai System Integration Co.,Ltd, TH

Bogon ASN Announcements

AS45606   Announced by AS45328   NIPA-AS-TH NIPA TECHNOLOGY CO., LTD, TH
AS56096   Announced by AS45455   TH-2S1N-AP Two S One N Co Ltd, Internet Service Provider and IT Solutions, TH
AS133528 Announced by AS9931 CAT-AP The Communication Authority of Thailand, CAT, TH

Spoofer Project

Session	Timestamp (UTC)	Client IP Block	ASN	Country	NAT	Spoof Private	Spoof Routable	Adjacency Spoofing
461062	2018-05-08 11:09:16	49.231.180.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	/8
453942	2018-04-27 03:42:57	49.231.180.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	/8
453291	2018-04-26 07:04:32	49.231.180.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	/8
443994	2018-04-11 15:36:58	2403:6200:88xx::/40	45629 (JASTEL-NETWORK-TH-AP)	tha (Thailand)	no	blocked	received	/16
442846	2018-04-10 00:12:34	2403:6200:88xx::/40	45629 (JASTEL-NETWORK-TH-AP)	tha (Thailand)	no	blocked	received	/16
441993	2018-04-08 14:11:14	2403:6200:88xx::/40	45629 (JASTEL-NETWORK-TH-AP)	tha (Thailand)	no	blocked	received	/16
440880	2018-04-06 12:52:02	2403:6200:88xx::/40	45629 (JASTEL-NETWORK-TH-AP)	tha (Thailand)	no	blocked	received	/16
440211	2018-04-05 11:05:50	2403:6200:88xx::/40	45629 (JASTEL-NETWORK-TH-AP)	tha (Thailand)	no	blocked	received	/16
426142	2018-03-13 12:24:53	171.100.31.x/24	7470 (TRUEINTERNET-AS-AP)	tha (Thailand)	yes	received	received	/8
417129	2018-02-26 11:14:37	49.231.180.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	/8
406508	2018-02-08 05:21:36	49.231.44.x/24	45430 (SBN-AWN-IIG-AS-AP)	tha (Thailand)	no	received	received	/8
387730	2018-01-09 14:56:41	122.154.104.x/24	9931 (CAT-AP)	tha (Thailand)	yes	blocked	received	/8
387698	2018-01-09 14:10:06	122.154.104.x/24	9931 (CAT-AP)	tha (Thailand)	yes	blocked	received	/8
387593	2018-01-09 10:59:32	122.154.104.x/24	9931 (CAT-AP)	tha (Thailand)	yes	blocked	received	/8
384537	2018-01-04 07:38:12	49.231.94.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	none
384531	2018-01-04 07:30:59	49.231.195.x/24	45458 (SBN-AWN-AS-02-AP)	tha (Thailand)	no	received	received	none

https://spoofer.caida.org/recent_tests.php?country_include=tha

Thank you.

MANRS@isoc.org