



RIPE

Peering Manager

Making Network Peering Management Painless



Guillaume Mazoyer, 14 May 2018

- Talk about a project that can be useful to many people
- Peering can be time consuming and a boring (same configuration over and over)
- Write a tool to make this faster and easy at the same time



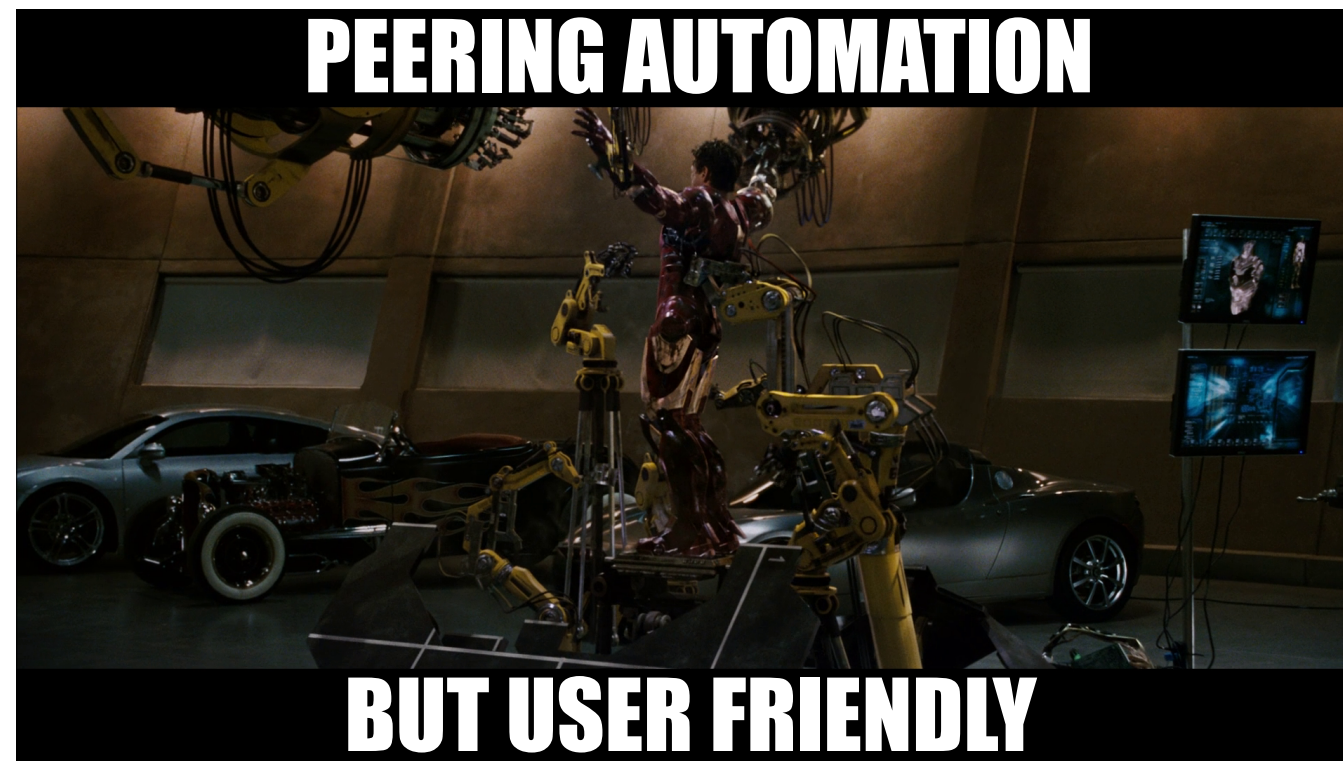
- Really?!
- Why should it be so hard?
- We've all thought about it at one point
- We all want to make our life easier
- We all want to be able to focus on more interesting stuff
- We all have some little scripts to do that (or at least copy&paste)

Who Am I?

- Network Engineer (mostly backbone and automation)
- Carrier network environment
- Used to contribute to the open source effort
 - Looking Glass <https://github.com/respawner/looking-glass>
 - PeeringDB Go API <https://github.com/respawner/peeringdb>
 - Debian/Ubuntu
 - GNOME
 - ...



- Network engineer with a 4 years experience
- Work since the beginning of my experience in the same operator/carrier
- Contribute to open source softwares for about 10 years (early days in C/Java, now in PHP/Python/Go)
- Did three Google Summer of Code (Debian/Scilab/GNOME)



- Making peering
 - Easy
 - Beautiful
 - Human manageable even for people peering a lot (and you should)
- Try to match every organizations needs (but it is hard)

Peering Manager

Internet ExchangesAutonomous SystemsDeployment

gmazoyer

Peering Data

Internet Exchanges

Internet exchanges that local AS is connected to

11

Autonomous Systems

Autonomous systems peering with the local AS

89

Peering Sessions

Peering sessions with other autonomous systems

299

Deployment

Communities

Communities used to tag routes from or to Internet exchanges

22

Templates

Templates used to generate configuration for network devices

1

Routers

Network devices connected to Internet exchanges, generated configuration can be applied to these devices if they are running on a supported platform

1

Recent History

Created peering session LU-CIX - AS6661 - IP 188.93.171.4

gmazoyer - 05/07/2018 4 p.m.

Created peering session LU-CIX - AS6661 - IP 2001.708.4c:1a05.2

gmazoyer - 05/07/2018 4 p.m.

Created peering session LU-CIX - AS6661 - IP 100.00.171.4

gmazoyer - 05/07/2018 3:59 p.m.

Created peering session LU-CIX - AS6661 - IP 2001.708.4c:1a05.2

gmazoyer - 05/07/2018 3:59 p.m.

Deleted 42 peering sessions

gmazoyer - 05/07/2018 3:42 p.m.

Imported 419 associations from Internet Exchanges

PeeringDB Synchronizations

Added 34, updated 67 and deleted 4 objects

05/11/2016 2:30 a.m.

Added 22, updated 77 and deleted 3 objects

05/10/2018 2:30 a.m.

Added 34, updated 77 and deleted 4 objects

05/08/2018 2:30 a.m.

Added 48, updated 56 and deleted 8 objects

05/08/2018 2:30 a.m.

Added 11, updated 19 and deleted 2 objects

05/07/2018 2:30 a.m.

vrtaudoc01 (v0.99-dev)

2018-05-11 09:27:58 CEST

Docs

Github

Issues

Peering Manager

Internet Exchanges

Autonomous Systems

Deployment

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+ Add an IX

Import IX

Import from PeeringDB

Internet Exchanges

<input type="checkbox"/>	Name	IPv6 Address	IPv4 Address	Template	Router	
<input type="checkbox"/>	AMS-IX	2001:718:1::a502:9467:1	80.249.212.207	Juniper JUNOS	btbg-luxent1-crluxpe01	Edit
<input type="checkbox"/>	AuvemiX	2001:718:81::2:9467:1	185.1.2.13	Juniper JUNOS	cfc-cov-crluxpe01	Edit
<input type="checkbox"/>	DNIX	2001:718:26::a502:9467:1	194.53.172.120	Juniper JUNOS	bru-ix-crluxpe01	Edit
<input type="checkbox"/>	DE-CIX Frankfurt	2001:718:731b:0:1	80.81.193.52	Juniper JUNOS	btbg-luxent1-crluxpe01	Edit
<input type="checkbox"/>	ECIX-DUS	2001:718:6::731b:0:1	194.146.118.126	—	—	Edit
<input type="checkbox"/>	ECIX-FRA	2001:718:8:20:0::731b:0:1	62.69.146.21	—	—	Edit
<input type="checkbox"/>	Equinix Paris - TH2	2001:718:43::2:9467:1	195.42.145.24	Juniper JUNOS	par-th2-crluxpe01	Edit
<input type="checkbox"/>	France-IX Paris	2001:718:54::227	37.49.236.227	Juniper JUNOS	par-th2-crluxpe02	Edit
<input type="checkbox"/>	LU-CIX	2001:718:4c::731b:1	188.93.170.56	Juniper JUNOS	btbg-bc1-crluxpe01	Edit
<input type="checkbox"/>	LU-CIX	2001:718:4c::731b:2	188.93.171.56	Juniper JUNOS	bis-luxent2-crluxpe01	Edit
<input type="checkbox"/>	LyonIX	2001:718:47:47::5a	77.95.71.90	Juniper JUNOS	lyn-str-crluxpe01	Edit

Delete Selected

Showing 1 / 11 of 11

Search

IX Name

IX Name

IPv6 Address

IPv6 Address

IPv4 Address

IPv4 Address

Configuration template

-- None --
Juniper JUNOS

Router

-- None --
bis-luxent2-crluxpe01
bru-ix-crluxpe01
btbg-luxent1-crluxpe01
btbg-bc1-crluxpe01
cfc-cov-crluxpe01

Apply

Clear

vmixdoc01 (v0.99-dev)

2018-06-11 10:03:55 CEST

Docs

GitHub

Issues

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Internet Exchanges

Autonomous Systems

Deployment

gns3user

Editing France-IX Paris

Internet Exchange

Name

France-IX Paris

Full name of the Internet Exchange point

Wg

francex

Handy unique shorthand used for IXL, and coding

IPv4 Address

2001:76:54::227

IPv4 Address used to peer

IPv4 Address

37.49.230.227

IPv4 Address used to peer

Deployment

Configuration template

Juniper JUNOS

Template for configuration generation

Router

par-92-r1gw402

Router connected to the Internet Exchange point

Check For Peering Session States

Yes

If enabled, with a valid router, the state of peering sessions will be updated.

PeeringDB

Getting the PeeringDB ID

PeeringDB ID

14028

The PeeringDB ID for the BGP connection (can be left empty)

Comments

Comments

GitHub Flavored Markdown syntax is supported

Update

Cancel

rmhux00371 (pl 65.40s)

2018-05-11 10:36:14 CEST

Docs

GitHub

Issues

Peering ManagerInternet ExchangesAutonomous SystemsDeployment

gmsztyor

Autonomous Systems

ASN

Name

IRR AS-SET

IPv6 Max Prefixes

IPv4 Max Prefixes

42

Packet Clearing House AS42

AS-PCH

600

600

Get Edit

714

Apple Inc

AS-APPLE

1000

10000

Get Edit

2200

RENATER

AS-RENATER

10

200

Get Edit

2484

FR-MC-DIS-ANYCAST (AFNIC / NIC-France)

AS-AFMC

1

1

Get Edit

2486

FR-MC-DIS-UNICAST (AFNIC / NIC-France)

AS-AFMC

3

3

Get Edit

2603

NORDUnet

AS-NORDUNET

600

7000

Get Edit

2611

BELLNET

AS-BELNET

2

50

Get Edit

2906

Netlix

as-nltx

13

200

Get Edit

3216

VEON Group

AS-SOVAM | AS-SOVAM-V5

2000

20000

Get Edit

3856

Packet Clearing House

AS-PCH

600

600

Get Edit

4651

CAT Telecom AS4651

AS-THX

1200

6000

Get Edit

5406

BNX

—

300

1000

Get Edit

6061

Post Group Luxembourg

AS-PTLU

50

300

Get Edit

6090

DL-CIX Frankfurt Route Servers

AS-DLCIX

20000

240000

Get Edit

6724

STRATO AG

AS-STRATORZ

100

100

Get Edit

6777

AMS-IX Route Servers

AS-AMS-IX-RS

25000

180000

Get Edit

6836

Hurricane Electric

AS-HURRICANE / AS-HURRICANEv6

28000

160000

Get Edit

8070

Microsoft

AS-MICROSOFT

500

1000

Get Edit

9309

SiparTech

AS-SPH

1

100

Get Edit

8360

MANDA

AS-WANDA

00

100

Get Edit

0 Selected

12345»

Showing 1-20 of 88

Search

ASN

AS Name

IRR AS-SET

IPv6 Max Prefixes

IPv4 Max Prefixes

ApplyClear

vmxarocd1 (v0.93-dev)

2018-05-11 10:04:05 CEST

DocsGitHubIssues

AS32590 - Valve Corporation

Last updated: May 11, 2018, 3:36 a.m.

Sync with PeeringDB

Rollback

Delete

Info

Peering Sessions

AS Details

PeeringDB

ASN	32590
Name	Valve Corporation
IRR AS SET	RADB:AS VALVE
IPv6 Max Prefixes	50
IPv4 Max Prefixes	100

Comments

None

Peering Manager

Internet Exchanges

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gnanzyer

Editing AS32590 - Valve Corporation

Autonomous System

ASN

32590

BCP autonomous system number (32-bit capable)

Name

Valve Corporation

Full name of the AS

IRR AS-SET

RADB:AS-VALVE

IPv6 Max Prefixes

50

IPv4 Max Prefixes

100

Comments

Comments

GitHub-Flavored Markdown syntax is supported

Update

Cancel

vmxudac01 (v0.99-dev)

2018-05-11 10:07:55 CEST

Docs

GitHub

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Back to IX

DisableEditDelete

France-IX Paris - AS2906 - IP 2001:7f8:54::1:50

Peering Session Details

UnabledEstablishedRoutes: 1021

Internet Exchange	France-IX Paris
AS Name	netflix
ASN	2906
IP Address	2001:7f8:54::1:50

Comments

None

vmiluxdoc01 (v0.99-0cv)

2018-05-11 10:05:42 CEST

[Docs](#)[Github](#)[Issues](#)

Peering Manager

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gmaucroyer

Editing France-IX Paris - AS2906 - IP 2001:7f8:54::1:50

Peering Session

ASN

AS2906 - Netflix

IX

France-IX Paris

IP Address

2001:7f8:54::1:50

IPv6 or IPv4 address

Is Enabled

Yes

Comments

Comments

📖

GitHub-Flavored Markdown syntax is supported

Update

Cancel

vtriluxdoc01 (v0.99-dev)

2018-05-11 10:05:54 CEST

📖

Docs

🔗

GitHub

🐛

Issues

Juniper JUNOS

Template Details	
Name	Junior 80408
Last update	May 7, 2018, 1:00 pm

Peering ManagerInternet PeeringasAutonomous SystemsDeployment

gmsroyer

Peering Sessions

ASN

AS Name

IP Address

Status

State

42

Packet Clearing House AS42

2001.7f8:54::92

Established

Established

Routes: 1091 21

Details

Edit

42

Packet Clearing House AS42

37.49.226.92

Established

Established

Routes: 111 64

Details

Edit

2200

RENATER

2001.7f8:54::19

Established

Established

Routes: 1 21

Details

Edit

2200

RENATER

37.49.236.19

Established

Established

Routes: 1 64

Details

Edit

2484

FR-NIC-DNS-ANYCAST (AFNIC / NIC-France)

2001.7f8:54::20

Established

Established

Routes: 1 21

Details

Edit

2484

FR-NIC-DNS-ANYCAST (AFNIC / NIC-France)

37.49.236.20

Established

Established

Routes: 1 64

Details

Edit

2496

FR-NIC-DNS-UNICAST (AFNIC / NIC-France)

2001.7f8:54::21

Established

Established

Routes: 1 21

Details

Edit

2496

FR-NIC-DNS-UNICAST (AFNIC / NIC-France)

37.49.236.21

Established

Established

Routes: 1 64

Details

Edit

2905

Netfix

2001.7f8:54::1:50

Established

Established

Routes: 1 21

Details

Edit

2905

Netfix

37.49.237.50

Established

Established

Routes: 1 64

Details

Edit

3856

Packet Clearing House

2001.7f8:54::31

Established

Connect

Details

Edit

3856

Packet Clearing House

37.49.226.91

Established

Connect

Details

Edit

6061

Post Group Luxembourg

2001.7f8:54::90

Established

Established

Routes: 26 21

Details

Edit

6061

Post Group Luxembourg

37.49.226.90

Established

Established

Routes: 172 64

Details

Edit

6059

Hurricane Electric

2001.7f8:54::10

Established

Established

Routes: 30351 21

Details

Edit

6059

Hurricane Electric

37.49.236.10

Established

Established

Routes: 124173 64

Details

Edit

8075

Microsoft

2001.7f8:54::5

Established

Established

Routes: 67 21

Details

Edit

8075

Microsoft

37.49.236.5

Established

Established

Routes: 216 64

Details

Edit

8060

1&1 Internet

2001.7f8:54::42

Established

Established

Routes: 100 21

Details

Edit

8060

1&1 Internet

37.49.236.42

Established

Established

Routes: 371 64

Details

Edit

0 Details Selected

1234»

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Search

Search

ASN

ASN

AS Name

AS Name

IP Address

IP Address

IP Version

Enabled

ApplyClear

vmxaroc61 (v0.99-dev)

2018-05-11 10:05:01 CEST

Docs

GitHub

Issues

Details And Features

- Use Python with the Django framework
- Can use PeeringDB for more automation
- Future development:
 - Discover missing peering sessions between AS
 - Remove abandoned sessions
 - Generate prefix lists, IRR objects, BGP policies, session passwords
 - Notifications (peers and NOC)
- Available on GitHub (Apache-2.0 license)
- <https://github.com/respawner/peering-manager>



- Heavy development on going
- No stable release yet, but we are getting there one feature and one bug fix at a time
- Use NAPALM to be able to focus on other code aspect and because it is a great library
- Can interact with the PeeringDB API (read only for now) for more automation
- Jinja2 based templates for configuration generation
- There are more features to come
- Contributions are welcome (can be reported issues, feature requests, pull requests, documentation, ...)

Supporters

- Donator 
- Hardware for testing 
- Contributors
 - Oliver Haake (feedbacks, bug reports, code)
 - Jeffrey Nikoletich (feedbacks, bug reports)
- Early adopters



luxnetwork



TRInAPS
INGÉNIERIE RÉSEAU



- Already supported by several companies
- Some donated some money
- Some proposed hardware for testing purpose
- Some just use the tool and give feedbacks

ANY QUESTIONS?



- If you have some questions, do not hesitate to talk to me
- You should be able to find me here and there
- I'm happy to speak about this project
- If you don't get that movie reference, just look for OSS117 (best spy in the world)